Statutory Authority: RCW 2.10.020, 41.50.050(6), and 41.50.090.

290-48-020 Definitions. [Order IV, § 290-48-020, filed 9/11/73.] Repealed by 78-12-038 (Order V), filed 11/22/78. Statutory Authority: RCW 2.10.020, 41.50.050(6), and 41.50.090.

290-48-030 Description of central and field organization of Washington judicial retirement system. [Order IV, § 290-48-030, filed 9/11/73.] Repealed by 78-12-038 (Order V), filed 11/22/78. Statutory Authority: RCW 2.10.020, 41.50.050(6), and 41.50.090.

290-48-040 Operations and procedures. [Order IV, § 290-48-040, filed 9/11/73.] Repealed by 78-12-038 (Order V), filed 11/22/78. Statutory Authority: RCW 2.10.020, 41.50.050(6), and 41.50.090.

290-48-050 Public records available. [Order IV, § 290-48-050, filed 9/11/73.] Repealed by 78-12-038 (Order V), filed 11/22/78. Statutory Authority: RCW 2.10.020, 41.50.050(6), and 41.50.090.

290-48-060 Public records officer. [Order IV, § 290-48-060, filed 9/11/73.] Repealed by 78-12-038 (Order V), filed 11/22/78. Statutory Authority: RCW 2.10.020, 41.50.050(6), and 41.50.090.

290-48-070 Office hours. [Order IV, § 290-48-070, filed 9/11/73.] Repealed by 78-12-038 (Order V), filed 11/22/78. Statutory Authority: RCW 2.10.020, 41.50.050(6), and 41.50.090.

290-48-080 Requests for public records. [Order IV, § 290-48-080, filed 9/11/73.] Repealed by 78-12-038 (Order V), filed 11/22/78. Statutory Authority: RCW 2.10-.020, 41.50.050(6), and 41.50.090.

290-48-090 Copying. [Order IV, § 290-48-090, filed 9/11/73.] Repealed by 78-12-038 (Order V), filed 11/22/78. Statutory Authority: RCW 2.10.020, 41.50.050(6), and 41.50.090.

290-48-100 Exemptions. [Order IV, § 290-48-100, filed 9/11/73.] Repealed by 78-12-038 (Order V), filed 11/22/78. Statutory Authority: RCW 2.10.020, 41.50.050(6), and 41.50.090.

290-48-110 Review of denials of public records requests. [Order IV, § 290-48-110, filed 9/11/73.] Repealed by 78-12-038 (Order V), filed 11/22/78. Statutory Authority: RCW 2.10.020, 41.50.050(6), and 41.50.090.

290-48-120 Records index. [Order IV, § 290-48-120, filed 9/11/73.] Repealed by 78-12-038 (Order V), filed 11/22/78. Statutory Authority: RCW 2.10.020, 41.50.050(6), and 41.50.090.

290-48-130 Washington judicial retirement system address. [Order IV, § 290-48-130, filed 9/11/73.] Repealed by 78-12-038 (Order V), filed 11/22/78. Statutory Authority: RCW 2.10.020, 41.50.050(6), and 41.50.090.

290-48-140 Adoption of form. [Order IV, § 290-48-140, filed 9/11/73.] Repealed by 78-12-038 (Order V), filed 11/22/78. Statutory Authority: RCW 2.10.020, 41.50.050(6), and 41.50.090.

290-48-990 Appendix A—Request for public records. [Order IV, Appendix A (codified as WAC 290-48-990), filed 9/11/73.] Repealed by 78-12-038 (Order V), filed 11/22/78. Statutory Authority: RCW 2.10.020, 41.50.050(6), and 41.50.090.

WAC 290-48-010 through 290-48-990 Repealed. See Disposition Table at beginning of this chapter.

Title 296 WAC
LABOR AND INDUSTRIES

Chapters

Chapter 296-04 WAC
INTERNAL RULES--STATE APPRENTICESHIP AND TRAINING COUNCIL

AFFIRMATIVE ACTION PLAN OF THE WASHINGTON STATE APPRENTICESHIP COUNCIL TO PROMOTE EQUAL EMPLOYMENT OPPORTUNITY IN APPRENTICESHIP AND TRAINING

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-04-290 Appeal procedure. [Order 76-4, § 296-04-290, filed 2/20/76; Order 72-18, § 296-04-290, filed 11/8/72; Order 71-3, § 296-04-290, filed 3/25/71.] Repealed

by 79-09-003 (Order 79-13), filed 8/2/79. Statutory Authority: RCW 49.04.010.

INTERNAL RULES

WAC 296-04-040 Council meetings--When held--Notice--Who may attend--Quorum. Council meetings shall be of two kinds—[business] [regular] and special meetings.

(1) **[Business] [Regular] Meetings.** [Business] [Regular] meetings of the council shall be held at least quarterly during each year on the third Thursday and Friday of the months of January, April, July and October. Such [business] [regular] meetings shall be held at such locations within the State of Washington which in the opinion of the council will best promote the purposes of the Washington State Apprenticeship and Training Act. All meetings of the council shall be open to the general public, and all actions, transaction of official business of the council, collective decision, commitment or promise, and all collective discussion, acquisition and exchange of facts in the course of deliberation prior to any action of the council shall only be made in meetings open to the public consistent with the provisions of the Open Public Meetings Act of 1971 (Chapter 250, Laws of 1971, 1st ex. sess.) and chapter 34.04 RCW. No member of the general public will be required as a condition upon attending any council meeting to register his name or give any other information or to fulfill any condition precedent to his attendance at council meetings. Notice of such meetings shall be given to all approved committees and may be given to any persons, organizations, or agencies at the direction of the council, or any member thereof, and in addition shall be given to any newspaper, news service, television or radio station which has requested to be notified of council meetings. Committee programs, plant programs, or amendments thereto, may be approved or disapproved only at [business] [regular] meetings.

(2) **Special Meetings.** Special meetings of the council may be called by the chairman or by majority of the council members by delivering personally or by mail[,] written notice to each member of the council[,] and all approved joint apprenticeship and training committees[,] and to each newspaper of general circulation, television or radio station[,] which has on file with the council or the supervisor[,] a request to be notified of such special meeting of the council[,] which shall be ineffective unless it sets forth the date, time and location of the meeting[,] and specifies the business to be transacted by the council at such special meeting[s]. Final disposition may not be made of any matter at such special meeting other than specified in the notice of such special meeting. Special meetings shall be open to the general public to the same extent [at] [as] the quarterly [business] [regular] meetings of the council. Notice of special meetings must be delivered personally or by mail at least twenty-four hours before the time specified in the notice of such special meeting[,] except in the case of rule changes pursuant to chapter 34.04 RCW which must be at least 20 days before the time specified in the notice.

(3) **Notice of Council Meetings.** Notice of each quarterly [business] [regular] meeting of the council shall be given to all council members by the supervisor at least 20 days before the date set for the meeting and in addition shall give notice to such other persons and organizations as specified in subsection (1) of this section.

(4) **Notice of Special Meetings of the Apprenticeship Council.** Notice of special meetings of the council may be given by the supervisor at the request of the chairman or the majority of the members of the council in the manner and form specified in subsection (2) of this section. If such notices are not given, no action taken by the council shall be effective at such meetings unless each regular council member at such meeting, or prior thereto, gives a written waiver of notice of such meeting to be filed by the supervisor and the notice shall be deemed to be waived by any member who is present at the meeting at the time it convenes. *Provided*, That rule change may not be made at such special meeting unless the requirements of chapter 34.04 RCW have been complied with.

(5) **Submission of Petitions or Requests.** The council will not act upon any petition or request which is addressed to the council unless such a petition or request is submitted in writing[,] to the supervisor at least 30 days prior to the date of such quarterly [business] [regular] meeting, and any petitions or requests not submitted 30 days prior to such quarterly meeting shall be deferred to the next quarterly [business] [regular] meeting of the council and the petitioner shall be so notified by the supervisor.

(6) **Tie Vote.** When a tie vote occurs on an issue before the council, the impasse will be resolved by the following procedure:

(a) The Chairman, Vice Chairman, and Supervisor (Assistant Director for Apprenticeship) shall meet and develop a recommendation to resolve the issue, reporting the outcome of such meeting to the council prior to adjournment.

(b) If the issue remains unresolved, the council shall instruct the supervisor (Assistant Director for Apprenticeship) to request the intervention of the Director of the Department of Labor and Industries. If, in the opinion of the director, the issue warrants his intervention, the director shall review the matter and submit to the council a recommended resolution for consideration at a special meeting or the next regular meeting, at which time the council shall resolve the issue.

(7) **Quorum.** Two-thirds of the council members entitled to vote shall be considered a quorum. [Statutory Authority: RCW 49.04.010. 79-03-023 (Order 79-3), § 296-04-040, filed 2/22/79; Order 72-8, § 296-04-040, filed 6/8/72; Order 71-3, § 296-04-040, filed 3/25/71; § V, filed 10/11/65; § V, filed 2/12/65; § III, filed 3/23/60.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-04-160 Apprenticeship committees. Apprenticeship committees shall be appointed in accordance with the provisions of RCW 49.04.040. Such committees shall have the duties prescribed by statute, these rules and the approved standards under which they operate. Committees shall function, administrate or relinquish authority only with the consent of the council. On any petition addressed to the council or the supervisor, only the signature of the elected chairman and secretary of the committee shall be accepted unless the apprenticeship committee has petitioned the council to recognize and accept the signature of another person. Such a petition must be signed by a quorum of the members of the petitioning apprenticeship committee. It is the council's view that joint apprenticeship and training committees are not state agencies but rather only quasi-public entities performing services jointly for management and labor by assistance to the apprenticeship program. [Statutory Authority: RCW 49.04.010. 78-12-022 (Order 78-21), § 296-04-160, filed 11/14/78; Order 76-4, § 296-04-160, filed 2/20/76; Order 72-8, § 296-04-160, filed 6/8/72; Order 71-3, § 296-04-160, filed 3/25/71; § XVI, filed 10/11/65; § XVI, filed 2/12/65; § X A, filed 3/23/60.]

WAC 296-04-165 Union Waiver. (1) Under a program proposed for registration by an employer or employers' association, and where the standards, collective bargaining agreement or other instrument, provides for participation by a union in any manner in the operation of the substantive matters of the apprenticeship program, and such participation is exercised, written acknowledgement of union agreement or "no objection" to the registration is required. Where no such participation is evidenced and practiced, the employer or employers' association shall simultaneously furnish to the union, if any, which is the collective bargaining agent of the employees to be trained, a copy of its application for registration and of the apprenticeship program. The registration agency shall provide a reasonable time period of not less than 30 days nor more than 60 days for receipt of union comments, if any, before final action on the application for registration and/or approval.

(2) Where the employees to be trained have no collective bargaining agent, an apprenticeship program may be proposed for registration by an employer or group of employers. [Statutory Authority: RCW 49.04.010. 78-12-022 (Order 78-21), § 296-04-165, filed 11/14/78.]

WAC 296-04-275 Reciprocity. Apprenticeship programs and standards of employers and unions in other than the building and construction industry, which jointly form a sponsoring entity on a multistate basis and are registered pursuant to all requirements of Title 29 Code of Federal Regulations, Part 29, as adopted February 15, 1977 by any recognized State Apprenticeship Agency/Council or by the Bureau of Apprenticeship and Training, U. S. Department of Labor, shall be accorded approval reciprocity by the Washington State Apprenticeship and Training Council, if such reciprocity is requested by the sponsoring entity. [Statutory Authority: RCW 49.04.010. 78-12-022 (Order 78-21), § 296-04-275, filed 11/14/78; 78-09-056 (Order 78-13), § 296-04-275, filed 8/22/78.]

WAC 296-04-290 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-04-295 Complaint review procedure. (1) Any controversy or difference that cannot be resolved to the satisfaction of the parties by the local committee or other organization administering the agreement may be submitted by any apprentice who has completed his or her probationary period to the apprenticeship division for resolution.

(a) The apprentice shall request the local committee or other organization to reconsider any action that is the basis for the complaint. The local committee or other organization shall, within 30 days, provide a written notification of its decision on the request for reconsideration to the apprentice and this notification shall be considered the final action of the committee. The apprentice shall submit a written complaint describing the controversy to the supervisor of the apprenticeship division within 30 days of the final action taken on the matter by the local committee or other organization.

(b) The written complaint shall set out the specific matter(s) complained of and the facts and circumstances relevant to the complaint. Any documents or correspondence relevant to the complaint shall be attached to the complaint. The apprentice shall send a copy of the complaint to the interested local committee or other organization.

(c) Any controversy that involves matters covered by a collective bargaining agreement are not subject to the complaint review procedure established by this rule.

(2) Upon receipt of a complaint from an apprentice, the supervisor of the apprenticeship division shall investigate the controversy.

(a) The supervisor shall have 30 working days within which to complete the investigation. During the investigation, the supervisor shall attempt to effect a settlement of the controversy between the parties. If the controversy is not settled during the investigation, the supervisor, at the conclusion of the investigation shall issue a written decision resolving the controversy.

(b) The apprentice and the local committee or other organization shall fully cooperate with the supervisor during the investigation by providing any information or documents requested by the supervisor.

(c) The supervisor may, in his or her discretion, delegate the investigation of a complaint by an apprentice to any employee of the apprenticeship division.

(3) If the apprentice, local committee or other organization is dissatisfied with the decision of the supervisor, the dissatisfied party may request the apprenticeship council to review the decision.

(a) The request shall be made to the council in writing within 30 days of the issuance of the supervisor's decision and shall specify the reasons that the review is requested. The party requesting review shall provide a

copy of the request to the other parties to the controversy.

(b) The council shall conduct an informal hearing to consider the request for review of the supervisor's decision. The hearing shall be held in conjunction with the council's regular quarterly meeting unless special circumstances require a hearing at a different time.

(i) At the informal hearing, the council shall review the decision issued by the supervisor and all records of the investigation. The council may also accept testimony or documents from any person, including the supervisor and his or her staff, who has knowledge relating to the controversy.

(ii) Parties at the informal hearing may be represented by counsel and may, at the council's discretion, present argument concerning the controversy. The council shall not apply formal rules of evidence.

(iii) After the informal hearing, the council shall issue a written decision resolving the controversy within 30 days. The decision of the council may be to affirm the decision of the supervisor and in that case the decision of the supervisor becomes the decision of the council. All parties to the informal hearing shall be sent a copy of the council's decision. The chairman may sign the decision for the council.

(4) The investigation or review of any controversy under this rule by the supervisor or the council shall not suspend any action taken or decision made by the local committee or other organization pending the issuance of a decision resolving the matter.

(5) This rule is not applicable to any complaints concerning discrimination or equal opportunity matters that are to be resolved under the procedures outline in WAC 296-04-300, et. seq. [Statutory Authority: RCW 49.04-.010. 79-09-003 (Order 79-13), § 296-04-295, filed 8/2/79.]

AFFIRMATIVE ACTION PLAN

WAC 296-04-300 Promulgation. WAC 296-04-300 through 296-04-480 of this chapter sets forth the affirmative action plan of the Washington State Apprenticeship and Training Council and establishes the policies and procedures to promote equality of opportunity in apprenticeship programs approved by the Washington State Apprenticeship and Training Council and are adopted in accordance with the provisions of Title 29, Part 30 of the Code of Federal Regulations as amended and promulgated by the United States Department of Labor. These policies and procedures apply to the recruitment and selection of apprentices, and to all conditions of employment and training during apprenticeship; and the procedures established provide for review of apprenticeship programs, for registering apprenticeship programs, for processing complaints, and for deregistering noncomplying apprenticeship programs. These policies and procedures also provide for continued or withdrawal of recognition of apprenticeship programs. The purpose of the following sections is to promote equality of opportunity in apprenticeship by prohibiting discrimination based on race, color, religion, national origin, or sex in apprenticeship programs, by requiring affirmative action to provide equal opportunity in such apprenticeship programs, and by coordinating these policies and procedures with other equal opportunity programs. [Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-300, filed 11/14/78; Order 77-3, § 296-04-300, filed 1/25/77; Order 71-13, § 296-04-300, filed 10/28/71.]

WAC 296-04-330 Equal opportunity standards. Obligations of Sponsors. Each sponsor of an apprenticeship program shall:

(1) Recruit, select, employ and train apprentices during their apprenticeship, without discrimination because of race, color, religion, national origin, or sex; and

(2) Uniformly apply rules and regulations concerning apprentices, including but not limited to, equality of wages, periodic advancement, promotion, assignment of work, job performance, rotation among all work processes of the trade, imposition of penalties or other disciplinary action, and all other aspects of the apprenticeship program administered by the program sponsors; and

(3) Take affirmative action to provide equal opportunity in apprenticeship, including adoption of an affirmative action plan as required by the provisions of WAC 296-04-340.

(4) **Equal Opportunity Pledge.** Each sponsor of an apprenticeship program shall include in its standards the following equal opportunity pledge: "The recruitment, selection, employment, and training of apprentices during their apprenticeship shall be without discrimination because of race, color, religion, national origin, or sex. The sponsor will take affirmative action to provide equal opportunity in apprenticeship and will operate the apprenticeship program as required by the rules of the Washington State Apprenticeship and Training Council and Title 29, Part 30 of the Code of Federal Regulations."

(5) **Programs Presently Registered.** Each sponsor of a program registered with the council as of the effective date of these rules shall within 90 days following that effective date take the following action:

(a) Include in the standards of its apprenticeship program the equal opportunity pledge prescribed by subsection (4) of this section; and

(b) Adopt an affirmative action plan as required by WAC 296-04-340; and

(c) Adopt a selection procedure as required by WAC 296-04-350. A sponsor adopting a selection method under WAC 296-04-350(2), (3) or (4)[,] shall prepare and have available for submission upon request, copies of its amended standards, affirmative action plans, and selection procedure. A sponsor adopting a selection method under WAC 296-04-350(5) shall submit to the council copies of its standards, affirmative action plan, and selection procedure in accordance with the requirements of WAC 296-04-350(5)(a).

(6) **Sponsors Seeking New Registration.** A sponsor of a program seeking new registration and approval of the

council shall submit copies of its proposed standards, affirmative action plan, selection procedures, and such other information as may be required. The program shall be registered and approved [and] [if] such standards, affirmative action plan, and selection procedure meet the requirements of these rules.

(7) **Programs Subject to Approved Equal Employment Opportunity Programs.** A sponsor shall not be required to adopt an affirmative action plan under WAC 296-04-340, or a selection procedure under WAC 296-04-350, if it submits to the council satisfactory evidence that it is in compliance with an equal employment opportunity program providing for the selection of apprentices and for affirmative action in apprenticeship including goals and timetables for women and minorities which has been approved as meeting the requirements of Title VII of the Civil Rights Act of 1964, as amended, (42 U.S.C. 2000e, et seq.) and its implementing regulations published in Title 29 of the Code of Federal Regulations, Chapter XIV, or Executive Order 11246, as amended, and its implementing regulations at Title 41 of the Code of Federal Regulations, Chapter 60: *Provided*, That programs approved, modified or renewed subsequent to the effective date of this amendment will qualify for this exception only if the goals and timetables for minorities and women for the selection of apprentices provided for in such programs are equal to or greater than the goals required under this part[.]

(8) **Program with Fewer than Five Apprentices.** A sponsor of a program in which fewer than five apprentices are indentured shall not be required to adopt an affirmative action plan under WAC 296-04-340, or a selection procedure under WAC 296-04-350: Provided, That such program was not adopted to circumvent the requirements of this part[.] [Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-330, filed 11/14/78; Order 71-13, § 296-04-330, filed 10/28/71.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-04-340 Affirmative action plans. (1) Adoption of a sponsor's commitment to equal opportunity in recruitment, selection, employment, and training of apprentices shall include the adoption of a written affirmative action plan.

(2) Definition of Affirmative Action. Affirmative action is not mere passive nondiscrimination. It includes procedures, methods and programs for the identification, positive recruitment, training, and motivation of present and potential minority and female (minority and nonminority) apprentices including the establishment of goals and timetables. It is action which will equalize opportunity in apprenticeship so as to allow full utilization of the work potential of minorities and women. The overall result to be sought is equal opportunity in apprenticeship for all individuals participating in or seeking entrance to the labor force of this state.

(3) Outreach and Positive Recruitment. An acceptable affirmative action plan must also include adequate provisions for outreach and positive recruitment that would reasonably be expected to increase minority and female participation in apprenticeship by expanding the opportunity of minorities and women to become eligible for apprenticeship selection. In order to achieve these objectives, sponsors shall undertake activities such as those listed below. It is not contemplated that each sponsor necessarily will include all of the listed activities in its affirmative action program. The scope of the affirmative action program will depend on all the circumstances including the size and type of the program and its resources. However, the sponsor will be required to undertake a significant number of appropriate activities in order to enable it to meet its obligations under these rules. The affirmative action plan shall set forth the specific steps the sponsor intends to take in the areas listed below. Whenever special circumstances warrant, the council may provide from any funds made available to it for such purpose, such financial or other assistance it deems necessary to implement the requirements of this paragraph.

(a) Dissemination of information concerning the nature of apprenticeship, requirements for admission to apprenticeship, availability of apprenticeship opportunities, sources of apprenticeship applications, and the equal opportunity policy of the sponsor. For programs accepting applications only at specified intervals, such information shall be disseminated at least 30 days in advance of the earliest date for application at each interval. For programs customarily receiving applications throughout the year, such information shall be regularly disseminated, but not less than semiannually. Such information shall be given to the council, local schools, employment service offices, women's centers, outreach programs and community organizations which can effectively reach minorities and women and shall be published in newspapers which are circulated in the minority community and among women as well as the general areas in which the program sponsor operates.

(b) Participate in any workshops conducted by employment service agencies for the purpose of familiarizing school, employment service and other appropriate personnel with the apprenticeship system and current opportunities therein.

(c) Cooperation with the local school boards and vocational education systems to develop programs for preparing students to meet the standards and criteria required to qualify for entry into apprenticeship programs.

(d) Internal communication of the sponsor's equal opportunity policy in such a manner as to foster understanding, acceptance, and support among the sponsor's various officers, supervisors, employees, and members and to encourage such persons to take the necessary action to aid the sponsor in meeting its obligations under these rules.

(e) Engaging in such programs as outreach for the positive recruitment and preparation of potential applicants for apprenticeship; where appropriate and feasible,

such programs shall provide for pretesting experience and training. If no programs are in existence, the sponsor shall seek to initiate these programs, or, when available, to obtain financial assistance from the council. In initiating and conducting these programs, the sponsor may be required to work with other sponsors and appropriate community organizations. The sponsor shall also initiate programs to prepare women and encourage women to enter traditionally male programs[.]

(f) To encourage the establishment and utilization of programs of preapprenticeship, preparatory trade training, or others designed to afford related work experience or to prepare candidates for apprenticeship, a sponsor shall make appropriate provision in its affirmative action plan to assure that those who complete such programs are afforded full and equal opportunity for admission into the apprenticeship program.

(g) Utilization of journeymen to assist in the implementation of the sponsor's affirmative action program.

(h) Granting advance standing or credit on the basis of previously acquired experience, training, skills, or aptitude for all applicants equally.

(i) Admitting to apprenticeship persons whose age exceeds the maximum age for admission to the program, where such action is necessary to assist the sponsor in achieving its affirmative action obligations.

(j) Appropriate action as to ensure that the recruitment, selection, employment, and training of apprentices during apprenticeship, shall be without discrimination because of race, color, religion, national origin, or sex; such as: General publication of apprenticeship opportunities and advantages in advertisements, industry reports, articles, etc.; use of present minority and female apprentices and journeymen as recruiters; career counseling; periodic auditing of affirmative action programs and activities; and development of reasonable procedures between the sponsor and the employers of apprentices to ensure that equal employment opportunity is being granted including reporting systems, on site reviews, briefing sessions, etc. The affirmative action programs shall set forth the specific steps the sponsors intend to take in the above areas under this subsection (3). Whenever special circumstances warrant, the council may provide such financial or other assistance from funds available to it for that purpose, as it deems necessary to implement the above requirements.

(4) Goals and Timetables. (a) A sponsor adopting a selection method under WAC 296-04-350, (2) or (3), which determines on the basis of analysis described in subdivision (e) that it has deficiencies in terms of underutilization of minorities and/or women (minority and nonminority) in the craft or crafts represented by the program shall include in its affirmative action plan percentage goals and timetables for the admission of minority and/or female (minority and nonminority) applicants into the eligibility pool.

(b) A sponsor adopting a selection method under WAC 296-04-350, (4) or (5), which determines on the basis of the analysis described in subdivision (e) that it has deficiencies in terms of the underutilization of the minorities and/or women in the craft or crafts represented by the program shall include in its affirmative action plan percentage goals and timetables for the selection of minority and female (minority and nonminority) applicants for the apprenticeship program.

(c) "Underutilization" as used in this subsection refers to the situation where there are fewer minorities and/or women (minority and nonminority) in the particular craft or crafts represented by the program than would reasonably be expected in view of an analysis of the specific factors in subdivision (e) of this section. Where, on the basis of the analysis, the sponsor determines that it has no deficiencies, no goals and timetables need be established. However, where no goals and timetables are established, the affirmative action plan shall include a detailed explanation why no goals and timetables have been established.

(d) Where the sponsor fails to submit goals and timetables as part of its affirmative action plan or submits goals or timetables which are unacceptable, and the council determines that the sponsor has deficiencies in terms of underutilization of minorities or women (minority and nonminority) within the meaning of this section, the council shall establish goals and timetables applicable to the sponsor for the admission of minority and female (minority and nonminority) applicants into the eligibility pool for selection of apprentices, as appropriate. The sponsor shall make good faith efforts to obtain these goals and timetables in accordance with the requirements of this section.

(e) Analysis to Determine if Deficiencies Exist. The sponsor's determination as to whether goals and timetables shall be established shall be based on an analysis of at least the following factors, which analysis shall be set forth in writing as part of the affirmative action plan.

(i) The size of the working age minority and female (minority and nonminority) population in the program sponsor's labor market area;

(ii) The size of the minority and female (minority and nonminority) labor force in the program sponsor's labor market area;

(iii) The percentage of the minority and female (minority and nonminority) participation as apprentices in the particular craft as compared with the percentage of minorities and women (minority and nonminority) in the labor force in the program sponsor's labor market area;

(iv) The percentage of minority and female (minority and nonminority) participation as journeymen employed by the employer or employers participating in the program as compared with the percentage of minorities and women (minority and nonminority) in the sponsor's labor market area and the extent to which the sponsor should be expected to correct any deficiencies through the achievement of goals and timetables for the selection of apprentices;

(v) The general availability of minorities and women (minority and nonminority) with present or potential capacity for apprenticeship in the program sponsor's labor market area.

(f) Establishment and Attainment of Goals and Timetables. The goals and timetables shall be established on the basis of the sponsor's analysis of its underutilization of minorities and women and its entire affirmative action program. A single goal for minorities and a separate single goal for women is acceptable unless a particular group is employed in a substantially disparate manner in which case separate goals shall be established for such group. Such separate goals would be required, for example, if a specific minority group of women were underutilized even though the sponsor had achieved its standards for women generally[.] In establishing the goals, the sponsor should consider the results which could be reasonably expected from its good faith efforts to make its overall affirmative action program work. Compliance with these requirements shall be determined by whether the sponsor has met its goals within its timetable, or failing that, whether it has made good faith efforts to meet its goals and timetables. Its "good faith efforts" shall be judged by whether it is following its affirmative action program and attempting to make it work, including evaluation and changes in its program where necessary to attain the maximum effectiveness toward the attainment of its goals. However, in order to deal fairly with program sponsors, and with women who are entitled to protection under the goals and timetables requirements, during the first 12 months after the effective date of these regulations, the program sponsor would generally be expected to set a goal for women for the entering year class at a rate which is not less than 50 percent of the proportion women are of the workforce in the program sponsor's labor market area and set a percentage goal for women in each class beyond the entering class which is not less than the participation rate of women currently in the preceding class. At the end of the first 12 months after the effective date of these regulations, sponsors are expected to make appropriate adjustments in goal levels. See WAC 296-04-370(2).

(g) Data and Information. The supervisor shall make available to program sponsors data and information on minority and female (minority and nonminority) labor force characteristics for each Standard Metropolitan Statistical Area, and for other special areas as appropriate. [Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-340, filed 11/14/78; Order 77-3, § 296-04-340, filed 1/25/77; Order 71-13, § 296-04-340, filed 10/28/71.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-04-350 Selection of apprentices. (1) **Obligations of Sponsors.** In addition to development of a written affirmative action plan to ensure that minorities and women have an equal opportunity for selection as apprentices and otherwise ensure the prompt achievement of full and equal opportunity in apprenticeship, each sponsor shall further provide in its affirmative action program that the selection of apprentices shall be made under one of the methods specified in the following subsections (2) through (5) of this section.

(2) **Selection Methods.** The sponsor shall adopt one of the following methods of selecting apprentices:

(a) Selection on Basis of Rank from Pool of Eligible Applicants. A sponsor may select apprentices from a pool of eligible applicants created in accordance with the requirements of subdivision (c) of this subsection on the basis of the rank order of scores of applicants on one or more qualification standards where there is a significant statistical relationship between rank order of scores and performance in the apprenticeship program. In demonstrating such relationship, the sponsor shall follow the procedure set forth in Guidelines on Employee Selection Procedures published at 41 CFR Part 60-3.

(b) Requirements. The sponsor adopting this method of selecting apprentices shall meet the requirements of subdivisions (c) through (g) of this subsection.

(c) Creation of Pool of Eligibles. A pool of eligibles shall be created from applicants who meet the qualifications of minimum legal working age and the sponsor's minimum physical requirements; or from applicants who meet qualification standards in addition to minimum legal working age: *Provided*, That any additional qualification standards conform with the following requirements:

(i) Qualification Standards. The qualification standards and the procedures for determining such qualification standards shall be stated in detail and shall provide criteria for the specific factors and attributes to be considered in evaluating applicants for admission to the pool. The score required under each qualification standard for admission to the pool shall also be specified. All qualification standards, and the score required on any standard for admission to the pool, shall be directly related to job performance, as shown by a significant statistical relationship between the score required for admission to the pool, and performance in the apprenticeship program. In demonstrating such relationship, the sponsor shall follow the procedures set forth in 41 CFR Part 60-3. Qualifications shall be considered as separately required so that the failure of an applicant to obtain the specified score under a single qualification standard shall disqualify the applicant from admission to the pool.

(ii) Aptitude Tests. Any qualification standard for admission to the pool consisting of aptitude test scores shall be directly related to job performance, as shown by significant statistical relationships between the score on the aptitude tests required for admission to the pool, and performance in the apprenticeship program. In determining such relationship, the sponsor shall follow the procedures set forth in 41 CFR Part 60-3. The requirements of this item (ii) shall also be applicable to aptitude tests utilized by a program sponsor which are administered by a state employment agency, or any other person, agency or organization engaged in the selection or evaluation of personnel. A national test developed and administered by a national joint apprenticeship committee will not be approved by the United States

Department of Labor unless such test meets the requirements of this subdivision.

(iii) Educational Attainments. All educational attainments or achievements as qualifications for admission to the pool shall be directly related to job performance, as shown by a significant statistical relationship between the score required for admission to the pool and performance in the apprenticeship program. In demonstrating such relationship the sponsor shall meet the requirements of 41 CFR Part 60-3. School records or a passing grade on the general educational development tests recognized by the state or local public instruction authority shall be evidence of educational achievement. Education requirements shall be applied uniformly to all applicants.

(d) Oral Interviews. Oral interviews shall not be used as a qualification standard for admission into an eligibility pool. However, once an applicant is placed in the eligibility pool, and prior to selection for apprenticeship from the pool, he or she may be required to submit to an oral interview. Oral interviews shall be limited to such objective questions as may be required to determine the fitness of applicants to enter the apprenticeship program, but shall not include questions relating to qualifications previously determined in gaining entrance to the eligibility pool. When an oral interview is used, each interviewer shall record the questions and the general nature of the applicant's answers, and shall prepare a summary of any conclusions. Each applicant rejected from the pool of eligibles on the basis of an oral interview shall be given a written statement of such rejection, the reasons therefor, and the appeal rights available to the applicant.

(e) Notification of Applicants. All applicants who meet the requirements for admission shall be notified and placed in the eligibility pool. The program sponsors shall give each rejected applicant who is not selected for the pool or the program notice of his or her rejection, including the reason for the rejection, the requirements for admission to the pool of [the] eligibles, and the appeal rights available to the applicant.

(f) Goals and Timetables. The sponsor shall establish, where required by WAC 296-04-340(4), percentage goals and timetables for the admission of minorities and women (minority and nonminority) into the pool of eligibles in accordance with the provisions of WAC 296-04-340(4), (a) through (f).

(g) Compliance. A sponsor shall be deemed to be in compliance with its commitments under subdivision (f) of this subsection (2) if it meets its goals or timetables or if it makes a good faith effort to meet these goals and timetables. In the event of the failure of the sponsor to meet its goals and timetables, it shall be given an opportunity to demonstrate that it has made every "good faith effort" to meet its commitments (see WAC 296-04-430(4)(f)). All the actions for the sponsor shall be reviewed and evaluated in determining whether such good faith efforts have been made.

(3) **Random Selection from Pool of Eligible Applicants.**

(a) Selection. A sponsor may select apprentices from a pool of eligible applicants on a random basis. The method of random selection is subject to approval by the council. Supervision of the random selection process shall be by an impartial person or persons selected by the sponsor, but not associated with the administration of the apprenticeship program. The time and place of the selection, and the number of apprentices to be selected, shall be announced. The place of the selection shall be open to all applicants and the public. The names of apprentices drawn by this method shall be posted immediately following the selection at the program sponsor's place of business.

(b) Requirements. The sponsor adopting this method of selecting apprentices shall meet the requirements of subdivisions (c) through (e) of subsection (2) of this section relating to the creation of a pool of eligibles, oral interviews and notification of applicants.

(c) Goals and Timetables. The sponsor shall establish where required by WAC 296-04-340(4), percentage goals and timetables for the admission of minorities and women (minority and nonminority) into the pool of eligibles in accordance with the provisions of WAC 296-04-340(4), (d) through (f).

(d) Compliance. Determinations as to the sponsor's compliance with its obligations under these rules shall be in accordance with the provisions of subdivision (g) of subsection (2) of this section.

(4) **Selection from Pool of Current Employees.**

(a) Selection. A sponsor may select apprentices from an eligibility pool of the workers already employed by the program sponsor in a manner prescribed by a collective bargaining agreement where such exists, or by the sponsor's established promotion policy. The sponsor adopting this method of selecting apprentices shall establish goals and timetables for the selection of minority and female apprentices, unless the sponsor concludes, in accordance with the provisions of WAC 296-04-340(4), (d) through (f), that it does not have deficiencies in terms of underutilization of minorities and/or women (minority and nonminority) in the apprenticeship of journeymen crafts represented by the program.

(b) Compliance. The determination as to the sponsor's compliance with its obligations under these regulations shall be in accordance with the provisions of subdivision (g) of subsection (2) of this section.

(5) **Alternative Selection Methods.** Selection. The sponsor may select apprentices by means of any other method, including its present selection method: *Provided*, That the sponsor meets the following requirements:

(a) Selection Method and Goals and Timetables. Within 90 days of the effective date of these rules, the sponsor shall submit to the council, through its supervisor, the revised selection method it [proposed] [proposes] to use along with the rest of its written affirmative action program including, where required by WAC 296-04-340(4), its percentage goals and timetables for the selection of minority and/or female (minority and nonminority) applicants for apprenticeship and its written analysis, upon which such goals and timetables, or lack thereof, are based. The establishment of goals and timetables shall be in accordance with the provisions of WAC 296-04-340(4), (d) through (f). The sponsor may not implement any such [selection] method [until the

council has approved the selection method] as meeting the requirements of subdivision (b) of this subsection (5) and has approved the remainder of its affirmative action program including its goals and timetables. If the council fails to act upon the selection method and the affirmative action program within 30 days of its submission, the sponsor then may implement the selection method until acted upon by the council.

(b) Qualification Standards. Apprentices shall be selected on the basis of objective and specific qualification standards. Examples of such standards are fair aptitude tests, school diplomas or equivalent, occupationally essential health requirements, fair interviews, school grades, and previous work experience. Where interviews are used, adequate records shall be kept including a brief summary of each interview and the conclusions on each of the specific factors, e.g., motivation, ambition, and willingness to accept direction which are part of the total judgment. In applying any such standards, the sponsor shall meet the requirements of 41 CFR Part 60–3.

(6) **Compliance.** Determination as to the sponsor's compliance with its obligations under these regulations shall be in accordance with the provisions of subdivision (g) of subsection (2) of this section. Where a sponsor, despite its good faith efforts, fails to meet its goals and timetables within a reasonable period of time, the sponsor may be required to make appropriate changes in its affirmative action program to the extent necessary to obtain maximum effectiveness toward the attainment of its goals. The sponsor may also be required to develop and adopt an alternative selection method, including a method prescribed by the council where it is determined that the failure of the sponsor to meet its goals is attributable in substantial part to the selection method. Where the sponsor's failure to meet its goals is attributable in substantial part to its use of the qualification standard which has adversely affected the opportunities of minorities and/or women (minority and nonminority) for apprenticeship, the sponsor may be required to demonstrate that such qualification standard is directly related to job performance, in accordance with the provisions of subsection (2), subdivision (c), item (i), of this section. [Statutory Authority: RCW 49.04.010. 78–12–021 (Order 78–20), § 296–04–350, filed 11/14/78; Order 71–13, § 296–04–350, filed 10/28/71.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296–04–360 Existing lists of eligibles and public notice. A sponsor adopting a selection method under WAC 296–04–350, subsections (2) or (3), and a sponsor adopting a selection method under WAC 296–04–350, subsection (5), who determines that there are [few] [fewer] minorities and/or women (minority and nonminority) on its existing list of eligibles than would be reasonably expected in view of the analysis described in WAC 296–04–340, subsection (4), subdivision (e), shall discard all existing eligibility lists upon adoption of the selection methods required by these rules. New eligibility pools shall be established and lists of eligibility pools shall be posted at the sponsor's place of business. Sponsors shall establish a reasonable period of not less than two weeks for accepting applications for admission to the apprenticeship program. There shall be at least 30 days of public notice in advance of the earliest date for application for admission to the apprenticeship program (see WAC 296–04–340(3) on affirmative action with respect to dissemination of information). Applicants who have been placed in a pool of eligibles shall be retained on lists of eligibles subject to selection for a period of two years. Applicants may be removed from the list at an earlier date by their request or following their failure to respond to [an] apprentice job opportunity given by certified mail, return receipt requested. Applicants who have been accepted in the program shall be afforded a reasonable period of time in light of the customs and practices of the industry for reporting for work. All applicants shall be treated equally in determining such period of time. It shall be the responsibility of the applicant to keep the sponsor informed of his or her current mailing address. Upon request, a sponsor may restore to the list of eligibles applicants who have been removed from the list or who have failed to respond to an apprenticeship job opportunity. [Statutory Authority: RCW 49.04.010. 78–12–021 (Order 78–20), § 296–04–360, filed 11/14/78; Order 71–13, § 296–04–360, filed 10/28/71.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296–04–370 Records. Obligations of Sponsors. (1) Each sponsor shall keep adequate records including a summary of the qualifications of each applicant, the basis for evaluation and for selection or rejection of each applicant, the records pertaining to the interviews of applicants, the original application for each applicant, information relative to the operation of the apprenticeship program, including but not limited to job assignment, promotion, demotion, layoff, or termination, rates of pay, or other forms of compensation or conditions of work, and separately, hours of training provided, and any other records pertinent to the determination of compliance with these regulations as may be required by the council. The records pertaining to the individual applicants, selected or rejected, shall be maintained in such manner as to permit identification of minority and female (minority and nonminority) participants.

(2) **Affirmative Action Plans.** Each sponsor must retain a statement of its affirmative action plan required by WAC 296–04–340 for the prompt achievement of full and equal opportunity in apprenticeship, including all data and analysis made pursuant to the requirements of WAC 296–04–340. Sponsors shall review their affirmative action plans annually and update them where necessary, including the goals and timetables.

(3) **Qualification Standards.** Each sponsor must maintain evidence that its qualification standards have been

validated in accordance with the requirements set forth in WAC 296-04-350, subsection (2).

(4) **Records of State Apprenticeship Council.** The records of the council shall be kept in the offices of the supervisor, which records shall include registration requirements, individual program standards, registration records, program compliance reviews and investigations, and any other records pertinent to the determination of compliance with these rules, as may be required by the United States Department of Labor, and shall report to the department as may be required.

(5) **Maintenance of Records.** The records required by these rules (WAC 296-04-300 through 296-04-480) and any other information relevant to compliance with Part 30 of Title 29 of the Code of Federal Regulations shall be maintained for five years and made available upon request to the United States Department of Labor or other authorized representative. [Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-370, filed 11/14/78; Order 71-13, § 296-04-370, filed 10/28/71.]

WAC 296-04-400 Complaint procedure. (1) **Filing.**

(a) Any apprentice or applicant for apprenticeship who believes that he or she has been discriminated against on the basis of race, color, religion, national origin, or sex with regard to apprenticeship or that the equal opportunity standards with respect to his or her selection have not been followed in the operation of an apprenticeship program may, personally or through an authorized representative, file a complaint with the council, or, at the apprentice's or applicant's election, with a private review body established pursuant to subdivision (c) of this subsection (1). The complaint shall be in writing and shall be signed by the complainant. It must include the name, address, and telephone number of the person allegedly discriminated against, the program sponsor involved, and a brief description of the circumstances of the failure to apply the equal opportunity standards provided for in these rules.

(b) The complaint must be filed not later than 180 days from the date of the alleged discrimination or specified failure to follow the equal opportunity standards; and, in the case of complaints filed directly with review bodies designated by program sponsors to review such complaints, any referral of such complaint by the complainant to the council must occur within the time limitation stated above or 30 days from the final decision of such review body, whichever is later. The time may be extended by the council for good cause shown.

(c) Sponsors are encouraged to establish fair, speedy, and effective procedures for a review body to consider complaints of failure to follow the equal opportunity standards. A private review body established by the program sponsor for this purpose should number three or more responsible persons from the community serving in this capacity without compensation. Members of the review body should not be directly associated with the administration of an apprenticeship program. Sponsors may join together in establishing a review body to serve the needs of programs within the community.

(2) **Processing of Complaints.**

(a) When the sponsor has designated a review body for reviewing complaints, the council, unless the complainant has indicated otherwise or unless the council has determined that the review body will not effectively enforce the equal opportunity standards, the supervisor, upon receiving a complaint, shall refer the complaint to the review body.

(b) The supervisor shall, within 30 days following the referral of the complaint to the review body, obtain the reports from the complainant and the review body as to the disposition of the complaint. If the complaint has been satisfactorily adjusted and there is no other indication of failure to apply equal opportunity standards, the case shall be closed and the parties appropriately informed.

(c) When a complaint has not been resolved by the review body within 90 days or where, despite satisfactory resolution of the particular complaint by the review body, there is evidence that equal opportunity practices of the apprenticeship program are not in accordance with these rules, the council may conduct such compliance review as found necessary, and will take all necessary steps to resolve the complaint.

(3) Where no review body exists, the council may conduct such compliance review as found necessary in order to determine the facts of the complaint, and obtain such other information relating to compliance with these regulations as the circumstances warrant.

(4) Sponsors shall provide written notice of the above complaint procedure to all applicants for apprenticeship and all apprentices. [Statutory Authority: RCW 49.04-.010. 78-12-021 (Order 78-20), § 296-04-400, filed 11/14/78; Order 71-13, § 296-04-400, filed 10/28/71.]

WAC 296-04-410 Adjustments in schedule for compliance review or complaint processing. If in the judgment of the council, a particular situation warrants and requires special processing, and either expedited or extended determination, it shall take the steps necessary to permit such determination, if it finds that no person or party affected by such determination will be prejudiced by such special processing. [Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-410, filed 11/14/78; Order 71-13, § 296-04-410, filed 10/28/71.]

WAC 296-04-420 Sanctions. (1) Where the supervisor, as a result of a compliance review or other reason, determines that there is reasonable cause to believe that an apprenticeship program is not operating in accordance with these rules and voluntary corrective action has not been taken by the program sponsor, the council shall institute proceedings to deregister the program or it shall refer the matter to the Equal Employment Opportunity Commission or to the Attorney General with recommendations for the institution of a court action under Title VII of the Civil Rights Act of 1964, as amended, or to the Attorney General for other court action as authorized by law.

(2) The deregistration proceedings shall be conducted according to the following procedures:

(a) The council shall notify the sponsor, in writing, that a determination of reasonable cause has been made under subsection (1) of this section and that the apprenticeship program may be deregistered unless, within 15 days of the receipt of the notice, the sponsor requests a hearing. The notification shall specify the facts on which the determination is based.

(b) If within 15 days of the receipt of the notice provided for in subdivision (a) of this subsection (2), the sponsor mails a request for hearing, the supervisor shall convene an appropriate hearing.

(c) The council shall make a final decision on the basis of the record before it, which shall consist of the compliance review file and other evidence presented. In its discretion, the council may allow the sponsor a reasonable time to achieve voluntary corrective action. If the council's decision is that the apprenticeship program is not operating in accordance with these rules, the apprenticeship program may be deregistered. In each case in which deregistration is ordered, the council shall make public notice of the order and shall notify the sponsor and the complainant, if any. [Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-420, filed 11/14/78; Order 76-4, § 296-04-420, filed 2/20/76; Order 71-13, § 296-04-420, filed 10/28/71.]

WAC 296-04-440 Adoption of consistent state plans. All apprenticeship programs registered with the council shall comply with the requirements of WAC 296-04-300 through 296-04-480 within 90 days after the effective date of these rules. (1) The United States Department of Labor shall have authority to conduct compliance reviews to determine whether the Washington state affirmative action plan or any state apprenticeship program registered with the council is being administered or operated in accordance with the provisions of Title 29, Part 30 of the Code of Federal Regulations.

(2) It shall be the responsibility of the council to take the necessary action to bring a noncomplying program into compliance with these rules. In the event the council fails to fulfill this responsibility, the Secretary of the United States Department of Labor may withdraw the recognition for federal purposes of any or all state apprenticeship programs, in accordance with the procedures for deregistration of programs registered by the department, or refer the matter to the Attorney General of the United States with a recommendation for the institution by the Attorney General of a court action under Title 7 of the Civil Rights Act of 1964.

(3) The council shall notify the United States Department of Labor of any state apprenticeship program disapproved and deregistered by it.

(4) Any state apprenticeship program disapproved and deregistered by the council for noncompliance with the requirements of these rules or Title 29, Part 30 of the Code of Federal Regulations may, within 15 days of the receipt of the notice of disapproval and deregistration, appeal to the United States department of Labor to set aside the determination of the State Apprenticeship and Training Council. The department shall make its determination on the basis of the record. The department may grant the state program sponsor, the State Apprenticeship and Training Council, and the complainant, if any, the opportunity to present oral or written argument.

(5) **Withdrawal of Recognition.** Whenever the United States Department of Labor determines that reasonable cause exists to believe that the council has not adopted or implemented a plan in accordance with the equal opportunity requirements of Title 29, Part 30 of the Code of Federal Regulations, it shall give notice to the council and to appropriate state sponsors of this determination, stating specifically wherein the state's plan failed to meet such requirements and the United States Department of Labor proposes to withdraw recognition for federal purposes from the State Apprenticeship and Training Council unless within 15 days of the receipt of the notice, the council complies with the provisions of Title 29, Part 30, of the Code of Federal Regulations or mails a request for a hearing to the Secretary of the United States Department of Labor.

(6) If within 15 days of the receipt of the notice provided for in subsection (5) of this section, the council neither complies with the provisions of Title 29, Part 30 of the Code of Federal Regulations, nor mails a request for a hearing, the Secretary of the United States Department of Labor shall notify the council of the withdrawal of recognition.

(7) If within 15 days of the receipt of the notice provided for in subsection (5) of this section, the council mails a request for a hearing, the Secretary of the United States Department of Labor shall proceed in accordance with Title 29, Section 30.16 of the Code of Federal Regulations.

(8) If a hearing is conducted in accordance with Title 29, Section 30.16 of the Code of Federal Regulations, the Secretary of the United States Department of Labor upon receipt of the proposed findings and recommended decision of the hearing officer shall make a final decision whether the council has adopted or implemented a plan in accordance with equal opportunity requirements of Title 29 of Part 30 of the Code of Federal Regulations.

(9) If the Secretary of the United States Department of Labor determines to withdraw from recognition, for federal purposes, from the State Apprenticeship and Training Council, the secretary shall notify the council of this determination. The secretary shall also notify the state's sponsors that within 30 days of the receipt of the notice the United States Department of Labor shall cease to recognize, for federal purposes, each state apprenticeship program unless the state program sponsor requests registration with the department. Such registration may be granted contingent upon finding that the state apprenticeship and training program is operating in accordance with the requirements of Title 29, Part 30 of the Code of Federal Regulations.

(10) If the Secretary of the United States Department of Labor determines to withdraw recognition, for federal purposes, from the State Apprenticeship [and Training Council], such recognition may be reinstated upon presentation of adequate evidence to the Secretary of the United States Department of Labor that the council has adopted and implemented a plan carrying out the equal opportunity requirements of Title 29, Part 30 of the Code of Federal Regulations. [Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-440, filed 11/14/78; Order 71-13, § 296-04-440, filed 10/28/71.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-04-460 Intimidatory or retaliatory acts. Any intimidation, threat, coercion, or retaliation by or with the approval of any sponsor against any person for the purpose of interfering with any right or privilege secured by Title VII of the Civil Rights Act of 1964, as amended Executive Order 11246, as amended, or because he or she has made a complaint, testified, assisted or participated in any manner in any investigation proceeding, or hearing under these rules or Title 29, Part 30 of the Code of Federal Regulations, shall be considered noncompliance with the equal opportunity standards of these rules. The identity of complainants shall be kept confidential except to the extent necessary to carry out the purpose of these rules, including the conduct of any investigation, hearing, or judicial proceeding arising therefrom. [Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-460, filed 11/14/78; Order 71-13, § 296-04-460, filed 10/28/71.]

Chapter 296-11 WAC
PRACTICE AND PROCEDURE--BOARD OF PILOTAGE COMMISSIONERS

WAC

WAC 296-11-001 General rule and information. The chairperson of the board of pilotage commissioners is the secretary of transportation of the state of Washington or the secretary's designee. Information regarding the Pilotage Act, complaints and other matters coming under the provisions of the Pilotage Act and the board's rules and regulations may be obtained by contacting the chairperson or the board's secretary in person or in writing at the Office of the Board of Pilotage Commissioners, Pier 52, Seattle, Washington 98104. All public documents in the custody of the board may be obtained upon request made to the chairperson of the Board of Pilotage Commissioners, Pier 52, Seattle, Washington 98104.

Any matter filed with the chairperson and/or the secretary will be brought to the attention of the board at its next regular meeting, the date of which is the first Thursday of each month. Persons desiring to do so may also attend the board meetings, which are held at Pier 52, Seattle, Washington.

The purpose and scope of activity of the board of pilotage commissioners is set out in chapter 88.16 RCW and is as follows:

Scope: (1) Puget Sound pilotage district.

(2) Grays Harbor and Willapa Bay pilotage district.

Purpose: (1) The purpose of the board of pilotage commissioners is to prevent the loss of human lives, loss of property and vessels and to protect the marine environment by maintenance of a competent and efficient pilotage service on the state's waters. To accomplish this end the board examines proficiency of potential pilots, licenses pilots, regulates pilots, enforces the use of pilots, sets pilotage rates, receives and investigates reports of accidents involving pilots, keeps records of various matters affecting pilotage and fulfills other responsibilities enumerated in chapter 88.16 RCW. [Statutory Authority: RCW 88.16.035 and 88.16.155. 78-09-057 (Order 78-2, Resolution 78-2), § 296-11-001, filed 8/23/78; Order 2-68, § 296-11-001, filed 11/1/68.]

WAC 296-11-003 Index to documents. The board of pilotage commissioners finds that the preparation and maintenance of an index to documents as required by RCW 42.17.260 would be unduly burdensome. Therefore, such an index will not be maintained. This undue burden is caused by the fact that the board of pilotage commissioners is a small agency of the state of Washington operating with a limited amount of financial resources. Because of the agency's size, its records are organized in an effective and straightforward manner which renders them accessible to the general public without resort to an index as envisioned in RCW 42.17-.260. All indexes which are maintained for agency use will be available for public inspection. [Statutory Authority: RCW 88.16.035 and 88.16.155. 78-09-057 (Order 78-2, Resolution 78-2), § 296-11-003, filed 8/23/78.]

Chapter 296-17 WAC
MANUAL OF RULES, CLASSIFICATIONS, RATES, AND RATING SYSTEM FOR WASHINGTON WORKMEN'S COMPENSATION INSURANCE

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-17-588 Classification 35-4. [Order 73-22, § 296-17-588, filed 11/9/73, effective 1/1/74.] Repealed by 79-12-086 (Order 79-18), filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.030 and 51.16.035.

296-17-602 Classification 37-6. [Order 73-22, § 296-17-602, filed 11/9/73, effective 1/1/74.] Repealed by 79-12-086 (Order 79-18), filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.030 and 51.16.035.

296-17-683 Classification 61-6. [Order 73-22, § 296-17-683, filed 11/9/73, effective 1/1/74.] Repealed by 78-12-043 (Order 78-23), filed 11/27/78, effective 1/1/79. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

WAC 296-17-330 Officers or members of a corporate employer. As used in this manual, the terms "member" and "officer" are synonymous and mean any executive officer elected and empowered in accordance with the articles of incorporation or bylaws of a corporation and who is also a director and shareholder of the corporation.

All such regularly constituted executive officers who have not voluntarily elected to withdraw from coverage or who have been included for coverage in accordance with RCW 51.12.020 and RCW 51.12.110 shall be included in the corporation's statement of payroll (on a form prescribed by the department) and premium shall be charged thereon. Any such regularly constituted executive officer who is compensated by means of a wage or a salary for work performed for the corporation shall be regarded as an employee. For the purpose of this rule, wages or salary shall be construed as meaning earnings of any kind, actual or anticipated.

The statement of payroll so developed of each executive officer shall be assigned to Classification 71-1, WAC 296-17-754: *Provided, however,* That the statement of payroll of each executive officer who performs such duties as are ordinarily undertaken by a superintendent, foreman, or worker, shall be assigned as provided in this manual of an individual employee who is not an executive officer: *Provided further,* That no executive officer will be assigned the "clerical office" classification: *Provided further,* In case the employer's business is subject to a classification which specifically includes clerical office or salesmen, and the corporate officer's duties are primarily in connection with such business, the classification assigned to the business shall apply with respect to any such executive officer. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-330, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-330, filed 11/27/78, effective 1/1/79; Order 75-28, § 296-17-330, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-330, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-330, filed 11/9/73, effective 1/1/74.]

WAC 296-17-350 Minimum premiums--Assumed workman hours. A minimum premium is the lowest amount of premium to be paid by an employer and is also the basis for determining premium computation for workmen for whom an assumed number of workmen hours must be, and hereby, is established:

(1) **Minimum Premium.** Except as otherwise provided in this chapter, every employer shall be liable for a premium not less than ten dollars for any calendar quarter regardless of number of workman hours reported.

(2) **Minimum Premium for Elective Adoption.** Any employer having in his employ any person exempt from mandatory coverage under the provisions of RCW 51-.12.020 and whose application for coverage under the elective adoption provisions of RCW 51.12.110 is accepted by the director, shall have a minimum premium rate for such employer's applicable class based upon not

less than 40 workman hours for each month, until such time as elective adoption coverage is cancelled: *Provided*, That the minimum premium rate as specified above shall not apply to agricultural workers obtaining coverage under this rule and the elective adoption provisions of RCW 51.12.110.

(3) **Apartment House, Apartment Hotel, Motor Court and Similar Operations.** Resident managers, caretakers or other similar occupations who are employed for irregular periods and whose compensation is for a stipulated sum in money or a substitute for money shall be reported for the purpose of calculation of premiums, each three dollars of compensation in money or a substitute for money shall represent one workman hour: *Provided*, That the employer shall not be required to report in excess of 40 hours per week for each person so employed.

(4) **Commission Salesman.** Commission salesmen are to be reported for premium purposes at a minimum of assumed workman hours of not less than eight workman hours a day for part–time employment, or not less than 40 workman hours per week for full–time employment: *Provided*, That the assumed eight workman hours daily for part–time employment will apply only if the employer's books and records are maintained so as to show separately such person's actual record of employment.

(5) **Salaried Personnel.** Salaried personnel for the purposes of this chapter means persons whose compensation is not governed by the number of hours devoted to employment for his employer. Employers having salaried personnel in their employ shall for the purpose of premium calculation report assumed workman hours based upon 40 workman hours for each week in which any duties of salaried personnel are performed: *Provided*, That salaried personnel, as defined by the foregoing, who are not regularly and continuously employed by the employer may for the purpose of premium calculation compute premiums in accordance with the piece worker rule, subsection (6) of this section: *Provided further*, The 40 hours per week may be substituted on behalf of all salaried employees by assuming 160 hours per month for each month in which employees are on salary.

(6) **Piece Workers.** Employees whose compensation is based upon the accomplishment of a number of individual tasks whether computed on the number of pounds, items, pieces, or otherwise, the employer shall for the purpose of premium calculation assume each two dollars of earnings of each employee as representing one workman hour: *Provided*, That if the average rate of compensation for the applicable classification is at least $3.00 but less than $3.50 per workman hour the assumed amount shall be $3.00 of earnings as representing one workman hour, and on a progressive basis, if the average compensation is at least $3.50 but less than $4.00 the assumed amount shall be $3.50 of earnings as representing one workman hour, etc. The records of the department as compiled for the preceding fiscal year ending June 30, shall be the basis for determining the average rate of compensation for each classification: *Provided further*, That if the employer maintains books and records to show separately the hours employed for each workman in his employ engaged in piece work then such actual workman hours shall be reported for the purpose of premium calculation.

(7) **Noncontact Sports Teams.** All employers having personnel in their employ as defined under WAC 296–17–745 shall for the purpose of premium calculations, report assumed workman hours based upon 40 workman hours for each week in which any duties are performed.

(8) All employers having personnel in their employ as defined under WAC 296–17–739 shall, for the purpose of premium calculations, report assumed workman hours based upon one hour for each mount in each horse race; professional drivers shall report workman hours based upon one hour for each heat or race of any racing event; provided, that any day such personnel do not ride or drive in a race, the premium calculation shall be made by assuming 3 worker hours for any day in which duties are performed. [Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78–12–043 (Order 78–23), § 296–17–350, filed 11/27/78, effective 1/1/79; Order 77–27, § 296–17–350, filed 11/30/77, effective 1/1/78; Order 77–10, § 296–17–350, filed 5/31/77; Order 76–18, § 296–17–350, filed 5/28/76, effective 7/1/76; Order 75–28, § 296–17–350, filed 8/29/75, effective 10/1/75; Order 74–40, § 296–17–350, filed 11/27/74, effective 1/1/75; Order 73–22, § 296–17–350, filed 11/9/73, effective 1/1/74.]

WAC 296–17–351 Periodic review of cash deposit. The supervisor of industrial insurance through the audit and collection section of the division of industrial insurance will periodically review the cash deposit of all employers and all new employers or employers resuming operations pursuant to RCW 51.16.110[.]

The department will cancel the cash deposit having been made by an employer who has been conducting a business or trade and who has been reporting premium payments to the department for at least 12 consecutive calendar quarters: *Provided, however*, The cancellation of the deposit shall be contingent upon:

(1) The initial deposit is deemed by the department as having adequately represented the premiums covering the first three full calendar months of operations.

(2) The employer's quarterly reports and premium payments covering any such 12 consecutive quarterly reporting periods have been made in accordance with the provisions as set forth in Title 51 RCW and in accordance with WAC 296–17–310: *Provided further*, In the event cancellation of the deposit has been made on behalf of any employer and such employer subsequently fails to submit reports and payments, as required, such employer shall, upon request be required to reinstate the deposit. [Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78–12–043 (Order 78–23), § 296–17–351, filed 11/27/78, effective 1/1/79; Order 76–36, § 296–17–351, filed 11/30/76; Order 74–29, § 296–17–351, filed 5/29/74, effective 7/1/74.]

WAC 296–17–352 Audits. An audit of the employer's books, records and payrolls performed pursuant to the authority contained in RCW 51.48.040 shall include, but not be limited to:

(1) An audit to determine whether an employer engaged in a business or trade has employment subject to the Industrial Insurance Laws.

(2) A visual inspection of the employer's workplace or places for the purpose of determining appropriate classifications in accordance with the Industrial Insurance Laws and rules as set forth in chapter 296-17 WAC.

(3) Audits containing a complete and detailed examination of the employer's books and records for a specific period to establish the reporting of the employer's payroll in accordance with the Industrial Insurance Laws and the rules as set forth in chapter 296-17 WAC, and as well, chapter 296-15 WAC in the event the employer has been certified a self-insurer.

Except as otherwise provided in this rule any audit time period may be less than, but will not exceed, three years of the due dates of any payments from any employer where the department has requested submission of the employer's books, or three years of the due dates of any payments where the employer makes claim for adjustment, recomputation or alteration of any such payment: *Provided*, That an employer certified to self-insure pursuant to the authority contained in chapter 51.14 RCW, shall be subject to such audit as deemed necessary to guarantee its compliance with the Industrial Insurance Laws and Rules and Regulations for Self-Insurers: *Provided further*, That an employer who fails to make any books and records, or certified copies thereof, available for audit in the state of Washington, will be charged for all costs incurred by the department in auditing any books and records maintained at other places: *Provided further*, That in any instance where fraud may be indicated with respect to underpayment or nonpayment of premiums the audit time period may be extended beyond that previously set forth. [Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-352, filed 11/27/78, effective 1/1/79; Order 76-36, § 296-17-352, filed 11/30/76; Order 76-18, § 296-17-352, filed 5/28/76, effective 7/1/76.]

WAC 296-17-450 Special agricultural class interpretations. Farming in Classifications 48-2 through 48-6, 48-8 and 48-9 will include farm labor by contractors and farm machinery operations by contractors.

Any employee not regularly and continuously employed by an employer in agricultural labor whose cash remuneration paid by or due from any one employer in that calendar year for agricultural labor is less than one hundred fifty dollars is not within the mandatory coverage of Title 51 RCW. The department will consider an agricultural employee as being "regularly and continuously employed" as those terms are used in RCW 51-.12.020, subsection (6) in the case of any employee who as of January 1 of any calendar year is carried on the payroll of the employer and who is employed by the employer in agricultural labor and was carried on the employer's payroll as of December 31 of the preceding calendar year and has exceeded one hundred fifty dollars, of earnings during such preceding calendar year. Coverage for all exempt agricultural employees is available upon request as provided under RCW 51.12.110.

To qualify for a separate rating of ground hand-picking or any other separation of agricultural classes, separate and distinct payroll records of such operations will be required.

If a single establishment or work comprises more than one of Classifications 48-2 through 48-6, 48-8 and 48-9, the premiums shall be computed according to the payroll for operations of each classification. The department in its discretion may assess a single rate of premium for an agricultural establishment when a substantial portion of the operation falls within one classification, and in such cases, the entire operation will be required to be reported in such largest classification: *Provided*, That under no circumstances will the hand-picking classification (48-6) apply for the purpose of single rating of an entire establishment. [Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-450, filed 11/27/78, effective 1/1/79; Order 74-40, § 296-17-450, filed 11/27/74, effective 1/1/75; Order 74-29, § 296-17-450, filed 5/29/74, effective 7/1/74; Order 73-22, § 296-17-450, filed 11/9/73, effective 1/1/74.]

WAC 296-17-501 Classification 1-1.

Highway, street and road construction, N.O.C., includes all operations such as grading, grubbing, clearing, surfacing, striping, guard rails, highway dividers, highway lighting and highway signs installation, excludes bridges and logging roads. See Class 2-1 (WAC 296-17-508) and/or Class 69-2 (WAC 296-17-747)

Airports, landing strips, runways and taxi ways, construction and repair

Excavation, N.O.C.

Grading, N.O.C. - including land leveling and grading of farm lands by contractor

Land clearing, N.O.C., firefighting, N.O.C.

Diking, N.O.C.

Pit, crusher and bunker operations in connection with road, street and highway construction

Railroads, construction, maintenance and repair, N.O.C., including dismantling. Excludes bridges and log railroads

Retaining walls with road, street and highway construction, N.O.C.

Tunnels and approaches including lining

Humus or peat digging - including humus or peat dealers

Sand or gravel, or shale digging

Oil spill clean-up involving diking and/or ditching work will be rated with diking, N.O.C.

Slope grooming and forest trail construction will be rated with land clearing

Cofferdam work and shaft sinking and well digging with caisson will be rated under tunnels and approaches, except where subject to dam construction classification

See Class 52-6 (WAC 296-17-675) for permanent yard operations.

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-501, filed 11/30/79, effective 1/1/80; Order 76-36, § 296-17-501, filed 11/30/76; Order 75-38, § 296-17-501, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-501, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-501, filed 11/9/73, effective 1/1/74.]

WAC 296-17-50601 Classification 1-7.

Coaxial cable and conduit underground construction, maintenance and repair - including use of automatic cable laying equipment and including television cable, N.O.C.
Pipelaying, N.O.C.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-50601, filed 11/30/79, effective 1/1/80.]

WAC 296-17-50602 Classification 1-8.

Ditches and canals, N.O.C.
Trenches and sewers, construction, N.O.C.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-50602, filed 11/30/79, effective 1/1/80.]

WAC 296-17-510 Classification 3-1.

Chemical spraying and fumigating
Landscaping and lawn care
Landscape gardening will also include sodding, seeding, planting, and related landscape work necessary for the beautification of median strips and road sides
Lawn-type sprinkler systems installation. Agricultural-type sprinkler and irrigation system installation. Excludes ditches and canals subject to Class 1-8 (WAC 296-17-50602).
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-510, filed 11/30/79, effective 1/1/80; Order 76-36, § 296-17-510, filed 11/30/76; Order 73-22, § 296-17-510, filed 11/9/73, effective 1/1/74.]

WAC 296-17-512 Classification 3-6.

Plumbing, N.O.C., sewer pipe cleaning
Boilers, N.O.C., installation, service and repair
Sprinkler installation - automatic
Steam pipe, boiler, etc., covering insulation
Boiler scaling and tank erection within buildings will be rated with boilers, N.O.C. installation
Roto rooter service companies will be rated under sewer pipe cleaning
This class includes shop operations.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-512, filed 11/30/79, effective 1/1/80; Order 74-40, § 296-17-512, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-512, filed 11/9/73, effective 1/1/74.]

WAC 296-17-567 Classification 24-1.

Paper or pulp manufacturing, wood fibre manufacturing
Corrugated and fibre board container manufacturing, including corrugating and laminating of paper
Paper coating, corrugating, laminating or oiling
Paper goods, N.O.C., manufacturing
Building and roofing paper or felt preparation, no manufacturing felt.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-567, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-17-567, filed 11/30/77, effective 1/1/78; Order 73-22, § 296-17-567, filed 11/9/73, effective 1/1/74.]

WAC 296-17-576 Classification 33-1.

Fish canneries, fish freezing and processing, fish curing
Fish trap operation, oystermen, oyster raising, fish rearing
Oyster, crab, clam, canning or cold packing
Sea foods products, N.O.C., canning or manufacturing
Fish oil manufacturing
Marine life, nonedible, processing
[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-576, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-576, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-576, filed 11/9/73, effective 1/1/74.]

WAC 296-17-57601 Classification 33-2.

Meat, fish and poultry dealers, wholesale. [Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-57601, filed 11/27/78, effective 1/1/79.]

WAC 296-17-57602 Classification 33-3.

Meat, fish and poultry dealers, retail. [Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-57602, filed 11/27/78, effective 1/1/79.]

WAC 296-17-580 Classification 34-2.

Air compressor manufacturing, elevator manufacturing, gear grinding or manufacturing
Printing or bookbinding machinery manufacturing
Pump manufacturing, safe manufacturing, scale manufacturing or repair shop, auto jack manufacturing
Shoe machinery manufacturing, sprinkler head manufacturing, textile machinery manufacturing
Confectioners machinery manufacturing, precision machined parts, N.O.C., manufacturing
Machine shops, N.O.C., including mobile shops, tool sharpening
Power saw, lawn and garden equipment and small motor repair, N.O.C.
Boilermaking, tank building
Metal goods manufacturing from material 9 gauge or heavier
Furnace, heater or radiator manufacturing
Saw manufacturing
Heat treating metal
Nut, bolt, screw, nail, tack, rivet, eyelet, spike and needle manufacturing

Iron or steel works, shop, fabricate or assemble structural iron or steel
Abrasive wheel manufacturing
Welding or cutting, N.O.C.
Lead burning, metal spraying – copper
Automobile, truck, tractor radiator manufacturing and repair shops
Coppersmithing, shop
Office machinery manufacturing, N.O.C., cash register and sewing machine manufacturing
Small arms, speedometer and carburetor manufacturing
Sewing machine, commercial – repair and rebuild
Iron works – shop – manufacturing railings, staircases, fire escapes, etc.
Brass, bronze, iron – ornamental – shop fabricating, assemble and manufacturing
Iron works – shop – fabricate, assemble or manufacturing nonstructural iron or steel
Tool manufacturing, not hot forming or stamping, die manufacturing – ferrous
Auto body manufacturing – truck, trailer, bus body manufacturing, travel trailer body repair
Steam cleaning portable, N.O.C., no buildings or structures
Tool manufacturing, machine finishing
Auto or truck parts, machining or rebuild not in vehicle
Auto or truck engine manufacturing, aircraft engine manufacturing or rebuild, N.O.C.
Bed spring or wire mattress manufacturing
Valve manufacturing.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-580, filed 11/30/79, effective 1/1/80; Order 76-36, § 296-17-580, filed 11/30/76; Order 75-38, § 296-17-580, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-580, filed 11/9/73, effective 1/1/74.]

WAC 296-17-581 Classification 34-3.

Aircraft manufacturing, including aircraft operations incident thereto
This class includes all operations including clerical office and salesmen.
[Statutory Authority: RCW 51.04.020(1) and 51.16-.035. 78-12-043 (Order 78-23), § 296-17-581, filed 11/27/78, effective 1/1/79; Order 73-22, § 296-17-581, filed 11/9/73, effective 1/1/74.]

WAC 296-17-58201 Classification 34-5.

Aircraft parts manufacturing, N.O.C. [Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-58201, filed 11/27/78, effective 1/1/79.]

WAC 296-17-583 Classification 34-6.

Auto or truck service stations, N.O.C.
Auto or truck car washes
Auto truck storage garages – no repair.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-583, filed 11/30/79, effective 1/1/80; Order 73-22, § 296-17-583, filed 11/9/73, effective 1/1/74.]

WAC 296-17-58501 Classification 34-9.

Self service gas stations
This class applies to service stations that are completely self service with no employees performing a direct service of any kind to customer's vehicle.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-58501, filed 11/30/79, effective 1/1/80.]

WAC 296-17-588 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-594 Classification 36-2.

Electronic products manufacturing; resistors, capacitors and relays manufacturing
Telephone, telegraph or radio apparatus manufacturing, N.O.C.
Dental laboratories
Jewelry manufacturing or engraving
Electronic parts assembly
Electrical cordset radio and ignition assembly
Watch manufacturing
Motion picture projectors and camera repair
Assembly of fishing tackle, flies, lures and spinners
Instrument manufacturing, scientific or professional
Sound recording equipment, thermometer and steam gauge manufacturing
Incandescent lamp manufacturing, electric tube or transistor manufacturing
This class does not apply to the production of raw material for use in the manufacturing of the above articles.
All operations.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-594, filed 11/30/79, effective 1/1/80; Order 75-38, § 296-17-594, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-594, filed 11/9/73, effective 1/1/74.]

WAC 296-17-599 Classification 37-1.

Ammonia, nitrogen and ammonium nitrate manufacturing
Nitrate recovery from x-ray and photo films
Manufacturing dye and chemicals for tinting candles
Chemical manufacturing, N.O.C., by nitration, alkylation, oxidation, etc. process. This classification includes the manufacturing of chemicals involving, but not limited to, the following chemical processes: nitration, alkylation, distillation, reduction, oxidation, sulphonation, compression of gasses, halogenation and amidation
Chemical mixing, blending and repackaging only – no manufacturing of ingredients
Cosmetics manufacturing, no manufacturing of ingredients
Drug, medicine or pharmaceutical preparation manufacturing, no manufacturing of ingredients

Oxygen or hydrogen manufacturing, acetylene gas or carbonic acid gas manufacturing
Alcohol manufacturing, distilling, N.O.C.
Polish, dressing, ink or mucilage manufacturing
Extract manufacturing, including distillation of essential oils
Perfumery manufacturing, including distillation of essential oils
Flavoring manufacturing, including distillation of essential oils
Mint distilling
Salt, borax or potash producing or refining
Serum, anti-toxin or virus manufacturing.
[Statutory Authority: RCW 51.04.020(1) and 51.16-.035. 78-12-043 (Order 78-23), § 296-17-599, filed 11/27/78, effective 1/1/79; Order 74-40, § 296-17-599, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-599, filed 11/9/73, effective 1/1/74.]

WAC 296-17-602 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-614 Classification 39-1.

Bakeries
All operations
This class applies only to those bakeries that sell all products on premises of the bakery and with no transporting goods from premises.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-614, filed 11/30/79, effective 1/1/80; Order 73-22, § 296-17-614, filed 11/9/73, effective 1/1/74.]

WAC 296-17-61801 Classification 39-6.

Bakeries, cracker or potato chip manufacturing, N.O.C.
Ravioli or tamale manufacturing
Macaroni manufacturing
Confectionery and chewing gum manufacturing
Cough drop manufacturing
All operations.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-61801, filed 11/30/79, effective 1/1/80.]

WAC 296-17-620 Classification 41-1.

Printing, lithography, engraving, map printing, N.O.C.
Rubber stamp manufacturing and assembling
Bookbinding, with printing
Photoengraving.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-620, filed 11/30/79, effective 1/1/80; Order 75-38, § 296-17-620, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-620, filed 11/9/73, effective 1/1/74.]

WAC 296-17-630 Classification 43-1.

Fertilizer manufacturing
Glue manufacturing
Lard making or refining
Sausage manufacturing
Packing house – all operations – including butchering and handling livestock
Meat products manufacturing, including canning or dehydrating
Peat moss shredding and baling
Tallow making
Tanneries, fur manufacturing
Sausage casings, wholesale dealer
Rendering works, N.O.C.
[Statutory Authority: RCW 51.04.020(1) and 51.16-.035. 78-12-043 (Order 78-23), § 296-17-630, filed 11/27/78, effective 1/1/79; Order 76-36, § 296-17-630, filed 11/30/76; Order 75-38, § 296-17-630, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-630, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-630, filed 11/9/73, effective 1/1/74.]

WAC 296-17-646 Classification 48-5.

Nurseries, including greenhouse operations incidental thereto
Nursery applies to all acreage devoted to nursery operations and including tree nurseries.
[Statutory Authority: RCW 51.04.020(1) and 51.16-.035. 78-12-043 (Order 78-23), § 296-17-646, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-646, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-646, filed 11/9/73, effective 1/1/74.]

WAC 296-17-64901 Classification 48-9.

Greenhouses, N.O.C.
Flowers – field growing (excludes bulb raising)
Mushroom raising.
[Statutory Authority: RCW 51.04.020(1) and 51.16-.035. 78-12-043 (Order 78-23), § 296-17-64901, filed 11/27/78, effective 1/1/79.]

WAC 296-17-651 Classification 49-2.

State employees – clerical office and professional, N.O.C.
This class includes all departments, agencies, boards, commissions and committees of either the executive, legislative or judicial branches of state government. See Classes 49-6 (WAC 296-17-655), 53-7 (WAC 296-17-67901), 71-3 (WAC 296-17-756) and 72-1 (WAC 296-17-763) for other state employees.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-651, filed 11/30/79, effective 1/1/80; Order 73-22, § 296-17-651, filed 11/9/73, effective 1/1/74.]

WAC 296-17-659 Classification 50-1.

Logging operations, N.O.C.
Logging shall be considered the complete operation, including falling and bucking, skidding, yarding, loading, transportation of logs and maintenance of equipment except as otherwise provided. This class also includes aircraft operations incident thereto.
See Class 52-6 (WAC 296-17-675) for permanent yard operations.

[Statutory Authority: RCW 51.04.020(1) and 51.16-.035. 78-12-043 (Order 78-23), § 296-17-659, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-659, filed 11/30/77, effective 1/1/78; Order 75-38, § 296-17-659, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-659, filed 11/9/73, effective 1/1/74.]

WAC 296-17-66001 Classification 50-3.

Log hauling by contractor
This class is not available if the log hauling is incidental to other logging operations of the employer.
See Class 52-6 (WAC 296-17-675) for permanent yard operations.
[Statutory Authority: RCW 51.04.020(1) and 51.16-.035. 78-12-043 (Order 78-23), § 296-17-66001, filed 11/27/78, effective 1/1/79.]

WAC 296-17-675 Classification 52-6.

Permanent yard or shop for maintenance or storage of firm's equipment or material
This class to be assigned only to operations incidental to Classes 1-1 (WAC 296-17-501), 1-2 (WAC 296-17-502), 1-3 (WAC 296-17-503), 1-4 (WAC 296-17-504), 2-1 (WAC 296-17-508), 2-2 (WAC 296-17-509), 5-5 (WAC 296-17-520), 5-8 (WAC 296-17-521), 50-1 (WAC 296-17-659), 50-3 (WAC 296-17-66001) and 69-2 (WAC 296-17-747) and is applicable only to a permanent yard or shop maintained by the employer for the storage of material, or the storage and maintenance of equipment. This class is applicable only to those employees regularly assigned to the shop or yard, and whose duties are solely incidental to the storage, repair or maintenance of the employer's equipment or material. No employee having any other duties during his shift or work day will be rated in this class.
[Statutory Authority: RCW 51.04.020(1) and 51.16-.035. 78-12-043 (Order 78-23), § 296-17-675, filed 11/27/78, effective 1/1/79; Order 76-36, § 296-17-675, filed 11/30/76; Order 73-22, § 296-17-675, filed 11/9/73, effective 1/1/74.]

WAC 296-17-677 Classification 53-1.

Accounting or bookkeeping firms
Law firms
Credit bureaus
Employment agencies
Court reporting firms
Management analyst firms
All operations including clerical office and salesmen.
[Statutory Authority: RCW 51.04.020(1) and 51.16-.035. 78-12-043 (Order 78-23), § 296-17-677, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-677, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-677, filed 11/9/73, effective 1/1/74.]

WAC 296-17-67901 Classification 53-7.

State employees - Nonprofessional, N.O.C.
This class includes all departments, agencies, boards, commissions and committees of either the executive, legislative or judicial branches of state government
For the purpose of this rule, nonprofessional means persons having duties performing manual labor. Including persons having duties such as custodial or maintenance, machinery or equipment operators. See Classes 49-2 (WAC 296-17-651), 49-6 (WAC 296-17-655), 72-1 (WAC 296-17-763), and 71-3 (WAC 296-17-756) for other state employees.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-67901, filed 11/30/79, effective 1/1/80.]

WAC 296-17-682 Classification 61-5.

Hospitals - religious and charitable
Hospitals - other, not city or county
Nursing care, N.O.C.
All operations, including clerical office and salesmen.
[Statutory Authority: RCW 51.04.020(1) and 51.16-.035. 78-12-043 (Order 78-23), § 296-17-682, filed 11/27/78, effective 1/1/79; Order 73-22, § 296-17-682, filed 11/9/73, effective 1/1/74.]

WAC 296-17-683 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-698 Classification 63-3.

Salesmen, N.O.C. - outside
Collectors, messengers, appraisers, estimators, public relations, counsellors, N.O.C.
Insurance salesmen and claims adjustors - outside
Machinery salesmen - outside - construction, mining, heavy equipment
Farm machinery salesmen - outside.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-698, filed 11/30/79, effective 1/1/80; Order 76-36, § 296-17-698, filed 11/30/76; Order 73-22, § 296-17-698, filed 11/9/73, effective 1/1/74.]

WAC 296-17-738 Classification 67-7.

Football teams, N.O.C.
Hockey teams
Roller derbies
Contact sports, N.O.C.
This class applies to professional contact sports and includes umpires, referees, playing coaches and managers.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-738, filed 11/30/79, effective 1/1/80; Order 74-40, § 296-17-738, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-738, filed 11/9/73, effective 1/1/74.]

WAC 296-17-753 Classification 69-8.

Envelope or stationery manufacturing
Paper or plastic bag, abrasive paper and wallpaper manufacturing

Carbon paper, crepe paper and typewriter ribbon manufacturing
Paper box manufacturing, solid paper boxes
Paper box manufacturing, folding paper boxes
All operations including printing on products being manufactured.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-753, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-17-753, filed 11/30/77, effective 1/1/78.]

WAC 296-17-75301 Classification 69-9.

Medical laboratories
Blood banks
Assaying laboratories
Laboratories—Analytical, testing, or quality control for others, including outside operations, excluding outside x-raying and drilling.
[Statutory Authority: RCW 51.04.020(1) and 51.16-.035. 78-12-043 (Order 78-23), § 296-17-75301, filed 11/27/78, effective 1/1/79.]

WAC 296-17-754 Classification 71-1.

Executive officers, N.O.C.
[Statutory Authority: RCW 51.04.020(1) and 51.16-.035. 78-12-043 (Order 78-23), § 296-17-754, filed 11/27/78, effective 1/1/79.]

WAC 296-17-755 Classification 71-2.

Football teams. This class applies to football teams which are participants in the national football league and includes playing coaches and managers.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-755, filed 11/30/79, effective 1/1/80.]

WAC 296-17-756 Classification 71-3.

State employees—Law enforcement officers
This class includes all departments, agencies, boards, commissions and committees of either the executive, legislative or judicial branches of state government, including employees having arrest powers or such other powers common to law enforcement, such as state patrolmen, game wardens, guards or correctional officers of inmates.
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-756, filed 11/30/79, effective 1/1/80.]

WAC 296-17-757 Classification 71-4.

Temporary help companies
This class applies to employees of Temporary Help Companies, N.O.C., that are referred on a temporary basis to its customers. This class applies if the customer's business is by nature enumerated in this manual as being subject to any of the following classes: 13-4 (WAC 296-17-541), 49-1 (WAC 296-17-650), 49-2 (WAC 296-17-651), 49-3 (WAC 296-17-652), 49-4 (WAC 296-17-653), 49-6 (WAC 296-17-655), 53-1 (WAC 296-17-677), 53-5 (WAC 296-17-678), 53-6 (WAC 296-17-679), 61-3 (WAC 296-17-680), 61-9 (WAC 296-17-686), 63-3 (WAC 296-17-698), 65-1 (WAC 296-17-714), 65-2 (WAC 296-17-715), 65-6 (WAC 296-17-719), 72-2 (WAC 296-17-764).
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-757, filed 11/30/79, effective 1/1/80.]

WAC 296-17-758 Classification 71-5.

Temporary help companies
This class applies to employees of Temporary Help Companies, N.O.C., that are referred on a temporary basis to its customers. This class applies if the customers' business is by nature enumerated in this manual as being subject to any of the following classes: 13-3 (WAC 296-17-540), 22-1 (WAC 296-17-565), 22-2 (WAC 296-17-566), 34-3 (WAC 296-17-581), 34-5 (WAC 296-17-58201), 34-6 (WAC 296-17-583), 34-8 (WAC 296-17-585), 36-2 (WAC 296-17-594), 37-1 (WAC 296-17-599), 37-3 (WAC 296-17-601), 37-7 (WAC 296-17-603), 37-8 (WAC 296-17-604), 38-1 (WAC 296-17-605), 38-2 (WAC 296-17-606), 38-3 (WAC 296-17-607), 38-4 (WAC 296-17-608), 38-5 (WAC 296-17-609), 38-6 (WAC 296-17-610), 38-8 (WAC 296-17-612), 38-9 (WAC 296-17-613), 39-5 (WAC 296-17-618), 41-1 (WAC 296-17-620), 41-2 (WAC 296-17-621), 41-3 (WAC 296-17-622), 41-4 (WAC 296-17-623), 41-5 (WAC 296-17-624), 41-6 (WAC 296-17-625), 41-7 (WAC 296-17-626), 41-8 (WAC 296-17-627), 41-9 (WAC 296-17-628), 45-1 (WAC 296-17-637), 45-2 (WAC 296-17-638), 45-3 (WAC 296-17-639), 45-4 (WAC 296-17-640), 49-5 (WAC 296-17-654), 52-7 (WAC 296-17-676), 61-5 (WAC 296-17-682), 61-7 (WAC 296-17-684), 62-1 (WAC 296-17-687), 62-3 (WAC 296-17-689), 62-4 (WAC 296-17-690), 62-5 (WAC 296-17-691), 62-6 (WAC 296-17-692), 62-9 (WAC 296-17-695), 63-1 (WAC 296-17-696), 63-2 (WAC 296-17-697), 63-4 (WAC 296-17-699), 63-5 (WAC 296-17-700), 63-6 (WAC 296-17-701), 63-8 (WAC 296-17-703), 63-9 (WAC 296-17-704), 64-2 (WAC 296-17-706), 64-3 (WAC 296-17-707), 64-4 (WAC 296-17-708), 64-5 (WAC 296-17-709), 64-6 (WAC 296-17-710), 64-7 (WAC 296-17-711), 65-3 (WAC 296-17-716), 65-4 (WAC 296-17-717), 65-5 (WAC 296-17-718), 65-7 (WAC 296-17-720), 65-8 (WAC 296-17-721), 65-9 (WAC 296-17-722), 66-1 (WAC 296-17-723), 66-3 (WAC 296-17-725), 66-4 (WAC 296-17-726), 66-5 (WAC 296-17-727), 66-7 (WAC 296-17-729), 67-4 (WAC 296-17-735), 67-9 (WAC 296-17-740), 69-9 (WAC 296-17-75301).
[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-758, filed 11/30/79, effective 1/1/80.]

WAC 296-17-759 Classification 71-6.

Temporary held companies

This class applies to employees of Temporary Help Companies, N.O.C., that are referred on a temporary basis to its customers. This class applies if the customers' business is by nature enumerated in this manual as being subject to any of the following classes: 3-1 (WAC 296-17-510), 8-3 (WAC 296-17-529), 11-3 (WAC 296-17-538), 13-1 (WAC 296-17-539), 14-3 (WAC 296-17-543), 14-4 (WAC 296-17-544), 15-1 (WAC 296-17-545), 15-7 (WAC 296-17-546), 20-2 (WAC 296-17-555), 20-3 (WAC 296-17-556), 20-4 (WAC 296-17-557), 20-5 (WAC 296-17-558), 20-6 (WAC 296-17-559), 20-7 (WAC 296-17-560), 20-8 (WAC 296-17-561), 21-1 (WAC 296-17-562), 21-2 (WAC 296-17-563), 21-4 (WAC 296-17-564), 33-9 (WAC 296-17-578), 34-1 (WAC 296-17-579), 34-7 (WAC 296-17-584), 35-1 (WAC 296-17-586), 35-3 (WAC 296-17-587), 35-8 (WAC 296-17-592), 37-2 (WAC 296-17-600), 39-1 (WAC 296-17-614), 39-6 (WAC 296-17-61801), 44-1 (WAC 296-17-635), 44-4 (WAC 296-17-636), 48-2 (WAC 296-17-643), 48-3 (WAC 296-17-644), 48-4 (WAC 296-17-645), 48-5 (WAC 296-17-646), 48-6 (WAC 296-17-647), 48-8 (WAC 296-17-649), 48-9 (WAC 296-17-64901), 53-7 (WAC 296-17-67901), 61-4 (WAC 296-17-681), 61-8 (WAC 296-17-685), 62-2 (WAC 296-17-688), 62-8 (WAC 296-17-694), 64-8 (WAC 296-17-712), 64-9 (WAC 296-17-713), 66-2 (WAC 296-17-724), 66-8 (WAC 296-17-730), 67-6 (WAC 296-17-737), 68-1 (WAC 296-17-741), 68-2 (WAC 296-17-742), 68-4 (WAC 296-17-744), 69-8 (WAC 296-17-753), 72-1 (WAC 296-17-763).

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-759, filed 11/30/79, effective 1/1/80.]

WAC 296-17-760 Classification 71-7.

Temporary help companies

This class applies to employees of Temporary Help Companies, N.O.C., that are referred on a temporary basis to its customers. This class applies if the customers' business is by nature enumerated in this manual as being subject to any of the following classes: 3-6 (WAC 296-17-512), 3-7 (WAC 296-17-513), 5-3 (WAC 296-17-518), 6-1 (WAC 296-17-522), 6-2 (WAC 296-17-523), 6-3 (WAC 296-17-524), 6-6 (WAC 296-17-526), 6-7 (WAC 296-17-527), 9-2 (WAC 296-17-533), 14-1 (WAC 296-17-542), 18-1 (WAC 296-17-552), 24-1 (WAC 296-17-567), 29-3 (WAC 296-17-568), 29-4 (WAC 296-17-569), 29-6 (WAC 296-17-570), 31-1 (WAC 296-17-571), 31-2 (WAC 296-17-572), 31-3 (WAC 296-17-573), 31-4 (WAC 296-17-574), 31-5 (WAC 296-17-575), 33-1 (WAC 296-17-576), 33-2 (WAC 296-17-57601), 33-3 (WAC 296-17-57602), 34-2 (WAC 296-17-580), 34-4 (WAC 296-17-582), 36-1 (WAC 296-17-593), 36-3 (WAC 296-17-595), 36-4 (WAC 296-17-596), 36-5 (WAC 296-17-597), 36-6 (WAC 296-17-598), 39-2 (WAC 296-17-615) 39-3 (WAC 296-17-616), 39-4 (WAC 296-17-617), 40-2 (WAC 296-17-619), 42-1 (WAC 296-17-629), 43-1 (WAC 296-17-630), 43-2 (WAC 296-17-631), 43-3 (WAC 296-17-632), 43-4 (WAC 296-17-633), 46-1 (WAC 296-17-641), 51-1 (WAC 296-17-661), 51-2 (WAC 296-17-662), 51-3 (WAC 296-17-663), 51-4 (WAC 296-17-664), 51-5 (WAC 296-17-665), 51-6 (WAC 296-17-666), 51-7 (WAC 296-17-667), 51-8 (WAC 296-17-668), 51-9 (WAC 296-17-669), 52-1 (WAC 296-17-670), 52-2 (WAC 296-17-671), 52-3 (WAC 296-17-672), 52-4 (WAC 296-17-673), 52-5 (WAC 296-17-674), 67-5 (WAC 296-17-736).

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-760, filed 11/30/79, effective 1/1/80.]

WAC 296-17-761 Classification 71-8.

Temporary help companies

This class applies to employees of Temporary Help Companies, N.O.C., that are referred on a temporary basis to its customers. This class applies if the customers' business is by nature enumerated in this manual as being subject to any of the following class: 1-1 (WAC 296-17-501), 1-2 (WAC 296-17-502), 1-3 (WAC 296-17-503), 1-4 (WAC 296-17-504), 1-5 (WAC 296-17-505), 1-6 (WAC 296-17-506), 1-7 (WAC 296-17-50601), 1-8 (WAC 296-17-50602), 1-9 (WAC 296-17-507), 3-2 (WAC 296-17-511), 4-1 (WAC 296-17-514), 4-2 (WAC 296-17-515), 4-3 (WAC 296-17-516), 5-2 (WAC 296-17-517), 5-4 (WAC 296-17-519), 5-5 (WAC 296-17-520), 5-8 (WAC 296-17-521), 6-4 (WAC 296-17-525), 7-1 (WAC 296-17-528), 8-4 (WAC 296-17-530), 9-1 (WAC 296-17-532), 10-2 (WAC 296-17-534), 10-3 (WAC 296-17-535), 11-1 (WAC 296-17-536), 11-2 (WAC 296-17-537), 17-3 (WAC 296-17-550), 17-4 (WAC 296-17-551), 35-6 (WAC 296-17-590), 43-5 (WAC 296-17-634), 52-6 (WAC 296-17-675), 62-7 (WAC 296-17-693), 66-9 (WAC 296-17-731), 69-2 (WAC 296-17-747), 69-4 (WAC 296-17-749), 69-5 (WAC 296-17-750), 69-7 (WAC 296-17-752), 71-3 (WAC 296-17-756).

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-761, filed 11/30/79, effective 1/1/80.]

WAC 296-17-762 Classification 71-9.

Temporary help companies

This class applies to employees of Temporary Help Companies, N.O.C., that are referred on a temporary basis to its customers. This class applies if the customer's business is by nature enumerated in this manual as being subject to any of the following classes: 2-1 (WAC 296-17-508), 2-2 (WAC 296-17-509), 17-1 (WAC 296-17-548), 17-2 (WAC 296-17-549), 50-1 (WAC 296-17-659), 50-2 (WAC 296-17-660), 50-3 (WAC 296-17-66001), 68-3 (WAC 296-17-743), 69-3 (WAC 296-17-748).

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-762, filed 11/30/79, effective 1/1/80.]

WAC 296-17-763 Classification 72-1.

State employees – health care facilities

This class applies to all employees of health care facilities who are assigned to and regularly employed at a health care facility.

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-763, filed 11/30/79, effective 1/1/80.]

WAC 296-17-764 Classification 72-2.

Real estate agencies – all operations including clerical office and salesmen

Excludes building management and/or property development.

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-764, filed 11/30/79, effective 1/1/80.]

WAC 296-17-850 Experience rating plan--Eligibility and experience period. (1) **Eligibility.** Each employer who has reported experience during more than one fiscal year of the "experience period" shall have his base rates multiplied by an "experience modification" calculated in accordance with the rules of this manual. The development of the "experience modification" as set forth in WAC 296-17-855 shall include losses and exposure reported in all risk classes: *Provided*, That the "experience modification" determined in accordance with WAC 296-17-855 shall not apply to industrial insurance rates in the following classes: 5-5 (WAC 296-17-520) and 48-7 (WAC 296-17-648). Employer premiums in the foregoing classes shall be computed at base industrial insurance rates as set forth in WAC 296-17-895.

(2) **Experience period.** The "experience period" shall be the oldest three of the four fiscal years preceding the effective date of premium rates as set forth in WAC 296-17-895. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-850, filed 11/30/79, effective 1/1/80; Order 76-18, § 296-17-850, filed 5/28/76, effective 7/1/76; Order 74-40, § 296-17-850, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-850, filed 11/9/73, effective 1/1/74.]

WAC 296-17-855 Experience modification. The basis of the experience modification shall be a comparison of the actual losses charged to an employer during the experience period with the losses which would be expected for an average employer reporting the same exposures in each classification. The comparison shall contain actuarial refinements designed to mitigate the effects of losses which may be considered catastrophic or of doubtful statistical significance, due consideration being given to the volume of the employer's experience. Except for those employers who qualify for an adjusted experience modification as specified in WAC 296-17-860 or 296-17-865, the experience modification shall be calculated from the formula:

$$\text{MODIFICATION} = \frac{Ap + WAe + (1-W)\,Ee + B}{E + B}$$

The components Ap, WAe, and (1–W) Ee are values which shall be charged against an employer's experience record. The component, E, shall be the expected value of these charges for an average employer reporting the same exposures in each classification. The meaning and function of each symbol in the formula is specified below.

"Ap" signifies "primary actual losses". For each claim the primary actual loss is defined as that portion of the claim which is considered completely rateable for all employers and which is to enter the experience modification calculation at its full value. For each claim in excess of $2,690, the primary actual loss shall be determined from the formula:

$$\text{Primary loss} = \frac{6{,}726}{\text{Total loss} + 4{,}036} \times \text{total loss}$$

Primary actual losses for selected claim values are shown in Table I. For each claim less than $2,690 the full value of the claim shall be considered a primary loss.

"Ae" signifies "excess actual losses". For each claim the excess actual loss is defined as that portion of the claim which is not considered completely rateable for all employers. The excess actual loss for each claim shall be determined by subtracting the primary loss from the total loss.

"W" signifies "W value". For each employer, the W value determines the portion of the actual excess losses which shall be included in the calculation of his experience modification, due consideration being given to the volume of his experience. This amount is represented by the symbol "WAe" in the experience modification formula. W values are set forth in Table II.

"E" signifies "expected losses". An employer's expected losses shall be determined by multiplying his reported exposure in each classification during the experience period by the classification expected loss rate. Expected loss rates are set forth in Table III.

"Ee" signifies "expected excess losses". Expected losses in each classification shall be multiplied by the classification "D-Ratio" to obtain "expected primary losses". Expected excess losses shall then be calculated by subtracting expected primary losses from expected total losses. Each employer shall have a statistical charge included in the calculation of his experience modification, said charge to be actuarially equivalent to the amount forgiven an average employer because of the exclusion of a portion of his excess actual losses. This charge is represented by "(1–W) Ee" in the experience modification formula. D-Ratios are set forth in Table III.

"B" signifies "B value" or "ballast". In order to limit the effect of a single severe accident on the modification of a small employer, a stabilizing element (B value) shall be added to both actual and expected losses. B values are set forth in Table II. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), §

296-17-855, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-17-855, filed 11/30/77, effective 1/1/78; Order 74-40, § 296-17-855, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-855, filed 11/9/73, effective 1/1/74.]

WAC 296-17-860 Transition adjustment. In the event that an employer has no compensable accidents during the experience period and the experience modification calculated in accordance with WAC 296-17-855 is greater than the experience modification shown in Table IV, WAC 296-17-890 then such modification shall be reduced to the value shown in Table IV. For the purpose of this rule, a compensable accident is defined as one which has resulted in, or is expected to result in, time loss compensation, permanent disability or death. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-860, filed 11/30/79, effective 1/1/80; Order 74-40, § 296-17-860, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-860, filed 11/9/73, effective 1/1/74.]

WAC 296-17-870 Evaluation of actual losses. Except as provided in the following subsections of this paragraph, actual losses shall include all payments as of the "valuation date" for each claim arising from an accident occurring during the experience period. Losses for claims open as of the valuation date may also include a reserve for future payments. Actual losses on claims for accidents occurring outside of the experience period shall not be included.

(1) **Valuation Date.** The valuation date shall be on and include December 31, one year and one day immediately preceding the effective date of premium rates as set forth in WAC 296-17-895.

(2) **Retroactive Adjustments - Revision of Losses Between Valuation Dates.** No claim value shall be revised between valuation dates and no retroactive adjustment of an experience modification shall be made because of disputation concerning the judgment of the claims examiner or because of subsequent developments except as specifically provided in the following cases:

(a) In cases where loss values are included or excluded through mistake other than error of judgment.

(b) In cases where a third party recovery is made.

(c) In cases where the claim qualifies as a second injury claim under the provisions of RCW 51.16.120.

(d) In cases where a claim is officially closed and is determined to be noncompensable.

In the above specified cases retroactive adjustment of the experience modification shall be made for each rating in which the claim was included.

(3) **Average Death Value.** Each fatal claim shall be assigned the "average death value", said value to be the average incurred cost for all fatal claims occurring during the experience period. The average death value is set forth in Table II.

(4) **Third Party Recovery.** In the event of a third party recovery on a claim, the employer shall be charged for a portion of the actual loss amount, gross of such recovery, established on the claim for each year in which the claim's injury date falls within the experience period (see WAC 296-17-850). This portion shall be determined by taking the ratio of the total cost of the claim, including attorneys' fees, after recovery, to the total cost of the claim before recovery. Both the primary and excess components of the actual loss amount shall be reduced in the same proportion.

(5) **Second Injury Claims.** The primary and excess values of any claim which becomes eligible for second injury relief under the provisions of RCW 51.16.120, as now or hereafter amended, shall be reduced by the percentage of relief granted.

(6) **Occupational Disease Claims.** When a claim results from an employee's exposure to an occupational disease hazard, the "date of injury," for the purposes of experience rating, shall be the date on which the disability was diagnosed, giving rise to the filing of a claim for benefits. The cost of any occupational disease claim, paid from the accident fund and arising from exposure to the disease hazard under two or more employers, shall be prorated to each period of employment involving exposure to the hazard. Each insured employer who had employed the claimant during the experience period shall be charged for his share of the claim based upon the prorated costs.

(7) **Maximum Claim Value.** No claim shall enter an employer's experience record at a value greater than the "maximum claim value." The maximum claim value is set forth in Table II. [Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-870, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-870, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-870, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-870, filed 11/9/73, effective 1/1/74.]

WAC 296-17-873 Structure of employer changes--Experience rating. WAC 296-17-873 through 296-17-87309 governs combination of entities and status changes of ownership for purposes of experience rating. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-873, filed 11/30/79, effective 1/1/80.]

WAC 296-17-87301 Definitions. The definitions in this section shall apply throughout WAC 296-17-873 through 296-17-87309.

(1) "Entity" means an individual, partnership, corporation, unincorporated association, or fiduciary operation (e.g. trust, receivership, or estate of deceased individual).

(2) "Immediate family member" as used in this rule means father, mother, husband, wife, son, daughter, stepson, stepdaughter, grandson, or granddaughter.

(3) "Majority interest" means more than fifty percent interest. If an entity other than a partnership:

(a) Has issued voting stock, majority interest means a majority of the issued voting stock. If all stock issues do not have the same number of votes per share, majority interest means a majority of the voting rights;

(b) Has not issued voting stock, majority interest means a majority of the members;

(c) Has not issued voting stock and has no members, a majority interest means a majority of the board of directors or comparable governing body.

If an entity is a partnership, majority interest means more than one-half of the general partners.

(4) "Joint venture" means a combination of two or more entities, entered into for the purpose of carrying to completion a specific job of limited duration. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-87301, filed 11/30/79, effective 1/1/80.]

WAC 296-17-87305 Change in ownership. (1) For the purpose of WAC 296-17-873 through 296-17-87309 management is considered to be vested in ownership. Except as specifically provided otherwise herein, ownership whether active or inactive, governs the administration of WAC 296-17-873 through 296-17-87309, and the words "nominal" and "material" denote respectively the effect of a particular change in ownership. If a change has occurred which the provisions of subsections (2) through (5) of this section denominate "nominal," the experience of the past shall be utilized for future modification. If, on the other hand, the change is denominated "material," the past experience shall be disregarded and the risk written at manual or otherwise applicable rates.

In application of WAC 296-17-873 through 296-17-87309, ownership changes of any entity which is neither a partnership, a joint venture, nor a corporation that has issued voting stock shall be decided in accordance with the provisions of subsections (2) through (5) of this section applicable to corporations. The provisions of sections (2) through (5) of this section shall be applied as though the entity has issued voting stock and the stock was:

(a) Held in equal amounts by each of its members; or

(b) If the entity does not have members, held in equal amounts by each member of the board of directors or comparable governing body.

Two or more changes during a twelve-month period shall be considered as a single change.

The department shall in each case determine from the applicable provisions of subsections (2) through (5) of this section whether a change is "nominal" or "material," and if no provision of subsections (2) through (5) of this section is expressly applicable it shall be governed by a consideration of WAC 296-17-873 through 296-17-87309 as a whole and of its several parts interpreted in the light of such relevant evidence as is offered.

(2) Individual.

(a) Death of an individual is a material change. Exception: Where a member or members of the immediate family take over the business, either as the executor, executrix, administrator, or sole owner the change is nominal.

(b) Sale of business to another is a material change. Exception: Where the sale is made to a member or members of the immediate family the change is nominal.

(c) Bankruptcy or insolvency with:

(i) Continued operation with appointment of a trustee is a nominal change;

(ii) Withdrawal of the trustee and reversion to the original owner is a nominal change;

(iii) Withdrawal of a trustee but with new owners is a material change.

(d) Formation of a living estate is a nominal change.

(e) Formation of a partnership is a material change. Exceptions:

(i) A partnership composed of only two general partners is a nominal change;

(ii) A partnership composed of members of an immediate family is a nominal change;

(iii) A limited partnership in which the individual is one of not more than two general partners is a nominal change.

(f) Formation of a corporation is a material change. Exception: If the individual or members of his immediate family own one-half or more of the issued voting stock the change is nominal.

(3) Partnership.

(a) Sale, conveyance, transfer, or assignment of partnership interest by one or more partners and the partnership not dissolved is a material change. Exceptions:

(i) If prior to the change all partners were members of an immediate family and after the change one-half or more of the general partners are members of such immediate family the change is nominal;

(ii) If one-half or more of the general partners prior to the change constitute one-half or more of the general partners after the change the change is nominal.

(b) If the partnership is dissolved the change is material. Exceptions:

(i) In a partnership wherein all partners were members of an immediate family and one or more of the members of such family constitute one-half or more of the general partners in the new partnership, or own one-half or greater interest in the new entity or entities if they are not partnerships the change is nominal;

(ii) If one-half or more of the general partners of the dissolved partnership constitute one-half or more of the general partners in the new partnership or own a one-half or greater interest in the new entity or entities if they are not a partnership the change is nominal.

(c) Bankruptcy or insolvency.

(i) Continued operation with appointment of a trustee is a nominal change.

(ii) Withdrawal of a trustee and reversion to one-half or more of the original general partners is a nominal change.

(iii) Withdrawal of a trustee with the original general partners not constituting one-half or more of the owners is a material change.

(4) Corporations.

(a) Old corporation dissolved or nonoperative, not a merger or consolidation.

(i) Formation of a new corporation is a material change. Exceptions:

(A) If the stockholders common to both the dissolved or nonoperative corporation and the newly formed corporation own or owned one-half or more of the issued

voting stock in the old corporation and own one–half or more of the issued voting stock in the newly formed corporation the change is nominal;

(B) If the nonoperative corporation owns one–half or more of the issued voting stock of the newly formed corporation the change is nominal;

(C) In a family corporation (meaning a corporation whose entire issued voting stock is held by the members of an immediate family) only those changes may be considered which involve the acquisition of ownership by a person not a member of such immediate family.

(ii) Reversion to an individual is a material change. Exceptions:

(A) If the individual owns or owned one–half or more of the issued voting stock of the dissolved or nonoperative corporation the change is nominal;

(B) If the individual was a member of an immediate family which wholly owned the corporation the change is nominal.

(iii) Reversion to a partnership is a material change. Exceptions:

(A) If the stockholders who own or owned one–half or more of the issued voting stock of the dissolved or nonoperative corporation constitute one–half or more of the general partners the change is nominal;

(B) If the corporation was wholly owned by members of an immediate family and a member or members of that immediate family constitute one–half or more of the general partners the change is nominal.

(b) Transfer of voting stock, not otherwise provided for in subsections (2) through (5) of this section.

(i) If one–half or less of issued voting stock is transferred the change is nominal.

(ii) If more than one–half of issued voting stock is transferred the change is material. Exception: If the stockholders who own or owned one–half or more of the issued voting stock prior to such sale own one–half or more of the issued voting stock after such sale the change is nominal.

(iii) In a family corporation (meaning a corporation whose entire issued voting stock is held by the members of an immediate family) only those changes shall be considered which involve the acquisition of ownership by a person not a member of such immediate family.

(c) Trustees, receiverships, and similar temporary changes of management are nominal changes.

(d) In the case of consolidations or mergers of corporations the experience of all consolidated or merged corporations shall be combined for computing the modification for the consolidated or surviving corporation.

(5) Joint ventures.

(a) Any change in the membership of the joint venture is a material change.

(b) A nominal change in the ownership of one of the joint venturers is a nominal change.

(c) A material change in the ownership of one of the joint venturers is a material change.

(d) The experience of a joint venture shall be continued for other operations which may be undertaken, as a joint venture, by the same group of joint venturers, either during the same time as the original venture or at a later date.

(e) Members of a joint venture may subcontract part or all of their operations to one or more of the joint venturers. Work thus subcontracted becomes a regular part of the subcontractor's operations and is subject to his experience modification. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79–12–086 (Order 79–18), § 296–17–87305, filed 11/30/79, effective 1/1/80.]

WAC 296–17–87306 Combination of entities. Separate entities shall be combined for experience rating purposes when the same person or persons and/or a single corporation owns a majority interest in each of the entities.

NOTE: If two or more different combinations are possible in accordance with the provisions of this section, the combination producing the greatest amount of expected losses during the experience period shall be made. The experience of any entity used in such combinations may not be otherwise used in combination with any other entity. The experience used in a rating of combination shall be subject to the provisions of WAC 296–17–87305 (Change in ownership).

Exceptions:

(1) Individual trusts may not be combined for experience rating purposes with operations of the trustee nor with the operations of any other trusts. However, two or more trusts having identical trustees and also having identical beneficiaries shall be combined.

(2) Joint venture operations may not be combined with the operations of any other entity, even though the members of the joint venture are identically owned.

This section applies only where the entities are or have been operating and insured concurrently in Washington. It does not apply where concurrent operations are for a short period of time, not exceeding one year, if the operation of the original entity during the period both entities were operating, was restricted to the completion of contracts entered into prior to the new entity commencing operations. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79–12–086 (Order 79–18), § 296–17–87306, filed 11/30/79, effective 1/1/80.]

WAC 296–17–87307 Revision or withdrawal of experience modifications. Experience modifications are not subject to revision or withdrawal because of the application of WAC 296–17–87305 or 296–17–87306 unless one of the following applies:

(1) Written notice to the department has been made by the affected entity or entities advising of the change of ownership status or the common ownership of a combination of entities: *Provided*, That the effective date of any such revision or withdrawal that would affect the premium covering any periods prior to the calendar

quarter during which such notice in writing was furnished the department, will be at the department's discretion to assure that no entity or entities will evade an unfavorable cost;

(2) The foregoing subsection (1) will apply in the absence of written notice to the department if the department determines the facts that would otherwise have been supplied by such written notice. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-87307, filed 11/30/79, effective 1/1/80.]

WAC 296-17-87308 Experience modification. WAC 296-17-873 through 296-17-87309 do not permit the establishment of more than one experience modification on a single risk at the same time. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-87308, filed 11/30/79, effective 1/1/80.]

WAC 296-17-87309 Classification assignments--Applicability. All rules in this manual governing assigning of classifications shall apply with respect to entities that are combined for experience rating purposes in the same manner as though the combination of entities were a single employer. [Statutory Authority: RCW 51.04-.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-87309, filed 11/30/79, effective 1/1/80.]

WAC 296-17-875 Table I.

Primary Losses for Selected Claim Values

Claim Value	Primary Loss
2,690	2,690
3,250	3,000
4,379	3,500
5,922	4,000
8,159	4,500
11,692	5,000
18,106	5,500
33,355	6,000
56,093*	6,275
67,260**	6,345

* Average death value
** Maximum claim value

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-875, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-875, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-875, filed 11/30/77, effective 1/1/78; Order 76-36, § 296-17-875, filed 11/30/76; Order 75-38, § 296-17-875, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-875, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-875, filed 11/9/73, effective 1/1/74.]

WAC 296-17-880 Table II.

"B" and "W" Values

Maximum Claim Value = $ 67,260
Average Death Value = $ 56,093

Expected Losses		B	W
1,456 &	Under	12,690	0
1,457 –	2,935	12,563	.01
2,936 –	4,436	12,436	.02
4,437 –	5,962	12,309	.03
5,963 –	7,508	12,182	.04
7,509 –	9,078	12,056	.05
9,079 –	10,674	11,929	.06
10,675 –	12,294	11,802	.07
12,295 –	13,940	11,675	.08
13,941 –	15,615	11,548	.09
15,616 –	17,315	11,421	.10
17,316 –	19,042	11,294	.11
19,043 –	20,798	11,167	.12
20,799 –	22,584	11,040	.13
22,585 –	24,398	10,913	.14
24,399 –	26,245	10,787	.15
26,246 –	28,126	10,660	.16
28,127 –	30,037	10,533	.17
30,038 –	31,982	10,406	.18
31,983 –	33,961	10,279	.19
33,962 –	35,976	10,152	.20
35,977 –	38,028	10,025	.21
38,029 –	40,118	9,898	.22
40,119 –	42,249	9,771	.23
42,250 –	44,416	9,644	.24
44,417 –	46,626	9,518	.25
46,627 –	48,878	9,391	.26
48,879 –	51,174	9,264	.27
51,175 –	53,515	9,137	.28
53,516 –	55,905	9,010	.29
55,906 –	58,341	8,883	.30
58,342 –	60,827	8,756	.31
60,828 –	63,364	8,629	.32
63,365 –	65,954	8,502	.33
65,955 –	68,597	8,375	.34
68,598 –	71,298	8,249	.35
71,299 –	74,061	8,122	.36
74,062 –	76,881	7,995	.37
76,882 –	79,764	7,868	.38
79,765 –	82,711	7,741	.39
82,712 –	85,726	7,614	.40
85,727 –	88,811	7,487	.41
88,812 –	91,967	7,360	.42
91,968 –	95,202	7,233	.43
95,203 –	98,510	7,106	.44
98,511 –	101,899	6,980	.45
101,900 –	105,372	6,853	.46
105,373 –	108,932	6,726	.47
108,933 –	112,583	6,599	.48
112,584 –	116,331	6,472	.49
116,332 –	120,173	6,345	.50
120,174 –	124,117	6,218	.51
124,118 –	128,167	6,091	.52
128,168 –	132,327	5,964	.53

Expected Losses		B	W
132,328 –	136,602	5,837	.54
136,603 –	140,998	5,711	.55
140,999 –	145,524	5,584	.56
145,525 –	150,176	5,457	.57
150,177 –	154,966	5,330	.58
154,967 –	159,900	5,203	.59
159,901 –	164,984	5,076	.60
164,985 –	170,225	4,949	.61
170,226 –	175,631	4,822	.62
175,632 –	181,214	4,695	.63
181,215 –	186,974	4,568	.64
186,975 –	192,926	4,442	.65
192,927 –	199,078	4,315	.66
199,079 –	205,442	4,188	.67
205,443 –	212,029	4,061	.68
212,030 –	218,856	3,934	.69
218,857 –	225,925	3,807	.70
225,926 –	233,257	3,680	.71
233,528 –	240,866	3,553	.72
240,867 –	248,769	3,426	.73
248,770 –	256,981	3,299	.74
256,982 –	265,524	3,173	.75
265,525 –	274,424	3,046	.76
274,425 –	283,691	2,919	.77
283,692 –	293,356	2,792	.78
293,357 –	303,444	2,665	.79
303,445 –	313,986	2,538	.80
313,987 –	325,012	2,411	.81
325,013 –	336,556	2,284	.82
336,557 –	348,664	2,157	.83
348,665 –	361,364	2,030	.84
361,365 –	374,709	1,904	.85
374,710 –	388,750	1,777	.86
388,751 –	403,544	1,650	.87
403,545 –	419,152	1,523	.88
419,153 –	435,651	1,396	.89
435,652 –	453,107	1,269	.90
453,108 –	471,613	1,142	.91
471,614 –	491,267	1,015	.92
491,268 –	512,182	888	.93
512,183 –	534,481	761	.94
534,482 –	558,310	635	.95
558,311 –	583,841	508	.96
583,842 –	611,245	381	.97
611,246 –	640,747	254	.98
640,748 –	672,599	127	.99
672,600 &	over	0	1.00

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-880, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-880, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-880, filed 11/30/77, effective 1/1/78; Order 76-36, § 296-17-880, filed 11/30/76; Order 75-38, § 296-17-880, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-880, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-880, filed 11/9/73, effective 1/1/74.]

WAC 296-17-885 Table III.

Expected Loss Rates and D-Ratios
Expected Loss Rates in Dollars Per Workman Hour For Indicated Fiscal Year

Class	1976	1977	1978	D-Ratio
1-1	.1916	.1901	.1867	.369
1-2	.2074	.2058	.2021	.374
1-3	.2361	.2342	.2300	.387
1-4	.1881	.1867	.1833	.344
1-5	.1759	.1745	.1714	.411
1-6	.2552	.2531	.2486	.330
1-7	.1610	.1597	.1568	.392
1-8	.2114	.2098	.2060	.326
1-9	.2547	.2526	.2481	.375
2-1	.5072	.5031	.4940	.294
2-2	.3955	.3924	.3853	.352
3-1	.0819	.0813	.0798	.442
3-2	.2578	.2558	.2512	.378
3-6	.1243	.1233	.1211	.396
3-7	.0881	.0874	.0858	.411
4-1	.3403	.3376	.3315	.330
4-2	.3403	.3376	.3315	.330
4-3	.2334	.2315	.2273	.362
5-2	.1749	.1735	.1704	.368
5-3	.0999	.0991	.0973	.399
5-4	.2158	.2141	.2102	.381
5-5	.2203	.2185	.2146	.434
5-8	.2494	.2474	.2429	.397
6-1	.0655	.0650	.0638	.444
6-2	.0812	.0806	.0791	.381
6-3	.1032	.1024	.1006	.412
6-4	.2199	.2182	.2142	.417
6-6	.0510	.0506	.0497	.450
6-7	.0559	.0555	.0544	.427
7-1	.1757	.1743	.1712	.331
8-3	.0753	.0747	.0733	.379
8-4	.1610	.1597	.1568	.333
9-1	.3058	.3033	.2978	.379
9-2	.1152	.1143	.1122	.422
10-2	.2875	.2852	.2801	.455
10-3	.1385	.1374	.1349	.427
11-1	.1178	.1169	.1147	.393
11-2	.1825	.1811	.1778	.391
11-3	.0650	.0645	.0633	.464
13-1	.0641	.0636	.0624	.413
13-3	.0361	.0358	.0352	.409
13-4	.0023	.0023	.0022	.437
14-1	.1102	.1093	.1073	.428
14-3	.0794	.0787	.0773	.435
14-4	.0794	.0787	.0773	.435
15-1	.0660	.0655	.0643	.430
15-7	.0594	.0589	.0579	.411
17-1	.3490	.3462	.3399	.392
17-2	.3490	.3462	.3399	.392
17-3	.1628	.1615	.1586	.369
17-4	.0760	.0754	.0740	.385
18-1	.1359	.1348	.1324	.407
20-2	.0701	.0696	.0683	.480
20-3	.0843	.0837	.0821	.415

Class	1976	1977	1978	D-Ratio	Class	1976	1977	1978	D-Ratio
20-4	.0783	.0777	.0763	.434	38-9	.0295	.0293	.0287	.429
20-5	.0564	.0559	.0549	.401	39-1	.0672	.0667	.0655	.436
20-6	.0959	.0951	.0934	.400	39-2	.1100	.1091	.1071	.423
20-7	.0684	.0678	.0666	.399	39-3	.1502	.1490	.1463	.413
20-8	.0576	.0571	.0561	.403	39-4	.1100	.1091	.1071	.423
21-1	.0710	.0704	.0691	.443	39-5	.0300	.0297	.0292	.470
21-2	.0843	.0837	.0821	.415	39-6	.0672	.0667	.0655	.436
21-4	.0455	.0452	.0443	.488	40-2	.1111	.1102	.1082	.365
22-1	.0488	.0484	.0475	.416	41-1	.0182	.0180	.0177	.499
22-2	.0498	.0494	.0485	.448	41-2	.0179	.0178	.0175	.453
24-1	.0975	.0968	.0950	.436	41-3	.0250	.0249	.0244	.478
29-3	.1016	.1008	.0989	.514	41-4	.0182	.0180	.0177	.499
29-4	.1146	.1137	.1117	.448	41-5	.0182	.0180	.0177	.499
29-6	.0857	.0850	.0835	.379	41-6	.0179	.0178	.0175	.453
31-1	.1016	.1008	.0989	.514	41-7	.0145	.0143	.0141	.479
31-2	.1105	.1096	.1076	.403	41-8	.0182	.0180	.0177	.499
31-3	.0857	.0850	.0835	.379	41-9	.0182	.0180	.0177	.499
31-4	.1105	.1096	.1076	.403	42-1	.1325	.1314	.1290	.383
31-5	.1593	.1581	.1552	.458	43-1	.1281	.1271	.1248	.436
33-1	.1004	.0997	.0978	.456	43-2	.1191	.1182	.1160	.424
33-2	.1077	.1069	.1050	.384	43-3	.1325	.1314	.1290	.411
33-3	.0653	.0648	.0636	.406	43-4	.1433	.1422	.1396	.390
33-8	.0568	.0563	.0553	.506	43-5	.2808	.2786	.2735	.415
33-9	.0568	.0563	.0553	.458	44-1	.0950	.0942	.0925	.375
34-1	.0799	.0793	.0778	.384	44-4	.0843	.0837	.0821	.415
34-2	.0916	.0909	.0892	.458	45-1	.0244	.0242	.0238	.307
34-3	.0150	.0149	.0147	.380	45-2	.0122	.0121	.0119	.311
34-4	.0811	.0805	.0790	.447	45-3	.0343	.0340	.0334	.354
34-5	.0154	.0153	.0150	.390	45-4	.0126	.0125	.0123	.418
34-6	.0375	.0372	.0365	.406	46-1	.0485	.0481	.0472	.348
34-7	.0459	.0455	.0447	.453	48-2	.0458	.0454	.0446	.382
34-8	.0219	.0218	.0214	.388	48-3	.0827	.0820	.0805	.500
34-9	.0375	.0372	.0365	.406	48-4	.0644	.0639	.0627	.446
35-1	.0663	.0658	.0646	.482	48-5	.0517	.0513	.0503	.403
35-3	.0499	.0495	.0486	.480	48-6	.0103	.0103	.0101	.430
35-4	.0179	.0178	.0175	.453	48-7	.2203	.2185	.2146	.434
35-5	.0663	.0658	.0646	.482	48-8	.0606	.0602	.0591	.441
35-6	.1441	.1430	.1404	.342	48-9	.0363	.0360	.0354	.434
35-8	.0595	.0590	.0580	.460	49-1	.0133	.0132	.0130	.432
36-1	.0811	.0805	.0790	.447	49-2	.0320	.0318	.0312	.444
36-2	.0179	.0178	.0175	.453	49-3	.0133	.0132	.0130	.432
36-3	.0729	.0723	.0710	.436	49-4	.0030	.0030	.0029	.399
36-4	.1456	.1445	.1419	.305	49-5	.0489	.0485	.0476	.420
36-5	.0529	.0524	.0515	.406	49-6	.0100	.0099	.0097	.447
36-6	.0929	.0921	.0905	.463	49-7	.0227	.0225	.0221	.395
37-1	.0416	.0413	.0405	.409	49-8	.0535	.0531	.0521	.388
37-2	.0897	.0890	.0874	.386	49-9	.0535	.0531	.0521	.388
37-3	.0416	.0413	.0405	.409	50-1	.4843	.4805	.4718	.414
37-6	.0419	.0416	.0408	.414	50-2	.0787	.0780	.0766	.456
37-7	.0447	.0443	.0435	.424	50-3	.3183	.3158	.3101	.382
37-8	.0419	.0416	.0408	.414	51-1	.1051	.1043	.1024	.438
38-1	.0419	.0416	.0408	.414	51-2	.1759	.1745	.1714	.485
38-2	.0295	.0293	.0287	.429	51-3	.1759	.1745	.1714	.485
38-3	.0295	.0293	.0287	.429	51-4	.0916	.0909	.0892	.458
38-4	.0295	.0293	.0287	.429	51-5	.0916	.0909	.0892	.458
38-5	.0295	.0293	.0287	.429	51-6	.0916	.0909	.0892	.458
38-6	.0295	.0293	.0287	.429	51-7	.0885	.0878	.0862	.445
38-7	.0295	.0293	.0287	.429	51-8	.0916	.0909	.0892	.458
38-8	.0295	.0293	.0287	.429	51-9	.0675	.0669	.0657	.449

Class	1976	1977	1978	D-Ratio
52-1	.0863	.0856	.0840	.418
52-2	.0916	.0909	.0892	.458
52-3	.0916	.0909	.0892	.458
52-4	.1400	.1389	.1364	.433
52-5	.0916	.0909	.0892	.458
52-6	.0723	.0717	.0704	.429
52-7	.0271	.0268	.0263	.453
53-1	.0030	.0030	.0029	.399
53-5	.0052	.0051	.0050	.358
53-6	.0054	.0053	.0052	.412
61-3	.0068	.0068	.0067	.440
61-4	.0712	.0706	.0693	.413
61-5	.0345	.0342	.0336	.402
61-6	.0345	.0342	.0336	.402
61-7	.0282	.0280	.0274	.416
61-8	.0638	.0633	.0622	.515
61-9	.0076	.0075	.0074	.404
62-1	.0294	.0292	.0287	.396
62-2	.0955	.0948	.0931	.372
62-3	.0225	.0223	.0219	.421
62-4	.0280	.0278	.0273	.481
62-5	.0280	.0278	.0273	.481
62-6	.0280	.0278	.0273	.481
62-7	.1400	.1389	.1364	.443
62-8	.0758	.0752	.0739	.322
62-9	.0314	.0312	.0306	.483
63-1	.0310	.0307	.0302	.293
63-2	.0397	.0394	.0387	.393
63-3	.0140	.0139	.0136	.326
63-4	.0201	.0199	.0196	.425
63-5	.0084	.0083	.0082	.459
63-6	.0348	.0346	.0339	.455
63-7	.0135	.0134	.0131	.440
63-8	.0096	.0096	.0094	.374
63-9	.0173	.0172	.0169	.442
64-1	.0135	.0134	.0131	.440
64-2	.0512	.0508	.0499	.392
64-3	.0252	.0250	.0246	.484
64-4	.0095	.0094	.0092	.421
64-5	.0568	.0563	.0553	.506
64-6	.0135	.0134	.0131	.440
64-7	.0244	.0242	.0238	.497
64-8	.0649	.0643	.0632	.398
64-9	.0736	.0731	.0717	.395
65-1	.0082	.0081	.0080	.457
65-2	.0029	.0029	.0028	.389
65-3	.0193	.0192	.0188	.371
65-4	.0280	.0278	.0273	.460
65-5	.0219	.0218	.0214	.402
65-6	.0081	.0081	.0079	.432
65-7	.0519	.0515	.0506	.422
65-8	.0396	.0393	.0386	.460
65-9	.0314	.0311	.0306	.451
66-1	.0338	.0335	.0329	.415
66-2	.0748	.0742	.0728	.443
66-3	.0422	.0419	.0411	.431
66-4	.0134	.0133	.0131	.405
66-5	.0367	.0364	.0357	.424
66-6	.0367	.0364	.0357	.424
66-7	.0271	.0268	.0263	.453
66-8	.0590	.0586	.0575	.402
66-9	.1865	.1850	.1816	.498
67-1	.0133	.0132	.0130	.432
67-2	.0133	.0132	.0130	.432
67-4	.0349	.0346	.0340	.408
67-5	.1102	.1093	.1073	.452
67-6	.0476	.0472	.0463	.395
67-7	5.48*	5.44*	5.34*	.490
67-8	3.09	3.07	3.01	.483
67-9	.0258	.0256	.0252	.422
68-1	.1103	.1095	.1075	.421
68-2	.0717	.0712	.0699	.500
68-3	.5560	.5516	.5416	.257
68-4	.0524	.0519	.0510	.376
68-9	.2168	.2151	.2112	.470
69-2	.1729	.1715	.1684	.366
69-3	.8799	.8729	.8571	.267
69-4	.1333	.1323	.1299	.406
69-5	.1333	.1323	.1299	.406
69-7	.2476	.2457	.2412	.369
69-8	.0554	.0550	.0540	.463
69-9	.0196	.0195	.0191	.397
71-1	.0140	.0139	.0136	.326
71-2	2.46*	2.44*	2.39*	.475
71-3	.0320	.0318	.0312	.444
71-4	.0043	.0042	.0041	.364
71-5	.0313	.0311	.0305	.486
71-6	.0631	.0626	.0615	.428
71-7	.0947	.0940	.0923	.423
71-8	.2157	.2139	.2101	.413
71-9	.4843	.4805	.4718	.414
72-1	.0320	.0318	.0312	.444
72-2	.0133	.0132	.0130	.287

*Daily expected loss rate

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-885, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-885, filed 11/27/78, effective 1/1/79, effective 1/1/80. Order 77-27, § 296-17-885, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-885, filed 12/1/77; Order 77-10, § 296-17-885, filed 5/31/77; Order 76-36, § 296-17-885, filed 11/30/76; Order 76-18, § 296-17-885, filed 5/28/76, effective 7/1/76; Order 75-38, § 296-17-885, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-885, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-885, filed 11/9/73, effective 1/1/74.]

WAC 296-17-890 Table IV.

Maximum experience modifications for firms with no compensable accidents:

Expected Loss Range	Maximum Experience Modification
1–593	.90
594–634	.89
635–679	.88
680–727	.87
728–780	.86
781–837	.85
838–899	.84
900–967	.83
968–1,041	.82
1,042–1,121	.81
1,122–1,208	.80
1,209–1,303	.79
1,304–1,408	.78
1,409–1,522	.77
1,513–1,648	.76
1,649 and over	.75

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-890, filed 11/30/79, effective 1/1/80.]

WAC 296-17-895 Industrial insurance accident fund base rates and medical aid rates by class of industry. Industrial insurance accident fund base rates and medical aid rates by class of industry shall be as set forth below.

Class	Rates Effective January 1, 1980: Accident Fund Base Rate	Rates Effective January 1, 1980: Medical Aid Fund Rate
1–1	.4598	.2011
1–2	.4977	.1645
1–3	.5665	.2399
1–4	.4514	.1733
1–5	.4221	.1896
1–6	.6122	.2413
1–7	.3863	.1708
1–8	.5073	.1808
1–9	.6110	.2383
2–1	1.2168	.4161
2–2	.9489	.3289
3–1	.1965	.1287
3–2	.6186	.2225
3–6	.2982	.1614
3–7	.2113	.1304
4–1	.8165	.2727
4–2	.8165	.2727
4–3	.5599	.2627
5–2	.4197	.1568
5–3	.2396	.1779
5–4	.5177	.2360
5–5	.5126	.2639
5–8	.5983	.2939
6–1	.1571	.1126
6–2	.1949	.1124
6–3	.2477	.1464
6–4	.5277	.2900
6–6	.1223	.0838
6–7	.1341	.0688
7–1	.4216	.1460
8–3	.1806	.1058
8–4	.3862	.1951
9–1	.7336	.1851
9–2	.2764	.1695
10–2	.6898	.3179
10–3	.3322	.1558
11–1	.2826	.1331
11–2	.4379	.1924
11–3	.1560	.1190
13–1	.1537	.0960
13–3	.0866	.0461
13–4	.0055	.0055
14–1	.2644	.1424
14–3	.1904	.0631
14–4	.1904	.0631
15–1	.1584	.0951
15–7	.1425	.0785
17–1	.8373	.3391
17–2	.8373	.3391
17–3	.3906	.2011
17–4	.1823	.1278
18–1	.3260	.1541
20–2	.1683	.0965
20–3	.2023	.1061
20–4	.1879	.1565
20–5	.1352	.0996
20–6	.2300	.1221
20–7	.1640	.0969
20–8	.1381	.0787
21–1	.1703	.1297
21–2	.2023	.1061
21–4	.1092	.0826
22–1	.1171	.0540
22–2	.1195	.0710
24–1	.2340	.1374
29–3	.2437	.1681
29–4	.2750	.1568
29–6	.2437	.1681
31–1	.2651	.1449
31–2	.2056	.1013
31–3	.2056	.1013
31–4	.2651	.1449
31–5	.3823	.1784

Class	Rates Effective January 1, 1980 Accident Fund Base Rate	Medical Aid Fund Rate
33–1	.2410	.1680
33–2	.2585	.1677
33–3	.1566	.1088
33–9	.1362	.0966
34–1	.1917	.1028
34–2	.2198	.1503
34–3	.0361	.0211
34–4	.1946	.1294
34–5	.0429	.0238
34–6	.0900	.0749
34–7	.1101	.0716
34–8	.0526	.0376
34–9	.0900	.0749
35–1	.1591	.1070
35–3	.1198	.0940
35–6	.3458	.1471
35–8	.1428	.1404
36–1	.1946	.1294
36–2	.0430	.0326
36–3	.1749	.1201
36–4	.3494	.1955
36–5	.1268	.0811
36–6	.2228	.1625
37–1	.0998	.0527
37–2	.2153	.1244
37–3	.0998	.0527
37–7	.1072	.0641
37–8	.1006	.0626
38–1	.1006	.0626
38–2	.0708	.0471
38–3	.0708	.0471
38–4	.0708	.0471
38–5	.0708	.0471
38–6	.0708	.0471
38–8	.0708	.0471
38–9	.0708	.0471
39–1	.1613	.0881
39–2	.2638	.1281
39–3	.3604	.2147
39–4	.2638	.1281
39–5	.0719	.0574
39–6	.1613	.0881
40–2	.2666	.1098
41–1	.0436	.0388
41–2	.0430	.0326
41–3	.0601	.0508
41–4	.0436	.0388
41–5	.0436	.0388
41–6	.0430	.0326
41–7	.0347	.0265
41–8	.0436	.0388
41–9	.0436	.0388
42–1	.3178	.1717
43–1	.3073	.2021
43–2	.2858	.1602
43–3	.3178	.1531
43–4	.3438	.1848
43–5	.6737	.2458
44–1	.2279	.0941
44–4	.2023	.1061
45–1	.0585	.0390
45–2	.0292	.0137
45–3	.0823	.0439
45–4	.0303	.0259
46–1	.1163	.1638
48–2	.1099	.0627
48–3	.1983	.1502
48–4	.1545	.1106
48–5	.1240	.0883
48–6	.0248	.0191
48–7	.5126	.2639
48–8	.1455	.1031
48–9	.0871	.0688
49–1	.0319	.0231
49–2	.0768	.0386
49–3	.0319	.0231
49–4	.0072	.0052
49–5	.1173	.0709
49–6	.0239	.0172
49–7	.0544	.0306
49–8	.1284	.0625
49–9	.1284	.0625
50–1	1.1620	.4813
50–2	.1887	.1374
50–3	.7637	.3163
51–1	.2522	.1616
51–2	.4221	.2754
51–3	.4221	.2754
51–4	.2198	.1503
51–5	.2198	.1503
51–6	.2198	.1503
51–7	.2124	.1392
51–8	.2198	.1503
51–9	.1619	.1077
52–1	.2070	.1250
52–2	.2198	.1503
52–3	.2198	.1503
52–4	.3360	.1382
52–5	.2198	.1503
52–6	.1734	.1038
52–7	.0649	.0458
53–1	.0072	.0052
53–5	.0124	.0087
53–6	.0129	.0089
53–7	.0768	.0386
61–3	.0164	.0155
61–4	.1708	.0846
61–5	.0827	.0555

Class	Rates Effective January 1, 1980 Accident Fund Base Rate	Medical Aid Fund Rate
61-7	.0676	.0437
61-8	.1531	.1020
61-9	.0182	.0118
62-1	.0706	.0461
62-2	.2292	.1060
62-3	.0539	.0303
62-4	.0672	.0484
62-5	.0672	.0484
62-6	.0672	.0484
62-7	.3359	.3383
62-8	.1819	.0837
62-9	.0754	.0763
63-1	.0743	.0292
63-2	.0953	.0412
63-3	.0335	.0155
63-4	.0482	.0352
63-5	.0201	.0190
63-6	.0836	.0603
63-8	.0231	.0104
63-9	.0416	.0372
64-2	.1229	.0627
64-3	.0605	.0423
64-4	.0227	.0168
64-5	.1362	.1006
64-6	.0323	.0277
64-7	.0586	.0569
64-8	.1556	.1051
64-9	.1767	.1242
65-1	.0197	.0131
65-2	.0069	.0048
65-3	.0464	.0162
65-4	.0672	.0640
65-5	.0526	.0389
65-6	.0195	.0116
65-7	.1246	.0760
65-8	.0950	.0585
65-9	.0753	.0561
66-1	.0810	.0567
66-2	.1794	.0844
66-3	.1013	.0568
66-4	.0322	.0201
66-5	.0880	.0470
66-7	.0649	.0458
66-8	.1416	.0617
66-9	.4474	.3473
67-4	.0837	.0617
67-5	.2644	.1922
67-6	.1141	.0624
67-7	13.15*	8.86*
67-8	7.4190	2.6737
67-9	.0620	.0534
68-1	.2647	.1553
68-2	.1721	.1292
68-3	1.3340	.5937
68-4	.1256	.0722
68-9	.5201	.8696
69-1	–	.0274
69-2	.4148	.1324
69-3	2.1111	.9566
69-4	.3199	.1536
69-5	.3199	.1536
69-6	–	.1751
69-7	.5941	.1828
69-8	.1330	.0672
69-9	.0471	.0332
71-1	.0335	.0155
71-2	5.89*	8.86*
71-3	.0768	.0386
71-4	.0102	.0072
71-5	.0752	.0637
71-6	.1515	.0969
71-7	.2273	.1292
71-8	.5174	.2448
71-9	1.1620	.4813
72-1	.0768	.0386
72-2	.0319	.0156

*Daily rate. The daily rate shall be paid in full on any person for any calendar day in which any duties are performed that are incidental to the profession of the worker.

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-895, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-895, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-895, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-895, filed 12/1/77; Order 77-10, § 296-17-895, filed 5/31/77; Order 76-36, § 296-17-895, filed 11/30/76; Order 76-18, § 296-17-895, filed 5/28/76, effective 7/1/76; Order 75-38, § 296-17-895, filed 11/24/75, effective 1/1/76; Order 75-28, § 296-17-895, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-895, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-895, filed 11/9/73, effective 1/1/74.]

WAC 296-17-920 Assessment for supplemental pension fund. The amount of one cent shall be retained by each employer from the earnings of each of his workmen for each hour or fraction thereof the workman is employed. Provided that in classifications 67-7 and 71-2, the employer shall retain eight cents per man-day from each of his workmen. The amount of money so retained from the employee shall be matched in an equal amount by each employer, except as otherwise provided in these rules, all such moneys shall be remitted to the department on or before the last day of January, April,

July and October of each year for the preceding calendar quarter, provided self-insured employers shall remit to the department as provided under WAC 296-15-060. All such moneys shall be deposited in the supplemental pension fund. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-920, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-920, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-920, filed 11/30/77, effective 1/1/78; Order 77-10, § 296-17-920, filed 5/31/77; Order 76-36, § 296-17-920, filed 11/30/76; Order 75-38, § 296-17-920, filed 11/24/75, effective 1/1/76; Order 75-28, § 296-17-920, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-920, filed 11/27/74, effective 1/1/75; Order 74-6, § 296-17-920, filed 1/23/74.]

Chapter 296-20 WAC
MEDICAL AID RULES

WAC

WAC 296-20-01501 Physician's assistant rules. (1) Physicians' assistants may perform only those medical services in industrial injury cases, for which the physician's assistant is trained and licensed, under the control and supervision of a licensed physician. Such control and supervision shall not be construed to require the personal presence of the supervising physician.

(2) Physicians' assistants in remote areas may perform those medical services which are within the scope of their physician's assistant license for industrial injury cases within the limitations of subsections (3), (4), (5), and (6) below.

(3) Advance approval must be obtained from the department to treat industrial injury cases. To be eligible to treat industrial injuries, the physician's assistant must:

(a) Provide the department with a copy of his license indicating whether it is Type A, B, or C.

(b) Provide the name and address and specialty of the supervising physician.

(c) Provide the department with the evidence of a reliable and rapid system of communication with the supervising physician.

(4) Those physicians' assistants who hold Type A licenses may: Collect historical and physical data, organize the data, and present such data to the supervising physician who can then determine appropriate diagnostic or therapeutic measures. The physician assistant may assist the physician by performing diagnostic and therapeutic procedures and coordinating the roles of other more technical assistants. The physician's assistant may under certain circumstances and rules defined by the Professional License Division, perform medical services without the immediate surveillance of the physician. The supervising physician may bill for physician assistant service at eighty percent of procedure value as using applicable modifier code-01 or -04.

(5) A physician assistant holding Type B license may: Collect and organize data; perform appropriate diagnostic or therapeutic measures; and perform independent action only within the specialty field of the supervising physician. The supervising physician may bill for physician assistant services at seventy-five percent of procedure value using applicable modifier code -02 or -05.

(6) A physician assistant holding Type C license may: Perform a specific function within the specialty field of the supervising physician or physicians, only. The supervising physician may bill for physician assistant services at seventy percent of procedure value using applicable modifier code -03 or -06. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-01501, filed 11/30/79, effective 1/1/80.]

WAC 296-20-03001 Treatment requiring authorization--All cases. (1) Office calls in excess of the first ten.

(2) Elective major surgery (see WAC 296-20-045).

(3) X-ray and radium therapy.

(4) Specific diagnostic service—Codes 92000-95980.

(5) Myelogram and discogram, unless carried out within thirty days from the date of injury.

(6) Physical therapy. Advance authorization on an individual basis is required in remote isolated areas where there is no Registered Physical Therapist or Physical Therapist Assistant serving under the direction of a Registered Physical Therapist, and physical therapy is to be given in a physician's office, hospital or nurse practitioner clinic by other than a Registered Physical Therapist. USE OF DIAPULSE OR SIMILAR MACHINE ON PERSONS UNDER THE JURISDICTION OF THE DEPARTMENT OR SELF-INSURER IS NOT AUTHORIZED.

(7) Diagnostic or therapeutic nerve blocks subsequent to the first thirty days following injury, or in excess of once weekly.

(8) Intra-articular, para-articular and parenteral injections subsequent to the first thirty days following injury, or in excess of once weekly. INJECTION OF VITAMIN B-12 WILL BE AUTHORIZED ONLY FOR TREATMENT OF PERNICIOUS ANEMIA.

(9) Prior approval is required for injections of all fibrosing or sclerosing agents. The fibrosing or sclerosing agents to be employed, the reason for treatment and the areas to be treated must be included on the request for authorization.

(10) Treatment measures of an unusual, controversial, complicated, obsolete or experimental nature (see WAC

296-20-045 and 296-20-131) must be approved in advance by the department. Requests for approval of such treatment must contain a description of the treatment, the reason for its employment, its benefits and the expected results.

(11) The long term prescription of medication under the specific conditions and circumstances in (a) and (b) are considered corrective therapy rather than palliative treatment and approval in advance must be obtained.

(a) Nonsteroidal antiinflammatory agents for the treatment of degenerative joint conditions aggravated by occupational injury.

(b) Anticonvulsive agents for the treatment of seizure disorders caused by trauma.

(12) Injections of anesthetic and/or antiinflammatory agents into the vertabral facet joints will be authorized to qualified specialists in orthopedics, neurology, and anesthesia, under the following conditions:

(a) Rationale for procedure, treatment plan, and request for authorization must be presented in writing to the supervisor of medical services.

(b) Procedure must be performed in an accredited hospital under radiographic control.

(c) Not more than four facet injection procedures will be authorized in any one patient.

(d) Payment for services will be contingent upon receipt of satisfactory reports from the physician in regard to claimant's response to the procedure. Such reports are to be directed to the attention of the medical consultant to the department. [Statutory Authority: RCW 51.04-.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-03001, filed 11/30/79, effective 1/1/80; Order 76-34, § 296-20-03001, filed 11/24/76, effective 1/1/77.]

WAC 296-20-045 Procedures requiring consultation. In the event of complication, controversy, or dispute over the medical aspects of any claim, the department will not authorize treatment until the attending physician has obtained concurring opinion from a qualified physician with experience and expertise on the subject. This consultation must be arranged in accordance with WAC 296-20-051.

Consultation is also required in the following cases:

(1) All elective neck and back surgery.

(2) All repeat elective major surgery, except inguinal hernia.

(3) All elective major surgery on a patient with serious medical, emotional or social problems which are likely to complicate recovery.

(4) All procedures of a controversial nature or type not in common use for the specific condition.

(5) Surgical cases where there are complications or unfavorable circumstances such as age, preexisting conditions or interference with occupational requirements, etc. [Statutory Authority: RCW 51.04.030 and 51.16-.035. 79-12-086 (Order 79-18), § 296-20-045, filed 11/30/79, effective 1/1/80; Order 71-6, § 296-20-045, filed 6/1/71; Order 70-12, § 296-20-045, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-045, filed 11/27/68, effective 1/1/69.]

WAC 296-20-12501 Physician assistant billing procedure. Billing for physician assistant services can be made only by the supervising physician. Payment will be made directly to the supervising physician. All physician assistant services must be identified by using physician assistant modifiers.

(1) Bills must be itemized on department or self-insurer forms, as the case may be, specifying: The date, type of service and the charges for each service.

(2) The bill form must be completed in detail to include the claim number. While the name of the physician's assistant rendering service must be included on the bill, all bills must be submitted under the supervising physician account number. Bills will be accepted when signed by other than the practitioner rendering services. When bills are prepared by someone else, the responsibility for the completeness and accuracy of the description of services and charges rests with the supervising physician.

(3) For a bill to be considered for payment, it must be received in the department or by the self-insurer within ninety days from the date each specific treatment and/or service was rendered or performed. Whenever possible, bills should be submitted monthly.

(4) Bills cannot be paid for services rendered while a claim is closed.

(5) The department or self-insurer may reject bills for services rendered in violation of medical aid rules. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-12501, filed 11/30/79, effective 1/1/80.]

WAC 296-20-12502 Physician assistant modifiers. As the scope of physician assistant treatment covers a broad area of treatment procedures, the following modifier codes are to be used after the applicable procedure code.

-01 Physician Assistant, Type A License, if performing procedure without presence of supervising physician. Bill 80% of Procedure Value.

-02 Physician Assistant, Type B License, if performing procedure without presence of supervising physician. Bill 75% of Procedure Value.

-03 Physician Assistant, Type C License, if performing procedure without presence of supervising physician. Bill 70% of Procedure Value.

-04 Physician Assistant, Type A License, if performing procedure in presence of supervising physician. Bill 80% of Procedure Value.

-05 Physician Assistant, Type B License, if performing procedure in presence of supervising physician. Bill 75% of Procedure Value.

-06 Physician Assistant, Type C License, if performing procedure in presence of supervising physician. Bill 75% of Procedure Value.

-99 Multiple modifiers: Under certain circumstances, multiple modifier may be applicable. One or more such modifiers may be taken from another section, as applicable. For example, a physician assistant might be serving as a surgical assistant (modifier -80), assisting in performing a multiple or bilateral procedure (modifier

–50). In such cases, he would add this modifier (–99) to the procedure code and briefly indicate the circumstances. [Statutory Authority: RCW 51.04.030 and 51-.16.035. 79-12-086 (Order 79-18), § 296-20-12502, filed 11/30/79, effective 1/1/80.]

WAC 296-20-135 Conversion factor table--Medicine, chiropractic, physical therapy, drugless therapeutics and nurse practitioner sections. This table is a conversion of fee schedule unit values to fees in dollar amounts at $0.88 per unit. This conversion factor is to be applied to the medicine section of the fee schedule, the chiropractic, physical therapy, drugless therapeutic and nurse practitioner sections.

Unit Value	@$0.88	Unit Value	@$0.88	Unit Value	@$0.88
.1	.09	5.0	4.40	9.9	8.71
.2	.18	5.1	4.49	10.0	8.80
.3	.26	5.2	4.58	10.5	9.24
.4	.35	5.3	4.66	11.0	9.68
.5	.44	5.4	4.75	11.5	10.12
.6	.53	5.5	4.84	12.0	10.56
.7	.62	5.6	4.93	12.5	11.00
.8	.70	5.7	5.02	13.0	11.44
.9	.79	5.8	5.10	13.5	11.88
1.0	.88	5.9	5.19	14.0	12.32
1.1	.97	6.0	5.28	14.5	12.76
1.2	1.06	6.1	5.37	15.0	13.20
1.3	1.14	6.2	5.46	16.0	14.08
1.4	1.23	6.3	5.54	17.0	14.96
1.5	1.32	6.4	5.63	18.0	15.84
1.6	1.41	6.5	5.72	19.0	16.72
1.7	1.50	6.6	5.81	20.0	17.60
1.8	1.58	6.7	5.90	21.0	18.48
1.9	1.67	6.8	5.98	22.0	19.36
2.0	1.76	6.9	6.07	23.0	20.24
2.1	1.85	7.0	6.16	24.0	21.12
2.2	1.94	7.1	6.25	25.0	22.00
2.3	2.02	7.2	6.34	30.0	26.40
2.4	2.11	7.3	6.42	35.0	30.80
2.5	2.20	7.4	6.51	40.0	35.20
2.6	2.29	7.5	6.60	45.0	39.60
2.7	2.38	7.6	6.69	50.0	44.00
2.8	2.46	7.7	6.78	55.0	48.40
2.9	2.55	7.8	6.86	60.0	52.80
3.0	2.64	7.9	6.95	65.0	57.20
3.1	2.73	8.0	7.04	70.0	61.60
3.2	2.82	8.1	7.13	75.0	66.00
3.3	2.90	8.2	7.22	80.0	70.40
3.4	2.99	8.3	7.30	85.0	74.80
3.5	3.08	8.4	7.39	90.0	79.20
3.6	3.17	8.5	7.48	95.0	83.60
3.7	3.26	8.6	7.57	100.0	88.00
3.8	3.34	8.7	7.66	105.0	92.40
3.9	3.43	8.8	7.74	110.0	96.80
4.0	3.52	8.9	7.83	115.0	101.20
4.1	3.61	9.0	7.92	120.0	105.60
4.2	3.70	9.1	8.01	125.0	110.00
4.3	3.78	9.2	8.10	130.0	114.40
4.4	3.87	9.3	8.18	140.0	123.20
4.5	3.96	9.4	8.27	150.0	132.00
4.6	4.05	9.5	8.36	160.0	140.80
4.7	4.14	9.6	8.45	170.0	149.60
4.8	4.22	9.7	8.54	180.0	158.40
4.9	4.31	9.8	8.62	190.0	167.20
				200.0	176.00

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-135, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-135, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-135, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-135, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-135, filed 1/30/74; Order 71-6, § 296-20-135, filed 6/1/71; Order 68-7, § 296-20-135, filed 11/27/68, effective 1/1/69.]

WAC 296-20-140 Conversion factor table--Anesthesia. This table is a conversion of fee schedule unit values to fees in dollar amounts at $12.30 per unit. This conversion factor is to be applied to the anesthesia section of the fee schedule.

Unit Value	@$12.30	Unit Value	@$12.30	Unit Value	@$12.30
.1	1.23	5.0	61.50	9.9	121.77
.2	2.46	5.1	62.73	10.0	123.00
.3	3.69	5.2	63.96	10.5	129.15
.4	4.92	5.3	65.19	11.0	135.30
.5	6.15	5.4	66.42	11.5	141.45
.6	7.38	5.5	67.65	12.0	147.60
.7	8.61	5.6	68.88	12.5	153.75
.8	9.84	5.7	70.11	13.0	159.90
.9	11.07	5.8	71.34	13.5	166.05
1.0	12.30	5.9	72.57	14.0	172.20
1.1	13.53	6.0	73.80	14.5	178.35
1.2	14.76	6.1	75.03	15.0	184.50
1.3	15.99	6.2	76.26	16.0	196.80
1.4	17.22	6.3	77.49	17.0	209.10
1.5	18.45	6.4	78.72	18.0	221.40
1.6	19.68	6.5	79.95	19.0	233.70
1.7	20.91	6.6	81.18	20.0	246.00
1.8	22.14	6.7	82.41	21.0	258.30
1.9	23.37	6.8	83.64	22.0	270.60
2.0	24.60	6.9	84.87	23.0	282.90
2.1	25.83	7.0	86.10	24.0	295.20
2.2	27.06	7.1	87.33	25.0	307.50
2.3	28.29	7.2	88.56	30.0	369.00
2.4	29.52	7.3	89.79	35.0	430.50
2.5	30.75	7.4	91.02	40.0	492.00
2.6	31.98	7.5	92.25	45.0	553.50
2.7	33.21	7.6	93.48	50.0	615.00
2.8	34.44	7.7	94.71	55.0	676.50
2.9	35.67	7.8	95.94	60.0	738.00
3.0	36.90	7.9	97.17	65.0	799.50
3.1	38.13	8.0	98.40	70.0	861.00
3.2	39.36	8.1	99.63	75.0	922.50
3.3	40.59	8.2	100.86	80.0	984.00
3.4	41.82	8.3	102.09	85.0	1,045.50
3.5	43.05	8.4	103.32	90.0	1,107.00
3.6	44.28	8.5	104.55	95.0	1,168.50
3.7	45.51	8.6	105.78	100.0	1,230.00
3.8	46.74	8.7	107.01	105.0	1,291.50
3.9	47.97	8.8	108.24	110.0	1,353.00
4.0	49.20	8.9	109.47	115.0	1,414.50
4.1	50.43	9.0	110.70	120.0	1,476.00
4.2	51.66	9.1	111.93	125.0	1,537.50
4.3	52.89	9.2	113.16	130.0	1,599.00
4.4	54.12	9.3	114.39	140.0	1,722.00
4.5	55.35	9.4	115.62	150.0	1,845.00
4.6	56.58	9.5	116.85	160.0	1,968.00
4.7	57.81	9.6	118.08	170.0	2,091.00
4.8	59.04	9.7	119.31	180.0	2,214.00
4.9	60.27	9.8	120.54	190.0	2,337.00
				200.0	2,460.00

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-140, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-140, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-140, filed 11/24/76, effective 1/1/77; Order

75-39, § 296-20-140, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-20-140, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-20-140, filed 1/30/74.]

WAC 296-20-145 Conversion factor table--Surgery. This table is a conversion of fee schedule unit values to fees in dollar amounts at $42.60 per unit. This conversion factor applies only to the surgery section of the fee schedule.

Unit Value	@$42.60	Unit Value	@$42.60	Unit Value	@$42.60
.1	4.26	5.0	213.00	9.9	421.74
.2	8.52	5.1	217.26	10.0	426.00
.3	12.78	5.2	221.52	10.5	447.30
.4	17.04	5.3	225.78	11.0	468.60
.5	21.30	5.4	230.04	11.5	489.90
.6	25.56	5.5	234.30	12.0	511.20
.7	29.82	5.6	238.56	12.5	532.50
.8	34.08	5.7	242.82	13.0	533.80
.9	38.34	5.8	247.08	13.5	575.10
1.0	42.60	5.9	251.34	14.0	596.40
1.1	46.86	6.0	255.60	14.5	617.70
1.2	51.12	6.1	259.86	15.0	639.00
1.3	55.38	6.2	264.12	16.0	681.60
1.4	59.64	6.3	268.38	17.0	724.20
1.5	63.90	6.4	272.64	18.0	766.80
1.6	68.16	6.5	276.90	19.0	809.40
1.7	72.42	6.6	281.16	20.0	852.00
1.8	76.68	6.7	285.42	21.0	894.60
1.9	80.94	6.8	289.68	22.0	937.20
2.0	85.20	6.9	293.94	23.0	979.80
2.1	89.46	7.0	298.20	24.0	1,022.40
2.2	93.72	7.1	302.46	25.0	1,065.00
2.3	97.98	7.2	306.72	30.0	1,278.00
2.4	102.24	7.3	310.98	35.0	1,491.00
2.5	106.50	7.4	315.24	40.0	1,704.00
2.6	110.76	7.5	319.50	45.0	1,917.00
2.7	115.02	7.6	323.76	50.0	2,130.00
2.8	119.28	7.7	328.02	55.0	2,343.00
2.9	123.54	7.8	332.28	60.0	2,556.00
3.0	127.80	7.9	336.54	65.0	2,769.00
3.1	132.06	8.0	340.80	70.0	2,982.00
3.2	136.32	8.1	345.06	75.0	3,195.00
3.3	140.58	8.2	349.32	80.0	3,408.00
3.4	144.84	8.3	353.58	85.0	3,621.00
3.5	149.10	8.4	357.84	90.0	3,834.00
3.6	153.36	8.5	362.10	95.0	4,047.00
3.7	157.62	8.6	366.36	100.0	4,260.00
3.8	161.88	8.7	370.62	105.0	4,473.00
3.9	166.14	8.8	374.88	110.0	4,686.00
4.0	170.40	8.9	379.14	115.0	4,899.00
4.1	174.66	9.0	383.40	120.0	5,112.00
4.2	178.92	9.1	387.66	125.0	5,325.00
4.3	183.18	9.2	391.92	130.0	5,538.00
4.4	187.44	9.3	396.18	140.0	5,964.00
4.5	191.70	9.4	400.44	150.0	6,390.00
4.6	195.96	9.5	404.70	160.0	6,816.00
4.7	200.22	9.6	408.96	170.0	7,242.00
4.8	204.48	9.7	413.22	180.0	7,668.00
4.9	208.74	9.8	417.48	190.0	8,094.00
				200.0	8,520.00

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-145, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-145, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-145, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-145, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-145, filed 1/30/74.]

WAC 296-20-150 Conversion factor table--Radiology. This table is a conversion of the fee schedule unit values to fees in dollar amounts at $4.35 per unit. This conversion factor is to be applied only to the radiology section of the fee schedule.

Unit Value	@$4.35	Unit Value	@$4.35	Unit Value	@$4.35
.1	.44	5.0	21.75	9.9	43.07
.2	.87	5.1	22.19	10.0	43.50
.3	1.31	5.2	22.62	10.5	45.68
.4	1.74	5.3	23.06	11.0	47.85
.5	2.18	5.4	23.49	11.5	50.03
.6	2.61	5.5	23.93	12.0	52.20
.7	3.05	5.6	24.36	12.5	54.38
.8	3.48	5.7	24.80	13.0	56.55
.9	3.92	5.8	25.23	13.5	58.73
1.0	4.35	5.9	25.67	14.0	60.90
1.1	4.79	6.0	26.10	14.5	63.08
1.2	5.22	6.1	26.54	15.0	65.25
1.3	5.66	6.2	26.97	16.0	69.60
1.4	6.09	6.3	27.41	17.0	73.95
1.5	6.53	6.4	27.84	18.0	78.30
1.6	6.96	6.5	28.28	19.0	82.65
1.7	7.40	6.6	28.71	20.0	87.00
1.8	7.83	6.7	29.15	21.0	91.35
1.9	8.27	6.8	29.58	22.0	95.70
2.0	8.70	6.9	30.02	23.0	100.05
2.1	9.14	7.0	30.45	24.0	104.40
2.2	9.57	7.1	30.89	25.0	108.75
2.3	10.01	7.2	31.32	30.0	130.50
2.4	10.44	7.3	31.76	35.0	152.25
2.5	10.88	7.4	32.19	40.0	174.00
2.6	11.31	7.5	32.63	45.0	195.75
2.7	11.75	7.6	33.06	50.0	217.50
2.8	12.18	7.7	33.50	55.0	239.25
2.9	12.62	7.8	33.93	60.0	261.00
3.0	13.05	7.9	34.37	65.0	282.75
3.1	13.49	8.0	34.80	70.0	304.50
3.2	13.92	8.1	35.24	75.0	326.25
3.3	14.36	8.2	35.67	80.0	348.00
3.4	14.79	8.3	36.11	85.0	369.75
3.5	15.23	8.4	36.54	90.0	391.50
3.6	15.66	8.5	36.98	95.0	413.25
3.7	16.10	8.6	37.41	100.0	435.00
3.8	16.53	8.7	37.85	105.0	456.75
3.9	16.97	8.8	38.28	110.0	478.50
4.0	17.40	8.9	38.72	115.0	500.25
4.1	17.84	9.0	39.15	120.0	522.00
4.2	18.27	9.1	39.59	125.0	543.75
4.3	18.71	9.2	40.02	130.0	565.50
4.4	19.14	9.3	40.46	140.0	609.00
4.5	19.58	9.4	40.89	150.0	652.50
4.6	20.01	9.5	41.33	160.0	696.00
4.7	20.45	9.6	41.76	170.0	739.50
4.8	20.88	9.7	42.20	180.0	783.00
4.9	21.32	9.8	42.63	190.0	826.50
				200.0	870.00

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-150, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-150, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-150, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-150, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-150, filed 1/30/74.]

WAC 296-20-155 Conversion factor table--Pathology. This table is a conversion of the fee schedule unit values to fees in dollar amounts at $0.41 per unit.

This conversion factor is to be applied only to the pathology section of the fee section schedule.

Unit Value	@$.41	Unit Value	@$.41	Unit Value	@$.41
.1	.04	5.0	2.05	9.9	4.06
.2	.08	5.1	2.09	10.0	4.10
.3	.12	5.2	2.13	10.5	4.31
.4	.16	5.3	2.17	11.0	4.51
.5	.21	5.4	2.21	11.5	4.72
.6	.25	5.5	2.26	12.0	4.92
.7	.29	5.6	2.30	12.5	5.13
.8	.33	5.7	2.34	13.0	5.33
.9	.37	5.8	2.38	13.5	5.54
1.0	.41	5.9	2.42	14.0	5.74
1.1	.45	6.0	2.46	14.5	5.95
1.2	.49	6.1	2.50	15.0	6.15
1.3	.53	6.2	2.54	16.0	6.56
1.4	.57	6.3	2.58	17.0	6.97
1.5	.62	6.4	2.62	18.0	7.38
1.6	.66	6.5	2.67	19.0	7.79
1.7	.70	6.6	2.71	20.0	8.20
1.8	.74	6.7	2.75	21.0	8.61
1.9	.78	6.8	2.79	22.0	9.02
2.0	.82	6.9	2.83	23.0	9.43
2.1	.86	7.0	2.87	24.0	9.84
2.2	.90	7.1	2.91	25.0	10.25
2.3	.94	7.2	2.95	30.0	12.30
2.4	.98	7.3	2.99	35.0	14.35
2.5	1.03	7.4	3.03	40.0	16.40
2.6	1.07	7.5	3.08	45.0	18.45
2.7	1.11	7.6	3.12	50.0	20.50
2.8	1.15	7.7	3.16	55.0	22.55
2.9	1.19	7.8	3.20	60.0	24.60
3.0	1.23	7.9	3.24	65.0	26.65
3.1	1.27	8.0	3.28	70.0	28.70
3.2	1.31	8.1	3.32	75.0	30.75
3.3	1.35	8.2	3.36	80.0	32.80
3.4	1.39	8.3	3.40	85.0	34.85
3.5	1.44	8.4	3.44	90.0	36.90
3.6	1.48	8.5	3.49	95.0	38.95
3.7	1.52	8.6	3.53	100.0	41.00
3.8	1.56	8.7	3.57	105.0	43.05
3.9	1.60	8.8	3.61	110.0	45.10
4.0	1.64	8.9	3.65	115.0	47.15
4.1	1.68	9.0	3.69	120.0	49.20
4.2	1.72	9.1	3.73	125.0	51.25
4.3	1.76	9.2	3.77	130.0	53.30
4.4	1.80	9.3	3.81	140.0	57.40
4.5	1.85	9.4	3.85	150.0	61.50
4.6	1.89	9.5	3.90	160.0	65.60
4.7	1.93	9.6	3.94	170.0	69.70
4.8	1.97	9.7	3.98	180.0	73.80
4.9	2.01	9.8	4.02	190.0	77.90
				200.0	82.00

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-155, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-155, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-155, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-20-155, filed 1/30/74.]

WAC 296-20-220 Special rules for evaluation of permanent bodily impairment. (1) Evaluations of permanent bodily impairment using categories require uniformity in procedure and terminology. The following rules have been enacted to produce this uniformity and shall apply to all evaluations of permanent impairment of an unspecified nature.

(a) Gradations of relative severity shall be expressed by the words "minimal", "mild", "moderate" and "marked" in an ascending scale. "Minimal" shall describe deviations from normal responses which are not medically significant. "Mild", "moderate" and "marked" shall describe ranges of medically significant deviations from normal responses. "Mild" shall describe the least severe third. "Moderate" shall describe the middle third. "Marked" shall describe the most severe third.

(b) "Permanent" describes those conditions which are fixed, lasting and stable, and from which within the limits of medical probability, further recovery is not expected.

(c) "Impairment" means a loss of physical or mental function.

(d) "Total bodily impairment", as used in these rules, is the loss of physical or mental function which is essentially complete short of death.

(e) The examining physician shall not assign a percentage figure for permanent bodily impairment described in the categories established herein.

(f) The method of evaluating impairment levels is by selection of the appropriate level of impairment. These descriptive levels are called "categories". Assessments of the level of impairment are to be made by comparing the condition of the injured workman with the conditions described in the categories and selecting the most appropriate category.

These rules and categories for various bodily areas and systems provide a comprehensive system for the measurement of disabling conditions which are not already provided for in the list of specified permanent partial disabilities in RCW 51.32.080(1). Disabilities resulting from loss of central visual acuity, loss of an eye by enucleation, loss of hearing, amputation or loss of function of the extremities will continue to be evaluated as elsewhere provided in RCW 51.32.080.

The categories have been classified in percentages in reasonable proportion to total bodily impairment for the purpose of determining the proper award. Provision has been made for correctly weighing the overall impairment due to particular injuries or occupational disease in cases in which there are preexisting impairments.

(g) The categories of the various bodily areas and systems are listed in the order of increasing impairment except as otherwise specified. Where several categories are given for the evaluation of the extent of permanent bodily impairment, the impairments in the higher numbered categories, unless otherwise specified, include the impairments in the lesser numbered categories. No category for a condition due to an injury shall be selected unless that condition is permanent as defined by these rules.

The examining physician shall select the one category which most accurately indicates the overall degree of permanent impairment unless otherwise instructed. Where there is language in more than one category which may appear applicable, the category which most accurately reflects the overall impairment shall be selected.

The categories include appropriate subjective complaints in an ascending scale in keeping with the severity of objective findings, thus a higher or lower category is not to be selected purely on the basis of unusually great or minor complaints.

(h) When the examination discloses a preexisting permanent bodily impairment in the area of the injury, the examining physician shall report the findings and any category of impairment appropriate to the workman's condition prior to his industrial injury in addition to the findings and the categories appropriate to the workman's condition after the injury.

(i) Objective physical or clinical findings are those findings on examination which are independent of voluntary action and can be seen, felt, or consistently measured by examining physicians.

(j) Subjective complaints or symptoms are those perceived only by the senses and feelings of the person being examined which cannot be independently proved or established.

(k) Muscle spasm as used in these rules is an involuntary contraction of a muscle or group of muscles of a more than momentary nature.

(l) An involuntary action is one performed independently of the will.

(m) These special rules for evaluation of permanent bodily impairment shall apply to all examinations for the evaluation of impairment, in accordance with RCW 51-.32.080, for the body areas or systems covered by or enumerated in WAC 296-20-230 through 296-20-660.

(n) The rules for evaluation of each body area or system are an integral part of the categories for that body area or system.

(o) In cases of injury or occupational disease of bodily areas and/or systems which are not included in these categories or rules and which do not involve loss of hearing, loss of central visual acuity, loss of an eye by enucleation or loss of the extremities or use thereof, examining physicians shall determine the impairment of such bodily areas and/or systems in terms of percentage of total bodily impairment.

(p) The words used in the categories of impairments, in the rules for evaluation of specific impairments, the general rules, and the special rules shall be deemed, unless the context indicates the contrary, to have their general and accepted medical meanings.

(q) The rating of impairment due to total joint replacement shall be in accordance with the limitation of motion guidelines as set forth in the "Guides to the Evaluation of Permanent Impairment" of American Medical Association, with department of labor and industries acknowledgement of responsibility for failure of prostheses beyond the seven year limitation. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-220, filed 11/30/79, effective 1/1/80; Order 74-32, § 296-20-220, filed 6/21/74, effective 10/1/74.]

Chapter 296-24 WAC
GENERAL SAFETY AND HEALTH STANDARDS

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-24-662 Safety requirements for explosive-actuated fastening tools. [Order 73-5, § 296-24-662, filed 5/9/73 and Order 73-4, § 296-24-662, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66201 Scope. [Order 73-5, § 296-24-66201, filed 5/9/73 and Order 73-4, § 296-24-66201, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66203 Purpose. [Order 73-5, § 296-24-66203, filed 5/9/73 and Order 73-4, § 296-24-66203, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66205 Definitions. [Order 73-5, § 296-24-66205, filed 5/9/73 and Order 73-4, § 296-24-66205, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49-.17.150, and 49.17.240.

296-24-66207 Design requirements—High velocity tools. [Order 73-5, § 296-24-66207, filed 5/9/73 and Order 73-4, § 296-24-66207, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66209 Low velocity piston tools. [Order 73-5, § 296-24-66209, filed 5/9/73 and Order 73-4, § 296-24-66209, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49-.17.040, 49.17.150, and 49.17.240.

296-24-66211 Hammer-operated piston tools—Low velocity type. [Order 73-5, § 296-24-66211, filed 5/9/73 and Order 73-4, § 296-24-66211, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66213 Requirements for loads and fasteners. [Order 73-5, § 296-24-66213, filed 5/9/73 and Order 73-4, § 296-24-66213, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66215 Approvals. [Order 73-5, § 296-24-66215, filed 5/9/73 and Order 73-4, § 296-24-66215, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49-.17.150, and 49.17.240.

296-24-66217 Operation. [Order 73-5, § 296-24-66217, filed 5/9/73 and Order 73-4, § 296-24-66217, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49-.17.150, and 49.17.240.

296-24-66219 Servicing. [Order 73-5, § 296-24-66219, filed 5/9/73 and Order 73-4, § 296-24-66219, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49-.17.150, and 49.17.240.

296-24-66221 Qualification and certification of operators. [Order 73-5, § 296-24-66221, filed 5/9/73 and Order 73-4, § 296-24-66221, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66223 Storage of explosive-actuated tools, instruction books, cleaning kits, and tools. [Order 73-5, § 296-24-66223, filed 5/9/73 and Order 73-4, § 296-24-66223, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49-.17.040, 49.17.150, and 49.17.240.

296-24-66225 Use low velocity tools when possible. [Order 73-5, § 296-24-66225, filed 5/9/73 and Order 73-4, § 296-24-66225, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

WAC 296-24-020 Management's responsibility. (1) It shall be the responsibility of management to establish and supervise:

(a) A safe and healthful working environment.

(b) An accident prevention program as required by these standards.

(c) Training programs to improve the skill and competency of all employees in the field of occupational safety and health. Such training shall include the on-the-job instructions on the safe use of powered materials handling equipment, machine tool operations, use of toxic materials and operation of utility systems prior to assignments to jobs involving such exposures.

(2) After the emergency actions following accidents that cause serious injuries that have immediate symptoms, a preliminary investigation of the cause of the accident shall be conducted. The investigation shall be conducted by a person designated by the employer, the immediate supervisor of the injured employee, witnesses, employee representative if available and any other person with the special expertise required to evaluate the facts relating to the cause of the accident. The findings of the investigation shall be documented by the employer for reference at any following formal investigation.

(3) Reporting of Fatality or Multiple Hospitalization Accidents. (a) Within 24 hours after the occurrence of an employment accident which results in an immediate or probable fatality(s) or which results in [the] hospitalization of two or more employees, the employer of any employee so injured or killed shall report the accident [either orally or in writing] to the nearest office of the department. The reporting may be by telephone or telegraph. The reporting shall relate the circumstances of the accident, the number of fatalities, and the extent of any injuries. The director may require such additional reports, in writing or otherwise, as he deems necessary, concerning the accident.

(b) Equipment involved in an accident resulting in an immediate or probable fatality, shall not be moved, until a representative of the Division of Industrial Safety and Health investigates the accident and releases such equipment, except where removal is essential to prevent further accident. Where necessary to remove the victim, such equipment may be moved only to the extent of making possible such removal.

(c) Upon arrival of Division of Industrial Safety and Health investigator, employer shall assign to assist the investigator, the immediate supervisor and all employees who were witnesses to the accident, or whoever the investigator deems necessary to complete his investigation.

(4) A system for maintaining records of occupational injuries and illnesses as prescribed by Chapter 296-27 WAC.

NOTE: Recordable cases include:

1. Every occupational death.
2. Every industrial illness.
3. Every occupational injury that involves one of the following:
   a. Unconsciousness.
   b. Inability to perform all phases of regular job.
   c. Inability to work full time on regular job.
   d. Temporary assignment to another job.
   e. Medical treatment beyond first-aid.

All employers with eleven or more employees shall record occupational injury and illness information on forms OSHA 101 – Supplementary Record Occupational Injuries and Illnesses and OSHA 200 – Log and Summary. Forms other than OSHA 101 may be substituted for the Supplementary Record of Occupational Injuries and Illnesses if they contain the same items.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49-.17.240 and chapters 42.30 and 43.22 RCW. 78-12-017 (Order 78-22), § 296-24-020, filed 11/13/78; Order 74-27, § 296-24-020, filed 5/7/74; Order 73-5, § 296-24-020, filed 5/9/73 and Order 73-4, § 296-24-020, filed 5/7/73.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-24-040 Accident prevention programs. Each employer shall develop a formal accident-prevention program, tailored to the needs of the particular plant or operation and to the type of hazards involved. The division may be contacted for assistance in developing appropriate programs.

(1) The following are the minimal program elements for all employers:

(a) A safety orientation program describing the employer's safety program and including:

(i) How and when to report injuries, including instruction as to the location of first-aid facilities.

(ii) How to report unsafe conditions and practices.

(iii) The use and care of required personal protective equipment.

(iv) The proper actions to take in event of emergencies including the routes of exiting from areas during emergencies.

(v) Identification of the hazardous gases, chemicals or materials involved along with the instructions on the safe use and emergency action following accidental exposure.

(vi) A description of the employer's total safety program.

(vii) An on-the-job review of the practices necessary to perform the initial job assignments in a safe manner.

(b) A designated safety and health committee consisting of management and employee representatives with the employee representatives being elected or appointed by fellow employees.

(2) Each accident-prevention program shall be outlined in written format. [Statutory Authority: RCW 49-.17.040, 49.17.050, 49.17.240 and chapters 42.30 and 43.22 RCW. 78-12-017 (Order 78-22), § 296-24-040, filed 11/13/78; Order 74-27, § 296-24-040, filed 5/7/74; Order 73-5, § 296-24-040, filed 5/9/73 and Order 73-4, § 296-24-040, filed 5/7/73.]

WAC 296-24-045 Safety and health committee plan. (1) All employers shall have a designated safety committee composed of employer and employee elected members.

(a) The terms of employee-elected members shall be a maximum of one year. Should a vacancy occur on the committee, a new member shall be elected prior to the next scheduled meeting.

(b) The number of employer members shall not exceed the number of employee-elected members.

(2) The safety committee shall have an elected chairperson.

(3) The safety committee shall be responsible for determining the frequency of committee meetings.

NOTE: If the committee vote on the frequency of safety meetings is stalemated, the Division's Regional Safety Educational Representative may be consulted for recommendations.

(a) The committee shall be responsible for determining the date, hour and location of the meeting.

(b) The length of each meeting shall not exceed one hour except by majority vote of the committee.

(4) Minutes of each committee meeting shall be prepared and filed for a period of at least one year and shall be made available for review by noncompliance personnel, Division of Industrial Safety and Health.

(5) Safety and Health Committee meetings shall address the following:

(a) A review of the safety and health inspection reports to assist in correction of identified unsafe conditions or practices.

(b) An evaluation of the accident investigations conducted since the last meeting to determine if the cause of the unsafe acts or unsafe conditions involved was properly identified and corrected.

(c) An evaluation of the accident and illness prevention program with a discussion of recommendations for improvement where indicated.

(d) The attendance shall be documented.

(e) The subject(s) discussed shall be documented. [Statutory Authority: RCW 49.17.040, 49.17.050, 49-.17.240 and chapters 42.30 and 43.22 RCW. 78-12-017 (Order 78-22), § 296-24-045, filed 11/13/78.]

WAC 296-24-060 First-aid training and certification. The purpose of this section is to assure that all employees of this state can be afforded quick and effective first-aid attention in the event that an injury occurs on the job. The means of achieving this purpose is to assure the presence of personnel trained in first-aid procedures at or near those places where employees are working. Compliance with the provisions of this section may require the presence of more than one first-aid trained person.

(1) In addition to RCW 51.36.030, every employer shall comply with the department's requirements for first-aid training and certification.

(2) There shall be present or available at all times, a person or persons holding a valid certificate of first-aid training. (A valid first-aid certificate is one which is less than three years old.)

(3) Compliance with the requirements of subsection (2) of this section may be achieved as follows:

(a) All foremen, supervisors, or persons in direct charge of crews working in physically dispersed operations, shall have a valid first-aid certificate; provided: that if the duties or work of the foreman, supervisor or person in direct charge of a crew, is absent from the crew, another person holding a valid first-aid certificate shall be present. For the purposes of this section, a crew shall mean a group of two or more employees working at a work site separate and remote from the main office or

fixed work place (such as occurs in construction, logging, etc.)

NOTE: In emergencies, foremen will be permitted to work up to 30 days without having the required certificate, providing an employee in the crew or another foreman in the immediate work area has the necessary certificate.

(b) In fixed establishments, all foremen, supervisors, or persons in direct charge of a group or groups of employees shall have a valid first–aid certificate; provided: that in fixed establishments where the foreman, supervisor, or person in charge has duties which require his absence from the work site of the group, another person holding a valid first–aid certificate shall be present or available to the group.

NOTE: Foremen will be permitted to work up to 30 days without having the required certificate, providing an employee in the crew or another foreman in the immediate [work] area has the necessary certificate.

(c) Valid certification shall be achieved by passing a course of first–aid instruction and participation in practical application of the following subject matter.

Bleeding control and bandaging.
Practical methods of artificial respiration, including mouth to mouth and mouth to nose resuscitation.
Closed chest heart massage.
Poisons.
Shock, unconsciousness, stroke.
Burns, scalds.
Sunstroke, heat exhaustion.
Frostbite, freezing, hypothermia.
Strains, sprains, hernias.
Fractures, dislocations.
Proper transportation of the injured.
Bites, stings.
Subjects covering specific health hazards likely to be encountered by co–workers of first–aid students enrolled in the course.

(4) In physically dispersed operations, at least one member of each crew shall have a valid first–aid certificate. A crew shall mean a group of two or more employees working at a work site separate and remote from the main office or fixed workplace such as occurs in construction, logging, etc.

(5) In fixed establishments organized into distinct departments or equivalent organizational units such as department stores, large company offices, etc., a person or persons holding a valid first–aid certificate shall be present or available at all times employees are working within that department or organizational unit.

(6) In small businesses, offices or similar types of fixed workplaces, compliance may be achieved by having a number of such small businesses, offices, etc., combined into a single unit for the purpose of assuring the continued presence or availability of a person or persons holding a valid first–aid training certificate.

A plan for combining a number of small businesses etc., into such a group shall be submitted to the Division of Industrial Safety and Health, Safety Education Section, for approval. That section is also available to assist employers who wish to develop such a plan. Criteria for approval by the Division shall include:

(a) The businesses within the group must not be widely dispersed;

(b) The person or persons holding the first–aid certificates, their usual places of work, their work phone numbers, and other appropriate information shall be posted in each establishment which is a member of the group, in a place which can reasonably be expected to give notice to employees of that establishment;

(c) First–aid kits must be available as required by WAC 296–24–065.

(7) Industrial first–aid course instructors will, upon request, be furnished by the Division of Industrial Safety and Health, Department of Labor and Industries, either directly or through a program with the Community Colleges or vocational education. [Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240 and chapters 42-.30 and 43.22 RCW. 78–12–017 (Order 78–22), § 296–24–060, filed 11/13/78; Order 74–27, § 296–24–060, filed 5/7/74; Order 73–5, § 296–24–060, filed 5/9/73 and Order 73–4, § 296–24–060, filed 5/7/73.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296–24–23515 Hoisting equipment. (1) Sheaves.

(a) Sheave grooves shall be smooth and free from surface defects which could cause rope damage.

(b) Sheaves carrying ropes which can be momentarily unloaded shall be provided with close–fitting guards or other suitable devices to guide the rope back into the groove when the load is applied again.

(c) The sheaves in the bottom block shall be equipped with close–fitting guards that will prevent ropes from becoming fouled when the block is lying on the ground with ropes loose.

(d) Pockets and flanges of sheaves used with hoist chains shall be of such dimensions that the chain does not catch or bind during operation.

(e) All running sheaves shall be equipped with means for lubrication. Permanently lubricated, sealed and/or shielded bearings meet this requirement.

(2) Ropes.

(a) In using hoisting ropes, the crane manufacturer's recommendation shall be followed. The rated load divided by the number of parts of rope shall not exceed 20 percent of the nominal breaking strength of the rope.

(b) Socketing shall be done in the manner specified by the manufacturer of the assembly.

(c) Rope shall be secured to the drum as follows:

(i) No less than two wraps of rope shall remain on the drum when the hook is in its extreme low position.

(ii) Rope end shall be anchored by a clamp securely attached to the drum, or by a socket arrangement approved by the crane or rope manufacturer.

(d) Rope clips attached with U-bolts shall have the U-bolts on the dead or short end of the rope. Spacing and number of all types of clips shall be in accordance with (2)(e) of this section. Clips shall be drop-forged steel in all sizes manufactured commercially. When a newly installed rope has been in operation for an hour, all nuts on the clip bolts shall be retightened.

(e)

Diameter of Rope	Number of Clips Required	Space Between Clips
1 1/2 inch	8	10 inches
1 3/8 inch	7	9 inches
1 1/4 inch	6	8 inches
1 1/8 inch	5	7 inches
1 inch	5	6 inches
7/8 inch	5	5 1/4 inches
3/4 inch	5	4 1/2 inches
3/8 to 5/8 inch	4	3 inches

(f) Swaged or compressed fittings shall be applied as recommended by the rope or crane manufacturer.

(g) Wherever exposed to temperatures, at which fiber cores would be damaged, rope having an independent wire-rope or wire-strand core, or other temperature-damage resistant core shall be used.

(h) Replacement rope shall be the same size, grade, and construction as the original rope furnished by the crane manufacturer, unless otherwise recommended by a wire rope manufacturer due to actual working condition requirements.

(3) Equalizers. If a load is supported by more than one part of rope, the tension in the parts shall be equalized.

(4) Hooks. Hooks shall meet the manufacturer's recommendations and shall not be overloaded. Safety latch-type hooks shall be used or the hook shall be moused. [Statutory Authority: RCW 49.17.040, 49.17-.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-23515, filed 7/31/79; Order 73-5, § 296-24-23515, filed 5/9/73 and Order 73-4, § 296-24-23515, filed 5/7/73.]

WAC 296-24-24005 Load ratings. (1) Load ratings—Where stability governs lifting performance.

(a) The margin of stability for determination of load ratings, with booms of stipulated lengths at stipulated working radii for the various types of crane mountings is established by taking a percentage of the loads which will produce a condition of tipping or balance with the boom in the least stable direction, relative to the mounting. The load ratings shall not exceed the following percentages for cranes, with the indicated types of mounting under conditions stipulated in (1)(b) and (c) of this section.

Type of crane mounting:	Maximum load ratings (percent of tipping loads)
Locomotive, without outriggers;	
Booms 60 feet or less	85
Booms over 60 feet	85 [1]
Locomotive, using outriggers fully extended	80
Crawler, without outriggers	75
Crawler, using outriggers fully extended	85
Truck and wheel mounted without outriggers or using outriggers fully extended	85

[1]Unless this results in less than 30,000 pound-feet net stabilizing moment about the rail, which shall be minimum with such booms.

(b) The following stipulation shall govern the application of the values in (1)(a) of this section for locomotive cranes:

(i) Tipping with or without the use of outriggers occurs when half of the wheels farthest from the load leave the rail.

(ii) The crane shall be standing on track which is level within 1 percent grade.

(iii) Radius of the load is the horizontal distance from a projection of the axis of rotation to the rail support surface, before loading, to the center of vertical hoist line or tackle with load applied.

(iv) Tipping loads from which ratings are determined shall be applied under static conditions only, i.e., without dynamic effect of hoisting, lowering, or swinging.

(v) The weight of all auxiliary handling devices such as hoist blocks, hooks, and slings shall be considered a part of the load rating.

(c) Stipulations governing the application of the values in (i)(a) of this section for crawler, truck, and wheel-mounted cranes shall be in accordance with Crane Load-Stability Test Code. Society of Automotive Engineers (SAE) J765.

NOTE: The effectiveness of these preceding stability factors will be influenced by such additional factors as freely suspended loads, track, wind, or ground conditions, condition and inflation of rubber tires, boom lengths, proper operating speeds for existing conditions, and, in general, careful and competent operation. All of these shall be taken into account by the user.

(2) Rated capacity chart. A chart indicating the manufacturer's rated capacity at all operating radii for all permissible boom lengths and jib lengths with alternate ratings for optional equipment affecting such ratings shall be posted in all mobile type cranes and shall be readily visible to the operator in his normal operating position.

(3) Inspection classification.

(a) Initial inspection. Prior to initial use all new and altered cranes shall be inspected to insure compliance with provisions of these standards.

(4) All hooks shall be of the safety latch–type or the hook shall be moused. [Statutory Authority: RCW 49-.17.040, 49.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–24005, filed 7/31/79; Order 73–5, § 296–24–24005, filed 5/9/73 and Order 73–4, § 296–24–24005, filed 5/7/73.]

WAC 296–24–24519 Other requirements. (1) Guards.

(a) Exposed moving parts, such as gears, ropes, setscrews, projecting keys, chains, chain sprockets, and reciprocating components, which constitute a hazard under normal operating conditions shall be guarded.

(b) Guards shall be securely fastened.

(c) Each guard shall be capable of supporting without permanent distortion, the weight of a 200–pound person unless the guard is located where it is impossible for a person to step on it.

(2) Hooks.

(a) Hooks shall meet the manufacturer's recommendations and shall not be overloaded.

(b) Safety latch type hooks shall be used or the hooks shall be moused.

(3) Fire extinguishers.

(a) A carbon dioxide, dry chemical, or equivalent fire extinguisher shall be kept in the immediate vicinity of the derrick.

(b) Operating and maintenance personnel shall be familiar with the use and care of the fire extinguishers proved.

(4) Refueling.

(a) Refueling with portable containers shall be done with Underwriters' Laboratory, Inc. (UL), or Factory Mutual Laboratories approved, or equivalent, safety type containers equipped with automatic closing spout and flame arrester.

(b) Machines shall not be refueled with the engine running.

(5) Operating near electric powerlines.

(a) Except where the electrical distribution and transmission lines have been deenergized and visibility grounded at point of work or where insulating barriers not a part of or an attachment to the derrick have been erected to prevent physical contact with the lines, derricks shall be operated proximate to, under, over, by, or near powerlines only in accordance with the following:

(i) For lines rated 50 kv. or below minimum clearance between the lines and any part of the derrick or load shall be 10 feet.

(ii) For lines rated over 50 kv. minimum clearance between lines and any part of the derrick or load shall be 10 feet plus 0.4 inch for each 1 kv. over 50 kv., or use twice the length of the line insulator, but never less than 10 feet.

(b) Cage–type boom guards, insulating links, or proximity warning devices may be used on derricks, but the use of such devices shall not operate to alter the requirements of (5)(a) of this section.

(c) Before the commencement of operations near electrical lines, the owners of the lines or their authorized representatives shall be notified and provided with pertinent information. The owner's cooperation shall be requested.

(d) Any overhead wire shall be considered to be an energized line until the owner of the line or their authorized representatives state that it is deenergized.

(6) Cab or operating enclosure.

(a) Necessary clothing and personnel belongings shall be stored in such a manner as to not interfere with access or operation.

(b) Tools, oilcans, waste, extra fuses, and other necessary articles shall be stored in the toolbox, and shall not be permitted to lie loose in or about the cab or operating enclosure. [Statutory Authority: RCW 49.17.040, 49-.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–24519, filed 7/31/79; Order 73–5, § 296–24–24519, filed 5/9/73 and Order 73–4, § 296–24–24519, filed 5/7/73.]

WAC 296–24–29425 Wire rope slings. (1) Sling use. Wire rope slings shall not be used with loads in excess of the rated capacities shown in Tables D–3 through D–14. Slings not included in these tables shall be used only in accordance with the manufacturer's recommendations.

(2) Minimum sling lengths.

(a) Cable laid and 6x19 and 6x37 slings shall have a minimum clear length of wire rope 10 times the component rope diameter between splices, sleeves or end fittings.

(b) Braided slings shall have a minimum clear length of wire rope 40 times the component rope diameter between the loops or end fittings.

(c) Cable laid grommets, strand laid grommets and endless slings shall have a minimum circumferential length of 96 times their body diameter.

(3) Safe operating temperatures. Fiber core wire rope slings of all grades shall be permanently removed from service if they are exposed to temperatures in excess of 200°F. When nonfiber core wire rope slings of any grade are used at temperatures above 400°F or below minus 60°F, recommendations of the sling manufacturer regarding use at that temperature shall be followed.

(4) End attachments.

(a) Welding of end attachments, except covers to thimbles, shall be performed prior to the assembly of the sling.

(b) All welded end attachments shall not be used unless proof tested by the manufacturer or equivalent entity at twice their rated capacity prior to initial use. The employer shall retain a certificate of the proof test, and make it available for examination.

(5) Removal from service. Wire rope slings shall be immediately removed from service if any of the following conditions are present:

(a) Ten randomly distributed broken wires in one rope lay, or five broken wires in one strand in one rope lay.

(b) Wear or scraping of one–third the original diameter of outside individual wires.

(c) Kinking, crushing, bird caging or any other damage resulting in distortion of the wire rope structure.

(d) Evidence of heat damage.

(e) End attachments that are cracked, deformed or worn.

(f) Hooks that have been opened more than 15 percent of the normal throat opening measured at the narrowest point or twisted more than 10 degrees from the plane of the unbent hook.

(g) Corrosion of the rope or end attachments. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17-.240. 79-08-115 (Order 79-9), § 296-24-29425, filed 7/31/79; Order 76-6, § 296-24-29425, filed 3/1/76.]

WAC 296-24-662 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-66201 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-66203 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-66205 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-66207 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-66209 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-66211 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-66213 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-66215 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-66217 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-66219 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-66221 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-66223 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-66225 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-663 Safety requirements for powder actuated fastening systems. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-663, filed 7/31/79.]

WAC 296-24-66301 Scope. This standard provides safety requirements for a powder actuated fastening tool or machine which propels a stud, pin, fastener, or other object for the purpose of affixing it by penetration to another object.

This standard does not apply to devices designed for attaching objects to soft construction materials, such as wood, plaster, tar, dry wallboard, and the like, or to stud welding equipment. [Statutory Authority: RCW 49.17-.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66301, filed 7/31/79.]

WAC 296-24-66303 Purpose. The purpose of this standard is to provide reasonable safety for life, limb, and property, by establishing requirements for design, construction, operation, service, and storage of powder actuated fastening tools, fasteners, and power loads. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66303, filed 7/31/79.]

WAC 296-24-66305 Definitions applicable to this section. (1) Angle control – a safety feature designed to prevent a tool from operating when tilted beyond a predetermined angle.

(2) Approved – meeting the requirements of this standard and acceptable to the Department of Labor and Industries, Division of Industrial Safety and Health.

(3) Cased power load – a power load with the propellant contained in a closed case.

(4) Caseless power load – a power load with the propellant in solid form not requiring containment.

(5) Chamber (noun) – the location in the tool into which the power load is placed and in which it is actuated.

(6) Chamber (verb) – to fit the chamber according to manufacturer's specifications.

(7) Fasteners – any pins (unthreaded heads) or studs (threaded heads) driven by powder actuated tools.

(8) Fixture – a special shield that provides equivalent protection where the standard shield cannot be used.

(9) Head – that portion of a fastener that extends above the work surface after being properly driven.

(10) Misfire – a condition in which the power load fails to ignite after the tool has been operated.

(11) Powder actuated fastening system – a method comprising the use of a powder actuated tool, a power load, and a fastener.

(12) Powder actuated tool (also known as tool) – a tool that utilizes the expanding gases from a power load to drive a fastener.

(13) Power load – the energy source used in powder actuated tools.

(14) Qualified operator – a person who meets the requirements of WAC 296-24-66321(1) and (2).

(15) Shield – a device, attached to the muzzle end of a tool, which is designed to confine flying particles.

(16) Spalled area – a damaged and nonuniform concrete or masonry surface.

(17) Test velocity – the measurement of fastener velocity performed in accordance with WAC 296-24-66307(1)(m).

(18) Tools – tools can be divided into two types: Direct acting and indirect acting; and three classes: Low velocity, medium velocity, and high velocity.

(a) Direct–acting tool – a tool in which the expanding gas of the power load acts directly on the fastener to be driven.

(b) Indirect–acting tool – a tool in which the expanding gas of the power load acts on a captive piston, which in turn drives the fastener.

(c) Low–velocity tool – a tool whose test velocity has been measured ten times while utilizing the highest velocity combination of:

(i) The lightest commercially available fastener designed for that specific tool;

(ii) The strongest commercially available power load that will properly chamber in the tool;

(iii) The piston designed for that tool and appropriate for that fastener; that will produce an average test velocity from the ten tests not in excess of 100 meters per second (328 feet per second) with no single test having a velocity of over 108 m/s (354 ft/s).

(d) Medium–velocity tool – a tool whose test velocity has been measured ten times while utilizing the highest velocity combination of:

(i) The lightest commercially available fastener designed for the tool;

(ii) The strongest commercially available power load that will properly chamber in the tool;

(iii) The piston designed for that tool and appropriate for that fastener; that will produce an average test velocity from ten tests in excess of 100 m/s (328 ft/s) but not in excess of 150 m/s (492 ft/s) with no single test having a velocity of 160 m/s (525 ft/s).

(e) High–velocity tool – a tool whose test velocity has been measured ten times while utilizing the combination of:

(i) The lightest commercially available fastener designed for the tool;

(ii) The strongest commercially available power load which will properly chamber in the tool; that will produce an average velocity from the ten tests in excess of 150 m/s (492 ft/s). [Statutory Authority: RCW 49-.17.040, 49.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–66305, filed 7/31/79.]

WAC 296–24–66307 Requirements. (1) General.

(a) The tool shall be designed to prevent inadvertent actuation.

(b) The tool shall be designed to prevent actuation when dropped in any attitude from a height of 3 meters (10 ft) onto a smooth, hard surface such as concrete or steel, if such actuation can propel a fastener or any part thereof in free flight.

(c) Actuation of the tool shall be dependent upon at least two separate and distinct operations by the operator, with at least one operation being separate from the operation of holding the tool against the work surface.

(d) The tool shall be designed not to be operable other than against a work surface with a force on the work surface equal to 22 newtons (5 lb.) greater than the weight of the tool or a minimum impact energy of 4 joules (3 ft–lb).

(e) All tools shall be designed so that compatible protective shields or fixtures, designed, built, and supplied by the manufacturer of the tool, can be used (see WAC 296–24–66307(2)(b), (3)(b), (4)(b) and 296–24–66313(8)).

(f) The tool shall be designed so that a determinable means of varying the power levels is available for selecting a power level adequate to perform the desired work (see WAC 296–24–66309(5)).

(g) The tool shall be designed so that all principal functional parts can be checked for foreign matter that may affect operation.

(h) The tool shall be designed so that all parts will be of adequate strength to resist maximum stresses imposed upon actuation when the tool is used in accordance with the manufacturer's instructions and is powered by any commercially available power load which will properly chamber in the tool.

(i) Each tool shall bear a legible permanent model designation, which shall serve as a means of identification. Each tool shall also bear a legible, permanent manufacturer's unique serial number.

(j) A lockable container shall be provided for each tool. The words "POWDER ACTUATED TOOL" shall appear in plain sight on the outside of the container. The following notice shall be attached on the inside cover of the container:

"WARNING – POWDER ACTUATED TOOL. TO BE USED ONLY BY A QUALIFIED OPERATOR AND KEPT UNDER LOCK AND KEY WHEN NOT IN USE."

(k) Each tool shall bear a durable warning label with the following statement, or the equivalent:

"WARNING – FOR USE ONLY BY QUALIFIED OPERATORS ACCORDING TO MANUFACTURER'S INSTRUCTION MANUAL."

(l) Each tool shall be supplied with the following:

(i) Operator's instruction and service manual.

(ii) Power load chart.

(iii) Tool inspection record.

(iv) Service tools and accessories.

(m) In determining tool test velocities, the velocity of the fastener shall be measured in free flight at a distance of 2 meters (6–1/2 ft) from the muzzle end of the tool, using accepted ballistic test methods.

(2) Design requirements – low–velocity class.

(a) Low–velocity tools, indirect–acting (piston) type, as defined in WAC 296–24–66305, shall meet the requirements of WAC 296–24–66307(1).

(b) A shield shall be supplied with each tool.

(3) Design requirements – medium–velocity class.

(a) Medium–velocity tools, indirect–acting (piston) type, as defined in WAC 296–24–66305, shall meet the requirements of WAC 296–24–66307(1).

(b) The tool shall have a shield at least 63 mm (2-1/2 in) in diameter mounted perpendicular to, and concentric with, the muzzle end, when it is indexed to the center position. A special shield or fixture may be used when it provides equivalent protection.

(c) The tool shall be designed so that it cannot be actuated unless it is equipped with a shield or fixture.

(d) The tool shall be designed with angle control so that it will not actuate when equipped with the standard shield indexed to the center position if the bearing surface of the shield is tilted more than 12 degrees from a flat surface.

(4) Design requirements – high-velocity class.

(a) High-velocity tools, direct-acting or indirect-acting type, as defined in WAC 296-24-66305, shall meet the requirements of WAC 296-24-66307(1).

(b) The tool shall have a shield at least 88 mm (3-1/2 in) in diameter mounted perpendicular to, and concentric with, the muzzle end, when it is indexed to the center position. A special shield or fixture may be used when it provides equivalent protection.

(c) The tool shall be designed so that it cannot be actuated unless it is equipped with a shield or fixture.

(d) The tool shall be designed with angle control so that it will not actuate when equipped with the standard shield indexed to the center position, if the bearing surface of the shield is tilted more than eight degrees from a flat surface. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66307, filed 7/31/79.]

WAC 296-24-66309 **Power loads.** (1) Identification of cased power loads. Cased power loads shall be coded to identify power load levels by case color and power load color as specified in Table P-1.

(2) Identification of caseless power loads. Caseless power loads shall be coded to identify power load levels by power load color as specified in Table P-1 and by configuration.

(3) Power load use limitation. No power load (cased or caseless) shall be used if it will properly chamber in any existing commercially available tool and will cause a fastener to have a test velocity in excess of the maximum test velocities specified for the said tool.

(4) Identification of power load packages. Power load packages shall provide a visual number-color indication of the power level of the power load as specified in Table P-1.

(5) Optional power load variation. Where means other than power loads of varying power levels are to be used to control penetration, such means shall provide an equivalent power level variation. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66309, filed 7/31/79.]

WAC 296-24-66311 **Fasteners.** Fasteners for use in powder actuated tools shall be designed and manufactured to function compatibly with these tools and, when used in masonry, concrete, or steel, to effect properly the application for which they are recommended.

TABLE P-1

Power Load Identification

Power Level	Color Identification		Nominal velocity	
	Case Color	Load Color	Meters per Second (± 13.5)	Feet per Second (± 45)
1	Brass	Gray	91	300
2	Brass	Brown	119	390
3	Brass	Green	146	480
4	Brass	Yellow	174	570
5	Brass	Red	201	660
6	Brass	Purple	229	750
7	Nickel	Gray	256	840
8	Nickel	Brown	283	930
9	Nickel	Green	311	1020
10	Nickel	Yellow	338	1110
11	Nickel	Red	366	1200
12	Nickel	Purple	393	1290

NOTE: The nominal velocity applies to a 9.53 mm (3/8-in) diameter 22.7-gram (350-grain) ballistic slug fired in a test device and has no reference to actual fastener velocity developed in any specific tool.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66311, filed 7/31/79.]

WAC 296-24-66313 **Operation.** (1) Only tools meeting the requirements of this standard shall be used.

(2) Only qualified operators shall operate tools.

(3) The lowest velocity class of tool that will properly set the fastener shall be used.

(4) Tools shall be operated in strict accordance with the manufacturer's instructions.

(5) Eye or face protection, or both, shall be worn by operators, assistants, and adjacent personnel when tool is in use. Hearing protection shall be used when making fastenings in confined areas.

(6) Each day, prior to use, the operator shall inspect the tool to determine that it is in proper working condition in accordance with the testing methods recommended by the manufacturer of the tool.

(7) Any tool found not to be in proper working condition shall be immediately removed from service and tagged "DEFECTIVE"; it shall not be used until it has been properly repaired in accordance with the manufacturer's instructions.

(8) The proper shield, fixture, adapter, or accessory, suited for the application, as recommended and supplied by the manufacturer, shall be used.

(9) Only those types of fasteners and power loads recommended by the tool manufacturer shall be used.

(10) Before fastening into any questionable material, the operator shall determine its suitability by using a fastener as a center punch. If the fastener point does not easily penetrate, is not blunted, and does not fracture the material, initial test fastenings shall then be made in accordance with the tool manufacturer's recommendations. (See WAC 296-24-66315(3)).

(11) No tool shall be loaded unless it is being prepared for immediate use. If the work is interrupted after loading, the tool shall be unloaded at once.

(12) Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any person; hands shall be kept clear of the open barrel end.

(13) The tool shall always be held perpendicular to the work surface when fastening into any material, except for specific applications recommended by the tool manufacturer.

(14) In the event of a misfire, the operator shall hold the tool firmly against the work surface for a period of thirty seconds and then follow the explicit instructions set forth in the manufacturer's instructions.

(15) Power loads of different power levels and types shall be kept in separate compartments or containers.

(16) A sign, at least 20 x 25 cm (8 x 10 in), using boldface type no less than 2.5 cm (1 in) in height, shall be posted in plain sight on all construction projects where tools are used. The sign shall bear wording similar to the following: "POWDER ACTUATED TOOL IN USE." [Statutory Authority: RCW 49.17.040, 49.17-.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66313, filed 7/31/79.]

WAC 296-24-66315 Limitations of use. (1) The tool shall not be used in an explosive or flammable atmosphere.

(2) A tool shall never be left unattended in a place where it would be available to unauthorized persons.

(3) Fasteners shall not be driven into very hard or brittle materials including, but not limited to, cast iron, glazed tile, hardened steel, glass block, natural rock, hollow tile, or most brick. (See WAC 296-24-66313(10)).

(4) Fasteners shall not be driven into easily penetrated or thin materials, or materials of questionable resistance, unless backed by a material that will prevent the fastener from passing completely through the other side.

(5) Fasteners shall not be driven closer than 13 mm (1/2 in) from the edge of steel except for specific applications recommended by the tool manufacturer.

(6) Fasteners shall not be driven closer than 7.5 cm (3 in) from the unsupported edge of masonry materials except for specific applications recommended by the tool manufacturer.

(7) Fasteners shall not be driven into concrete unless material thickness is at least three times the fastener shank penetration.

(8) Fasteners shall not be driven into any spalled area.

(9) Fasteners shall not be driven through existing holes unless a specific guide means, as recommended and supplied by the tool manufacturer, is used to ensure positive alignment. [Statutory Authority: RCW 49.17-.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66315, filed 7/31/79.]

WAC 296-24-66317 Maintenance and storage. (1) The tool shall be serviced and inspected for worn or damaged parts at regular intervals as recommended by the tool manufacturer. Prior to the tool being put back into use, all worn or damaged parts shall be replaced by a qualified person using only parts supplied by the tool manufacturer. A record of this inspection shall be noted and dated on the tool inspection record.

(2) Instruction manuals, maintenance tools, and accessories supplied with the tool shall be stored in the tool container when not in use.

(3) Powder actuated tools and power loads shall be locked in a container and stored in a safe place when not in use and shall be accessible only to authorized personnel. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66317, filed 7/31/79.]

WAC 296-24-66319 Authorized instructor. (1) Only persons trained and authorized by the tool manufacturer or by an authorized representative of the tool manufacturer shall be qualified to instruct and qualify operators for the manufacturer's powder actuated tools.

(2) All authorized instructors shall have read and be familiar with this standard, and shall be capable of:

(a) Disassembling, servicing, and reassembling the tool.

(b) Recognizing any worn or damaged parts or defective operation.

(c) Recognizing and clearly identifying the colors used to identify power load levels.

(d) Using the tool correctly within the limitations of its use.

(e) Training and testing operators prior to issuing a qualified operator's card.

(3) All authorized instructors shall have in their possession a valid authorized instructor's card issued and signed by an authorized representative of the manufacturer. The card shall be wallet size of approximately 6 x 9 cm (2-1/2 x 3-1/2 in), and the face of the card shall bear text similar to that shown in Figure P-1.

(4) A list of all instructors authorized by the manufacturer to instruct and qualify operators shall be maintained by the tool manufacturer and be made available to the Department of Labor and Industries, Division of Industrial Safety and Health, upon request.

(5) An instructor's card may be revoked by the authorizing agent or the Department of Labor and Industries, Division of Industrial Safety and Health, if he is known to have issued a qualified operator's card in violation of any regulation contained in this standard. When an instructor is no longer authorized to issue qualified operator's cards, he shall surrender his card to the authorizing agent or the Department of Labor and Industries, Division of Industrial Safety and Health.

AUTHORIZED INSTRUCTOR

---------- Powder Actuated Tools Date -----
(MAKE)
Card No. ---------- Social Security No. -------
This certifies that ----------
(NAME OF INSTRUCTOR)

has received the prescribed training in the operation and maintenance of powder actuated tools manufactured by

_____ and is qualified
(NAME OF MANUFACTURER)
to train and certify operators of _____
(MAKE)
powder actuated tools.
Model(s) _____
Authorized by _____
I have received instruction by the manufacturer's authorized representative in the training of operators of the above tools and agree to conform to all rules and regulations governing the instruction of tool operators.
Date of Birth _____

_____
(SIGNATURE)

Figure P-1
Sample of Authorized Instructor's Card

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66319, filed 7/31/79.]

WAC 296-24-66321 Qualified operator. (1) The operator shall be trained by an authorized instructor to be familiar with the provisions of this standard and the instructions provided by the manufacturer for operation and maintenance. The operator shall also be capable of:

(a) Reading and understanding the manufacturer's instruction manual.

(b) Cleaning the tool correctly.

(c) Recognizing any worn or damaged parts or defective operation.

(d) Recognizing the number-color code system used in this standard to identify power load levels. In the event the operator is unable to distinguish the colors used, he shall be given special instruction to enable him to avoid error.

(e) Using the tool correctly within the limitations of its use and demonstrating his competence by operating the tool in the presence of the instructor.

(2) After training, the operator shall, to substantiate his competency, satisfactorily complete a written examination provided by the manufacturer of the tool.

(a) The operator's written examination shall consist of questions to establish the operator's competence with respect to:

(i) The requirements of this standard;

(ii) The powder actuated fastening system; and

(iii) The specific details of operation and maintenance of the tool(s) involved.

(b) The examination shall provide a statement, attested to by the instructor, that the applicant can (or cannot) readily distinguish the colors used to identify power load levels (see WAC 296-24-66309).

(3) Each applicant who meets the requirements as set forth in subsections (1) and (2) of this section shall receive a qualified operator's card, issued and signed by both the instructor and applicant. While using the tool, the operator shall have this card in his possession.

(4) The qualified operator's card supplied by the manufacturer shall be wallet size of approximately 6 x 9 cm (2-1/2 x 3-1/2 in), and the face of the card shall bear text similar to that shown in Figure P-2.

(5) There shall be printed on the card a notation reading:

"Revocation of card – Failure to comply with any of the rules and regulations for safe operation of powder actuated fastening tools shall be cause for the immediate revocation of this card."

QUALIFIED OPERATOR

_____ Powder Actuated Tools Date _____
(MAKE)
Card No. _____ Social Security No. _____
This certifies that _____
(NAME OF OPERATOR)
has received the prescribed training in the operation of powder actuated tools manufactured by

_____
(NAME OF MANUFACTURER)
Model(s) _____
Trained and issued by

_____
(SIGNATURE OF AUTHORIZED INSTRUCTOR)

I have received instruction in the safe operation and maintenance of powder actuated fastening tools of the makes and models specified and agree to conform to all rules and regulations governing that use
Date of Birth _____

_____
(SIGNATURE)

Figure P-2
Sample of Qualified Operator's Card

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66321, filed 7/31/79.]

WAC 296-24-73507 Covers and guardrails. (1) All open vats and tanks into which workers may fall shall be guarded with railings or screen guards.

(2) All open vats and tanks where workers are employed shall have a platform or walkway 36 to 42 inches below the top of vat or tank or where walkway is flush with top of vat or tank, a standard safeguard of 36 to 42 inches high shall be constructed.

(3) Every tank over 5 feet deep, excepting where agitators are used or where products may be damaged by ladders, shall have a ladder fixed on the inside so placed as to connect with means of access from the outside. Rungs shall have a clearance of at least 6 inches measured between the rung and the side of the tank. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-73507, filed 7/31/79; Order 74-27, § 296-24-73507, filed

5/7/74; Order 73-5, § 296-24-73507, filed 5/9/73 and Order 73-4, § 296-24-73507, filed 5/7/73.]

WAC 296-24-75011 Railing, toeboards, and cover specifications. (1) A standard railing shall consist of top rail, intermediate rail, and posts, and shall have a vertical height of from 36 to 42 inches nominal from upper surface of top rail to floor, platform, runway, or ramp level. The top rail shall be smooth-surfaced throughout the length of the railing. The intermediate rail shall be approximately halfway between the top rail and the floor, platform, runway, or ramp. The ends of the rails shall not overhang the terminal posts except where such overhang does not constitute a projection hazard.

(2) A stair railing shall be of construction similar to a standard railing but the vertical height shall be not more than 34 inches nor less than 30 inches from upper surface of top rail to surface of tread in line with face of riser at forward edge of tread.

(3) Minimum requirements for standard railings under various types of construction are specified in this subsection. Dimensions specified are based on the U.S. Department of Agriculture Wood Handbook, No. 72, 1955 (No. 1 [S4S] Southern Yellow Pine [Modulus of Rupture 7,400 p.s.i.]) for wood; ANSI G 41.5-1970, American National Standard Specifications for Structural Steel, for structural steel; and ANSI B 125.1-1970, American National Standard Specifications for Welded and Steamless Steel Pipe, for pipe.

(a) For wood railings, the posts shall be of at least 2-inch by 4-inch nominal stock spaced not to exceed 6 feet; the top and intermediate rails shall be of at least 2-inch by 4-inch nominal stock. If top rail is made of two right-angle pieces of 1-inch by 4-inch stock, posts may be spaced on 8-foot centers, with 2-inch by 4-inch intermediate rail.

(b) For pipe railings, posts and top and intermediate railings shall be at least 1 1/2 inches nominal diameter with posts spaced not more than 8 feet on centers.

(c) For structural steel railings, posts and top and intermediate rails shall be of 2-inch by 2-inch by 3/8-inch angles or other metal shapes of equivalent bending strength with posts spaced not more than 8 feet on centers.

(d) The anchoring of posts and framing of members for railings of all types shall be of such construction that the completed structure shall be capable of withstanding a load of at least 200 pounds applied in any direction at any point on the top rail.

(e) Other types, sizes, and arrangements of railing construction are acceptable provided they meet the following conditions:

(i) A smooth-surfaced top rail at a height above floor, platform, runway, or ramp level of from 36 to 42 inches nominal;

(ii) A strength to withstand at least the minimum requirement of 200 pounds top rail pressure;

(iii) Protection between top rail and floor, platform, runway, ramp, or stair treads, equivalent at least to that afforded by a standard intermediate rail;

(iv) Elimination of overhang of rail ends unless such overhang does not constitute a hazard; such as, baluster railings, scrollwork railings, paneled railings.

(4) A standard toeboard shall be a minimum of 4 inches nominal in vertical height from its top edge to the level of the floor, platform, runway, or ramp. It shall be securely fastened in place and with not more than 1/4-inch clearance above floor level. It may be made of any substantial material either solid or with openings not over 1 inch in greatest dimension.

Where material is piled to such height that a standard toeboard does not provide protection, paneling from floor to intermediate rail, or to top rail shall be provided.

(5) A handrail shall consist of a lengthwise member mounted directly on a wall or partition by means of brackets attached to the lower side of the handrail so as to offer no obstruction to a smooth surface along the top and both sides of the handrail. The handrail shall be of rounded or other section that will furnish an adequate handhold for anyone grasping it to avoid falling. The ends of the handrail should be turned in to the supporting wall or otherwise arranged so as not to constitute a projection hazard.

(a) The height of handrails shall be not more than 34 inches nor less than 30 inches from upper surface of handrail to surface of tread in line with face of riser or to surface of ramp.

(b) The size of handrails shall be: When of hardwood, at least 2 inches in diameter; when of metal pipe, at least 1 1/2 inches in diameter. The length of brackets shall be such as will give a clearance between handrail and wall or any projection thereon of at least 1 1/2 inches. The spacing of brackets shall not exceed 8 feet.

(c) The mounting of handrails shall be such that the completed structure is capable of withstanding a load of at least 200 pounds applied in any direction at any point on the rail.

(6) All handrails and railings shall be provided with a clearance of not less than 1 1/2 inches between the handrail or railing and any other object.

(7) Floor opening covers may be of any material that meets the following strength requirements:

(a) Trench or conduit covers and their supports, when located in plant roadways, shall be designed to carry a truck rear-axle load of at least 20,000 pounds.

(b) Manhole covers and their supports, when located in plant roadways, shall comply with local standard highway requirements if any; otherwise, they shall be designed to carry a truck rear-axle of at least 20,000 pounds.

(c) The construction of floor opening covers may be of any material that meets the strength requirements. Covers projecting not more than 1 inch above the floor level may be used providing all edges are chamfered to an angle with the horizontal of not over 30 degrees. All hinges, handles, bolts, or other parts shall set flush with the floor or cover surface.

(8) Skylight screens shall be of such construction and mounting that they are capable of withstanding a load of at least 200 pounds applied perpendicularly at any one

area on the screen. They shall also be of such construction and mounting that under ordinary loads or impacts, they will not deflect downward sufficiently to break the glass below them. The construction shall be of grillwork with openings not more than 4 inches long or of slat work with openings not more than 2 inches wide with length unrestricted.

(9) Wall opening barriers (rails, rollers, picket fences, and half doors) shall be of such construction and mounting that, when in place at the opening, the barrier is capable of withstanding a load of at least 200 pounds applied in any direction (except upward) at any point on the top rail or corresponding member.

(10) Wall opening grab handles shall be not less than 12 inches in length and shall be so mounted as to give 1 1/2 inches clearance from the side framing of the wall opening. The size, material, and anchoring of the grab handle shall be such that the completed structure is capable of withstanding a load of at least 200 pounds applied in any direction at any point of the handle.

(11) Wall opening screens shall be of such construction and mounting that they are capable of withstanding a load of at least 200 pounds applied horizontally at any point on the near side of the screen. They may be of solid construction, of grillwork with openings not more than 8 inches long, or of slatwork with openings not more than 4 inches wide with length unrestricted. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17-.240. 79-08-115 (Order 79-9), § 296-24-75011, filed 7/31/79; Order 73-5, § 296-24-75011, filed 5/9/73 and Order 73-4, § 296-24-75011, filed 5/7/73.]

WAC 296-24-78009 Care and use of ladders. (1) Care. To insure safety and serviceability the following precautions on the care of ladders shall be observed:

(a) Ladders shall be maintained in good condition at all times, the joint between the steps and side rails shall be tight, all hardware and fittings securely attached, and the moveable parts shall operate freely without binding or undue play.

(b) Metal bearings of locks, wheels, pulleys, etc., shall be frequently lubricated.

(c) Frayed or badly worn rope shall be replaced.

(d) Safety feet and other auxiliary equipment shall be kept in good condition to insure proper performance.

(e) Ladders should be stored in such a manner as to provide ease of access or inspection, and to prevent danger of accident when withdrawing a ladder for use.

(f) Wood ladders, when not in use, should be stored at a location where they will not be exposed to the elements, but where there is good ventilation. They shall not be stored near radiators, stoves, steam pipes, or other places subjected to excessive heat or dampness.

(g) Ladders stored in a horizontal position should be supported at a sufficient number of points to avoid sagging and permanent set.

(h) Ladders carried on vehicles should be adequately supported to avoid sagging and securely fastened in position to minimize chafing and the effects of road shocks.

(i) Ladders should be kept coated with a suitable protective material. The painting of ladders is satisfactory providing the ladders are carefully inspected prior to painting by competent and experienced inspectors acting for, and responsible to, the purchaser, and providing the ladders are not for resale.

(j) Ladders shall be inspected frequently and those which have developed defects shall be withdrawn from service for repair or destruction and tagged or marked as "Dangerous, Do Not Use".

(k) Rungs should be kept free of grease and oil.

(2) Use. The following safety precautions shall be observed in connection with the use of ladders:

(a) Portable rung and cleat ladders shall, where possible, be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder (the length along the ladder between the foot and the top support). The ladder shall be so placed as to prevent slipping, or it shall be lashed, or held in position. Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.

(b) Ladders for which dimensions are specified should not be used by more than one man at a time nor with ladder jacks and scaffold planks where use by more than one man is anticipated. In such cases, specially designed ladders with larger dimensions of the parts should be procured.

(c) Portable ladders shall be so placed that the side rails have a secure footing. The top rest for portable rung and cleat ladders shall be reasonably rigid and shall have ample strength to support the applied load.

(d) Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded.

(e) Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height.

(f) To support the top of the ladder at a window opening, a board should be attached across the back of the ladder, extending across the window and providing firm support against the building walls or window frames.

(g) When ascending or descending, the user should face the ladder.

(h) Ladders with broken or missing steps, rungs, or cleats, broken side rails, or other faulty equipment shall not be used; improvised repairs shall not be made.

(i) Short ladders shall not be spliced together to provide long sections.

(j) Ladders made by fastening cleats across a single rail shall not be used.

(k) Ladders shall not be used as guys, braces, or skids, or for other than their intended purposes.

(l) Tops of the ordinary types of stepladders shall not be used as steps.

(m) On two-section extension ladders the minimum overlap for the two sections in use shall be as follows:

Size of ladder (feet):	Overlap (feet)
Up to and including 36	3
Over 36 up to and including 48	4
Over 48 up to and including 60	5

(n) Portable rung ladders with reinforced rails (see WAC 296-24-78007(3)(iii) and (iv)) shall be used only with the metal reinforcement on the under side. Ladders of this type should be used with great care near electrical conductors, since the reinforcing itself is a good conductor.

(o) No ladder should be used to gain access to a roof unless the top of the ladder shall extend at least 3 feet above the point of support, at eave, gutter, or roof line.

(p) Adjustment of extension ladders should only be made by the user when standing at the base of the ladder, so that the user may observe when the locks are properly engaged. Adjustment of extension ladders from the top of the ladder (or any level over the locking device) is a dangerous practice and should not be attempted. Adjustment should not be made while the user is standing on the ladder.

(q) Middle and top sections of sectional or window cleaner's ladders should not be used for bottom section unless the user equips them with safety shoes.

(r) Extension ladders should always be erected so that the upper section is resting on the bottom section.

(s) The user should equip all portable rung ladders with nonslip bases when there is a hazard of slipping. Nonslip bases are not intended as a substitute for care in safety placing, lashing, or holding a ladder that is being used upon oily metal, concrete, or slippery surfaces.

(t) The bracing on the back legs of step ladders is designed solely for increasing stability and not for climbing.

(u) When service conditions warrant, hooks may be attached at or near the top of portable ladders to give added security.

(v) Stepladders shall not be used as single ladders.

(w) Separate ladders for ascending and descending shall be provided in building construction of more than 2 stories in height, or where traffic is heavy.

(x) Where one broad ladder is used, a center rail shall be provided, and each side plainly marked "up" and "down".

(y) Ladder rungs shall not be used to support more than 1 section of plank, and not more than 2 men shall work on such section of planking at one and the same time. When 2 men are working on the same section of plank, their work should be so arranged that their weight is equally distributed between 2 ladders as nearly as possible.

(z) When ladders are used of a length sufficient to possess a tendency to spring when weight is applied, they shall be provided with bracing to overcome same. This applies particularly to extension ladders.

(a1) Before climbing ladders, workmen shall see that their shoes are free and clean of greasy or slippery substances.

(b1) When working from a stepladder over 5 feet high a workman shall not stand on a step higher than the third step from the top of the stepladder.

(c1) Ladders shall not be placed or used in elevator shafts or hoistways except where used by workmen engaged in work within such shafts or hoistways, and then they shall be protected from objects falling from operations at higher elevations in or adjoining the shaft.

(d1) Workmen shall not ascend or descend ladders while carrying tools or materials which will interfere with the free use of both hands.

(e1) Ladders shall pass the following test:

When tested as a simple beam with a support under each end and the center rung loaded with a 200 pound load, the ladder must support this load for 10 minutes without permanent set and without showing any sign of failure. The maximum deflection shall not be greater than shown in the enclosed table.

Lengths of extended ladder in feet	Distance of supports from ends, in inches	Total deflection, in inches
12	3	2 3/4
16	3	6 3/4
20	3	11 1/2
24	3	16 1/2
28	3	21 1/2
30	3	23 1/2
34	6	26
36	6	29
40	6	37
44	9	41

(f1) When working from a ladder over 25 feet from the ground or floor, the ladder shall be secured at both top and bottom.

(g1) No type of work shall be performed on a ladder over 25 feet from the ground or floor that requires the use of both hands to perform the work, unless a safety belt is worn and the safety lanyard is secured to the ladder.

(h1) Work such as sandblasting or spray painting, that requires wearing eye protection, respirators, and handling of pressure equipment, shall be limited to not over 30 feet from the ground or floor while working on a ladder.

TABLE D-5

CLASSIFICATION OF VARIOUS SPECIES OF WOOD ACCEPTABLE FOR USE IN LADDER

The species are listed alphabetically within each group. The position of any species within a group therefore bears no relation to its strength or acceptability.

Where ladders are desired for use under conditions favorable to decay, it is recommended that the heartwood of decay-resistant species be used, or that the wood be given a treatment with a wood preservative. The species having the most durable heartwood are

marked with an asterisk (*), and these should be preferred where resistance to decay is required.

GROUP 1

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed 2,150 pounds per square inch. These species may be substituted for Group 3 woods on the following basis: The dimensions may be not more than 10 percent smaller for each cross-section dimension, or the thickness may remain unchanged, in which case the width may not be more than 15 percent smaller if used edgewise (as in a rail) or 25 percent smaller if used flatwise (as in a tread).

White ash	Fraxinus americana, pennsylvanica, quadrangulata
Beech	Fagus grandifolia
Birch	Betula lenta, alleghaniensis, nigra (2)
Rock elm	Ulmus themasii
Hickory	Carya ovata, laciniosa, tomentosa, glabra
Locust*	Robinia pseudoacacia, Gleditsia triacanthos
Hard maple	Acer nigrum, saccharum
Red maple	Acer rubrum (3)
Red oak	Quercus velutina, marilandica, kelloggii, falcata var. pagodaefolia, laurifolia, ellipsoidalis, rubra, nuttallii, palustris, coccinea, shumardii, falcata, laevis, phellos
White oak	Quercus arizonica, douglasii, macrocarpa, lobata, prinus, muehlenbergii, emoryi, gambelii, oblonifolia, virginiana, garryana, lyrata, stellata, michauxii, bicolor, alba
Pecan	Carya illinoensis, cordiformis, myristicaeformis (4), aquatica (4)
Persimmon	Diospryros virginiana

GROUP 2

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed 2,000 pounds per square inch. These species may be substituted for Group 3 woods on the following basis: The dimensions may be not more than 7 1/2 percent smaller for each cross-section dimension, or the thickness may remain unchanged, in which case the width may be not more than 11 percent smaller if used edgewise (as in a rail) or 20 percent smaller if used flatwise (as in a tread).

Douglas fir (coast region)	Pseudotsuga menziesii
Western larch	Larix occidentalis
Southern yellow pine	Pinus taeda, palustris, echinata, elliotii, rigida, virginiana

GROUP 3

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed 1,600 pounds per square inch.

Red alder	Alnus ruba, rhombifolia (2)
Oregon ash	Fraxinus latifolia
Pumpkin ash	Fraxinus profunda
Alaska cedar*	Chamaecyparis nootkatensis
Port Orford cedar*	Chamaecyparis lawsoniana
Cucumber	Magnolia acuminata
Cypress*	Taxodium distichum
Soft elm	Ulmus americana, rubra
Douglas fir (Rocky Mountain type)	Pseudotsuga menziesii var. glauca
Noble fir	Abies procera
Gum	Liquidambar styraciflua
West coast hemlock	Tsuga heterophylla
Magnolia	Magnolia grandiflora
Oregon maple	Acer macrophyllum
Norway pine	Pinus resinosa
Poplar	Liriodendron tulipifera
Redwood*	Sequoia sempervirens
Eastern spruce	Picea glauca, rubens
Sitka spruce	Picea sitchensis
Sycamore	Platanus occidentalis
Tamarack	Larix laricina
Tupelo	Nyssa aquatica, sylvatica

GROUP 4

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed 1,375 pounds per square inch. These species may be substituted for Group 3 woods on the following basis: The dimensions shall be at least 5 percent greater for each cross-section dimension, or the thickness may remain unchanged, in which case the width shall be at least 7 1/2 percent greater if used edgewise (as in a rail) or 15 percent greater if used flatwise (as in a tread).

Aspen	Populus tremuloides, grandidentata
Basswood	Tilia americana, heterophylla (2)
Buckeye	Aesculus octandra, glabra (2)
Butternut	Juglanscinerea
Incense cedar*	Libocedrus decurrens
Western red cedar*	Thuja plicata
Cottonwood	Populus balsamifera, deltiodes, sargentii, heterophylla
White fir	Abies concolor, grandis, amabilis, lasiocarpa, magnifica
Hackberry	Celtis occidentalis, laevigata (2)
Eastern hemlock	Tsuga canadensis
Holly	Ilex opaca
Soft maple	Acer saccharinum
Lodgepole pine	Pinus contorta
Idaho white pine	Pinus monticola
Northern white pine	Pinus strobus
Ponderosa pine	Pinus ponderosa, pinus jeffreyi (Jeffrey pine)
Sugar pine	Pinus lambertiana
Engelmann spruce	Picea engelmannii

NOTE 1: The common and scientific names of species used conform to the American Lumber Standards nomenclature and in most cases to U.S. Department of Agriculture Handbook No. 41, "Check List of Native and Naturalized Trees of the United States (including Alaska)," by Elbert L. Little. These publications can be obtained from the Superintendent of Documents, Washington D.C. 20225.

NOTE 2: This species is commonly associated with others of the same genus under American Lumber Standards nomenclature, but no strength tests have been made on it at the Forest Products Laboratory.

NOTE 3: Included under soft maple in American Lumber Standards nomenclature.

NOTE 4: This species is not included under this common name in American Lumber Standards

nomenclature, but strength data are available and it is accordingly included in this classification.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-78009, filed 7/31/79; Order 76-6, § 296-24-78009, filed 3/1/76; Order 73-5, § 296-24-78009, filed 5/9/73 and Order 73-4, § 296-24-78009, filed 5/7/73.]

WAC 296-24-82507 Tube and coupler scaffolds. (1) A light-duty tube and coupler scaffold shall have all posts, bearers, runners, and bracing of nominal 2-inch O.D. steel tubing. The posts shall be spaced no more than 6 feet apart by 10 feet along the length of the scaffold. Other structural metals when used must be designed to carry an equivalent load.

(2) A medium-duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal 2-inch O.D. steel tubing. Posts spaced not more than 6 feet apart by 8 feet along the length of the scaffold shall have bearers of nominal 2 1/2-inch O.D. steel tubing. Posts spaced not more than 5 feet apart by 8 feet along the length of the scaffold shall have bearers of nominal 2-inch O.D. steel tubing. Other structural metals when used must be designed to carry an equivalent load.

(3) A heavy-duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal 2-inch O.D. steel tubing, with the posts spaced not more than 6 feet apart by 6 feet 6 inches along the length of the scaffold. Other structural metals when used must be designed to carry an equivalent load.

(4) Tube and coupler scaffolds shall be limited in heights and working levels to those permitted in tables D-13, 14, and 15. Drawings and specifications of all tube and coupler scaffolds above the limitations in tables D-13, 14, and 15 shall be designed by a registered professional engineer and copies made available to the employer and for inspection purposes.

(5) All tube and coupler scaffolds shall be constructed and erected to support four times the maximum intended loads as set forth in tables D-13, 14, and 15, or as set forth in the specifications by a registered professional engineer, copies which shall be made available to the employer and for inspection purposes.

(6) All tube and coupler scaffolds shall be erected by competent and experienced personnel.

(7) Posts shall be accurately spaced, erected on suitable bases, and maintained plumb.

(8) Runners shall be erected along the length of the scaffold located on both the inside and the outside posts at even height. Runners shall be interlocked to form continuous lengths and coupled to each post. The bottom runners shall be located as close to the base as possible. Runners shall be placed not more than 6 feet 6 inches on centers.

(9) Bearers shall be installed transversely between posts and shall be securely coupled to the posts bearing on the runner coupler. When coupled directly to the runners, the coupler must be kept as close to the posts as possible.

(10) Bearers shall be at least 4 inches but not more than 12 inches longer than the post spacing or runner spacing. Bearers may be cantilevered for use as brackets to carry not more than two planks.

(11) Cross bracing shall be installed across the width of the scaffold at least every third set of posts horizontally and every fourth runner vertically. Such bracing shall extend diagonally from the inner and outer runners upward to the next outer and inner runners.

(12) Longitudinal diagonal bracing shall be installed at approximately a 45-degree angle from near the base of the first outer post upward to the extreme top of the scaffold. Where the longitudinal length of the scaffold permits, such bracing shall be duplicated beginning at every fifth post. In a similar manner, longitudinal diagonal bracing shall also be installed from the last post extending back and upward toward the first post. Where conditions preclude the attachment of this bracing to the posts, it may be attached to the runners.

(13) The entire scaffold shall be tied to and securely braced against the building at intervals not to exceed 30 feet horizontally and 26 feet vertically.

(14) Guardrails not less than 2 x 4 inches nominal lumber or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1 x 4-inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17). (See tables D-13, 14 and 15.)

TABLE D-13

TUBE AND COUPLER SCAFFOLDS
LIGHT DUTY

Uniformly distributed load	Not to exceed 25 p.s.f.
Post spacing (longitudinal)	10 ft. 0 in.
Post spacing (transverse)	6 ft. 0 in.

Working levels	Additional planked levels	Maximum height
1	8	125 ft.
2	4	125 ft.
3	0	91 ft. 0 in.

TABLE D-14

TUBE AND COUPLER SCAFFOLDS
MEDIUM DUTY

Uniformly distributed load	Not to exceed 50 p.s.f.
Post spacing (longitudinal)	8 ft. 0 in.
Post spacing (transverse)	6 ft. 0. in.

Working levels	Additional planked levels	Maximum height
1	6	125 ft.
2	0	78 ft. 0 in.

TABLE D-15

TUBE AND COUPLER SCAFFOLDS
HEAVY DUTY

Uniformly distributed load	Not to exceed 75 p.s.f.
Post spacing (longitudinal)	6 ft. 6 in.
Post spacing (transverse)	6 ft. 0 in.

Working levels	Additional planked levels	Maximum height
1	6	125 ft.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82507, filed 7/31/79; Order 73-5, § 296-24-82507, filed 5/9/73 and Order 73-4, § 296-24-82507, filed 5/7/73.]

WAC 296-24-82509 Tubular welded frame scaffolds. (1) Metal tubular frame scaffolds, including accessories such as braces, brackets, trusses, screw legs, ladders, etc., shall be designed and proved to safely support four times the maximum intended load.

(2) Spacing of panels or frames shall be consistent with the loads imposed.

(3) Scaffolds shall be properly braced by cross bracing or diagonal braces, or both, for securing vertical members together laterally, and the cross braces shall be of such length as will automatically square and align vertical members so that the erected scaffold is always plumb, square, and rigid. All brace connections shall be made secure.

(4) Scaffold legs shall be set on adjustable bases or plain bases placed on mud sills or other foundations adequate to support the maximum intended load.

(5) The frames shall be placed one on top of the other with coupling or stacking pins to provide proper vertical alinement of the legs.

(6) Where uplift may occur, panels shall be locked together vertically by pins or other equivalent suitable means.

(7) Guardrails not less than 2 x 4 inches or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1-x 4-inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17).

(8) All tubular metal scaffolds shall be constructed and erected to support four times the maximum intended loads.

(9) To prevent movement, the scaffold shall be secured to the building or structure at intervals not to exceed 30 feet horizontally and 26 feet vertically.

(10) Maximum permissible spans of planking shall be in conformity with WAC 296-24-82503(9).

(11) Drawings and specifications for all frame scaffolds over 125 feet in height above the base plates shall be designed by a registered professional engineer and copies made available to the employer and for inspection purposes.

(12) All tubular welded frame scaffolds shall be erected by competent and experienced personnel.

(13) Frames and accessories for scaffolds shall be maintained in good repair and every defect, unsafe condition, or noncompliance with this section shall be immediately corrected before further use of the scaffold. Any broken, bent, excessively rusted, altered, or otherwise structurally damaged frames or accessories shall not be used.

(14) Periodic inspections shall be made of all welded frames and accessories, and any maintenance, including painting, or minor corrections authorized by the manufacturer, shall be made before further use. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82509, filed 7/31/79; Order 73-5, § 296-24-82509, filed 5/9/73 and Order 73-4, § 296-24-82509, filed 5/7/73.]

WAC 296-24-82515 Two-point suspension scaffolds (swinging scaffolds). (1) Two-point suspension scaffold platforms shall be not less than 20 inches nor more than 36 inches wide overall. The platform shall be securely fastened to the hangers by U-bolts or by other equivalent means.

(2) The hangers of two-point suspension scaffolds shall be made of wrought iron, mild steel, or other equivalent material having a cross-sectional area capable of sustaining four times the maximum intended load, and shall be designed with a support for guardrail, intermediate rail, and toeboard.

(3) When hoisting machines are used on two-point suspension scaffolds, such machines shall be of a design

tested and approved by Underwriters' Laboratories or Factory Mutual Engineering Corp.

(4) The roof irons or hooks shall be of wrought iron, mild steel, or other equivalent material of proper size and design, securely installed and anchored. Tiebacks of 3/4- inch manila rope or the equivalent shall serve as a secondary means of anchorage, installed at right angles to the face of the building whenever possible and secured to a structurally sound portion of the building.

(5) Guardrails not less than 2 x 4 inches or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1- x 4-inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17).

(6) Two-point suspension scaffolds shall be suspended by wire or fiber ropes. Wire and fiber ropes shall conform to WAC 296-24-82503(22).

(7) The blocks for fiber ropes shall be of standard 6-inch size, consisting of at least one double and one single block. The sheaves of all blocks shall fit the size of rope used.

(8) All wire ropes, fiber ropes, slings, hangers, platforms, and other supporting parts shall be inspected before every installation. Periodic inspections shall be made while the scaffold is in use.

(9) On suspension scaffolds designed for a working load of 500 pounds no more than two men shall be permitted to work at one time. On suspension scaffolds with a working load of 750 pounds, no more than three men shall be permitted to work at one time. Each workman shall be protected by a safety lifebelt attached to a lifeline. The lifeline shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the workman in case of a fall.

(10) Where acid solutions are used, fiber ropes are not permitted unless acid-proof.

(11) Two-point suspension scaffolds shall be securely lashed to the building or structure to prevent them from swaying. Window cleaners' anchors shall not be used for this purpose.

(12) The platform of every two-point suspension scaffold shall be one of the following types:

(a) The side stringer of ladder-type platforms shall be clear straight-grained spruce or materials of equivalent strength and durability. The rungs shall be of straight-grained oak, ash, or hickory, at least 1 1/8 inch in diameter, with seven-eighth inch tenons mortised into the side stringers at least seven-eighth inch. The stringers shall be tied together with the tie rods not less than one-quarter inch in diameter, passing through the stringers and riveted up tight against washers on both ends. The flooring strips shall be spaced not more than five-eighth inch apart except at the side rails where the space may be 1 inch. Ladder-type platforms shall be constructed in accordance with table D-17.

(b) Plank-type platforms shall be composed of not less than nominal 2- x 8-inch unspliced planks, properly cleated together on the underside starting 6 inches from each end; intervals in between shall not exceed 4 feet. The plank-type platform shall not extend beyond the hangers more than 18 inches. A bar or other effective means shall be securely fastened to the platform at each end to prevent its slipping off the hanger. The span between hangers for plank-type platforms shall not exceed 10 feet.

(c) Beam platforms shall have side stringers of lumber not less than 2 x 6 inches set on edge. The span between hangers shall not exceed 12 feet when beam platforms are used. The flooring shall be supported on 2- and 6-inch crossbeams, laid flat and set into the upper edge of the stringers with a snug fit, at intervals of not more than 4 feet, securely nailed in place. The flooring shall be of 1- x 6-inch material properly nailed. Floorboards shall not be spaced more than one-half inch apart. (See table D-17.) [Statutory Authority: RCW 49.17.040, 49-.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82515, filed 7/31/79; Order 73-5, § 296-24-82515, filed 5/9/73 and Order 73-4, § 296-24-82515, filed 5/7/73.]

WAC 296-24-82517 Stone setters' adjustable multiple-point suspension scaffolds. (1) The scaffold shall be capable of sustaining a working load of 25 pounds per square foot and shall not be overloaded. Scaffolds shall not be used for storage of stone or other heavy materials.

(2) The hoisting machine and its supports shall be of a type tested and listed by Underwriters' Laboratories or Factory Mutual Engineering Corp.

(3) The platform shall be securely fastened to the hangers by U-bolts or other equivalent means.

(4) The scaffold unit shall be suspended from metal outriggers, iron brackets, wire rope slings, or iron hooks which will safely support the maximum intended load.

(5) Outriggers when used shall be set with their webs in a vertical position, securely anchored to the building or structure and provided with stop bolts at each end.

(6) The scaffold shall be supported by wire rope conforming with WAC 296-24-82503(22), suspended from overhead supports.

(7) The free ends of the suspension wire ropes shall be equipped with proper size thimbles, secured by splicing or other equivalent means. The running ends shall be securely attached to the hoisting drum and at least four turns of rope shall remain on the drum at all times.

(8) Guardrails not less than 2 by 4 inches or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1- by 4-inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17).

(9) When two or more scaffolds are used on a building or structure they shall not be bridged one to the

other but shall be maintained at even height with platforms butting closely.

(10) Each scaffold shall be installed or relocated in accordance with designs and instructions of a registered professional engineer, and such installation or relocation shall be supervised by a competent designated person to comply with requirements of this section. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82517, filed 7/31/79; Order 73-5, § 296-24-82517, filed 5/9/73 and Order 73-4, § 296-24-82517, filed 5/7/73.]

WAC 296-24-82521 Boatswain's chairs. (1) The chair seat shall be not less than 12 by 24 inches, and of 1-inch thickness. The seat shall be reinforced on the underside to prevent the board from splitting.

(2) The two fiber rope seat slings shall be of 5/8-inch diameter, reeved through the four seat holes so as to cross each other on the underside of the seat.

TABLE D-17

SCHEDULE FOR LADDER-TYPE PLATFORMS

	Length of platform (feet)				
	12	14&16	18&20	22&24	28&30
Side Stringers, minimum cross section (finished sizes):					
At ends (in.)	1 3/4 x2 3/4	1 3/4 x2 3/4	1 3/4 x3	1 3/4 x3	1 3/4 x3 1/2
At middle (in.)	1 3/4 x3 3/4	1 3/4 x3 3/4	1 3/4 x4	1 3/4 x4 1/4	1 3/4 x5
Reinforcing strip (minimum)	A 1/8x7/8-in. steel reinforcing strip or its equivalent shall be attached to the side or underside, full length.				
Rungs	Rungs shall be 1 1/8-in. minimum diameter with at least 7/8-in. diameter tenons, and the maximum spacing shall be 12 in. center to center.				
Tie rods:					
Number (minimum)	3	4	4	5	6
Diameter (minimum)	1/4 in.	1/4 in.	1/4 in.	1/4 in.	1/4 in.
Flooring, minimum finished size (in.)	1/2 x2 3/4	1/2 x2 3/4	1/2 x2 3/4	1/2 x2 3/4	1/2 x2 3/4

(3) Seat slings shall be of at least 3/8-inch wire rope when a workman is conducting a heat producing process such as gas or arc welding.

(4) The workman shall be protected by a safety life belt attached to a lifeline. The lifeline shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the worker in case of a fall.

(5) The tackle shall consist of correct size ball bearing or bushed blocks and properly spliced 5/8-inch diameter first-grade manila rope or equivalent strength synthetic-fiber rope.

(6) The roof irons, hooks, or the object to which the tackle is anchored shall be securely installed. Tiebacks when used shall be installed at right angles to the face of the building and securely fastened to a chimney. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17-.240. 79-08-115 (Order 79-9), § 296-24-82521, filed 7/31/79; Order 73-5, § 296-24-82521, filed 5/9/73 and Order 73-4, § 296-24-82521, filed 5/7/73.]

WAC 296-24-82523 Carpenters' bracket scaffolds. (1) The brackets shall consist of a triangular wood frame not less than 2 by 3 inches in cross section, or of metal of equivalent strength. Each member shall be properly fitted and securely joined.

(2) Each bracket shall be attached to the structure by means of one of the following:

(a) A bolt no less than 5/8-inch in diameter which shall extend through the inside of the building wall.

(b) A metal stud attachment device.

(c) Welding to steel tanks.

(d) Hooking over or securing through a well-secured and adequately strong supporting member.

The brackets shall be spaced no more than 10 feet apart.

(3) No more than two persons shall occupy any given 10 feet of a bracket scaffold at any one time. Tools and materials shall not exceed 75 pounds in addition to the occupancy.

(4) The platform shall consist of not less than two 2-by 10-inch nominal size planks extending not more than 10 inches or less than 6 inches beyond each end support.

(5) Guardrails not less than 2 by 4 inches or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1- by 4-inch lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17). [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82523, filed 7/31/79; Order 76-6, § 296-24-82523, filed 3/1/76; Order 73-5, § 296-24-82523, filed 5/9/73 and Order 73-4, § 296-24-82523, filed 5/7/73.]

WAC 296-24-82527 Horse scaffolds. (1) Horse scaffolds shall not be constructed or arranged more than two tiers or 10 feet in height.

(2) The members of the horses shall be not less than those specified in Table D-19.

(3) Horses shall be spaced not more than 5 feet for medium duty and not more than 8 feet for light duty.

(4) When arranged in tiers, each horse shall be placed directly over the horse in the tier below.

(5) On all scaffolds arranged in tiers, the legs shall be nailed down to the planks to prevent displacement or thrust and each tier shall be substantially cross braced.

TABLE D-19

MINIMUM DIMENSIONS
FOR HORSE SCAFFOLD MEMBER

Members:	Dimensions (inches)
Horizontal members or bearers	3 by 4
Legs	1 1/4 by 4 1/2
Longitudinal brace between legs	1 by 6
Gusset brace at top of legs	1 by 8
Half diagonal braces	1 1/4 by 4 1/2

(6) Horses or parts which have become weak or defective shall not be used.

(7) Guardrails not less than 2 by 4 inches or the equivalent and not less than 36 inches or more than 42 inches high with a mid–rail, when required, of 1– by 4–inch lumber or equivalent and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with WAC 296–24–82503(17). [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–82527, filed 7/31/79; Order 73–5, § 296–24–82527, filed 5/9/73 and Order 73–4, § 296–24–82527, filed 5/7/73.]

WAC 296-24-82529 Needle beam scaffold. (1) Wood needle beams shall be in accordance with WAC 296–24–82503(5) and (9) and shall be not less than 4 by 6 inches in size, with the greater dimension placed in a vertical direction. Metal beams or the equivalent conforming to WAC 296–24–82503(4) and (8) may be used.

(2) Ropes or hangers shall be provided for supports. The span between supports on the needle beam shall not exceed 10 feet for 4– by 6–inch timbers. Rope supports shall be equivalent in strength to 1–inch diameter first–grade manila rope.

(3) The ropes shall be attached to the needle beams by a scaffold hitch or a properly made eye splice. The loose end of the rope shall be tied by a bowline knot or by a round turn and one–half hitch.

(4) The platform span between the needle beams shall not exceed 8 feet when using 2–inch scaffold plank. For spans greater than 8 feet, platforms shall be designed based on design requirements for the special span. The overhang of each end of the platform planks shall be not less than 1 foot and not more than 18 inches.

(5) When one needle beam is higher than the other or when the platform is not level the platform shall be secured against slipping.

(6) All unattached tools, bolts, and nuts used on needle beam scaffolds shall be kept in suitable containers.

(7) One end of a needle beam scaffold may be supported by a permanent structural member conforming to WAC 296–24–82503(4) and (8).

(8) Each man working on a needle beam scaffold 10 feet or more above the ground or floor, shall be protected by a safety life belt attached to a lifeline. The lifeline shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the workman in case of a fall. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–82529, filed 7/31/79; Order 73–5, § 296–24–82529, filed 5/9/73 and Order 73–4, § 296–24–82529, filed 5/7/73.]

WAC 296-24-82531 Plasterers', decorators', and large area scaffolds. (1) Plasterers', decorators', lathers', and ceiling workers' inside scaffolds shall be constructed in accordance with the general requirements set forth for independent wood pole scaffolds.

(2) Guardrails not less than 2 by 4 inches nominal lumber or the equivalent and not less than 36 inches or more than 42 inches high, with a mid–rail, when required, of 1– by 4–inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296–24–82503(17).

(3) All platform planks shall be laid with the edges close together to the point where material cannot fall through.

(4) When independent pole scaffold platforms are erected in sections such sections shall be provided with connecting runways equipped with substantial guardrails. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–82531, filed 7/31/79; Order 73–5, § 296–24–82531, filed 5/9/73 and Order 73–4, § 296–24–82531, filed 5/7/73.]

WAC 296-24-82533 Interior hung scaffolds. (1) An interior hung scaffold should be hung or suspended from the roof structure or substantial ceiling beams.

(2) The suspended steel wire rope shall conform to WAC 296–24–82503(22). Wire may be used providing the strength requirements of WAC 296–24–82503(22) are met.

(3) For hanging wood scaffolds, the following minimum nominal size material is recommended:

(a) Supporting bearers 2 by 9 inches on edge.

(b) Planking 2 by 9 inches or 2 by 10 inches, with maximum span 7 feet for heavy duty and 10 feet for light duty or medium duty.

(4) Steel tube and coupler members may be used for hanging scaffolds with both types of scaffold designed to sustain a uniform distributed working load up to heavy duty scaffold loads with a safety factor of four.

(5) When a hanging scaffold is supported by means of wire rope, such wire rope shall be wrapped at least twice around the supporting members and twice around the bearers of the scaffold, with each end of the wire rope secured by at least three standard wire–rope clips.

(6) All overhead supporting members shall be inspected and checked for strength before the scaffold is erected.

(7) Guardrails not less than 2 by 4 inches nominal lumber or the equivalent and not less than 36 inches or more than 42 inches high, with a mid–rail, when required, of at least 1– by 4–inch lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296–24–82503(17). [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–82533, filed 7/31/79; Order 73–5, § 296–24–82533, filed 5/9/73 and Order 73–4, § 296–24–82533, filed 5/7/73.]

WAC 296–24–84003 General requirements. (1) Application. This section is intended to prescribe rules and requirements for the design, construction, and use of mobile work platforms (including ladder stands but not including aerial ladders) and rolling (mobile) scaffolds (towers). This standard is promulgated to aid in providing for the safety of life, limb, and property, by establishing minimum standards for structural design requirements and for the use of mobile work platforms and towers.

(2) Working loads.

(a) Work platforms and scaffolds shall be capable of carrying the design load under varying circumstances depending upon the conditions of use. Therefore, all parts and appurtenances necessary for their safe and efficient utilization must be integral parts of the design.

(b) Specific design and construction requirements are not a part of this section because of the wide variety of materials and design possibilities. However, the design shall be such as to produce a mobile ladder stand or scaffold that will safely sustain the specified loads. The material selected shall be of sufficient strength to meet the test requirements and shall be protected against corrosion or deterioration.

(i) The design working load of ladder stands shall be calculated on the basis of one or more 200–pound persons together with 50 pounds of equipment each.

(ii) The design load of all scaffolds shall be calculated on the basis of:

Light—Designed and constructed to carry a working load of 25 pounds per square foot.

Medium—Designed and constructed to carry a working load of 50 pounds per square foot.

Heavy—Designed and constructed to carry a working load of 75 pounds per square foot.

All ladder stands and scaffolds shall be capable of supporting at least four times the design working load.

(c) Materials used in mobile ladder stands and scaffolds shall be of standard manufacture and conform to specifications of this section for strength, dimensions, and weights, and shall be selected to safely support the design working load.

(d) Nails, bolts, or other fasteners used in the construction of ladders, scaffolds, and towers shall be of adequate size and in sufficient numbers at each connection to develop the designed strength of the unit. Nails shall be driven full length. (All nails should be immediately withdrawn from dismantled lumber.)

(e) All exposed surfaces shall be free from sharp edges, burrs or other safety hazards.

(3) Work levels.

(a) The maximum work level height shall not exceed four times the minimum or least base dimension of any mobile ladder stand or scaffold. Where the basic mobile unit does not meet this requirement, suitable outrigger frames shall be employed to achieve this least base dimension, or provisions shall be made to guy or brace the unit against tipping.

(b) The minimum platform width for any work level shall not be less than 20 inches for mobile scaffolds (towers). Ladder stands shall have a minimum step width of 16 inches.

(c) The supporting structure for the work level shall be rigidly braced, using adequate cross bracing or diagonal bracing with rigid platforms at each work level.

(d) The steps of ladder stands shall be fabricated from slip resistant treads.

(e) The work level platform of scaffolds (towers) shall be of wood, aluminum, or plywood planking, steel or expanded metal, for the full width of the scaffold, except for necessary openings. Work platforms shall be secured in place. All planking shall be 2–inch (nominal) scaffold grade minimum 1,500 f. (stress grade) construction grade lumber or equivalent.

(f) All scaffold work levels 10 feet or higher above the ground or floor shall have a standard (4–inch nominal) toeboard.

(g) All work levels 10 feet or higher above the ground or floor shall have a guardrail of 2– by 4–inch nominal lumber or the equivalent installed no less than 36 inches or more than 42 inches high, with a mid–rail, when required, of at least 1– by 4–inch nominal lumber or equivalent.

(h) A climbing ladder, stairway, or equivalent shall be provided for proper access and egress, and shall be affixed or built into the scaffold and so located that its use will not have a tendency to tip the scaffold. A landing platform shall be provided at intervals not to exceed 30 feet.

(4) Wheels or casters.

(a) Wheels or casters shall be properly designed for strength and dimensions to support four times the design working load.

(b) All scaffold casters shall be provided with a positive wheel and/or swivel lock to prevent movement. Ladder stands shall have at least two of the four casters and shall be of the swivel type.

(c) Where leveling of the elevated work platform is required, screw jacks or other suitable means for adjusting the height shall be provided in the base section of each mobile unit. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–84003, filed 7/31/79; Order 73–5, § 296–

24-84003, filed 5/9/73 and Order 73-4, § 296-24-84003, filed 5/7/73.]

WAC 296-24-85503 Forging machine area. (1) Machines shall be so located as to give (a) enough clearance between machines so that the movement of one operator will not interfere with the work of another, (b) ample room for cleaning machines and handling the work, including material and scrap. The arrangement of machines shall be such that operators will not stand in aisles.

(2) Aisles shall be provided of sufficient width to permit the free movement of employees bringing and removing material. This aisle space is to be independent of working and storage space and should be defined by marking.

(3) Wood platforms used on the floor in front of machines shall be substantially constructed with nonslip surfaces. [Statutory Authority: RCW 49.17.040, 49.17-.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-85503, filed 7/31/79; Order 73-5, § 296-24-85503, filed 5/9/73 and Order 73-4, § 296-24-85503, filed 5/7/73.]

WAC 296-24-955 National electrical code. (1) The requirements contained in the following articles and sections of the National Electrical Code, NFPA 70-1971; ANSI C1-1971 (Rev. of 1968) shall apply to all existing electrical installations and utilization equipment:

Articles:

500	Hazardous Locations.
501	Class I Installations (Hazardous Locations).
502	Class II Installations (Hazardous Locations).
503	Class III Installations (Hazardous Locations).

Sections:

250-58 (a) and (b)	Equipment on Structural Metal.
250-59 (a), (b), and (c)	Portable and/or Cord Connected and Plug Connected Equipment, Grounding Method.
400-3 (a) and (b)	Flexible Cords and Cable, Uses.
400-4	Flexible Cords and Cable Prohibited.
400-5	Flexible Cords and Cables, Splices.
400-9	Overcurrent Protection and Ampacities of Flexible Cords.
400-10	Pull at Joints and Terminals of Flexible Cords and Cables.
422-8	Installation of Appliances with Flexible Cords.
422-9	Installation of Portable Immersion Heaters.
422-10	Installation Appliances Adjacent to Combustible Material.
422-11	Stands for Portable Appliances.
422-12	Signals for Heated Appliances.
422-14	Water Heaters.
422-15 (a), (b), and (c).	Installation of Infrared Lamp and Industrial Heating Appliances.
110-14 (a) and (b)	Electric Connection.
110-17 (a), (b), and (c)	Guarding Live Part.
110-18	Arcing Parts.
110-21	Marking.

Sections:

110-22	Identification.
240-16 (a), (b), (c), and (d)	Location in Premises for Overcurrent Protection Devices.
240-19 (a) and (b)	Guarding of Arcing or Suddenly Moving Parts of Overcurrent Protection Devices.
250-3 (a) and (b)	D.C. System Grounding.
250-5 (a), (b), and (c)	A.C. Circuits and Systems To Be Grounded.
250-7	Circuits Not To Be Grounded.
250-42 (a), (b), (c), and (d)	Fixed Equipment Grounding, General.
250-43 (a), (b), (c), (d), (e), (f), (g), (h), and (i).	Fixed Equipment Grounding[,] Specific.
250-44 (a), (b), (c), (d), and (e)	Nonelectrical Equipment, Grounding.
250-45 (a), (b), (c), and (d)	Equipment Connected by Cord and Plug, Grounding.
430-142 (a), (b), (c), and (d)	Stationary Motor, Grounding.
430-143	Portable Motors, Grounding.
250-50 (a) and (b)	Equipment Grounding Connections.
250-51	Effective Grounding.
250-57 (a) and (b)	Fixed Equipment Method of Grounding.
422-16	Appliance Grounding.
422-17	Installation of Wall-mounted Ovens and Counter-mounted Cooking Units.

(2) Every new electrical installation and all new utilization equipment installed after June 7, 1974, and every replacement, modification, or repair or rehabilitation, after June 7, 1974, of any part of any electrical installation or utilization equipment installed before June 7, 1974, shall be installed or made, and maintained, in accordance with the nonlisted articles of the 1971 National Electrical Code, NFPA 70-1971; ANSI C1-1971 (Rev. of 1968).

(3) Ground-fault protection. (a) General. Notwithstanding any other provision of this section, the requirement in section 210-7 of the 1971 National Electric Code (NFPA 70-1971; ANSI C1-1971) that all 15- and 20-ampere receptacle outlets on single-phase circuits for construction sites have approved ground-fault circuit protection for personnel does not apply. In lieu thereof, the employer shall use either ground-fault circuit interrupters as specified in subsection (3)(b) of this section or an assured equipment grounding conductor program as specified in subsection (3)(c) of this section, to protect employees on construction sites. These requirements are in addition to any other requirements for equipment grounding conductors.

(b) Ground-fault circuit interrupters. All 120-volt, single-phase, 15- and 20-ampere receptacle outlets on construction sites, which are not a part of the permanent wiring of the building or structure and which are in use by employees, shall have approved ground-fault circuit interrupters for personnel protection. Receptacles on a two-wire, single-phase portable or vehicle-mounted generator rated not more than 5kW, where the circuit conductors of the generator are insulated from the generator frame and all other grounded surfaces, need not be protected with ground-fault circuit interrupters.

(c) Assured equipment grounding conductor program. The employer shall establish and implement an assured equipment grounding conductor program on construction sites covering all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and equipment connected by cord and plug which are available for use or used by employees. This program shall comply with the following minimum requirements:

(i) A written description of the program, including the specific procedures adopted by the employer, shall be available at the jobsite for inspection and copying by the Director and any affected employee.

(ii) The employer shall designate one or more competent persons (as defined in WAC 296-24-012(3)) to implement the program.

(iii) Each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, shall be visually inspected before each day's use for external defects, such as deformed or missing pins or insulation damage, and for indication of possible internal damage. Equipment found damaged or defective may not be used until repaired.

(iv) The following tests shall be performed on all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and cord- and plug-connected equipment required to be grounded:

(A) All equipment grounding conductors shall be tested for continuity and shall be electrically continuous.

(B) Each receptacle and attachment cap or plug shall be tested for correct attachment of the equipment grounding conductor. The equipment grounding conductor shall be connected to its proper terminal.

(v) All required tests shall be performed:

(A) Before first use;

(B) Before equipment is returned to service following any repairs;

(C) Before equipment is used after any incident which can be reasonably suspected to have caused damage (for example, when a cord set is run over); and

(D) At intervals not to exceed 3 months, except that cord sets and receptacles which are fixed and not exposed to damage shall be tested at intervals not exceeding 6 months.

(vi) The employer may not make available or permit the use by employees of any equipment which has not met the requirements of subsection (3)(c) of this section.

(vii) Tests performed as required in this subsection shall be recorded. This test record shall identify each receptacle, cord set, and cord- and plug-connected equipment that passed the test, and shall indicate the last date it was tested or the interval for which it was tested. This record shall be kept by means of logs, color coding, or other effective means, and shall be maintained until replaced by a more current record. The record shall be made available on the jobsite for inspection by the director and any affected employee. [Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240 and chapters 42-.30 and 43.22 RCW. 78-12-017 (Order 78-22), § 296-24-955, filed 11/13/78; Order 77-12, § 296-24-955, filed 7/11/77; Order 74-27, § 296-24-955, filed 5/7/74.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

Chapter 296-27 WAC
RECORD KEEPING AND REPORTING

WAC

WAC 296-27-010 Purpose and scope. The regulations of this chapter implement sections RCW 49.17.050(5), 49.17.220(1), 49.17.220(2), 49.17.230, and 49.17.260 of the Washington Industrial Safety and Health Act of 1973. These sections provide for record keeping and reporting by employers covered under the Act as necessary or appropriate for enforcement of the Act, for developing information regarding the causes and prevention of occupational accidents and illnesses, and for maintaining a program of collection, compilation, and analysis of industrial safety and health statistics.

Pursuant to the provisions of 29 CFR 1904.10, records maintained by an employer and reports submitted pursuant to, and in accordance with the requirements of an approved State Plan under section 18 of the Federal Occupational Safety and Health Act of 1970 (Public Law 91-596, 84 STAT. 1590) shall be regarded as compliance with 29 CFR Part 1904 - "Recording and Reporting Occupational Injuries and Illnesses."

Compliance with and [the] requirements of this chapter, as recognized by the Washington Industrial Safety and Health State Plan, is regarded as compliance with the provisions of the above-cited federal requirements. Employers complying with the record keeping and reporting requirements of this chapter are not required to keep records as required by the Federal Record Keeping and Reporting Regulations (Ref. 29 CFR 1904.10).

The record keeping and reporting requirements of this chapter are separate and distinct from the record keeping and reporting requirements under Title 51 Revised Code of Washington (the Industrial Insurance Act) unless otherwise noted in this chapter. [Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-010, filed 6/28/78; Order 74-22, § 296-27-010, filed 5/6/74.]

WAC 296-27-020 Definitions. (1) "Act" means the Washington Industrial Safety and Health Act of 1973, chapter 49.17 RCW, as now or hereafter amended.

(2) The definitions and interpretations included in RCW 49.17.020 shall be applicable to such terms when used in this chapter, unless a different interpretation is clearly required by the context.

(3) "Recordable occupational injuries or illnesses of employees" means any occupational injury or illness of employees which result in:

(a) Occupational fatalities, regardless of the length of time between injury and death, or the length of the illness preceding the time of death (no recording is required for fatalities occurring after a termination of employment, except when recording may otherwise be required by a specific industrial safety and health standard adopted pursuant to the Act); or

(b) Lost workday cases, other than fatalities, that result in lost workdays (see subsection (6) of this section); or

(c) Occupational illnesses, or nonfatal cases without lost workdays which result in transfer to another job or termination of employment, or require medical treatment (other than first aid) or involve loss of consciousness or restriction of work or motion. This category also includes any diagnosed occupational illnesses which are reported to the employer but are not classified as fatalities or lost workday cases.

(4) "Medical treatment" means and includes treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even though provided by a physician or registered professional personnel.

(5) "First Aid" means any one–time treatment, and any follow–up visit or visits for the purpose of observation of minor scratches, cuts, burns, splinters and so forth which do not ordinarily require professional medical care. Such one–time treatment and follow–up visit or visits for the purpose of observation are considered first aid even though provided by a physician or registered professional personnel.

(6) "Lost workdays:"

(a) "Lost workdays – days away from work" means the number of days (consecutive or not) after the day of injury or illness which the employee would have worked but could not because of occupational injury or illness. The number of "lost workdays – days away from work", should not include the day of the injury, or the day the illness occurred, or any days which the employee was not scheduled to work; e.g. Saturday, Sunday, or holidays.

(b) "Lost workdays – days of restricted activity" means the number of workdays (consecutive or not) on which, because of the injury or illness:

(i) The employee was assigned to a temporary job; or

(ii) The employee worked at a permanent job less than full time; or

(iii) The employee worked at a permanently assigned job but could not perform all the duties normally assigned to that job.

The number of "lost workdays – days of restricted activity" should not include the day of the injury or the day the illness occurred, or any other days which the employee was not scheduled to work; e.g. Saturday, Sunday, or holidays, etc.

(7) "Establishment" means:

(a) A single physical location where business is conducted or where services or industrial operations are performed. (For example: a factory, mill, store, hotel, restaurant, movie theater, farm, ranch, bank, sales office, warehouse, or central administrative office.) Where distinctly separate activities are performed at a single physical location, such as contract construction activities operated from the same physical location as a lumber yard, each activity shall be treated as a separate establishment.

(b) For firms engaged in activities such as agriculture, construction, transportation, communications, electric, gas or sanitary services, which may be physically disbursed, "establishment" means a place to which employees report each day.

(c) For employees who do not primarily report or work at a single establishment, and who are generally not supervised in their daily work, such as travelling salesmen, technicians, engineers, etc., "establishment" means the location from which they are paid, or the base from which employees operate to carry out their activities.

(8) "WISHERS" means Washington Industrial Safety and Health Evaluation and Reporting System.

(9) "Occupational illness" means such illness as arises naturally and approximately out of employment under the provisions of the Act.

NOTE: Examples of occupational illnesses appear on the instruction page of Form OSHA No. 200.

(10) "Occupational" means industrial and industrial means occupational.

(11) "OSHA" means Occupational Safety and Health Administration. [Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17-.240. 78–07–052 (Order 78–10), § 296–27–020, filed 6/28/78; Order 74–22, § 296–27–020, filed 5/6/74.]

WAC 296-27-030 Log and summary of occupational injuries and illnesses. (1) Except as provided in subsection (2) of this section, each employer shall:

(a) Maintain in each establishment a log and summary of all recordable occupational injuries and illnesses for that establishment; and

(b) Enter each recordable injury and illness on the log as early as practicable, but no later than six working days after receiving information that a recordable case has occurred. For this purpose Form OSHA No. 200 or an equivalent which is as readable and comprehensible to a person not familiar with it shall be used. The log and summary shall be completed in the detail provided in instructions on Form OSHA No. 200.

(2) Any employer may maintain the log and summary of all recordable occupational injuries and illnesses at a place other than the establishment or by means of data

processing equipment, or both, if at each of the employer's establishments there is available a copy of the log and summary which reflects separately the injury and illness experience of that establishment complete and current to a date within forty-five calendar days. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17-.240. 79-08-115 (Order 79-9), § 296-27-030, filed 7/31/79. Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-030, filed 6/28/78; Order 74-22, § 296-27-030, filed 5/6/74.]

WAC 296-27-040 Period covered by logs. Logs and summaries of occupational injuries and illnesses shall be established on a calendar year basis. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-040, filed 7/31/79; Order 74-22, § 296-27-040, filed 5/6/74.]

WAC 296-27-050 Supplementary record. In addition to the log and summary of occupational injuries and illnesses provided for under WAC 296-27-030, each employer shall have available for inspection at each establishment or other location as specified in WAC 296-27-020 within six working days after receiving information that a recordable case has occurred, a supplementary record for each occupational injury or illness for that establishment. The record shall be completed in the detail prescribed in the instructions accompanying Form OSHA No. 101. The Department of Labor and Industries Accident Report Form LI-210-130 may be used as an alternative to the Form OSHA 101. Other reports are acceptable alternative records if they contain the information required by Form OSHA No. 101. If no acceptable alternative record is maintained for other purposes, Form OSHA No. 101 shall be used for the necessary information or shall be otherwise maintained in a convenient form. [Statutory Authority: RCW 49-.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-050, filed 7/31/79. Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-050, filed 6/28/78; Order 74-22, § 296-27-050, filed 5/6/74.]

WAC 296-27-060 Annual summary. (1) Each employer shall post an annual summary of occupational injuries and illnesses for each establishment. This summary shall consist of a copy of the year's totals from the form OSHA No. 200 and the following information from that form: Calendar year covered, company name, establishment name, establishment address, certification signature, title, and date. A form OSHA No. 200 shall be used in presenting the summary. If no injuries or illnesses occurred in the year, zeros must be entered on the totals line, and the form must be posted.

(2) The summary shall be completed by February 1 beginning with the calendar year 1979.

(3) Each employer, or the officer or employee of the employer who supervises the preparation of the log and summary of occupational injuries and illnesses, shall certify that the annual summary of occupational injuries and illnesses is true and complete. The certification shall be accomplished by affixing the signature of the employer, or the officer or employer who supervises the preparation of the annual summary of occupational injuries and illnesses, at the bottom of the last page of the log and summary, or by appending a separate statement to the log and summary certifying that the summary is true and complete.

(4) (a) Each employer shall post a copy of the establishment's summary in each establishment. The summary covering the previous calendar year shall be posted no later than February 1, and shall remain in place until March 1. For employees who do not primarily report or work at a single establishment, or who do not report to any fixed establishment on a regular basis, employers shall satisfy this posting requirement by presenting or mailing a copy of the summary portion of the log and summary during the month of February of the following year to each such employee who receives pay during that month. For multiestablishment employers where operations have closed down in some establishments during the calendar year, it will not be necessary to post summaries for those establishments.

(b) A failure to post a copy of the establishment's summary, or otherwise satisfy the posting requirements as specified in this section, may result in the issuance of citations and assessments of penalties pursuant to RCW 49.17.120 and 49.17.180. [Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-060, filed 6/28/78; Order 74-22, § 296-27-060, filed 5/6/74.]

WAC 296-27-070 Retention of records. Records provided for in WAC 296-27-030, 296-27-050, and 296-27-060 including Form OSHA No. 200 and its predecessor Forms WISHA No. 100 and WISHA No. 102 shall be retained in each establishment for five years following the end of the year to which they relate. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-070, filed 7/31/79; Order 74-22, § 296-27-070, filed 5/6/74.]

WAC 296-27-077 Small employers. (1) An employer who had no more than ten employees at any time during the calendar year immediately preceding the current calendar year need not comply with any of the requirements of this chapter except the following:

(a) Obligation to report under WAC 296-27-090 concerning fatalities or multiple hospitalization accidents; and

(b) Obligation to maintain a log of occupational injuries and illnesses under WAC 296-27-030 and to make reports under WAC 296-27-140 upon being notified in writing by the Bureau of Labor Statistics and the Department of Labor and Industries that the employer has been selected to participate in a statistical survey of occupational injuries and illnesses. [Statutory Authority:

Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49-.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-077, filed 6/28/78.]

WAC 296-27-080 Access to records. (1) Each employer shall provide upon request records provided for in WAC 296-27-030, 296-27-050, and 296-27-060, for inspection and copying by designated or authorized representatives of the Department of Labor and Industries, compliance safety and health officers of the Occupational Safety and Health Administration, U.S. Department of Labor during any occupational safety and health inspection provided for under 29 CFR 1903 and section 8 of the Federal Occupational Safety and Health Act, by any representatives of the Bureau of Labor Statistics, U.S. Department of Labor, or by any representative of the Secretary of Health, Education and Welfare during any investigation under section 20(b) of the Federal Occupational Safety and Health Act.

(2) (a) The log and summary of all recordable occupational injuries and illnesses (OSHA No. 200) (the log) provided for in WAC 296-27-030 shall, upon request, be made available by the employer to any employee, former employee, and to their representatives for examination and copying in a reasonable manner and at reasonable times. The employee, former employee, and their representatives shall have access to the log for any establishment in which the employee is or has been employed.

(b) Nothing in this section shall be deemed to preclude employees and employee representatives from collectively bargaining to obtain access to information relating to occupational injuries and illnesses in addition to the information made available under this section.

(c) Access to the log provided under this section shall pertain to all logs retained under the requirements of WAC 296-27-070. [Statutory Authority: RCW 49.17-.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-080, filed 7/31/79; Order 74-22, § 296-27-080, filed 5/6/74.]

WAC 296-27-120 Petitions for record keeping exceptions. (1)(a) In order to achieve a uniform, national system for the record keeping and reporting of occupational injuries and illnesses, the state of Washington and the United States Department of Labor have agreed that as applied to employers as defined by subsection 3(5) of the Occupational Safety and Health Act of 1970 (Public Law 91-596, 81 STAT 1950) the state shall not grant any variances or exceptions to the record keeping and reporting regulations of this chapter, with the exception of approval of forms to serve as the substitutes for OSHA 101 and OSHA 200 (see WAC 296-27-030 and 296-27-050), without prior approval of the Bureau of Labor Statistics.

(b) Any public employer who wishes to maintain records in a manner different from that prescribed by this chapter may submit a petition containing the information specified in subsection (5) of this section to the director, Department of Labor and Industries, General Administration Building, Olympia, Washington 98504[.]

(2) All petitions for authorization to maintain records in a manner different than that required by this chapter shall be submitted to the director or directly to the Bureau of Labor Statistics. The director, upon receipt of a petition submitted pursuant to the provisions of subsection (3) of this section, shall immediately forward copies of same to appropriate officials of the Bureau of Labor Statistics. Should said federal officials inform the director of their belief in the desirability or necessity of additional notice or conferences pursuant to provisions of subsection (7) of this section, the director shall provide or cause to be provided such additional notice and/or afford an opportunity for interested parties for informal conferences or hearings concerning the petition. For the purposes of this section, the Occupational Safety and Health Administration and the Bureau of Labor Statistics shall be considered interested parties.

The Bureau of Labor Statistics shall be afforded the opportunity to review the petition and any comments submitted in regard thereto. The director shall not grant the petition prior to a finding by the said federal agency that the alternative procedure proposed will not hamper or interfere with the purposes of the Occupational Safety and Health Act of 1970.

(3) Submission of Petition. Any employer, who for good cause wishes to maintain records in a manner different from that required by this chapter, may submit a petition containing the information specified in subsection (5) of this section to the director.

(4) Opportunity for Comment. Affected employees, or their representatives shall have an opportunity to submit written data, views, or arguments concerning the petition to the director within ten working days following the receipt of notice under subdivision (5)(e) of this section.

(5) Contents of Petition. A petition filed under subsection (3) of this section shall include:

(a) The name and address of the applicant;

(b) The address of the place or places (establishment or establishments) of the employment involved;

(c) Specifications of the reasons for seeking relief;

(d) A description of the different record keeping procedures which are proposed by the applicant;

(e) A statement that:

(i) The applicant has informed his affected employees of the petition by giving a copy thereof to them or to their authorized representative, posting a statement giving a summary of the petition and specifying where a copy of the petition may be obtained, at the place or places where notices to employees are normally posted, and by other appropriate means. A statement posted pursuant to these provisions shall be posted in each establishment identified in WAC 296-27-120(4)(b).

(ii) The applicant has in the same manner informed affected employees and their representatives of their rights under subsection (3) of this section.

(6) Additional Notice – Conferences.

(a) In addition to the actual notice provided for in subdivision (5)(e) of this section, the director may provide, or cause to be provided, such additional notice of the petition as he may deem appropriate.

(b) The director may also afford an opportunity to interested parties for informational conferences or hearings concerning the petition.

(7) After review of the petition, and any comments submitted in regard thereto, and upon completion of any necessary appropriate investigation concerning the petition, if the director finds that the alternative procedure proposed will not hamper or interfere with the purposes of the Act, and will provide equivalent information, he may grant the petition subject to such conditions as he may determine appropriate, subject to the provisions of WAC 296-200-120(2), and subject to revocation for cause.

(8) Publication. When any relief is granted to an applicant under this chapter, notice of such relief, and the reasons therefor, may be published in the Federal Register.

(9) Revocation. Whenever any relief under this section is sought to be revoked for any failure to comply with the conditions thereof, an opportunity for informal hearing or conference shall be afforded to the employers and effected employees, or their representatives, and other interested parties. Except in cases of willfulness or where public safety or health requires otherwise, before the commencement of any such informal proceeding, the employer shall:

(a) Be notified in writing of the facts of conduct which may warrant the action and,

(b) Be given an opportunity to demonstrate or achieve compliance.

(10) Compliance After Submission of Petitions. The submission of a petition or any delay by the director in acting upon a petition shall not relieve any employer from any obligation to comply with the provisions of this chapter.

(11) The director shall honor exceptions to the provisions of 29 CFR 1904 - RECORDING AND REPORTING OCCUPATIONAL INJURIES AND ILLNESSES, granted by the Bureau of Labor Statistics to companies having establishments in states other than Washington, when such exceptions apply to the establishments within this state.

(12) There shall be consultation between the appropriate representatives of the department, the Occupational Safety and Health Administration, and the Bureau of Labor Statistics in order to enjoy the effective implementation of this chapter. [Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49-.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-120, filed 6/28/78; Order 76-29, § 296-27-120, filed 9/30/76; Order 74-22, § 296-27-120, filed 5/6/74.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-27-130 Description of statistical program. RCW 49.17.260 directs the director to develop and maintain a program of collection, compilation and analysis of occupational safety and health statistics. The program shall include periodic surveys of occupational injuries and illnesses. [Statutory Authority: RCW 49-.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-130, filed 7/31/79; Order 74-22, § 296-27-130, filed 5/6/74.]

WAC 296-27-140 Duties of employers--Statistical program. Upon receipt of an Occupational Injuries and Illnesses Survey Form, Form OSHA No. 200-S, the employer shall promptly complete the form in accordance with the instructions contained therein and return it in accordance with the aforesaid instructions. [Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-140, filed 6/28/78; Order 74-22, § 296-27-140, filed 5/6/74.]

WAC 296-27-150 Effective date of regulations. Pursuant to the finding of the director that additional time is needed to afford affected employers a reasonable opportunity to make changes in methods, means, or practices to meet the requirements of WAC 296-27-010 through 296-27-140, the effective date of these requirements shall be January 1, 1978. [Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49-.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-150, filed 6/28/78; Order 74-22, § 296-27-150, filed 5/6/74.]

Chapter 296-37 WAC
STANDARDS FOR COMMERCIAL DIVING OPERATIONS

WAC

296-37-010 Repealed.
296-37-020 Repealed.
296-37-030 Repealed.
296-37-040 Repealed.
296-37-050 Repealed.
296-37-060 Repealed.
296-37-070 Repealed.
296-37-071 Repealed.
296-37-072 Repealed.
296-37-080 Repealed.
296-37-081 Repealed.
296-37-082 Repealed.
296-37-090 Repealed.
296-37-100 Repealed.
296-37-110 Repealed.
296-37-300 Repealed.
296-37-310 Repealed.
296-37-320 Repealed.
296-37-330 Repealed.
296-37-340 Repealed.
296-37-350 Repealed.
296-37-360 Repealed.
296-37-370 Repealed.
296-37-380 Repealed.
296-37-390 Repealed.
296-37-395 Repealed.
296-37-400 Repealed.
296-37-410 Repealed.
296-37-420 Repealed.
296-37-430 Repealed.
296-37-440 Repealed.
296-37-450 Repealed.
296-37-460 Repealed.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-37-010 Scope and application. [Section I, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-020 Purpose. [Section II, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-030 Definitions. [Section III, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-040 Appointment and duties of committees. [Section IV, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17-.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-050 Classification of apparatus permitted and air purity. [Section V, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42-.30 and 43.22 RCW.

296-37-060 Approval of equipment. [Section VI, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-070 Diver registration—Diver training or experience physical exam and medical history record. [Section VII, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17-.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-071 Form # 1. [Form # 1, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-072 Form # 2. [Form # 2, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-080 General requirements, procedures and techniques. [Section VIII, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42-.30 and 43.22 RCW.

296-37-081 Form # 3. [Form # 3, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-082 Illustrations of flags and shapes. [Illustrations, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-090 Recompression chamber—Tables—Attendant. [Section IX, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-100 Identification. [Section X, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-110 Waiver or variance. [Section XI, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-300 Use of compressors in diving operations. [Rule 101, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-310 Equipment requirements—Divers air line, check valves, etc. [Rules 102 and 103, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-320 Equipment requirements—Barge operations. [Rule 104, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17-.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-330 Equipment requirements—Air tools used in underwater operations. [Rule 105, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-340 Equipment requirements—Inspection. [Rule 106, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-350 Safety rules—Generally. [Rule 107, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-360 Safety rules—Suggestions made by diver considered rule to govern. [Rule 108, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-370 Conditions on barge deck. [Rule 109, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-380 Use of two-way telephones. [Rule 110, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-390 Decompression chamber—When used. [Rule 111, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-395 Special stipulation regarding inexperienced divers and workmen. [Rule 112, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-400 Special stipulation regarding inexperienced divers and workmen—Diver may choose tender. [Rule 113, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-410 Judgment of diver to take precedent. [Rule 114, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-420 Requirement on all ship surveys. [Rule 115, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-430 Use of flood lights. [Rule 116, filed 3/23/60:] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-440 Rules for compressed air operations applicable to diving operations. [Rule 117, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-450 Availability of life preservers. [Rule 118, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-460 Care and replacement of equipment. [Rules 119 and 120, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17-.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

WAC 296-37-010 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-020 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-030 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-040 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-050 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-060 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-070 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-071 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-072 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-080 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-081 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-082 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-090 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-100 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-110 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-300 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-310 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-320 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-330 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-340 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-350 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-360 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-370 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-380 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-390 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-395 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-400 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-410 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-420 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-430 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-440 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-450 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-460 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-37-510 Scope and application. (1) The requirements included in this vertical chapter shall apply throughout the state wherever commercial diving takes place within the jurisdiction of the Department of Labor and Industries. These requirements shall also be applicable to those diving related and supportive work activities not at the diving site but which have a direct effect on the safety of the diving operations. Examples may include but are not limited to: The supply of breathing air or gas; the supply of materials, equipment or supplies required by this chapter; the maintenance of diving equipment.

(2) This standard applies to diving and related support operations conducted in connection with all types of work and employments, including general industry, construction, ship repairing, shipbuilding, shipbreaking and longshoring. However, this standard does not apply to any diving operation:

(a) Performed solely for instructional purposes, using open-circuit, compressed-air SCUBA and conducted within the no-decompression limits; or

(b) Performed solely for search, rescue, or related public safety purposes by or under the control of a governmental agency; or

(c) Performed by noncommercial divers whose exposures may be of an entirely different type and whose operations are approved by the Department of Labor and Industries.

(3) This chapter shall augment the requirements of the General Safety and Health Standard, chapter 296-24 WAC and the General Occupational Health Standard, chapter 296-62 WAC. In instances where this chapter is in direct conflict with the requirements of any general horizontal standard, the requirements of this chapter shall apply.

(4) Hoisting gear used in diving operations shall be inspected and certified as required by chapter 296-56 WAC, Safety Standards for Longshore, Stevedore and Related Waterfront Operations.

(5) Application in Emergencies. (a) An employer may deviate from the requirements of this standard to the extent necessary to prevent or minimize a situation which is likely to cause death, serious physical harm, or major environmental damage, provided that the employer:

(i) Notifies the Assistant Director of the Department of Labor and Industries in Olympia or the Chief Safety Inspector for the Region within 48 hours of the onset of the emergency situation indicating the nature of the emergency and extent of the deviation from the prescribed regulations; and

(ii) Upon request from the authority notified, submits such information in writing.

(6) Employer Obligation. (a) The employer shall be responsible for compliance with:

(i) All provisions of this standard of general applicability; and

(ii) All requirements pertaining to specific diving modes to the extent diving operations in such modes are conducted. [Statutory Authority: RCW 49.17.040, 49-.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-510, filed 10/2/78.]

WAC 296-37-512 Variance and procedure. Realizing that conditions may exist in operations under which certain state standards will not have practical application, the Director of the Department of Labor and Industries or his authorized representative may, pursuant to this section, RCW 49.17.080 and/or 49.17.090 and appropriate administrative rules of this state and the Department of Labor and Industries and upon receipt of application and after adequate investigation by the Department, permit a variation from these requirements when other means of providing an equivalent measure of protection are afforded. Such variation granted shall be limited to the particular case or cases covered in the application for variance and may be revoked for cause. The permit for variance shall be conspicuously posted on the premises and shall remain posted during the time it is in effect. All requests for variances from safety and health standards included in this or any other chapter of Title 296 WAC, shall be made in writing to the Director of the Department of Labor and Industries at Olympia, Washington, or his duly authorized representative, the Assistant Director, Division of Industrial Safety and Health, Department of Labor and Industries, Olympia, Washington. Variance application forms may be obtained from the Department upon request. [Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-512, filed 10/2/78.]

WAC 296-37-515 Definitions. As used in this standard, the listed terms are defined as follows:

(1) "Acfm": Actual cubic feet per minute.

(2) "ASME Code or equivalent": ASME (American Society of Mechanical Engineers) Boiler and Pressure Vessel Code, Section VIII, or an equivalent code which the employer can demonstrate to be equally effective.

(3) "ATA": Atmosphere absolute.

(4) "Bell": An enclosed compartment, pressurized (closed bell) or unpressurized (open bell), which allows the diver to be transported to and from the underwater work area and which may be used as a temporary refuge during diving operations.

(5) "Bottom time": The total elapsed time measured in minutes from the time when the diver leaves the surface in descent to the time that the diver begins ascent.

(6) "Bursting pressure": The pressure at which a pressure containment device would fail structurally.

(7) "Cylinder": A pressure vessel for the storage of gases.

(8) "Decompression chamber": A pressure vessel for human occupancy such as a surface decompression chamber, closed bell, or deep diving system used to decompress divers and to treat decompression sickness.

(9) "Decompression sickness": A condition with a variety of symptoms which may result from gas or bubbles in the tissues of divers after pressure reduction.

(10) "Decompression table": A profile or set of profiles of depth-time relationships for ascent rates and breathing mixtures to be followed after a specific depth-time exposure or exposures.

(11) "Dive location": A surface or vessel from which a diving operation is conducted.

(12) "Dive-location reserve breathing gas": A supply system of air or mixed-gas (as appropriate) at the dive location which is independent of the primary supply system and sufficient to support divers during the planned decompression.

(13) "Dive team": Divers and support employees involved in a diving operation, including the designated person-in-charge.

(14) "Diver": An employee working in water using underwater apparatus which supplies compressed breathing gas at the ambient pressure.

(15) "Diver-carried reserve breathing gas": A diver-carried supply of air or mixed gas (as appropriate) sufficient under standard operating conditions to allow the diver to reach the surface, or another source of breathing gas, or to be reached by a standby diver.

(16) "Diving mode": A type of diving requiring specific equipment, procedures and techniques (SCUBA, surface-supplied air, or mixed gas).

(17) "Fsw": Feet of seawater (or equivalent static pressure head).

(18) "Heavy gear": Diver-worn deep-sea dress including helmet, breastplate, dry suit, and weighted shoes.

(19) "Hyperbaric conditions": Pressure conditions in excess of surface pressure.

(20) "Inwater stage": A suspended underwater platform which supports a diver in the water.

(21) "Liveboating": The practice of supporting a surfaced-supplied air or mixed gas diver from a vessel which is underway.

(22) "Mixed-gas diving": A diving mode in which the diver is supplied in the water with a breathing gas other than air.

(23) "No-decompression limits": The depth-time limits of the "no-decompression limits and repetitive dive group designation table for no-decompression air dives", U.S. Navy Diving Manual or equivalent limits which the employer can demonstrate to be equally effective.

(24) "Psi(g)": Pounds per square inch (gauge).

(25) "SCUBA diving": A diving mode independent of surface supply in which the diver uses open circuit self-contained underwater breathing apparatus.

(26) "Standby diver": A diver at the dive location available to assist a diver in the water.

(27) "Surface-supplied air diving": A diving mode in which the diver in the water is supplied from the dive location with compressed air for breathing.

(28) "Treatment table": A depth-time and breathing gas profile designed to treat decompression sickness.

(29) "Umbilical": The composite hose bundle between a dive location and a diver or bell, or between a diver and a bell, which supplies the diver or bell with breathing gas, communications, power, or heat as appropriate to the diving mode or conditions, and includes a safety line between the diver and the dive location.

(30) "Volume tank": A pressure vessel connected to the outlet of a compressor and used as an air reservoir.

(31) "Working pressure": The maximum pressure to which a pressure containment device may be exposed under standard operating conditions. [Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-515, filed 10/2/78.]

WAC 296-37-520 Qualifications of dive team. (1) General.

(a) Each dive team member shall have the experience or training necessary to perform assigned tasks in a safe and healthful manner.

(b) Each dive team member shall have experience or training in the following:

(i) The use of tools, equipment and systems relevant to assigned tasks;

(ii) Techniques of the assigned diving mode; and

(iii) Diving operations and emergency procedures.

(c) All dive team members shall be trained in cardiopulmonary resuscitation and first aid (American Red Cross standard course or equivalent).

(d) Dive team members who are exposed to or control the exposure of others to hyperbaric conditions shall be trained in diving-related physics and physiology.

(2) Assignments. (a) Each dive team member shall be assigned tasks in accordance with the employee's experience or training, except that limited additional tasks may be assigned to an employee undergoing training provided that these tasks are performed under the direct supervision of an experienced dive team member.

(b) The employer shall not require a dive team member to be exposed to hyperbaric conditions against the employee's will, except when necessary to complete decompression or treatment procedures.

(c) The employer shall not permit a dive team member to dive or be otherwise exposed to hyperbaric conditions for the duration of any temporary physical impairment or condition which is known to the employer and is likely to affect adversely the safety or health of a dive team member.

(3) Designated Person-In-Charge. (a) The employer or an employee designated by the employer shall be at the dive location in charge of all aspects of the diving operation affecting the safety and health of dive team members.

(b) The designated person-in-charge shall have experience and training in the conduct of the assigned diving operation. [Statutory Authority: RCW 49.17.040, 49-.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-520, filed 10/2/78.]

WAC 296-37-525 Medical requirements. (1) General. (a) The employer shall determine that dive team members who are, or are likely to be, exposed to hyperbaric conditions are medically fit to perform assigned tasks in a safe and healthful manner.

(b) The employer shall provide each dive team member who is, or is likely to be, exposed to hyperbaric conditions with all medical examinations required by this standard.

(c) All medical examinations required by this standard shall be performed by, or under the direction of, a physician at no cost to the employee.

(2) Frequency of Medical Examinations. Medical examinations shall be provided:

(a) Prior to initial hyperbaric exposure with the employer, unless an equivalent medical examination has

been given within the preceding 12 months and the employer has obtained the results of the examination and an opinion from the examining physician of the employee's medical fitness to dive or to be otherwise exposed to hyperbaric conditions;

(b) At one year intervals from the date of initial examination or last equivalent examination; and

(c) After an injury or illness requiring hospitalization of more than twenty-four hours.

(3) Information Provided to Examining Physician. The employer shall provide the following information to the examining physician:

(a) A copy of the medical requirements of this standard; and

(b) A summary of the nature and extent of hyperbaric conditions to which the dive team member will be exposed, including diving modes and types of work to be assigned.

(4) Content of Medical Examinations. (a) Medical examinations conducted initially and annually shall consist of the following:

(i) Medical history;

(ii) Diving-related work history;

(iii) Basic physical examination;

(iv) The tests required by Table I; and

(v) Any additional tests the physician considers necessary.

(b) Medical examinations conducted after an injury or illness requiring hospitalization of more than 24 hours shall be appropriate to the nature and extent of the injury or illness as determined by the examining physician.

TABLE I

TESTS FOR DIVING MEDICAL EXAMINATION

Test	Initial Examination	Annual Reexamination
Chest X-ray	x	
Visual acuity	x	x
Color blindness	x	
EKG: standard 12L[1]		
Hearing test	x	x
Hematocrit or hemoglobin.	x	x
Sickle cell index	x	
White blood count	x	x
Urinalysis	x	x

[1]To be given to the employee once, at age 35 or over.

(5) Physician's Written Report. (a) After any medical examination required by this standard, the employer shall obtain a written report prepared by the examining physician containing:

(i) The results of the medical examination; and

(ii) The examining physician's opinion of the employee's fitness to be exposed to hyperbaric conditions, including any recommended restrictions or limitations to such exposure (see WAC 296-37-585).

(b) The employer shall provide the employee with a copy of the physician's written report.

(6) Determination of Employee Fitness. (a) The employer shall determine the extent and nature of the dive team member's fitness to engage in diving or be otherwise exposed to hyperbaric conditions consistent with the recommendations in the examining physician's report.

(b) If the examining physician has recommended a restriction or limitation on the dive team member's exposure to hyperbaric conditions, and the affected employee does not concur, a second physician selected by the employee shall render a medical opinion on the nature and extent of the restriction or limitation, if any.

(c) If the recommendation of the second opinion differs from that of the examining (first) physician, and if the employer and employee are unable to agree on the nature and extent of the restriction or limitation, an opinion from a third physician selected by the first two physicians shall be obtained. The employer's determination of the dive team member's fitness shall be consistent with the medical opinion of the third physician, unless the employer and employee reach an agreement which is otherwise consistent with the recommendation or opinion of at least two of the physicians involved.

(d) Nothing in this procedure shall be construed to prohibit either a dive team member from accepting, or an employer from offering, an assignment which is otherwise consistent with at least one medical opinion while a final determination on the employee's fitness is pending. [Statutory Authority: RCW 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-525, filed 10/2/78.]

WAC 296-37-530 Safe practices manual. (1) General. The employer shall develop and maintain a safe practices manual which shall be made available at the dive location to each dive team member.

(2) Contents. (a) The safe practices manual shall contain a copy of this standard and the employer's policies for implementing the requirements of this standard.

(b) For each diving mode engaged in, the safe practices manual shall include:

(i) Safety procedures and checklists for diving operations;

(ii) Assignments and responsibilities of the dive team members;

(iii) Equipment procedures and checklists; and

(iv) Emergency procedures for fire, equipment failure, adverse environmental conditions, and medical illness and injury. [Statutory Authority: RCW 49.17.040, 49-.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-530, filed 10/2/78.]

WAC 296-37-535 Pre-dive procedures. (1) General. The employer shall comply with the following requirements prior to each diving operation, unless otherwise specified.

(2) Emergency Aid. A list shall be kept at the dive location of the telephone or call numbers of the following:

(a) An operational decompression chamber (if not at the dive location);
(b) Accessible hospitals;
(c) Available physicians;
(d) Available means of transportation; and
(e) The nearest U.S. Coast Guard Rescue Coordination Center.

(3) First Aid Supplies. (a) A first aid kit appropriate for the diving operation and approved by a physician shall be available at the dive location.

(b) When used in a decompression chamber or bell, the first aid kit shall be suitable for use under hyperbaric conditions.

(c) In addition to any other first aid supplies, an American Red Cross standard first aid handbook or equivalent, and a bag-type manual resuscitator with transparent mask and tubing shall be available at the dive location.

(4) Planning and Assessment. Planning of a diving operation shall include an assessment of the safety and health aspects of the following:
(a) Diving mode;
(b) Surface and underwater conditions and hazards;
(c) Breathing gas supply (including reserves);
(d) Thermal protection;
(e) Diving equipment and systems;
(f) Dive team assignments and physical fitness of dive team members (including any impairment known to the employer);
(g) Repetitive dive designation or residual inert gas status of dive team members;
(h) Decompression and treatment procedures (including altitude corrections); and
(i) Emergency procedures.

(5) Hazardous Activities. To minimize hazards to the dive team, diving operations shall be coordinated with other activities in the vicinity which are likely to interfere with the diving operation.

(6) Employee Briefing. (a) Dive team members shall be briefed on:
(i) The tasks to be undertaken;
(ii) Safety procedures for the diving mode;
(iii) Any unusual hazards or environmental conditions likely to affect the safety of the diving operation; and
(iv) Any modifications to operating procedures necessitated by the specific diving operation.

(b) Prior to making individual dive team member assignments, the employer shall inquire into the dive team member's current state of physical fitness, and indicate to the dive team member the procedure for reporting physical problems or adverse physiological effects during and after the dive.

(7) Equipment Inspection. The breathing gas supply system including reserve breathing gas supplies, masks, helmets, thermal protection, and bell handling mechanism (when appropriate) shall be inspected prior to each dive.

(8) Warning Signal. When diving from surfaces other than vessels in areas capable of supporting marine traffic, a rigid replica of the international code flag "A" at least one meter in height shall be displayed at the dive location in a manner which allows all-round visibility, and shall be illuminated during night diving operations. [Statutory Authority: RCW 49.17.040, 49.17.050, 49-.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-535, filed 10/2/78.]

WAC 296-37-540 Procedures during dive. (1) General. The employer shall comply with the following requirements which are applicable to each diving operation unless otherwise specified.

(2) Water Entry and Exit. (a) A means capable of supporting the diver shall be provided for entering and exiting the water.

(b) The means provided for exiting the water shall extend below the water surface.

(c) A means shall be provided to assist an injured diver from the water or into a bell.

(3) Communications. (a) An operational two-way voice communication system shall be used between:
(i) Each surface-supplied air or mixed-gas diver and a dive team member at the dive location or bell (when provided or required); and
(ii) The bell and the dive location.

(b) An operational, two-way communication system shall be available at the dive location to obtain emergency assistance.

(4) Decompression Tables. Decompression, repetitive, and no-decompression tables (as appropriate) shall be at the dive location.

(5) Dive Profiles. A depth-time profile, including when appropriate any breathing gas changes, shall be maintained for each diver during the dive including decompression.

(6) Hand-held Power Tools and Equipment. (a) Hand-held electrical tools and equipment shall be deenergized before being placed into or retrieved from the water.

(b) Hand-held power tools shall not be supplied with power from the dive location until requested by the diver.

(7) Welding and Burning. (a) A current supply switch to interrupt the current flow to the welding or burning electrode shall be:
(i) Tended by a dive team member in voice communication with the diver performing the welding or burning; and
(ii) Kept in the open position except when the diver is welding or burning.

(b) The welding machine frame shall be grounded.

(c) Welding and burning cables, electrode holders, and connections shall be capable of carrying the maximum current required by the work, and shall be properly insulated.

(d) Insulated gloves shall be provided to divers performing welding and burning operations.

(e) Prior to welding or burning on closed compartments, structures or pipes, which contain a flammable vapor or in which a flammable vapor may be generated by the work, they shall be vented, flooded, or purged with a mixture of gases which will not support combustion.

(8) Explosives. (a) Employers shall transport, store, and use explosives in accordance with this section and applicable provisions of chapter 296-52 WAC.

(b) Electrical continuity of explosive circuits shall not be tested until the diver is out of the water.

(c) Explosives shall not be detonated while the diver is in the water.

(9) Termination of Dive. The working interval of a dive shall be terminated when:

(a) A diver requests termination;

(b) A diver fails to respond correctly to communications or signals from a dive team member;

(c) Communications are lost and can not be quickly reestablished between the diver and a dive team member at the dive location, and between the designated person-in-charge and the person controlling the vessel in liveboating operations; or

(d) A diver begins to use diver-carried reserve breathing gas or the dive-location reserve breathing gas. [Statutory Authority: RCW 49.17.040, 49.17.050, 49-.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-540, filed 10/2/78.]

WAC 296-37-545 Post-dive procedures. (1) General. The employer shall comply with the following requirements which are applicable after each diving operation, unless otherwise specified.

(2) Precautions. (a) After the completion of any dive, the employer shall:

(i) Check the physical condition of the diver;

(ii) Instruct the diver to report any physical problems or adverse physiological effects including symptoms of decompression sickness;

(iii) Advise the diver of the location of a decompression chamber which is ready for use; and

(iv) Alert the diver to the potential hazards of flying after diving.

(b) For any dive outside the no-decompression limits, deeper than 100 fsw or using mixed gas as a breathing mixture, the employer shall instruct the diver to remain awake and in the vicinity of the decompression chamber which is at the dive location for at least one hour after the dive (including decompression or treatment as appropriate).

(3) Recompression Capability. (a) A decompression chamber capable of recompressing the diver at the surface to a minimum of 165 fsw (6 ATA) shall be available at the dive location for:

(i) Surface-supplied air diving to depths deeper than 100 fsw and shallower than 220 fsw;

(ii) Mixed gas diving shallower than 300 fsw; or

(iii) Diving outside the no-decompression limits shallower than 300 fsw.

(b) A decompression chamber capable of recompressing the diver at the surface to the maximum depth of the dive shall be available at the dive location for dives deeper than 300 fsw.

(c) The decompression chamber shall be:

(i) Dual-lock;

(ii) Multiplace; and

(iii) Located within five minutes of the dive location.

(d) The decompression chamber shall be equipped with:

(i) A pressure gauge for each pressurized compartment designed for human occupancy;

(ii) A built-in-breathing-system with a minimum of one mask per occupant;

(iii) A two-way voice communication system between occupants and a dive team member at the dive location;

(iv) A viewport; and

(v) Illumination capability to light the interior.

(e) Treatment tables, treatment gas appropriate to the diving mode, and sufficient gas to conduct treatment shall be available at the dive location.

(f) A dive team member shall be available at the dive location during and for at least one hour after the dive to operate the decompression chamber (when required or provided).

(4) Record of Dive. (a) The following information shall be recorded and maintained for each diving operation:

(i) Names of dive team members including designated person-in-charge;

(ii) Date, time, and location;

(iii) Diving modes used;

(iv) General nature of work performed;

(v) Approximate underwater and surface conditions (visibility, water temperature and current); and

(vi) Maximum depth and bottom time for each diver.

(b) For each dive outside the no-decompression limits, deeper than 100 fsw or using mixed gas, the following additional information shall be recorded and maintained:

(i) Depth-time and breathing gas profiles;

(ii) Decompression table designation (including modification); and

(iii) Elapsed time since last pressure exposure if less than 24 hours or repetitive dive designation for each diver.

(c) For each dive in which decompression sickness is suspected or symptoms are evident, the following additional information shall be recorded and maintained:

(i) Description of decompression sickness symptoms (including depth and time of onset); and

(ii) Description and results of treatment.

(5) Decompression Procedure Assessment. The employer shall:

(a) Investigate and evaluate each incident of decompression sickness based on the recorded information, consideration of the past performance of decompression table used, and individual susceptibility;

(b) Take appropriate corrective action to reduce the probability of recurrence of decompression sickness; and

(c) Prepare a written evaluation of the decompression procedure assessment, including any corrective action taken, within 45 days of the incident of decompression sickness. [Statutory Authority: RCW 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-545, filed 10/2/78.]

WAC 296-37-550 Scuba diving. (1) General. Employers engaged in SCUBA diving shall comply with the following requirements, unless otherwise specified.

(2) Limits. SCUBA diving shall not be conducted:

(a) At depths deeper than 130 fsw;

(b) At depths deeper than 100 fsw or outside the no-decompression limits unless a decompression chamber is ready for use.

(3) Procedures. (a) A standby diver shall be available while a diver is in the water.

(b) A diver shall be line-tended from the surface, or accompanied by another diver in the water in continuous visual contact during the diving operation.

(c) A diver shall be stationed at the underwater point of entry when diving is conducted in enclosed or physically confining spaces and shall have positive means of communication with the diver or divers within the space.

(d) A diver-carried reserve breathing gas supply shall be provided for each diver consisting of:

(i) A manual reserve (J valve); or

(ii) An independent reserve cylinder with a separate regulator or connected to the underwater breathing apparatus.

(e) The valve of the reserve breathing gas supply shall be in the closed position prior to the dive. [Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-550, filed 10/2/78.]

WAC 296-37-555 Surface-supplied air diving. (1) General. Employers engaged in surface-supplied air diving shall comply with the following requirements, unless otherwise specified.

(2) Limits. (a) Surface-supplied air diving shall not be conducted at depths deeper than 190 fsw, except that dives with bottom times of 30 minutes or less may be conducted to depths of 220 fsw.

(b) A decompression chamber shall be ready for use at the dive location for any dive outside the no-decompression limits or deeper than 100 fsw.

(c) A bell shall be used for dives with an inwater decompression time greater than 120 minutes, except when heavy gear is worn or diving is conducted in physically confining spaces.

(3) Procedures. (a) Each diver shall be continuously tended while in the water.

(b) A diver shall be stationed at the underwater point of entry when diving is conducted in enclosed or physically confining spaces.

(c) Each diving operation shall have a primary breathing gas supply sufficient to support divers for the duration of the planned dive including decompression.

(d) For dives deeper than 100 fsw or outside the no-decompression limits:

(i) A separate dive team member shall tend each diver in the water;

(ii) A standby diver shall be available while a diver is in the water;

(iii) A diver-carried reserve breathing gas supply shall be provided for each diver except when heavy gear is worn; and

(iv) A dive-location reserve breathing gas supply shall be provided.

(e) For heavy-gear diving deeper than 100 fsw or outside the no-decompression limits:

(i) An extra breathing gas hose capable of supplying breathing gas to the diver in the water shall be available to the standby diver.

(ii) An inwater stage shall be provided to divers in the water.

(f) Except when heavy gear is worn or where physical space does not permit, a diver-carried reserve breathing gas supply shall be provided whenever the diver is prevented by the configuration of the dive area from ascending directly to the surface. [Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-555, filed 10/2/78.]

WAC 296-37-560 Mixed-gas diving. (1) General. Employers engaged in mixed-gas diving shall comply with the following requirements, unless otherwise specified.

(2) Limits. Mixed-gas diving shall be conducted only when:

(a) A decompression chamber is ready for use at the dive location; and

(i) A bell is used at depths greater than 220 fsw or when the dive involves inwater decompression time of greater than 120 minutes, except when heavy gear is worn or when diving in physically confining spaces; or

(ii) A closed bell is used at depths greater than 300 fsw, except when diving is conducted in physically confining spaces.

(3) Procedures. (a) A separate dive team member shall tend each diver in the water.

(b) A standby diver shall be available while a diver is in the water.

(c) A diver shall be stationed at the underwater point of entry when diving is conducted in enclosed or physically confining spaces.

(d) Each diving operation shall have a primary breathing gas supply sufficient to support divers for the duration of the planned dive including decompression.

(e) Each diving operation shall have a dive-location reserve breathing gas supply.

(f) When heavy gear is worn:

(i) An extra breathing gas hose capable of supplying breathing gas to the diver in the water shall be available to the standby diver; and

(ii) An inwater stage shall be provided to divers in the water.

(g) An inwater stage shall be provided for divers without access to a bell for dives deeper than 100 fsw or outside the no-decompression limits.

(h) When a closed bell is used, one dive team member in the bell shall be available and tend the diver in the water.

(i) Except when heavy gear is worn or where physical space does not permit, a diver-carried reserve breathing gas supply shall be provided for each diver:

(i) Diving deeper than 100 fsw or outside the no-decompression limits; or

(ii) Prevented by the configuration of the dive area from directly ascending to the surface. [Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-560, filed 10/2/78.]

WAC 296-37-565 Liveboating. (1) General. Employers engaged in diving operations involving liveboating shall comply with the following requirements.

(2) Limits. Diving operations involving liveboating shall not be conducted:

(a) With an inwater decompression time of greater than 120 minutes;

(b) Using surface-supplied air at depths deeper than 190 fsw, except that dives with bottom times of 30 minutes or less may be conducted to depths of 220 fsw;

(c) Using mixed gas at depths greater than 220 fsw;

(d) In rough seas which significantly impede diver mobility or work function; or

(e) In other than daylight hours.

(3) Procedures. (a) The propeller of the vessel shall be stopped before the diver enters or exits the water.

(b) A device shall be used which minimizes the possibility of entanglement of the diver's hose in the propeller of the vessel.

(c) Two-way voice communication between the designated person-in-charge and the person controlling the vessel shall be available while the diver is in the water.

(d) A standby diver shall be available while a diver is in the water.

(e) A diver-carried reserve breathing gas supply shall be carried by each diver engaged in liveboating operations. [Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-565, filed 10/2/78.]

WAC 296-37-570 Equipment. (1) General. (a) All employers shall comply with the following requirements, unless otherwise specified.

(b) Each equipment modification, repair, test, calibration or maintenance service shall be recorded by means of a tagging or logging system, and include the date and nature of work performed, and the name or initials of the person performing the work.

(2) Air compressor systems. (a) Compressors used to supply air to the diver shall be equipped with a volume tank with a check valve on the inlet side, a pressure gauge, a relief valve, and a drain valve.

(b) Air compressor intakes shall be located away from areas containing exhaust or other contaminants.

(c) Respirable air supplied to a diver shall not contain:

(i) A level of carbon monoxide (CO) greater than 20 ppm;

(ii) A level of carbon dioxide (CO_2) greater than 1,000 ppm;

(iii) A level of oil mist greater than 5 milligrams per cubic meter; or

(iv) A noxious or pronounced odor.

(d) The output of air compressor systems shall be tested for air purity every six months by means of samples taken at the connection to the distribution system, except that nonoil lubricated compressors need not be tested for oil mist.

(3) Breathing Gas Supply Hoses. (a) Breathing gas supply hoses shall:

(i) Have a working pressure at least equal to the working pressure of the total breathing gas system;

(ii) Have a rated bursting pressure at least equal to four times the working pressure;

(iii) Be tested at least annually to 1.5 times their working pressure; and

(iv) Have their open ends taped, capped or plugged when not in use.

(b) Breathing gas supply hose connectors shall:

(i) Be made of corrosion-resistant materials;

(ii) Have a working pressure at least equal to the working pressure of the hose to which they are attached; and

(iii) Be resistant to accidental disengagement.

(c) Umbilicals shall: (i) Be marked in 10-foot increments to 100 feet beginning at the diver's end, and in 50 foot increments thereafter;

(ii) Be made of kink-resistant materials; and

(iii) Have a working pressure greater than the pressure equivalent to the maximum depth of the dive (relative to the supply source) plus 100 psi.

(f) Buoyancy Control (a) Helmets or masks connected directly to the dry suit or other buoyancy-changing equipment shall be equipped with an exhaust valve.

(b) A dry suit or other buoyancy-changing equipment not directly connected to the helmet or mask shall be equipped with an exhaust valve.

(c) When used for SCUBA diving, a buoyancy compensator shall have an inflation source separate from the breathing gas supply.

(d) An inflatable flotation device capable of maintaining the diver at the surface in a face-up position, having a manually activated inflation source independent of the breathing supply, an oral inflation device, and an exhaust valve shall be used for SCUBA diving.

(5) Compressed Gas Cylinders. (a) Compressed gas cylinders shall:

(i) Be designed, constructed and maintained in accordance with the applicable provisions of WAC 296-24-920 through 296-24-94003.

(ii) Be stored in a ventilated area and protected from excessive heat;

(iii) Be secured from falling; and

(iv) Have shut-off valves recessed into the cylinder or protected by a cap, except when in use or manifolded, or when used for SCUBA diving.

(6) Decompression Chambers. (a) Each decompression chamber manufactured after the effective date of this standard, shall be built and maintained in accordance with the ASME Code or equivalent.

(b) Each decompression chamber manufactured prior to the effective date of this standard shall be maintained

in conformity with the code requirements to which it was built, or equivalent.

(c) Each decompression chamber shall be equipped with:

(i) Means to maintain the atmosphere below a level of 25% oxygen by volume;

(ii) Mufflers on intake and exhaust lines, which shall be regularly inspected and maintained;

(iii) Suction guards on exhaust line openings; and

(iv) A means for extinguishing fire, and shall be maintained to minimize sources of ignition and combustible material.

(7) Gauges and Timekeeping Devices. (a) Gauges indicating diver depth which can be read at the dive location shall be used for all dives except SCUBA.

(b) Each depth gauge shall be dead-weight tested or calibrated against a master reference gauge every six months, and when there is a discrepancy greater than two percent of full scale between any two equivalent gauges.

(c) A cylinder pressure gauge capable of being monitored by the diver during the dive shall be worn by each SCUBA diver.

(d) A timekeeping device shall be available at each dive location.

(8) Masks and Helmets. (a) Surface-supplied air and mixed-gas masks and helmets shall have:

(i) A nonreturn valve at the attachment point between helmet or mask and hose which shall close readily and positively; and

(ii) An exhaust valve.

(b) Surface-supplied air masks and helmets shall have a minimum ventilation rate capability of 4.5 acfm at any depth at which they are operated or the capability of maintaining the diver's inspired carbon dioxide partial pressure below 0.02 ATA when the diver is producing carbon dioxide at the rate of 1.6 standard liters per minute.

(9) Oxygen Safety. (a) Equipment used with oxygen or mixtures containing over forty percent by volume oxygen shall be designed for oxygen service.

(b) Components (except umbilicals) exposed to oxygen or mixtures containing over forty percent by volume oxygen shall be cleaned of flammable materials before use.

(c) Oxygen systems over 125 psig and compressed air systems over 500 psig shall have slow-opening shut-off valves.

(10) Weights and harnesses. (a) Except when heavy gear is worn, divers shall be equipped with a weight belt or assembly capable of quick release.

(b) Except when heavy gear is worn or in SCUBA diving, each diver shall wear a safety harness with:

(i) A positive buckling device;

(ii) An attachment point for the umbilical to prevent strain on the mask or helmet; and

(iii) A lifting point to distribute the pull force of the line over the diver's body. [Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-570, filed 10/2/78.]

WAC 296-37-575 Recordkeeping requirements. (1) Recording and Reporting. (a) The employer shall record and report occupational injuries and illnesses in accordance with requirements of chapters 296-27 and 296-350 WAC.

(b) The employer shall record the occurrence of any diving-related injury or illness which requires any dive team member to be hospitalized for 24 hours or more, specifying the circumstances of the incident and the extent of any injuries or illnesses.

(2) Availability of records. (a) Upon the request of the Director of the Department of Labor and Industries or his duly authorized designees, the employer shall make available for inspection and copying any record or document required by this standard.

NOTE: Requests for information or copies of records and reports by OSHA or NIOSH shall be made to the Director of the Department of Labor and Industries.

(b) Upon request of any employee, former employee or authorized representative, the employer shall make available for inspection and copying any record or document required by this standard which pertains to the individual employee or former employee.

(c) Records and documents required by this standard shall be retained by the employer for the following period:

(i) Dive team member medical records (physician's reports) (WAC 296-37-525) – five years;

(ii) Safe practices manual (WAC 296-37-530) – current document only;

(iii) Depth-time profile (WAC 296-37-540) – until completion of the recording of dive, or until completion of decompression procedure assessment where there has been an incident of decompression sickness;

(iv) Recording dive (WAC 296-37-545) one year, except five years where there has been an incident of decompression sickness;

(v) Decompression procedure assessment evaluations (WAC 296-37-545) – five years;

(vi) Equipment inspections and testing records (WAC 296-37-570) – current entry or tag, or until equipment is withdrawn from service;

(vii) Records of hospitalizations (WAC 296-37-575) – five years.

(d) After the expiration of the retention period of any record required to be kept for five years, the employer shall forward such records to the National Institute for Occupational Safety and Health, Department of Health, Education, and Welfare.

(e) In the event the employer ceases to do business:

(i) The successor employer shall receive and retain all dive and employee medical records required by this standard; or

(ii) If there is no successor employer, dive and employee medical records shall be forwarded to the National Institute for Occupational Safety and Health, Department of Health, Education, and Welfare. [Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240,

and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-575, filed 10/2/78.]

WAC 296-37-580 Effective date. This standard shall be effective 30 days after being filed with the code reviser. [Statutory Authority: RCW 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-580, filed 10/2/78.]

WAC 296-37-585 Examples of conditions which may restrict or limit exposure to hyperbaric conditions. (1) The following disorders may restrict or limit occupational exposure to hyperbaric conditions depending on severity, presence of residual effects, response to therapy, number of occurrences, diving mode, or degree and duration of isolation.

(a) History of seizure disorder other than early febrile convulsions.

(b) Malignancies (active) unless treated and without recurrence for five years.

(c) Chronic inability to equalize sinus and/or middle ear pressure.

(d) Cystic or cavitary disease of the lungs.

(e) Impaired organ function caused by alcohol or drug use.

(f) Conditions requiring continuous medication for control (e.g., antihistamines, steroids, barbiturates, mood altering drugs, or insulin).

(i) Meniere's disease.

(ii) Hemoglobinopathies.

(iii) Obstructive or restrictive lung disease.

(iv) Vestibular end organ destruction.

(v) Pneumothorax.

(vi) Cardiac abnormalities, (e.g., pathological heart block, valvular disease, intraventricular conduction defects other than isolated right bundle branch block, angina pectoris, arrhythmia, coronary artery disease).

(vii) Juxta-articular osteonecrosis. [Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-585, filed 10/2/78.]

Chapter 296-46 WAC

SAFETY STANDARDS--INSTALLING ELECTRIC WIRES AND EQUIPMENT--ADMINISTRATIVE RULES

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-46-250 Safe wiring label. [Order 69-2, § 296-46-250, filed 2/28/69, effective 4/1/69.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78; Statutory Authority: RCW 19.28.060.

296-46-260 Direct burial cable. [Order 75-25, § 296-46-260, filed 8/4/75; Order 72-7, § 296-46-260, filed 6/7/72; Order 69-2, § 296-46-260, filed 2/28/69, effective 4/1/69.] Repealed by Order 74-43, filed 12/19/74 and later adopted, as amended, by Order 75-25, filed 8/4/75.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78; Statutory Authority: RCW 19.28.060.

296-46-265 Conductors of different systems. [Order 74-43, § 296-265 (codified as WAC 296-46-265), filed 12/19/74.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78; Statutory Authority: RCW 19.28.060.

296-46-320 Electric heating. [Order 74-43, § 296-46-320, filed 12/19/74; Order 73-7, § 296-46-320, filed 5/17/73; Order 72-7, § 296-46-320, filed 6/7/72; Order 69-2, § 296-46-320, filed 2/28/69, effective 4/1/69.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78; Statutory Authority: RCW 19.28.060.

296-46-400 Mobile homes. [Order 69-2, § 296-46-400, filed 2/28/69, effective 4/1/69.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78; Statutory Authority: RCW 19.28.060.

296-46-401 License fee. [Order 71-17, § 296-46-401, filed 12/7/71.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78; Statutory Authority: RCW 19.28.060.

296-46-402 Fees. [Order 75-25, § 296-46-402, filed 8/4/75; Order 74-43, § 296-46-402, filed 12/19/74; Order 71-17, § 296-36-402 (codified as WAC § 296-46-402), filed 12/7/71.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78; Statutory Authority: RCW 19.28.060.

296-46-425 Construction sites. [Order 74-43, § 296-46-425, filed 12/19/74.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78; Statutory Authority: RCW 19.28.060.

296-46-450 Grounded neutral conductor. [Order 69-2, § 296-46-450, filed 2/28/69, effective 4/1/69.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78; Statutory Authority: RCW 19.28.060.

296-46-460 Terminating immediately inside an outside building wall. [Order 75-25, § 296-46-460, filed 8/4/75; Order 72-7, § 296-46-460, filed 6/7/72; Order 69-2, §

296-46-460, filed 2/28/69, effective 4/1/69.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78; Statutory Authority: RCW 19.28.060.

Appendix A Residential heat loss tables. [Order 72-7, Appendix A—Residential heat loss tables, filed 6/7/72; Order 69-2, Appendix A—Electric heat loss calculation, filed 2/28/69, effective 4/1/69.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78; Statutory Authority: RCW 19.28.060. Later promulgation, see WAC 296-46-59005.

Appendix B Outdoor design temperatures—Charts. [Order 72-7, Appendix B—Outdoor design temperatures—Charts, filed 6/7/72.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78; Statutory Authority: RCW 19.28-.060. Later promulgation, see WAC 296-46-59010.

Reviser's note: The 1978 Edition of National Electrical Code (NFPA No. 70-1978) was adopted by the Department of Labor and Industries on January 1, 1978. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), filed 1/31/78.]

WAC 296-46-110 Foreword. These Rules and Regulations are issued by the Electrical Inspection Section of the Department of Labor and Industries under the authority of chapter 19.28 RCW, Electrical Installations Law. The Department is empowered by law to enforce these Rules and Regulations and the National Electrical Code.

The 1978 edition, National Electrical Code, is hereby adopted by reference as part of these Rules and Regulations. The Rules and Regulations are adopted for the safety of the public and are to be used in connection with the 1978 edition of the National Electrical Code. Other codes, manuals and reference works referred to in this code will be available for inspection and review in the office of the Electrical Inspection Section of the Division of Building and Construction Safety Inspection Services, Olympia, during business hours. Where there is any conflict between the Rules and Regulations and the National Electrical Code, the Rules and Regulations shall be observed.

Electrical inspectors will give information as to the meaning or application of the National Electrical Code and these Rules and Regulations, but will not lay out work or act as consultants for contractors, owners or users.

A copy of chapter 19.28 RCW, Electrical Installations Law, may be obtained from the Department of Labor and Industries. [Statutory Authority: RCW 19-.28.060. 78-02-098 (Order 77-31), § 296-46-110, filed 1/31/78; Order 74-43, § 296-46-110, filed 12/19/74; Order 72-7, § 296-46-110, filed 6/7/72; Order 69-2, § 296-46-110, filed 2/28/69, effective 4/1/69.]

WAC 296-46-140 Plan review for institutional, educational and other buildings. (1) All plans for new or altered electrical installations in institutional buildings shall be reviewed and accepted by the State Health Department and the Electrical Inspection Section prior to beginning such installation. Refer plans to State Health Department, Olympia Airport, Olympia, Washington 98504.

(2) All plans for new or altered electrical installations in educational buildings shall be reviewed and accepted by the State Electrical Inspection Section prior to beginning such installation. Refer plans to Electrical Plans Examiner, Room 515, Department of Labor and Industries, 300 West Harrison, Seattle, Washington 98119.

(3) Plan review for new or altered electrical installations of other types of construction may be voluntarily requested by the owner or other interested parties.

(4) Charges for plan review of educational and other type buildings, but not including institutional buildings reviewed under subsection (1) of this section, will be based upon ten percent of the job label fee as determined by WAC 296-46-495 with a minimum fee of twenty dollars. Review fee shall be due at time of plan submittal. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-140, filed 1/31/78; Order 74-43, § 296-46-140, filed 12/19/74; Order 72-7, § 296-46-140, filed 6/7/72; Order 69-2, § 296-46-140, filed 2/28/69, effective 4/1/69.]

WAC 296-46-150 Wiring methods for designated building occupancies. (1) The fixed wiring methods for institutional and educational occupancies shall be metal raceway, nonmetallic raceways encased in not less than two inches of concrete, M.I. or M.C. cable.

EXCEPTION No. 1—For signal and control circuits, other than those circuits defined under emergency systems per National Electrical Code, Section 517-2, and Sections 725-3(a) and 725-4, open cable wiring approved for the purpose shall be permitted for Class 2 signal and control circuits installed in accordance with Article 725 of the National Electrical Code.

EXCEPTION No. 2—Open cable wiring approved for the purpose of (NFPA Bulletin No. 71) shall be permitted for Central Station Protective Systems installed and operator manned and supervised in accordance with the latest adopted edition of the National Fire Protection Association Bulletin No. 71.

(2) Other Buildings. The fixed wiring method in the following building occupancies shall be busways, metal raceways, nonmetallic raceways encased in not less than two inches of concrete, cable trays or types SNM, TC, MI, MC cables; subject to the National Electrical Code.

(a) Commercial Buildings: Commercial buildings open to the public and designed, intended or used for the purpose of accommodating 200 or more persons. For determination of such population capacity, the following number of square feet per person shall be applied: for standing capacity, 3 square feet per person for such building areas as transit stations, bus depots, court rooms and like buildings; for fixed seating capacity, 6 square feet per person for such building areas as church chapels, conference rooms, multi-purpose rooms and like buildings; for all other such commercial buildings, 25

square feet per person. Occupant capacity noted in Article 518 of the National Electrical Code governing those occupancies designated will not be recognized.

(b) Industrial Plants: Industrial plants, except that open conductors of No. 4/0 or larger size may be installed on insulators not less than 20 feet above floor or working surface level in accordance with Article 320 of the National Electrical Code.

EXCEPTION No. 1—Rigid nonmetallic conduit may be installed in areas outlined in National Electrical Code Section 300-6.

(c) Multi-Family Occupancy Buildings (i.e., apartment buildings, hotels, motels and dormitories) of two or more stories, not including basement, shall be wired in accordance with Chapter 3 of the National Electrical Code except feeders and subfeeders in such buildings shall be wired in a raceway(s).

EXCEPTION NO. 1—For signal and control circuits, other than those defined as Class 1 circuits per National Electrical Code, Sections 725-3(a) and 725-4, open cable wiring approved for the purpose shall be permitted for Class 2 signal and control circuits installed in accordance with Article 725 of the National Electrical Code.

EXCEPTION NO. 2—Open cable wiring approved for the purpose (NFPA Bulletin No. 71) shall be permitted for Central Station Protective Systems installed and operator manned and supervised in accordance with the latest adopted edition of the National Fire Protection Association Bulletin No. 71.

[Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-150, filed 1/31/78; Order 75-25, § 296-46-150, filed 8/4/75; Order 74-43, § 296-46-150, filed 12/19/74; Order 72-7, § 296-46-150, filed 6/7/72; Order 69-2, § 296-46-150, filed 2/28/69, effective 4/1/69.]

WAC 296-46-200 Service entrance conductors. (1) Service entrance conductors shall extend at least 18 inches from the service head to permit connection to the service drop. See National Electrical Code, Section 230-54.

(2) Service entrance conductors shall extend no more than 15 feet inside a building.

(3) Unfused code grade conductors 600 volts or less shall be installed in a metallic raceway when within the building structure. See National Electrical Code, Section 230-44. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-200, filed 1/31/78; Order 74-43, § 296-46-200, filed 12/19/74; Order 73-7, § 296-46-200, filed 5/17/73; Order Order 74-43, § 296-46-200, filed 12/19/74; Order 73-7, § 296-46-200, filed 5/17/73; Order 69-2, § 296-46-200, filed 2/28/69, effective 4/1/69.]

WAC 296-46-220 Service equipment. Service equipment shall be readily accessible and shall not be installed in bathrooms, clothes closets, shower rooms, cupboards, attics, nor above washers, dryers or plumbed in fixtures.

Service equipment shall be readily accessible after any subsequent building additions.

Service switches and other equipment exposed to elements of the outside weather shall be rain tight type factory built for the purpose. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-220, filed 1/31/78; Order 72-7, § 296-46-220, filed 6/7/72; Order 69-2, § 296-46-220, filed 2/28/69, effective 4/1/69.]

WAC 296-46-242 Transformer neutral grounding. Where services over 600 volts are supplied from multi-ground, neutral systems with transformer protection provided by fuses in the primary feeders as provided in the National Electrical Code, Section 450-3(a), the grounded neutral conductor shall be connected to a grounding electrode at each transformer location. Where the secondary of the transformer or transformers is grounded, the secondary ground shall be connected to the common neutral ground.

EXCEPTION No. 1—Will not apply to industrial distribution systems.

EXCEPTION No. 2—The bond between the transformer secondary neutral ground and primary common neutral may be removed if the connection causes undesirable currents or voltages.

[Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-242, filed 1/31/78.]

WAC 296-46-244 Utility conductor limitations. (1) "Termination immediately inside an outside building wall" will be interpreted to mean terminating in a junction box or a meter enclosure located in the outside wall of the structure with not more than eight feet of rigid steel or intermediate metal conduit within the framed wall. See WAC 296-45-900 (Appendix C, Drawing E-103), and WAC 296-45-905 (Appendix D, Drawing E-104).

(2) "Termination immediately inside the building lines" shall be interpreted to be a maximum of 18 inches rigid steel or intermediate metal conduit to the bottom of a J-box, C.T. or meter enclosure. See WAC 296-45-900 (Appendix C, Drawing E-103(A)), and WAC 296-45-905 (Appendix D, Drawing E-104).

(3) The identified neutral conductor of a service lateral in accordance with the preceding paragraphs may be identified with a yellow jacket.

(4) National Electrical Code, Section 230–44, will be recognized except as stated in paragraph (1) above. [Statutory Authority: RCW 19.28.060. 78–02–098 (Order 77–31), § 296–46–244, filed 1/31/78.]

WAC 296–46–250 Repealed. See Disposition Table at beginning of this chapter.

WAC 296–46–260 Repealed. See Disposition Table at beginning of this chapter.

WAC 296–46–265 Repealed. See Disposition Table at beginning of this chapter.

WAC 296–46–270 Metallic plumbing lines. All metallic water lines including waste systems, shall be bonded together by approved means. See Section 250–80 of the National Electrical Code. [Statutory Authority: RCW 19.28.060. 78–02–098 (Order 77–31), § 296–46–270, filed 1/31/78; Order 69–2, § 296–46–270, filed 2/28/69, effective 4/1/69.]

WAC 296–46–320 Repealed. See Disposition Table at beginning of this chapter.

WAC 296–46–350 Emergency systems. See Article 700, National Electrical Code. Emergency systems shall comply with the latest adopted edition of the National Fire Protection Association Bulletin 101, Life Safety Code. In accordance with Section 700–6(d), National Electrical Code, separate emergency service conductors shall be provided and may be tapped on the load side of the electric utility metering equipment provided they are sufficiently separated and effectively fireproofed from the main service disconnecting means.

Emergency Systems: Exit and emergency lights in places of assembly and including corridors must be installed where the seating capacity is 200 or more. The seating capacity will be determined by allowing a basis of 6 square feet per person. [Statutory Authority: RCW 19.28.060. 78–02–098 (Order 77–31), § 296–46–350, filed 1/31/78; Order 72–7, § 296–46–350, filed 6/7/72; Order 69–2, § 296–46–350, filed 2/28/69, effective 4/1/69.]

WAC 296–46–390 Woodworking plants. The production areas of saw mills and commercial and industrial woodworking plants shall be wired in rigid metal conduit, intermediate metal conduit M.I. cable, MC cable, or, if not subject to mechanical injury or vibration, E.M.T. with compression ring fittings. [Statutory Authority: RCW 19.28.060. 78–02–098 (Order 77–31), § 296–46–390, filed 1/31/78; Order 69–2, § 296–46–390, filed 2/28/69, effective 4/1/69.]

WAC 296–46–400 Repealed. See Disposition Table at beginning of this chapter.

WAC 296–46–401 Repealed. See Disposition Table at beginning of this chapter.

WAC 296–46–402 Repealed. See Disposition Table at beginning of this chapter.

WAC 296–46–424 Residential occupancies, ground fault circuit interrupters. In addition to complying with Article 210–8, National Electrical Code, there shall be a separate circuit and/or circuits limited to the bathroom(s), garage and those outdoor receptacles GFCI protected. Receptacles on the load side of the GFCI device shall be considered as being on a separate circuit.

EXCEPTION: Receptacles for a single appliance such as door openers and refrigeration equipment need not be GFCI protected.

[Statutory Authority: RCW 19.28.060. 78–02–098 (Order 77–31), § 296–46–424, filed 1/31/78; Order 75–25, § 296–46–424, filed 8/4/75.]

WAC 296–46–425 Repealed. See Disposition Table at beginning of this chapter.

WAC 296–46–426 Bonding agricultural structures and equipment. In accordance with the National Electrical Code, Article 250, buildings housing livestock must have all metallic and conductive portions of such structures and/or equipment used in such structures bonded to a common grounding electrode. Concrete slabs shall be considered as a conductive portion of the structure. For Agricultural Buildings, see National Electrical Code, Article 547. [Statutory Authority: RCW 19.28-.060. 78–02–098 (Order 77–31), § 296–46–426, filed 1/31/78; Order 74–43, § 296–46–426, filed 1/3/75.]

WAC 296–46–450 Repealed. See Disposition Table at beginning of this chapter.

WAC 296–46–460 Repealed. See Disposition Table at beginning of this chapter.

WAC 296–46–480 Location of pad mounted transformers. (1) Definition – A pad–mounted transformer installation is an installation of an oil–filled transformer outdoors wherein all bushings, handholes, and live and operating parts are guarded by a solid metal enclosure so secured as to be available to authorized qualified personnel only. This will not prohibit the use of approved glass monitoring devices or properly baffled ventilators.

(2) Where a pad–mounted transformer is to be installed adjacent to a structure of combustible material, it shall not be closer than eight (8) feet minimum. This eight foot separation should be measured from the nearest metal portion of the pad–mounted transformer installation to the nearest building features required to be safeguarded. In the case of overhanging eaves or roof lines of combustible material on standard single story structure, the eight foot measurement should be made in such a way as to provide eight feet of clear space between said eaves and the nearest metal portion of the pad–mounted transformer installed outside a vertical line extended from the ends of the eaves to the ground if

this distance is at least eight feet horizontally from a combustible wall. In addition, the grade of the ground at the location of the pad-mounted transformer shall be such that any oil leaking from the transformer will flow away from the building and will not form pools

EXCEPTION: In urban residential areas where improved alleyways are utilized, and where a pad-mounted transformer is to be installed adjacent to a structure of combustible material; it shall not be closer than two (2) feet minimum, provided the structure is noninhabited, such as an automobile garage.

(3) Pad-mounted transformer installations shall not be made nearer than two (2) feet, measured horizontally to a non-combustible building surface having no doors, windows or other openings closer than indicated in paragraph (2).

(4) Pad-mounted transformer installations should not be located where exposed to damage by automobiles, trucks or other mobile type of machinery. Where transformers are installed in areas subject to other than pedestrian traffic, they shall be provided with additional guarding.

(5) Pad-mounted transformer installations shall meet the requirements for being effectively grounded as provided in Section 250-51, National Electrical Code. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-480, filed 1/31/78; Order 69-2, § 296-46-480, filed 2/28/69, effective 4/1/69.]

WAC 296-46-492 Electrical license and administrator certificate designation. See RCW 19.28.120. (1) General Electrical License and/or Administrator's Certificate encompasses all phases of electrical installations for heat, light and power.

(2) Specialty (limited) electrical licenses and/or administrator's certificates are as follows:

(a) Residential: Limited to the wiring of one and two family dwellings, or multi-family dwellings not exceeding three floors above grade. All wiring to be in nonmetallic sheathed cable, except service and/or feeders.

(b) Domestic Appliances: Limited to the electrical connection of household appliances and the wiring thereto; such as hot water heaters, ranges, dishwashers, clothes dryers, oil and gas furnaces and similar appliances. This specialty license includes circuits to the appliances; however, it does not include the installation of service and/or feeders.

(c) Pump and Irrigation: Limited to the electrical connection of domestic and irrigation water pumps, circular irrigating systems and related pumps and pump houses. This specialty license includes circuits, feeders, controls and services to supply said pumps.

(d) Limited Energy System: Limited to the installation of signaling and power limited circuits and related equipment. Such license includes the installation of fire protection signaling systems, intrusion alarms, nonutility owned communication systems and such similar low energy circuits and equipment.

(e) Signs: Limited to the placement and connection of signs and outline lighting, the electrical supply, related controls and associated circuit extensions thereto. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-492, filed 1/31/78.]

WAC 296-46-493 Electrical contracting and administrator certificate fees.

(1) General Electrical License (Annual) –	$200
(2) Specialty Electrical License (Annual) –	$150
(3) Administrator Certificate Examination –	$50
(4) Administrator Certificate Renewal (Annual) –	$20

[Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-493, filed 1/31/78.]

WAC 296-46-495 Safe wiring labels and fees. Inspections shall not be made nor services connected unless a safe wiring label is completely and legibly filled out and readily available.

For fee purposes:

(1) Mobile homes shall be considered as single family residences.

(2) Four or more locations for mobile homes, travel trailers or coaches shall be considered a mobile home park.

(3) Fees shall be paid in accordance with the inspection fee schedule WAC 296-46-910 (Appendix F). [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-495, filed 1/31/78.]

WAC 296-46-500 Administrative rules, scope and purpose. The State Electricians and Electrical Installations Law, chapter 19.28 RCW, establishes the governor appointed Electrical Advisory Board and a Board of Electrical Examiners and fixes their administrative responsibilities as follows: (1) The Advisory Board's principal function is to assist the director of the Department of Labor and Industries in adopting and promulgating reasonable rules and regulations in furtherance of safety to life and property with respect to electrical installations and appliances. While the Advisory Board will, upon request of the director of the Department of Labor and Industries or the Electrical Inspection Section thereof, aid in the administrative interpretation of the National Electrical Code and the rules and regulations covering standards for electrical installations in the state of Washington, it will not function as a board of appeal nor will it render decisions concerning the application or interpretation of any adopted rules and regulations to any person, firm or corporation engaged in the business of installing wires or equipment to convey electric current, or engaged in installing apparatus or appliances to be operated by such current.

(2) The Board of Electrical Examiners principal purpose and function is to establish and administer a written examination for an electrical contractors qualifying certificate and to certify to the director of the Department of Labor and Industries all persons who are entitled to electrical contractors qualifying certificates.

(3) The primary purpose of the following rules is to provide a uniform procedure whereby persons, firms or corporations interested in communicating with the Department of Labor and Industries on any subject matter relative to rules or regulations which should be adopted, amended or repealed for electrical installations in the state of Washington or relative to the operation of the Electrical Inspection Section of such department may be heard. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-500, filed 1/31/78; Order 74-43, § 296-46-500, filed 12/19/74.]

WAC 296-46-510 Definitions. Whenever used in these rules, the words:

Advisory Board: Shall mean the Washington State Electrical Advisory Board appointed by the governor pursuant to RCW 19.28.065.

Examining Board: Shall mean the Board of Electrical Examiners.

Department: Shall mean the Department of Labor and Industries of the state of Washington.

Director: Shall mean the Director of the Department of Labor and Industries.

Regular Meeting: Shall mean the quarterly meetings held by the Advisory Board on the last Friday of January, April, July and October.

Board Meeting: Shall mean the quarterly meetings held by the Examining Board on the first Monday of February, May, August and November of each year.

Special Meeting: Shall mean any meeting of the Advisory Board or Examining Board called by the chairman thereof or the Director and held at times other than the regular meetings. [Statutory Authority: RCW 19-.28.060. 78-02-098 (Order 77-31), § 296-46-510, filed 1/31/78; Order 74-43, § 296-46-510, filed 12/19/74.]

WAC 296-46-515 Officers. In addition to the chairman and secretary of the Advisory Board, as provided for by RCW 19.28.065, the Advisory Board shall elect from its members a vice chairman who shall perform all functions of the chairman in his absence.

The Examining Board shall select its own chairman and elect from its members a vice chairman who shall perform all functions of the chairman in his absence. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-515, filed 1/31/78; Order 74-43, § 296-46-515, filed 12/19/74.]

WAC 296-46-525 Board duties. (1)(a) The Advisory Board shall study proposed rules and regulations submitted to it by the Director or by the Electrical Inspection Section of the Department and shall make recommendations to the Director concerning their adoption and promulgation.

(b) The Advisory Board shall further develop and submit for consideration to the Director administrative procedures, organizational plans and rules relating to improving the functions of the Electrical Inspection Section.

(c) The Advisory Board shall at each regular or special meeting consider any written proposals made by any persons, firms or corporations for new electrical rules or regulations or for amendments to or repeal of existing electrical rules or regulations or for changes in administrative procedures of the Electrical Inspection Section provided such proposals are submitted in writing to the secretary of the Advisory Board at least fifteen (15) days prior to any such meeting so that the same may be properly included on the agenda for such meeting.

(2) The Examining Board shall design an examination which will reasonably insure that electrical contractor's qualifying certificate holders are competent to engage in and supervise the work covered by the Statute, chapter 19.28 RCW.

This board shall certify to the Director all persons who are entitled to electrical contractors qualifying certificates. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-525, filed 1/31/78; Order 74-43, § 296-46-525, filed 12/19/74.]

WAC 296-46-590 Electric heating. (1) In accordance with the National Electrical Code, Section 215-5, where electric heating is to be installed, heat loss calculations and plans will be required whenever it appears necessary in order to assure the safe operation of the electric heating equipment or when diversity is requested.

These calculations shall be made in accordance with one of the following:

(a) WAC 296-46-59005 (Appendix A).

(b) The local serving utility heat loss calculations when based on the 1977 edition of ASHRAE GUIDE, Handbook of Fundamentals.

(c) The 1977 edition of the American Society of Heating, Refrigeration and Air Conditioning Engineers' Handbook of Fundamentals (ASHRAE 1977 Handbook of Fundamentals). Manuals and guides from National Environmental Systems Contractors Association (NESCA-Manual J. 1975).

(d) Any published heat loss tables based on ASHRAE GUIDE and approved by the Department of Labor and Industries.

(2) The submitter of heat loss calculations shall provide satisfactory evidence in writing from the general contractor, financing institution and/or owner stipulating in the "R" value of the insulation (insulation material only) that will be installed and where it is to be located.

(3) Line voltage double circuit thermostats shall not be permitted. The Department of Labor and Industries has the right to review and rule on the use of new line voltage controls submitted by the the manufacturers.

(4) Line voltage electric heating control devices, if not approved for continuous load, shall be derated to 80 percent of rated capacity.

(5) Residential and Residential Multiple Occupancy Structures:

(a) Heat loss calculations shall be based on a minimum of 70°F. indoor temperature with an outdoor design temperature as indicated in WAC 296-46-59010 (Appenidx B) or the 97 1/2 percent column of

ASHRAE Standards, weather data and design conditions, except that special application justifying the use of different design temperatures may be approved.

(b) Heat loss calculations for common ceilings, walls or floors separating living spaces from garages and carports shall be considered the same as outside exposure for calculation purposes.

(c) Heat loss calculations for common interior walls and floors separating adjoining living units of multiple occupancy structures shall be based on a minimum of 10° temperature difference. Common interior ceilings separating adjoining living units of multiple occupancy structures shall be based upon a minimum of 20° temperature difference, except that radiant ceilings shall be based on a minimum of 50° temperature difference.

(d) Structures designed with unheated interior spaces adaptable for future use shall have adequate service entrance and service equipment ampacity to provide electric heat for that space. In calculating the additional capacity needed to adequately heat these spaces, insulation values shall be comparable to that which is installed in the finished spaces. (If ducts from a central system are installed for the purpose of heating an interior space adaptable for future use, the system shall be sized to include the heat loss of that space.)

(e) Electric heating equipment shall be installed to meet or exceed the calculated heat loss in all new structures and existing structures which are converted to electric heat.

The minimum demand factor of 75 percent of the installed heating capacity may be used in sizing service entrance equipment when electric service is provided through a single panel.

(f) Where electric heat is used in a supplemental or auxiliary capacity, or where electric heating is installed in garages, patios, workshops, storage areas, and other incidental applications, heat loss calculations will not be required.

(g) An automatic temperature regulating device shall be installed to provide effective control of a heated space except for bathroom heater's designed for manual switch operation.

(i) Heated space shall be interpreted to mean: An entire space which is effectively separated from another by means of partition walls and/or doors, even though small permanent openings such as pass throughs and passage ways may exist.

(ii) Effective control shall be interpreted to mean: Not more than one automatic temperature regulating device to control all heating equipment in any heated space. (Applications outlined in subdivision 5-f are excluded.) An additional control may be used for regulating the temperature in adjoining stairways and entries where necessary due to design and/or exposure conditions. Special control applications justifying deviations from the above shall be subject to approval.

(h) Heat loss shall be calculated for ductwork or piping installed in vented attics, crawl spaces and unheated garages when central electric systems are to be installed.

(i) Heat loss calculations for radiant ceilings shall be based on a minimum of 100°F. ceiling temperature.

(6) Commercial and Industrial Electric space heating:

(a) When required by the department of labor and industries or when diversity is requested on sizing service entrance equipment, heat loss calculations and plans shall be submitted.

(b) A minimum demand factor of 75 percent of the installed space heating capacity used exclusively for heating may be used in sizing service entrance equipment if all the following conditions are met:

(i) Heat loss calculations shall be computed in accordance with subdivision 1-b, c or d where applicable.

The indoor temperature used for the purpose of calculating heat loss may vary according to the established use factor of the spaces involved.

(ii) Subsections 2, 3 and 4 shall be complied with.

(iii) Heating capacity installed meets or exceeds the submitted heat loss calculations.

(iv) Where electric heating equipment is controlled by three or more automatic temperature regulating devices.

(v) The service entrance conductors shall not have less ampacity than he largest feeder conductor. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-590, filed 1/31/78.]

WAC 296-46-59005 Appendix A--Residential heat loss tables.

APPENDIX A - RESIDENTIAL HEAT LOSS TABLES

NOTE: All "Added Insulation" values are for MATERIAL ONLY. R-Values for construction were included in the calculations deriving the watt loss factors in the following tables.

Table 1

Windows and Doors

Watt Loss Factor (Per Square Foot)

Temperature Difference	Single Glass (R=.9) (U=1.13)	Doors Double Glass Storm Windows (R=1.43) (U=.70)
50°F	16.6	10.1
55°F	18.2	11.1
60°F	19.9	12.1
70°F	23.2	14.2
80°F	26.5	16.2
90°F	29.8	18.2

Table 2

Outside Walls
(R=3.0) (U=.33)
Frame

Watt Loss Factor (Per Square Foot)

Temperature Difference	No Added Insulation	R-7 Added Insulation	R-11 Added Insulation	R-13 Added Insulation	R-18/19 Added Insulation
50°F	4.8	1.5	1.0	0.9	0.70
55°F	5.3	1.6	1.2	1.0	0.77

Temperature Difference	No Added Insulation	R-7 Added Insulation	R-11 Added Insulation	R-13 Added Insulation	R-18/19 Added Insulation
60°F	5.8	1.8	1.3	1.1	0.84
70°F	6.8	2.1	1.5	1.3	0.98
80°F	7.7	2.3	1.7	1.5	1.10
90°F	8.7	2.6	1.9	1.6	1.30

Table 3

Outside Walls
(R=1.35) (U=.74)
Concrete and Other Masonry Units Above Grade

Watt Loss Factor (Per Square Foot)

Temperature Difference	No Added Insulation	R-4 Added Insulation	R-6 Added Insulation	R-9 Added Insulation	R-11 Added Insulation	R-18 Added Insulation
50°F	11	2.7	2.0	1.4	1.2	0.76
55°F	12	3.0	2.2	1.6	1.3	0.83
60°F	13	3.3	2.4	1.7	1.4	0.91
70°F	15	3.8	2.8	2.0	1.7	1.10
80°F	17	4.4	3.2	2.3	1.9	1.20
90°F	20	4.9	3.6	2.5	2.1	1.40

Table 4

Ceiling
(R=1.8) (U=.56)
With Vented Attic Above

Watt Loss Factor (Per Square Foot)

Temperature Difference	No Added Insulation*	R-7 Added Insulation*	R-11 Added Insulation*	R-13 Added Insulation*	R-19 Added Insulation*	R-24 Added Insulation*	R-30 Added Insulation*	R-38 Added Insulation*
50°F	8.1(13.0)	1.7(2.7)	1.1(1.8)	1.00(1.6)	0.70(1.13)	0.57(0.91)	0.46(0.74)	0.37(0.59)
55°F	9.0(13.8)	1.8(2.8)	1.3(1.9)	1.10(1.7)	0.77(1.20)	0.63(0.97)	0.51(0.78)	0.40(0.63)
60°F	9.8(14.6)	2.0(3.0)	1.4(2.1)	1.20(1.8)	0.85(1.30)	0.68(1.02)	0.55(0.83)	0.44(0.66)
70°F	11.4(16.3)	2.3(3.3)	1.6(2.3)	1.40(2.0)	0.99(1.40)	0.79(1.10)	0.64(0.92)	0.52(0.74)
80°F	13.0(17.9)	2.7(3.7)	1.8(2.5)	1.60(2.2)	1.10(1.50)	0.91(1.20)	0.74(1.01)	0.59(0.81)
90°F	14.6(19.5)	3.0(4.0)	2.1(2.7)	1.80(2.4)	1.30(1.70)	1.00(1.40)	0.83(1.11)	0.66(0.88)

* For Ceilings with heating cable installations (radiant heat) use figures in parentheses. (Calculated on 100°F ceiling temperature).

Table 5

Ceiling
(R=3.0) (U=.33)
Open Beam Construction
With Built-Up Roof

Watt Loss Factor (Per Square Foot)

Temperature Difference	No Added Insulation	R-4 Added Insulation	R-8 Added Insulation	R-11 Added Insulation	R-13 Added Insulation	R-19 Added Insulation	R-24 Added Insulation	R-30 Added Insulation
50°F	4.9	2.1	1.3	1.0	0.9	0.67	0.54	0.44
55°F	5.4	2.3	1.5	1.2	1.0	0.73	0.60	0.49
60°F	5.9	2.5	1.6	1.3	1.1	0.80	0.65	0.53
70°F	6.8	2.9	1.9	1.5	1.3	0.93	0.76	0.62
80°F	7.8	3.3	2.1	1.7	1.5	1.07	0.87	0.71
90°F	8.8	3.8	2.4	1.9	1.6	1.20	0.98	0.80

Table 6

Floor
(R=4.3) (U=.23)
Over Crawl Space or Garage Areas

Watt Loss Factor (Per Square Foot)

Temperature Difference	No Added Floor Insulation	R-6 Added* Perimeter Wall Insulation	R-8 Added* Perimeter Wall Insulation	R-9 Added Floor Insulation	R-11 Added Floor Insulation	R-19 Added Floor Insulation
50°F	3.4	2.15	1.80	1.10	0.96	0.63
55°F	3.7	2.36	1.98	1.21	1.05	0.69
60°F	4.1	2.57	2.15	1.32	1.15	0.75
70°F	4.8	3.00	2.51	1.54	1.34	0.88
80°F	5.5	3.42	2.87	1.76	1.53	1.01
90°F	6.1	3.86	3.23	1.98	1.72	1.13

* When tightly–fitting operable louvered vents are installed in the perimeter foundation wall and insulation extends from the interior ground level to the subflooring.

Table 7

Floor
(R=4.3) (U=.23)
Over Enclosed Unheated Area
Basements, Cellars, Etc.

Watt Loss Factor (Per Square Foot)

Temperature* Difference	No Added Insulation	R-9 Added Insulation	R-11 Added Insulation	R-13 Added Insulation	R-19 Added Insulation
50°F	1.7	.55	.48	.42	.31
55°F	1.9	.61	.53	.47	.35
60°F	2.0	.66	.57	.51	.38
70°F	2.4	.77	.67	.59	.44
80°F	2.7	.88	.77	.68	.50
90°F	3.1	.99	.86	.76	.57

* Calculations are based on the assumption that 50% of outdoor temperature difference occurs between heated and unheated space.

Table 8

Floor
Concrete Slab Including
Concrete Walls Below Grade*

NOTE: Watt Loss Factor (Per Lineal Foot – Measure Entire Perimeter)

Temperature Difference	No Added Perimeter Insulation	R-4 Added Perimeter Insulation	R-6 Added Perimeter Insulation	R-8 Added Perimeter Insulation	R-9 Added Perimeter Insulation	R-11 Added Perimeter Insulation
50°F	12	7.5	5.0	3.4	2.8	1.8
55°F	13	8.3	5.5	3.8	3.1	2.1
60°F	14	9.0	6.0	4.1	3.4	2.4
70°F	17	10.5	7.0	4.8	3.9	2.9
80°F	19	12.0	8.0	5.5	4.5	3.5
90°F	22	13.5	9.0	6.1	5.0	4.0

* Heat loss of slab floor includes loss of any concrete walls below grade.

Table 9

Common Interior Ceilings, Walls or Floors
Of Multiple Occupancy Structures*
Ceilings(R=4.9) Walls(R=3.2) Floors(R=5.9)

Watt Loss Factor (Per Square Foot)

Temperature Difference		No Added Insulation	R-7 Added Insulation	R-11 Added Insulation	R-14 Added Insulation
20°F(50°F)	Ceilings*	1.2 (3.0)	.49(1.2)	.37(.92)	.31(.78)
10°F	Walls**	.92	.29	.21	.17
10°F	Floors**	.50	.23	.17	.15

* Based on 20° temperature difference (70° minus 50°) across ceiling area. For radiant ceiling installations use figures in parentheses, based on 50° temperature difference (100° minus 50°).

** Walls and floors based on 10° temperature difference (70° minus 60°).

Table 10

Infiltration

Watt Loss Factor (Per Cubic Feet of Volume)

Temperature Difference	Sunken Basement 1/2 Air Change Per Hour	2/3 Air Change* Per Hour	1 Air Change Per Hour
50°F	.13	.17	.26
55°F	.14	.19	.29
60°F	.16	.21	.32
70°F	.18	.25	.37
80°F	.21	.28	.42
90°F	.24	.32	.48

* For rooms with weatherstripped doors and insulated glass or storm windows.

Table 11

Duct Heat Loss Multipliers
(Central Systems Only)

NOTE: It is recognized that detailed duct layouts seldom accompany floor plans; therefore, this table is based on average duct design and shall be used to estimated duct heat loss, unless calculation of duct heat loss is based in accordance with formulas outlined in manuals listed in item 1-b of WAC 296-46-590.

Duct Location	Duct Insulation*	Approximate Installed R-Value	Multiplier**
	No Insulation	R-0	0.70
	1" duct wrap	R-3.50	0.20
Ducts located in	1-1/2" duct wrap	R-5.00	0.16
unconditioned spaces	2" duct wrap	R-7.00	0.10
such as attics,	1" rigid duct	R-4.50	0.10
vented crawl spaces	insulation		
and unheated garages	3" duct wrap	R-9.00	0.08
	4-1/2" duct wrap	R-11.00	0.06

Ducts located in conditioned space - no duct heat loss applicable.

* Nominal thickness listed.

** Multiplier assumes all joints are taped to prevent excess air loss.

Example: A house has a structure heat loss of 10,000 watts. Approximately 60% of the ductwork is located in unconditioned space and is insulated with 1-1/2" of duct wrap (R-5.0)

Refer to Heat Loss Calculation Form

(1) Structure Heat Loss (SHL) = 10,000 Watts
(2) 1-1/2" wrap duct insulation (thickness or R-value)
(3) Duct heat loss multiplier (Table 11) DHLM - 0.16
(4) 60% = 0.6 fraction of duct in unconditioned space
(5) Estimated Duct Heat Loss = SHL (1) X DHLM (3) X Fraction (4) = (10,000) X (0.16) X (0.60) = 960 Watts
(6) Total Heat Loss (1 plus 5) = 10,960 Watts

For Central Hydronic Systems

Calculation of piping heat loss for central hydronic systems shall be used on formulas outlined in manuals listed in item 1-b of WAC 296-46-590.

Table 12

Mobile Home
Walls
(R=2.2) (U=.45)

Watt Loss Factor (Per Square Foot)

Temperature Difference	No Added Insulation	R-7 Added Insulation	R-8 Added Insulation	R-11 Added Insulation	R-13 Added Insulation
50°F	6.7	1.6	1.4	1.1	0.97
55°F	7.4	1.8	1.6	1.2	1.10
60°F	8.0	1.9	1.7	1.3	1.20
70°F	9.4	2.2	2.0	1.6	1.40
80°F	11.0	2.6	2.3	1.8	1.50
90°F	12.0	2.9	2.6	2.0	1.70

Table 13

Mobile Home
Ceiling (R=2.5)
*Floor (R=2.5) (U=.40)

Watt Loss Factor (Per Square Foot)

Temperature Difference	No Added Insulation	R-7 Added Insulation	R-10 Added Insulation	R-11 Added Insulation	R-16 Added Insulation	R-19 Added Insulation
50°F	5.9	1.5	1.2	1.10	0.79	0.68
55°F	6.5	1.7	1.3	1.20	0.87	0.75
60°F	7.1	1.9	1.4	1.30	0.95	0.82
70°F	8.2	2.2	1.6	1.50	1.10	0.96
80°F	9.4	2.5	1.9	1.70	1.30	1.10
90°F	10.6	2.8	2.1	2.00	1.40	1.20

* Floor heat loss based on mobile home having skirting around it.

CALCULATION OF WATT LOSS FACTORS FOR INSULATION R-VALUES NOT GIVEN IN TABLES

Use the following formula:

$$\text{Watt Loss Factor} = \frac{\text{Temperature Difference}}{3.4 \times \text{Total Resistance}}$$

Where:

Temperature Difference: is the indoor to outdoor temperature difference listed in WAC 296-46-59010 (Appendix B), except for ceiling cable or panel heat add 30° to the temperature difference listed in WAC 296-46-59010 (Appendix B).

Total Resistance: is the sum of the thermal resistance of the basic construction found at the top of each table and the thermal resistance of the insulation material.

Example:

A floor over vented crawl space is insulated with R-24 insulation and is located in an

area with a design temperature difference of 50°F. Calculate the watt loss factor.

Solution:

Basic construction resistance (Table 6)	= 4.3
Resistance of Insulation	= 24.
Total Resistance	28.3

$$\text{Watt Loss Factor} = \frac{\text{Temperature Difference}}{3.4 \times \text{Total Resistance}}$$

$$= \frac{50}{3.4 \times 28.3}$$

$$= .52 \text{ Watts/Sq. Ft.}$$

To convert BTU per hour to watts, the following formula will apply:

$$\text{Watts} = \frac{\text{BTUH}}{3.413}$$

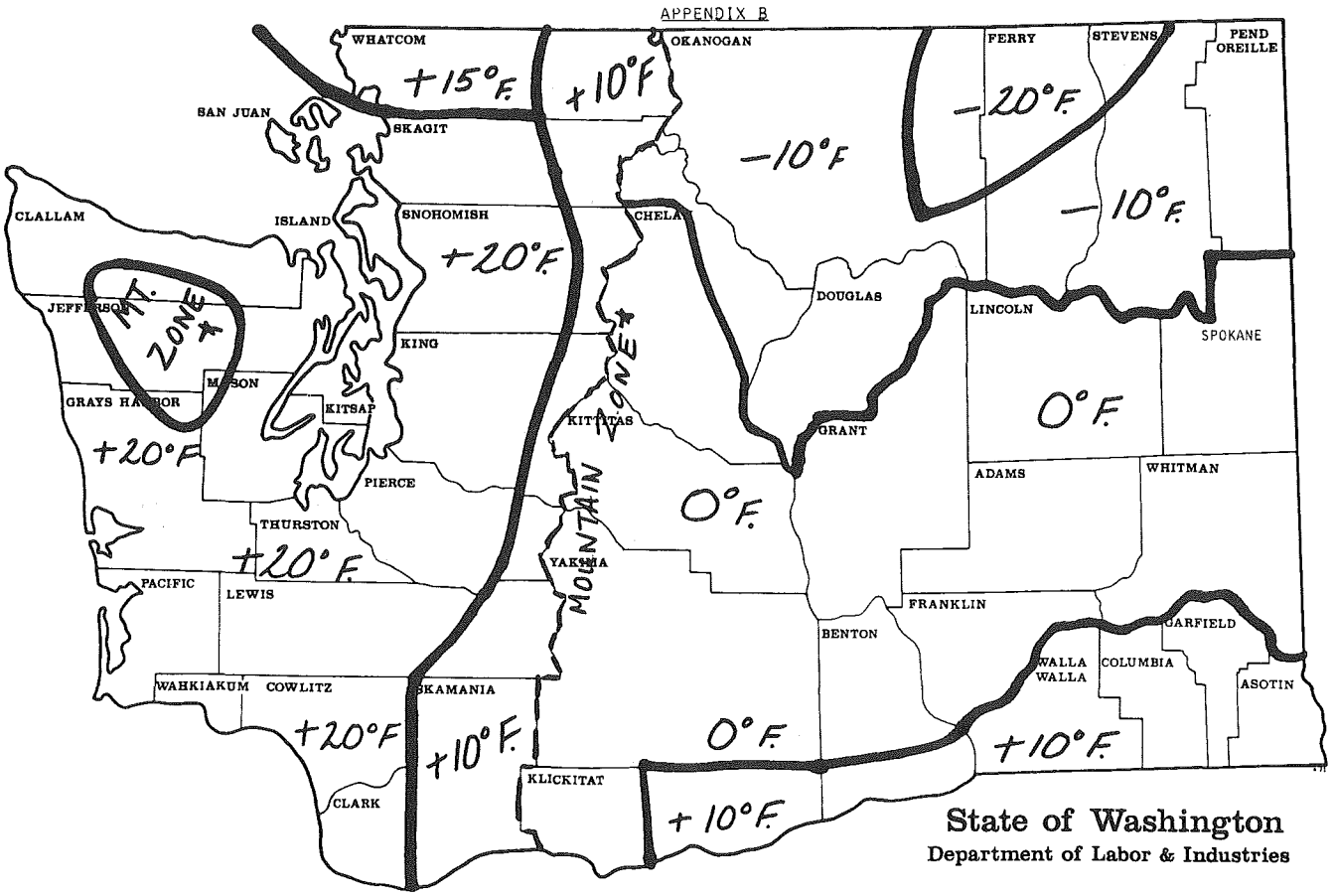
$$\text{BTUH} = \text{Watts} \times 3.413$$

[Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-59005, filed 1/31/78. Formerly Appendix A.]

WAC 296-46-59010 Appendix B--Outdoor design temperatures.

State of Washington

Department of Labor & Industries
OUTDOOR DESIGN TEMPERATURES



* Structures located in the summit areas of the Cascades shall be considered east of the Cascades for calculation purposes.

Mountain zone design temperatures will vary based upon the elevation above sea level, location, and wind conditions. Therefore, some areas may require

a colder outdoor design temperature. Consult the local inspecting authority if in doubt.

Outdoor Design Temperature	Design Temperature Difference
+25°F.	45°F.
+20°F.	50°F.
+15°F.	55°F.
+10°F.	60°F.
0°F.	70°F.
-10°F.	80°F.
-20°F.	90°F.

[Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-59010, filed 1/31/78. Formerly Appendix B.]

WAC 296-46-900 Appendix C--Drawing E-103.

INTERPRETATIONS:

N.E.C. 90-2 (C) — Terminating immediately: J-Box, C.T. or meter enclosure (C). See WAC 296-46-244, paragraphs (1) and (2).

Conduit Raceways — All raceways shall be rigid steel or intermediate metal conduit when within the building lines. Conduit shall terminate underground a minimum of 24 inches deep with an approved fiber bushing attached.

EXCEPTION:

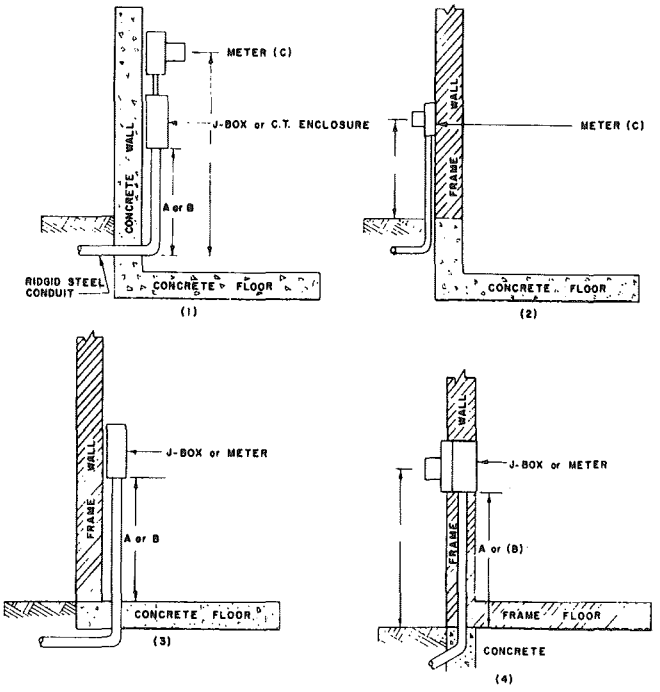
WAC 296-46-244(4)

DISTANCE LIMITATION:

A. Utility grade wire — Service Lateral Termination WAC 296-46-244 — As measured maximum, 18 inches if conduit is located inside the structure, or 8 feet if conduit is located in an outside framed wall.

B. Code grade wire — Service Entrance Conductors WAC 296-46-200 — As measured maximum 15 feet.

DISTANCE LIMITATIONS AS DESCRIBED IN A, B



[Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-900, filed 1/31/78; Order 75-25, Appendix C—Drawing E-103 (codified as WAC 296-46-900), filed 8/4/75; Order 72-7, Appendix C, filed 6/7/72.]

WAC 296-46-910 Appendix F--Inspection fees schedule.

INSPECTION FEES SCHEDULE

Appendix F

BUILDING AND CONSTRUCTION SAFETY INSPECTION SERVICES DIVISION

ELECTRICAL INSPECTION SECTION DEPARTMENT OF LABOR AND INDUSTRIES

FEES. For fee calculation purposes, amperage will be based on conductor ampacity. Voltage will be based on service conductor voltage as per National Electrical Code, Article 230-201, or load side of transformer.

INSPECTION FEES SHALL BE PAID PRIOR TO CONNECTION BY SERVING UTILITY.

(1) New Service Fees:

	Single Multi-Family	Other Than Residential			
Mobile Home Residence	Residence (Each Family Dwelling Unit)	120/208 240 Volts		480-600 Volts	601 & Over Volts
AMPS	1 phase	1 phase	3 phase	3 phase	3 phase
1- 100	$ 16.00	$ 16.00	$ 16.00	$ 16.00	$ 32.00
101- 200	20.00	20.00	24.00	32.00	56.00
201- 300	24.00	24.00	36.00	48.00	88.00
301- 400	32.00	32.00	52.00	64.00	124.00
401- 500	40.00	40.00	68.00	84.00	160.00

Mobile Home Residence	Single Multi-Family Residence (Each Family Dwelling Unit)	Other Than Residential 120/208 240 Volts		480-600 Volts	601 & Over Volts
AMPS	1 phase	1 phase	3 phase	3 phase	3 phase
501- 600	56.00	56.00	84.00	104.00	192.00
601- 800	64.00	64.00	96.00	120.00	228.00
801-1200	76.00	76.00	112.00	140.00	264.00
1201-1600		80.00	120.00	152.00	280.00
1601-2000		84.00	123.00	160.00	300.00
2001-2500		92.00	136.00	168.00	316.00
2501-3000		96.00	144.00	180.00	332.00
3001-4000		100.00	152.00	188.00	352.00
4001-5000		104.00	160.00	200.00	376.00
5001-6000		112.00	168.00	212.00	396.00

(2) A minimum fee of $7 shall be charged for each of the following subject to noted limitations.
   a. Mobile home service connection in a mobile home park.
   b. Mobile home feeder where service is existing in a mobile home park.
   c. Recreational vehicle park each lot to which power is supplied.
   d. Boat space in a boat harbor or marina each berth to which power is supplied.
   e. Calculation of or checking heat calculations, where required.

(3) A minimum fee of $10 shall be charged for each of the following subject to noted limitations.
   a. A temporary construction service for lighting and power of 20 KVA or less. The fee for a temporary construction service in excess of 20 KVA shall be 50% of the fee for a new service installation of like ampacity.
   b. Circuit extension installed for controls and motors for central heating plants such as gas, oil, and electrical furnaces.
   c. Yard pole meter loops or similar isolated metering installations.
   d. Each adjacent farm building served from yard pole other than each residence. Exceptions: Installations exceeding 200 amperes shall be in accordance with the appropriate schedule.
   e. Transient worker housing per unit.

(4) The fee for installations, increase and/or relocation (altered) of an existing service or feeder shall be 50% of the fee for a new service of like ampacity, with a minimum fee of $10.

(5) The fee for new circuits, circuit extensions, circuit alterations, where the service or feeder is not modified, shall be a total of $10 for one to four circuits inspected at the same time on the same premises under a single label and $2 for each additional circuit.

(6) The fee for sign and outline lighting circuits shall be a total of $10 for one to four circuits inspected at the same time on the same premises under a single label and $2 for each additional circuit.

(7) Where a high voltage primary feeder terminates in a separate building it shall be classed as a separate service.

(8) The fee for the first feeder installations with new services shall be 25% of the fee for service installations of like ampacity with a minimum fee of $7.

*(9) Optional fee schedule for service to individual motor(s) will be $10 per motor for motor rating 25 HP or less: each additional horse power in excess of 25 HP will be an additional fifty cents per HP, with a maximum of $100, including an allowance of 5 KVA of auxiliary motor equipment.

(10) In addition to the service and feeder installation fee, the fee for each electrically driven irrigation machine shall be $15.

Inspections requested for existing electrical facilities will be $7 for the first hour or fraction thereof and $20 each additional hour or fraction thereof.

* The optional fee for a new service installation to individual motor(s) may be calculated in accordance with Item (9) above based on HP rating or calculated per the new service amperage schedule Item (1) above whichever is the lesser of the calculation methods so stated.

[Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-910, filed 1/31/78.]

Appendix A Repealed. See Disposition Table at beginning of this chapter.

Appendix B Repealed. See Disposition Table at beginning of this chapter.

Chapter 296-52 WAC
SAFETY STANDARDS FOR THE POSSESSION AND HANDLING OF EXPLOSIVES

WAC
296-52-010 Introduction.

WAC 296-52-010 Introduction. The subject code shall apply to all persons in the state of Washington and will be known as the "Safety Standards for the Possession and Handling of Explosives," hereinafter called the "Explosives Code." [Statutory Authority: Chapters 42-.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-52-010, filed 6/28/78; Order 70-4, § 296-52-010, filed 4/29/70.]

Chapter 296-54 WAC
SAFETY STANDARDS--LOGGING OPERATIONS

WAC
296-54-001 Repealed.
296-54-003 Repealed.
296-54-010 Repealed.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-54-001 Scope and application. [Order 72-14, § 296-54-001, filed 7/31/72, effective 9/1/72; Rules (part), filed 6/2/67, effective 7/10/67.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-003 Waiver and variance. [Order 72-14, § 296-54-003, filed 7/31/72, effective 9/1/72; Rules (part), filed 6/2/67, effective 7/10/67.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-010 Definitions of terms used in the logging standards for the purpose of this chapter. [Order 76-29, § 296-54-010, filed 9/30/76; Order 72-14, § 296-54-010, filed 7/31/72, effective 9/1/72; Rules (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/30/62; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17-.040, 49.17.150, and 49.17.240.

296-54-020 Introduction. [Order 72-14, § 296-54-020, filed 7/31/72, effective 9/1/72; Rules (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-030 Management's responsibility. [Order 72-14, § 296-54-030, filed 7/31/72, effective 9/1/72; Rules, § I, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-040 Employee's responsibility. [Order 72-14, § 296-54-040, filed 7/31/72, effective 9/1/72; Rules, § II, filed

6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-051 Safety educational and first aid requirements. [Order 72-14, § 296-54-051, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-052 General requirements. [Order 72-14, § 296-54-052, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-130 Camps. [Order 72-14, § 296-54-130, filed 7/3/72, effective 9/1/72; Rules, § IV, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17-.040, 49.17.150, and 49.17.240.

296-54-140 Railroad and truck road construction and maintenance—Railroads. [Order 72-14, § 296-54-140, filed 7/31/72, effective 9/1/72; Rules, § V (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-150 Truck roads. [Order 72-14, § 296-54-150, filed 7/31/72, effective 9/1/72; Rules, § V (part), filed 6/2/67, 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-160 Transportation of crews—General requirements. [Order 72-14, § 296-54-160, filed 7/31/72, effective 9/1/72; Rules, § VI (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17-.040, 49.17.150, and 49.17.240.

296-54-170 Transportation of crews by use of speeders and trailers. [Order 72-14, § 296-54-170, filed 7/31/72, effective 9/1/72; Rules, § VI (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61, 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-180 Transportation of crews by motor vehicles. [Order 72-14, § 296-54-180, filed 7/31/72, effective 9/1/72; Rules, § VI (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17-.040, 49.17.150, and 49.17.240.

296-54-185 Methods of crew transportation other than those specified. [Order 72-14, § 296-54-185, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-190 Rigging. [Order 72-14, § 296-54-190, filed 7/31/72, effective 9/1/72; Rules, § VIII, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60; Addendum, filed 3/30/62.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49-.17.150, and 49.17.240.

296-54-195 Additional requirements for portable spars and boom type yarding and loading machines. [Order 72-14, § 296-54-195, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-200 Yarding. [Order 72-14, § 296-54-200, filed 7/31/72, effective 9/1/72; Rules, § XII, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17-.040, 49.17.150, and 49.17.240.

296-54-210 Tractor logging. [Order 72-14, § 296-54-210, filed 7/31/72, effective 9/1/72; Rules, § XIII, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-215 Canopy guards, barricades, seat belts, screens and other items required for industrial equipment. [Order 72-14, § 296-54-215, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-216 Roll-over protective structures and overhead protection. [Order 72-14, § 296-54-216, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17-.040, 49.17.150, and 49.17.240.

296-54-217 Braking systems for tractors and other mobile equipment. [Order 72-14, § 296-54-217, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-218 Emergency steering. [Order 72-14, § 296-54-218, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-220 Log loading. [Order 72-14, § 296-54-220, filed 7/31/72, effective 9/1/72; Rules, § XIV, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-230 Lines, blocks and shackles. [Order 72-14, § 296-54-230, filed 7/31/72, effective 9/1/72; Rules, § IX, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-240 Yarding, loading, and skidding units. [Order 72-14, § 296-54-240, filed 7/31/72, effective 9/1/72; Rules, § X, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-260 Falling—Bucking. [Order 72-14, § 296-54-260, filed 7/31/72, effective 9/1/72; Rules, § VII, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-270 Moving machines. [Order 72-14, § 296-54-270, filed 7/31/72, effective 9/1/72; Rules, § XI, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-280 General requirements. [Order 76-29, § 296-54-280, filed 9/30/76; Order 72-14, § 296-54-280, filed 7/31/72, effective 9/1/72; Rules, § XIX, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-281 Water dumps. [Order 72-14, § 296-54-281, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-282 Boom and rafting grounds. [Order 76-7, § 296-54-282, filed 3/1/76; Order 72-14, § 296-54-282, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-284 Dry land sorting and storage. [Order 72-14, § 296-54-284, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-286 Boats and mechanical devices on water. [Order 76-7, § 296-54-286, filed 3/1/76; Order 72-14, § 296-54-286, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-290 Electrical logging equipment. [Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-300 Explosives. [Order 72-14, § 296-54-300, filed 7/31/72, effective 9/1/72; Rules, § XX, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-310 Railroad operations. [Order 72-14, § 296-54-310, filed 7/31/72, effective 9/1/72; Rules, § XVI, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-320 Railroad maintenance, loading or unloading. [Order 72-14, § 296-54-320, filed 7/31/72, effective 9/1/72; Rules, § XVII, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17-.040, 49.17.150, and 49.17.240.

296-54-330 Motor truck log transportation. [Order 72-14, § 296-54-330, filed 7/31/72, effective 9/1/72; Rules, § XV, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-335 Stationary log truck trailer loading. [Order 72-14, § 296-54-335, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-340 Maintenance shops. [Order 72-14, § 296-54-340, filed 7/31/72, effective 9/1/72; Rules, § XVIII, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-350 Signals and signal systems. [Order 72-14, § 296-54-350, filed 7/31/72, effective 9/1/72; Rules, § XXI (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-360 Skidder whistle signals. [Order 72-14, § 296-54-360, filed 7/31/72, effective 9/1/72; Rules, § XXI (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-370 Slackline whistle signals. [Order 72-14, § 296-54-370, filed 7/31/72, effective 9/1/72; Rules, § XXI (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-380 High lead logging whistle signals. [Order 72-14, § 296-54-380, filed 7/31/72, effective 9/1/72; Rules, § XXI (part), filed 6/2/67, effective 7/10/67; Rules AB-1, effective 1/2/65; Rule Z-3, filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-392 Electric signal systems. [Order 72-14, § 296-54-392, filed 7/31/72, effective 9/1/72; Rules, § XXI (part), filed 6/2/67, effective 7/10/67.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-393 Radio systems used for voice communications, activation of audible signals or equipment. [Order 72-14, § 296-54-393, filed 7/31/72, effective 9/1/72; Rules, § XXI (part), filed 6/2/67, effective 7/10/67.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-39301 Form No. 157—Application for permit to operate radio signal system in designated area. [Order 72-14, Form No. 157 (codified as WAC 296-54-39301), filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-54-400 Radio-signaling systems—Minimum requirements. [Order 72-14, § 296-54-400, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

WAC 296-54-001 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-54-003 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-54-010 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-54-020 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-54-030 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-54-040 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-54-051 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-54-052 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-54-130 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-54-140 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-54-150 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-160 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-170 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-180 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-185 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-190 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-195 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-200 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-210 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-215 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-216 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-217 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-218 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-220 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-230 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-240 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-260 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-270 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-280 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-281 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-282 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-284 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-286 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-290 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-300 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-310 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-320 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-330 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-335 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-340 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-350 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-360 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-370 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-380 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-392 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-393 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-39301 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-400 **Repealed.** See Disposition Table at beginning of this chapter.

WAC 296-54-501 **Scope and application.** The requirements of this chapter augment those requirements of the general safety standards promulgated by the department of labor and industries, division of industrial safety and health, applicable to this industry, and apply to all persons, firms, corporations or others engaged in logging operations that come within the jurisdiction of the department of labor and industries. The requirements herein contained do not apply to log handling at sawmills, plywood mills, pulp mills or other manufacturing operations governed by their own specific safety standards.

The safety requirements herein contained are not to be construed to imply that other safe work practices, procedures or methods should not be employed where such methods, means or practices may be required to prevent accidents. Both employers and employees have a duty to do whatever is reasonable and practical to avoid causing accidents. These requirements are minimum safety requirements and shall augment other safety standards developed by the department which are of a general nature and apply to all industrial operations such as those contained in the General Safety Standards, chapter 296-24 WAC; Occupational Health Standards, chapter 296-62 WAC; and Precautionary Labeling of Containers of Hazardous Materials, chapter 296-64 WAC, or others which may be applicable. Regulations adopted by the department concerning certain types of equipment or conditions, such as Metal and Nonmetallic Mines, Quarries, Pits and Crushing Operations, chapter 296-61 WAC, and Possession, Handling and Use of Explosives, chapter 296-52 WAC shall be complied with when applicable.

Some of the factors involving safe practices are use of good judgment, and the avoidance of taking chances. Accidents can be avoided in many instances by everyone conscientiously applying their knowledge of safety.

Copies of all Society of Automotive Engineers Reports (SAE) referred to in these standards are on file in all district offices of the division of industrial safety and health of the department of labor and industries, and may be reviewed by any interested person. Individuals desiring to obtain copies of such material shall arrange to do so directly from the publishers or from other sources. The division of industrial safety and health will not assume the responsibility of acquiring such material for uses other than its own needs.

NOTE: Safety standards for pulpwood logging are contained in a separate edition titled "Safety Standards for Pulpwood Logging", WAC 296-54-450.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-501, filed 9/21/79.]

WAC 296-54-503 Variance. The assistant director may, upon receipt of application and after adequate investigation by the department, permit a variation from these requirements when an approved alternate means or manner of protection is provided, which affords an equivalent measure of safety as required by the rule from which a variance is requested. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-503, filed 9/21/79.]

WAC 296-54-505 Definitions applicable to this chapter. (1) A-frame - a structure made of two independent columns fastened together at the top and separated by a reasonable width at the bottom to stabilize the unit from tipping sideways.

(2) Alternate communication system - a system approved by the department of labor and industries, which by voice or other media than horn or whistle, provides a safe and reliable method of communication between crew members.

(3) A side - any place of activity involving a group in the yarding and loading of logs.

(4) An operation - any place where logging or log related activities are taking place.

(5) Approved - approved by the department of labor and industries, division of industrial safety and health.

(6) Arch - any device attached to the back of a vehicle and used for raising one end of logs to facilitate movement.

(7) Authorized person - a person approved or assigned by the employer to perform a specific type of duty(s) or to be at a specific location at a certain time(s).

(8) Back line - that section of the haulback that runs between the spar tree and the corner block.

(9) Ballistic nylon - a fabric of high tensile properties designed to provide protection from lacerations.

(10) Barrier - a fence, wall or railing to prevent passage or approach.

(11) Base of tree - that portion of a natural tree not more than three feet above ground level.

(12) Bight of the line - any area where a person is exposed to a controlled or uncontrolled moving line.

(13) Binder - a hinged lever assembly for connecting the ends of a wrapper to tighten the wrapper around the load of logs or materials.

(14) Boomboat - any boat used to push or pull logs, booms, bundles, or bags, in booming ground operations.

(15) Boomscooter - a small boat, usually less than fourteen feet in length, equipped with an outboard motor, having directional pushing capabilities of 360 degrees.

(16) Brailing - when tiers of logs, poles, or piles are fastened together with a type of dogline and the ends of the side members are then fastened together for towing.

(17) Brow log - a log or a suitable substitute placed parallel to any roadway at a landing or dump to protect the carrier and facilitate the safe loading or unloading of logs, timber products, or materials.

(18) Bullbuck - the supervisor of the cutting crew.

(19) Butt welding - the practice of welding something end to end.

(20) Cable tree thinning - the selective thinning of a timber stand utilizing mobile yarding equipment specifically designed or adapted for the purpose. Such systems may be of the skyline, slackline, or modified slackline, overhead cable system.

(21) Choker - a length of wire rope with attachments for encircling the end of a log to be yarded.

(22) Chunking - the clearing of nonusable material from a specified area.

(23) Cold deck - any pile of logs which is yarded and left for future removal.

(24) Competent person - one who is capable of identifying hazards in the surrounding or working conditions which are unsanitary, hazardous or dangerous.

(25) Corner block - the first block the haulback passes through on its way to the tail block.

(26) Crew bus or vehicle – any vehicle furnished by or for the employer that will transport nine or more persons.

(27) Crotch line – two short lines attached to the same ring or shackle, used for loading or unloading.

(28) Danger trees – trees with evidence of deterioration or physical damage to the root system or stem, as well as the degree and/or direction of lean. (See Snag)

(29) Directional falling – a mechanical means to control the direction of falling timber.

(30) Dog line – type of line used to fasten logs or timber products together by the use of dogs.

(31) Donkey – any machine with a series of drums used to yard logs.

(32) Double ended logs – two logs end to end on the same lay.

(33) Droplines – a short line attached to the carriage or carriage block which is used as an extension to the main line.

(34) Drum – a mechanical device on which line is spooled or unspooled.

(35) Dry land storage – decks of logs stored for future removal or use.

(36) Dutchman – (a) A block used to change direction of line lead.

(b) A method of falling timber consisting of inserting a piece of material into one side of the undercut to assist in pulling a tree against the lean or a section of the undercut can be left in a corner to accomplish the same purpose.

(37) Experienced person – a person who has been trained and has participated in the subject process for a period of time long enough to thoroughly acquaint the person with all facets of the process.

(38) F.O.P.S. – Falling object protective structure.

(39) Fair lead – sheaves, rolls, or a combination thereof arranged to receive a line coming from any direction for proper line spooling on to a drum.

(40) Front end loader – a mobile machine mounted on a wheeled or tracked chassis, equipped with a grapple, tusk, bucket, or fork–lift device, and employed in the loading, unloading, stacking, or sorting of logs or materials.

(41) Guard rail – a railing to restrain a person.

(42) Guyline – a line used to support or stabilize a spar.

(43) Gypsy drum – a mechanical device wherein the line is not attached to the drum and is manually spooled to control the line movement on and off the drum.

(44) Haulback – a line used to pull the buttrigging and mainline to the logs to be yarded.

(45) Haulback block – any block the haulback line passes through including the corner block and tailblock.

(46) Hay rack – (a) A type of loading boom where two tongs are used and logs are suspended.

(b) A transporting vehicle with multiple sets of bunks attached to a rigid frame usually used for hauling logs.

(47) Hazardous falling area – the area within a circle centered on the tree being felled and having a radius not less than twice the height of that tree.

(48) Head tree – the tree where yarding and/or loading takes place. (See Spar tree)

(49) Heel boom – a type of loading boom where one tong is used and one end of the log is pulled up against the boom.

(50) High lead – a system of logging wherein the main line is threaded through the main line block, which is attached near the top of the spar, to obtain a lift of the logs being yarded.

(51) Hobo log and/or hitchhiker – a free or unattached log that is picked up by a turn and is transported with the turn.

(52) Hooktender – the worker that supervises the method of moving the logs from the woods to the landing.

(53) Hot deck – a landing where logs are being moved.

(54) Hydraulic jack – a mechanical device, powered by internal pressure, used to control the direction in which a tree is to be felled.

(55) In the clear – being in a position where the possibility of harmful physical contact is minimized.

(56) Jackstrawed – trees or logs piled in an unorderly manner.

(57) Jaggers – any projecting broken wire in a strand of cable.

(58) Kerf – that portion of timber products taken out by the saw teeth.

(59) Knob – a metal ferrule attached to the end of a line.

(60) Landing – any place where logs are laid after being yarded, awaiting subsequent handling, loading, and hauling.

(61) Lift tree – an intermediate support for skylines.

(62) Loading boom – any structure projecting from a pivot point to guide a log when lifted.

(63) Lodged tree – a tree leaning against another tree or object which prevents it from falling to the ground.

(64) Log bronco – a sturdily built boat usually from twelve to twenty feet in length, used to push logs or bundles of logs in a generally forward direction in booming and rafting operations.

(65) Log dump – a place where logs are removed from transporting equipment. It may be either dry land or water, parbuckled over a brow log or removed by machine.

(66) Logging machine – a machine used or intended for use to yard, move, or handle logs, trees, chunks, trailers, and related materials or equipment. This shall include self–loading log trucks only during the loading and unloading process.

(67) Logs – tree segments suitable for subsequent processing into lumber, pulpwood, or other wood products, including but not limited to poles, piling, peeler blocks and bolts.

(68) Log stacker – a mobile machine mounted on a wheeled or tracked chassis, equipped with a frontally mounted grapple, tusk, or forklift device, and employed in the loading, unloading, stacking, or sorting of logs.

(69) Long sticks – an overlength log that creates a hazard by exceeding the safe perimeters of the landing.

(70) Mainline – the line attached to the buttrigging used to pull logs to the landing.

(71) Mainline block – the block hung in the spar through which the mainline passes.

(72) Mainline train – any train that is made up for travel between the woods and log dump.

(73) Matchcutting – the felling of trees without using an undercut.

(74) Mechanized falling – falling of standing timber by a self–propelled mobile wheeled or tracked machine equipped with a shear or other powered cutting device.

(75) Mechanized feller – any such machine as described in WAC 296–54–535 and 296–54–537, and includes feller/bunchers and similar machines performing multiple functions.

(76) Mobile log loader – a self–propelled log loading machine mounted on wheels or tracks, incorporating a grapple–rigged Bohemian, goose neck, or straight boom fabricated structure, employed in the loading or unloading of logs by means of grapples or tongs.

(77) Mobile yarder – a logging machine mounted on wheels, tracks, or skids, incorporating a vertical or inclined spar, tower, or boom, employed in skyline, slackline, high lead, or grapple overhead cable yarding systems.

(78) Must – the same as "shall" and is mandatory.

(79) Pass line – a small line threaded through a block at the top of the spar to assist the high climber.

(80) Permissible (as applied to any device, equipment or appliance) – such device, equipment, or appliance has the formal approval of the United States Bureau of Mines, American Standards Association, or National Board of Fire Underwriters.

(81) Portable spar or tower – a movable engineered structure designed to be used in a manner similar to which a wood spar tree would be used.

(82) Qualified person – a person, who by possession of a recognized degree, certificate, professional standing, or by extensive knowledge, training, and experience, has successfully demonstrated ability to solve or resolve problems relating to the subject matter, the work, or the project.

(83) Reach – a steel tube or wood timber or pole connected to the truck and inserted through a tunnel on the trailer. It steers the trailer when loaded and pulls the trailer when empty.

(84) Receding line – the line on a skidder or slackline comparable to the haulback line on a yarder.

(85) Reload – an area where logs are dumped and reloaded or transferred as a unit to another mode of transportation.

(86) Rollway – any place where logs are dumped and they roll or slide to their resting place.

(87) R.O.P.S. – Roll over protection structure.

(88) Rub tree – a tree used to guide a turn around a certain area.

(89) Running line – any line which moves.

(90) SAE – Society of automotive engineers.

(91) Safety factor – the ratio of breaking strength to a safe working strength or loading.

(92) Safety glass – a type of glass that will not shatter when broken.

(93) Sail block – a block hung inverted on the sail guy to hold the tong block in proper position.

(94) Scaler – the person who measures the diameter and length of the logs, determines specie and grade, and makes deductions for footage calculations.

(95) Shall – a requirement that is mandatory.

(96) Shear log – a log placed in a strategic location to divert passage of objects.

(97) Shore skids – any group of timbers spaced a short distance apart on which logs are rolled.

(98) Signal person – the person designated to give signals to the machine operator.

(99) Siwash – to change the lead of a line with a physical object such as a stump or tree instead of a block.

(100) Skidder – a machine or animal used to move logs or trees to a landing.

(101) Skidding – movement of logs or trees on the surface of the ground to the place where they are to be loaded.

(102) Skyline – the line suspended between two points on which a block or carriage travels.

(103) Slackline – a form of skyline where the skyline cable is spooled on a donkey drum and can be raised or lowered.

(104) Slack puller – any weight or mechanical device used to increase the movement of a line when its own weight is inadequate.

(105) Snag – a dead standing tree or a portion thereof. (See Danger tree)

(106) Snorkel – a loading boom modified to extend its limitations for the purpose of yarding.

(107) Spar – a device rigged for highlead, skyline or slackline yarding.

(108) Spar tree – (See Spar).

(109) Speeder – a small self–powered vehicle that runs on a railroad track.

(110) Spike – a long heavy nail similar to a railroad spike.

(111) Springboard – a board with an iron tip used by fallers to stand on while working above ground level.

(112) Square lead – the angle of 90 degrees.

(113) Squirrel – a weight used to swing a boom when the power unit does not have enough drums to do it mechanically.

(114) Squirrel tree – a topped tree, guyed if necessary, near the spar tree in which the counter balance (squirrel) of a tree rigged boom is hung.

(115) Stiff boom – two or more boom sticks wrapped together on which boom persons walk or work.

(116) Strap – any short piece of line with an eye or "D" in each end.

(117) Strawline – a small line used for miscellaneous purposes.

(118) Strap socket or D – a socket with a closed loop and arranged to be attached to the end of a line by the molten zinc, or an equivalent method. It is used in place of a spliced eye.

(119) Strip – a definite location of timber on which one or more cutting crews work.

(120) Swamping – the falling or cutting of brush around or along a specified place.

(121) Swifter – a piece of equipment used to tie the side sticks of a log raft together to keep the raft from spreading.

(122) Swing cut – a back cut in which the holding wood on one side is cut through.

(123) Tail block – the haulback block at the back end of the show.

(124) Tail hold – an anchor used for making fast any line or block.

(125) Tail tree – the tree at the opposite end from the head tree on which the skyline or other type rigging is hung.

(126) Tight line – when either the mainline or haulback are held and power is exerted on the other or when power is exerted on both at the same time.

(127) Tong line block – the block hung in a boom through which the tong line operates.

(128) Tongue – a device used to pull and/or steer a trailer.

(129) Topping – cutting off the top section of a standing tree prior to rigging the tree for a spar or tail tree.

(130) Tower – (See Portable spar or tower).

(131) Tractor – a machine of wheel or track design used in logging.

(132) Tractor logging – the use of any wheeled or tracked vehicle in the skidding or yarding of logs.

(133) Transfer (as used in loading) – changing of logs in a unit from one mode of transportation to another.

(134) Tree jack – a grooved saddle of wood or metal rollers contained within two steel plates, attached to a tree with a strap, used as a guide for skyline, sail guy, or similar static line. It is also formed to prevent a sharp bend in the line.

(135) Tree plates – steel bars sometimes shaped as elongated J's, which are fastened near the top of a tree to hold guylines and prevent them from cutting into the tree when tightened. The hooks of the J are also used to prevent the mainline block strap from sliding down the tree.

(136) Tree pulling – a method of falling trees in which the tree is pulled down with a line.

(137) Tug – a boat, usually over twenty feet in length, used primarily to pull barges, booms of logs, bags of debris, or log rafts.

(138) Turn – any log or group of logs attached by some means to power and moved from a point of rest to a landing.

(139) "V" lead – a horizontal angle of less than 90 degrees formed by the projected lines of the mainline from the drum of the logging machine through the block or fairlead and the yarding load or turn.

(140) WAC – Washington Administrative Code.

(141) Waistline – that portion of the haulback running between the corner block and the tail block.

(142) Wrapper – a cable assembly or chain used to contain a load of logs.

(143) Wrapper rack – barrier used to protect a person while removing binders and wrappers from a loaded logging truck.

(144) Yarder – a machine with a series of drums used to yard logs. (See Donkey)

(145) Yarding – the movement of logs from the place they are felled to a landing. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-505, filed 9/21/79.]

WAC 296-54-507 Management's responsibility. In addition to observance of the general safety and health standards:

(1) The employer shall assume the responsibility of safety training for new employees.

(2) The employer shall assume the responsibility of work assignments so that no employee shall be allowed to work in a position or location so isolated that he is not within ordinary calling distance of another employee who can render assistance in case of emergency. In any operation where cutting, yarding, loading, or a combination of these duties is carried on, there shall be a minimum crew of two employees who shall work as a team and shall be in visual or hearing contact with one another to allow prompt awareness of injury or cessation of work activity of one employee by the other. No employee shall be left alone for a period of time to exceed fifteen minutes without visual or hearing contact. In addition, there shall be some system of back-up communication in the near proximity to enable an employee to call for assistance in case of emergency.

NOTE: This does not apply to operators of motor vehicles, watchmen or certain other jobs which, by their nature, are singular employee assignments. However, a definite procedure for checking the welfare of all employees during their working hours shall be instituted and all employees so advised.

(3) The employer shall establish a method of checking the employees in from the woods at the end of each shift. Each immediate supervisor shall be responsible for his crew being accounted for. This standard also includes operators of all movable equipment.

(4) Prior to the commencement of logging operations, a safety meeting shall be held and a plan shall be developed and implemented whereby management shall ascertain by direct supervision that the work is being carried out with special emphasis on safety and safe work practices.

(5) When extreme weather or other extreme conditions are such that additional hazards arise, additional precautions shall be taken to assure safe operations. If the operation cannot be made safe because of the aforementioned conditions, the work shall be discontinued until safe to resume.

(6) Danger trees within reach of landings, roads, rigging, buildings or work areas shall be either felled before regular operations begin or work shall be arranged so that employees shall not be exposed to hazards involved.

(7) Management shall ensure that intoxicating beverages and narcotics are not permitted or used by employees on or in the vicinity of the work site. Management shall cause employees under the influence of alcohol or narcotics to be removed from the work site. This requirement does not apply to employees taking prescription drugs and/or narcotics as directed by a physician providing such use shall not endanger the employee or others. [Statutory Authority: RCW 49.17.040, 49.17-.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-507, filed 9/21/79.]

WAC 296-54-509 Employee's responsibility. (1) Employees shall coordinate and cooperate with management and other employees in an attempt to eliminate accidents.

(2) Employees shall study and observe all safe work practices governing their work.

(3) They should offer safety suggestions, wherein such suggestions may contribute to a safer work environment.

(4) Intoxicating beverages and narcotics shall not be permitted or used by employees in or around the work sites. Employees under the influence of alcohol or narcotics shall not be permitted on the work site. This rule does not apply to employees taking prescription drugs and/or narcotics as directed by a physician providing such use shall not endanger the employee or others.

(5) Employees shall conduct themselves in a workmanlike manner while on the work site. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-509, filed 9/21/79.]

WAC 296-54-511 Personal protective equipment. (1) General requirements.

(a) Protective equipment, including personal protective equipment for eyes, face, head, hearing and extremities, protective clothing, respiratory devices and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

(b) Employee owned equipment. Where employees are required to provide their own protective equipment, the employer shall be responsible to assure its adequacy, including proper maintenance and sanitation of such equipment.

(c) Design. All personal protective equipment shall be of safe design and construction for the work to be performed. All safety belts and attachments shall meet the requirements of section 3 of ANSI A10.14-1975.

(2) Eye and face protection. Protective eye and/or face equipment shall be required and worn where there is a probability of injury that can be prevented by such equipment. In such cases, employers shall make conveniently available a type of protector suitable for the work to be performed, and employees shall use such protectors. Suitable eye protectors shall be provided and worn where machines or operations present the hazard of flying objects, glare, liquids, injurious radiation, or a combination of these hazards.

(3) Respiratory protection. In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example: Enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used pursuant to The General Safety and Health Standards, WAC 296-24-081.

(4) Occupational head protection. Hard hats meeting the specifications contained in American National Standards Institute (ANSI) Z89.1-1969, shall be worn by all employees involved in the logging operation or any of its related activities unless such employees are protected by F.O.P.S., cabs or canopies. Hard hats shall be maintained in serviceable condition.

(5) Personal flotation devices. Employees working on, over or along water, where the danger of drowning exists, shall be provided with and shall wear approved personal flotation devices in accordance with General Safety and Health Standards, WAC 296-24-086.

(6) Occupational footwear.

(a) All employees whose duties require them to walk on logs or boomsticks, shall wear sharp-calked shoes, or the equivalent, except when conditions such as ice, snow, etc., render calks ineffective. When calks are ineffective and other footwear does not afford suitable protection, workers shall not be required to work on logs or boomsticks.

(b) When nonslip type shoes or boots afford a greater degree of employee protection than calk shoes, such as at scaling stations, log sorting yards, etc., then this type footwear may be worn in lieu of calk shoes providing firm ankle support and secure footing are maintained.

(7) Leg protection. Employees whose normal duties require them to operate a power saw shall wear a flexible ballistic nylon pad or pads, sewn or otherwise fastened into the trousers, or other equivalent protection, that will protect the vulnerable area of the legs.

(8) Hand protection. All employees handling lines or other rough materials where there is a reasonable possibility of hand injury, shall wear suitable gloves or other hand protection to prevent injury.

(9) Hearing protection. Employees shall be protected against the effects of exposure to noise which exceeds the permissible noise exposures shown in the following table and chapter 296-62 WAC:

PERMISSIBLE NOISE EXPOSURES

Duration per day Hours	Sound Level dBA**
8	90
6	92

PERMISSIBLE NOISE EXPOSURES

Duration per day Hours	Sound Level dBA**
4	95
3	97
2	100
1-1/2	102
1	105
3/4	107
1/2	110
1/4	115*

* Ceiling Value: No exposure in excess of 115 dBA.
** Sound level in decibels as measured on a standard sound level meter operating on the A-weighting network with slow meter response.

(10) Protective clothing. Employees working on landings or in log sorting yards, when working on or from the ground, shall wear hard hats and yellow or orange vests, or similarly colored garments, to enable equipment operators to readily see them. It is recommended that such hard hats and vests or outer garments be of a luminous or reflectorized material. Employees performing duties of a flagperson shall wear a hard hat and vest or garment of contrasting colors. Warning vests and hard hats worn at night shall be of a reflectorized material. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-511, filed 9/21/79.]

WAC 296-54-513 Safety educational and first aid requirements. See The General Safety and Health Standards, WAC 296-24-040 through 296-24-065. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-513, filed 9/21/79.]

WAC 296-54-515 General requirements. (1) Emergency stops. Speed limiting devices, safety stops or emergency shut down devices or shut off valves shall be provided, with the controls so located that in the event of an emergency, the prime mover may be shut down from a safe place.

(2) Machine operators. Machine operators shall be experienced in operating the equipment they are using, except that inexperienced persons may operate the equipment to gain experience while in training and may do so only while working under immediate supervision of an experienced authorized person.

(3) Refueling vehicles. Vehicles shall not be fueled while the motors are running with the exception of helicopters, which is permitted under certain conditions. (See WAC 296-54-559(36).)

(4) Hydraulic lines. If failure of hydraulic lines would create a hazard to an equipment operator while at the operating station, safeguards shall be installed in such a manner as to eliminate the hazard. All hydraulic lines shall be maintained free of leaks and shall be shielded from damage wherever possible.

(5) Defective equipment. Equipment in need of repair shall be reported to management in writing as soon as possible and such equipment shall not be used until repairs are completed if there is a possible hazard to safety of the operator or other employees.

(6) Lock out - tag out. Procedures for lock out - tag out shall be established and implemented to prevent the accidental starting of equipment that is shut down for repairs, maintenance or adjustments.

(7) Control marking. The controls of all machines shall be marked as to their purpose in the operation of the machine.

(8) Metal objects. Metal objects driven into trees or logs shall be removed immediately after serving their intended purpose.

(9) Fire protection. An approved, fully charged and maintained, fire extinguisher shall be available at locations where machines are operating or on each vehicle.

(10) Hand tools. Hand and portable powered tools and other hand-held equipment shall be maintained and used in accordance with the General Safety and Health Standards, WAC 296-24-650.

(11) Storage, handling and marking of fuel. Fuel shall be stored, handled and marked in accordance with WAC 296-24-330.

(12) Smoking prohibited. Smoking shall be prohibited in battery charging areas and within fifty feet of all refueling operations. Precautions shall be taken to prevent open flames, sparks or electric arcs in battery charging or refueling areas.

(13) Charging batteries. When charging batteries, the vent caps shall be kept in place to avoid electrolyte spray. Care shall be taken to ensure caps are functioning. The battery (or compartment) cover(s) shall be open to dissipate heat.

(14) Uncovered batteries. Tools and other metallic objects shall be kept away from the tops of uncovered batteries.

(15) Danger trees leaning towards and within reach of landings, roads, rigging or work areas shall be felled before the regular operations begin. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-515, filed 9/21/79.]

WAC 296-54-517 Camps. (1) Rules, regulations and standards for camps shall be in accordance with WAC 296-24-125.

(2) All dangerous trees or snags which could fall on any camp building must be felled. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-517, filed 9/21/79.]

WAC 296-54-519 Transportation of crews by motor vehicle. (1) Seats. Anchored seats shall be provided for each person when riding in any vehicle.

(2) Seat belts. The driver of a crew vehicle shall be provided with and shall wear a seat belt at all times the crew vehicle is in motion.

(3) Barricade. A substantial barricade shall be provided behind the driver of a crew bus or vehicle that will transport nine or more passengers. The barricade shall

extend from the floor to at least a level even with the top of the driver's head.

(4) Safe entrance and exits. Adequate provisions shall be made for safe entrance and exits.

(5) Enclosed racks. When equipment or tools are carried inside the vehicle, they shall be stored in enclosed racks or boxes, which shall be properly secured to the vehicle.

(6) Vehicle to be stopped. Persons shall not enter or exit from any vehicle until the vehicle is completely stopped.

(7) Keep within vehicle. Persons shall keep all parts of the body within the vehicle.

(8) Stoves prohibited. Provisions shall be made for heat and light in the passenger portion of the vehicle. Use of stoves in vehicles is prohibited.

(9) Emergency exit. On vehicles designed to transport nine or more passengers, an emergency exit not less than six and one-half square feet in area, with the smaller dimension being not less than 18 inches, shall be placed at the back of the vehicle or near the back on the side opposite the regular entrance. The route to and egress from the exit must be unobstructed at all times.

(10) Fire extinguisher. When no fuel is transported in the crew vehicle, a minimum rated 5/BC dry chemical fire extinguisher shall be kept in the passenger compartment. When fuel is transported on the crew vehicle in accordance with subsection (14) of this section, a minimum rated 10/BC dry chemical fire extinguisher shall be kept in the passenger compartment. The extinguishing agent shall be nontoxic and preferably a noncorrosive type.

(11) Crew and emergency vehicles. Vehicles designed to transport passengers shall be equipped with stretchers, two blankets, first-aid kits and a portable light. If used as a means of transporting injured persons, it shall be designed to enable persons to pass a loaded stretcher into the vehicle. Provisions shall be made for proper securing of the stretcher.

(12) Exhaust systems. Exhaust systems shall be designed and maintained to eliminate the exposure of passengers to toxic agents.

(13) Limitation of transportation of explosives. Explosives shall not be carried on any vehicle while the vehicle is being used to transport workers other than the driver and two persons.

(14) Limitation of transportation of fuels. Fuels shall be transported or stored only in approved safety containers. Enclosed areas where fuels are carried or stored shall be vented in such a manner that a hazardous concentration of fumes cannot accumulate. All containers or drums shall be properly secured to the vehicle while being transported. Commercially built vehicles of the pick-up or flatbed type with a seating capacity of not to exceed six persons may be used to carry fuels in or on the bed of such vehicles, providing such fuels are not carried in the crew compartment. Van-type vehicles may be used to carry fuels only when a vapor-proof bulkhead is installed between the passenger compartment and storage compartment. Not more than forty-two gallons of gasoline may be carried or stored in the compartment and each container shall have a capacity not exceeding seven gallons.

(15) Motor vehicle laws. Motor vehicles used as crew vehicles regularly for the transportation of workers shall be covered against the weather and equipped and operated in conformity with applicable state of Washington motor vehicle laws.

(16) Operator's license. All operators of crew vehicles shall be experienced drivers and shall possess a current valid drivers license.

(17) Daily vehicle check. Operators of crew vehicles shall check brakes and lights daily and shall keep windshields and mirrors clean.

(18) Good repair. Crew vehicles shall be maintained in good repair and safe condition.

(19) Dump trucks. Dump trucks shall only be used in an emergency to transport workers and shall be equipped with adequate safety chains or locking devices which will eliminate the possibility of the body of the truck being raised while employees are riding in the truck. Emergency shall mean any unforeseen circumstances which calls for immediate action when danger to life or danger from fire exists.

(20) Means of signaling. An effective means of signaling shall be provided for communication between the driver and the passengers being transported when they are in separate compartments.

(21) Load limit. The passenger load limit of a crew vehicle shall not exceed the seating capacity of the vehicle.

(22) Vehicle check. Crew vehicles shall be thoroughly inspected by a mechanic for defects which could create a hazardous condition for operation. Such inspections shall be carried out at least every month. Defects known to the operator shall be reported in writing to the mechanic or person in charge. If defects are found, they shall be corrected before the vehicle is used for the transportation of crews. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-519, filed 9/21/79.]

WAC 296-54-521 Transportation of crews by use of speeders and trailers. (1) Braking systems. All speeders shall be equipped with two separate and independently operated braking systems either of which shall be of sufficient capacity to lock all wheels when speeder is fully loaded.

(2) Sanding methods. All speeders used for transporting crews shall be equipped with methods for sanding tracks, operative for both directions of travel.

(3) Lights, windshield wipers. Electric lights of sufficient candle power and range so that vehicle can be stopped within the range of the beam, and which will shine in the direction of travel, shall be provided on all speeders. Adequate tail lights shall be installed and maintained in good order. Automatic windshield wipers of sufficient capacity to maintain clear visibility shall be installed on all speeders.

(4) Trailers. When trailers are coupled behind speeders, they shall be equipped with two separate and independent braking systems, either shall be of sufficient

capacity to lock all wheels when the trailer is fully loaded. One of these shall be power operated and shall be controlled from the speeder; the other manually operated from the trailer. One man shall be designated to operate this brake in case of emergency.

(5) Trailer coupling. All trailers shall be coupled to speeders with metal couplings and safety chains or straps of sufficient strength to withstand the impact caused by a broken coupling.

(6) Trailer not to coast. No trailer shall coast or be used as a crew car without being attached to a speeder. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-521, filed 9/21/79.]

WAC 296-54-523 Methods of crew transportation other than those specified. Special approval. Persons or firms desiring to transport crews by methods other than those specified in these rules shall so inform the division of industrial safety and health, department of labor and industries, so that an evaluation of that method may be made. Should the proposed method be found to afford a measure of safety acceptable to the division of industrial safety and health, department of labor and industries, a written order stating that finding shall be issued to the person or firm concerned by the division of industrial safety and health and the proposed method may be utilized. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-523, filed 9/21/79.]

WAC 296-54-525 Railroad construction and maintenance. (1) Construction. All construction shall be according to safe logging practice as to size of rails, ties, track accessories and methods of installing same.

(2) Rail guards. Rail guards shall be placed on main lines and spurs, consistent with type of traffic and general local conditions.

(3) Rail anchors. Rail anchors of approved design shall be installed wherever practicable.

(4) Frogs, switches and guard rail ends. Frogs, switches and ends of guard rails shall have either patent or wooden foot guard blocking installed.

(5) Slip plates. Slip plates shall be used under all switches and switch points.

(6) Wire for telephone lines. All above ground wire for permanent telegraph or telephone lines used for dispatching must be well strung on insulators and shall be clear of ground and obstruction.

(7) Insulators. Where telephone lines are strung under or near power lines, foot stools mounted on insulators in front of telephone boxes must be used, unless other protection is provided, which affords a substantially equivalent measure of safety.

(8) Trestles. Foundations, pile trestles, framed bent trestles, mud sills, or other framework of all structures shall be adequate to support the maximum imposed loads without exceeding the maximum safe working unit stresses. Such structure shall be maintained in good condition and repair and shall be inspected at least annually by a qualified person and a record maintained of inspection which shall be made available to the division of industrial safety and health on request.

(9) Wooden guard. Outside wooden guard rails shall be installed on all railroad bridges except that outside wooden rails will not be required where inside steel guard rails are used. They shall extend not less than six inches above the top of the ties and shall be bolted or spiked to ties at intervals of not more than five feet. Spacer blocks shall be used unless ties are spiked to stringers, or guard rails are dapped to avoid need for spacer blocks.

(10) Bridge ties. Regular bridge ties of not less than ten feet in length shall be used on all railroad bridges constructed after the effective date of these standards.

(11) Safety platforms. On trestles and bridges whose length exceeds two hundred fifty feet, safety platforms providing safe standing space for two persons shall be installed and spaced so that a person on the trestle or bridge is never more than one hundred twenty-five feet from a safety platform or the end of the bridge or structure.

(12) Bridges and trestles used as footways. All railroad bridges and trestles used habitually as footways shall be provided with a plank walkway not less than twelve inches wide and two inches thick, located between the rails, and shall extend from end to end of bridge or trestle.

(13) Walkway. A suitable substantial walkway not less than three feet wide with handrail shall be installed on bridges or trestles where train crews are required to perform routine inspection or repair work on trains. Substantial platforms and handrails shall be provided where switches are located on bridges or trestles. Adequate clearance shall be allowed for the throw of the switch.

(14) Clearing right of way. All dangerous trees, snags or brush shall be cleared a safe distance from both sides of the track and any obstruction that will create a transportation hazard shall be removed.

(15) Secure footing at switches. Material shall be provided which will promote secure footing at places alongside the track where employees customarily perform duties, such as inspect loads, set brakes by hand or throw switches.

(16) Clearance between tracks. The distance between any main tracks and side track shall be such that there shall be a clearance of four feet between bunk ends and locomotive cabs.

(17) Clearances. The minimum horizontal clearances on each side of the center line of standard gauge mainline railroads shall be eight feet, and the vertical clearance shall be twenty-two feet above the top of each rail (in accordance with standard railroad engineering practices).

(18) Derailers.

(a) Derailers shall be installed and used on all landings, passing tracks and spurs where cars are left on a grade.

(b) These derails shall be located in such a manner that they will be close to standing equipment and will

not operate to create a hazard to buildings and other railroad lines.

(c) Derailers shall not be located on the inside rail on a sharp curve.

(d) Derail signs shall be set on both sides of the track even with derailer.

(e) When a derailer is no longer needed, it shall be removed or rendered inoperative. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-525, filed 9/21/79.]

WAC 296-54-527 Truck roads. (1) Truck road grades. Truck road grades shall not be too steep for safe operation of logging or work trucks which operate over them and shall not exceed twenty percent in any case unless a positive means of lowering trucks is provided.

(2) Truck road surfaces.

(a) Truck roads shall be of sufficient width and evenness to insure the safe operation of equipment.

(b) Hazards such as broken planking, deep holes, large rocks, logs, etc., which prevent the safe operation of equipment, shall be immediately corrected.

(c) Road width. Truck roads shall be of sufficient width for two trucks to pass, or some type of signal system shall be maintained or speed limited to such that the vehicle can be stopped in one-half the visible distance.

(3) Safe roadways. All danger trees shall be felled a safe distance back from the roadway. Rocks, which present a hazard, shall be cleared from banks. Brush and other materials that obstruct the view at intersections or on sharp curves shall be cleared. (This subsection is applicable only to those portions of roads under direct control of the employer.)

(4) Bridges. All structures shall be adequate to support the maximum imposed loads without exceeding the maximum safe working unit stresses. All bridges shall have an adequate number of reflectors to clearly define the entrance to the bridge. All structures shall be maintained in good condition and repair and shall be inspected at least annually by a qualified authorized person and a record maintained of each inspection, which shall be made available to the Division of Industrial Safety and Health, Department of Labor and Industries on request.

(5) Shear rails. Shear rails shall be installed on both outside edges of bridges. The shear rails must be securely fastened and made of material capable of withstanding the impact generated by contact with the wheels of a loaded vehicle. The top of shear rails shall be not less than fifteen inches above the bridge surface. Bridges in use prior to the effective date of these regulations with outside shear rails of a minimum of ten inches high or center type shear rails of not less than five inches high are permissible until such time repairs are needed.

(6) Control of dust on logging roads. Measures shall be instituted which will minimize dust to such degree that visibility will not be reduced beyond the point where an operator can safely operate a vehicle. Vehicle operators shall govern the speed of vehicles by road conditions.

(7) Fenders. Pneumatic-tired equipment shall be equipped with fenders as described in the Society of Automotive Engineers Technical Report J321a. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-527, filed 9/21/79.]

WAC 296-54-529 Falling and bucking--General. (1) Before starting to fall or buck any tree or snag, the cutter shall survey the area for possible hazards and proceed according to safe practices. Snags which are unsafe to cut shall be blown down with explosives or felled by other safe methods.

(2) Workers shall not approach a faller within reach of the trees being felled unless a signal has been given and acknowledged by the faller that it is safe to approach.

(3) Before falling or bucking any tree, sufficient work area shall be swamped and an adequate escape path shall be made. An escape path shall be used as soon as the tree or snag is committed to fall, roll or slide.

(4) Warning to be given. Fallers shall give timely and adequate warning prior to falling each tree; such warning shall be given with the saw motor shut off. Persons in the area shall give response to the faller and shall also notify him when they are in the clear.

(5) A competent person, properly experienced in this type of work, shall be placed in charge of falling and bucking operations. Inexperienced workers shall not be allowed to fall timber or buck logs unless working under the direct supervision of an experienced worker.

(6) Snags that have loose bark in the area of the proposed cut shall have the bark removed before being felled. When a snag has elevated loose bark which cannot be removed, the buddy system shall be used to watch for and give warning of falling bark or other hazards.

(7) Tools of fallers and buckers, such as axes, sledges, wedges, saws, spring boards, etc., must be maintained in safe condition. Case hardened or battered sledges and wedges shall not be used. All tools shall be used for their intended purposes.

(8) Trees shall not be felled if the falling tree can endanger any worker or strike any line or any unit in the operation.

(9) When practical, strips shall be laid out so cutters face out into opening when starting strip, and all trees shall be felled into the open whenever conditions permit.

(10) Trade leaners. Cutters shall not fall into another strip; leaners on the line shall be traded.

(11) When there is danger from kickback of a sapling, the same must be either undercut or felled.

(12) Cutters shall place an adequate undercut and leave sufficient holding wood to insure the tree will fall in the intended direction. When required, mechanical means shall be used to accomplish this objective.

(13) Cutters shall be careful their chopping range is unobstructed.

(14) Cutters shall confer with their supervisor regarding a safe manner of performing the work and in unusually hazardous situations shall not proceed with the work

until their method has been approved by their supervisor.

(15) The person in charge of cutting crews shall regularly inspect the work of the cutting crews and shall be responsible for seeing the work is performed in a proper and safe manner.

(16) Common sense and good judgment must of necessity govern the safety of cutters as affected by weather conditions. At no time shall they work if wind is strong enough to prevent the falling of trees in the desired direction or when vision is impaired by dense fog or darkness.

(17) Cutters shall be assigned to work in locations where they are in contact with others or their welfare shall be checked on as provided for by WAC 296-54-507(2).

(18) Persons in charge of cutting crews shall account for all persons in their crews being on hand when work ceases as provided for by WAC 296-54-507(3).

(19) All fallers and buckers shall have a current first-aid card.

(20) All fallers and buckers shall carry or have with them in near proximity at all times, an axe, a minimum of two wedges, a whistle and a first-aid kit. The whistle shall be carried on their person.

(21) Special precautions shall be taken to prevent trees from falling into power lines. If it appears that a tree will hit a power line, the power company shall be notified before it is attempted to fall the tree. If an unsuspected tree does contact a power line, the power company shall be notified immediately and all persons shall remain clear of the area until the power company personnel advise that conditions have been made safe to resume operations.

(22) Wedges shall be of soft metal, hardwood or plastic.

(23) Wedges shall be driven with a hammer or other suitable tool. Double-bitted axes or pulaskies shall not be used for this purpose.

(24) While wedging, fallers shall watch for falling limbs or other material that might be jarred loose. Cutting of holding wood in lieu of using wedges is prohibited.

(25) Undercuts are required except in matchcutting, and shall be large enough to safely guide trees and eliminate the possibility of splitting. Trees with no perceptible lean having undercuts to a depth of one-fourth of the diameter of the tree with a face opening equal to one-fifth of the diameter of the tree, will be assumed to be within reasonable compliance with this rule. Swing cuts are prohibited.

(26) Undercuts shall be completely removed except when a dutchman is required on either side of the cut.

(27) Backcuts shall be as level as possible and shall be approximately two inches higher than the undercut, except in tree pulling.

(28) Trees with face cuts or backcuts shall not be left standing. When a tree is not completely felled, the faller shall clearly mark the tree, shall discontinue work in the hazardous area and notify his immediate supervisor. The supervisor shall be responsible for notifying all workers who might be endangered and shall take appropriate measures to ensure that the tree is safely felled before other work is undertaken in the hazardous area.

(29) To avoid use of wedges, which might dislodge loose bark or other material, snags shall be felled in the direction of lean unless other means (mechanical or dynamite) are used.

(30) Lodged trees shall be clearly marked and identified by a predetermined method and all persons in the area shall be instructed not to pass or work within two tree lengths of such trees except to ground them.

(31) Work areas shall be assigned so that a tree cannot fall into an adjacent occupied work area. The distance between work areas shall be at least twice the height of the trees being felled. A greater distance may be required on downhill slopes depending on the degree of the slope and on the type of trees and other considerations.

(32) Where felled trees are likely to roll and endanger workers, cutting shall proceed from the bottom toward the top of the slope, and performed uphill from previously felled timber.

(33) Cutters shall not be placed on a hillside immediately below each other or below other operations where there is probable danger.

(34) Fallers shall be informed of the movement and location of buckers or other cutters placed, passing or approaching the vicinity of trees being felled.

(35) A flagperson(s) shall be assigned on roads where hazardous conditions are created from falling trees. Where there is no through traffic, such as on a dead end road, warning signs or barricades shall be used.

(36) No tree or danger tree shall be felled by one cutter where and when the assistance of a fellow cutter is necessary to minimize the dangers or hazards involved.

(37) Cutters shall be in the clear as the tree falls.

(38) Undercuts and backcuts shall be made at a height above the highest ground level to enable the cutter to safely begin the cut, control the tree, and have freedom of movement for a quick escape to be in the clear from a falling tree.

(39) When falling, a positive means, method or procedure that will prevent accidental cutting of necessary holding wood shall be established and followed. Particular care shall be taken to hold enough wood to guide the tree or snag and prevent it prematurely slipping or twisting from the stump.

(40) The undercut shall not be made while buckers or other workers are in an area into which the tree could fall.

(41) Matchcutting should not be permitted and shall be prohibited for trees larger than six inches in diameter breast high.

(42) The tree (and root wad if applicable) shall be carefully examined to determine which way the logs (and root wad) will roll, drop, or swing when the cut is completed. No worker shall be allowed in this danger zone during cutting.

(43) Logs shall be completely bucked through whenever possible. If it becomes hazardous to complete a cut,

then the log shall be marked and identified by a predetermined method. Rigging crews shall be instructed to recognize such marks and when possible, cutters shall warn the rigging crew of locations where such unfinished cuts remain.

(44) Cutters shall give timely warning to all persons within range of any log which may have a tendency to roll after being cut off.

(45) Propping of logs or trees as a means to protect workers downslope from the logs or trees, shall be prohibited.

(46) Logs shall not be jackstrawed when being bucked in piles or decks at a landing. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-529, filed 9/21/79.]

WAC 296-54-531 Falling and bucking--Power saws and power equipment. (1) Operators shall inspect chain saws daily to ensure that handles and guards are in place, and controls and other moving parts are functional.

(2) Fuel outdoors. The chain saw shall be fueled outdoors at least fifty feet from persons smoking or from other potential sources of ignition.

(3) Chain saws shall not be operated unless equipped with a muffler.

(4) Idler end of power chain saw blade on all two-man machines shall be adequately guarded.

(5) Combustion-engine type power saws shall be equipped with a positive means of stopping the engine.

(6) Electric power saws shall be equipped with an automatic (deadman type) control switch. Saws with faulty switches shall not be used.

(7) Unless the carburetor is being adjusted, the saw shall be shut off before any adjustments or repairs are made to the saw, chain or bar.

(8) Combustion-engine type power saws shall be equipped with a clutch.

(9) The chain saw clutch shall be properly adjusted to prevent the chain from moving when the engine is at idle speed.

(10) Power chain saws with faulty clutches shall not be used.

(11) The bar shall be handled only when the power chain saw motor is shut off.

(12) Power chain saws shall have the drive end of the bar guarded.

(13) Combustion-engine driven power saws shall be equipped with an automatic throttle control (deadman type), which will return the engine to idle speed upon release of the throttle (idle speed is when the engine is running and the chain does not rotate on the bar).

(14) When falling of tree is completed, the power saw motor shall be shutoff. Where terrain or brush creates a hazardous condition, the power saw motor shall be shutoff while the operator is traveling to the next cut. The power saw motor shall also be shutoff while fueling.

(15) Saw pinching and subsequent chain saw kickback shall be prevented by using wedges, levers, guidelines, and saw placement, or by undercutting.

(16) Cutters shall not use the chain saw to cut directly overhead or at a distance that would require the operator to relinquish a safe grip on the saw.

(17) Effective January 1, 1980, all power saws shall be purchased and maintained with chain brakes to minimize kickbacks.

(18) Reserve fuel shall be handled and stored in accordance with WAC 296-24-37009.

(19) Hand-held files shall be equipped with a handle.

(20) Only experienced cutters shall buck windfalls. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-531, filed 9/21/79.]

WAC 296-54-533 Falling and bucking--Springboards and tree jacking. (1) Springboards shall be of clear, straight-grained sound stock of sufficient length, width and strength and shall be replaced when they will no longer safely support the expected load at the extreme end.

(2) Springboard irons shall be well lipped and firmly attached with bolts or a means of attachment furnishing equivalent strength.

(3) Two workers shall be present when falling any tree or snag when springboards are used.

(4) Power saw chains shall be stopped while shifting springboards.

(5) Jack plates shall be used with hydraulic tree jacks and the base plate shall be seated on solid wood inside the bark ring as close to level as possible.

(6) Two workers shall be present at all times during the use of tree jacks.

(7) Wedges shall be used as a follow-up method while using tree jacks. The wedges shall be continuously moved in as the tree is jacked.

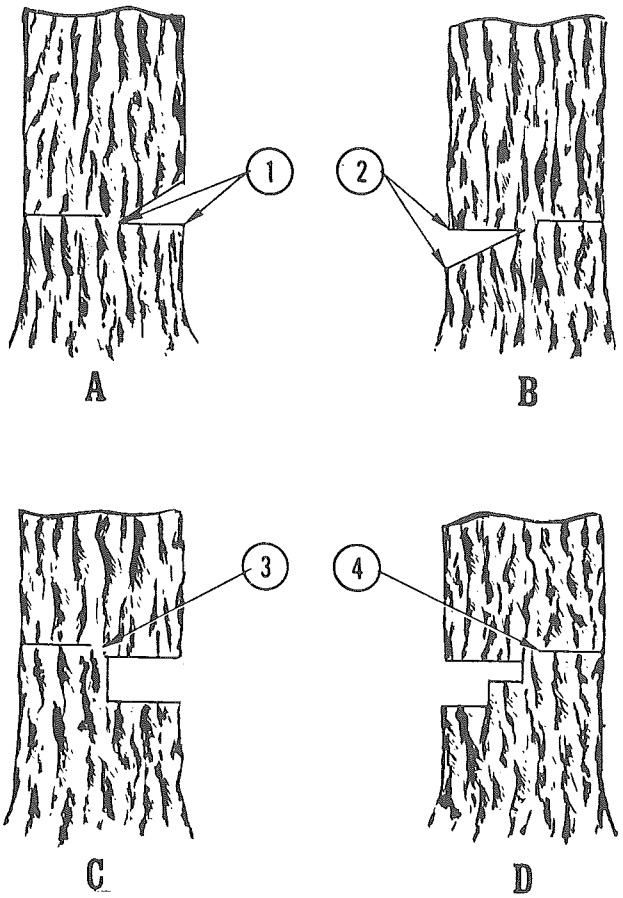
(8) Effective January 1, 1980, all hydraulic tree jacks shall be equipped with an operable velocity fuse (check valve) and the pump shall be equipped with an operable pressure gauge.

(9) When tree jacking, the facecut shall be nominally one-fourth the diameter of the tree.

(10) The vertical height of the facecut shall be not less than one-fifth of the diameter of the tree when tree jacking.

NOTE: See Figure No. 1, for illustrations of undercuts.

UNDERCUTS



(A) **Conventional undercut.** Can be made with parallel saw cut and axe diagonal cut or both cuts with the saw. Generally used on trees of small diameter.

(B) **Both cuts made with the saw.** Leaves square-end log. Same as (A), except that waste is put on the stump.

(C) **Two parallel cuts with the saw.** The material between the cuts is chipped out with an axe-adz (pulaski) combination. Used on trees over 30 inches in diameter.

(D) **Three parallel cuts with the saw, leaving a step.** Same in principle as (C). Used on trees of very large diameters.

Item

1 Undercut Depth
2 Undercut Height
3 Holding Wood
4 Backcut

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-533, filed 9/21/79.]

WAC 296-54-535 Tree pulling. (1) The cutter shall be responsible for determining if a tree can be safely pulled. If, for any reason, the cutter believes the tree pulling cannot be completed safely, the tree shall be conventionally felled.

(2) Positive radio communications shall be maintained at all times between the tree pulling machine and cutter when tree pulling. An audible signal shall be blown when the initial pull is made on the tree and the line is tightened. Hand signals, in lieu of radio communications and an audible signal, may be used only if the cutter is clearly visible to the tree puller operator.

(3) A choker, choker bell, or a line and sleeve shackle shall be used as the means of attachment around the tree when tree pulling. The bight on the line shall be only that necessary to hold the choker or line around the tree.

(4) The tree pulling machine shall be equipped with a torque converter, fluid coupler, or an equivalent device to insure a steady even pull on the line attached around the tree.

(5) The tree pulling line shall have as straight and direct path from the machine to the tree as possible. Physical obstructions which prevent a steady even pull on the tree pulling line shall be removed or the line shall be rerouted.

(6) Siwashing, in lieu of a block, in order to change tree pulling lead, is prohibited. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-535, filed 9/21/79.]

WAC 296-54-537 Mechanized falling. (1) When using selfpropelled mobile falling devices, a watchman and/or warning signs shall be posted at appropriate locations indicating that devices of this type are being used to fall trees.

(2) Self-propelled mobile falling equipment used for falling trees shall be designed in a manner or shall have auxiliary equipment installed which will cause the tree to fall in the intended direction.

(3) Mechanized falling shall be conducted in such a manner as not to endanger persons or equipment.

(4) Where a mechanized feller incorporates a cab structure having a single entrance door, it shall be equipped with an alternate means of escape from the cab should the door be blocked in the event of vehicle rollover or fire. Cab doors shall be fitted with latches operable from both sides of the door. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-537, filed 9/21/79.]

WAC 296-54-539 Climbing equipment and passline. (1) Standard climbing equipment shall be furnished by the employer; however, this shall not be construed to mean that the climber may not use his own equipment, provided it meets the following standards and is permitted by the employer. The climbing ropes shall be of steelcore type. The climber may fasten his rope by passing it through "D" rings fastened to the belt and around his body before tying it to itself. When topping standing trees, a steel chain of 3/16-inch or larger, with appropriate fittings attached, shall be used in addition to the climbing rope. All climbing equipment shall be maintained in good condition. An extra set of climbing equipment shall be kept at the climbing operation and

another person with climbing experience shall be present.

(2) A person shall ride only the passline to thread lines, oil blocks or to inspect rigging.

(3) No one shall work directly under a tree except when directed by the climber. Warning shall be given prior to intentionally dropping any objects or when objects are accidentally dropped.

(4) Running lines shall not be moved while the climber is working in the tree, except such "pulls" as he directs and are necessary for his work.

(5) One experienced person shall be dispatched to transmit the climber's signals to the machine operator and shall not otherwise be occupied during the time the climber is in the tree, nor shall the machine operator be otherwise occupied while the climber is using the passline. The designated signalman shall position himself clear of hazards from falling, flying or thrown objects.

(6) Splices and knots in passline are not permitted. Chains used in passlines shall be in good condition and shall not contain cold shuts or wire strands.

(7) The climber shall be an experienced logger with proper knowledge of logging methods and the safety of rigging spar and tail trees.

(8) Trees shall not be topped during windy weather.

(9) At no time shall topping, rigging-up, or stripping work be done when visibility is impaired.

(10) When the friction lever and passline drum is on the opposite side of the machine from the operator, an experienced person shall operate the friction lever while the engineer operates the throttle. While being used, the passline drum shall be properly attended by another person to guide the passline onto the passline drum with a tool suitable for the purpose.

(11) The use of a gypsy drum for handling persons in the tree is prohibited.

(12) Danger trees leaning towards and within reach of landings, roads, rigging or work areas shall either be felled before the regular operations begin or work shall be arranged so that workers will not be exposed to hazards involved.

(13) Noisy equipment such as power saws, tractors and shovels shall not be operated around the area where a climber is working when such noise will interfere with the climber's signals.

(14) Climbing and passline equipment shall not be used for other purposes.

(15) Defective climbing equipment shall be immediately removed from service.

(16) The climber shall be equipped with a climbing equipment assembly having a breaking strength of not less than five thousand four hundred pounds.
The equipment shall include:

(a) A safety belt with double "D" rings;

(b) Steel spurs long and sharp enough to hold in any tree in which they are used; and

(c) A climbing rope made of wire-core hemp, wire or chain construction.

(17) When the climber is using a chain saw in the tree, the climbing rope shall be made of material that cannot be severed by the saw.

(18) The climbing rope or chain shall be attached to both the two "D" rings at the side of the belt, or passed through the "D" rings and around the body.

(19) Lineman hooks shall not be used as spurs.

(20) When power saws are used in topping or limbing standing trees, the weight of the saw shall not exceed thirty pounds.

(21) Tools used by the climber, except the power saw, shall be safely secured to his belt when not in use.

(22) Snaps shall not be used on a climber's rope unless a secondary safety device between the belt and snap is used.

(23) A climber's rope shall encircle the tree before the climber leaves the ground except when the climber is riding the passline.

(24) While the climber is working in the tree, persons shall keep at sufficient distance from the tree to be clear of falling objects.

(25) When used, passline fair-leads shall be kept in alignment and free from fouling at all times.

(26) Spikes, used by the climber as a temporary aid in hanging rigging, shall be removed before the tree is used for logging.

(27) Loose equipment, rigging or material shall either be removed from the tree or securely fastened.

(28) All spar trees shall be equipped with passlines that shall:

(a) Be not less than 5/16-inch and not be over 1/2-inch in diameter;

(b) Not be subjected to any sawing on other lines or rigging, and kept clear of all moving lines and rigging;

(c) Be of one continuous length and in good condition with no splices, knots, molles, or eye-to-eye splices between the ends;

(d) Be long enough to provide three wraps on the drum before the climber leaves the ground.

(29) Drums used for passlines shall have sufficient flange depth to prevent the passline from running off the drum at any time.

(30) Passline chains shall:

(a) Be not less than 5/16-inch alloy or 3/8-inch high test chain and shall not contain cold shuts or wire strands;

(b) Be attached to the end of the passline with a screw-pin shackle, a slip-pin shackle with a nut and molle, or a ring large enough to prevent going through the pass block; and

(c) Be fitted with links or rings to prevent workers from being pulled into the passline block.

(31) Pass blocks shall:

(a) Be inspected before placing in each spar and the necessary replacements or repairs made before they are hung;

(b) Have the shells bolted under the sheaves;

(c) Have the bearing pin securely locked and nuts keyed or the block be of the type which positively secures the nut and pin;

(d) Equipped with sheaves not less than six inches in diameter; and

(e) Comply with applicable portions of WAC 296-54-543(6) pertaining to blocks.

(32) When workers are required to go up vertical metal spars, passlines, chains and blocks shall be provided and used. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-539, filed 9/21/79.]

WAC 296-54-541 Selection of spar, tail and intermediate trees. (1) Douglas fir or spruce shall be used as spar, tail, or intermediate support trees when they are available. If other species must be used, additional guylines, tree plates, or other precautions shall be taken to insure the tree will withstand the strains to be imposed.

(2) Spar, tail and intermediate support trees shall be examined carefully for defects before being selected. They shall be sound, straight, green and of sufficient diameter to withstand the strains to be imposed.

(3) Trees having defects that impair their strength shall not be used for spar, tail or intermediate support trees. Raised trees shall be identified and marked as such.

(4) Before raising spar trees, dummy trees shall be topped and guyed with three guylines equivalent in breaking strength to the mainline. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-541, filed 9/21/79.]

WAC 296-54-543 General requirements. (1) Rigging.

(a) Rigging shall be arranged and operated so rigging or loads will not foul, rub or saw against lines, straps, blocks or other equipment.

(b) A thorough inspection of all blocks, straps, guylines and other rigging shall be made before they are placed in positions for use. Inspections shall include an examination for damaged, cracked or worn parts, loose nuts and bolts, and of lubrication, and the condition of straps and guylines. All necessary repairs or replacements for safe operation shall be made before the rigging is used.

(c) Rigging equipment, when not in use, shall be stored so as to not present a hazard to employees.

(d) Running lines shall be arranged so workers will not be required to work in the bight. When this is not possible, workers shall move out of the bight of lines before the lines are tightened or moved.

(2) Shackles.

(a) Shackles with screw pins should have either a molle or cotter key when used to fasten guylines to spar trees.

(b) All shackles used to hang blocks, jacks, or rigging on trees or loading booms shall have the pins fastened by a nut secured with a cotter pin or molle. When used, molles shall be as large as the pin hole will accommodate and with the loose ends rolled in.

(c) The size of the opening between the jaws of shackles used to hang blocks, jacks, rigging, and for joining or attaching lines, shall not be more than one inch greater than the size of the rope, swivel, shackle, or similar device to which it is attached.

(d) All shackles used for mainline or skyline extensions shall be of a type designed for that purpose.

(e) Shackles used other than for mainline extension connections, shall be of the screw-pin type or with the pin secured by a nut and cotter pin or molle, except as specified elsewhere for specific purposes.

(f) Shackles, swivels, links and tree plates shall be replaced or repaired when they will not safely support the imposed strains of their intended use.

(g) Shackles shall not be loaded in excess of the working load recommended by the manufacturer.

(h) All shackles must be made of forged steel or material of equivalent strength and one size larger than the line it connects.

(3) Straps.

(a) Safety straps of appropriate size shall be placed on all high lead blocks; also other blocks whenever practicable. Safety straps shall be shackled, with closed end of shackle up, to a guyline which extends as near as possible at right angles with power unit, but shall not be placed on a guyline having an extension within one hundred feet of the tree. When the top guyline on which the safety strap of the high lead block is fastened is changed, safety strap must be attached to another guyline or loosened guyline tightened after change.

(b) All tree straps shall be at least 1/4-inch larger than the pulling line. If impossible to use safety strap, all tree straps shall be 1/2-inch larger than the pulling line.

(c) All straps in back of show must be as large as the running line.

(d) All blocks other than passline and straw line lead blocks shall be hung in both eyes or "D's" of straps. Threading eye through eye is prohibited.

(e) Skyline jack shall not be hung by double strap through shackle and hanging jack in two eyes.

(f) Tree straps shall initially be made of new wire rope when made up. They shall be replaced when there is evidence of damage or broken wires.

(g) A guyline safety strap or equivalent device shall be installed at the top of metal spars to prevent guylines from falling more than five feet in case of structural or mechanical failure of the guyline attachment.

(h) Metal spar guyline safety straps or equivalent devices shall be equal to the strength of the guyline.

(i) Nylon straps may be used in accordance with manufacturer recommendations.

(j) Nylon straps shall be removed from service when the wear reaches the limits prescribed by the manufacturer. The person responsible for inspecting the condition of rigging shall be aware of these limits.

(4) Guylines.

(a) All component parts of the guyline system on head tree shall be of equal or greater strength than the mainline and guylines shall be properly spaced to effectively oppose the pull of the mainline.

(b) Guylines on wood spar trees shall be secured to solid stumps with not less than two and one-half complete wraps with at least six staples or eight railroad spikes driven solidly into sound wood on the first and last wrap. The bark shall be removed and the stump adequately notched or other equivalent means shall be used to prevent movement of the line on the stump or tree. Guyline stumps shall be inspected periodically. Guylines

may be secured to properly installed "deadmen" when suitable stumps are not available. It is permissible, on the tail tree, to secure the guylines by placing three wraps around a tree or stump and securing them properly by use of clamps.

(c) When a mainline of 7/8–inch or less is used, the spar shall be supported by at least five top guylines or other positive means of supporting the spar.

(d) When tail hold on skyline is choked on stump, there shall be no excessive bight against shackle.

(e) In removing guylines and skylines from stumps, etc.:

(i) A reversed safety wrap shall be put on and secured before loosening the last wrap.

(ii) An experienced person shall be in charge loosening guylines or skylines using proper precautions, and giving warning before lines are released.

(iii) Safety holdbacks shall be used when necessary for the safety of workers.

(iv) Powder or power shall be used for releasing the last wrap on skylines.

(f) Guylines shall be used with any logging equipment when required by the equipment manufacturer.

(g) Guying shall not be less than the minimum recommended by the equipment manufacturer.

(h) Top guys on vertical metal and wooden spars which require five or more guylines shall be so arranged that at least three guys oppose the pull of the load, with at least one guyline anchored adjacent to the yarding quarter.

(i) Guylines shall be of plow steel or better material, and shall be maintained in good condition.

(j) When side blocking or lateral yarding, lateral stability to the head spar tree shall be insured by guylines sufficient in number, breaking strength and spacing.

(k) All guylines shall be kept well tightened while the spar, tree, equipment or rigging they support is in use.

(l) All trees that interfere with proper alignment, placement or tightening of guylines shall be felled.

(m) Guylines shall be hung in a manner to prevent a bight or fouling when they are tightened.

(n) All spliced guyline eyes shall be tucked at least three times.

(o) Extensions to guylines shall be:

(i) Equal in strength to the guyline to which they are attached; and

(ii) Connected only by a shackle connecting two spliced eyes or by double–end hooks. Connections shall have at least one and one–half times the strength of the guyline.

(p) Portable metal spars and their appurtenances shall be inspected by a qualified person each time the spar is lowered and at any time its safe condition is in doubt. When damage from over–stress is noted or suspected, the part in question shall be inspected by a suitable method and found to be safe, or the part repaired or replaced before the spar is again used.

(q) No person shall go up a raised metal spar unless suitable passline equipment is provided and used.

(r) Repairs, modifications or additions which affect the capacity or safe operation of metal spars shall be made only under the direction of a registered engineer and within the manufacturer's recommendations.

(i) In no case shall the original safety factor of the equipment be reduced.

(ii) If such modifications or additions are made, the identification plate required by WAC 296–54–553(1) shall reflect such changes.

(s) When using skylines 7/8–inch or smaller, tail trees shall be supported by at least two guylines when the rigging is placed on the tail tree at a height greater than five times the tree diameter (dbh) or higher than ten feet from the highest ground point, whichever is lower.

(t) When using skylines one inch or larger, tail trees shall be supported by at least four guylines when the rigging is placed on the tail tree at a height greater than five times the tree diameter (dbh) or higher than ten feet from the highest ground point whichever is lower.

(u) Tail trees shall be supported by additional guylines if necessary to insure stability of the tree.

(v) Wood head spar trees shall be guyed as follows:

(i) All spar trees one hundred ten feet and over in height shall be provided with a minimum of six top guys and three buckle guys, each of which shall be substantially equal in strength to the strength of the mainline. This requirement, however, shall not be construed as applying where more than three buckle guys are specifically required.

(ii) Spar trees used for loading and yarding at the same time, or for loading and swinging at the same time, or supporting a skyline yarding system, shall have not less than six top and four buckle guylines each of which shall be substantially equal in strength to the strength of the mainline.

(iii) Spar trees under one hundred ten feet high used only for yarding with heavy equipment (over 7/8–inch mainline) shall have not less than six top guys each of which shall be substantially equal in strength to the strength of the mainline.

(iv) Spar trees used for yarding with light equipment (7/8–inch or smaller mainline) shall be guyed in such a manner that strains will be imposed on not less than two guylines. If less than five top guys are used, guylines shall be at least 1/4–inch larger than the mainline.

(v) More guylines shall be added if there is any doubt as to the stability of any spar tree, raised tree, tail trees and lift trees, or other equipment or rigging they support.

(w) Guylines shall alternately be passed around the wood spar in opposite directions to prevent twisting of the spar.

(x) Guylines shall be attached to the upper portion of the wood spar by means of shackles.

(y) A–frames shall be guyed by at least two quarter–guylines and one snap guyline or equivalent means to prevent A–frame from tipping back.

(5) Anchoring.

(a) Stump anchors used for fastening guylines and skylines shall be carefully chosen as to position, height and strength. When necessary, stump anchors shall be tied back in a manner that will distribute the load.

(b) Stump anchors shall be barked where attachments are to be made, or devices designed to accomplish the same purpose shall be used.

(c) Stump anchors shall be notched to a depth not greater than one and one-half times the diameter of the line to be attached.

(d) Deadman anchors may be used if properly installed. Guylines shall not be directly attached to deadman anchors. Suitable straps or equally effective means shall be used for this purpose.

(e) Rock bolts and other types of imbedded anchors may be used if properly designed and installed.

(f) Stumps, trees and imbedded type guyline anchors shall be regularly inspected while the operation is in progress. Insecure or hazardous anchors shall be immediately corrected.

(g) Workers shall not stand close to the stump, or in the bight of lines as the guyline or wraps are being tightened.

(6) Blocks.

(a) All blocks shall:

(i) Not be used for heavier strains or lines than those for which they are constructed;

(ii) Be fitted with line guards and shall be designed and used in a manner that prevents fouling, with the exception of special line blocks not designed with line guards;

(iii) Be kept in proper alignment when in use;

(iv) Have bearing and yoke pins of a material that will safely withstand the strains imposed and shall be securely fastened;

(v) Have sheaves of a size designed for the size of the wire rope used.

(b) Blocks with cracked or excessively worn sheaves shall not be used.

(c) Lead blocks used for yarding, swinging, loading and unloading used in wood spars shall:

(i) Be of the type and construction designed for this purpose;

(ii) Be bolted with not less than two bolts through the shells below the sheaves in a manner that will retain the sheave and line in case of bearing pin failure (this does not apply to haulback lead blocks); and

(iii) Mainline blocks shall have a sheave diameter of not less than twenty times the diameter of the mainline.

(d) Block bearing shall be kept well lubricated.

(e) All blocks must be of steel construction or of material of equal or greater strength and so hung that they will not strike or interfere with other blocks or rigging.

(f) All pins in blocks shall be properly secured by "Molle Hogans" or keys of the largest size the pin hole will accommodate. When blocks are hung in trees, threaded pins and nuts shall be used.

(g) Sufficient corner or tail blocks to distribute the stress on anchors and attachments shall be used on all logging systems.

(h) Blocks used to lead lines directly to yarding, loading or unloading machines other than passline or strawline blocks shall be hung by the following method: In both eyes or "D"s of straps; threading eye through eye is prohibited.

(i) Tail, side or corner blocks used in yarding shall be hung in both eyes of straps.

(7) Wire Rope.

(a) Wire rope shall be of the same or better grade as originally recommended by the equipment manufacturer.

(b) Wire rope shall be removed from service when any of the following conditions exist:

(i) In running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay;

(ii) Wear of one-third the original diameter of outside individual wires. Kinking, crushing, bird-caging, or any other damage resulting in distortion of the rope structure;

(iii) Evidence of any heat damage from any cause;

(iv) Reductions from nominal diameter of more than 3/64-inch for diameters to and including 3/4-inch, 1/16-inch for diameters 7/8-inch to 1-1/8-inch, inclusive, 3/32-inch for diameters 1-1/4-inches to 1-1/2-inches inclusive;

(v) In standing ropes, more than two broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection;

(vi) In standing ropes, when twelve and one-half percent of the wires are broken within a distance of one wrap (lay); and

(vii) Corroded, damaged or improperly applied end connections.

(c) Wire rope shall be kept lubricated as conditions of use require.

(8) Splicing Wire Rope.

(a) Marlin spikes or needles in good condition and large enough for the size of the line being spliced, shall be used for splicing.

(b) When available, and practical to use, a patented wire cutter shall be used. If using a wire axe to cut cable, the hammer used to strike the axe shall be made of soft nonspalling type material. Eye and face protection shall be worn in accordance with WAC 296-54-511(2).

(c) Short splices, eye to eye splices, cat's paws, knots, molles and rolled eyes are prohibited except for use in the moving of slack lines. Knots will be permitted for use on single drum tractors and grapple pick-up lines when properly tied.

(d) Wire rope 1/2-inch or less in diameter may be tucked two times provided the rope is used only as straw line.

(e) Splices other than eye splices in lang lay lines are prohibited. Eye splices in lang lay lines shall be tucked at least four times.

(f) Long splices shall be used for permanently joining "regular lay" running lines.

(g) When U-bolt wire rope clips (clamps) are used to form eyes on high strength wire rope, an additional clip (clamp) for each grade of line above improved plow steel shall be used over and above the following table: (See Figure No. 2, following this section, for proper application of wire rope clips.)

Improved Plow Steel Diameter of Rope	Number of Clips Drop Forged	Required Other Material	Minimum Space Between Clips
3/8 to 5/8 inch	3	4	3-3/4 inches
3/4 inch	4	5	4-1/2 inches
7/8 inch	4	5	5-1/4 inches
1 inch	5	6	6 inches
1-1/8 inch	6	6	6-3/4 inches
1-1/4 inch	6	7	7-1/2 inches
1-3/8 inch	7	7	8-1/4 inches
1-1/2 inch	7	8	9 inches

(h) All line eye splices shall be tucked at least three full tucks. D's and knobs are recommended for line ends.

(i) Two lines may be connected by a long splice, or by shackles or patent links of the next size larger than the line being used where practical. Double "Molle Hogans" may be used on drop lines only and single "Molle Hogans" may be used on strawline.

(j) Splicing of two lines together for loading line or pass line is prohibited.

(k) Safe margin of line must be used for making long splices. The following table shows comparative safe lengths as to size of cable in making long splices:

Rope Diameter	To Be Unravelled	Total Length
1/4"	8'	16'
3/8"	8'	16'
1/2"	10'	20'
5/8"	13'	26'
3/4"	15'	30'
7/8"	18'	36'
1 "	20'	40'
1-1/8"	23'	46'
1-1/4"	25'	50'
1-3/8"	28'	56'
1-1/2"	30'	60'
1-5/8"	33'	66'
1-3/4"	35'	70'
1-7/8"	38'	76'
2 "	40'	80'

(9) Miscellaneous Requirements.

(a) All lines, straps, blocks, shackles, swivels, etc., shall be inspected frequently and shall be used only when found to be in good condition. Such items shall be of sufficient size and strength as to safely withstand the stress which can be imposed by the maximum pull of the power unit against such equipment or devices as rigged or used in that particular logging operation.

(b) When used or second-hand cables are purchased,they shall not be used for any purpose until inspection determines they will withstand the maximum imposed strain.

(c) Skyline shall be anchored by placing three full wraps around tail hold and staples or spikes shall be used to securely hold each wrap or choked and secured with a shackle or three wraps and at least three clamps securely tightened.

(d) When using haulback lines greater than 7/8-inch diameter on interlocking drum-type yarders, additional precautions shall be taken to prevent the corner blocks or tail blocks from dislodging the anchors to which the blocks are secured.

(e) Where "dutchman" is used, either for yarding or on skyline, a block of heavy construction must be used. Regular tree shoe or jack may be used for "dutchman" on skyline. Cable must be fastened securely.

(f) Choker drops shall be connected to the butt rigging by knobs or shackles. The use of molles or cold shuts is prohibited in all components of the butt rigging. All butt rigging shall be designed to prevent loss of chokers and defective swivels shall not be used. Open hooks shall not be used to connect lines to the buttrigging.

(g) When heel tackle is fastened near machine, safety line must be placed in such manner that in case of breakage, lines shall not strike power unit and endanger operator.

(h) Only in case of necessity shall any metallic object be driven into a log. The metal must be removed immediately when splice or other work is completed. Stumps shall be used whenever possible for splicing.

PUT CLIPS ON RIGHT

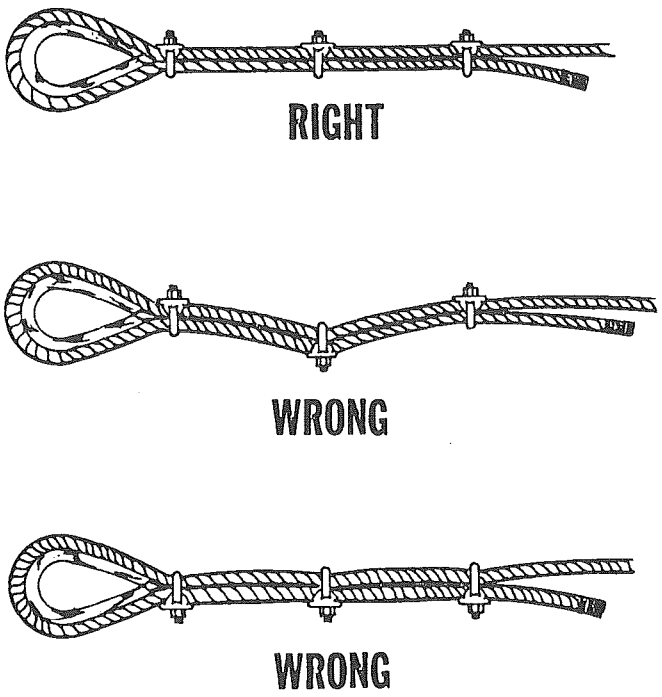


Figure No. 2

Clips should be spaced at least six rope diameters apart to get the maximum holding power and should always be attached with the base or saddle of the clip against the longer or "live" end of the rope. The "U" bolt goes over the dead end. This is the only right way. Do not reverse the clips or stagger them. Otherwise the "U" bolt will cut into the live rope when the load is applied. After the rope has been used and is under tension, the clips should again be tightened to take up any looseness caused by the tension reducing the rope diameter. Remember that even when properly applied, a

clip fastening has only about eighty percent (80%) of the strength of the rope and far less than that when on wrong.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-543, filed 9/21/79.]

WAC 296-54-545 Rigging--Wood spar trees. (1) Wood spar trees shall be of sound material of sufficient size and strength to withstand any stresses which may be imposed by any equipment used for that specific operation. The top of the tree shall extend not more than sixteen feet above the top guylines on spar trees over fifty feet in height. Spar trees less than fifty feet in height shall extend no more than eight feet above the top guylines. School marms used as spar trees shall be topped at the forks. Spar trees, except cedar, must be barked where guylines, straps, bull blocks and tree plates are placed.

(2) Spar trees must be topped and limbs must be cut off close so that running lines will not foul or saw on protruding knots.

(3) At least four tree plates shall be placed under top guylines on spar trees over fifty feet in height and at least three tree plates shall be used on spar trees less than fifty feet in height.

(4) Tree plates shall be equipped with lugs or other suitable means of holding them in place.

(5) When spar trees are raised, stumps used for snubbing shall be properly notched. Guylines shall be held by some mechanical means. Snubbing by hand is prohibited.

(6) All rub trees shall be limbed and topped.

(7) Guylines.

(a) Wood spar trees using a line greater than 7/8-inch and used as loading and yarding trees shall have at least six top guys and four buckle guys, providing a sail guy is used.

(b) Wood spar trees using a mainline greater than 7/8-inch and used only as yarding trees shall have at least six top guys and, at least three buckle guys shall be used.

(c) Wood spar trees used for loading only with crotch line, spreader bar or swinging boom shall have at least four top guys and, at least three buckle guys shall be used.

(d) Wood spar trees used for any skyline system of logging shall have additional guylines as are necessary to assure rigidity of tree at skyline jack, skidding block, receding and transfer line blocks, and loading rigging.

(e) Wood spar trees used for transfer shall have at least five top guys and, at least three buckle guys shall be used.

(f) When high lead block is hung below buckle guys, at least three top guys of equal strength to the mainline shall be used to keep the top from swaying.

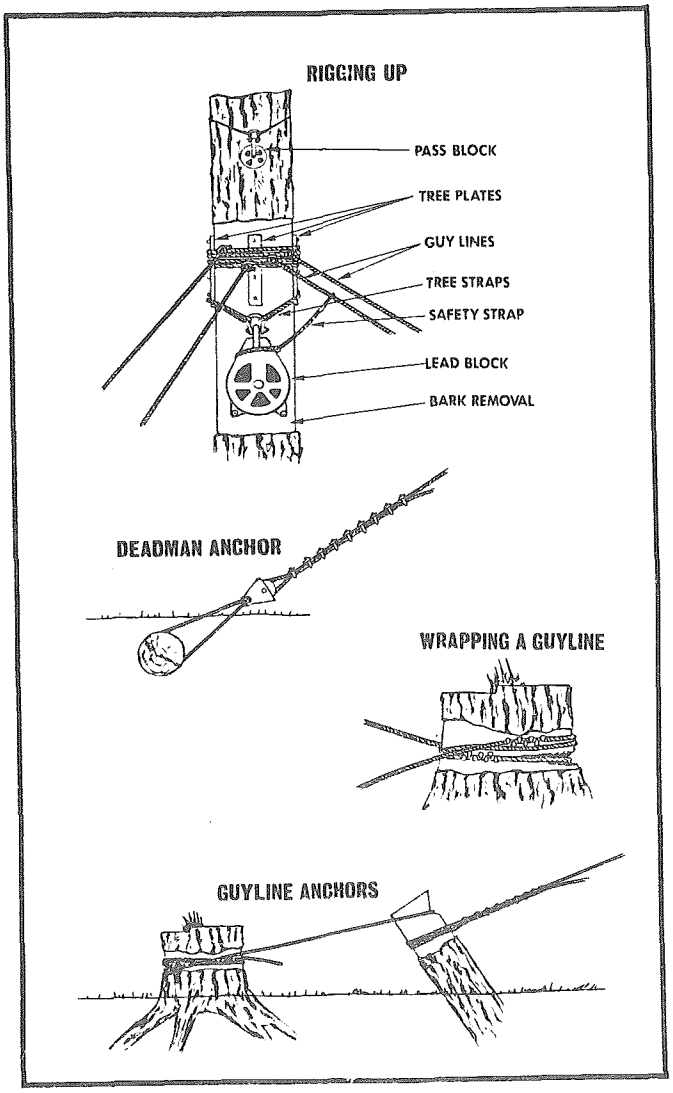
(g) When buckle guys are required, they shall be installed on the tree where they will provide the maximum effectiveness.

(8) Loose material such as bark, spikes, straps or chains not in use and slabs caused by bumping logs of chafing straps must be removed from the spar tree. Heavy bark shall be removed from trees used for a permanent installation. [Statutory Authority: RCW 49.17-.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-545, filed 9/21/79.]

WAC 296-54-547 Rigging--Tail tree. (1) No work shall continue on tail tree while the climber is working on the head tree or vice versa, if trees are connected by any line.

(2) Tail trees shall be adequately guyed to withstand any stress to which the tree may be subjected. Live (slackline) or standing skylines may be anchored to the base of standing trees only if no part of the tree will enter the work area (cutting unit) if pulled over. The guyline shall be anchored as low as possible to the base of the tree. If using a live (slackline) standing or running (Grabinski) skyline, the tail tree need not be topped provided the slackline or skyline passes through a jack or block on the tree before being anchored. At least two guylines shall be installed to support the tail tree and may be anchored to the base of standing trees if the above conditions are complied with. Attaching the end of the skyline or slackline to the base of the tail tree is prohibited.

NOTE: See Figure No. 3 for rigging illustrations.



[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-547, filed 9/21/79.]

WAC 296-54-549 Lines, straps and guyline attachments--Steel spars. (1) When in use, steel tower guyline safety straps shall have a minimum amount of slack.

(2) A safety strap shall be installed on steel towers at the bight of the guylines to prevent the guylines from falling in the case of failure of guyline attachments, guyline lug rings or collar plates, where such exist. Such devices shall have a breaking strength at least equivalent to that of the guylines.

(3) The use of cable clips or clamps for joining the ends of steel tower guylines safety straps is prohibited. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-549, filed 9/21/79.]

WAC 296-54-551 Yarding, loading and skidding machines--General requirements. (1) Yarding, loading and skidding machines shall be operated only by experienced authorized personnel, except that inexperienced personnel may operate machines in accordance with WAC 296-54-515(2).

(2) Overhead protection and other barriers shall be installed to protect the operator from lines, limbs and other moving materials on or over all yarding, loading or skidding machines. Construction shall be so the view of the operator is not impaired. Barriers shall consist of metal screen constructed of 1/4-inch diameter woven wire material with maximum two inch openings or 3/4-inch diameter steel rod with eight inch maximum openings. Such barriers shall be installed no closer than four inches to the glass.

(3) When using a yarder, loader or skidding machine, the location of the machine or position of the yarder shall be such that the operator will not be endangered by incoming logs or debris.

(4) Logging machines and their components shall be securely anchored to their bases.

(5) A safe and adequate means of access and egress to all parts of logging machinery where persons must go shall be provided and maintained in a safe condition.

(6) Any logging equipment having a single cab entrance door, shall be equipped with an alternate means of escape from the cab should the door be blocked in the event of vehicle rollover or fire. Door latches shall be operable from both sides.

(7) Logging machines shall be kept free of flammable waste materials and any materials which might contribute to slipping, tripping or falling.

(8) Logging machine engines shall be stopped during inspection or repairing, except where operation is required for adjustment.

(9) Grab rails shall be provided and maintained in good repair on all walkways of stationary units elevated more than four feet. Walkway surfaces on such units shall be of the slip-proof type.

(10) Standard safeguards shall be provided at every place on a machine where persons may be exposed to contact with revolving parts or pinchpoints during normal operations.

(11) To protect workers from exposure to the hazardous pinchpoint area between the rotating superstructure and the nonrotating undercarriage of any logging machine, signs shall be conspicuously posted on all sides of that type machine warning workers: "DANGER - STAY CLEAR."

(12) Items of personal property, tools or other miscellaneous materials shall not be stored on or near any logging machine if retrieval of such items would expose a worker to the hazardous pinchpoint referred to in subsection (11) of this section.

(13) Workers shall approach the hazardous pinchpoint area referenced in subsection (11) of this section, only after informing the operator of their intent and receiving acknowledgment from the operator that he understands their intention. All such machines shall be stopped while any worker is in the hazardous pinchpoint area.

(14) When the nature of the work requires a person to work within three feet of the swing radius of the rotating superstructure, a physical barrier, similar to a standard guardrail, with warning signs attached, shall be provided between the hazard and the person. This requirement shall not apply when:

(a) The distance from the highest point of the undercarriage to the lowest point of the rotating superstructure is greater than 18-inches. This applies only to that portion of the rotating superstructure that swings directly over the undercarriage;

(b) The distance from the ground to the lowest point of the rotating superstructure is greater than five feet six inches. This applies only to that portion of the rotating superstructure that swings directly over the undercarriage; or

(c) On crawler-type track-mounted logging machines only, the rotating superstructure is positioned at a right angle to the tracks, and the distance from the side of the cab to the extreme end of the track is four feet or less. This exemption shall apply to side barricades only; barricades between the tracks at both ends of any crawler-type logging machine are required regardless of the right angle dimension.

(15) An unimpaired clearance of not less than three feet shall be maintained between the rotating superstructure of any logging machine and any adjacent object or surface. If this clearance cannot be maintained, a physical barrier similar to a standard guardrail, with warning signs attached, shall be provided to isolate the hazardous area. When it is necessary for the logging machine to move constantly to fulfill its purpose, such as a loading machine moving back and forth to sort logs for loading or loading out right of way logs, brightly colored cones may be used in lieu of barricades provided no employee is permitted to work or pass within the perimeter of the cones. The cones shall be at least twenty-four inches in height.

(16) Logging machines shall not be operated until all guards have been installed, safety devices activated and maintenance equipment removed.

(17) Stationary logging machines shall be securely anchored to prevent movement of the machine while yarding or skidding.

(18) Ends of drum lines shall be securely fastened to the drum and at least three wraps shall be maintained on the drum at all times. (This rule does not apply to tractor winch lines.)

(19) Such units shall not be tied to any part of the towing unit, when they are being moved on truck and trailer units.

(20) Logs shall not be moved, swung or held over any persons.

(21) Brow logs in the loading or unloading area shall be blocked or secured to prevent movement. Log decks shall be maintained in a safe condition and shall not present a hazard of logs rolling or sliding on workers.

(22) Brakes shall be set and brake locking devices engaged on logging machines when the operator leaves his normal operating position.

(23) Guyline drum controls and outrigger controls shall be separated, color coded or marked in a manner that will prevent engaging of the wrong control.

(24) Exhaust pipes shall be located or insulated to protect workers from accidental contact with the pipes or muffler and shall direct exhaust gases away from the operator and other persons.

(25) Glass on logging machines shall be safety glass or equivalent and shall be free of deposits of oil, mud, or defects that could endanger the operator or other persons.

(26) Broken or defective glass shall be removed and replaced.

(27) Where safety glass or equivalent, does not provide adequate operator protection from flying chokers, chunks, saplings, limbs, etc., an additional metal screen and/or barrier shall be provided over the safety glass. The operator's vision shall not be impaired. Barriers shall consist of 1/4-inch diameter woven wire material with maximum two inch openings, 3/4-inch diameter steel rod with eight inch maximum openings in any direction or barriers so designed and constructed to provide equivalent operator protection. Such barriers shall be installed no closer than four inches to the glass to enable keeping the glass clean.

(28) Except for hydraulic drums, brakes shall be installed on all logging machines and maintained in effective working condition. Brake levers shall be provided with a ratchet or other effective means for securely holding drums. Brakes shall be tested prior to putting the machine in operation. If defective, they shall be repaired immediately.

(29) A stable base shall be provided under outriggers or leveling pads and a means shall be provided to hold outriggers in both the retracted and extended position.

(30) Abrasive contact with hydraulic hose, tubing or fittings shall be eliminated before further use and defective hydraulic hoses, lines and fittings shall be replaced.

(31) When moving logging machines, the driver or operator shall have a clear and unobstructed view of the direction of travel. When this is not possible, a signalperson with a clear and unobstructed view of the direction of travel shall be designated and used to direct movement of the machine.

(32) Where a signalperson is used, the equipment operator shall move the equipment only on signal from the designated signalperson and only when the signal is distinct and clearly understood.

(33) When moving power units, persons other than the operator and the person in charge shall not be permitted to ride thereon.

(34) All obstructions which may reach the operator while moving machines, shall be removed.

(35) Only shackles with threaded pins shall be used for connecting moving rigging.

(36) Anchors used for moving power units shall be carefully chosen and must be stable.

(37) When snubbing a machine down a steep slope, use the mainline for snubbing and pull with the haulback whenever possible.

(38) Self-powered mobile logging machines of the type where towers or spars can be raised, shall not travel on steep road grades unless they are securely snubbed or towed.

(39) When moving, all persons working on the landing shall stay in the clear of the machine and shall inform the operator of their intention to approach or be near the machine.

(40) Service brakes shall be provided on crawler crane-type logging machines that will bring the machine to a complete stop from normal travel speeds.

(41) A traction lock or brake or an equivalent locking and braking system shall be provided on crawler crane-type machines that is capable of holding the machine stationary under normal working conditions, and on any grade the machine is capable of negotiating.

(42) No modifications or additions which affect the capacity or safe operation of the equipment shall be made by the employer without written approval of the manufacturer or a qualified engineer. If such modifications or changes are made, the capacity, operation and maintenance instruction plates, tags, or decals, shall be changed accordingly. In no case shall the original safety factor of the equipment be reduced.

(43) Equipment shall be classed and used according to the manufacturer's rating. Where low gear ratios or other devices are installed to increase the line pull in accordance with subsection (42) of this section, the size of the rigging shall be increased accordingly so that it will safely withstand the increased strains.

(44) Every tractor, skidder, front-end loader, scraper, grader and dozer shall be equipped with a roll-over protective structure (R.O.P.S.). Such structures shall be installed, tested and maintained in accordance with:

(a) WAC 296-155-950 through 296-155-965 of the Safety Standards for Construction, if manufactured prior to the effective date of this chapter.

(b) The Society of Automotive Engineers SAE 1040a-1975, "Performance Criteria for Roll-over Protective Structures (ROPS) for Earthmoving, Construction, Logging and Industrial Vehicles," if manufactured after the effective date of this chapter.

(45) The ROPS shall be of sufficient height and width so that it will not impair the movements of the operator or prevent his immediate escape from the vehicle in emergencies and shall allow as much visibility as possible. Clearance above the deck and the ROPS of the vehicle at points of egress shall not be less than fifty-two inches.

(46) Certified roll-over protective systems shall be identified by a metal tag permanently attached to the ROPS in a position where it may be easily read from the ground. The tag shall be permanently and clearly stamped, etched or embossed indicating the name and address of the certifying manufacturer or registered professional engineer, the ROPS model number (if any) and the vehicle make, model or serial number the ROPS is designed to fit.

(47) Roll-over protective structure systems shall be maintained in a manner that will preserve their original strength. Welding shall be performed by qualified welders only. (A qualified welder is defined under "Welder Qualification" in American Welding Society A.W.S. A3.0-69.)

(48) Every tractor, skidder, front-end loader, log stacker, forklift truck, scraper, grader and dozer shall be equipped with a FOPS. Such structures shall be installed, tested and maintained in accordance with the Society of Automotive Engineers SAE J231-1971, "Minimum Performance Criteria for Falling Object Protective Structures (F.O.P.S.)."

(49) Vehicles equipped with ROPS or FOPS as required in subsections (44) and (48) of this section, shall comply with the Society of Automotive Engineers SAE J397a-1972, "Deflection Limiting Volume for Laboratory Evaluation of Roll-over Protective Structures (ROPS) and Falling Object Protective Structures (FOPS) of Construction and Industrial Vehicles."

(50) The opening in the rear of the ROPS on the crawler or rubber-tired tractors (skidders) shall be covered with 1/4-inch diameter woven wire having not less than 1-1/2-inches or more than 2-inch mesh, or material which will afford equivalent protection for the operator. The covering shall be affixed to the structural members so that ample clearance is provided between the screen and the back of the operator. Structural members shall be free from projections which would tend to puncture or tear flesh or clothing. Suitable safeguards or barricades shall be installed, in addition to the screen, to protect the operator when there is a possibility of being struck by any material that could enter from the rear.

(51) Crawler and rubber-tired tractors (skidders) working in areas where limbs or brush may endanger the operator shall be guarded. Shear or deflector guards shall be installed on each side of the vehicle at an angle leading forward and down from the top front edge of the canopy of the vehicle, which will tend to slide the brush or limbs up and over the top of the canopy. Open mesh material with openings of a size that will reject the entrance of an object larger than 1-3/4-inches in diameter, shall be extended forward as far as possible from the rear corners of the cab sides to give the maximum protection against obstacles, branches, etc. entering the cab area. Deflectors shall also be installed ahead of the operator to deflect whipping saplings and branches. These shall be located so as not to impede ingress or egress from the compartment area. The floor and lower portion of the cab shall be completely enclosed with solid material, except at entrances, to prevent the operator from being injured by obstacles which otherwise could enter the cab compartment.

(52) Enclosures for agricultural and industrial tractors manufactured after September 1, 1972, shall be constructed, designed and installed as detailed in the Society of Automotive Engineers Technical Report J168.

(53) All bidirectional machines, shall be equipped with a horn distinguishable from the surrounding noise level, which shall be operated when the machine is moving in either direction unless an assigned signal-person directs the movement. The horn shall be maintained in

an operating condition. [Statutory Authority: RCW 49-.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-551, filed 9/21/79.]

WAC 296-54-553 Yarding, loading and skidding machines--Mobile towers and boom-type yarding and loading machines. (1) Portable (mobile) tower specification plate. A specification plate shall be permanently attached to the base of each portable (mobile) tower so it can be easily read by a person standing on the ground or on the base platform. It shall contain the following information:

(a) Name and address of manufacturer and model number;

(b) The maximum diameter of the mainline or skyline for which the unit is designed and size of haulback and mainline to be used together if drums are interlocking or automatic tensioning type;

(c) The number and size of guylines required to stabilize the unit;

(d) The maximum length and capacity of a loading boom or similar equipment which may be attached if the structure is engineered for such;

(e) If the unit is designed for use on any skyline system of logging; and

(f) Maximum degree of inclination from vertical at which the spar (tower) may be used.

(2) The critical parts of portable spars (towers) shall be inspected by a qualified person at reasonable intervals while in service and each time the spar (tower) is lowered. If indication of failure or weakness is noted or suspected, the part shall be inspected by an approved method and found to be safe, or it shall be repaired or replaced before the operation is allowed to proceed.

(3) Blocks and fair leads shall be so located that there will be no chafing or sawing of any line or part of the structure.

(4)(a) Power guylines used for stabilizing any unit may be choked around an adequately notched stump if using a shackle or approved choker attachment. Three full wraps or more must be placed around an adequately notched stump to secure the guyline if clamps are used. Guyline extensions shall be property shackled to the guylines.

(b) When using a deadman anchor to support a guyline, the connection shall be made by properly shackling both eyes of the anchor strap to the guyline.

(c) If guylines on metal spars or towers are not power guylines, they shall be secured to stumps or anchorages in the same manner as guylines on wood spar trees.

(5) Power driven devices shall be securely anchored when used to tighten guylines. Holding of such devices manually is prohibited.

(6)(a) Machines or equipment shall be stabilized by their design or the attachment of guylines or other devices which will prevent the machine from overturning. Machine operators shall be advised of the stability limitations of the equipment.

(b) If stabilization of a machine is dependent upon the use of hydraulic outriggers, a pilot operated hydraulic check valve or other locking device shall be installed to prohibit the outrigger from retracting in case a hydraulic line breaks, except when proper blocking is provided.

(7) A qualified person shall direct each raising or lowering of a portable spar or tower.

(8) All persons not engaged in the actual raising or lowering of portable spars or towers shall stay in the clear during such operations.

(9) Guylines required in rigging spars or towers shall be evenly spooled to prevent fouling.

(10) Portable spars or towers shall be leveled to provide even line spooling and avoid excessive stress on component parts.

(11) The portable spar or tower shall be lowered or supported so the stability of the machine is not impaired during movement of the portable spar or tower.

(12) Guylines of portable spars or towers shall not be anchored to standing trees if the unit is used for yarding as a head tree.

(13) Timbers used for masts or booms shall be straight-grained, solid, and capable of withstanding the working load.

(14) Boom points of timber booms shall be equipped with metal straps, plates, or other devices as needed to properly secure eyebolts and fittings used to support lines, blocks, or other rigging.

(15) All mobile vehicles on which yarding equipment, towers, spars, masts or booms are installed, shall be maintained in a safe operating condition.

(16) A-frames shall be secured against displacement and the tops shall be securely bolted or lashed to prevent displacement.

(17) When any portable-type tower, A-frame or spar is used, the base shall be securely and solidly supported.

(18) All loading, unloading and skidding machines shall be equipped with a horn or whistle which is audible above the surrounding noise level. Such horn or whistle shall be maintained in an operative condition. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-553, filed 9/21/79.]

WAC 296-54-555 Yarding--General requirements. (1) Workers shall be alert and be positioned in the clear where they will not be exposed to the hazards of moving logs, saplings, root wads, chunks, rigging, or any other material which might be put in motion by the rigging or turn, before the "go ahead" signal is given. They shall remain in the clear at all times while the rigging is moving.

(2) No person shall be near rigging which is stopped at a hangup, until the rigging has been slacked to reduce the hazard.

(3) No person shall stand or remain within the bight of any running line, nor in a position where he could be struck by a line were it to break or come loose.

(4) Whenever possible, chokers shall be set from the uphill side of a log. Persons shall not be on the lower side of a log which appears to be unstable or likely to roll.

(5) Wire rope used for chokers shall not exceed seventy-five percent of the breaking strength of the mainline.

(6) Chokers shall be placed near the end of the log whenever possible.

(7) When pulling lines, do not stand close to fair leads or blocks.

(8) Lines shall not be guided on drums with hands or feet. The use of a bar or equivalent means is recommended.

(9) Yarding with more than one unit on any one head spar is prohibited.

(10) The angle between the power unit, the high lead block, and the mainline road shall not exceed a square lead on rigged spars. When using portable spars or towers, the location of the machine or position of the operator shall be such that the operator shall not be endangered by incoming logs.

(11) When there is danger of tail block straps slipping up or off the stump or tree, the stump or tree shall be adequately notched or the line properly wrapped and secured. When the tail tree or stump is not secure, it shall be tied back.

(12) When yarding is being done during the hours of darkness, the area shall be provided with illumination which will allow persons to safely perform their duties. The source of illumination shall be located and directed creating a minimum of shadows and glare. If using a portable tail-hold, lights shall be directed on the equipment to allow the person to visually ascertain that the tail-hold equipment remains stabilized.

(13) No person shall be required or allowed to ride on a turn of logs or rigging excepting the passline. The practice of holding on to moving rigging or chokers to assist a person by being pulled uphill shall be prohibited.

(14) Wire rope shall be wound evenly on the drum and not be allowed to lap one layer on another in an irregular manner. Sheaves shall be smooth and free from defects that could cause rope damage.

(15) Chaser shall be sure that turns are safely landed before approaching to remove the chokers.

(16) Signaling machine operator at landings by throwing bark, chips or other material in the air is prohibited. Whistle or hand signals shall be used at all times.

(17) Logs shall not be landed while loaders or chasers are engaged in hooking on. Logs shall not be removed from yarder tree by the loader or tractors while the chaser is unhooking a turn from the yarder.

(18) Landings shall be as level as possible and of sufficient size to safely accommodate the majority of type turns to be yarded. At least two-thirds of the log shall rest on the ground or other substantial material when landed. Logs shall be set on the ground or deck and not dropped when being landed. Long sticks shall be safely removed before additional logs are landed.

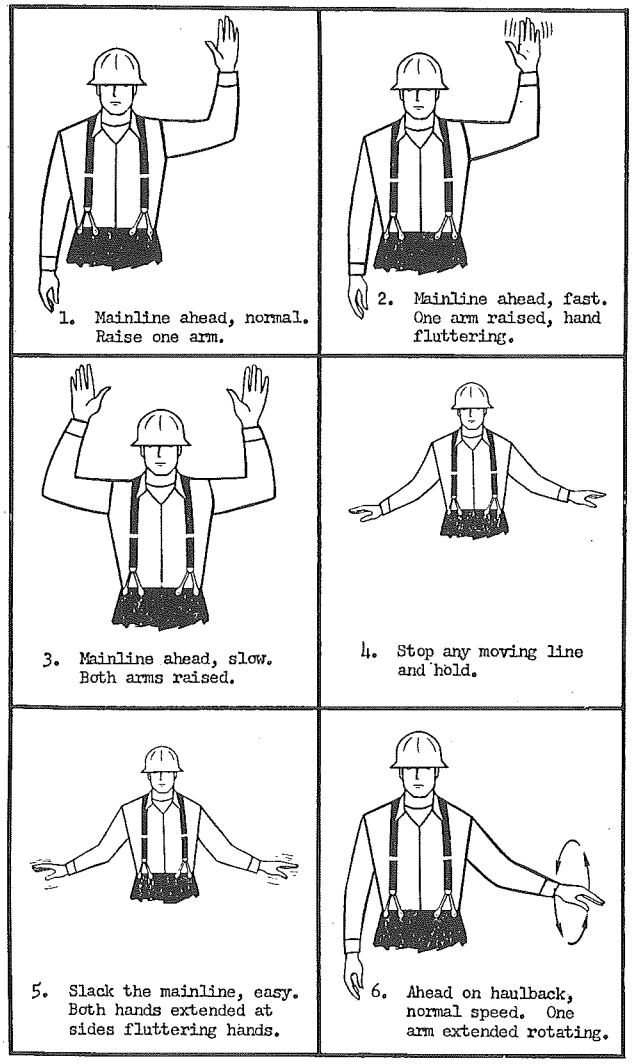
(19) Chokers shall not be used on a grapple system when the yarder operator cannot clearly see the persons setting the choker, unless conventional whistle signals are used.

(20) Landings shall be free of root wads, limbs, tops, etc., that constitute a safety hazard.

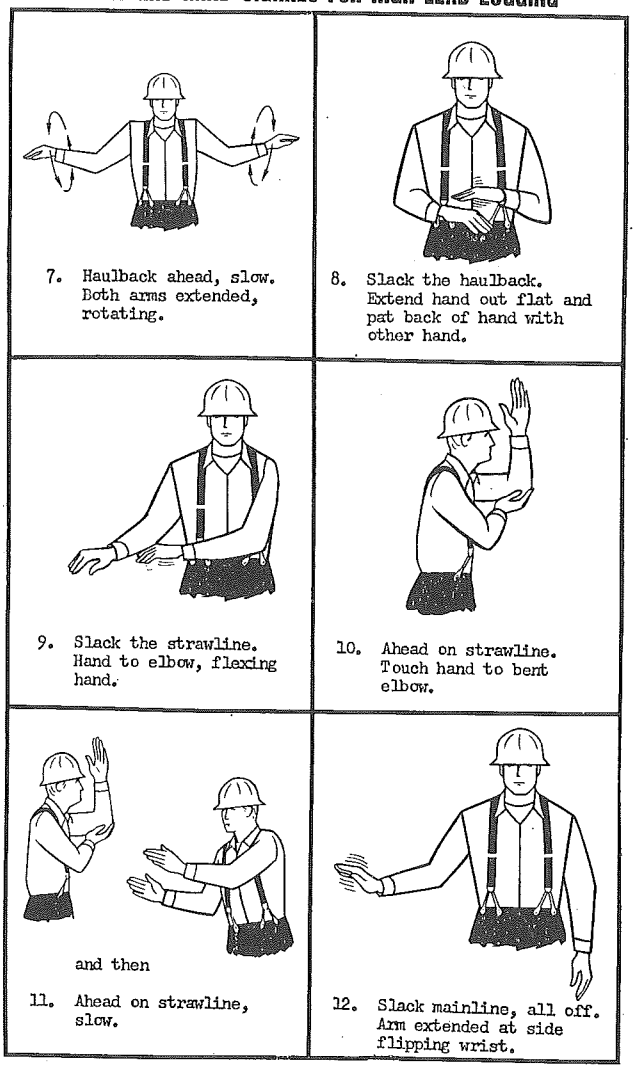
(21) When shorter logs are yarded in the same turn with long sticks, the shorter logs shall be landed and chokers released before the long stick choker is released.

NOTE: See Figures No. 4-A and 4-B for Standard Hand Signals for High Lead Logging.

STANDARD HAND SIGNALS FOR HIGH LEAD LOGGING



STANDARD HAND SIGNALS FOR HIGH LEAD LOGGING



[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-555, filed 9/21/79.]

WAC 296-54-557 Yarding--Tractors and skidders. (1) Operators shall ensure that all persons are safely in the clear before initiating or continuing the movement of any mobile equipment.

(2) No person shall ride on any mobile equipment, except where adequate and protected seats, or other safe facilities have been provided.

(3) While in use, tractors and skidders shall be maintained in a safe operable condition, with all guards in proper places.

(4) No person shall be under a tractor or other mobile equipment, or be placed in a hazardous position around the equipment without first making certain it cannot move or be moved by another person.

(5) Prior to working on tractor or skidder blades, arches, or other equipment, the equipment must be blocked up lowered to the ground or otherwise secured against slipping or falling. Prior to working on hydraulic equipment, the pressure shall be relieved.

(6) When making repairs to tractor or skidder equipment, such as blades, arches, etc., the engine shall be stopped. The engine may be run when necessary for making adjustments to the engine or equipment.

(7) Operators shall operate and control their machines in a safe manner and avoid operations in areas where machine stability may not be maintained.

(8) The following safe work procedures shall be adhered to:

(a) When hobo logs are picked up with a log turn, the turn shall be dropped to free the hobo.

(b) No line shall be allowed to trail behind the tractor or skidder where it may hang up and snap forward.

(c) Winching at a severe angle, which could cause a hang-up to upset the machine, shall be avoided.

(d) Grapple skidded log turns shall be evenly bunched with squared butt ends, securely grappled and safely positioned before travel commences.

(e) Before climbing or descending grades, the proper gear shall be selected to allow the engine to govern the tractor speed.

(f) On side hills, an abrupt turn uphill shall be avoided. The tractor or skidder shall be backed downhill first then turned uphill. The turn may be slacked off as necessary to permit this maneuver.

(g) The operator shall, before leaving a tractor or skidder, lower the blade to the ground and apply the parking brake.

(h) Tractor or skidder speed shall be adjusted to the circumstances prevailing. Excessive or uncontrolled speed shall be avoided.

(i) Winch lines on logging tractors or skidders shall be attached to the drum with a break-away device.

(9) When hand signals are required for giving instructions to the tractor or skidder operator, the signals as illustrated in Figure No. 5 shall be used.

(10) Tractor and skidder brakes shall stop and hold the machine on any grade over which the machine is being operated. They shall be effective whether or not the engine is running and regardless of the direction of travel.

(11) Tractors and skidders shall be provided with a brake locking device that will hold the machine indefinitely on any grade on which it is being operated.

(12) Operating a tractor or skidder with defective steering or braking devices is prohibited.

(13) Arches shall be equipped with line guards.

(14) Where tractor and skidder operators or helpers, because of the nature or their work duties, are required to wear calk soled footwear, the decks and operating foot controls shall be covered with a suitable nonslip material.

(15) Glass used in windshields or inn cabs shall be of "safety glass." Broken or cracked glass shall be replaced as soon as practical. Barriers shall provided, as needed, to protect the glass from being broken by using screen, bars or other material. The protective material shall be a type that will not create a hazard by undue impairment of the operators' vision.

(16) Barriers shall be constructed of at least 1/4-inch diameter woven wire with two inch maximum openings or other material providing equivalent protection. The barrier shall be installed at least four inches from the glass to provide space to clean the glass.

(17) Enclosed-type cabs installed on mobile equipment shall have two means of exit. One may be deemed as an emergency exit and be available for use at all times, regardless of the position of the side arms or other movable parts of the machine. (An easily removable window will be acceptable as the emergency exit if it is of adequate size for a person to readily exit through.)

(18) Seat belts shall be installed on tractors and other mobile equipment equipped with a roll-over protective system and shall be worn by the operator and passenger(s) at all times the vehicle is in motion. The seat belts and assemblies shall be designed, constructed and maintained to conform to the requirements specified in the Society of Automotive Engineers Technical Report J386 or J333a. Seat belts need not be provided for equipment which is designed for stand-up operations.

(19) If the equipment operator and person in charge of the jobsite agree that life safety of the operator is jeopardized by wearing a seat belt, the seat belt need not be worn.

(20) Seat belts required by subsection (18) of this section, shall have buckles of the quick release type, designed to minimize the possibility of accidental release.

(21) Before a tractor or skidder is started or moved, the operator shall be certain nothing is in the way that could be set in motion by the movement of the machine thereby endangering persons.

(22) A log or turn shall not be moved until all persons are in the clear (behind the turn and on the uphill side on sloping ground).

(23) Before the engine is shut-down, the brake locks shall be applied and all elements such as blades, buckets, grapples and shears shall be lowered to the ground.

(24) Tractors or skidders shall not be operated within a radius of two tree heights of trees being felled unless called upon by the cutter or faller to ground lodged trees. All cutters shall be notified of the tractor or skidder entrance into the area and all felling within two tree lengths of the tractor or skidder shall be stopped.

(25) Except where electrical distribution and transmission lines have been de-energized and visibly grounded at point of work or where insulating barriers, not a part of or an attachment to the equipment or machinery, have been erected to prevent physical contact with the lines, equipment or machines shall be operated proximate to power lines only in accordance with the following:

(a) For lines rated 50 kV or below, minimum clearance between the lines and any part of the equipment or machine shall be ten feet;

(b) For lines rated over 50 kV, minimum clearance between the lines and any part of the equipment or machine shall be ten feet plus 0.4 inch for each 1 kV over 50 kV, or twice the length of the line insulator, but never less than ten feet;

(c) In transit with no load and boom or extended equipment lowered, the equipment clearance shall be a minimum of four feet for voltages less than 50 kV, and ten feet for voltages over 50 kV up to and including 345 kV, and sixteen feet for voltages up to and including 750 kV;

(d) A person shall be designated to observe clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means;

(e) Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate it is not an energized line and it has been visibly grounded.

(26) Log piles and decks shall be located and constructed to provide working areas around them that will accommodate the safe movement of personnel and machinery.

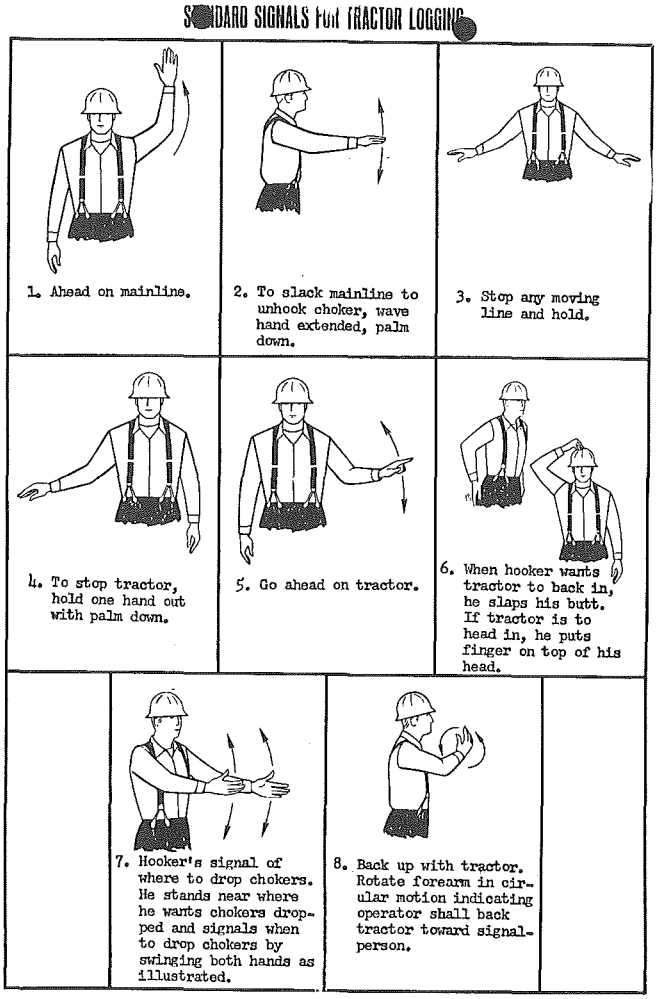
(27) Braking systems required by subsection (10) of this section, shall be capable of stopping the equipment fully loaded as specified in the Society of Automotive Engineers Technical Reports listed in subdivisions (a), (b), (c) or (d) of this subsection and shall be installed by June 30, 1973. All rubber-tired tractors or other types of mobile equipment listed below, manufactured after the effective date of these standards, shall have braking systems and requirements specified in the applicable Technical Reports of the Society of Automotive Engineers as follows:

(a) Brake systems for off-highway, rubber-tired, self-propelled scrapers shall meet or exceed the requirements outlined in SAE Technical Report J319b.

(b) Brake systems for off-highway, rubber-tired, front-end loaders, log stackers and dozers (skidders) shall meet or exceed the requirements outlined in SAE Technical Report J237.

(c) Brake systems for rubber-tired, self-propelled graders shall meet or exceed the requirements outlined in SAE Technical Report J236.

(d) Brake systems for off-highway trucks and wagons shall meet or exceed the requirements outlined in SAE Technical Report J166.



[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-557, filed 9/21/79.]

WAC 296-54-559 Yarding--Helicopters and helicopter cranes. (1) Helicopters and helicopter cranes shall comply with any applicable regulations of the Federal Aviation Administration.

(2) Prior to each day's operation, a briefing shall be conducted. This briefing shall set forth the plan of operation for the pilot and ground personnel.

(3) A take-off path from the log pickup point shall be established, and shall be made known to all workers in that area before the first turn of logs is moved.

(4) The helicopter flight path to and from the drop zone shall be designated and no equipment or personnel (other than flight personnel necessary to assist landing and take-off) will occupy these areas during helicopter arrival or departure.

(5) The approach to the landing shall be clear and long enough to prevent tree tops from being pulled into the landing.

(6) The helicopter shall not pass over an area in which cutters are working at a height which would cause the

rotor wash to inhibit a cutter's ability to safely control a tree or dislodge limbs.

(7) Drop zones shall be twice the nominal length of logs to be landed.

(8) The drop zone shall be no less than one hundred twenty–five feet from the loading or decking area.

(9) Separate areas shall be designated for landing logs and fueling the helicopter(s).

(10) The yarding helicopter shall be equipped with a siren to warn workers of any hazardous situation.

(11) Workers shall remain in the clear as chokers are being delivered, and under no circumstances will workers move under the helicopter that is delivering the chokers or take hold of the chokers before they have been released by the helicopter.

(12) Log pickup shall be arranged in a manner that the hook up crew will not work on slopes below felled and bucked timber.

(13) If the load must be lightened, the hook shall be placed on the ground on the uphill side of the turn before the hooker approaches to release the excess logs.

(14) Landing crew shall be in the clear before logs are dropped.

(15) One end of all the logs in the turn shall be touching the ground and lowered to an angle of not more than 45° from the horizontal before the chokers are released.

(16) Logs shall be laid on the ground and the helicopter will be completely free of the choker(s) before workers approach the logs.

(17) If the load will not release from the hook, the load and the hook shall be on the ground before workers approach to release the hook manually.

(18) Loads shall be properly slung. Tag lines shall be of a length that will not permit their being drawn up into rotors. Pressed sleeve, swedged eyes, or equivalent means shall be used for all freely suspended loads to prevent hand splices from spinning open or cable clamps from loosening.

(19) All electrically operated cargo hooks shall have the electrical activating device so designed and installed as to prevent inadvertent operation. In addition, these cargo hooks shall be equipped with an emergency mechanical control for releasing the load. The hooks shall be tested prior to each day's operation to determine that the release functions properly, both electrically and mechanically.

(20)(a) Personal protective equipment for employees receiving the load shall consist of complete eye protection and hard hats secured by chinstraps, and high visibility vests or outer garments.

(b) Loose–fitting clothing likely to flap in the downwash, and thus be snagged on hoist line, shall not be worn.

(21) Every practical precaution shall be taken to provide for the protection of employees from flying objects in the rotor downwash. All loose gear within one hundred feet of the place of lifting of the load, depositing the load, and all other areas susceptible to rotor downwash shall be secured or removed.

(22) Good housekeeping shall be maintained in all helicopter loading and unloading areas.

(23) The helicopter operator shall be responsible for size, weight, and manner in which loads are connected to the helicopter. If, for any reason, the helicopter operator believes the lift cannot be made safely, the lift shall not be made.

(24) Employees shall not perform work under hovering craft except for that limited period of time necessary to guide, secure, hook and unhook loads. Regardless of whether the hooking or unhooking of a load takes place on the ground or other location in an elevated work position in structural members, a safe means of access and egress; to include an unprogrammed emergency escape route or routes, shall be provided for the employees hooking or unhooking loads.

(25) Static charge on the suspended load shall be dissipated with a grounding device before ground personnel touch the suspended load, or protective rubber gloves shall be worn by all ground personnel touching the suspended load.

(26) The weight of an external load shall not exceed the manufacturer's rating.

(27) Hoist wires or other gear, except for pulling lines or conductors that are allowed to "pay out" from a container or roll off a reel, shall not be attached to any fixed ground structure, or allowed to foul on any fixed structure.

(28) When visibility is reduced by dust or other conditions, ground personnel shall exercise special caution to keep clear of main and stabilizing rotors. Precautions shall also be taken by the employer to eliminate as far as practical reduced visibility.

(29) Signal systems between aircrew and ground personnel shall be understood and checked in advance of hoisting the load. This applies to either radio or hand signal systems. Hand signals shall be as shown in Figure 6.

(30) No unauthorized person shall be allowed to approach within fifty feet of the helicopter when the rotor blades are turning.

(31) Whenever approaching or leaving a helicopter with blades rotating, all employees shall remain in full view of the pilot and keep in a crouched position. Employees shall avoid the area from the cockpit or cabin rearward unless authorized by the helicopter operator to work there.

(32) Sufficient ground personnel shall be provided, when required, for safe helicopter loading and unloading operations.

(33) There shall be constant reliable communication between the pilot, and a designated employee of the ground crew who acts as a signalperson during the period of loading and unloading. This signalperson shall be distinctly recognizable from other ground personnel.

(34) Open fires shall not be permitted in an area that could result in such fires being spread by the rotor downwash.

(35) Under no circumstances shall the refueling of any type helicopter with either aviation gasoline or Jet B

(Turbine) type fuel be permitted while the engines are running.

(36) Helicopters using Jet A (Turbine–Kerosene) type fuel may be refueled with engines running provided the following criteria is met:

(a) No unauthorized persons shall be allowed within fifty feet of the refueling operation or fueling equipment.

(b) A minimum of one thirty–pound fire extinguisher, or a combination of same, good for class A, B and C fires, shall be provided within one hundred feet on the upwind side of the refueling operation.

(c) All fueling personnel shall be thoroughly trained in the refueling operation and in the use of the available fire extinguishing equipment they may be expected to utilize.

(d) There shall be no smoking, open flames, exposed flame heaters, flare pots or open flame lights within fifty feet of the refueling area or fueling equipment. All entrances to the refueling area shall be posted with "NO SMOKING" signs.

(e) Due to the numerous causes of static electricity, it shall be considered present at all times. Prior to starting refueling operations, the fueling equipment and the helicopter shall be grounded and the fueling nozzle shall be electrically bonded to the helicopter. The use of conductive hose shall not be accepted to accomplish this bonding. All grounding and bonding connections shall be electrically and mechanically firm, to clean unpainted metal parts.

(f) To control spills, fuel shall be pumped either by hand or power. Pouring or gravity flow shall not be permitted. Selfclosing nozzles or deadman controls shall be used and shall not be blocked open. Nozzles shall not be dragged along the ground.

(g) In case of a spill, the fueling operation shall be immediately stopped until such time as the person–in–charge determines that it is safe to resume the refueling operation.

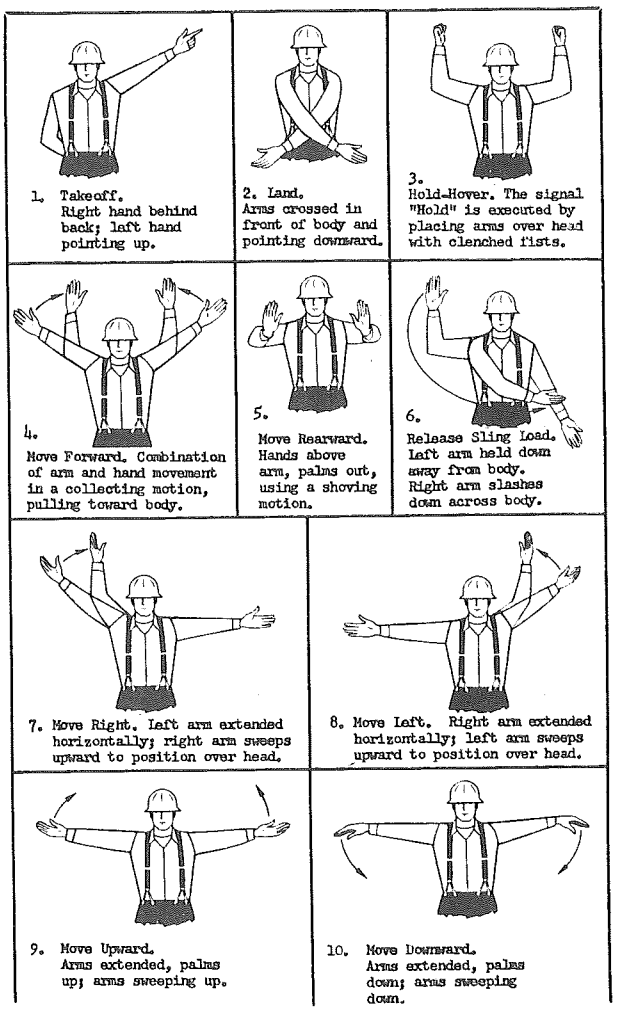
(h) When ambient temperatures have been in the 100 degree F. range for an extended period of time, all refueling of helicopters with the engines running shall be suspended until such time as conditions become suitable to resume refueling with the engines running.

(37) Helicopters with their engines stopped being refueled with aviation gasoline or Jet B (Turbine) type fuel, shall also comply with subsection (36) (a) through (g) of this section.

(38) Hook on persons in logging operations shall wear contrasting colored hard hats, with chinstraps, and high visibility vests or outer garments to enable the helicopter operator to readily identify their location.

(39) Riding the load or hook of a helicopter is prohibited except in the case of an emergency with the proper safety gear.

HELICOPTER HAND SIGNALS



[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–10–081 (Order 79–14), § 296–54–559, filed 9/21/79.]

WAC 296-54-561 Log loading--General requirements. (1) Loading operators shall have a clear view of the landing and of the cars or trucks being loaded.

(2) Persons shall not ride logs, tongs, grapples or other loading devices.

(3) The use of plain spiked loading hooks without a bell is prohibited for loading logs.

(4) All limbs or knots that would project beyond the stakes or legal height shall be removed before the log is loaded on the car or truck.

(5) When the loading operator is not able to see the loading operation, signals shall be given by a designated person, who shall have a clear view of the operations and shall be visible to the operator. Hand signals used shall be as illustrated in Figure No. 7, following WAC 296–54–565.

(6) Logs shall not be swung or suspended over occupied equipment by loading machines on landings. Persons shall not stand or walk under suspended logs.

(7) No one shall ride loads while cars or trucks are being spotted or dropped, except those whose regular duties require them to do so.

(8) Cars and trucks shall not be moved until the head loader or loading machine operator is positive that all persons are in the clear.

(9) When grapples, trip tongs or similar devices are used in the loading operation, they shall be lowered to the ground whenever the machine is unattended. If the device can tip or fall over, it shall be laid on its side on the ground.

(10) While logs are being loaded, no one shall remain on the load, chain deck or behind the cab protector. Any unattached material shall be removed from the top of the cab protector before the truck is moved from the landing.

(11) To control the movement of a log truck being loaded, a positive audible means of communication shall be established between the truck driver and the loading machine operator. The established means of communication shall be familiar to all employees on the landing and shall include a danger signal to warn employees in case of an emergency. If a movable loader is being used, the loader operator shall sound a warning signal before moving the loader. The signals so used shall be easily distinguishable from other whistle or horn signals used in the landing area.

(12) When signals are used at a landing, reload or deck to control the movement of logging trucks in accordance with subsection (11) of this section, the following signals shall be used:

1 short	Stop
1 short	Ahead
2 shorts	Back
2 shorts then 2 shorts ...	Wrapper
3 shorts	Check Scales
1 long–repeated	Danger
1 long	Loader Moving

(13) No person shall be permitted alongside or underneath trucks being loaded or on the load until communication has been established with the loading machine operator and truck driver and assurance has been received that it is safe to be there.

(14) Power saws shall not be operated on top of loaded logging trucks.

(15) Standing underneath a suspended trailer or its reach is prohibited.

(16) The outside bunklogs (bottom tier) shall be loaded tight against the stakes.

(17) Logs shall be loaded in a manner to prevent undue strain on wrappers, binders, bunk stakes and chains or straps.

NOTE: Logs shall be considered to be "within the stakes" when one–half the log diameter is below the top of the stakes.

(18) Logs in any tier or layer unsecured by stakes or chalk blocks shall be well saddled and have their diameter centers inside the diameter centers of the outer logs of the next lower tier or layer.

(19) Bunk and wing logs shall extend not less than twelve inches beyond the front and rear bunks or stakes. On rigid type bunks, they shall extend not less than six inches beyond the front and rear bunks or stakes.

(20) Double ended logs, above the stakes, shall not be loaded on the side of the load from which the binders or wrappers are intended to be released from.

(21) Logs shall be loaded in a manner that will not impair full and free movement of the truck and trailer.

(22) Each log not contained within the stakes shall be secured with at least two wrappers before the truck leaves the immediate landing area.

(23) Loads or logs shall not be moved or shifted while wrappers and binders are being applied or adjusted.

(24) Stable loads. Loads shall be built up or loaded in a manner to be stable without the use of wrappers. Wrappers shall be considered only as precautionary measures to ensure stability of the load.

(25) Loading equipment maintained. All loading machines and equipment shall be maintained in a safe condition. The critical parts of such equipment, such as bolts in base plates, etc., that cannot be inspected while in operation, shall be inspected at reasonable intervals by a qualified person when the machine is shutdown. If indications of failure or weakness is noted or suspected, the parts in question shall be examined by an approved method and if found to be defective, shall be repaired or replaced before the equipment is put back into operation.

(26) Tongs pulling out. Where there is a danger of tongs or hooks pulling out of the log, straps shall be used. Tongs may be used on extra–large logs provided the logs are barked and notched to provide a secure hold. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–10–081 (Order 79–14), § 296–54–561, filed 9/21/79.]

WAC 296-54-563 Log loading--Special requirements. (1)(a) Loading machines shall be equipped with an effective parking braking system which is not dependent on the air or hydraulic pressure which is used to stop the machine while traveling.

(b) A braking system shall be installed on the load line and boom supporting equipment which shall be capable of stopping and holding, in any position, the maximum load for which the loading machine is designed. The equipment shall be of such design as to lower the boom with power. Booms not having power down shall be dogged before workers enter the hazardous area around the boom. Workers shall not be under any boom while it is being held by the brake.

(2) A minimum distance of thirty–six–inch clearances shall be maintained between the counterweight of a loading machine and trees, logs, banks, trucks, etc., while the machine is in operation. If this clearance cannot be maintained, suitable barricades with warning signs attached, similar to a standard guardrail, shall be installed to isolate the hazardous area. "DANGER –

36-Inch Clearance" shall be marked in contrasting colors on sides and face of counterweight on shovels, loaders and other swing-type logging equipment.

(3) Persons shall not work under a slack puller. A warning line, of sufficient length to reach the ground at all positions, shall be hung from any slack puller.

(4) Where a backstop of a loading machine is so constructed that it could crush the operator's cab should the heel boom be pulled or pushed too far backward, positive boom stops shall be installed.

(5) All mobile fork-lift type log handling machines shall be equipped with a means or mechanism to prevent the logs from leaving or rolling off the forks, and shall be used at all times while moving logs. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-563, filed 9/21/79.]

WAC 296-54-565 Log loading--Self-loading log trucks. (1) A safe means of access and egress shall be provided to the operator's loading work station.

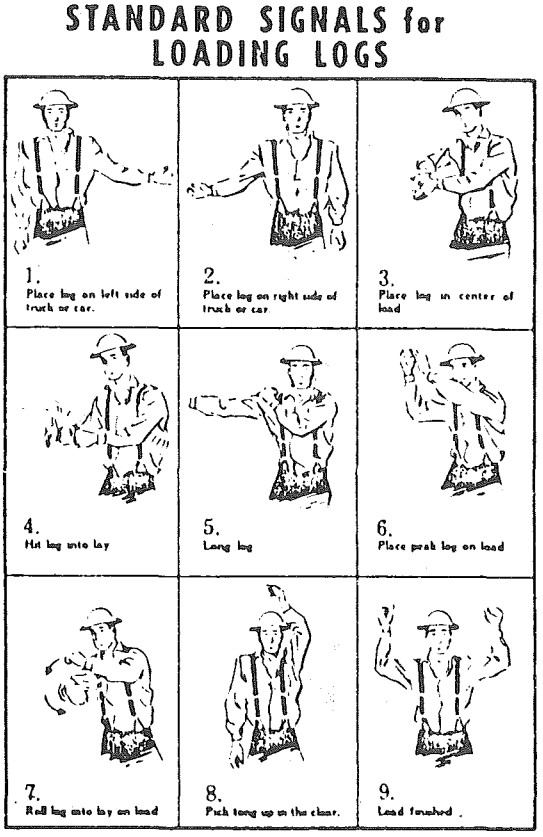
(2) Self-loading log truck operators shall not unload their own load unless a positive means of securing the logs has been provided when binders and wrappers are removed.

(3) New self-loading log trucks purchased and put in operation after January 1, 1980, shall be equipped with:

(a) A check valve installed on the jib boom; and

(b) A seat that is offset from the point of attachment of the boom. The seat and boom structure shall rotate concurrently.

(4) The operator of a self-loading log truck shall not heel the log over his head.

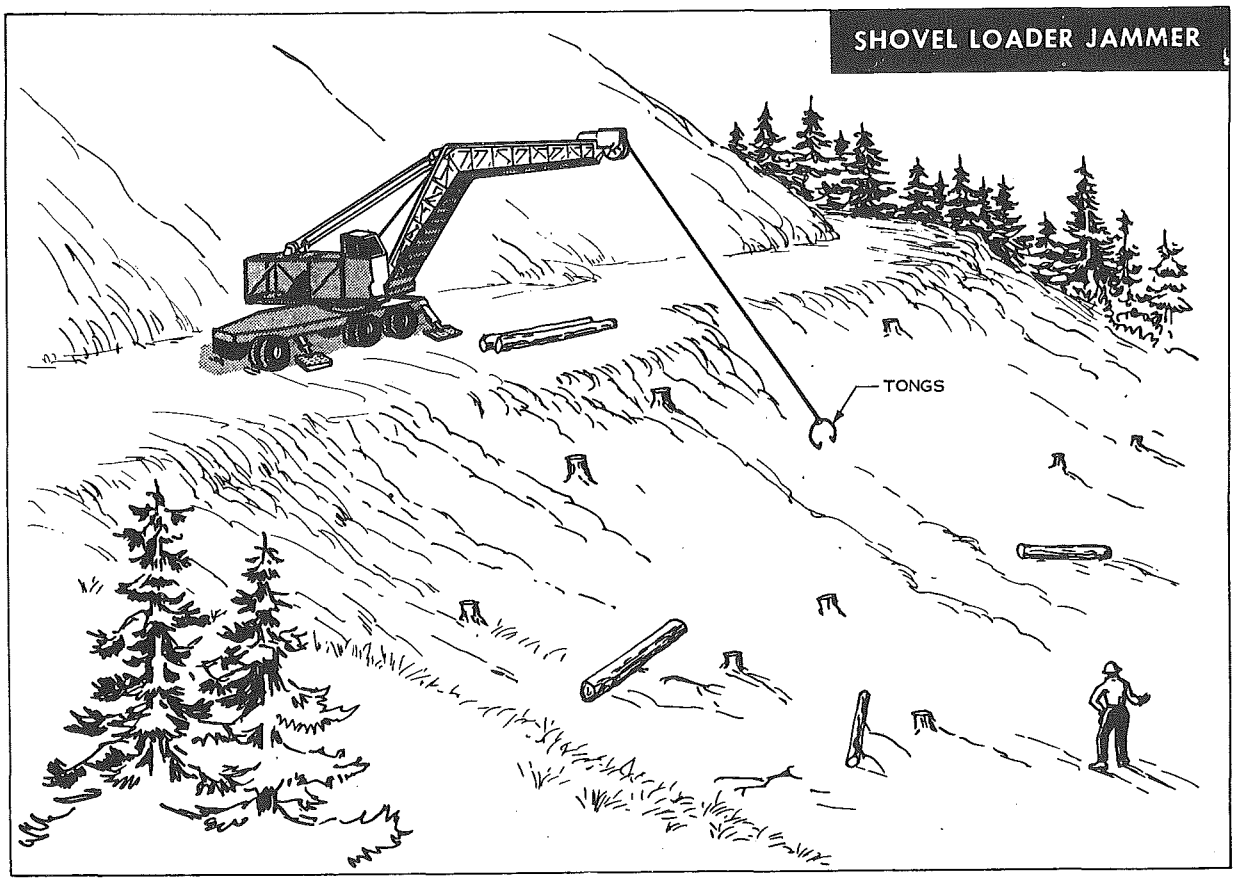


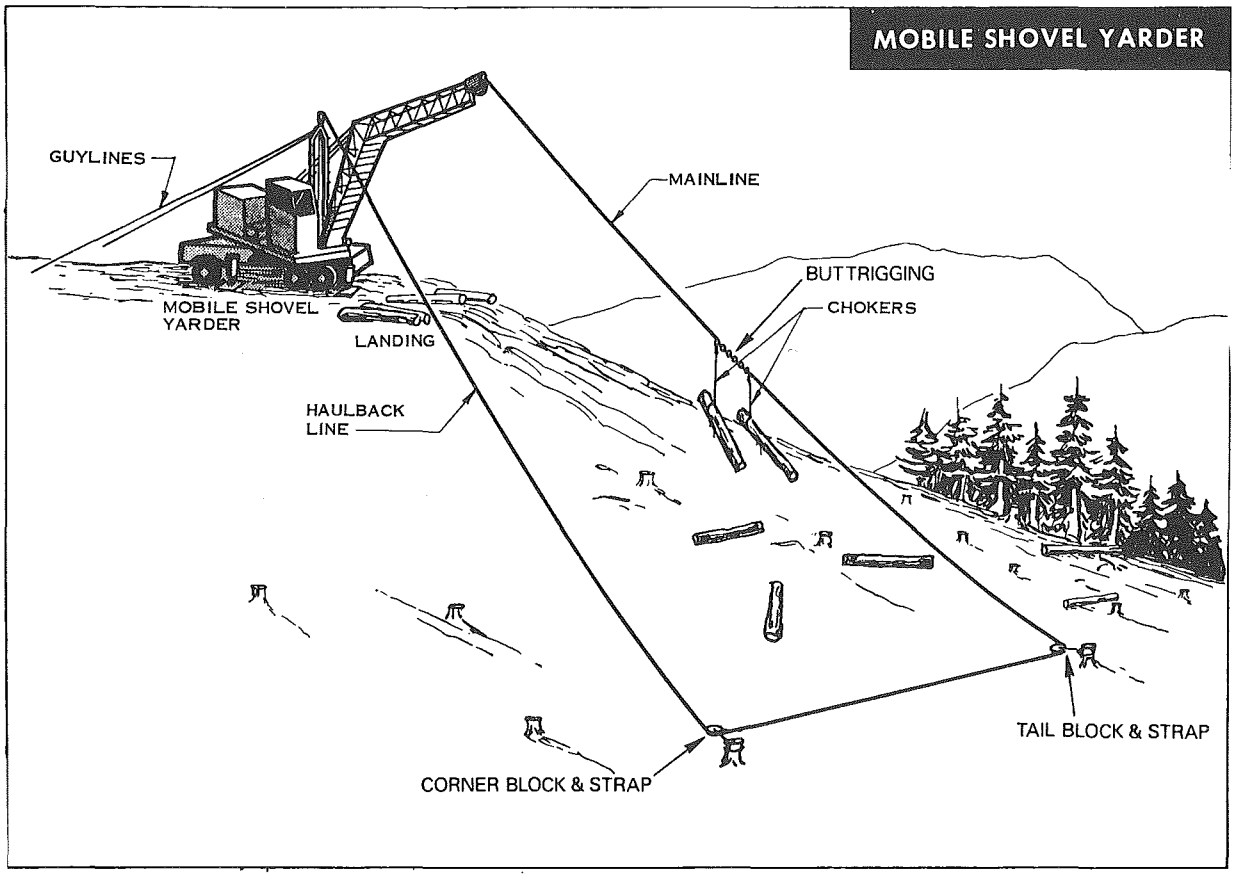
[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-565, filed 9/21/79.]

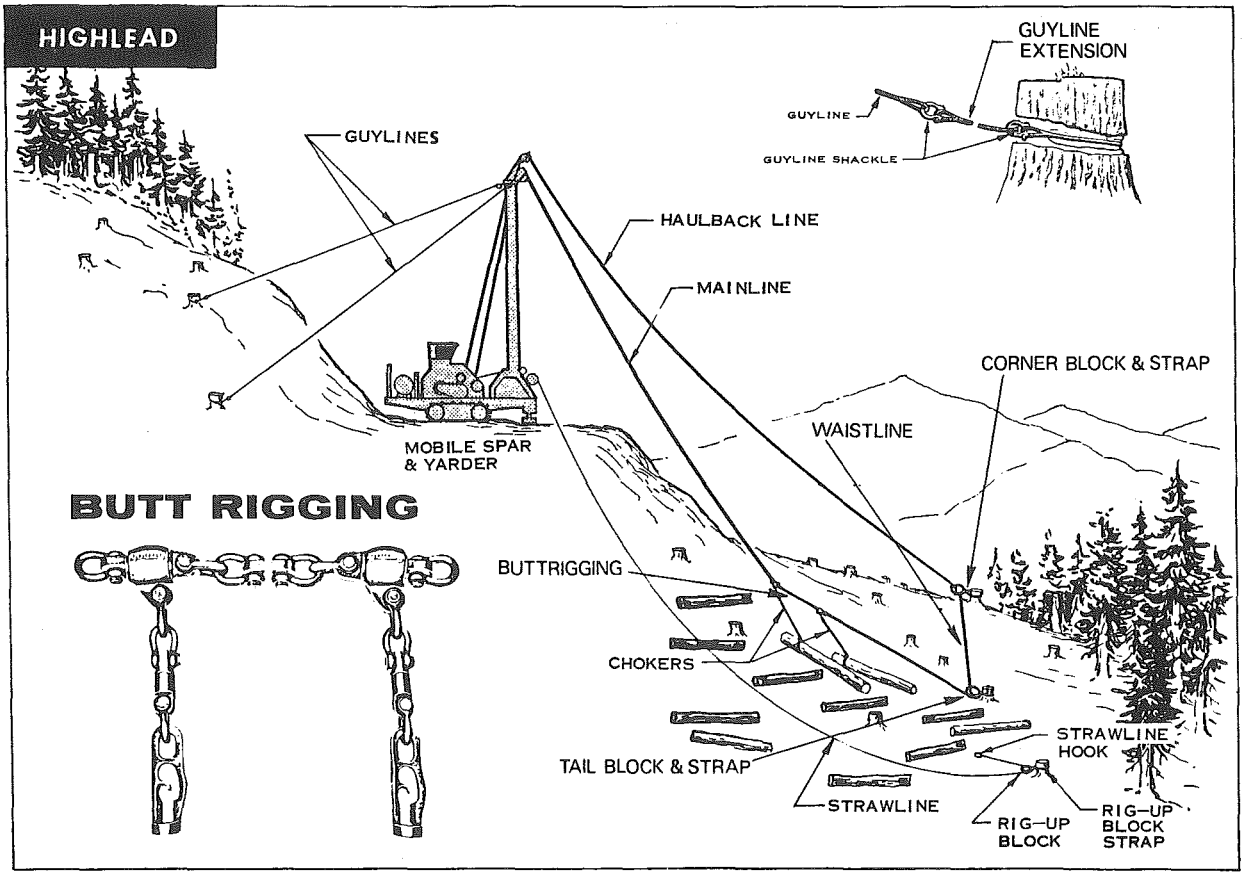
WAC 296-54-567 Motor truck log transportation--General requirements. (1) Prior to use, the operator shall make a complete daily inspection of the truck and trailer with particular attention to steering apparatus, lights and reflectors, brake boosters, brake hoses and connections, reaches, and hitches (couplings). The brakes shall be tested before and after movement of the vehicle. The operator shall submit a written list of necessary repairs to a person designated by the employer.

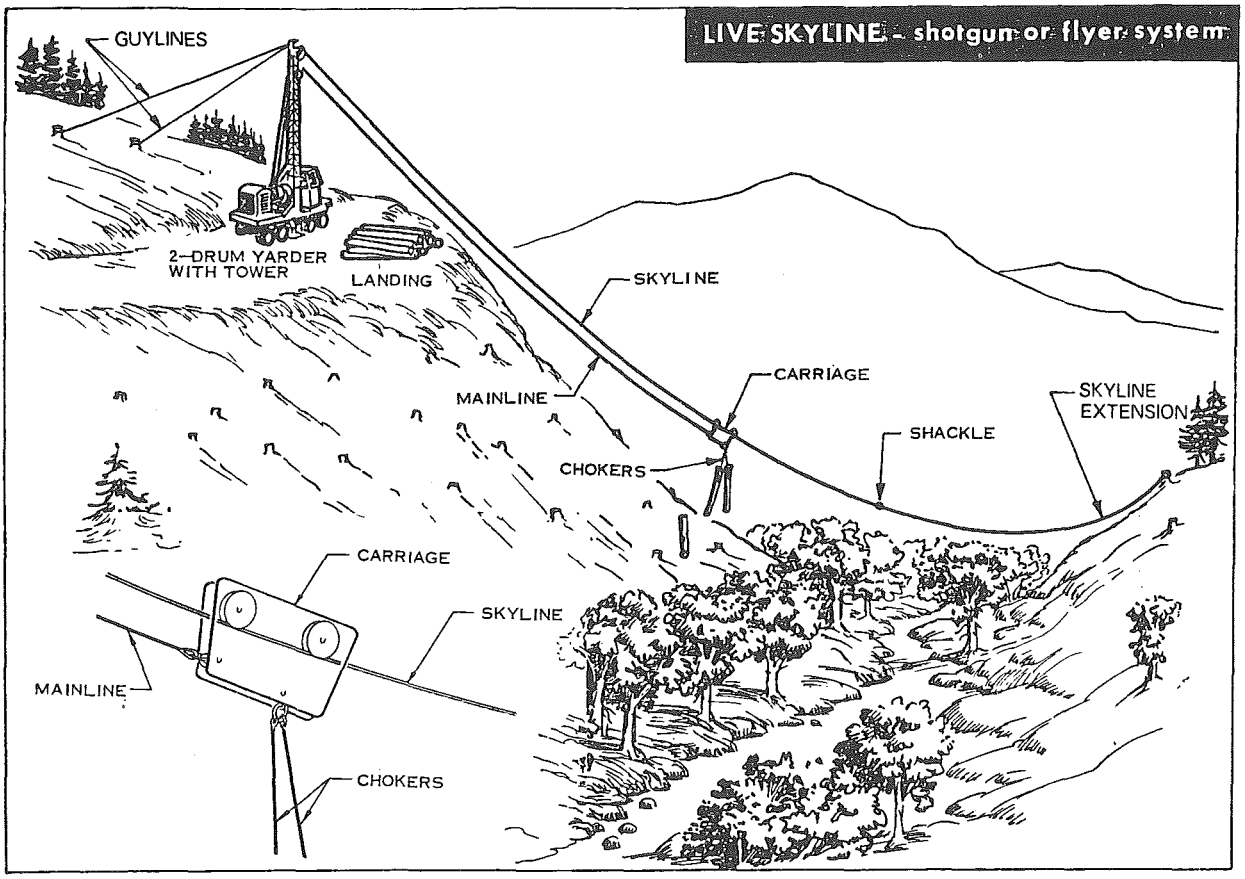
NOTE: See Figures No. 8-A through 8-P, for Illustrations of Various Types of Cable Logging Systems.

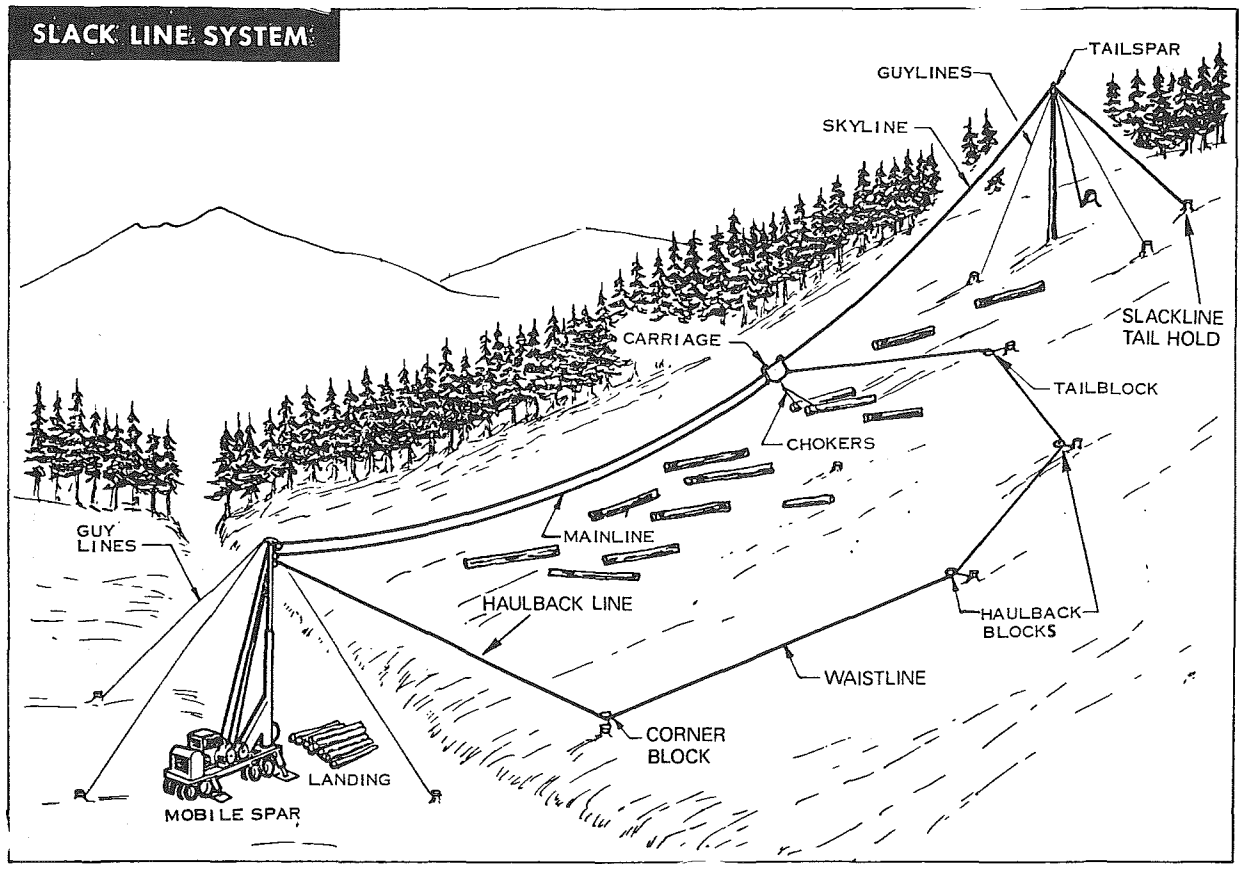
See Figures No. 8-Q through 8-U, for Illustrations of Whistle Signals used on Various Cable Logging Systems.

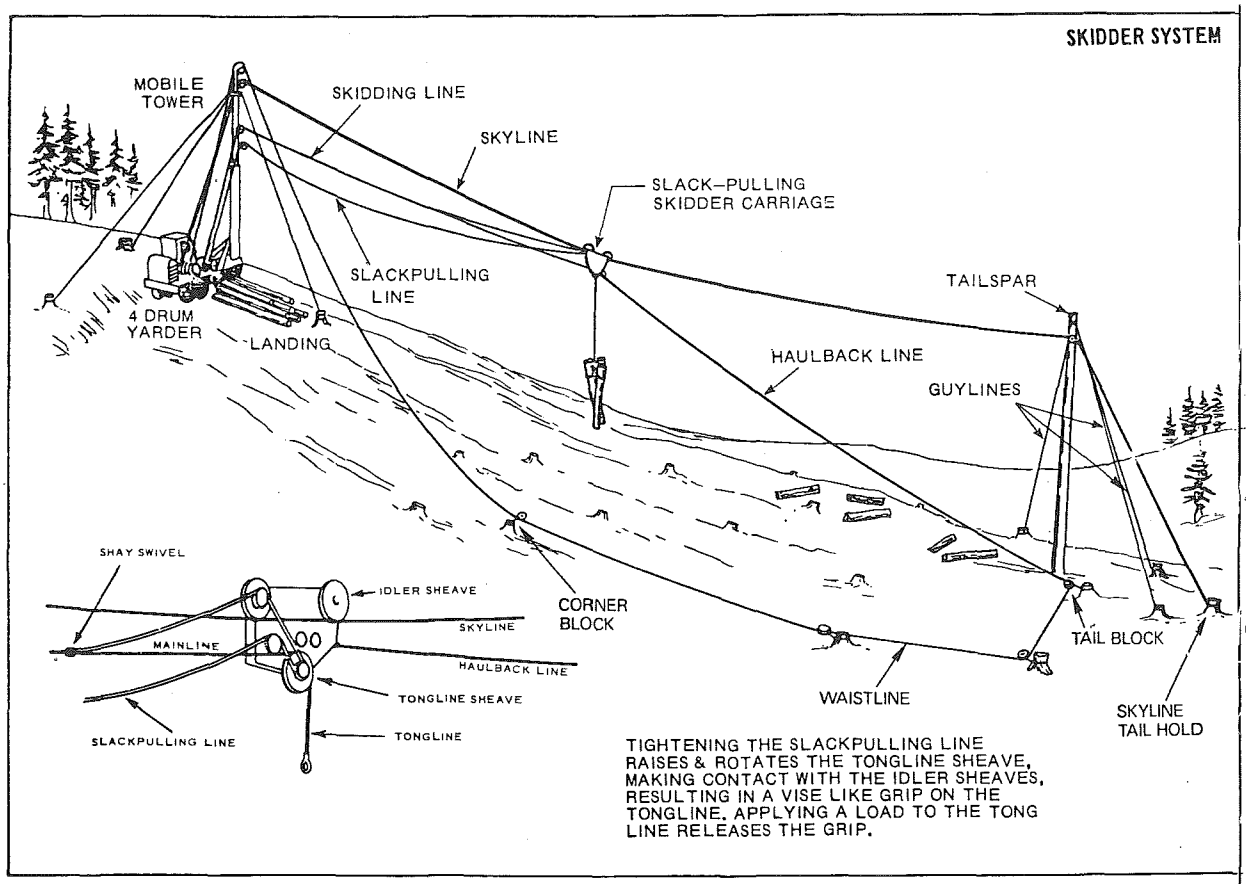

SHOVEL LOADER JAMMER
TONGS

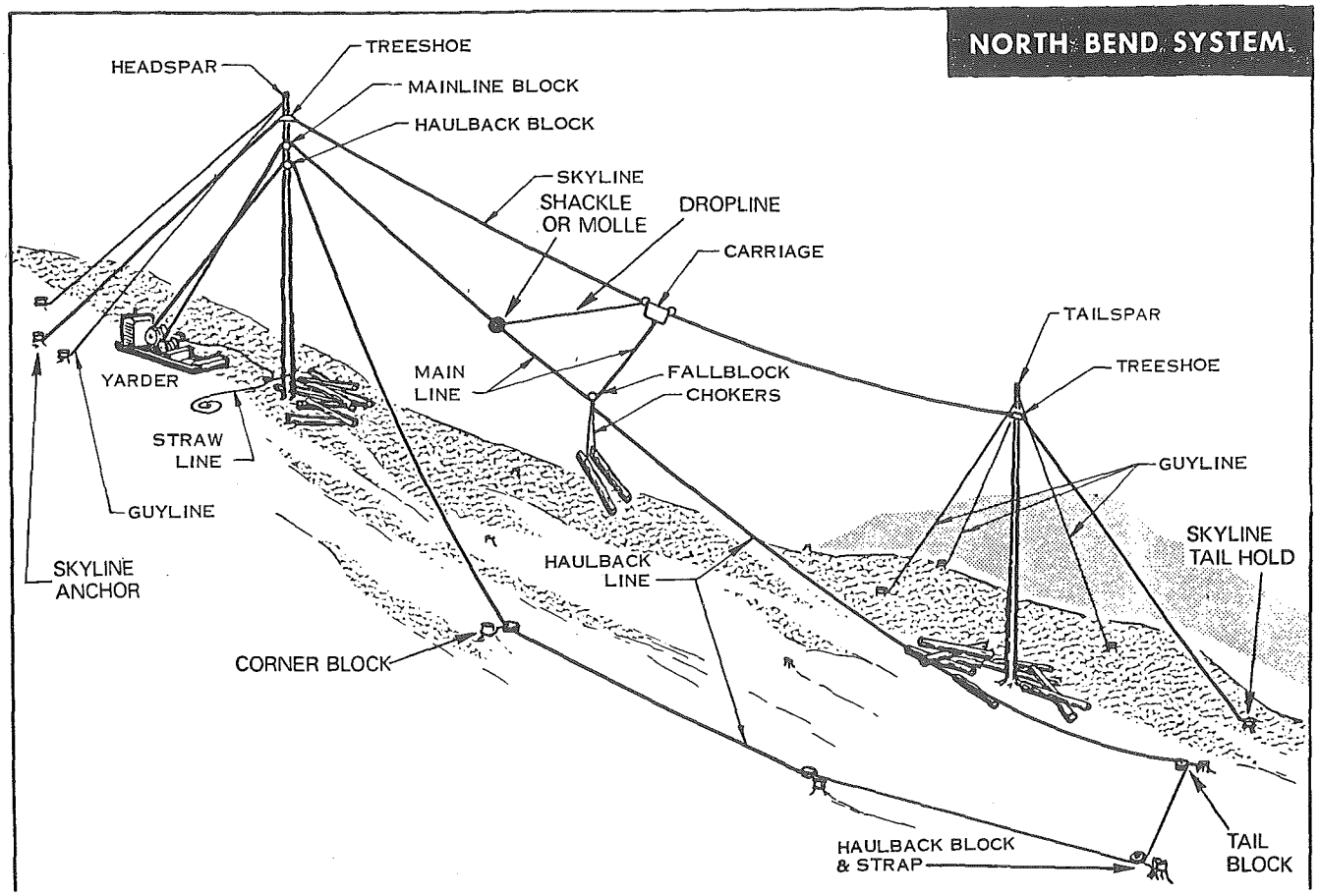

MOBILE SHOVEL YARDER
GUYLINES
MAINLINE
BUTTRIGGING
CHOKERS
MOBILE SHOVEL YARDER
LANDING
HAULBACK LINE
TAIL BLOCK & STRAP
CORNER BLOCK & STRAP

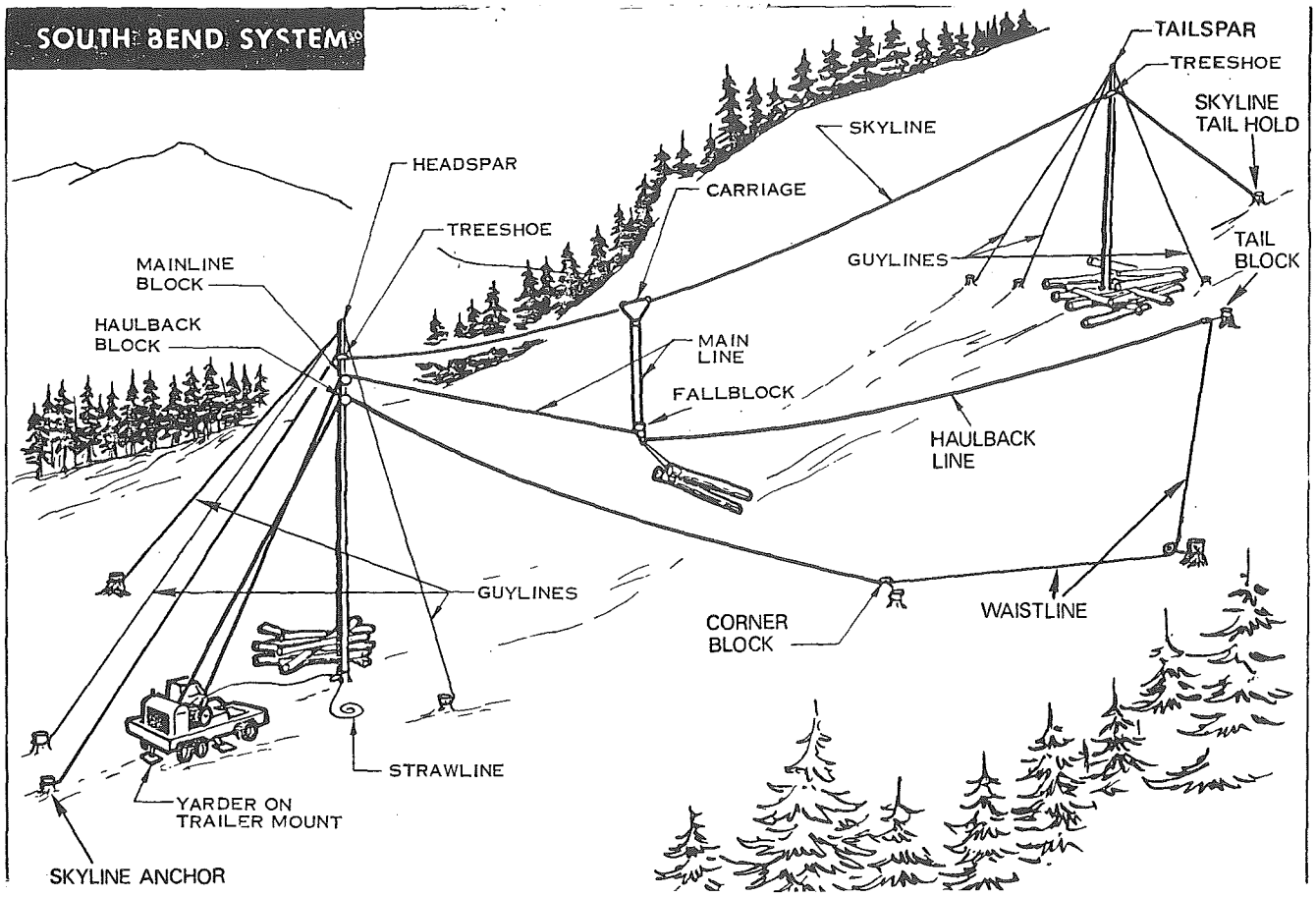

HIGHLEAD
GUYLINE EXTENSION
GUYLINE
GUYLINE SHACKLE
GUYLINES
HAULBACK LINE
MAINLINE
CORNER BLOCK & STRAP
WAISTLINE
MOBILE SPAR & YARDER
BUTT RIGGING
BUTTRIGGING
CHOKERS
TAIL BLOCK & STRAP
STRAWLINE HOOK
STRAWLINE
RIG-UP BLOCK
RIG-UP BLOCK STRAP


LIVE SKYLINE - shotgun or flyer system
GUYLINES
2-DRUM YARDER WITH TOWER
LANDING
SKYLINE
CARRIAGE
MAINLINE
SKYLINE EXTENSION
SHACKLE
CHOKERS
CARRIAGE
SKYLINE
MAINLINE
CHOKERS


SLACK LINE SYSTEM
TAILSPAR
GUYLINES
SKYLINE
SLACKLINE TAIL HOLD
CARRIAGE
TAILBLOCK
CHOKERS
GUY LINES
MAINLINE
HAULBACK LINE
HAULBACK BLOCKS
WAISTLINE
CORNER BLOCK
LANDING
MOBILE SPAR

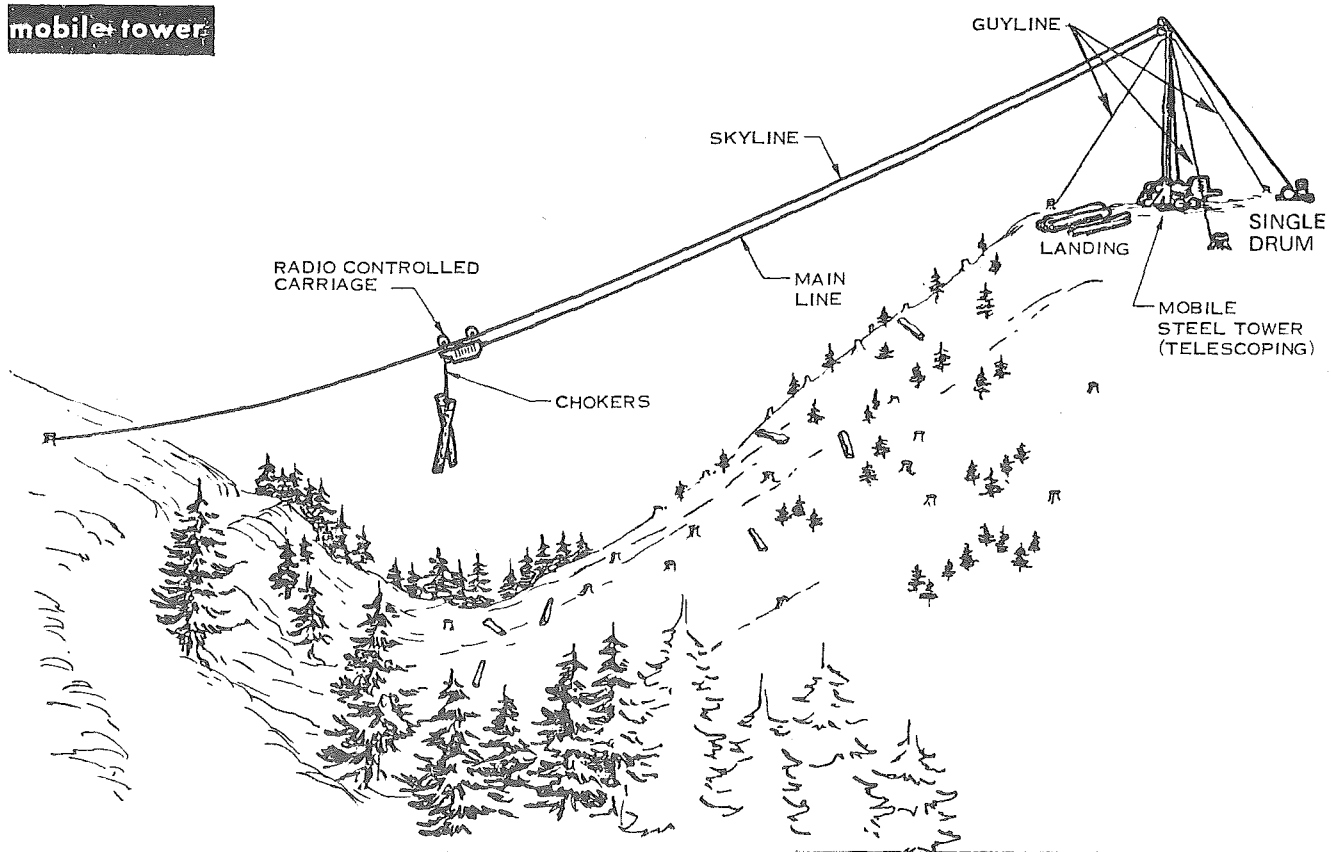

SKIDDER SYSTEM
MOBILE TOWER
SKIDDING LINE
SKYLINE
SLACK-PULLING SKIDDER CARRIAGE
SLACKPULLING LINE
TAILSPAR
4 DRUM YARDER
LANDING
HAULBACK LINE
GUYLINES
SHAY SWIVEL
IDLER SHEAVE
SKYLINE
MAINLINE
HAULBACK LINE
TONGLINE SHEAVE
SLACKPULLING LINE
TONGLINE
CORNER BLOCK
TAIL BLOCK
WAISTLINE
SKYLINE TAIL HOLD
TIGHTENING THE SLACKPULLING LINE RAISES & ROTATES THE TONGLINE SHEAVE, MAKING CONTACT WITH THE IDLER SHEAVES, RESULTING IN A VISE LIKE GRIP ON THE TONGLINE. APPLYING A LOAD TO THE TONG LINE RELEASES THE GRIP.


NORTH BEND SYSTEM
HEADSPAR
TREESHOE
MAINLINE BLOCK
HAULBACK BLOCK
SKYLINE
SHACKLE OR MOLLE
DROPLINE
CARRIAGE
TAILSPAR
TREESHOE
YARDER
MAIN LINE
FALLBLOCK
CHOKERS
STRAW LINE
GUYLINE
GUYLINE
SKYLINE TAIL HOLD
SKYLINE ANCHOR
HAULBACK LINE
CORNER BLOCK
HAULBACK BLOCK & STRAP
TAIL BLOCK

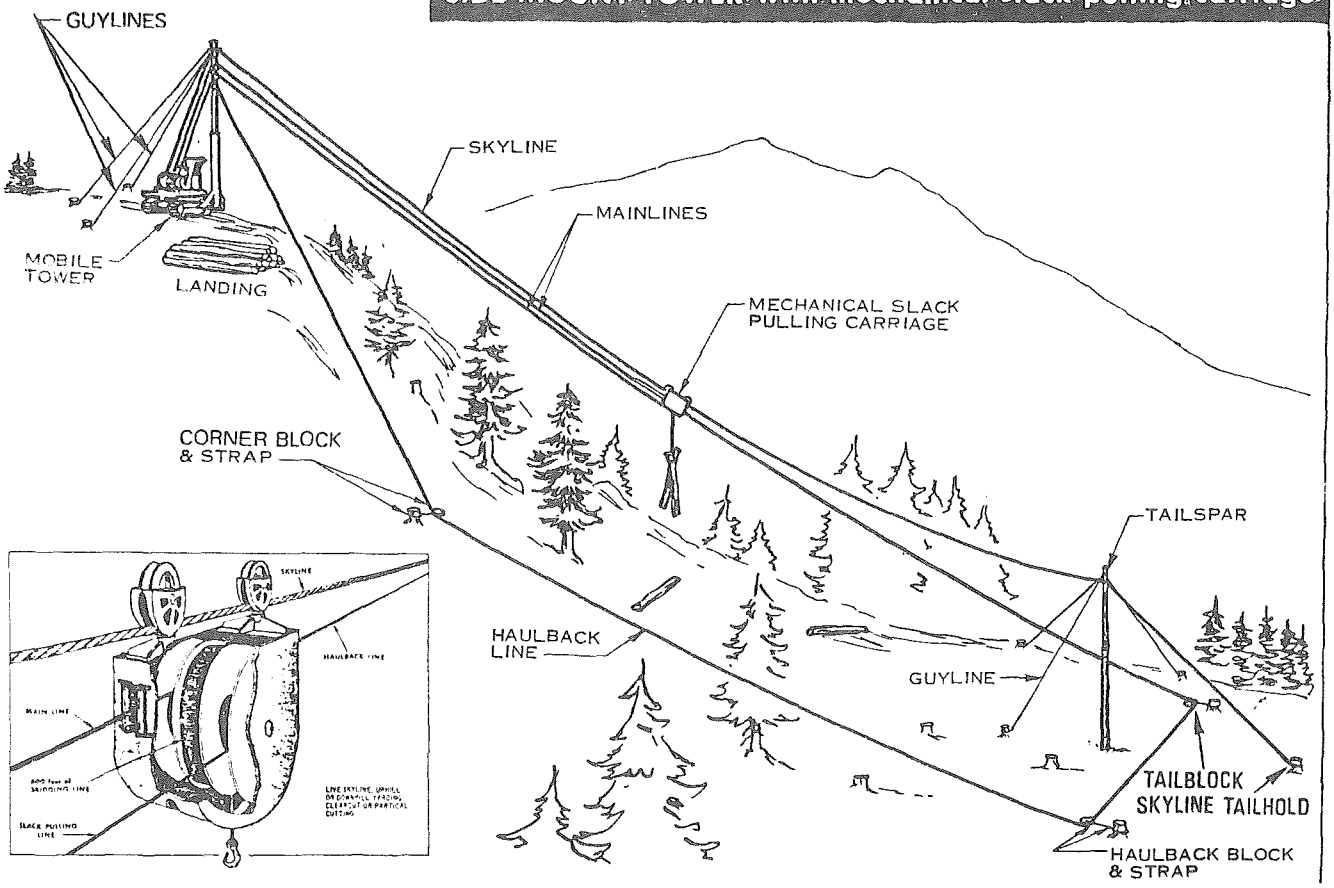

SOUTH BEND SYSTEM
TAILSPAR
TREESHOE
SKYLINE TAIL HOLD
SKYLINE
HEADSPAR
CARRIAGE
TREESHOE
GUYLINES
TAIL BLOCK
MAINLINE BLOCK
HAULBACK BLOCK
MAIN LINE
FALLBLOCK
HAULBACK LINE
GUYLINES
CORNER BLOCK
WAISTLINE
STRAWLINE
YARDER ON TRAILER MOUNT
SKYLINE ANCHOR

STANDING SKYLINE -- RADIO CONTROLLED CARRIAGE

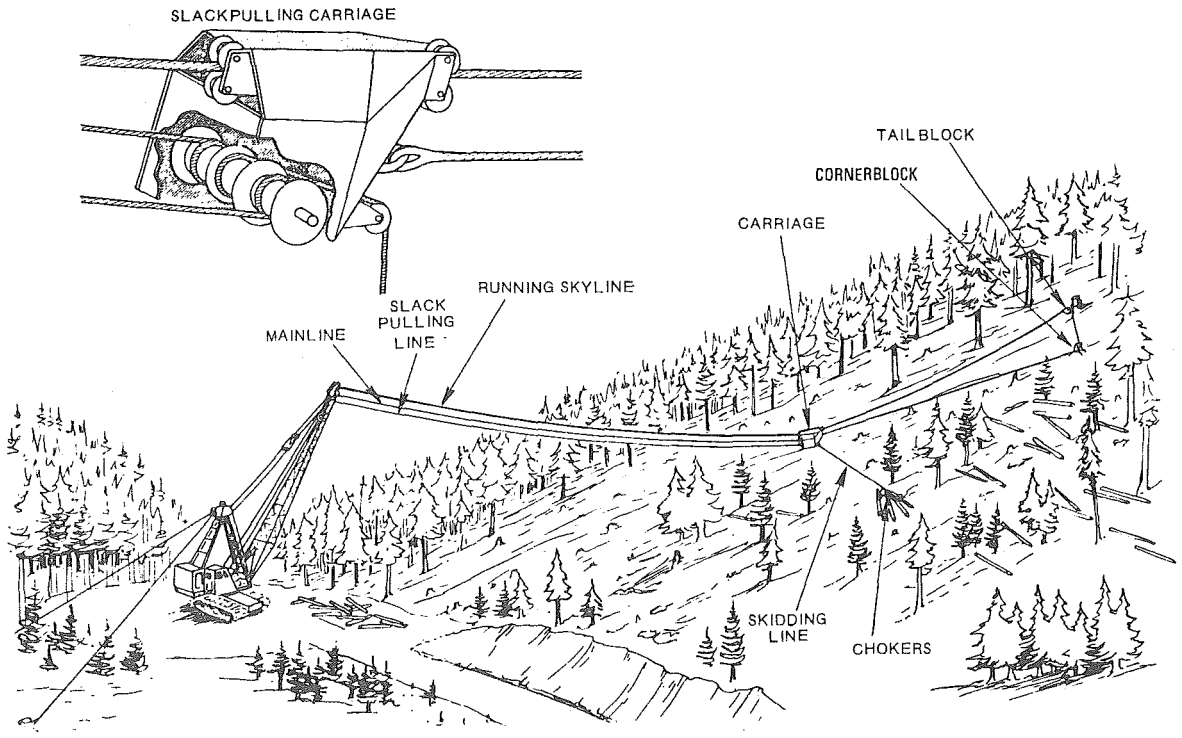
mobile tower



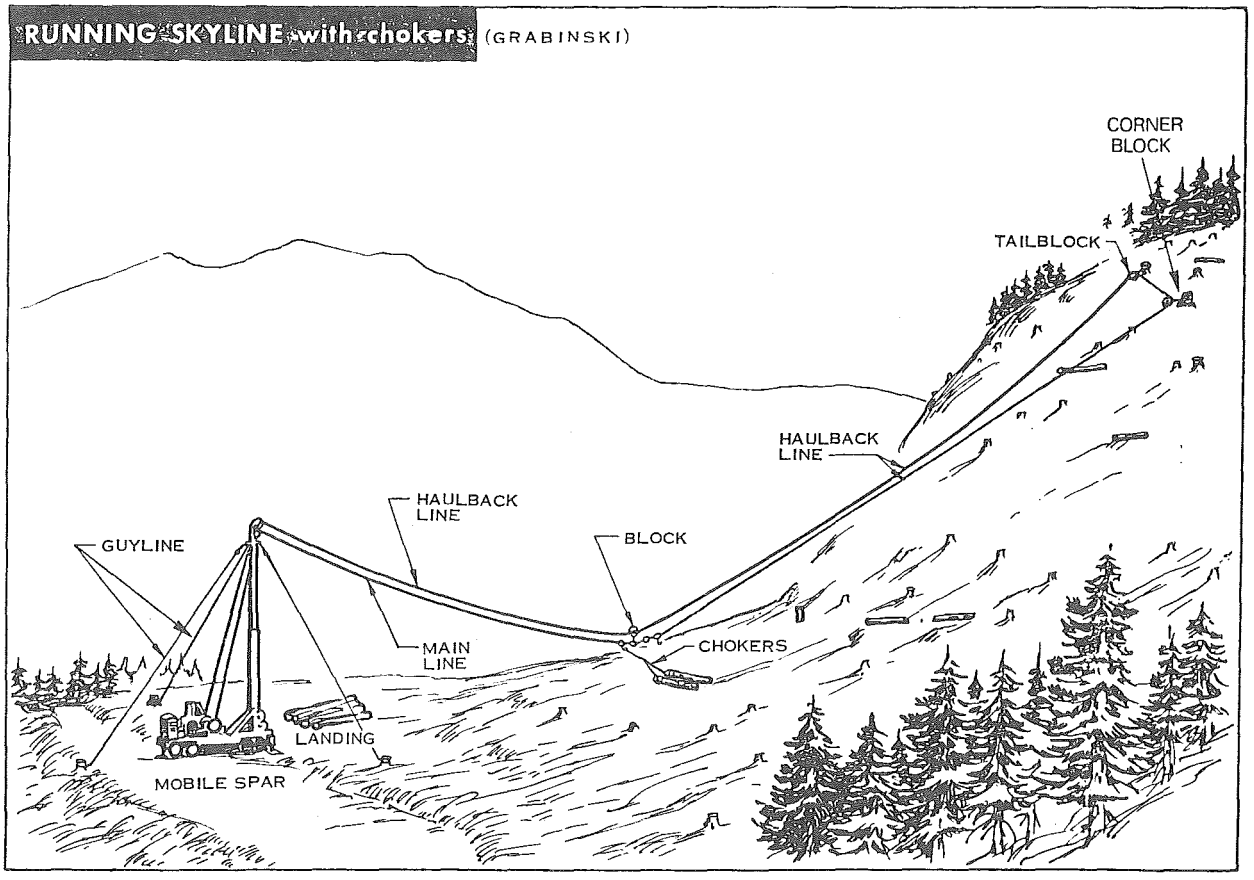
SIDE MOUNT TOWER with mechanical slack pulling carriage

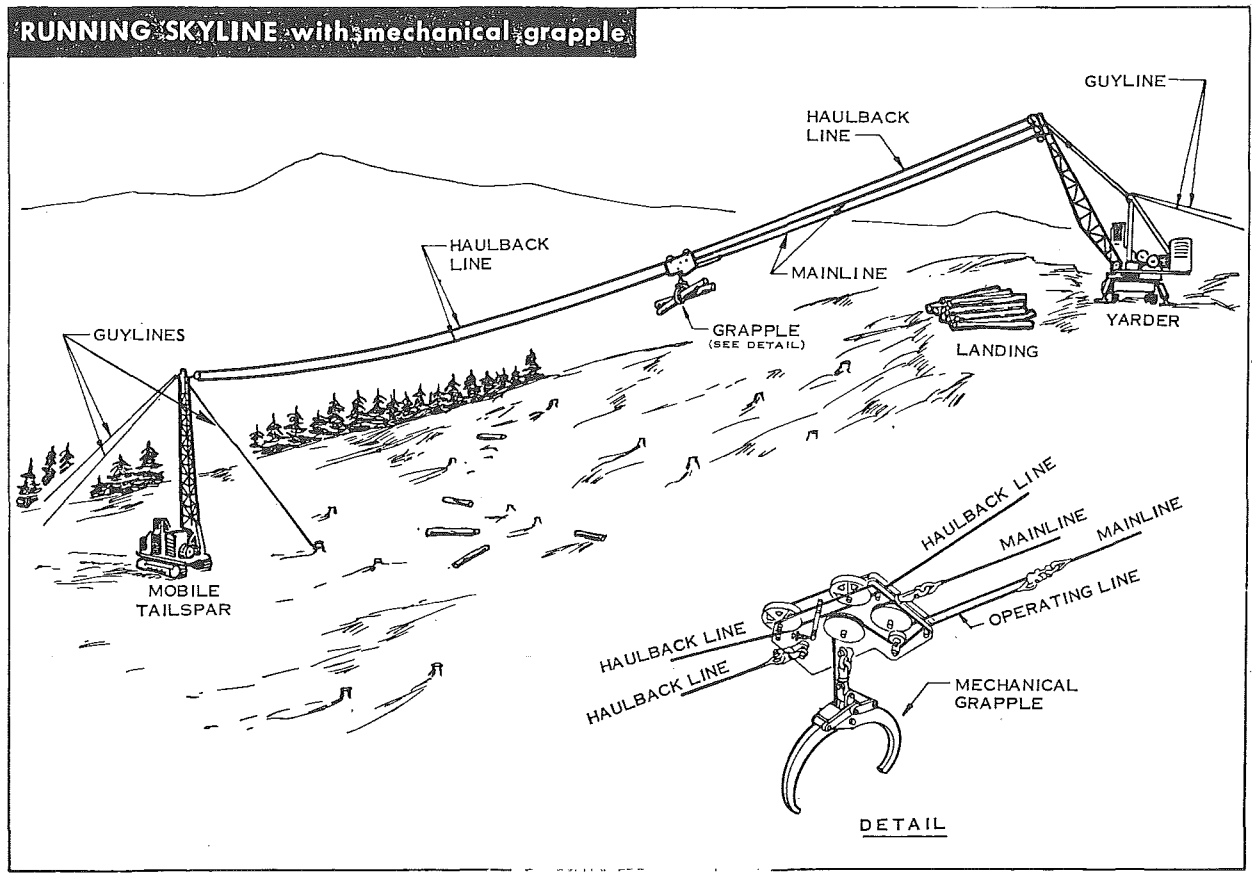


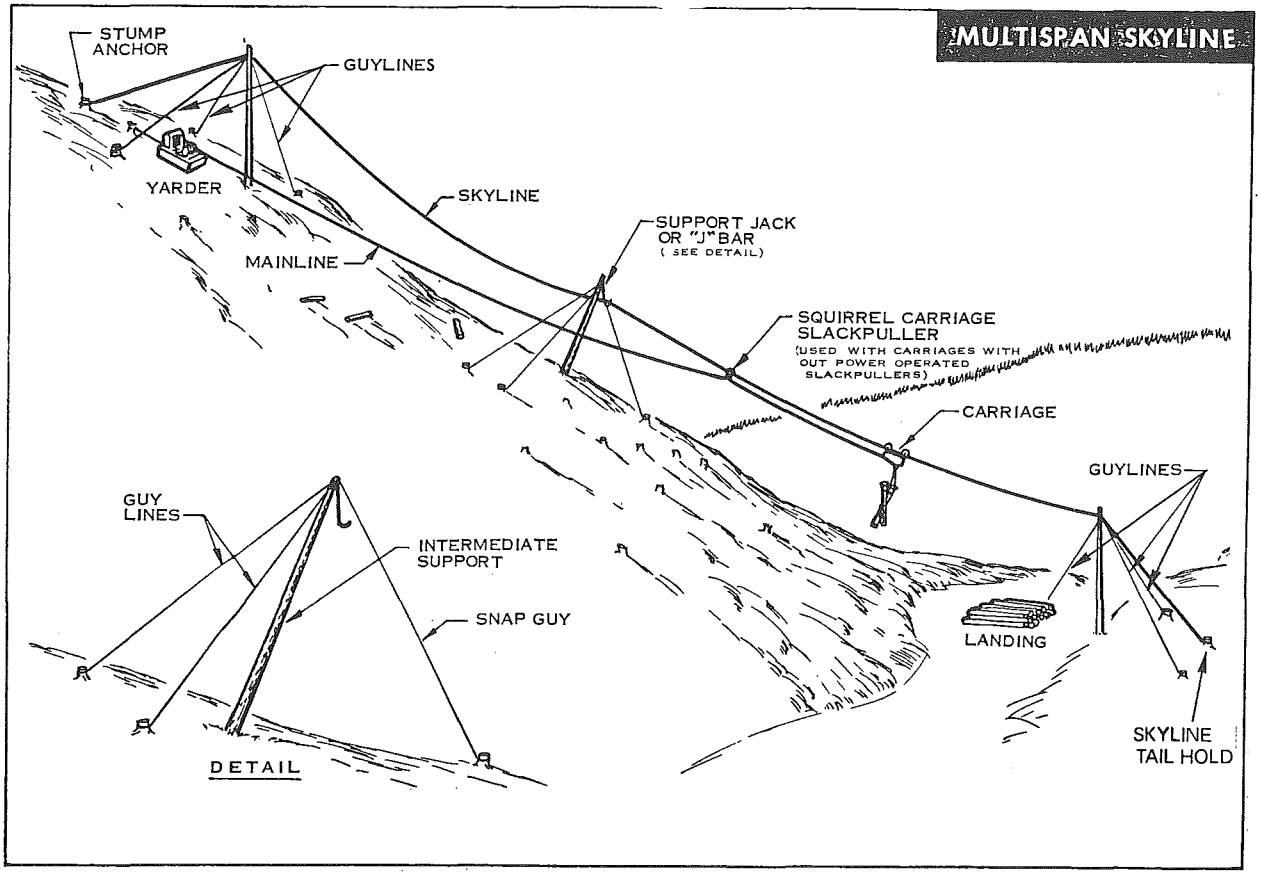
PARTIAL CUTTING WITH RUNNING SKYLINE

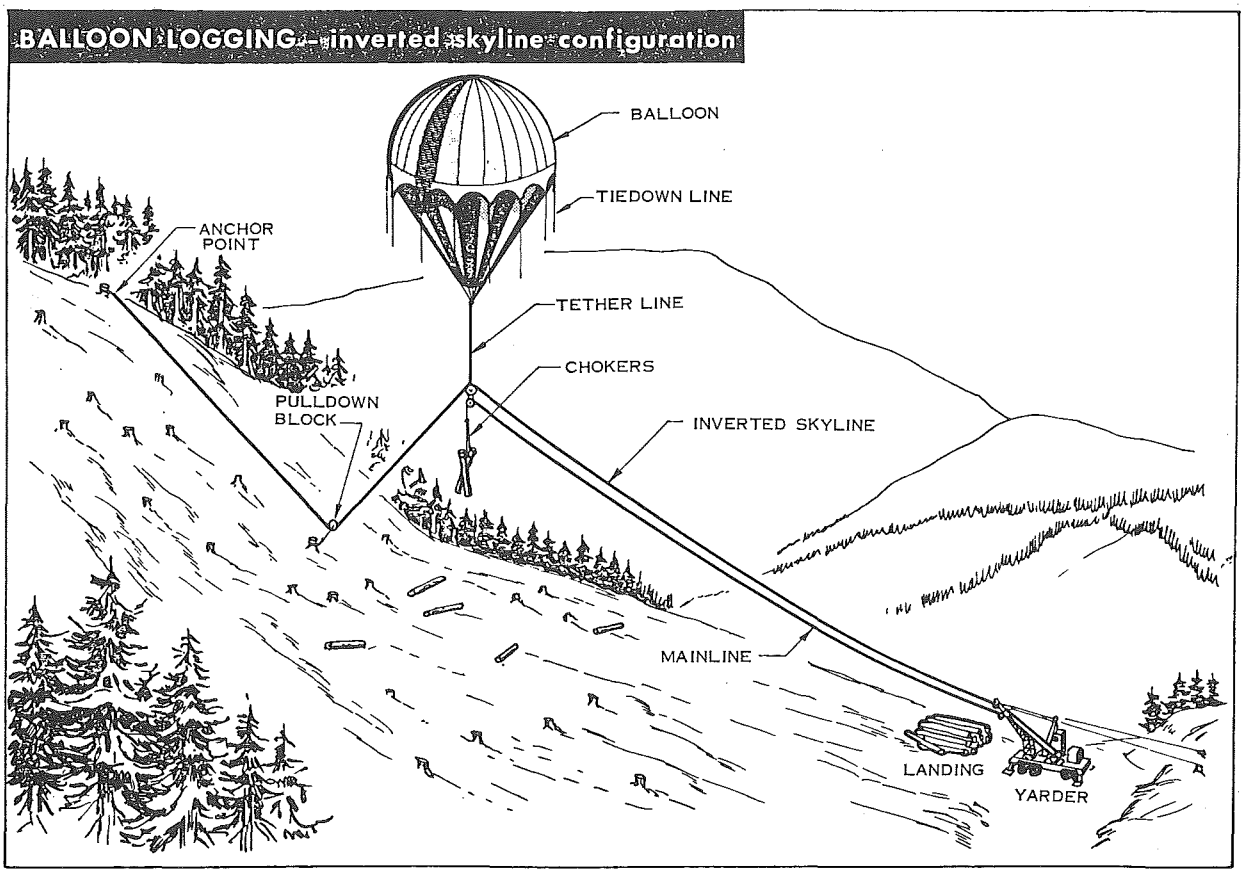


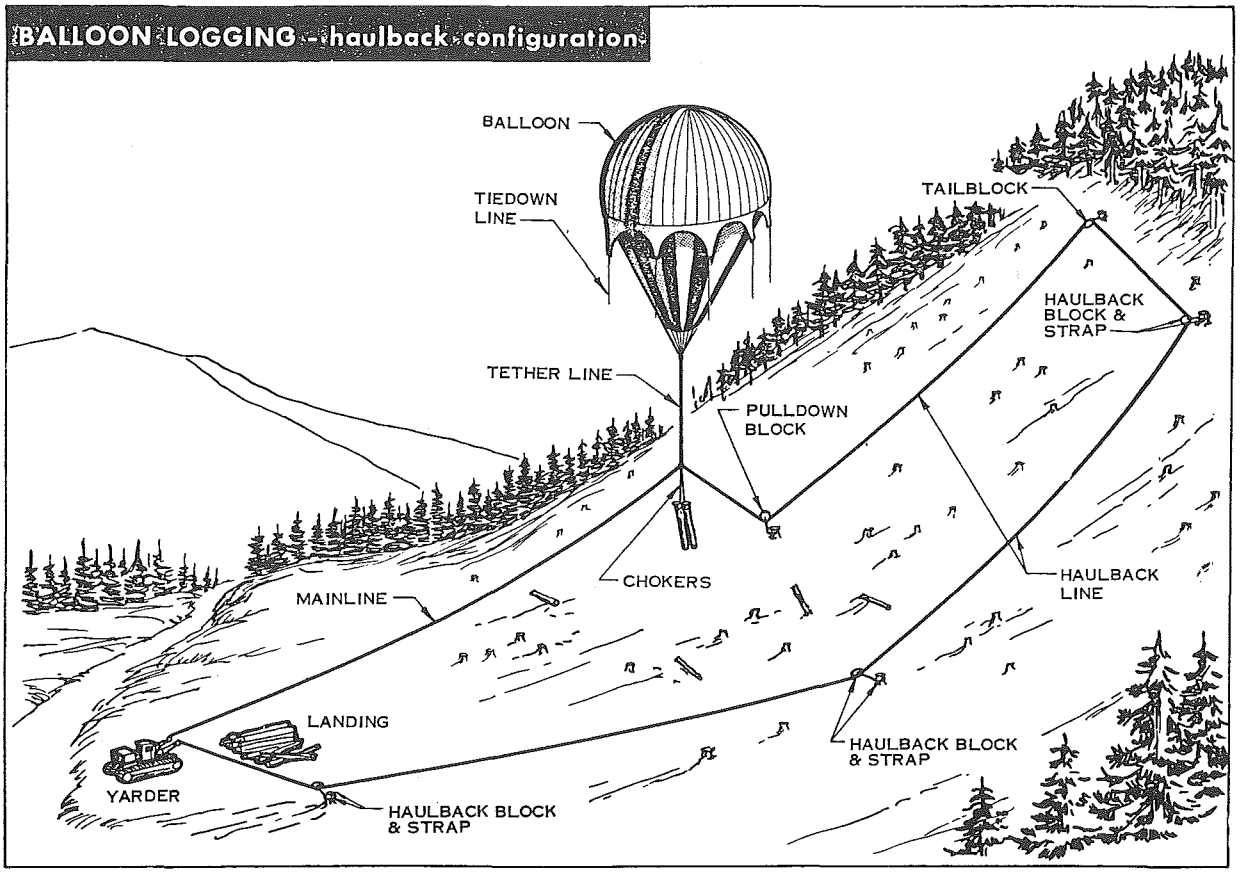
RUNNING SKYLINE with chokers (GRABINSKI)




RUNNING SKYLINE with mechanical grapple
GUYLINE
HAULBACK LINE
HAULBACK LINE
MAINLINE
GRAPPLE (SEE DETAIL)
YARDER
LANDING
GUYLINES
MOBILE TAILSPAR
HAULBACK LINE
MAINLINE
MAINLINE
OPERATING LINE
HAULBACK LINE
HAULBACK LINE
MECHANICAL GRAPPLE
DETAIL


MULTISPAN SKYLINE
STUMP ANCHOR
GUYLINES
YARDER
SKYLINE
SUPPORT JACK OR "J" BAR (SEE DETAIL)
MAINLINE
SQUIRREL CARRIAGE SLACKPULLER (USED WITH CARRIAGES WITH OUT POWER OPERATED SLACKPULLERS)
CARRIAGE
GUYLINES
GUY LINES
INTERMEDIATE SUPPORT
SNAP GUY
LANDING
SKYLINE TAIL HOLD
DETAIL


BALLOON LOGGING--inverted skyline configuration
BALLOON
TIEDOWN LINE
ANCHOR POINT
TETHER LINE
CHOKERS
PULLDOWN BLOCK
INVERTED SKYLINE
MAINLINE
LANDING
YARDER


BALLOON LOGGING--haulback configuration
BALLOON
TIEDOWN LINE
TAILBLOCK
HAULBACK BLOCK & STRAP
TETHER LINE
PULLDOWN BLOCK
CHOKERS
HAULBACK LINE
MAINLINE
LANDING
YARDER
HAULBACK BLOCK & STRAP
HAULBACK BLOCK & STRAP

HIGH LEAD LOGGING WHISTLE SIGNALS

— Means longer spacing between signals.

1 short	Stop all lines.
3 short—3 short	Ahead slow on mainline.
3 short	Ahead on mainline.
2 short	Ahead on haulback.
2 short—2 short	Ahead slow on haulback.
3 short—1 short	Ahead on strawline.
3 short—1 short—3 short	Ahead slow on strawline.
4 short or more	Slack mainline.
2 short—4 short	Slack haulback.
3 short—1 short—4 short	Slack strawline.
3 short—2 short	Standing tight line.
1 short—1 short	Tight line while lines are running, or break if running tight.
3 short	When rigging is in: strawline back on haulback.
3 short / plus "X" number of shorts	When rigging is in: indicates number of sections of strawline back on rigging.
3 short—1 short—2 short	Strawline back on rigging.
1 short	When rigging is in: Chaser inspect and repair rigging.
2 short	When rigging is in: no chokers back.
2 short—1 short / plus "X" number of shorts	Number of chokers back.
2 short—4 short	When rigging is in: slack haulback–hold all lines until 2 short blown.
3 medium	Hooker.
3 medium—4 short	Hooker and his crew.
5 long	Climber.
4 long	Foreman.
1 long—1 short	Start or stop work.
7 long—2 short	Man injured, call transportation and stretcher.
1 long—1 short repeated	Fire.
Grabinski System	
2 short—1 short	Slack mainline and haulback together.
2 long	Take off or put on rider block.

Figure 8-Q

SKIDDER WHISTLE SIGNALS

— Means longer spacing between signals.

1 short	Stops moving carriage–Stops or goes ahead on slack puller, as case may be, if carriage is stopped.
2 short	Go ahead on skidding line holding carriage.
1 short—2 short	Pick up skidding line, easy.
2 short—1 short	Shake up carriage to clear choker.
2 short—2 short	Ahead on receding line.
3 short	Ahead on carriage, holding at present level, using interlock.
3 short—3 short	Ahead easy on skidding line.
2 short—2 short—2 short	Slack skyline, cable down.
2 short—2 short—2 short —1 short	Pick up skyline, cable up.
2 short—2 short—4 short	Slack receding line.
2 short—4 short	Slack skidding line.
2 short—2 short—1 short	Tighten all lines.
1 short—4 short	Slack off slack puller.
1 short—2 short	Pick up slack puller when slack.
2 short—2 short / plus "X" number of shorts	When carriage is in: number of chokers wanted.
2 short—2 short—1 long	Bull choker.
1 short	When carriage is in: inspect butt rigging.
2 short—4 short / 1 short	For each additional ten feet of tong line.
1 long / plus "X" number of shorts	Number of coils of strawline wanted.
5 Medium	Tail or second rigger.
5 medium—4 short	Tail or second rigger and his crew.
2 medium	Skidder head rigger.
3 medium—4 short	Hooker and his crew.
2 long	Ahead on transfer.
2 long—4 short	Slack transfer
1 short—3 short	Ahead on carriage with slack puller line.
1 long	Ahead on strawline.
1 long—4 short	Slack strawline.
1 long—3 short	Ahead easy on strawline.
5 long	Climber.
4 long	Foreman.
1 long—1 short	Start or stop work.
7 long—2 short	Man injured, call transportation and stretcher.
1 long—1 short repeated	Fire.

Figure 8-R

SLACKLINE WHISTLE SIGNALS

— Means longer spacing between signals.

2 short—2 short—2 short —1 short	First cable up when road has been changed and tail hold made fast.
2 short—2 short—2 short	Drop skyline.
1 short	Stop any moving line.
1 long	When logging, slack skyline.

2 short	Ahead on skyline.
1 long—2 short	Ahead easy on skyline.
3 short	Ahead on skidding line, holding haulback.
3 short—3 short	Ahead easy on skidding line with slack haulback.
4 short	Slack skidding line.
2 short—2 short / 2 short—2 short	Ahead easy on haulback with slack skidding line.
2 short—2 short	Ahead on haulback.
2 short—2 short—4 short	Slack haulback.
2 short / 3 short	Pick up skyline and skid.
2 short / 2 short—2 short	Pick up skyline and skin.
3 short—1 short	When carriage is in: strawline back on haulback.
3 short—1 short—2 short	When carriage is in: strawline back on carriage.
3 short—1 short	When strawline is out: ahead on strawline.
3 short—2 short	Tight line.
3 short—1 short—4 short	Slack strawline.
3 short—1 short—3 short	Pull easy on strawline.
2 long	Ahead on transfer.
2 long—4 short	Slack transfer.
2 long—2 short—2 short	When carriage is in: transfer back on carriage.
1 long / plus "X" number of shorts	When carriage is in: number of coils.
2 short—2 short—1 short / plus "X" number of shorts	When carriage is in: number of chokers.
1 short	When carriage is in: inspect rigging, repair and send back.
2 short—2 short—4 short	When carriage is in: slack haulback and hold all lines until 1 short is blown–then send back.
3 short—3 short	When carriage is in: send back powder.
5 medium	Tail rigger.
5 medium—4 short	Tail rigger and his crew.
3 medium	Head hooker.
3 medium—4 short	Second hooker and his crew.
5 long	Climber.
4 long	Foreman.
1 long—1 short	Start or stop work.
7 long—2 short	Man injured, call transportation and stretcher.
1 long—1 short repeated	Fire.

Figure 8–S

RUNNING SKYLINE WHISTLE SIGNALS

— Means longer spacing between signals

1 short	Stop all moving lines
2 short	Skin carriage back
2 short—1 short	Slack haulback
2 short—2 short	Skin carriage easy
2 short—3 short	Standing tight line
1 short—2 short	Ahead on drop line
4 short	Slack drop line
1 short—4 short	Slack both mainlines
1 short—1 short	Stop drop line going up and move carriage forward
3 short	Move carriage forward
3 short—3 short	Move carriage forward easy
3 short—1 short	When strawline is out: Ahead on strawline
3 short—1 short—4 short	Slack strawline
3 short	When carriage is in: Strawline
3 short—X short	When carriage is in: Number sections
3 short—1 short—2 short	When carriage is in: Strawline back on carriage
2 short—X short	When carriage is in: Number of chokers
4 short	When carriage is in: Inspect rigging, repair and send back
1 short	When carriage is in: Hold all lines until 2 shorts, then send back
3 medium	Head hooker
3 medium—4 short	Hooker and his crew
4 long	Foreman
1 long—1 short	Start or stop work
7 long—2 short	Man injured; call transportation and stretcher
1 long—1 short (repeated)	Fire
3 short—1 long	Acknowledged by engineer to signify hazardous turn

Figure 8–T

TENSION SYSTEM SIGNALS

4	Release tension
1 short	Stop carriage and start unspooling tong line
1 short	Stop tong line
1 short	Resume unspooling tong line
1 short	Will stop any moving line or slack tong line when carriage is stopped
2 short—2 short	Go into interlock and go back

2 short—4 short	Slack haulback and let carriage down
After Turn is Set	
2 short	Go ahead on tong line
2 short—3 short	Go ahead easy on tong line
3 short	Go into interlock and take carriage to landing
3 short—3 short	Ahead on carriage easy
1 short—2 short	Increase tension on tong line when carriage is going in
short—1 short	Decrease tension on tong line when carriage is going in

Figure 8-U

(2) Any defective parts that would make the vehicle unsafe to operate, shall be replaced or repaired before the vehicle is placed in service.

(3) All motor vehicles operated on public roads shall comply with the rules of the regulatory body having jurisdiction. Motor vehicles used on roads not under the control of the state department of transportation, counties or cities shall be equipped with accessories necessary for a safe operation including operable head lamps and at least two tail lamps and brake lamps which shall emit a red light plainly visible from a distance of one thousand feet to the rear and shall also have two reflectors visible at night from three hundred fifty feet when directly in front of properly adjusted motor vehicle head lamps.

(4) Truck tires worn beyond a point of safety or not meeting the safety requirements of the jurisdiction having authority as to tread wear and tire conditions, shall not be used.

(5) The driver shall do everything reasonably possible to keep his truck under control at all times and shall not operate in excess of a speed at which he can stop the truck in one-half the distance between him and the range of unobstructed vision.

(6) The area between the truck frame members, extending from the cab rearward as far as necessary to provide a safe work area, shall be covered with suitable nonslip type material. Log trucks which have logs scaled at stations shall be provided with a platform on each side extending outward from the frame members at least eighteen inches, and shall be eighteen inches long or as near this dimension as the design of the truck will permit. The treading surface of the platforms shall be of nonslip type material and the platform shall be capable of safely supporting a five hundred pound load.

(7) To protect the operator of vehicles from loads, a substantial bulkhead shall be provided behind the cab which shall extend up to the height of the cab.

(8) If logs must be scaled or branded while the loading operation is being carried on, the loading operation shall cease while the scaling or branding is being done so that the scaler or person doing the branding is not subjected to any hazards created by the loading operation.

(9) When at the dump or reload or where logs are scaled or branded on the truck, the logs shall be scaled or branded before the binders are released.

(10) All vehicles, where vision of the operator in the direction of travel is impaired by the load or vehicle, shall be moved only on a signal from a worker who shall have a clear view in the direction in which the vehicle is to be moved.

(11) Where a bridge or other roadway structure is posted with a load limit sign, log truck drivers or operators of other heavy equipment are prohibited from driving a load in excess of the posted limit over such structure.

(12) Persons shall be allowed to ride only when in the cab of the log truck.

(13) All trucks shall keep to the right side of the road except where the road is plainly and adequately posted for left side travel.

(14) A method shall be provided to assure that the trailer will remain mounted on the truck while driving on highways or logging roads.

(15) When trucks are towed on any road, the person guiding the vehicle being towed shall, by prearranged signals, govern the speed of travel. The towing of vehicles shall be done at a reasonable speed and in a prudent manner. A tow cable or chain over fifteen feet in length shall have a white flag affixed at the approximate center, however, it is recommended that a rigid tow bar be used for this purpose.

(16) All air lines, air chambers and systems shall be free of leaks and be able to maintain air pressure on constant brake application with the motor shut-off for one minute, or air pressure does not drop more than 4 p.s.i. in one minute with the engine running at idling speed and the service brake applied.

(17) All rubber-tired motor vehicles shall be equipped with fenders. Mud flaps may be used in lieu of fenders whenever the motor vehicle is not designed for fenders.

(18) Seat belts and anchorages meeting the requirements of 49 CFR Part 571 (D.O.T. Federal Motor Vehicle Safety Standards) shall be installed and used in all motor vehicles.

(19) All trucks shall be equipped with doors with operable latches, or a safety bar or strap shall be provided in lieu of the door.

(20) All trucks shall be equipped with a means to protect the operator from inclement weather.

(21) Log trucks shall not approach a landing while there is danger from incoming logs.

(22) Log truck drivers shall stop their vehicle, dismount, check and tighten loose load wrappers and binders, either just before or immediately after leaving a private road to enter a public road. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-567, filed 9/21/79.]

WAC 296-54-569 Motor truck log transportation—Brake requirements. (1) Motor logging trucks and trailers shall be equipped with brakes or other control methods which will safely stop and hold the maximum load on the maximum grade. When unattended trucks are

parked on a grade, in addition to setting the brakes, the wheels shall be chocked or blocked.

(2) Logging truck tractors having more than two axles need not have brakes on the steering axle wheels.

(3) All trucks equipped with air brakes shall be also equipped with a readily visual or audible low air pressure warning device in good working order.

(4) Engine-type brakes shall be considered as auxiliary controls, not a substitute for the requirement for a service brake system.

(5) Brake drums shall be maintained free of cracks, breaks or defects. Defective brake drums, cans, shoes or air lines shall be immediately repaired or replaced. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-569, filed 9/21/79.]

WAC 296-54-571 Motor truck log transportation--Trailer hitches and safety chains. (1) All log truck and trailer combinations shall be equipped with approved hitches (couplings) which shall:

(a) Be capable of withstanding, in any direction, the potential stresses imposed;

(b) Be of a design which would not be rendered inoperative by dirt and debris and shall be locked securely and positively;

(c) Be attached to the truck frame or extension of the truck frame by means of not less than four machine bolts and nuts (120,000 p.s.i. material or better) 3/4-inch diameter or larger, secured by lock nuts. Other means of attachment furnishing strength equal to or greater than the above may be accepted if of approved design and application; and

(d) Hitches (couplings) or parts that are broken, cracked, excessively worn, or otherwise defective hitches shall be repaired before use.

(2) Each log truck and trailer combination or log truck and independent trailer combination shall be provided with two or more safety chains or cables with a rated breaking strength of not less than the gross weight of the towed vehicle, be capable of holding the trailer in line in case of failure of the hitch assembly, and be as follows:

(a) Be permanently attached to the frame of the truck or an extension of the truck frame;

(b) Form a separate continuous connection between the truck frame or extension of the truck frame and the reach or trailer;

(c) Be attached not more than twelve inches from the eye of the reach or trailer;

(d) Be of a length short enough to prevent the trailer reach or tongue from contacting the ground in the event of disengagement from the truck;

(e) Be of a design to provide a positive connection that cannot be rendered inoperative by any condition of use or exposure.

(3) Safety chains and cables shall be replaced immediately if they contain cut, cracked, or excessively worn links, or frayed, stranded, or otherwise defective wire rope.

(4) Butt welding of safety chain links to reach truck frame, or extension of truck frame is prohibited.

(5) Cold-shuts may be used in safety chains provided they are welded shut and one size larger than the chain being used.

(6) There shall be no welding or hole drilling in frames on which the manufacturer recommends this not be done. [Statutory Authority: RCW 49.17.040, 49.17-.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-571, filed 9/21/79.]

WAC 296-54-573 Motor truck log transportation--Reaches and bunks. (1) Log trailers shall be connected to tractors by reaches of a size and strength to withstand all normal imposed stresses. Spliced wooden reaches shall not be used. Proper repair of metal reaches by welding will be permitted if done by a qualified welder.

(2) Hand-holds or other facilities shall be installed on trailer tongues or trailer reaches if workers are required to manually assist in coupling them to their tractors or trucks.

(3) A positive means, other than clamp and in addition to the clamp, shall be installed on the reach of log truck trailers when the trailers are being towed without a load.

(4) Persons shall never enter the area below a suspended load of logs. At dumps where the load must remain suspended above the bunks until the truck is moved away, and when the trailer is the type with a compensating pin in the reach, a method shall be utilized which will allow the trailer to be towed away from the danger area.

(5) The reaches of unloaded trailers being towed shall be provided with and use a minimum one-inch pin near the end or an equally effective means to prevent pulling or stripping through the tunnel.

(6) Reach locks, clamps, or tighteners shall be of the type that will securely lock the reach in the tunnel.

(7) No reach of less than the maximum size usable in the tunnel of a trailer shall be permitted.

(8) Alteration of trailer tunnel to permit reduction of reach size is prohibited.

(9) Every truck or truck and trailer engaged in the transportation of logs loaded lengthwise, shall be equipped with bunks and chock blocks or stakes.

(10) Log bunks or any part of bunk assembly bent enough to cause bunks to bind, shall be straightened. Bunks shall be sufficiently sharp to prevent logs from slipping. Trip type stakes shall be properly secured and locked in a manner which will prevent them from accidentally tripping or falling.

(11) All trucks with swivel type bunks shall have bunk locks or an equivalent system of holding the bunks in place while loading logs.

(12) The bunks or bolsters of any truck or trailer shall be either curved upward or straight. Bunks with ends lower than their centers are prohibited.

(13) Sufficient clearance between the bunk and bunk rider shall be maintained to prevent bunk binding.

(14) Trailer bunks shall be provided with a false or tilt bunk. The channel of the bunk shall be kept reasonably free of debris.

(15) Stakes and stake extensions shall be installed and maintained so that the angle between bunks and stakes (and extensions if used) shall not exceed ninety degrees when loaded.

(16) Frames, reaches, bunks and running gear of log trucks shall be maintained free of cracks, breaks and defects. If defects are found, they shall be immediately repaired or the part replaced. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-573, filed 9/21/79.]

WAC 296-54-575 Motor truck log transportation--Stakes, stake extensions and chock blocks. (1) Trucks and trailers shall be equipped with bunk stakes or chock blocks of strength and sized material to perform their intended function.

(2) The linkage used to support the stakes or chocks must be of adequate size and strength to withstand the maximum imposed impact load. Molles or cold shuts are prohibited in chains or cables used for linkage.

(3) Stake chains or cables shall be equal to or better than "high test" steel chain or "plow steel" wire rope, and shall be of a size necessary to meet the requirements of a safe working load of not less than six thousand six hundred pounds. (3/8-inch alloy chain, 7/16-inch high test chain of welded link construction, and 5/8 inch improved plow steel cable in 6 x 19 and 6 x 37 construction meet this requirement.)

(4) Bunk chains containing cut, cracked, excessively worn, or otherwise defective links, shall be immediately removed from service. Molles, cold-shuts (welded or otherwise), or bolts are not permitted in bunk chains.

(5) The use of frayed, stranded, or otherwise defective wire rope for chock block cable or stake straps is prohibited.

(6) Only chain links approved for welding (and properly welded) or approved repair links which will develop a strength equivalent to the chain, are permissible for repairs or attachments to stake chains or binder chains.

(7) Chains or cables used to secure stakes or chock blocks shall be secured in a manner which will not necessitate hammering directly on them to release the stakes or blocks. Keyhole slots and similar methods of securing chains are prohibited.

(8) Deformed or defective stakes, stake securing or stake locking devices, or bunks shall be immediately repaired or removed from service. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-575, filed 9/21/79.]

WAC 296-54-577 Motor truck log transportation--Wrappers and binders. (1) On log trucks equipped with stakes, the following requirements shall apply:

(a) In the hauling of a one log load, one wrapper chain or cable shall be required and secured to the rear bunk. The log shall be properly blocked or secured in a manner which will prevent it from rolling or shifting. An additional wrapper secured to the front bunk is optional.

(b) In the hauling of two log loads, not less than two wrapper chains or cables shall be used to secure the load. The logs shall be properly blocked to prevent them from rolling or shifting.

(c) On loads consisting of three or four logs not over forty-four feet in length, the load shall be secured by not less than two properly spaced wrapper chains or cables. Ends of short logs not secured by such wrappers shall be secured with extra wrappers. If any log is over forty-four feet in length, the load shall be secured by not less than three properly spaced wrappers.

(d) Loads consisting of five or more logs, when the logs are all seventeen feet or less in length, shall be secured by not less than two properly spaced wrappers. Loads consisting of five or more logs, when any log is over seventeen feet in length, shall be secured by not less than three properly spaced wrappers.

(2) On log trucks equipped with chock blocks, the following requirements shall apply:

(a) In the hauling of a one log load, one wrapper chain or cable shall be required and secured to the rear bunk and the log shall be properly blocked in a manner to prevent it from rolling or shifting.

(b) One additional wrapper chain or cable shall be required on log trucks using chock blocks over and above the requirements in subdivisions (1) (c) and (d) of this section.

(3) In the case of short logs loaded crosswise, the following method of securing the load shall be used if the truck or trailer is not provided with solid ends of a height sufficient to prevent any log in the load from rolling off: Not less than two chock blocks shall be used at each open end of the vehicle and the load shall be held with at least two wrapper chains or cables. The wrappers shall be firmly attached to the end of the truck or trailer. Rigid standards or stakes may be used in lieu of chock blocks but each such standard or stake shall be either rigidly connected to the bed of the truck or trailer or shall be placed in a tight-fitting socket at least 12 inches in depth. Other means furnishing equivalent security may be acceptable.

(4) When two wrappers are required, they shall be applied within six feet of the front and rear bunks. When more than two wrappers are required, the front and back binder shall be applied within six feet of the front and rear bunks.

(5) To properly secure short logs, binders shall be placed near the end, not less than twelve inches from the end of the log.

(6) No log loaded on top or in outside saddles of a load shall be transported unless secured by not less than two wrapper chains or cables, one of which shall be placed near each end of such log.

(7) All wrappers and binders shall be fastened in place prior to tightening to prevent the displacement of logs on the top of the load.

(8) All wrapper chains or cables, except in the case of one log loads, shall entirely surround the load. This does not apply to gut-wrappers.

(9) Gut–wrappers, when used, shall be adjusted so as to be tightened by, but not carry the weight of the logs above them.

(10) A warning shall be given before throwing wrappers over the load and care shall be taken to avoid striking other persons with the wrapper.

(11) Wrappers and binders shall be placed and tightened around the completed load before the truck leaves the immediate loading area.

(12) While moving logs, poles, or log chunks within sorting or mill yards, that could roll or slide off the truck due to snow or ice conditions, or the logs or log chunks do not extend beyond the stakes, at least two wrappers and binders shall be used regardless of the height of the load.

(13) Wrapper chains or cables, binders, fasteners, or attachments thereof, used for any purpose as required by these standards, shall have a minimum breaking strength of not less than fifteen thousand pounds and shall be rigged so that it can be safely released.

NOTE: 3/8–inch Hi–Test steel chain, 7/16–inch improved Plow Steel wire rope of 6x19 or 6x37 construction, or materials having equivalent strength, when in compliance with the requirements herein contained, will be acceptable. (The diameter of the wire rope is immaterial as long as it meets the minimum breaking strength requirements.)

(14) A loaded logging truck required to have wrappers by this section, may be moved within the loading area without wrappers only if such movement does not present a hazard to workers.

(15) For the purposes of this standard, applied bundle straps or banding are not acceptable as wrappers and binders.

(16) All loose ends of wrapper chains or cables shall be securely fastened so as to prevent their swinging free in a manner that will create a hazard.

(17) Binders for securing wrappers on logging trucks shall be fitted with hooks of proper size and design for the wrapper chain being used.

(18) Wrappers shall be removed from service when any of the following conditions exist:

(a) Excessively worn links on chains;

(b) Deformed or stretched chain links;

(c) Cracked chain links;

(d) Frayed, stranded, knotted, or otherwise defective wire rope.

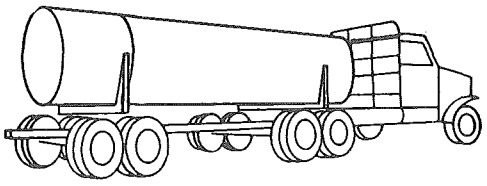
(19) Pipe extension handles (swedes) for tightening or securing binders shall be limited to not longer than thirty–six inches. Care shall be taken that a sufficient amount of the pipe extends over the binder handle.

(20) Defective binders shall be immediately removed from service.

NOTE: See Figures 9–A and 9–B for Illustrations of Placement and Number of Wrappers.

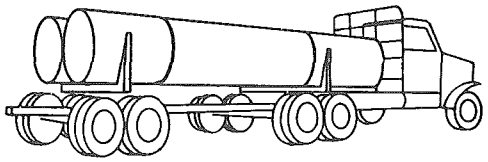
PLACEMENT AND NUMBER OF WRAPPERS

One Log Load



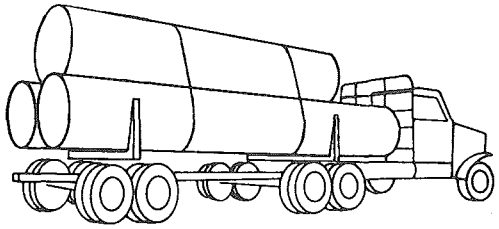
One wrapper required which shall be secured to the rear bunk. The Log shall be blocked or secured in a manner to prevent it from rolling or shifting. An additional wrapper secured to the front bunk is optional.

Two Log Load



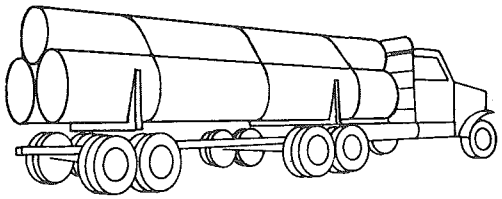
A minimum of two wrappers required. Logs shall be blocked to prevent them from rolling or shifting. If all logs are not contained by the stakes, additional wrappers required.

Three Or Four Log Load 44 Ft. Or Less



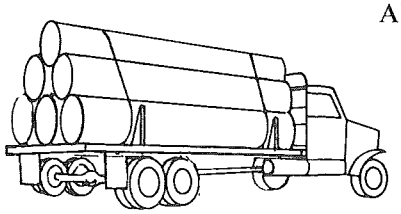
A minimum of two wrappers required. If all logs are not contained by the stakes, additional wrappers required.

Three Or Four Log Loads More Than 44 Feet



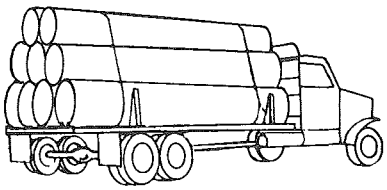
A minimum of three wrappers required. If all logs are not contained by the stakes, additional wrappers required.

Five Or Six Log Load
All Logs 17 Feet Or Less



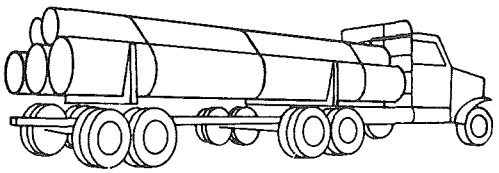
A minimum of two wrappers required. If all logs are not contained by the stakes, additional wrappers required.

Seven Or More Log Load
All Logs 17 Feet Or Less



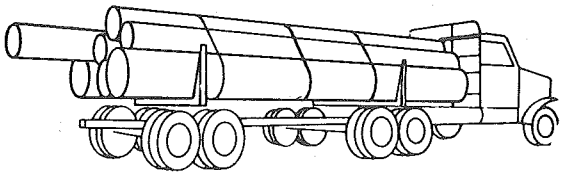
A minimum of two wrappers required. If all logs are not contained by the stakes, additional wrappers required.

Five Or More Log Load
If Any Logs Are More Than 17 Feet



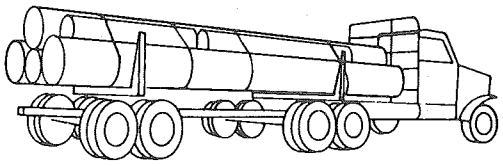
A minimum of three wrappers are required. If all logs are not contained by the stakes, additional wrappers required.

Proper Support For Logs



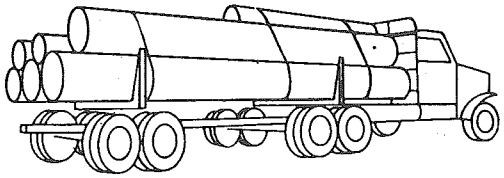
Not more than approximately one–third the weight of any log shall extend beyond the end of the logs or bunk supporting it.

Outside Logs Or Top Logs



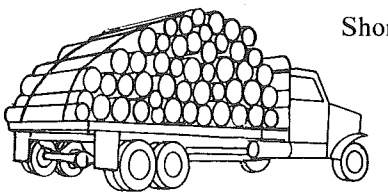
All outside (wing) or top logs shall be secured by a wrapper near but not within 12 inches of each end.

A Wrapper Shall Be Near Each Bunk



Each load shall be secured by having a wrapper within 6 feet of each bunk except on one log loads.

Short Logs Loaded Crosswise



A minimum of two wrappers are required and two chocks or stakes shall be used on the open end of the truck.

NOTE: All loads of logs on logging trucks equipped with chock blocks instead of stakes, shall have at least one additional wrapper over and above the requirements for trucks equipped with stakes, excepting on one and two log loads and trucks with short logs loaded crosswise.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–10–081 (Order 79–14), § 296–54–577, filed 9/21/79.]

WAC 296–54–579 Motor truck log transportation--Miscellaneous requirements. (1) No truck wheel shall have more than twenty–five percent of the lugs missing or defective.

(2) All truck wheels shall be maintained free of cracks, breaks, or defects.

(3) Windshields on all equipment shall be provided with windshield wipers in good working condition.

(4) Mule train trailers shall have a platform on the trailer tongue at least twelve inches by twenty–four inches made of nonslip material and capable of supporting at least three hundred pounds. The platform shall be of the self–cleaning type.

(5) Logs shall be loaded so that not more than approximately one–third of the weight of any log shall extend beyond the end of the logs or bunk supporting it.

(6) Trailer loading and unloading straps, links, or chains shall be fastened securely to the trailer frame and used in hoisting the trailer. The connections shall be maintained in good condition and shall not be attached to the trailer bunk. The use of molles for this purpose is prohibited.

(7) In unloading trailers from trucks, trailers shall be hoisted clear, the truck driven forward a safe distance, and the trailer lowered to within one foot of the roadway before persons approach the trailer or reach.

(8) Trailer hoisting or unloading straps shall be constructed and installed in a manner enabling the loading or unloading machine to engage the strap without manual personal contact.

(9) All motor vehicles shall be equipped with a horn that is audible above the surrounding noise level. The horn shall be sounded before operating the vehicle in reverse gear and sounded intermittently during the entire backing operation. The horn shall be maintained in an

operative condition. [Statutory Authority: RCW 49.17-.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-579, filed 9/21/79.]

WAC 296-54-581 Motor truck log transportation--Steered trailers. Steered trailers, not controlled from the truck cab, shall be designed, constructed, and operated as follows:

(1) A secure seat with substantial foot rest shall be provided for the operator at the rear of the bunk. Any arrangement that permits the operator to ride in front of the bunk is prohibited unless a false bunk or other adequate protection is provided for the operator.

(2) The seat for the operator shall be so arranged that he has an unobstructed exit from both sides and the rear.

(3) The bunk support shall be so constructed that the operator has a clear view ahead at all times.

(4) Adequate means of communication shall be provided between the operator and the truck driver.

(5) Eye protection and respirator shall be provided for the operator.

(6) The trailer shall be equipped with fenders or splash plates to protect the operator from mud and dust so far as possible.

(7) If used during periods of reduced visibility on roads not under the control of the state department of transportation, counties, or cities, the trailer shall be equipped with head, tail, turn and stop lights. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-581, filed 9/21/79.]

WAC 296-54-583 Stationary log truck trailer loading. (1) All loading devices shall be designed, constructed, and maintained in such a manner as to have a five to one safety factor for its rated load capacity.

(2) Loaders shall be constructed of such height and width that they can be safely used to load the maximum-sized trailers they will be expected to handle without hanging up or striking the equipment.

(3) Electric-powered trailer loading devices shall be equipped with a switch or device which will govern the upper direction of travel of the load line to a safe limit.

(4) Electric motors used for hoisting purposes shall be equipped with approved overload switches or breakers.

(5) All electrical switch controls shall not exceed twenty-four volts. All control switches shall be of the momentary contact type which require continuous manual pressure for hoist to operate.

(6) Pendent-type control switches shall be suspended by a chain or other suitable device which will prevent placing a strain on the electrical cable.

(7) Pendents shall be so installed that when retracted the control switch shall not touch the ground.

(8) All electrical equipment shall be weatherproof-type or adequately protected from the weather, and shall meet or exceed the requirements of the National Electrical Code as promulgated by the Director of the Department of Labor and Industries pursuant to RCW 19.28.060.

(9) Trailer loaders, except A-frame type or bridge crane, shall be equipped with reach guides or devices which will keep reach in proper alignment. A tag rope or other safe guidance device shall be used to guide trailers being loaded by use of an A-frame type loader.

(10) Access roads and the area around the trailer loading devices shall be kept free of standing water and debris and maintained in good repair.

(11) The maximum capacity load to be lifted shall be posted in a conspicuous location where it can be easily seen by any person operating the hoist.

(12) Trailer loading equipment shall be periodically inspected at least every thirty days and shall be maintained in good repair. A written report shall be made and signed by the person making the inspection and kept on file by the company for twelve months.

(13) A lifting test shall be conducted annually on each loading device and a written record showing the date, name of person conducting the test, amount of weight lifted and results shall be kept in the office of the employer or at the site. The test weight shall be at least one hundred twenty-five percent of the maximum rated load but not more than one hundred thirty percent of the maximum rated load.

(14) Each drum shall be designed and arranged in such a manner that the line will maintain lead and spool evenly without chafing, crossing or kinking.

(15) A braking system shall be installed which shall have the capability of safely braking and holding one and one-half times weight of the full rated load.

(16) When trailers are to be loaded after dark, sufficient lights shall be provided for a safe operation. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-583, filed 9/21/79.]

WAC 296-54-585 Log unloading, booms, and rafting grounds--Storage and sorting areas--General requirements. (1) At no time shall one person be permitted to work alone.

(2) (a) Employees working on over or along water, where the danger of drowning exists, shall be provided with and shall wear approved personal flotation devices.

(b) Employees are not considered exposed to the danger of drowning when:

(i) The water depth is known to be less than chest deep on the exposed individual;

(ii) When working behind standard height and strength guardrails;

(iii) When working inside operating cabs or stations which eliminate the possibility of accidentally falling into the water;

(iv) When wearing approved safety belts with lifeline attached so as to preclude the possibility of falling into the water.

(c) Prior to and after each use, personal flotation devices shall be inspected for defects which would reduce their designed effectiveness. Defective personal flotation devices shall not be used.

(d) To meet the approved criteria required by subdivision (a), a personal flotation device shall be approved

by the United States Coast Guard as a Type I PFD, Type II PFD, Type III PFD, or Type V PFD, or their equivalent, pursuant to 46 CFR 160 (Coast Guard Lifesaving Equipment Specifications) and 33 CFR 175.23 (Coast Guard table of devices equivalent to personal flotation devices). Ski belt or inflatable type personal flotation devices are specifically prohibited.

(3) In operations where regular logging machinery, rigging, etc., is used, the applicable sections of these rules shall apply.

(4) Artificial lights shall be provided and used where work is to be done between the hours of sunset and sunrise. Such lights shall be located in a manner that will be reasonably free of glare and provide uniform distribution of illumination and avoid sharply defined shadows.

(5) On all log dumps, adequate power for the method used for unloading shall be provided. All machines used for hoisting, reloading or lowering purposes shall be of approved design and sufficient power to control or hold the maximum load imposed in mid-air.

(6) Binders shall not be released from any load until an effective safeguard is provided.

(7) All mobile log handling machines shall be equipped with a means or mechanism which will prevent the logs from accidentally leaving the forks, and shall be used.

(8) The operator of the unloading machine shall have an unobstructed view of the unloading area or shall make certain no one is in the area where the logs are to be unloaded. Rearview mirrors shall be installed on mobile log handling equipment to assist the operator in ascertaining that the area behind the machine is clear before backing up.

(9) Unloading lines shall be so arranged that it is not necessary for the workman to attach them on the pond or dump side of the load.

(10) Life rings with a minimum of ninety feet of one-fourth-inch line with a minimum breaking strength of five hundred pounds attached, shall be provided at convenient points adjacent to water which is five feet or more in depth. Life rings shall be a minimum of thirty inches outside diameter and seventeen inches inside diameter and be maintained so as to retain a thirty-two pound positive buoyancy. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-585, filed 9/21/79.]

WAC 296-54-587 Water dumps. (1) All water dumps shall have brow logs except when logs are lifted from the load. If portable equipment is used, adequate stops shall be provided to prevent equipment from running off the dump.

(2) Where necessary for persons to walk alongside loads and equipment on trestles or fills, a minimum twenty-two inch wide walkway shall be provided, unless otherwise specified.

(3) All decks and plankways on log dumps must be kept in good repair and free from bark and other debris. Roadways shall not be inclined more than one inch to twelve inches across the driving surface.

(4) The use of small bridge-over logs, planking or timbers, between regular foot logs, or walkways, which will not support the weight of at least three persons are prohibited. All regular foot logs shall be barked on upper side.

(5) Electric powered hoists using hand-held cord remote controls in grounded locations, shall be actuated by circuits operating at no more than twenty-four volts. All control switches shall be of the momentary contact type which requires continuous manual pressure for the hoist to operate.

(6) Roadbeds at log dumps shall be hard packed gravel, heavy planking, or equivalent material, and shall be of sufficient width and even surface to insure safe operation of equipment.

(7) Where logs are unloaded on to rollways, sufficient space shall be provided between the top of the skids and the ground to clear the body of a person.

(8) When a brow log is used with a parbuckle system, all persons are prohibited from going between the brow log and the load of logs at any time.

(9) A positive safeguard shall be provided to prevent logs from leaving the loads on the side opposite the dump. Unloading lines, crotch lines or equally effective means shall be arranged and used in a manner to prevent any log from swinging or rolling back.

(10) All persons shall remain in the clear until all moving equipment has come to a complete stop.

(11) Logs shall not be unloaded by peaves or similar manual methods, unless means are provided and used that eliminate the danger from rolling or swinging logs. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-587, filed 9/21/79.]

WAC 296-54-589 Boom and rafting grounds. (1) Breaking of log jams by peavy method is prohibited, except in river drive or when jam occurs away from mechanical means or the dump.

(2) Wooden pike poles shall be of continuous, straight-grained No. 1 material. Defective poles, blunt or dull pikes shall not be used. Conductive pike poles shall not be used where there is a possibility of coming in contact with energized electrical conductors.

(3) Stiff booms shall be made by fastening not less than two boom sticks together. The width of a stiff boom shall be not less than thirty-six inches measured outside to outside of the logs. The boom sticks shall be fastened together with not less than 4" x 6" cross ties, or cable lashings notched into the boom sticks may be used when stiff booms are exposed to heavy swells. Stiff booms shall be kept free of loose bark and shall be maintained in good repair.

(4) A walkway thirty-six inches wide with standard hand railing shall be provided from the shore end of stiff boom to shore.

(5) All sorting gaps shall have a substantial stiff boom on each side of gaps. Such stiff booms or walkways shall be planked over.

(6) (a) Boom sticks shall be reasonably straight with no protruding knots or loose bark. They shall be capable

of supporting above the water line at either end the weight of one worker and equipment or two hundred fifty pounds.

(b) Foot logs shall be reasonably straight with no protruding knots or loose bark and shall be of sufficient size to support above the water line at either end the weight of two workers and equipment or five hundred pounds.

(7) Boom sticks which have been condemned as unsafe shall be marked by three chopped crosses ten feet from the butt end, and such sticks shall not be used as boom sticks.

(8) Gaps between boom sticks shall not exceed twenty–four inches. All wire shall be removed from boom sticks and boom chains before they are re–used or hung in rafting stalls.

(9) When permanent cable swifters are used they shall be arranged so that they are within easy reach of rafter without rolling boom sticks on which they are fastened. When cables become hazardous to use because of jaggers, they shall be discarded.

(10) When floating donkeys or other power–driven machinery is used on boom, it shall be placed on a raft or float with enough buoyancy to keep the deck of such raft or float well above water. Wherever persons walk, the deck of the raft or float shall be planked over with not less than two inch planking, and kept in good repair.

(11) When doglines used in rafting, brailing or stowing logs become hazardous to use because of jaggers, they shall be discarded.

(12) Storing, sorting or any boom work, other than boom boat operations, shall require a minimum of two persons.

(13) Sufficient walkways and floats shall be installed and securely anchored, to provide safe passage for workers.

(14) Walkways alongside sorting gaps shall not be less than four feet wide. Other walkways shall be not less than twenty–two inches wide. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–10–081 (Order 79–14), § 296–54–589, filed 9/21/79.]

WAC 296–54–591 Boats and mechanical devices on waters. (1) Prior to starting the boat motor, any spilled fuel shall be removed and vapors shall be exhausted from any area in which they may accumulate.

(2) The bilge area shall be kept clean and oil, grease, fuel, or highly combustible materials shall not be allowed to accumulate.

(3) Adequate ventilation equipment shall be provided and used for the bilge area to prevent the accumulation of toxic or explosive gases or vapors.

(4) Adequate ventilation equipment shall be provided and used for the cabin area on enclosed–cabin type boats to prevent an accumulation of harmful gases or vapors.

(5) Deck and cabin lighting shall be provided and used where necessary to provide safe levels of illumination aboard boats. Boats operated during the period from sunset to sunrise, or in conditions of restricted visibility, shall display navigation lights as required by the United States Coast Guard. Searchlights or floodlights shall be provided to facilitate safe navigation and to illuminate working or boarding areas adjacent to the craft.

(6) On craft used by workers wearing calked shoes, all areas where the operator or workers must stand or walk shall be made of or be covered with wood or other suitable matting or nonslip material and such covering shall be maintained in good condition.

(7) Each boat shall be provided with a fire extinguisher and life ring with at least fifty feet of one–fourth inch line attached. On log broncs, boomscooters, or other small boomboats where all occupants are required to wear life saving devices and a life ring would present a tripping hazard, the life ring may be omitted.

(8) (a) Along docks, walkways, or other fixed installations on or adjacent to open water more than five feet deep, approved life rings with at least ninety feet of one–fourth inch line attached, shall be provided. The life rings shall be spaced at intervals not to exceed two hundred feet and shall be kept in easily visible and readily accessible locations.

(b) When employees are assigned work at other casual locations where exposure to drowning exists, at least one approved life ring with at least ninety feet of line attached, shall be provided in the immediate vicinity of the work assigned.

(c) Where work is assigned over water where the vertical drop from an accidental fall would exceed fifty feet, special arrangements shall be made with and approved by the Department of Labor and Industries prior to such assignment.

(d) Lines attached to life rings on fixed installations shall be at least ninety feet in length, at least one–fourth–inch in diameter, and have a minimum breaking strength of five hundred pounds. Similar lines attached to life rings on boats shall be at least fifty feet in length.

(e) Life rings must be United States Coast Guard approved thirty–inch size.

(f) Life rings and attached lines shall be maintained to retain at least seventy–five percent of their designed buoyancy and strength.

(9) Log broncs, boomscooters, and boomboats shall not be loaded with personnel or equipment so as to adversely affect their stability or seaworthiness.

(10) Boats shall not be operated at an excessive speed or handled recklessly. [Statutory Authority: RCW 49-.17.040, 49.17.150, and 49.17.240. 79–10–081 (Order 79–14), § 296–54–591, filed 9/21/79.]

WAC 296–54–593 Dry land sorting and storage. (1) Unauthorized foot and vehicle traffic shall not be permitted in the sorting or storage area.

(2) Logs shall be stored in a safe and orderly manner. Roadways and traffic lanes shall be kept clear of protruding ends of logs and debris.

(3) Dry deck log storage areas shall be kept orderly and maintained in a condition conducive to safe operation of mobile equipment. Roadways and walkways shall have a smooth hard–packed surface wide enough to permit a safe operation. Bark, mud, and other debris shall

not be allowed to accumulate to the extent it constitutes a hazard to the operation.

(4) At log dumps, sorting and storage areas, an effective means shall be provided and used to control dust.

(5) Only an authorized person shall operate or ride any lift truck, log stacker, or log unloader.

(6) Signaling log unloader operators at dry deck areas by throwing bark or chips in the air is prohibited. Hand, horn signals or other safe, effective means shall be used at all times.

(7) Unnecessary talking to operator while engaged in operating controls of log stacker or log unloader is forbidden.

(8) Lift forks and arms of unloading machines shall be lowered to their lowest position, and all equipment brakes set prior to the operator leaving his machine unattended.

(9) Log unloaders or stackers shall not be moved about the premises for distances greater than absolutely necessary with the lift extended above the drivers head or with loads lifted higher than is necessary for vision.

(10) When truck drivers are out of the cab, they shall be in the clear, and in view of the log unloader before the lift forks are moved under the load and the lift is made.

(11) Where logs are offloaded onto a dry deck by means of unloading lines, a mechanism shall be used which is self-releasing. Employees shall be prohibited from ascending dry decks to release unloading lines.

(12) Persons shall not position themselves in the hazardous area near or under loads of logs being lifted, moved or suspended.

(13) Jackets or vests of fluorescent or other high visibility material shall be worn by persons working on dry land log storages. Hard hats shall be of a contrasting color or shall have high visibility tape affixed thereon.

(14) Log unloaders and log stackers designed in a manner whereby logs being handled may jeopardize the safety of the operator shall be provided with overhead protection and any other safeguards needed to afford adequate protection.

(15) Log unloaders and log stackers shall be equipped with a horn or other audible warning device. The warning device shall be sounded before operating the vehicle in reverse gear and sounded intermittently during the entire backing operation. The warning device shall be maintained in an operative condition.

(16) Each log-handling machine shall be equipped with a braking system which is capable of stopping and holding the machine with maximum load on any grade on which it may be required to work.

(17) A limit stop, which will prevent the lift arms from over-traveling, shall be installed on electric powered log unloaders.

(18) Shear guards shall be installed on unloading machines and similar types of equipment on which the arms pivot and move alongside the operator creating a pinch point at that location.

(19) All fork-lift type machines shall be equipped with grapple arms and the arms shall be used whenever logs are being moved.

(20) When log trucks are loaded by the use of a log stacker and the lay of any log is higher than the stakes, the log stacker shall remain against the completed load, or other suitable protection provided, to prevent the logs from falling until at least two wrappers and binders have been applied.

(21) All binders and wrappers shall remain on the load until an approved safeguard has been provided to prevent logs from rolling off the side of the truck or trailer when binders are released. A shear log, or equivalent means, shall be provided to ensure the log truck will be stationed close enough to the wrapper rack so that a log cannot fall between the log truck and the wrapper rack when removing binders and wrappers. At least one binder shall remain secured while relocating or tightening other binders. Crotch lines, fork lifts, log stackers, log unloaders, or other effective means shall be used for this purpose.

(22) An extra wrapper or metal band of equal strength shall be placed to hold the logs when it is necessary to remove a wrapper to prevent it from being fouled by the unloading machine.

(23) Machines of the type having arms which block the regular exit when in the up position, shall have an emergency exit installed.

(24) Seat provided. Riding on any part of a log handling machine except under the canopy guard is prohibited.

(25) Identification tags shall not be applied or pulled unless logs are resting in a stationary place, such as bunks, cradles, skids, or sorting tables.

(26) No person shall approach the immediate vicinity of a forklift-type log handling machine without first notifying the operator of his intention and receiving an acknowledgement from the operator.

(27) When fork-lift-type machines are used to load, unload, or handle trailers, a positive means of holding the lifting attachment to the fork shall be installed and used.

(28) When dry land log dumps use unloading methods similar to those of water dumps, the safety standards for water dumps shall apply to dry land dumps.

(29) When logs are handled between the hours of sunset and sunrise or other periods of poor visibility, illumination shall be provided consistent with chapter 296-62 WAC, General Occupational Health Standards, pertaining to illumination.

(30) Air operated stake releases shall be in conformity with the following requirements:

(a) The air supply shall be taken from the "wet" air reservoir or from the accessory air line to a spring loaded, normally closed control valve.

(b) The control valve shall be located in the cab, positioned so that it is accessible only from the operator's position.

(c) The control valve shall be fitted with a spring loaded cover or be otherwise guarded against inadvertent operation.

(d) A separate air line shall extend from the control valve to the tractor and trailer stake release chambers. The air line shall be clearly identified or installed in

such a manner as to preclude it from being mistaken for the service or emergency air line. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-593, filed 9/21/79.]

WAC 296-54-595 Railroad operations. (1) All persons employed in any service on trains or rail operations, which are not engaged in interstate commerce, are subject to and shall be conversant with all rules and special instructions.

(2) Employees must render every assistance in their power in carrying out these rules and special instructions and must report to the proper official any violation thereof.

(3) Accidents, detention of trains or speeders, failure in supply of fuel or water, defects in track, bridges, or signals, must be properly reported to the supervisor by the quickest possible method.

(4) Any logging railroad may maintain a special set of operating rules applicable to their operation, provided that said rules are acceptable to the division of industrial safety and health, department of labor and industries.

(5) Each logging railroad operation which has more than one self-propelled speeder, must have a dispatcher on duty. All equipment must receive clearance from dispatcher.

(6) Train crew size shall be dependent upon the number of persons needed to safely operate the train under all prevailing conditions; however, when necessary to set hand brakes, two or more persons shall be assigned to set the brakes and give signals.

(7) All locomotives shall be equipped with sanding devices for both rails, front and rear, in proper working order. Clean, dry sand should be used.

(8) Locomotives shall be equipped with power brakes (air or steam) on all driving wheels. Tenders also shall have power brakes.

(9) All locomotives and speeders, operating between sunset and sunrise or other periods of reduced visibility, shall be equipped with and use head lights which shine in the direction of travel. The lights shall be of sufficient candlepower so the train can be stopped within range of the light beam. Cab lights shall be provided and maintained so the operators can see from their required positions the gauges and equipment necessary for operation.

(10) All locomotives shall be equipped with proper grab irons, hand holds, steps, and running boards.

(11) All locomotives shall be equipped with automatic couplers, suitable for low or high draw-bars.

(12) On all rolling stock, wheels which have sharp or badly worn flanges, shall be replaced. Avoid the use of flat wheels.

(13) All locomotives with tender shall have an apron of proper length and width to insure safety and which shall be roughened to insure secure footing.

(14) Handholds and footboards shall be provided on locomotive cranes, except where cab overhangs end of car.

(15) Trains and speeders shall not exceed a safe speed.

(16) A terminal test of air brakes shall be made by trainmen before leaving the terminal. Enginemen shall not proceed until they are satisfied by brake action that brakes are able to control the train.

(17) All of the cars in a train shall have their brakes in good operating condition.

(18) On railroads where joint operations of two or more firms are necessary, trains shall not be dispatched less than fifteen minutes apart. Red lights shall be displayed on the rear of such trains at night or when visibility is poor.

(19) Whenever cars are left on grades, derailers shall be provided. Derail signs shall be placed near derailers. In setting out equipment, care shall be used in seeing that proper clearance is provided.

(20) Standard pressure for mountain grades requires a pressure of ninety pounds in train pipe, one hundred ten pounds in main reservoirs (low pressure) and one hundred thirty pounds in high pressure to insure quick releasing of brakes and recharging of auxiliaries. Engineer shall see that his engine carries these pressures and that sanders, both forward and rear, are in working order. On all heavy grades the high pressure retaining valve must be used and before train is started from landing, a test of brakes must be made and piston travel adjusted, if necessary, and retaining valves put up. Engineer shall start train away from landing slowly, giving wheels a chance to roll before applying brakes and, to avoid skidding of wheels, using sand freely. Brakes should then be applied immediately and released, allowing the retaining valves to hold the train while train pipe and auxiliaries are being recharged. Train speed should be held to the required rate by setting and releasing brakes as it is necessary to control train.

(21) When it is necessary to leave loads on pass while switching a side, loads must be left close to derailer, air set and sufficient hand brakes set up, before cutting engine from train.

(22) Enginemen must see car or signalman when making couplings, giving trainmen ample time to align drawheads and open knuckles of coupler, especially on curves, except when using radios.

(23) Drawbars should not be aligned with the foot while cars or engines are in motion. Trainmen shall not climb between cars while in motion. Enginemen shall not drift too close to switches which are to be thrown. Position of switch points should always be observed after throwing switch. Switch lever should be pushed firmly into the notch before leaving the switch. No persons except trainmen, unless authorized, shall ride on engine foot-boards. No object shall be thrown from train or engine while in motion. Bell shall be rung or whistle blown, before moving locomotive.

(24) No equipment shall be pushed ahead of locomotive unless a brakeman is on head car in constant view of engineer or second brakeman in position to intercept and pass signal to engineer.

(25) In addition to air brakes, hand brakes must be provided on all cars and maintained in good working order.

(26) Hand brakes must be easily accessible to brakemen when cars are loaded. When wheels or staff brakes are used they should be placed on the side opposite the brow log at the dump to prevent their damage when cars are unloaded. All switch throws, walkways and cleared areas for brakemen shall be on the hand brake side.

(27) All brake hickeys shall be made from three-fourths inch hexagon steel (high grade) and be twenty-four inches with a good claw on one end to fit the wheel and a knob on opposite end to prevent slipping from brakeman's hand.

(28) All railroad trucks and cars, where brakes are set by hand while in motion, shall have good footboards and toeboards on the brake end.

(29) A ten inch bunk block is recommended on all trucks to prevent logs from slipping over block.

(30) All cars other than logging trucks must have hand hold and foot steps to permit persons to get on and off easily and safely.

(31) All cars and trucks regularly operated must have automatic couplers.

(32) Locomotives and cabooses shall carry the following equipment:

1 Red Light (Lantern Type)
3 Red Flags
At least 3 fuses

(33) When a train stops between telephones, or where the rear of a train extends beyond yard limits, the rear of the train must be properly protected.

(34) Whistle sign board shall be placed one thousand two hundred feet from each side of highway crossings.

(35) A rail clamp shall be placed to hold cars left on a grade on main line or spurs.

(36) All cars and trucks shall be legibly numbered so that those with defects may be reported and taken out of service. Each locomotive, speeder, or other self-propelled vehicles shall be numbered, or otherwise made readily identifiable.

(37) All cars used for hauling logs shall be equipped with patent stake bunks, or bunks with chock blocks and/or chains, so constructed that block can be released from opposite end of bunk unless solid stakes are used.

(38) All main line trains of more than ten loaded cars shall have a caboose at the rear of the train.

(39) All operations having both truck roads and railroads, shall post signs at intersections same as public crossings.

Engine whistle signals. The following engine whistle signals are established as standard and are taken from the American Association of Railroads. The signals prescribed are illustrated by "o" for short sounds and "–" for long sounds. Audible whistle shall be sounded when approaching camps, junctions, grade crossings and other prescribed places in conformity with the American Association of Railroads:

One short	(o)	Stop, apply brakes.
Two long	(––)	Release brakes.
Three long	(–––)	When running, train parted, to be repeated until answered by hand signal.
Two short	(oo)	Answer to any signals not otherwise provided for.
Three short	(ooo)	When train is standing back.
Four short	(oooo)	Call for signals.
Two long, two short	(––oo)	Approaching highway crossing at grade.
One long	(–)	Approaching station, rollway, chute, crossing, junctions, and derailers. When standing, air leak.
Six long	(––––––)	Repeated at intervals, call for section men, train derailed.
One long, three short	(–ooo)	Flagman to go back and protect rear of train.
Four long	(––––)	Foreman.
Five long	(–––––)	Flagman to return from any direction.
Long, short	(–o–o–o)	Repeated four or more times, fire alarm.
Seven long, two short	(–––––––oo)	Repeated, man hurt.
One long, one short	(–o)	Repeated at intervals, closing down.
Groups of shorts repeated	(ooooooo)	Danger of runaway.

Unnecessary use of whistle is prohibited.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-595, filed 9/21/79.]

WAC 296-54-597 Railroad maintenance--Loading or unloading. (1) Track gangs, bridge crews, etc., when working on railroads in use shall place a yellow caution flag by day and a yellow lantern by night a sufficient distance both directions from the crew to protect them against approaching equipment. The operator of said equipment shall acknowledge the signal by two short blasts of the whistle or horn and proceed with caution.

When said crews are removing or replacing a rail or are performing any other work that would make it necessary for approaching equipment to come to a stop, they shall place a red flag by day and a red lantern by night in the center of the track a sufficient distance in both directions from the crew to protect them against said equipment. The operator of approaching equipment shall acknowledge the signal by one short blast of the

whistle or horn and shall come to a dead stop and remain standing until the signal is removed by the person who placed it, or until investigation proves that the track is safe for passage. If a flagman is used, the above provision need not apply.

(2) Where clearance is scant, warning signs or signals shall be posted.

(3) Switch throws should be kept well oiled and targets and signs in good legible condition.

(4) Standard clearances shall be maintained at all points on the right of way except where necessarily restricted where loading or unloading operations are performed or at water tanks, fuel tanks, etc. Warning signs shall be posted at all such locations.

(5) Whenever workmen are repairing, working on or in railroad equipment, loading or unloading cars or performing other duties where there is danger of the railroad equipment being struck by other moving railroad equipment; proper means, methods or safeguards shall be used to protect such workmen. A derail shall be used to prevent other rail equipment from contacting such cars or equipment or endangering the workmen. After cars are spotted, blue flags shall be placed in the center of the tracks at least fifty feet from the end car during the day and blue lights shall be installed at such locations at night. Flags, lanterns and derails shall be removed only by the person placing them unless they are to remain posted for a longer period of time, in which case one person on each oncoming shift shall be responsible to ascertain that they are in place and he shall not remove such safeguards until he investigates to make certain all persons are in the clear. Operators of approaching equipment shall not pass or remove a flag or lantern which is properly posted. Cars or other equipment shall not be placed where it will obscure the signal from an operator controlling approaching equipment. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-597, filed 9/21/79.]

WAC 296-54-599 Truck and equipment maintenance shops. It is recognized that the usual hazards encountered in maintenance shops performing work on logging and related equipment would be very similar to those found in general repair, machine or welding shops; therefore, the rules contained in the general safety and health standards and other applicable safety standards promulgated and administered by the department of labor and industries shall apply to such places of work. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-599, filed 9/21/79.]

WAC 296-54-601 Signals and signal systems. (1) Standard hand or whistle signals as described or illustrated herein, shall be used for the movement of rigging, logs, or equipment when using a high lead, slackline, or cable skidder system for yarding. For Hand Signal illustrations, see Figure 4.

(2) Voice communications may be used for yarding under the following conditions:

(a) Voice communications by use of radio frequencies may be used to transmit instructions and directions to the yarder operator when using a grapple type logging system, providing no person is in a hazardous area near live rigging.

(b) Voice communication may be used to instruct the yarder operator when picking up an occasional log with the use of a choker on a grapple system, providing the grapple is on the ground prior to the setting of the choker and that no lines are moved by the operator until the person setting the choker has returned to a safe location away from any running lines. At no time shall chokers be used on the grapple system during the hours of darkness or during periods of reduced visibility to such extent that the yarder operator cannot clearly see the workmen setting the choker. When a number of logs are required to be yarded by using chokers instead of the grapple, the requirements specified for high lead type of logging shall apply.

(c) Voice communications by use of radio frequencies may be used to transmit instructions and directions to the yarder operator when using a balloon system for yarding. The person operating the radio shall ascertain that all crew members are in the clear before transmitting instructions which would cause any line or turn to move. The person giving such instructions shall keep the crew members informed as to which movements will commence. The whistle shall be blown before moving any running line.

(d) At the conclusion of the voice transmission, the caller shall give the radio signal system permit number issued by the department of labor and industries.

(3) Voice communications on the same radio frequencies used to transmit skyline, highlead, slackline, or skidder whistle signals (154.57 and 154.60 MHz Channels), shall be prohibited.

NOTE: If voice is received on 154.57 or 154.60 MHz Channels, it is recommended the Assistant Director, Department of Labor and Industries, Division of Industrial Safety and Health, P.O. Box 207, Olympia, Washington 98504, (Phone 206/753-6500) be contacted as soon as possible to enable the department to ascertain the source of the voice transmission.

(4) If a standard signal is not listed for an unusual or new situation, a hand or whistle signal other than any listed for the type of yarding being done may be used for the specific situation only. Any special signals so developed shall be understood by all persons required to work in the area which may be affected by their use.

(5) A copy of the standard hand and whistle signals shall be posted on the yarder and at places where crews congregate. For tractor logging operations, hand signals shall be posted at places frequented by the crew members such as in crew buses, etc.

(6) Only one workman in any crew shall give signals at the point where chokers are being set. Any person is authorized to give a stop signal when a workman is in danger or other emergency condition is apparent.

(7) Hand signals are permitted only when the signal person is in plain sight of and within three hundred feet of the machine operator and when visibility is such that the signals are discernible. Hand signals may be used at any time as an emergency stop signal.

(8) Throwing of any type of material as a signal is prohibited.

(9) The use of a jerk wire signal system for any type of yarding operation is prohibited.

(10) All persons shall be in the clear before any signal is given to move the rigging, logs, or turns, and movement of rigging, logs, or turns shall not commence until after the proper signals have been given.

(11) Machine operators shall not move any line unless the signal received is clear and distinct. If in doubt, the operator shall repeat the signal as understood and wait for confirmation.

(12) A horn or whistle which is automatically activated by the radio or electric signaling system shall be used on each yarder used for skyline, high lead, skidder or slackline system of yarding, except where hand signals are permissible. The horn or whistle shall emit a sound which will be clearly audible to all persons in the affected area. Such a horn or whistle shall also be required on combination yarding and loading machines and tree pullers. Audible signals are not necessary on grapple or other yarding systems where persons are not exposed to the movement of logs or rigging.

(13) Each unit of the signal or control system in use, shall be tested daily before operations begin. Audible signals used for test purposes shall not include signals used for the movement of lines or materials.

(14) Citizen band (CB) radios shall not be used to activate any signal, machine, or process, either automatically or by voice. This shall not prohibit the use of CB radios for communication between sides, vehicles, work units, or for emergency situations.

(15) When audible whistle signals are being used simultaneously by yarding and loading machines at a landing, signal whistle or horn tones used in connection with machine movements shall be so differentiated as to distinctively identify any intended work movement of either machine. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-601, filed 9/21/79.]

WAC 296-54-603 Electric signal systems. (1) Where an electrical signal system is used, all wire and attachments shall be of the weatherproof type and all connections shall be weatherproof.

(2) Electric signal systems shall be properly installed and adjusted. They shall be protected against accidental signaling and shall be maintained in good operating condition at all times. Sufficient signal wire shall be provided to enable good voice contact between the whistle punk and rigging crew at all times. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-603, filed 9/21/79.]

WAC 296-54-605 Radio systems used for voice communication, activation of audible signals, or equipment. (1) Every employer who uses a radio signaling or control system (voice or functions) shall comply with or exceed the minimum requirements specified in this section.

(2) A valid operating permit shall be obtained by the owner from the division of industrial safety and health, department of labor and industries, prior to putting into use any radio signaling or control system (voice or functions) intended to be used in conjunction with any type of cable logging operation. Permits will be issued only for systems licensed for such use and using those carrier frequencies as authorized by the Federal Communications Commission. In addition, permits will be granted only when tone or function frequencies are compatible with other radio systems in use and when in compliance with all other applicable requirements contained in this safety standard.

(3) The division of industrial safety and health reserves the right to designate the use of radio frequencies for certain purposes or functions, for example, certain frequencies may be used for voice transmission of instruction, others for tone coded functions, or activation of signaling devices. No single tone sets shall be permitted for logging purposes. The division may also designate which tone frequencies may be used for the activation of a signaling device or for control of equipment on certain federal communication assigned carrier frequencies.

(4) A list of tone frequencies which may be used with any Federal Communications Commission assigned carrier frequencies will be made available by the division of industrial safety and health to any interested person, firm, or corporation upon request.

(5) The division of industrial safety and health shall assign the area or areas in which a radio signaling system may be used and shall so mark on the permit. Radio signaling systems shall not be used in any area other than indicated on the permit. (See Figure 16 for map of areas.)

(6) The person or firm name on the permit shall be the same as the person or firm operating the radio signaling system except for loaner or rental sets. A person or firm using a loaner or rental set shall be responsible for the radio signal system as if they were the owner of the set. The application for a permit to use a radio signaling system shall contain the following information:

(a) Name and address of applicant.

(b) The radio frequencies of the radio signaling device in MHz.

(c) The tone frequency or frequencies of the radio signaling system used to activate a horn, whistle, or control equipment in Hz. The security gate, or pulse tone, shall be shown first.

(d) The name of the manufacturer of the radio signaling system.

(e) The serial number of the receiving unit.

(f) The state assigned area or location in which the unit will operate.

(g) Indicate type of signaling used.

(h) From whom the system was purchased or acquired, and the date of acquisition of the system.

(i) Intended use and function of system.

NOTE: See Sample Form No. 157, "Application for Permit to Operate Radio Signal System in Designated Area," Figure 10 following this section.

(7) The permit granted by the department shall be attached to the case of the receiver of the radio signaling system for which it is granted.

NOTE: See sample S.F. Form No. 158, "Permit to Operate Multi–Tone Radio Signal System in Designated Area," Figure 11 following this section.

(8) Each radio receiver shall have its radio carrier frequency in MHz and tone frequency(s) in Hz indicated on the outside case of the receiver. The manufacturer's name and serial number shall also be permanently indicated on the outside of the case. When the duration or width of the tone frequencies performs a function, the one duration/width shall also be permanently indicated on the outside of the receiver case. Each transmitter shall be identified with its receiver. Two or more receivers in operation simultaneously on the same tone frequency shall be prohibited.

(9) It shall be the responsibility of the owner of any radio signaling system to notify the division of industrial safety and health, department of labor and industries, immediately, if the signal system is:

(a) Permanently retired (in what manner and date retired).

(b) Sold (submit name and address of purchaser and date sold).

(c) Removed from the state (name of state to which moved and date moved).

(d) Stolen (date).

(10) Two operable transmitters shall be carried by separate individuals at the point where chokers are being set at all times when transmitters are being used for tone signaling by persons around the live rigging in the choker setting area. Only one radio transmitter shall be required if in the possession of a signalperson who has no other duties and remains in an area where there are no hazards created by the moving rigging or logs. If the total crew consists of a yarder operator and one person in the rigging, only one transmitter is required provided a positive system is instituted and used to check on the well–being of the person in the rigging.

(11) When interference, overlap, fadeout, or blackout of radio signals is encountered, the use of the device shall be discontinued immediately. The use of the device shall not be resumed until the source of trouble has been detected and corrected.

(12) All radio signaling systems put into use for the first time after the effective date of these safety standards, shall meet or exceed the minimum performance specifications contained in WAC 296–54–607 of these safety standards, and, when altered or repaired, shall continue to meet such specifications.

(13) At least one make and model of each signaling system shall be tested and certified that it meets or exceeds the minimum requirements for performance as specified in WAC 296–54–607. A copy of such performance report shall be signed by the person or persons who tested the unit or components and shall be sent to the Division of Industrial Safety and Health, Department of Labor and Industries, P.O. Box 207, Olympia, Washington 98504.

(14) Radio equipment shall not be used without displaying a permit as required by this standard. The permit shall be prominently displayed on the outside case of the receiver of the unit or, for radio controlled carriages, on the transmitter in the yarder.

(15) Adjustments, repairs, or alterations of radio signaling devices shall be done only by or under the immediate supervision and responsibility of a person holding a first–class or second–class commercial radio operator's license, either radio–telephone or radio–telegraph, issued by the Federal Communications Commission. Persons who do not possess the technical ability or do not have the proper equipment to cause the signaling systems to function within required tolerances shall not attempt to repair, alter, or adjust such systems.

(16) Radio frequencies assigned to systems for which voice communications may be used to give signals to the yarder operator, shall not be the same frequencies as those assigned for whistle signals used in skyline, highlead, slackline, or cable skidder systems.

(17) When hazardous interference is created by moving a voice communication system into an area where a system is already in use on the same frequency, use of the newly–moved system shall be immediately discontinued until the problem of interference has been corrected.

(18) Before moving any unit from one assigned geographical area to another (see area map, Figure 12 following this section), a new permit shall be applied for and secured from the Division of Industrial Safety and Health, Department of Labor and Industries, P.O. Box 207, Olympia, Washington 98504.

Form No. 157. 5-71

STATE OF WASHINGTON

DEPARTMENT OF LABOR AND INDUSTRIES DIVISION OF SAFETY

APPLICATION FOR PERMIT TO OPERATE RADIO SIGNAL SYSTEM IN DESIGNATED AREA

Radio Carrier Frequency..... Serial No.....

Tone Coding Frequency.....Hz.....Name of Manufacturer of Signal System.....

Firm Name..... Address..... By.....

Intended Function of Unit: Voice communication ☐ Whistle signal ☐ Control Equipment ☐

Area in which Unit will be Operated:..... 1 ☐ ..... 2 ☐ ..... 3 ☐ .....
(Area map included in Safety Standards for Logging Operations)

Type of Tone: Sequential ☐ Simultaneous ☐ If other specify type.....

System to be Used For: Grapple ☐ Skyline, Highlead, Slackline, Skidder ☐ Balloon ☐

System Purchased or Acquired From.....

Date System Purchased or Acquired: Day..... Month..... Year.....

Mail Permit to.....

Date Application Mailed to Division of Safety ...../...../.....
Day Mo. Year

Date Permit Issued ...../...../.....
Day Mo. Year
DIV. OF SAFETY USE ONLY

3

Figure No. 10

STATE OF WASHINGTON
DEPT. OF LABOR & INDUSTRIES DIV. OF SAFETY

PERMIT #

TO OPERATE MULTI-TONE RADIO SIGNAL SYSTEM IN DESIGNATED AREA.

Model ..... Serial.....

Carrier Frequency ..... MHz

Tones ..... Hz

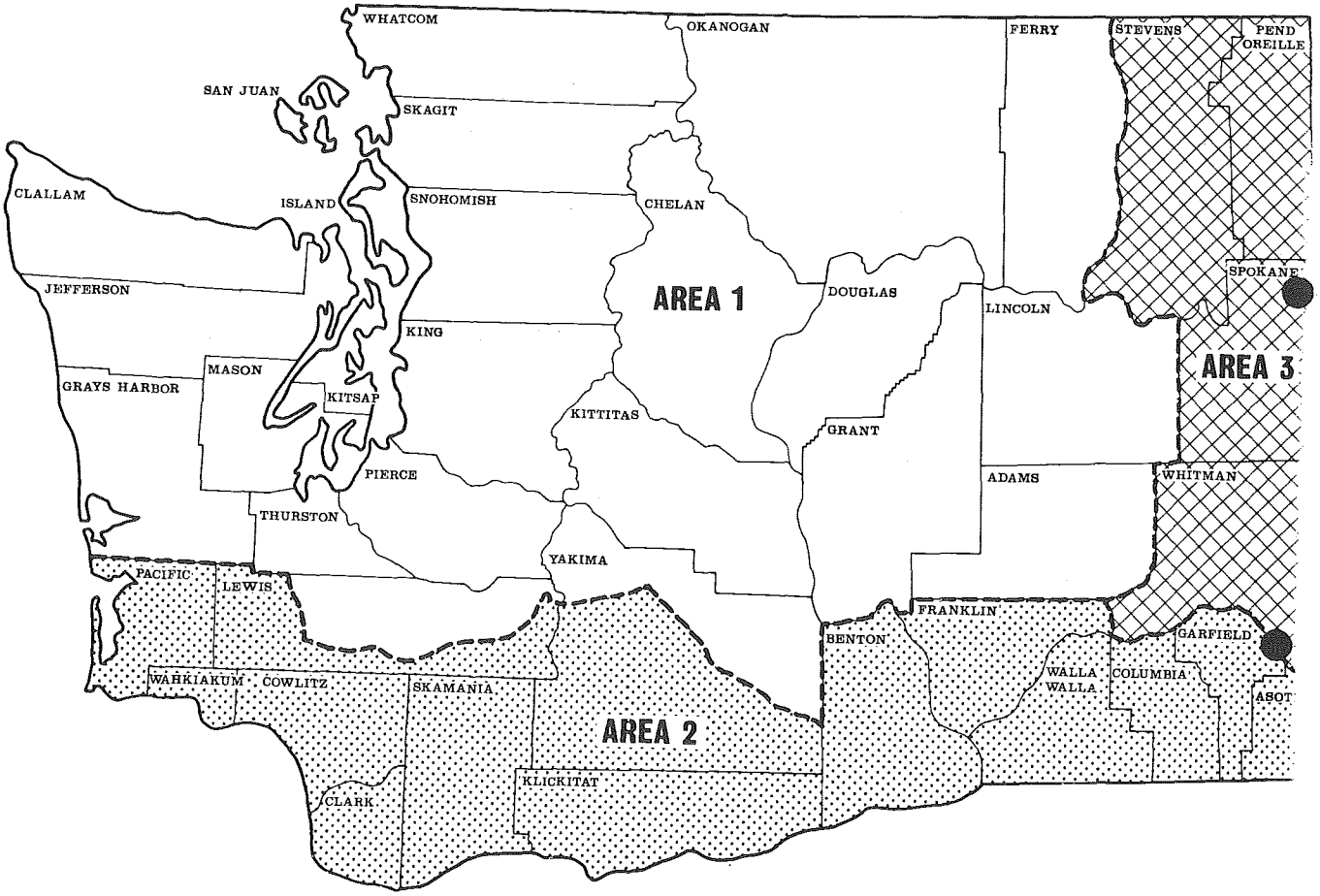
AREA

Firm Name .....

Issued by .....

S. F. No. 158—12-71—25C. 38416.

AREAS FOR USE OF RADIO SIGNALING SYSTEMS FOR LOGGING OPERATIONS



State of Washington
Department of Labor and Industries
Division of Industrial Safety and Health

A permit issued by the Division of Industrial Safety Health shall be attached to the outside of the receiver which shall indicate the area in which the radio signaling equipment may by used.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-605, filed 9/21/79.]

WAC 296-54-607 Radio signal systems--Specifications and test procedures. All radio-signaling systems put into use for the first time after the effective date of these rules shall meet or exceed the following requirements, specifications, tolerance, and tests and such systems, when altered or repaired, shall meet the same minimum requirements.

(1) Radio-signaling systems used to transmit whistle signals or control functions of equipment associated with skyline, highlead, slackline, or cable skidder systems of logging shall transmit and decode only by the use of authorized multi-tone frequencies. Only sequential tones may be used to transmit signals or control equipment when utilizing carrier frequencies of 154.57 or 154.60 MHz.

(2) The receiver sensitivity shall be capable of attaining .6 microvolt, or greater, for 12 db SINAD ratio for VHF frequencies and .7 microvolt, or greater, for UHF frequencies. Effective January 1, 1984, all radio systems receiver sensitivity shall be capable of attaining .4 microvolt, or greater, for 12 db SINAD ratio for VHF frequencies and .5 microvolt, or greater, for UHF frequencies. When interference is a factor, the receiver may be desensitized in the furtherance of safety by a person qualified in accordance with WAC 296-54-605(15).

(3) The receiver spurious attenuation shall be at least 40 db when measured by the 20 db quieting method. On all new radio systems put into service after the effective date of these standards, the receiver spurious attenuation shall be at least 60 db when measured by the 20 db quieting method. Effective January 1, 1984, all new radio signal systems shall be required to have receiver spurious attenuation of at least 70 db when measured by the 20 db quieting method and shall have image response attenuation of 60 db when measured by the 20 db quieting method. Effective January 1, 1989, all radio

signal systems shall be required to have receiver spurious attenuation of at least 70 db when measured by the 20 db quieting method and image response attenuation of 60 db when measured by the 20 db quieting method.

NOTE: Spurious response attenuation is a measure of the receiver's ability to discriminate between a desired signal to which it is resonant and an undesired signal at any other frequency to which it is also responsive.

(4) The receiver selectivity shall be more than 40 db plus or minus 30 KHz. All new radio signal systems put into service after the effective date of these standards, the receiver selectivity shall be at least 60 db plus or minus 30 KHz. Effective January 1, 1984, all new radio signal systems purchased and used shall have receiver selectivity of at least 80 db plus or minus 30 KHz. Effective January 1, 1989, all radio signal systems shall have receiver selectivity of at least 80 db plus or minus 30 KHz, when measured by the E.*I.A. SINAD method.

(5) The receiver–decoder tone frequency stability shall not exceed .006 (.6%) above or below the assigned tone frequency.

(6) The drift of a transmitter–encoder tone shall not exceed .006 (.6%) above or below the assigned tone frequency.

(7) Parts of the radio–signaling system affected by moisture, which may be subjected to the entrance of moisture during use, shall be weatherproofed. Transmitters shall be tested within fifteen minutes after being subjected to the following conditions and shall have the ability to continue functioning properly. The transmitter and receiver shall be placed in a humidity chamber for eight hours where the humidity has been maintained at not less than ninety percent and where a 40°C. temperature has been maintained.

(8) Radio–signaling system units shall operate within tolerances specified at any temperature within the range of –30°C. to +60°C.

(9) Switches of transmitters used to send whistle signals or activate equipment associated with high lead, slackline, or cable skidder systems of logging shall be designed in such a manner whereby two buttons, motions or a combination of these shall be required simultaneously to cause activation of the system. Arrangement of the activating switches shall be such that the operator can transmit signals easily but cannot easily activate a control or command function accidentally.

(10) All receivers intended to be mounted on or in the yarder or similar equipment, and all portable transmitters, shall continue to maintain specified mechanical and electrical performance during and after being subjected to vibration of the magnitude and amplitude as follows:

The equipment shall be vibrated with simple harmonic motion having an amplitude of 0.015" (total excursion 0.03") with the frequency varied uniformly between 10 and 30 Hz and an amplitude of 0.0075" (total excursion 0.015") with the frequency varied uniformly between 30 and 60 Hz. The entire cycle of frequencies for each group (i.e., 10 to 30 cycles and 30 to 60 cycles) shall be accomplished in five minutes and repeated three times. The above motion shall be applied for a total period of thirty minutes in each direction, namely, the directions parallel to both axes of the base and perpendicular to the plane of the base.

(11) All portable transmitters shall continue to maintain specified mechanical and electrical performance after being subjected to a shock test as follows:

The equipment shall be dropped once on each of five surfaces from a height of four feet onto a smooth concrete floor.

(12) Transmitters operating on carrier frequencies of 154.57 MHz and on 154.60 MHz shall be limited on maximum power output not to exceed 500 mW measured at the antenna terminals.

(13) To minimize the possibility of interference with other signaling systems, the input power of transmitters operating in the 450 MHz range should be limited to only the amount needed to transmit to the receiver of the system effectively. [Statutory Authority: RCW 49-.17.040, 49.17.150, and 49.17.240. 79-10-081 (Order 79-14), § 296-54-607, filed 9/21/79.]

Chapter 296-62 WAC
OCCUPATIONAL HEALTH STANDARDS--SAFETY STANDARDS FOR CARCINOGENS

WAC

WAC 296-62-07335 Benzene. (1) Scope and application.

(a) This section applies to each place of employment where benzene is produced, reacted, released, packaged, repackaged, stored, transported, handled, or used.

(b) This section does not apply to:

(i) The storage, transportation, distribution, dispensing, sale or use as fuel of gasoline motor fuels or other fuels subsequent to discharge from bulk terminals; or

(ii) The storage, transportation, distribution or sale of benzene in intact containers sealed in such a manner as to contain benzene vapors or liquid, except for the requirements of subsection (11)(b),(c),(d) and (e), and subsection (10) of this section.

(iii) Work operations where the only exposure to benzene is from liquid mixtures containing 0.5 percent (0.1 percent after June 27, 1981) or less of benzene by volume, or the vapors released from such liquids.

(2) Definitions applicable to this section:

(a) "Action level" – an airborne concentration of benzene of 0.5 ppm, averaged over an 8-hour work day.

(b) "Authorized person" – any person required by his duties to enter a regulated area and authorized to do so by his employer, by this section or by the Washington Industrial Safety and Health Act of 1973. Authorized

person includes a representative of employees who is designated to observe monitoring and measuring procedures under subsection (13) of this section.

(c) "Benzene" – (C_6H_6) CAS Registry No. 00071432), means solid, liquefied or gaseous benzene. It includes mixtures of liquids containing benzene and the vapors released by these liquids.

(d) "Bulk terminal" – a facility which is used for the storage and distribution of gasoline, motor fuels or other fuels and which receives its petroleum products by pipeline, barge or marine tanker.

(e) "Director" – the Director of Labor and Industries, or his authorized representative.

(f) "Emergency" – any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which may, or does, result in a massive release of benzene.

(3) Permissible exposure limits. (a) Inhalation.

(i) Time-weighted average limit (TWA). The employer shall assure that no employee is exposed to an airborne concentration of benzene in excess of 1 part benzene per million parts of air (1 ppm), as an 8-hour time-weighted average.

(ii) Ceiling limit. The employer shall assure that no employee is exposed to an airborne concentration of benzene in excess of 5 ppm as averaged over any 15 minute period.

(b) Dermal and eye exposure limit. The employer shall assure that no employee is exposed to eye contact with liquid benzene; or to skin contact with liquid benzene, unless the employer can establish that the skin contact is an isolated instance.

(4) Regulated areas. (a) The employer shall establish within each place of employment, regulated areas where benzene concentrations are in excess of the permissible airborne exposure limit.

(b) The employer shall limit access to regulated areas to authorized persons.

(c) Notification of regulated areas. Within 30 days following the establishment of a regulated area, the employer shall report the following information to the Director:

(i) The address of each establishment which has one or more regulated areas;

(ii) The locations, within the establishment, of each regulated area;

(iii) A brief description of each process or operation which results in employee exposure to benzene in regulated areas; and

(iv) The number of employees engaged in each process or operation within each regulated area which results in exposure to benzene and an estimate of the frequency and degree of exposure within each regulated area.

(5) Exposure monitoring and measurement. (a) General.

(i) Determinations of airborne exposure levels shall be made from air samples that are representative of each employee's exposure to benzene over an eight hour period.

(ii) For the purposes of this section, employee exposure is that exposure which would occur if the employee were not using a respirator.

(b) Initial monitoring. (i) Each employer who has a place of employment where benzene is produced, reacted, released, packaged, repackaged, stored, transported, handled or used, shall monitor each of these workplaces and work operations to accurately determine the airborne concentrations of benzene to which employees may be exposed.

(ii) The initial monitoring required under subsection (5)(b)(i) of this section shall be conducted and the results obtained within 30 days of the effective date of this section. Where the employer has monitored after January 4, 1977, and the monitoring satisfies the accuracy requirements of subsection (5)(f) of the section, the employer may rely on such earlier monitoring to satisfy the requirements of subsection (5)(b)(i) of this section, unless there has been a production, process, personnel or control change which may have resulted in new or additional exposures to benzene or the employer has any other reason to suspect a change which may have resulted in new or additional exposures to benzene; and provided that the employer maintains a record of the monitoring in accordance with subsection (12)(a) and notifies each employee in accordance with subsection (5)(e).

(c) Frequency. (i) Measurements below the action level. If the measurements conducted under subsection(5)(b)(i) of this section reveal employee exposure to be below the action level, the measurements need not be repeated, except as otherwise provided in subsection (5)(d) of this section.

(ii) Measurements at or above the action level. If the measurements reveal employee exposure to be at or in excess of the action level, but below the permissible exposure limit, the employer shall repeat the monitoring at least quarterly. The employer shall continue these quarterly measurements until at least two consecutive measurements, taken at least seven days apart, are below the action level, and thereafter the employer may discontinue monitoring, except as provided in subsection (5)(e) of this section.

(iii) Measurements above the permissible exposure limit. If the measurements reveal employee exposure to be in excess of the permissible exposure limits, the employer shall repeat the measurements at least monthly. The employer shall continue these monthly measurements until at least two consecutive measurements, taken at least seven days apart, are below the permissible exposure limits, and thereafter the employer shall monitor at least quarterly.

(d) Additional monitoring. (i) Whenever there has been a production, process, personnel or control change which may result in new or additional exposure to benzene or whenever the employer has any other reason to suspect a change which may result in new or additional exposures to benzene, the employer shall repeat the monitoring which is required by subsection (5)(b)(i) of this section.

(ii) Whenever spills, leaks, ruptures or other breakdowns occur, the employer shall repeat the monitoring which is required by subsection (5)(b)(i) after cleanup of the spill or repair of the leak, rupture or other breakdown.

(e) Employee notification. (i) Within 5 working days after the receipt of measurement results, the employer shall notify each employee in writing of the exposure measurements which represent that employee's exposure.

(ii) Where the results indicate that the employee's exposure exceeds the permissible exposure limits, the notification shall also include the corrective action being taken or to be taken by the employer to reduce exposure to or below the permissible exposure limit.

(f) Accuracy of measurement. The employer shall use a method of measurement which has an accuracy, to a confidence level of 95 percent, of not less than plus or minus 25 percent for concentrations of benzene greater than or equal to 1 ppm.

(6) Methods of compliance. (a) Priority of compliance methods. The employer shall institute engineering and work practice controls to reduce and maintain employee exposures to benzene at or below the permissible exposure limits, except to the extent that the employer establishes that these controls are not feasible. Where feasible engineering and work practice controls are not sufficient to reduce employee exposures to or below the permissible exposure limits, the employer shall nonetheless use them to reduce exposures to the lowest level achievable by these controls, and shall supplement them by the use of respiratory protection.

(b) Compliance program. (i) The employer shall establish and implement a written program to reduce exposures to or below the permissible exposure limits solely by means of engineering and work practice controls required by subsection (6)(a) of this section.

(ii) The written program shall include a schedule for development and implementation of the engineering and work practice controls. These plans shall be revised and updated at least every six months to reflect the current status of the programs.

(iii) Written plans for these compliance programs shall be submitted, upon request, to the director, and shall be available at the worksite for examination and copying by the director, and the employees or their authorized representatives.

(iv) The employer shall institute and maintain at least the controls described in his most recent written compliance program.

(7) Respiratory protection. (a) General. Where respiratory protection is required under this section, the employer shall select, provide and assure the use of respirators. Respirators shall be used in the following circumstances:

(i) During the time period necessary to install or implement feasible engineering and work practice controls;

(ii) During maintenance and repair activities in which engineering and work practice controls are not feasible;

(iii) In work situations where feasible engineering and work practice controls are not yet sufficient to reduce exposure to or below the permissible exposure limits; or

(iv) In emergencies.

(b) Respirator selection. (i) Where respiratory protection is required under this section, the employer shall select and provide at no cost to the employee, the appropriate respirator from Table I and shall assure that the employee uses the respirator provided.

(ii) The employer shall select respirators from among those approved by the National Institute for Occupational Safety and Health, and according to WAC 296-24-081.

(c) Respirator program. The employer shall institute a respiratory protection program in accordance with WAC 296-24-081.

(d) Respirator use. (i) Where air-purifying respirators (cartridge, canister, or gas mask) are used, the employer shall, except as provided in subsection (7)(d)(ii) of this section, replace the air-purifying canisters or cartridges prior to the expiration of their service life or the end of shift in which they are first used, whichever occurs first.

(ii) Where a cartridge or canister of an air-purifying respirator has an end of service life indicator certified by NIOSH for benzene, the employer may permit its use until such time as the indicator shows the end of service life.

(iii) The employer shall assure that the respirator issued to the employee exhibits minimum facepiece leakage and that the respirator is properly fitted.

(iv) The employer shall allow each employee who wears a respirator to wash his or her face and respirator facepiece to prevent skin irritation association with respirator use.

TABLE I

RESPIRATORY PROTECTION FOR BENZENE

Airborne Concentration of Benzene or Condition of Use	Respirator Type
(a) Less than or equal to 10 p/m	(1) Any chemical cartridge respirator with organic vapor cartridge; or (2) Any supplied air respirator.
(b) Less than or equal to 50 p/m	(1) Any chemical cartridge respirator with organic vapor cartridge and full facepiece; (2) Any supplied air respirator with full facepiece; (3) Any organic vapor gas mask; or (4) Any self-contained breathing apparatus with full facepiece.
(c) Less than or equal to 1,000 p/m	(1) Supplied air respirator with half mask in positive pressure mode.
(d) Less than or equal to 2,000 p/m	(1) Supplied air respirator with full facepiece, helmet or hood, in positive pressure mode.
(e) Less than or equal to 10,000 p/m	(1) Supplied air respirator and auxiliary self-contained facepiece in positive pressure mode; or

Airborne Concentration of Benzene or Condition of Use	Respirator Type
	(2) Open circuit self-contained breathing apparatus with full facepiece in positive pressure mode.
(f) Escape	(1) Any organic vapor gas mask; or
	(2) Any self-contained breathing apparatus with full facepiece.

(8) Protective clothing and equipment. Where eye or dermal exposure may occur, the employer shall provide, at no cost to the employee, and assure that the employee wears impermeable protective clothing and equipment to protect the area of the body which may come in contact with liquid benzene. Eye and face protection shall meet the requirements of WAC 296-24-07801.

(9) Medical surveillance. (a) General. (i) The employer shall make available a medical surveillance program for employees who are or may be exposed to benzene at or above the action level and employees who are subjected to an emergency.

(ii) The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and provided without cost to the employee.

(b) Initial examinations. (i) Within thirty days of the effective date of this section, or before the time of initial assignment, the employer shall provide each employee who is or may be exposed to benzene at or above the action level with a medical examination, including at least the following elements:

(A) A history which includes past work exposure to benzene or any other hematologic toxins; a family history of blood dyscrasias including hematological neoplasms; a history of blood dyscrasias including genetically related hemoglobin alterations, bleeding abnormalties, abnormal function of formed blood elements; a history of renal or liver dysfunction, a history of drugs routinely taken, alcoholic intake and systemic infections; a history of exposure to marrow toxins outside of the current work situation, including volatile cleaning agents and insecticides;

(B) Laboratory tests, including a complete blood count with red cell count, white cell count with differential, platelet count, hematocrit, hemoglobin and red cell indices (MCV, MCH, MCHC), serum bilirubin and reticulocyte count; and

(C) Additional tests where, in the opinion of the examining physician, alterations in the components of the blood are related to benzene exposure.

(ii) No medical examination is required to satisfy the requirements of subsection (9)(b)(i) of this section if adequate records show that the employee has been examined in accordance with the procedures of subsection (9)(b)(i) of this section within the previous six months.

(c) Information provided to the physician. The employer shall provide the following information to the examining physician for each examination under this section:

(i) A copy of this regulation;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) The employee's representative exposure level or anticipated exposure level;

(iv) A description of any personal protective equipment used or to be used; and

(v) Information from previous medical examinations of the affected employee which is not readily available to the examining physician.

(d) Physician's written opinions. (i) For each examination under this section, the employer shall obtain and provide the employee with a copy of the examining physician's written opinion containing the following:

(A) The results of the medical examination and tests;

(B) The physician's opinion concerning whether the employee has any detected medical conditions which would place the employee's health at increased risk of material impairment from exposure to benzene;

(C) The physician's recommended limitations upon the employee's exposure to benzene or upon the employee's use of protective clothing or equipment and respirators.

(ii) The written opinion obtained by the employer shall not reveal specific findings or diagnoses unrelated to occupational exposures.

(e) Periodic examinations. (i) The employer shall provide each employee covered under subsection (9)(b) of this section with a medical examination at least semi-annually following the initial examination. These periodic examinations shall include at least the following elements:

(A) A brief history regarding any new exposure to potential marrow toxins, changes in drug and alcohol intake and the appearance of physical symptoms relating to blood disorders;

(B) A complete blood count with red cell count, white cell count with differential, platelet count, hemoglobin, hematocrit and red cell indices (MCV, MCH, MCHC); and

(C) Additional tests where in the opinion of the examining physician, alterations in the components of the blood are related to benzene exposure.

(ii) Where the employee develops signs and symptoms commonly associated with toxic exposure to benzene, the employer shall provide the employee with a medical examination which shall include those elements considered appropriate by the examining physician.

(f) Emergency situations. If the employee is exposed to benzene in an emergency situation, the employer shall provide the employee with a urinary phenol test at the end of the employee's shift. The urine specific gravity shall be corrected to 1.024. If the result of the urinary phenol test is below 75 mg phenol/L of urine, no further testing is required. If the result of the urinary phenol test is equal to or greater than 75 mg phenol/L of urine, the employer shall provide the employee with a complete blood count including a red cell count, white cell count with differential, and platelet count as soon as practicable, and shall provide these same counts one month later.

(g) Special examinations. (i) Where the results of any tests required by this section reveal that any of the following conditions exist, the employer shall have the test results of the employee evaluated by a hematologist:

(A) The red cell count, hemoglobin or platelet count varies more than 15 percent above or below the employee's most recent values;

(B) The red cell count is below 4.4 million or above 6.3 million per mm^3, (for males), or below 4.2 million or above 5.5 million per mm^3 (for females);

(C) The hemoglobin is below 14 grams percent or above 18 grams percent (for males) or below 12 grams percent or above 16 grams percent (for females);

(D) The white cell count is below 4,200 or above $10,000/mm^3$;

(E) The thrombocyte count is below $140x10^3$ cells per mm^3 or above $440x10^3$ cells per mm^3.

(ii) In addition to the information required to be provided to the physician under subsection (9)(c) of this section, the employer shall provide the hematologist with the medical record required to be maintained by subsection (12)(b) of this section.

(iii) The hematologist's evaluation shall include a determination as to the need for additional tests, and the employer shall assure that these tests are provided.

(10) Employee information and training. (a) Training program. (i) The employer shall institute a training program for all employees assigned to workplaces where benzene is produced, reacted, released, packaged, repackaged, stored, transported, handled or used and shall assure that each employee assigned to these workplaces is informed of the following:

(A) The information contained in Appendix A and B*[(1)];

(B) The quantity, location, manner of use, release, or storage of benzene and the specific nature of operations which could result in exposure above the permissible exposure limits as well as necessary protective steps;

(C) The purpose, proper use, and limitations of personal protective equipment and clothing required by subsection (8) of this section and of respiratory devices required by subsection (7) of this section and WAC 296-24-081;

(D) The purpose and a description of the medical surveillance program required by subsection (9) of this section and the information contained in Appendix C*[(1)]; and

(E) The contents of this standard.

(ii) The training program required under subsection (10)(a)(i) of this section shall be provided within 90 days of the effective date of this section or at the time of initial assignment to workplaces where benzene is produced, reacted, released, packaged, repackaged, stored, transported, handled or used, and at least annually thereafter.

(b) Access to training materials. (i) The employer shall make a copy of this standard and its appendices readily available to all affected employees.

(ii) The employer shall provide, upon request, all materials relating to the employee information and training program to the director.

(11) Signs and labels. (a) The employer shall post signs in regulated areas bearing the following legend:

DANGER
BENZENE
CANCER HAZARD
FLAMMABLE-NO SMOKING
AUTHORIZED PERSONNEL ONLY
RESPIRATOR REQUIRED

(b) The employer shall assure that caution labels are affixed to all containers of benzene and of products containing any amount of benzene, except:

(i) Pipelines, and

(ii) Transport vessels or vehicles carrying benzene or benzene products in sealed intact containers.

(iii) Liquid mixtures containing 5.0 percent or less benzene by volume which were packaged before June 27, 1978.

(c) The employer shall assure that the caution labels remain affixed when the benzene or products containing benzene are sold, distributed or otherwise leave the employer's workplace.

(d) The caution labels required by subsection (11)(b) of this section shall be readily visible and legible. The labels shall bear the following legend:

CAUTION
CONTAINS BENZENE
CANCER HAZARD

(e) The employer shall assure that no statement which contradicts or detracts from the information required by subsections (11)(a) and (d) of this section appears on or near any required sign or label.

(12) Recordkeeping. (a) Exposure measurements. (i) The employer shall establish and maintain an accurate record of all measurements required by subsection (5) of this section.

(ii) This record shall include:

(A) The dates, number, duration, and results of each of the samples taken, including a description of the procedure used to determine representative employee exposures;

(B) A description of the sampling and analytical methods used;

(C) Type of respiratory protective devices worn, if any; and

(D) Name, social security number, and job classification of the employee monitored and all other employees whose exposure the measurement is intended to represent.

(iii) The employer shall maintain this record for at least 40 years or the duration of employment plus 20 years, whichever is longer.

(b) Medical surveillance. (i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance required by subsection (9) of this section.

(ii) This record shall include:

(A) The name, and social security number of the employee;

(B) A copy of the physicians' written opinions, including results of medical examinations and all tests, opinions and recommendations;

(C) The peripheral blood smear slides of the initial test, the most recent test, and any test demonstrating hematological abnormalities related to benzene exposure;

(D) Any employee medical complaints related to exposure to benzene;

(E) A copy of this standard and its appendices, except that the employer may keep one copy of the standard and its appendices for all employees provided that he references the standard and its appendices in the medical surveillance record of each employee;

(F) A copy of the information provided to the physician as required by subsections (9)(c)(ii) through (9)(c)(v) of this section; and

(G) A copy of the employee's medical and work history related to exposure to benzene or any other hematologic toxins.

(iii) The employer shall maintain this record for at least 40 years or for the duration of employment plus 20 years, whichever is longer.

(c) Availability. (i) The employer shall assure that all records required to be maintained by this section shall be made available upon request to the director for examination and copying.

(ii) The employer shall assure that employee exposure measurement records as required by this section be made available for examination and copying to affected employees or their designated representatives.

(iii) The employer shall assure that former employees and the former employees' designated representatives have access to such records as will indicate the former employee's own exposure to benzene.

(iv) The employer shall assure that employee medical records required to be maintained by this section be made available upon request for examination and copying to the employee or former employee or to a physician or other individual designated by the affected employee or former employee.

(d) Transfer of records. (i) When the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by subsection (12) of this section for the prescribed period.

(ii) When the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall transmit these records by mail to the director.

(iii) At the expiration of the retention period for the records required to be maintained under subsection (12) of this section, the employer shall transmit these records by mail to the director.

(13) Observation of monitoring. (a) Employee observation. The employer shall provide affected employees, or their designated representatives, an opportunity to observe any measuring or monitoring of employee exposure to benzene conducted pursuant to subsection (5) of this section.

(b) Observation procedures. (i) When observation of the measuring or monitoring of employee exposure to benzene requires entry into areas where the use of protective clothing and equipment or respirators is required, the employer shall provide the observer with personal protective clothing and equipment or respirators required to be worn by employees working in the area, assure the use of such clothing and equipment or respirators, and require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the measurement, observers shall be entitled to:

(A) Receive an explanation of the measurement procedures;

(B) Observe all steps related to the measurement of airborne concentrations of benzene performed at the place of exposure; and

(C) Record the results obtained.

(14) Effective date. This standard shall become effective 30 days after being filed with the Code Reviser unless otherwise stated within this standard.

*(1) Appendices printed in addition to this section and information contained therein is not intended, by itself, to create any additional obligations not otherwise imposed or to detract from any existing obligations.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49-.17.240, chapters 42.30, and 43.22 RCW. 78-09-092 (Order 78-16), § 296-62-07335, filed 8/31/78.]

WAC 296-62-07341 Acrylonitrile. (1) Scope and application.

(a) This section applies to all occupational exposure to acrylonitrile (AN), Chemical Abstracts Service Registry No. 000107131, except as provided in subsection (1)(b) of this section.

(b) This section does not apply to the processing, use, and handling of products fabricated from polyacrylonitrile (PAN) where objective data is reasonably relied upon as to one of the following conditions:

(i) That the material to be processed is not capable of releasing AN resulting in airborne concentrations in excess of (1.0 ppm; or 0.5 ppm; or 0.1 ppm), under the expected conditions of processing, use and handling which will cause the greatest possible release; or

(ii) That the material to be processed is not a latex or other liquid mixture and does not contain more than (XX) ppm by weight, residual AN; or

(iii) That the material to be processed is not a latex or other liquid mixture and will not be heated or melted during the fabrication process.

Where the processing, use, and handling of products fabricated from PAN are exempted under this subsection, the employer shall maintain records of the objective data supporting that exemption, as provided in subsection (17) of this section.

(2) Definitions, as applicable to this section:

(a) "Acrylonitrile" or "AN" – acrylonitrile monomer, chemical formula CH2=CHCN.

(b) "Action level" – a concentration of AN of (1 ppm; or 0.5 ppm; or 0.1 ppm) averaged over any eight-hour period.

(c) "Authorized person" – any person specifically authorized by the employer whose duties require the

person to enter a regulated area, or any person entering such an area as a designated representative of employees for the purpose of exercising the opportunity to observe monitoring procedures under subsection (18) of this section.

(d) "Director" – the Director of Labor and Industries, or his authorized representative.

(e) "Emergency" – any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment, which is likely to, or does, result in unexpected exposure to AN in excess of the ceiling limit.

(f) "Polyacrylonitrile" or "PAN" – polyacrylonitrile homopolymers or copolymers, except for materials as exempted under subsection (1)(b) of this section.

(3) Permissible exposure limits. (a) Inhalation. (i) Time–weighted average limit (TWA). The employer shall assure that no employee is exposed to an airborne concentration of acrylonitrile in excess of (two (2) parts; or one part; or two–tenths (0.2) part) acrylonitrile per million parts of air (2 ppm; or 1 ppm; or 0.2 ppm), as an eight–hour time–weighted average.

(ii) Ceiling limit. The employer shall assure that no employee is exposed to an airborne concentration of acrylonitrile in excess of (10 ppm; or 5 ppm; or 1 ppm) as averaged over any fifteen–minute period during the working day.

(b) Dermal and eye exposure. The employer shall assure that no employee is exposed to skin contact or eye contact with liquid AN or PAN.

(4) Notification of use and emergencies. (a) Use. Within ten days of the effective date of this standard, or within fifteen days following the introduction of AN into the workplace, every employer shall report, unless he has done so pursuant to the emergency temporary standard, the following information to the director for each such workplace:

(i) The address and location of each workplace in which AN is present;

(ii) A brief description of each process of operation which may result in employee exposure to AN;

(iii) The number of employees engaged in each process or operation who may be exposed to AN and an estimate of the frequency and degree of exposure that occurs; and

(iv) A brief description of the employer's safety and health program as it relates to limitation of employee exposure to AN. Whenever there has been a significant change in the information required by this subsection, the employer shall promptly amend such information previously provided to the director.

(b) Emergencies and remedial action. Emergencies, and the facts obtainable at that time, shall be reported within 24 hours of the initial occurrence to the director. Upon request of the director, the employer shall submit additional information in writing relevant to the nature and extent of employee exposures and measures taken to prevent future emergencies of a similar nature.

(5) Exposure monitoring. (a) General. (i) Determinations of airborne exposure levels shall be made from air samples that are representative of each employee's exposure to AN over an eight–hour period.

(ii) For the purposes of this section, employee exposure is that which would occur if the employee were not using a respirator.

(b) Initial monitoring. Each employer who has a place of employment in which AN is present shall monitor each such workplace and work operation to accurately determine the airborne concentrations of AN to which employees may be exposed. Such monitoring may be done on a representative basis, provided that the employer can demonstrate that the determinations are representative of employee exposures.

(c) Frequency. (i) If the monitoring required by this section reveals employee exposure to be below the action level, the employer may discontinue monitoring for that employee.

(ii) If the monitoring required by this section reveals employee exposure to be at or above the action level but below the permissible exposure limits, the employer shall repeat such monitoring for each such employee at least quarterly.

(iii) If the monitoring required by this section reveals employee exposure to be in excess of the permissible exposure limits, the employer shall repeat these determinations for each such employee at least monthly. The employer shall continue these monthly measurements until at least two consecutive measurements, taken at least seven days apart, are below the permissible exposure limits, and thereafter the employer shall monitor at least quarterly.

(d) Additional monitoring. Whenever there has been a production, process, control or personnel change which may result in new or additional exposure to AN, or whenever the employer has any other reason to suspect a change which may result in new or additional exposures to AN, additional monitoring which complies with this subsection shall be conducted.

(e) Employee notification. (i) Within five working days after the receipt of monitoring results, the employer shall notify each employee in writing of the results which represent that employee's exposure.

(ii) Whenever the results indicate that the representative employee exposure exceeds the permissible exposure limits, the employer shall include in the written notice a statement that the permissible exposure limits were exceeded and a description of the corrective action being taken to reduce exposure to or below the permissible exposure limits.

(f) Accuracy of measurement. The method of measurement of employee exposures shall be accurate, to a confidence level of 95 percent, to within plus or minus 25 percent for concentrations of AN at or above the permissible exposure limits, and plus or minus 35 percent for concentrations of AN between the action level and the permissible exposure limits.

(g) Weekly survey of operations involving liquid AN. In addition to monitoring of employee exposures to AN as otherwise required by this subsection, the employer shall survey areas of operations involving liquid AN at least weekly to detect points where AN liquid or vapor

are being released into the workplace. The survey shall employ an infra-red gas analyzer calibrated for AN, a multipoint gas chromatographic monitor, or comparable system for detection of AN. A listing of levels detected and areas of AN release, as determined from the survey, shall be posted prominently in the workplace, and shall remain posted until the next survey is completed.

(6) Regulated areas. (a) The employer shall establish regulated areas where AN concentrations are in excess of the permissible exposure limits.

(b) Regulated areas shall be demarcated and segregated from the rest of the workplace, in any manner that minimizes the number of persons who will be exposed to AN.

(c) Access to regulated areas shall be limited to authorized persons or to persons otherwise authorized by the Act or regulations issued pursuant thereto.

(d) The employer shall assure that in the regulated area, food or beverages are not present or consumed, smoking products are not present or used, and cosmetics are not applied, (except that these activities may be conducted in the lunchrooms, change rooms and showers required under subsections (13)(a)-(13)(c) of this section.

(7) Methods of compliance. (a) Engineering and work practice controls. (i) The employer shall institute engineering or work practice controls to reduce and maintain employee exposures to AN, to or below the permissible exposure limits, except to the extent that the employer establishes that such controls are not feasible.

(ii) Wherever the engineering and work practice controls which can be instituted are not sufficient to reduce employee exposures to or below the permissible exposure limits, the employer shall nonetheless use them to reduce exposures to the lowest levels achievable by these controls and shall supplement them by the use of respiratory protection which complies with the requirements of subsection (8) of this section.

(b) Compliance program. (i) The employer shall establish and implement a written program to reduce employee exposures to or below the permissible exposure limits solely by means of engineering and work practice controls, as required by subsection (7)(a) of this section.

(ii) Written plans for these compliance programs shall include at least the following:

(A) A description of each operation or process resulting in employee exposure to AN above the permissible exposure limits;

(B) Engineering plans and other studies used to determine the controls for each process;

(C) A report of the technology considered in meeting the permissible exposure limits;

(D) A detailed schedule for the implementation of engineering or work practice controls; and

(E) Other relevant information.

(iii) Written plans for such a program shall be submitted upon request to the director, and shall be available at the worksite for examination and copying by the director, or any affected employee or representative.

(iv) The plans required by this subsection shall be revised and updated at least every six months to reflect the current status of the program.

(8) Respiratory protection. (a) General. The employer shall assure that respirators are used where required pursuant to this section to reduce employee exposure to within the permissible exposure limits and in emergencies. Compliance with the permissible exposure limits may not be achieved by the use of respirators except:

(i) During the time period necessary to install or implement feasible engineering and work practice controls; or

(ii) In work operations such as maintenance and repair activities in which the employer establishes that engineering and work practice controls are not feasible; or

(iii) In work situations where feasible engineering and work practice controls are not yet sufficient to reduce exposure to or below the permissible exposure limits; or

(iv) In emergencies.

(b) Respirator selection. (i) Where respiratory protection is required under this section, the employer shall select and provide at no cost to the employee, the appropriate type of respirator from Table I and shall assure that the employee wears the respirator provided.

TABLE I

RESPIRATORY PROTECTION FOR ACRYLONITRILE (AN)

Concentration of AN or Condition of Use	Respirator Type
(a) Less than or equal to 10 x permissible exposure limits.	(1) Any chemical cartridge respirator with organic vapor cartridge(s) and half-mask; or (2) Any supplied air respirator with half-mask.
(b) Less than or equal to 50 x permissible exposure limits.	(1) Any organic vapor gas mask; or (2) Any supplied air respirator with full facepiece; or (3) Any self-contained breathing apparatus with full facepiece.
(c) Less than or equal to 2,000 x permissible exposure limits.	(1) Supplied air respirator in positive pressure mode with full facepiece, helmet, hood, or suit.
(d) Less than or equal to 10,000 x permissible exposure limits.	(1) Supplied air respirator and auxiliary self-contained full facepiece in positive pressure mode; or (2) Open circuit self-contained breathing apparatus with full facepiece in positive pressure mode.
(e) Emergency entry into unknown concentration of fire-fighting.	(1) Any self-contained breathing

Concentration of AN or Condition of Use	Respirator Type
	apparatus with full facepiece in positive pressure mode.
(f) Escape.	(1) Any organic vapor gas mask; or (2) Any self-contained breathing apparatus with full facepiece.

(ii) The employer shall select respirators from those approved for use with AN by the National Institute for Occupational Safety and Health under the provisions of WAC 296-24-081.

(c) Respirator program. (i) The employer shall institute a respiratory protection program in accordance with WAC 296-24-081.

(ii) Where air-purifying respirators (chemical cartridge or canister-type gas mask) are used, the air-purifying canister or cartridge(s) shall be replaced prior to the expiration of their service life or at the beginning of each shift, whichever occurs first. A label shall be attached to the cartridge or canister to indicate the date and time at which it is first installed on the respirator.

(iii) The employer shall allow each employee who uses a filter respirator (cartridge or canister) to change the filter elements whenever an increase in breathing resistance is detected and shall maintain an adequate supply of the filter elements necessary for this purpose.

(iv) Employees who wear respirators shall be allowed to wash their faces and respirator facepieces to prevent potential skin irritation associated with respirator use.

(9) Emergency situations. (a) Written plans. (i) A written plan for emergency situations shall be developed for each workplace where AN is present. Appropriate portions of the plan shall be implemented in the event of an emergency.

(ii) The plan shall specifically provide that employees engaged in correcting emergency conditions shall be equipped as required in subsection (8) of this section until the emergency is abated.

(b) Alerting employees. (i) Alarms. Where there is the possibility of employee exposure to AN in excess of the ceiling limit due to the occurrence of an emergency, a general alarm shall be installed and maintained to promptly alert employees of such occurrences.

(ii) Evacuation. Employees not engaged in correcting the emergency shall be restricted from the area and shall not be permitted to return until the emergency is abated.

(10) Protective clothing and equipment. (a) Provision and use. Where eye or skin contact with liquid AN or PAN may occur, the employer shall provide at no cost to the employee, and assure that employees wear, appropriate protective clothing or other equipment in accordance with WAC 296-24-07501 and 296-24-07801 to protect any area of the body which may come in contact with liquid AN or PAN.

(b) Cleaning and replacement. (i) The employer shall clean, launder, maintain, or replace protective clothing and equipment required by this subsection, as needed to maintain their effectiveness. In addition, the employer shall provide clean protective clothing and equipment at least weekly to each affected employee.

(ii) The employer shall assure that the employee removes all protective clothing and equipment at the completion of a work shift and that an employee whose protective clothing becomes wet with liquid AN or PAN removes that clothing promptly to avoid skin contact with the liquid AN or PAN. Protective clothing shall be removed only in change rooms as required by subsection (14)(a) of this section.

(iii) The employer shall assure that AN- or PAN-contaminated protective clothing and equipment is placed and stored in closable containers which prevent dispersion of the AN or PAN outside the container.

(iv) The employer shall assure that no employee removes AN- or PAN-contaminated protective equipment or clothing from the change room, except for those employees authorized to do so for the purpose of laundering, maintenance, or disposal.

(v) The employer shall inform any person who launders or cleans AN-or PAN-contaminated protective clothing or equipment of the potentially harmful effects of exposure to AN.

(vi) The employer shall assure that containers of contaminated protective clothing and equipment which are to be removed from the workplace for any reason are labeled in accordance with subsection (16)(c)(ii) of this section, and that such labels remain affixed when such containers leave the employer's workplace.

(11) Housekeeping. (a) Surfaces. (i) All surfaces shall be maintained free of accumulations of liquid AN and of PAN.

(ii) Dry sweeping and the use of compressed air for the cleaning of floors and other surfaces where liquid AN and PAN are found is prohibited.

(iii) Where vacuuming methods are selected, either portable units or a permanent system may be used.

(A) If a portable unit is selected, the exhaust shall be attached to the general workplace exhaust ventilation system or collected within the vacuum unit, equipped with high efficiency filters or other appropriate means of contaminant removal, so that AN is not reintroduced into the workplace air; and

(B) Portable vacuum units used to collect AN may not be used for other cleaning purposes and shall be labeled as prescribed by subsection (16)(c)(ii) of this section.

(iv) Cleaning of floors and other contaminated surfaces may not be performed by washing down with a hose, unless a fine spray has first been laid down.

(b) Liquids. Where AN is present in a liquid form, or as a resultant vapor, all containers or vessels containing AN shall be enclosed to the maximum extent feasible and tightly covered when not in use, with adequate provision made to avoid any resulting potential explosion hazard.

(12) Waste disposal. AN and PAN waste, scrap, debris, bags, containers or equipment, shall be disposed of in sealed bags or other closed containers which prevent dispersion of AN outside the container, and labeled as prescribed in subsection (16)(c)(ii) of this section.

(13) Hygiene facilities and practices. Where employees are exposed to airborne concentrations of AN above

the permissible exposure limits, or where employees are required to wear protective clothing or equipment pursuant to subsection (11) of this section, or where otherwise found to be appropriate, the facilities required by WAC 296-24-12009 shall be provided by the employer for the use of those employees, and the employer shall assure that the employees use the facilities provided. In addition, the following facilities or requirements are mandated.

(a) Change rooms. The employer shall provide clean change rooms in accordance with WAC 296-24-12011.

(b) Showers. (i) The employer shall provide shower facilities in accordance with WAC 296-24-12009(3).

(ii) In addition, the employer shall also assure that employees exposed to liquid AN and PAN shower at the end of the work shift.

(c) Lunchrooms. (i) Whenever food or beverages are consumed in the workplace, the employer shall provide lunchroom facilities which have a temperature controlled, positive pressure, filtered air supply, and which are readily accessible to employees exposed to AN above the permissible exposure limits.

(ii) In addition, the employer shall also assure that employees exposed to AN above the permissible exposure limits wash their hands and face prior to eating.

(14) Medical surveillance. (a) General. (i) The employer shall institute a program of medical surveillance for each employee who is or will be exposed to AN above the action level. The employer shall provide each such employee with an opportunity for medical examinations and tests in accordance with this subsection.

(ii) The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and shall be provided without cost to the employee.

(b) Initial examinations. At the time of initial assignment, or upon institution of the medical surveillance program, the employer shall provide each affected employee an opportunity for a medical examination, including at least the following elements:

(i) A work history and medical history with special attention to skin, respiratory, and gastrointestinal systems, and those non-specific symptoms, such as headache, nausea, vomiting, dizziness, weakness, or other central nervous system dysfunctions that may be associated with acute or chronic exposure to AN.

(ii) A physical examination giving particular attention to central nervous system, gastrointestinal system, respiratory system, skin and thyroid.

(iii) A 14" x 17" posteroanterior chest x-ray.

(iv) Further tests of the intestinal tract, including fecal occult blood and proctosigmoidoscopy, on all workers 40 years of age or older, and to any other affected employees for whom, in the opinion of the physician, such testing would be appropriate.

(c) Periodic examinations. (i) The employer shall provide examinations specified in this subsection at least annually for all employees specified in subsection (14)(a) of this section.

(ii) If an employee has not had the examinations prescribed in subsection (14)(b) of this section within six months of termination of employment, the employer shall make such examination available to the employee upon such termination.

(d) Additional examinations. If the employee for any reason develops signs or symptoms commonly associated with exposure to AN, the employer shall provide appropriate examination and emergency medical treatment.

(e) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this standard and its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) The employee's representative exposure level;

(iv) The employee's anticipated or estimated exposure level (for preplacement examinations or in cases of exposure due to an emergency);

(v) A description of any personal protective equipment used or to be used; and

(vi) Information from previous medical examinations of the affected employee, which is not otherwise available to the examining physician.

(f) Physician's written opinion. (i) The employer shall obtain a written opinion from the examining physician which shall include:

(A) The results of the medical tests performed;

(B) The physician's opinion as to whether the employee has any detected medical condition which would place the employee at an increased risk of material impairment of the employee's health from exposure to AN;

(C) Any recommended limitations upon the employee's exposure to AN or upon the use of protective clothing and equipment such as respirators; and

(D) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

(ii) The employer shall instruct the physician not to reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure to AN.

(iii) The employer shall provide a copy of the written opinion to the affected employee.

(15) Employee information and training. (a) Training program. (i) The employer shall institute a training program for all employees where there is occupational exposure to AN and shall assure their participation in the training program.

(ii) The training program shall be provided at the time of initial assignment, or upon institution of the training program, and at least annually thereafter, and the employer shall assure that each employee is informed of the following:

(A) The information contained in Appendices A, B and C*(1);

(B) The quantity, location, manner of use, release or storage of AN and the specific nature of operations which could result in exposure to AN, as well as any necessary protective steps;

(C) The purpose, proper use, and limitations of respirators;

(D) The purpose and a description of the medical surveillance program required by subsection (14) of this section;

(E) The emergency procedures developed, as required by subsection (9) of this section; and

(F) The engineering and work practice controls, their function and the employee's relationship thereto; and

(G) A review of this standard.

(b) Access to training materials. (i) The employer shall make a copy of this standard and its appendices readily available to all affected employees.

(ii) The employer shall provide, upon request, all materials relating to the employee information and training program to the director.

(16) Signs and labels. (a) General. (i) The employer may use labels or signs required by other statutes, regulations, or ordinances in addition to, or in combination with, signs and labels required by this subsection.

(ii) The employer shall assure that no statement appears on or near any sign or label, required by this subsection, which contradicts or detracts from such effects of the required sign or label.

(b) Signs. (i) The employer shall post signs to clearly indicate all workplaces where AN concentrations exceed the permissible exposure limits. The signs shall bear the following legend:

DANGER
ACRYLONITRILE (AN)
CANCER HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS REQUIRED

(ii) The employer shall assure that signs required by this subsection are illuminated and cleaned as necessary so that the legend is readily visible.

(c) Labels. (i) The employer shall assure that precautionary labels are affixed to all containers of AN, and to containers of PAN and products fabricated from PAN, except for those materials for which objective data is provided as to the conditions specified in subsection (1)(b) of this section. The employer shall assure that the labels remain affixed when the AN or PAN are sold, distributed or otherwise leave the employer's workplace.

(ii) The employer shall assure that the precautionary labels required by this subsection are readily visible and legible. The labels shall bear the following legend:

DANGER
CONTAINS ACRYLONITRILE (AN)
CANCER HAZARD

(17) Recordkeeping. (a) Objective data for exempted operations. (i) Where the processing, use, and handling of products fabricated from PAN are exempted pursuant to subsection (1)(b) of this section, the employer shall establish and maintain an accurate record of objective data reasonably relied upon in support of the exemption.

(ii) This record shall include the following information:

(A) The relevant condition in subsection (1)(b) upon which exemption is based;

(B) The source of the objective data;

(C) The results of testing and analysis of the material being processed;

(D) A description of the operation exempted; and

(E) Other data relevant to the operations, materials, and processing covered by the exemption.

(iii) The employer shall maintain this record for the duration of the employer's reliance upon such objective data.

(b) Exposure monitoring. (i) The employer shall establish and maintain an accurate record of all monitoring required by subsection (5) of this section.

(ii) This record shall include:

(A) The dates, number, duration, and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure;

(B) A description of the sampling and analytical methods used;

(C) Type of respiratory protective devices worn, if any; and

(D) Name, social security number and job classification of the employee monitored and of all other employees whose exposure the measurement is intended to represent.

(iii) The employer shall maintain this record for at least 40 years or the duration of employment plus 20 years, whichever is longer.

(c) Medical surveillance. (i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance as required by subsection (14) of this section.

(ii) This record shall include:

(A) A copy of the physicians' written opinions;

(B) Any employee medical complaints related to exposure to AN;

(C) A copy of the information provided to the physician as required by subsection (14)(f) of this section; and

(D) A copy of the employee's work history.

(iii) The employer shall assure that this record be maintained for at least forty years or for the duration of employment plus twenty years, whichever is longer.

(d) Availability. (i) The employer shall assure that all records required to be maintained by this section be made available upon request to the director for examination and copying.

(ii) The employer shall assure that employee exposure measurement records, as required by this section, be made available, upon request, for examination and copying to the affected employee, former employee, or designated representative.

(iii) The employer shall assure that employee medical records required to be maintained by this section, be made available, upon request, for examination and copying, to the affected employee or former employee, or to a physician designated by the affected employee, former employee, or designated representative.

(e) Transfer of records. (i) Whenever the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by this section.

(ii) Whenever the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, these records shall be transmitted to the director.

(iii) At the expiration of the retention period for the records required to be maintained pursuant to this section, the employer shall transmit these records to the director.

(18) Observation of monitoring. (a) Employee observation. The employer shall provide affected employees, or their designated representatives, an opportunity to observe any monitoring of employee exposure to AN conducted pursuant to subsection (5) of this section.

(b) Observation procedures. (i) Whenever observation of the monitoring of employee exposure to AN requires entry into an area where the use of protective clothing or equipment is required, the employer shall provide the observer with personal protective clothing or equipment required to be worn by employees working in the area, assure the use of such clothing and equipment, and require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the monitoring, observers shall be entitled:

(A) To receive an explanation of the measurement procedures;

(B) To observe all steps related to the measurement of airborne concentrations of AN performed at the place of exposure; and

(C) To record the results obtained.

(19) Effective date. This standard will become effective 30 days after it is filed with the Code Reviser.

*(1) Appendices printed in addition to this section, and information contained therein is not intended, by itself, to create any additional obligations not otherwise imposed or to detract from any existing obligations.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49-.17.240, chapters 42.30, and 43.22 RCW. 78-07-052 (Order 78-10), § 296-62-07341, filed 6/28/78.]

WAC 296-62-07345 1,2-Dibromo-3-chloropropane. (1) Scope and Application. This section applies to all occupational exposures to 1,2-dibromo-3-chloropropane (DBCP), Chemical Abstracts Service Registry Number 96-12-8, except that this section does not apply to exposure to DBCP which results solely from the application and use of DBCP as a pesticide.

(2) Definitions applicable to this section:

(a) "Authorized person" - any person specifically authorized by the employer and whose duties require the person to be present in areas where DBCP is present; and any person entering this area as a designated representative of employees exercising an opportunity to observe employee exposure monitoring.

(b) "DBCP" - 1,2-dibromo-3-chloropropane.

(c) "Director" - the Director of Labor and Industries, or his authorized representative.

(3) Permissible Exposure Limits. (a) Inhalation. (i) Time-weighted average limit (TWA). The employer shall assure that no employee is exposed to an airborne concentration in excess of 10 parts DBCP per billion part of air (ppb) as an eight-hour time-weighted average.

(ii) Ceiling limit. The employer shall assure that no employee is exposed to an airborne concentration in excess of 50 parts DBCP per billion parts of air (ppb) as averaged over any 15 minutes during the working day.

(b) Dermal and eye exposure. The employer shall assure that no employee is exposed to eye or skin contact with DBCP.

(4) Notification of Use. Within ten days of the effective date of this section or within ten days following the introduction of DBCP into the workplace, every employer who has a workplace where DBCP is present shall report the following information to the director for each such workplace:

(a) The address and location of each workplace in which DBCP is present;

(b) A brief description of each process or operation which may result in employee exposure to DBCP;

(c) The number of employees engaged in each process or operation who may be exposed to DBCP and an estimate of the frequency and degree of exposure that occurs;

(d) A brief description of the employer's safety and health program as it relates to limitation of employee exposure to DBCP.

(5) Exposure Monitoring. (a) General. Determinations of airborne exposure levels shall be made from air samples that are representative of each employee's exposure to DBCP over an eight-hour period. (For the purposes of this section, employee exposure is that exposure which would occur if the employee were not using a respirator.)

(b) Initial. Each employer who has a place of employment in which DBCP is present shall monitor, within thirty days of the effective date of this section, each workplace and work operation to accurately determine the airborne concentrations of DBCP to which employees may be exposed.

(c) Frequency. (i) If the monitoring required by this section reveals employee exposures to be below the permissible exposure limits, the employer shall repeat these determinations at least quarterly.

(ii) If the monitoring required by this section reveals employee exposure to be in excess of the permissible exposure limits, the employer shall repeat these determinations for each such employee at least monthly. The employer shall continue these monthly determinations until at least two consecutive measurements, taken at least seven days apart, are below the permissible exposure limit, thereafter the employer shall monitor at least quarterly.

(d) Additional. Whenever there has been a production process, control or personnel change which may result in any new or additional exposure to DBCP, or whenever the employer has any other reason to suspect a change which may result in new or additional exposure to DBCP, additional monitoring which complies with subsection (5) shall be conducted.

(e) Employee notification. (i) Within five working days after the receipt of monitoring results, the employer

shall notify each employee in writing of results which represent the employee's exposure.

(ii) Whenever the results indicate that employee exposure exceeds the permissible exposure limit, the employer shall include in the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action being taken to reduce exposure to or below the permissible exposure limits.

(f) Accuracy of measurement. The method of measurement shall be accurate, to a confidence level of 95 percent, to within plus or minus 25 percent for concentrations of DBCP at or above the permissible exposure limits.

(6) Methods of Compliance. The employer shall control employee exposures to airborne concentrations of DBCP to within the permissible exposure limit, and shall protect against employee exposure to eye or skin contact with DBCP by engineering controls, work practices and personal protective equipment.

(a) Engineering controls. The employer shall develop and implement, as soon as possible, feasible engineering controls to reduce the airborne concentrations of DBCP to within the permissible exposure limits.

(b) Work practices. The employer shall examine each work area in which DBCP is present and shall institute, as soon as possible, work practices to reduce employee exposure to DBCP. The work practices shall be described in writing and shall include, among other things, the following mandatory work practices:

(i) Limiting access to work areas where DBCP is present to authorized personnel only;

(ii) Prohibiting smoking and the consumption of food and beverages in work areas where DBCP is present; and

(iii) Establishing good maintenance and housekeeping practices including the prompt cleanup of spills, repair of leaks, and the practices required in subsection (9) of this section.

(c) Respiratory protection. Where engineering and work practice controls are not sufficient to reduce employee exposures to airborne concentrations of DBCP to within the permissible exposure limits, the employer shall provide at no cost to the employee, and assure that employees wear respirators in accordance with subsection (7) of this section.

(d) Engineering and work practice control plan. (i) Within ninety days of the effective date of this section, the employer shall develop a written plan describing proposed means to reduce employee exposures to DBCP to the lowest feasible level solely by means of engineering and work practice controls.

(ii) Written plans required under subsection (6)(d) shall be submitted upon request to the director, and shall be available at the worksite for examination and copying by the director, and any affected employee or designated representative of employees.

(7) Respirators. (a) Required use. The employer shall assure that respirators are used where required under this section to reduce employee exposure to within the permissible exposure limits, and in emergencies.

(b) Respirator selection. (i) Where respirators are used to reduce employee exposures to within the permissible exposure limit and in emergencies, the employer shall select and provide, at no cost to the employee, the appropriate respirator from Table I and shall assure that the employee wears the respirator provided.

(ii) The employer shall select respirators from among those approved by the National Institute for Occupational Safety and Health (NIOSH) under the provisions of WAC 296-24-081.

TABLE I

RESPIRATORY PROTECTION FOR DBCP

RESPIRATORY PROTECTION

Concentration not greater than:

100 ppb:

Any chemical cartridge respirator with pesticide cartridge(s).

Any supplied-air respirator.

Any self-contained cartridge breathing apparatus.

500 ppb:

A chemical cartridge respirator with full facepiece and pesticide cartridge(s).

A gas mask with full facepiece and pesticide canister.

Any supplied-air respirator with full facepiece, helmet or hood.

Any self-contained breathing apparatus with full facepiece.

5,000 ppb:

A Type C supplied-air respirator operated in pressure-demand or other positive pressure or continuous flow mode.

20,000 ppb:

A Type C supplied-air respirator with full facepiece operated in pressure-demand or other positive pressure mode, or with full facepiece, hood or helmet operated in continuous flow mode.

Greater than 20,000 ppb or entry and escape from unknown concentrations:

A combination respirator which includes a Type C supplied-air respirator with full facepiece operated in pressure-demand or other positive pressure or continuous flow mode and an auxiliary self-contained breathing apparatus operated in pressure-demand or positive pressure mode.

A self-contained breathing apparatus with full facepiece operated in pressure-demand or other positive pressure mode.

Firefighting:

A self-contained breathing apparatus with full facepiece operated in pressure-demand or other positive pressure mode.

(c) Respirator program. (i) The employer shall institute a respiratory protection program in accordance with WAC 296-24-081.

(ii) Where air-purifying respirators (chemical cartridge or gas mask) are used, the air-purifying canister or cartridge(s) shall be replaced prior to the expiration of their service life or the beginning of each shift, whichever occurs first.

(iii) Employees who wear respirators shall be allowed to wash their face and respirator facepiece to prevent potential skin irritation associated with respirator use.

(8) Protective Clothing and Equipment. (a) Provision and use. Where eye or skin contact with liquid or solid DBCP may occur, employers shall provide at no cost to the employee, and assure that employees wear impermeable protective clothing and equipment in accordance with WAC 296-24-07501 and 296-24-07801 to protect the area of the body which may come in contact with DBCP.

(b) Cleaning and replacement. (i) The employer shall clean, launder, maintain, or replace protective clothing and equipment required by this subsection to maintain their effectiveness. In addition, the employer shall provide clean protective clothing and equipment at least daily to each affected employee.

(ii) The employer shall assure that the employee removes all protective clothing and equipment at the completion of a workshift.

(iii) The employer shall assure that DBCP-contaminated protective work clothing and equipment is placed and stored in closed containers which prevent dispersion of DBCP outside the container.

(iv) The employer shall inform any person who launders or cleans DBCP-contaminated protective clothing or equipment of the potentially harmful effects of exposure to DBCP.

(v) The employer shall assure that the containers of contaminated protective clothing and equipment which are to be removed from the workplace for any reason are labeled in accordance with subsection (13)(c) of this section.

(vi) The employer shall prohibit the removal of DBCP from protective clothing and equipment by blowing or shaking.

(9) Housekeeping. (a) Surfaces. (i) All surfaces shall be maintained free of accumulations of DBCP.

(ii) Dry sweeping and the use of air for the cleaning of floors and other surfaces where DBCP dust or liquids are found is prohibited.

(iii) Where vacuuming methods are selected, either portable units or a permanent system may be used.

(A) If a portable unit is selected, the exhaust shall be attached to the general workplace exhaust ventilation system or collected within the vacuum unit, equipped with high efficiency filters or other appropriate means of contaminant removal, so that DBCP is not reintroduced into the workplace air; and

(B) Portable vacuum units used to collect DBCP may not be used for other cleaning purposes and shall be labeled as prescribed by subsection (13)(c) of this section.

(iv) Cleaning of floors and other contaminated surfaces may not be performed by washing down with a hose, unless a fine spray has first been laid down.

(b) Liquids. Where DBCP is present in a liquid form, or as a resultant vapor, all containers or vessels containing DBCP shall be enclosed to the maximum extent feasible and tightly covered when not in use.

(c) Waste disposal. DBCP waste, scrap, debris, bags, containers or equipment, shall be disposed in sealed bags or other closed containers which prevent dispersion of DBCP outside the container.

(10) Hygiene Facilities and Practices. Hygiene facilities shall be provided and practices implemented in accordance with the requirements of WAC 296-24-12009.

(11) Medical Surveillance. (a) General. The employer shall institute a program of medical surveillance for each employee who is or will be exposed, without regard to the use of respirators, to DBCP. The employer shall provide each such employee with an opportunity for medical examinations and tests in accordance with this subsection. All medical examinations and procedures shall be performed by or under the supervision of a licensed physician, and shall be provided without cost to the employee.

(b) Frequency and content. Within 30 days of the effective date of this section or time of initial assignment, and whenever exposure to DBCP, the employer shall provide a medical examination including at least the following:

(i) A complete medical and occupational history with emphasis on reproductive history.

(ii) A complete physical examination with emphasis on the genito-urinary tract, testicle size, and body habitus including the following tests:

(A) Sperm count;

(B) Complete urinalysis (U/A);

(C) Complete blood count; and

(D) Thyroid profile.

(iii) A serum specimen shall be obtained and the following determinations made:

(A) Serum multiphasic analysis (SMA 12);

(B) Serum testosterone;

(C) Serum follicle stimulating hormone (FSH);

(D) Serum luteinizing hormone (LH).

(c) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this standard and its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) The level of DBCP to which the employee is exposed; and

(iv) A description of any personal protective equipment used or to be used.

(d) Physician's written opinion. (i) The employer shall obtain a written opinion from the examining physician which shall include:

(A) The results of the medical tests performed;

(B) The physician's opinion as to whether the employee has any detected medical condition which would

place the employee at an increased risk of material impairment of health from exposure to DBCP;

(C) Any recommended limitations upon the employee's exposure to DBCP or upon the use of protective clothing and equipment such as respirators; and

(D) A statement that the employee was informed by the physician of the results of the medical examination, and any medical conditions which require further examination or treatment.

(ii) The employer shall instruct the physician not to reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure to DBCP.

(iii) The employer shall provide a copy of the written opinion to the affected employee.

(12) Employee Information and Training. (a) Training program. (i) Within thirty days of the effective date of this standard, the employer shall institute a training program for all employees who may be exposed to DBCP and shall assure their participation in such training program.

(ii) The employer shall assure that each employee is informed of the following:

(A) The information contained in Appendices A, B and C*[(1)];

(B) The quantity, location, manner of use, release or storage of DBCP and the specific nature of operations which could result in exposure to DBCP as well as any necessary protective steps;

(C) The purpose, proper use, and limitations of respirators;

(D) The purpose and description of the medical surveillance program required by subsection (11) of this section; and

(E) A review of this standard.

(b) Access to training materials. (i) The employer shall make a copy of this standard and its appendices readily available to all affected employees.

(ii) The employer shall provide, upon request, all materials relating to the employee information and training program to the director.

(13) Signs and Labels. (a) General. (i) The employer may use labels or signs required by other statutes, regulations, or ordinances in addition to or in combination with, signs and labels required by this subsection.

(ii) The employer shall assure that no statement appears on or near any sign or label required by this subsection which contradicts or detracts from the required sign or label.

(b) Signs. (i) The employer shall post signs to clearly indicate all work areas where DBCP may be present. These signs shall bear the legend:

DANGER

1,2–Dibromo–3–chloropropane

(Insert appropriate trade or common names)

CANCER HAZARD

AUTHORIZED PERSONNEL ONLY

(ii) Where airborne concentrations of DBCP exceed the permissible exposure limits, the signs shall bear the additional legend:

RESPIRATOR REQUIRED

(c) Labels. (i) The employer shall assure that precautionary labels are affixed to all containers of DBCP and of products containing DBCP, and that the labels remain affixed when the DBCP or products containing DBCP are sold, distributed, or otherwise leave the employer's workplace. Where DBCP or products containing DBCP are sold, distributed or otherwise leave the employer's workplace bearing appropriate labels required by EPA under the regulations in 40 CFR Part 162, the labels required by this subsection need not be affixed.

(ii) The employer shall assure that the precautionary labels required by this subsection are readily visible and legible. The labels shall bear the following legend:

DANGER

1,2–Dibromo–3–chloropropane

CANCER HAZARD

(14) Recordkeeping. (a) Exposure monitoring. (i) The employer shall establish and maintain an accurate record of all monitoring required by subsection (5) of this section.

(ii) This record shall include:

(A) The dates, number, duration and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure;

(B) A description of the sampling and analytical methods used;

(C) Type of respiratory worn, if any; and

(D) Name, social security number, and job classification of the employee monitored and of all other employees whose exposure the measurement is intended to represent.

(iii) The employer shall maintain this record for the effective period of this standard.

(b) Medical surveillance. (i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance required by subsection (11) of this section.

(ii) This record shall include:

(A) A copy of the physician's written opinion.

(B) Any employee medical complaints related to exposure to DBCP;

(C) A copy of the information provided the physician as required by subsection (11)(c) of this section; and

(D) A copy of the employee's work history.

(iii) The employer shall assure that this record be maintained for the effective period of this standard.

(c) Availability. (i) The employer shall assure that all records required to be maintained by this section be made available upon request to the director for examination and copying.

(ii) The employer shall assure that employee exposure monitoring records required by this section be made available upon request, for examination and copying to

the affected employee or former employee, and their designated representatives.

(iii) The employer shall assure that employee medical records required to be maintained by this section be made available, upon request, for examination and copying to the affected employee or former employee, or to a physician designated by the affected employee or former employee or designated representative.

(15) Observation of Monitoring. (a) Employee observation. The employer shall provide affected employees, or their designated representatives, an opportunity to observe any monitoring of employee exposure to DBCP conducted under subsection (5) of this section.

(b) Observation procedures. (i) Whenever observation of the measuring or monitoring of employee exposure to DBCP requires entry into an area where the use of protective clothing or equipment is required, the employer shall provide the observer with personal protective clothing or equipment required to be worn by employees working in the area, assure the use of such clothing and equipment, and require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the monitoring or measurement, observers shall be entitled to:

(A) Receive an explanation of the measurement procedures;

(B) Observe all steps related to the measurement of airborne concentrations of DBCP performed at the place of exposure; and

(C) Record the results obtained.

(16) Effective Date. This standard will become effective 30 days after it is filed with the Code Reviser.

*(1) Appendices printed in addition to this section, and information contained therein is not intended, by itself, to create any additional obligations not otherwise imposed or to detract from any existing obligations.

[Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240, chapters 42.30, and 43.22 RCW. 78-07-052 (Order 78-10), § 296-62-07345, filed 6/28/78.]

WAC 296-62-07347 Inorganic arsenic. (1) Scope and Application. This section applies to all occupational exposures to inorganic arsenic except that this section does not apply to employee exposures in agriculture or resulting from pesticide application, the treatment of wood with preservatives or the utilization of arsenically preserved wood.

(2) Definitions. (a) "Action level" – a concentration of inorganic arsenic of 5 micrograms per cubic meter of air (5 $\mu g/m^3$) averaged over any eight-hour period.

(b) "Authorized person" – any person specifically authorized by the employer whose duties require the person to enter a regulated area, or any person entering such an area as a designated representative of employees for the purpose of exercising the right to observe monitoring and measuring procedures under subsection (5) of this section.

(c) "Director" – the Director of the Department of Labor and Industries, or his designated representative.

(d) "Inorganic arsenic" – copper aceto-arsenite and all inorganic compounds containing arsenic except arsine, measured as arsenic (As).

(3) Permissible Exposure Limit. The employer shall assure that no employee is exposed to inorganic arsenic at concentrations greater than 10 micrograms per cubic meter of air (10 $\mu g/m^3$), averaged over any eight-hour period.

(4) Notification of Use. (a) By October 1, 1978, or within sixty days after the introduction of inorganic arsenic into the workplace, every employer who is required to establish a regulated area in his workplaces shall report in writing to the Department of Labor and Industries for each such workplace:

(i) The address of each such workplace;

(ii) The approximate number of employees who will be working in regulated areas; and

(iii) A brief summary of the operations creating the exposure and the actions which the employer intends to take to reduce exposures.

(b) Whenever there has been a significant change in the information required by subsection (4)(a) of this section, the employer shall report the changes in writing within sixty days to the Department of Labor and Industries.

(5) Exposure Monitoring. (a) General. (i) Determinations of airborne exposure levels shall be made from air samples that are representative of each employee's exposure to inorganic arsenic over an eight-hour period.

(ii) For the purposes of this section, employee exposure is that exposure which would occur if the employee were not using a respirator.

(iii) The employer shall collect full shift (for at least seven continuous hours) personal samples including at least one sample for each shift for each job classification in each work area.

(b) Initial Monitoring. Each employer who has a workplace or work operation covered by this standard shall monitor each such workplace and work operation to accurately determine the airborne concentration of inorganic arsenic to which employees may be exposed.

(c) Frequency. (i) If the initial monitoring reveals employee exposure to be below the action level the measurements need not be repeated except as otherwise provided in subsection (5)(d) of this section.

(ii) If the initial monitoring, required by this section, or subsequent monitoring reveals employee exposure to be above the permissible exposure limit, the employer shall repeat monitoring at least quarterly.

(iii) If the initial monitoring, required by this section, or subsequent monitoring reveals employee exposure to be above the action level and below the permissible exposure limit the employee shall repeat monitoring at least every six months.

(iv) The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least seven days apart, are below the action level at which time the employer may discontinue monitoring for that employee until such time as any of the events in subsection (5)(d) of this section occur.

(d) Additional monitoring. Whenever there has been a production, process, control or personal change which may result in new or additional exposure to inorganic arsenic, or whenever the employer has any other reason to suspect a change which may result in new or additional exposures to inorganic arsenic, additional monitoring which complies with subsection (5) of this section shall be conducted.

(e) Employee notification. (i) Within five working days after the receipt of monitoring results, the employer shall notify each employee in writing of the results which represent that employee's exposures.

(ii) Whenever the results indicate that the representative employee exposure exceeds the permissible exposure limit, the employer shall include in the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action taken to reduce exposure to or below the permissible exposure limit.

(f) Accuracy of measurement. (i) The employer shall use a method of monitoring and measurement which has an accuracy (with a confidence level of 95 percent) of not less than plus or minus 25 percent for concentrations of inorganic arsenic greater than or equal to 10 $\mu g/m^3$.

(ii) The employer shall use a method of monitoring and measurement which has an accuracy (with confidence level of 95 percent) of not less than plus or minus 35 percent for concentrations of inorganic arsenic greater than 5 $\mu g/m^3$ but less than 10 $\mu g/m^3$.

(6) Regulated Area. (a) Establishment. The employer shall establish regulated areas where worker exposures to inorganic arsenic, without regard to the use of respirators, are in excess of the permissible limit.

(b) Demarcation. Regulated areas shall be demarcated and segregated from the rest of the workplace in any manner that minimizes the number of persons who will be exposed to inorganic arsenic.

(c) Access. Access to regulated areas shall be limited to authorized persons or to persons otherwise authorized by the Act or regulations issued pursuant thereto to enter such areas.

(d) Provision of respirators. All persons entering a regulated area shall be supplied with a respirator, selected in accordance with subsection (8)(b) of this section.

(e) Prohibited activities. The employer shall assure that in regulated areas, food or beverages are not consumed, smoking products, chewing tobacco and gum are not used and cosmetics are not applied, except that these activities may be conducted in the lunchrooms, change rooms and showers required under subsection (12) of this section. Drinking water may be consumed in the regulated area.

(7) Methods of Compliance. (a) Controls. (i) The employer shall institute at the earliest possible time but not later than December 31, 1979, engineering and work practice controls to reduce exposures to or below the permissible exposure limit, except to the extent that the employer can establish that such controls are not feasible.

(ii) Where engineering and work practice controls are not sufficient to reduce exposures to or below the permissible exposure limit, they shall nonetheless be used to reduce exposures to the lowest levels achievable by these controls and shall be supplemented by the use of respirators in accordance with subsection (8) of this section and other necessary personal protective equipment. Employee rotation is not required as a control strategy before respiratory protection is instituted.

(b) Compliance program. (i) The employer shall establish and implement a written program to reduce exposures to or below the permissible exposure limit by means of engineering and work practice controls.

(ii) Written plans for these compliance programs shall include at least the following:

(A) A description of each operation in which inorganic arsenic is emitted; e.g., machinery used, material processed, controls in place, crew size, operating procedures and maintenance practices;

(B) Engineering plans and studies used to determine methods selected for controlling exposure to inorganic arsenic;

(C) A report of the technology considered in meeting the permissible exposure limit;

(D) Monitoring data;

(E) A detailed schedule for implementation of the engineering controls and work practices that cannot be implemented immediately and for the adaption and implementation of any additional engineering and work practices necessary to meet the permissible exposure limit;

(F) Whenever the employer will not achieve the permissible exposure limit with engineering controls and work practices by December 31, 1979, the employer shall include in the compliance plan an analysis of the effectiveness of the various controls, shall install engineering controls and institute work practices on the quickest schedule feasible, and shall include in the compliance plan and implement a program to minimize the discomfort and maximize the effectiveness of respirator use; and

(G) Other relevant information.

(iii) Written plans for such a program shall be submitted upon request to the Director, and shall be available at the worksite for examination and copying by the Director, any affected employee or authorized employee representatives.

(iv) The plans required by this subsection shall be revised and updated at least every six months to reflect the current status of the program.

(8) Respiratory Protection. (a) General. The employer shall assure that respirators are used where required under this section to reduce employee exposures to below the permissible exposure limit and in emergencies. Respirators shall be used in the following circumstances:

(i) During the time period necessary to install or implement feasible engineering or work practice controls;

(ii) In work operations such as maintenance and repair activities in which the employer establishes that engineering and work practice controls are not feasible;

(iii) In work situations in which engineering controls and supplemental work practice controls are not yet sufficient to reduce exposures to or below the permissible exposure limit; or

(iv) In emergencies.

(b) Respirator selection. (i) Where respirators are required under this section the employer shall select, provide at no cost to the employee and assure the use of the appropriate respirator or combination of respirators from Table I for inorganic arsenic compounds without significant vapor pressure, or Table II for inorganic arsenic compounds which have significant vapor pressure.

(ii) Where employee exposures exceed the permissible exposure limit for inorganic arsenic and also exceed the relevant limit for particular gasses such as sulfur dioxide, any air purifying respirator supplied to the employee as permitted by this standard must have a combination high efficiency filter with an appropriate gas sorbent. (See footnote in Table I)

TABLE I

RESPIRATORY PROTECTION FOR INORGANIC ARSENIC PARTICULATE EXCEPT FOR THOSE WITH SIGNIFICANT VAPOR PRESSURE

Concentration of Inorganic Arsenic (as As) or Condition of Use.	Required Respirator
(i) Unknown or greater or lesser than 20,000 $\mu g/m^3$ (20 mg/m^3) or firefighting.	(A) Any full facepiece self–contained breathing apparatus operated in positive pressure mode.
(ii) Not greater than 20,000 $\mu g/m^3$ (20 mg/m^3)	(A) Supplied air respirator with full facepiece, hood, or helmet or suit and operated in positive pressure mode.
(iii) Not greater than 10,000 $\mu g/m^3$ (10 mg/m^3)	(A) Powered air–purifying respirators in all inlet face coverings with high–efficiency filters. [1](B) Half–mask supplied air respirators operated in positive pressure mode.
(iv) Not greater than 500 $\mu g/m^3$	(A) Full facepiece air–purifying respirator equipped with high–efficiency filter.[1] (B) Any full facepiece supplied air respirator. (C) Any full facepiece self–contained breathing apparatus.
(v) Not greater than 100 $\mu g/m^3$	(A) Half–mask air–purifying respirator equipped with high–efficiency filter. [1] (B) Any half–mask supplied air respirator.

[1]High–efficiency filter–99.97 pct efficiency against 0.3 micrometer monodisperse diethyl–hexyl phthalate (DOP) particles.

TABLE II

RESPIRATORY PROTECTION FOR INORGANIC ARSENICALS (SUCH AS ARSENIC TRICHLORIDE[2] AND ARSENIC PHOSPHIDE) WITH SIGNIFICANT VAPOR PRESSURE

Concentration of Inorganic Arsenic (as As) or Condition of Use	Required Respirator
(i) Unknown or greater or lesser than 20,000 $\mu g/m^3$ (20 mg/m^3) or firefighting.	(A) Any full facepiece contained breathing apparatus operated in positive pressure mode.
(ii) Not greater than 20,000 $\mu g/m^3$ (20 mg/m^3)	(A) Supplied air respirator with full facepiece hood, or helmet or suit and operated in positive pressure mode.
(iii) Not greater than 10,000 $\mu g/m^3$ (10 mg/m^3)	(A) Half–mask[2] supplied air respirator operated in positive pressure mode.
(iv) Not greater than 500 $\mu g/m^3$	(A) Front or back mounted gas mask equipped with high–efficiency filter[1] and acid gas canister. (B) Any full facepiece supplied air respirator. (C) Any full facepiece self–contained breathing apparatus.
(v) Not greater than 100 $\mu g/m^3$	(A) Half–mask [2] air–purifying respirator equipped with high–efficiency filter [1] and acid gas cartridge. (B) Any half–mask supplied air respirator.

[1]High efficiency filter–99.97 pct efficiency against 0.3 micrometer monodisperse diethyl–hexyl phthalate (DOP) particles.

[2]Half–mask respirators shall not be used for protection against arsenic trichloride, as it is rapidly absorbed through the skin.

(iii) The employer shall select respirators from among those approved for protection against dust, fume, and mist by the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11.

(c) Respirator usage. (i) The employer shall assure that the respirator issued to the employee exhibits minimum facepiece leakage and that the respirator is fitted properly.

(ii) The employer shall perform qualitative fit tests at the time of initial fitting and at least semi–annually thereafter for each employee wearing respirators, where quantitative fit tests are not required.

(iii) Employers with more than twenty employees wearing respirators shall perform a quantitative face fit test at the time of initial fitting and at least semi–annually thereafter for each employee wearing negative pressure respirators. The test shall be used to select facepieces that provide the required protection as prescribed in Table I or II.

(iv) If an employee has demonstrated difficulty in breathing during the fitting test or during use, he or she shall be examined by a physician trained in pulmonary

medicine to determine whether the employee can wear a respirator while performing the required duty.

(d) Respirator program. (i) The employer shall institute a respiratory protection program in accordance with WAC 296-24-08103, 296-24-08107, 296-24-08109 and 296-24-08111.

(ii) The employer shall permit each employee who uses a filter respirator to change the filter elements whenever an increase in breathing resistance is detected and shall maintain an adequate supply of filter elements for this purpose.

(iii) Employees who wear respirators shall be permitted to leave work areas to wash their face and respirator facepiece to prevent skin irritation associated with respirator use.

(e) Commencement of respirator use. (i) The employer's obligation to provide respirators commences on August 1, 1978, for employees exposed over 500 $\mu g/m^3$ of inorganic arsenic, as soon as possible but not later than October 1, 1978, for employees exposed to over 50 $\mu g/m^3$ of inorganic arsenic, and as soon as possible but not later than December 1, 1978, for employees exposed between 10 and 50 $\mu g/m^3$ of inorganic arsenic.

(ii) Employees with exposures below 50 $\mu g/m^3$ of inorganic arsenic may choose not to wear respirators until December 31, 1979.

(iii) After December 1, 1978, any employee required to wear air purifying respirators may choose, and if so chosen the employer must provide, if it will give proper protection, a powered air purifying respirator and in addition if necessary a combination dust and acid gas respirator for times where exposures to gases are over the relevant exposure limits.

(9) RESERVED.

(10) Protective Work Clothing and Equipment. (a) Provision and use. Where the possibility of skin or eye irritation from inorganic arsenic exists, and for all workers working in regulated areas, the employer shall provide at no cost to the employee and assure that employees use appropriate and clean protective work clothing and equipment such as, but not limited to:

(i) Coveralls or similar full-body work clothing;

(ii) Gloves, and shoes or coverlets;

(iii) Face shields or vented goggles when necessary to prevent eye irritation, which comply with the requirements of WAC 296-24-07801(1) - (6).

(iv) Impervious clothing for employees subject to exposure to arsenic trichloride.

(b) Cleaning and replacement. (i) The employer shall provide the protective clothing required in subsection (10)(a) of this section in a freshly laundered and dry condition at least weekly, and daily if the employee works in areas where exposures are over 100 $\mu g/m^3$ of inorganic arsenic or in areas where more frequent washing is needed to prevent skin irritation.

(ii) The employer shall clean, launder, or dispose of protective clothing required by subsection (10)(a) of this section.

(iii) The employer shall repair or replace the protective clothing and equipment as needed to maintain their effectiveness.

(iv) The employer shall assure that all protective clothing is removed at the completion of a work shift only in change rooms prescribed in subsection (13)(a) of this section.

(v) The employer shall assure that contaminated protective clothing which is to be cleaned, laundered, or disposed of, is placed in a closed container in the change-room which prevents dispersion of inorganic arsenic outside the container.

(vi) The employer shall inform in writing any person who cleans or launders clothing required by this section, of the potentially harmful affects including the carcinogenic effects of exposure to inorganic arsenic.

(vii) The employer shall assure that the containers of contaminated protective clothing and equipment in the workplace or which are to be removed from the workplace are labeled as follows:

CAUTION: Clothing contaminated with inorganic arsenic; do not remove dust by blowing or shaking. Dispose of inorganic arsenic contaminated wash water in accordance with applicable local, state, or Federal regulations.

(viii) The employer shall prohibit the removal of inorganic arsenic from protective clothing or equipment by blowing or shaking.

(11) Housekeeping. (a) Surfaces. All surfaces shall be maintained as free as practicable of accumulations of inorganic arsenic.

(b) Cleaning floors. Floors and other accessible surfaces contaminated with inorganic arsenic may not be cleaned by the use of compressed air, and shoveling and brushing may be used only where vacuuming or other relevant methods have been tried and found not to be effective.

(c) Vacuuming. Where vacuuming methods are selected, the vacuums shall be used and emptied in a manner to minimize the reentry of inorganic arsenic into the workplace.

(d) Housekeeping plan. A written housekeeping and maintenance plan shall be kept which shall list appropriate frequencies for carrying out housekeeping operations, and for cleaning and maintaining dust collection equipment. The plan shall be available for inspection by the Director.

(e) Maintenance of equipment. Periodic cleaning of dust collection and ventilation equipment and checks of their effectiveness shall be carried out to maintain the effectiveness of the system and a notation kept of the last check of effectiveness and cleaning or maintenance.

(12) RESERVED.

(13) Hygiene Facilities and Practices. (a) Change rooms. The employer shall provide for employees working in regulated areas or subject to the possibility of skin or eye irritation from inorganic arsenic, clean change rooms equipped with storage facilities for street clothes and separate storage facilities for protective clothing and equipment in accordance with WAC 296-24-12011.

(b) Showers. (i) The employer shall assure that employees working in regulated areas or subject to the possibility of skin or eye irritation from inorganic arsenic shower at the end of the work shift.

(ii) The employer shall provide shower facilities in accordance with WAC 296-24-12009(3).

(c) Lunchrooms. (i) The employer shall provide for employees working in regulated areas, lunchroom facilities which have a temperature controlled, positive pressure, filtered air supply, and which are readily accessible to employees working in regulated areas.

(ii) The employer shall assure that employees working in the regulated area or subject to the possibility of skin or eye irritation from exposure to inorganic arsenic wash their hands and face prior to eating.

(d) Lavatories. The employer shall provide lavatory facilities which comply with WAC 296-24-12009(1) and (2).

(e) Vacuuming clothes. The employer shall provide facilities for employees working in areas where exposure, without regard to the use of respirators, exceeds 100 $\mu g/m^3$ to vacuum their protective clothing and clean or change shoes worn in such areas before entering change rooms, lunchrooms or shower rooms required by subsection (10) of this section and shall assure that such employees use such facilities.

(f) Avoidance of skin irritation. The employer shall assure that no employee is exposed to skin or eye contact with arsenic trichloride, or to skin or eye contact with liquid or particulate inorganic arsenic which is likely to cause skin or eye irritation.

(14) Medical Surveillance. (a) General. (i) Employees covered. The employer shall institute a medical surveillance program for the following employees:

(A) All employees who are or will be exposed above the action level, without regard to the use of respirators, at least thirty days per year; and

(B) All employees who have been exposed above the action level, without regard to respirator use, for thirty days or more per year for a total of ten years or more of combined employment with the employer or predecessor employers prior to or after the effective date of this standard. The determination of exposures prior to the effective date of this standard shall be based upon prior exposure records, comparison with the first measurements taken after the effective date of this standard, or comparison with records of exposures in areas with similar processes, extent of engineering controls utilized and materials used by that employer.

(ii) Examination by physician. The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and shall be provided without cost to the employee, without loss of pay and at a reasonable time and place.

(b) Initial examinations. By December 1, 1978, for employees initially covered by the medical provisions of this section, or thereafter at the time of initial assignment to an area where the employee is likely to be exposed over the action level at least thirty days per year, the employer shall provide each affected employee an opportunity for a medical examination, including at least the following elements:

(i) A work history and a medical history which shall include a smoking history and the presence and degree of respiratory symptoms such as breathlessness, cough, sputum production and wheezing.

(ii) A medical examination which shall include at least the following:

(A) A 14" by 17" posterior-anterior chest X-ray and International Labor Office UICC/Cincinnati (ILO U/C) rating;

(B) A nasal and skin examination;

(C) A sputum cytology examination; and

(D) Other examinations which the physician believes appropriate because of the employees exposure to inorganic arsenic or because of required respirator use.

(c) Periodic examinations. (i) The employer shall provide the examinations specified in subsections (14)(b)(i) and (14)(b)(ii)(A), (B) and (D) of this section at least annually for covered employees who are under forty-five years of age with fewer than ten years of exposure over the action level without regard to respirator use.

(ii) The employer shall provide the examinations specified in subsections (14)(b)(i) and (ii) of this section at least semi-annually for other covered employees.

(iii) Whenever a covered employee has not taken the examinations specified in subsection (14)(b)(i) and (ii) of this section within six months preceding the termination of employment, the employer shall provide such examinations to the employee upon termination of employment.

(d) Additional examinations. If the employee for any reason develops signs or symptoms commonly associated with exposure to inorganic arsenic the employer shall provide an appropriate examination and emergency medical treatment.

(e) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this standard and its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) The employee's representative exposure level or anticipated exposure level;

(iv) A description of any personal protective equipment used or to be used; and

(v) Information from previous medical examinations of the affected employee which is not readily available to the examining physician.

(f) Physician's written opinion. (i) The employer shall obtain a written opinion from the examining physician which shall include:

(A) The results of the medical examination and tests performed;

(B) The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from exposure to inorganic arsenic;

(C) Any recommended limitations upon the employee's exposure to inorganic arsenic or upon the use of protective clothing or equipment such as respirators; and

(D) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further explanation or treatment.

(ii) The employer shall instruct the physician not to reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure.

(iii) The employer shall provide a copy of the written opinion to the affected employee.

(15) Employee information and training. (a) Training program. (i) The employer shall institute a training program for all employees who are subject to exposure to inorganic arsenic above the action level without regard to respirator use, or for whom there is the possibility of skin or eye irritation from inorganic arsenic. The employer shall assure that those employees participate in the training program.

(ii) The training program shall be provided by October 1, 1978 for employees covered by this provision, at the time of initial assignment for those subsequently covered by this provision, and shall be repeated at least quarterly for employees who have optional use of respirators and at least annually for other covered employees thereafter, and the employer shall assure that each employee is informed of the following:

(A) The information contained in Appendix A;

(B) The quantity, location, manner of use, storage, sources of exposure, and the specific nature of operations which could result in exposure to inorganic arsenic as well as any necessary protective steps;

(C) The purpose, proper use, and limitation of respirators;

(D) The purpose and a description of medical surveillance program as required by subsection (14) of this section;

(E) The engineering controls and work practices associated with the employee's job assignment; and

(F) A review of this standard.

(b) Access to training materials. (i) The employer shall make readily available to all affected employees a copy of this standard and its appendices.

(ii) The employer shall provide, upon request, all materials relating to the employee information and training program to the Director.

(16) Signs and Labels. (a) General. (i) The employer may use labels or signs required by other statutes, regulations, or ordinances in addition to, or in combination with, signs and labels required by this subsection.

(ii) The employer shall assure that no statement appears on or near any sign or label required by this subsection which contradicts or detracts from the meaning of the required sign or label.

(b) Signs. (i) The employer shall post signs demarcating regulated areas bearing the legend:

DANGER
INORGANIC ARSENIC
CANCER HAZARD
AUTHORIZED PERSONNEL ONLY
NO SMOKING OR EATING
RESPIRATOR REQUIRED

(ii) The employer shall assure that signs required by this subsection are illuminated and cleaned as necessary so that the legend is readily visible.

(c) Labels. The employer shall apply precautionary labels to all shipping and storage containers of inorganic arsenic, and to all products containing inorganic arsenic except when the inorganic arsenic in the product is bound in such a manner so as to make unlikely the possibility of airborne exposure to inorganic arsenic. (Possible examples of products not requiring labels are semiconductors, light emitting diodes and glass.) The label shall bear the following legend:

DANGER
CONTAINS INORGANIC ARSENIC
CANCER HAZARD
HARMFUL IF INHALED OR SWALLOWED
USE ONLY WITH ADEQUATE VENTILATION
OR RESPIRATORY PROTECTION

(17) Recordkeeping. (a) Exposure monitoring. (i) The employer shall establish and maintain an accurate record of all monitoring required by subsection (5) of this section.

(ii) This record shall include:

(A) The date(s), number, duration location, and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure where applicable;

(B) A description of the sampling and analytical methods used and evidence of their accuracy;

(C) The type of respiratory protective devices worn, if any;

(D) Name, social security number, and job classification of the employees monitored and of all other employees whose exposure the measurement is intended to represent; and

(E) The environmental variables that could affect the measurement of the employee's exposure.

(iii) The employer shall maintain these monitoring records for at least forty years or for the duration of employment plus twenty years, whichever is longer.

(b) Medical surveillance. (i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance as required by subsection (14) of this section.

(ii) This record shall include:

(A) The name, social security number, and description of duties of the employee;

(B) A copy of the physician's written opinions;

(C) Results of any exposure monitoring done for that employee and the representative exposure levels supplied to the physician; and

(D) Any employee medical complaints related to exposure to inorganic arsenic.

(iii) The employer shall in addition keep, or assure that the examining physician keeps, the following medical records:

(A) A copy of the medical examination results including medical and work history required under subsection (14) of this section;

(B) A description of the laboratory procedures and a copy of any standards or guidelines used to interpret the test results or references to that information;

(C) The initial X–ray;

(D) The X–rays for the most recent five years;

(E) Any X–rays with a demonstrated abnormality and all subsequent X–rays;

(F) The initial cytologic examination slide and written description;

(G) The cytologic examination slide and written description for the most recent five years; and

(H) Any cytologic examination slides with demonstrated atypia, if such atypia persists for three years, and all subsequent slides and written descriptions.

(iv) The employer shall maintain or assure that the physician maintains those medical records for at least forty years, or for the duration of employment, plus twenty years, whichever is longer.

(c) Availability. (i) The employer shall make available upon request all records required to be maintained by subsection (17) of this section to the Director for examination and copying.

(ii) The employer shall make available upon request records of employee exposure monitoring required by subsection (17)(a) of this section for inspection and copying to affected employees, former employees and their designated representatives.

(iii) The employer shall make available upon request an employee's medical records and exposure records representative of that employee's exposure required to be maintained by subsection (17) of this section to the affected employee or former employee or to a physician designated by the affected employee or former employee.

(d) Transfer of records. (i) Whenever the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by this section.

(ii) Whenever the employer ceases to do business and there is no successor employer to receive and retain the records required to be maintained by this section for the prescribed period, these records shall be transmitted to the Director.

(iii) At the expiration of the retention period for the records required to be maintained by this section, the employer shall notify the Director at least three months prior to the disposal of such records and shall transmit those records to the Director if he requests them within that period.

(18) Observation of Monitoring. (a) Employee observation. The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to inorganic arsenic conducted pursuant to subsection (5) of this section.

(b) Observation procedures. (i) Whenever observation of the monitoring of employee exposure to inorganic arsenic requires entry into an area where the use of respirators, protective clothing, or equipment is required, the employer shall provide the observer with and assure the use of such respirators, clothing, and such equipment, and shall require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the monitoring, observers shall be entitled to;

(A) Receive an explanation of the measurement procedures;

(B) Observe all steps related to the monitoring of inorganic arsenic performed at the place of exposure; and

(C) Record the results obtained or receive copies of the results when returned by the laboratory.

(19) Effective Date. This standard shall become effective thirty days after filing with the Code Reviser.

(20) Appendices. The information contained in the appendices to this section is not intended by itself, to create any additional obligations not otherwise imposed by this standard nor detract from any existing obligation.

(21) Startup Dates. (a) General. The startup dates of requirements of this standard shall be the effective date of this standard unless another startup date is provided for, either in other subsections of this section or in this subsection.

(b) Monitoring. Initial monitoring shall be commenced by August 1, 1978, and shall be completed by September 15, 1978.

(c) Regulated areas. Regulated areas required to be established as a result of initial monitoring shall be set up as soon as possible after the results of that monitoring is known and no later than October 1, 1978.

(d) Compliance program. The written program required by subsection (7)(b) as a result of initial monitoring shall be made available for inspection and copying as soon as possible and no later than December 1, 1978.

(e) Hygiene and lunchroom facilities. Construction plans for change–rooms, showers, lavatories, and lunchroom facilities shall be completed no later than December 1, 1978, and these facilities shall be constructed and in use no later than July 1, 1979. However, if as part of the compliance plan it is predicted by an independent engineering firm that engineering controls and work practices will reduce exposures below the permissible exposure limit by December 31, 1979, for affected employees, then such facilities need not be completed until one year after the engineering controls are completed or December 31, 1980, whichever is earlier, if such controls have not in fact succeeded in reducing exposure to below the permissible exposure limit.

(f) Summary of startup dates set forth elsewhere in this standard.

STARTUP DATES

August 1, 1978 – Respirator use over 500 $\mu g/m^3$.

AS SOON AS POSSIBLE BUT NO LATER THAN

September 15, 1978 – Completion of initial monitoring.

October 1, 1978 – Complete establishment of regulated areas. Respirator use for employees exposed above 50 $\mu g/m^3$. Completion of initial training. Notification of use.

December 1, 1978 – Respirator use over 10 $\mu g/m^3$. Completion of initial medical. Completion of compliance plan. Optional use of powered air-purifying respirators.

July 1, 1979 – Completion of lunch rooms and hygiene facilities.

December 31, 1979 – Completion of engineering controls.

All other requirements of the standard have as their startup date August 1, 1978.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-08-115 (Order 79-9), § 296-62-07347, filed 7/31/79; 79-02-037 (Order 79-1), § 296-62-07347, filed 1/23/79.]

WAC 296-62-07515 Control of chemical agents. Chemical agents shall be controlled in such a manner that the workers exposure shall not exceed the applicable limits in WAC 296-62-075 through 296-62-07515.

TABLE 1

Threshold Limit Values (alphabetical order) substance	ppm (See note a)	mg/M^3 (See note b)
Abate	—	10
**Acetaldehyde	(200)	(360)
Acetic acid	10	25
**Acetic anhydride	(5)	(20)
Acetone	1,000	2,400
Acetonitrile	40	70
2-Acetylamino flourene-skin	—	A[2]
Acetylene	F	—
Acetylene dichloride, see 1,2-Dichloroethylene		
Acetylene tetrabromide	1	14
Acrolein	0.1	0.25
Acrylamide—Skin	—	0.3
Acrylonitrile—Skin	20	45
Aldrin—Skin	—	0.25
Allyl alcohol—Skin	2	3
Allyl chloride	1	5
*C Allyl glycidyl ether (AGE)	(10)	(45)
Allyl propyl disulfide	2	12
Alundum (Al_2O_3)	—	E
4-Aminodiphenyl-skin	—	A[1] (See note b)
2-Aminoethanol, see Ethanolamine	—	—
2-Aminopyridine	0.5	2
**Ammonia	(50)	(35)
*Ammonium chloride, fume	—	10
Ammonium sulfamate (Ammate)	—	10
n-Amyl acetate	100	525

TABLE 1

Threshold Limit Values (alphabetical order) substance	ppm (See note a)	mg/M^3 (See note b)
sec-Amyl acetate	125	650
Aniline—Skin	5	19
Anisidine (o, p-isomers)—Skin	—	0.5
Antimony & compounds (as Sb)	—	0.5
ANTU (alpha naphthyl thiourea)	—	0.3
Argon	F	—
Arsenic & Compounds (as As)	—	0.5
Arsine	0.05	0.2
Asphalt (petroleum) fumes	—	5
Azinphos methyl—Skin	—	0.2
Barium (soluble compounds)	—	0.5
***Benzene	—	—
Benzidine—Skin	—	A[1] (See note b)
p-Benzoquione, see Quinone		
Benzoyl peroxide	—	5
Benzyl chloride	1	5
***Beryllium	—	—
Biphenyl, see Diphenyl		
Boron oxide	—	10
Boron tribromide	1	10
C Boron trifluoride	1	3
Bromine	0.1	0.7
Bromine pentafluoride	0.1	0.7
Bromoform—Skin	0.5	5.0
Butadiene (1,3-butadiene)	1,000	2,200
Butanethiol, see Butyl mercaptan		
2-Butanone	200	590
2-Butoxy ethanol (Butyl Cellosolve)—Skin	50	240
Butyl acetate (n-butyl acetate)	150	710
sec-Butyl acetate	200	950
tert-Butyl acetate	200	950
Butyl alcohol	100	300
sec-Butyl alcohol	150	450
tert-Butyl alcohol	100	300
C Butylamine—Skin	5	15
C tert-Butyl chromate (as CrO_3)—Skin	—	0.1
n-Butyl glycidyl ether (BGE)	50	270
Butyl mercaptan	0.5	1.5
p-tert-Butyl-toluene	10	60
***Cadmium dust	—	—
C Cadmium oxide fume (as Cd)	—	0.1
Calcium carbonate	—	E
Calcium arsenate	—	1
Calcium oxide	—	5
Camphor (synthetic)	2	12
Carbaryl (Sevin[R])	—	5
Carbon black	—	3.5
Carbon dioxide	5,000	9,000
***Carbon disulfide	—	—
Carbon monoxide	50	55
***Carbon tetrachloride	—	—
Cellulose (paper fiber)	—	E
Chlordane—Skin	—	0.5
Chlorinated camphene-skin	—	0.5
Chlorinated diphenyl oxide	—	0.5
Chlorine	1	3
Chlorine dioxide	0.1	0.3
C Chlorine tri-fluoride	0.1	0.4
C Chloroacet-aldehyde	1	3

TABLE 1

Threshold Limit Values (alphabetical order) substance	ppm (See note a)	mg/M^3 (See note b)
α–Chloroaceto–phenone (Phenacylchloride)	0.05	0.03
Chlorobenzene (monochlorobenzene)	75	350
o–Chlorobenzylidene malomonitrile (OCBM)–skin	0.05	0.4
Chlorobromomethane	200	1,050
2–Chloro–1,3–butadiene, see Chloroprene		
Chlorodiphenyl (42% Chlorine)—Skin	—	1
Chlorodiphenyl (54% Chlorine)—Skin	—	0.5
1–Chloro,2,3–epoxy propane, see Epichlorhydrin		
2–Chloroethanol, see Ethylene chlorohydrin		
Chloroethylene, see Vinyl chloride		
**C Chloroform (trichloromethane)	(50)	(240)
1–Chloro–1–nitropropane	20	100
Chloropicrin	0.1	0.7
Chloroprene (2–chloro–1,3–butadiene)—Skin	25	90
***Chromic acid	—	—
Chromium, sol. chromic, chromous salts as Cr.	—	0.5
**Metal & insol. salts	A[1] (See note a)	(1.0)
Coal tar pitch volatiles (benzene soluble fraction anthracene, BaP, phenanthrene, acridine, chrysene, pyrene)	A[1] (See note a)	0.2
Colbalt, metal fume & dust	—	0.1
Copper fume	—	0.1
Dusts and Mists	—	1.0
*Corundum (Al_2O_3)	—	E
**Cotton Dust (raw)	—	(1)
Crag[R] herbicide	—	10
Cresol (all isomers)—Skin	5	22
Crotonaldehyde	2	6
Cumene—Skin	50	245
Cyanide (as CN)—Skin	—	5
Cyanogen	10	—
Cyclohexane	300	1,050
Cyclohexanol	50	200
Cyclohexanone	50	200
Cyclohexene	300	1,015
Cyclopentadiene	75	200
2,4–D	—	10
DDT	—	1
DDVP, see Dichlorvos	—	—
Decaborane—Skin	0.05	0.3
Demeton[R]—Skin	—	0.1
Diacetone alcohol (4–hydroxy–4–methyl–2–pentanone)	50	240
1,2–Diaminoethane, see Ethylenediamine	—	—
Diazinon–skin	—	0.1
Diazomethane	0.2	0.4
Diborane	0.1	0.1
Dibrom[R]	—	3
*2–N Dibutylamino–ethanol–skin	2	14
Dibutyl phosphate	1	5
Dibutylphthalate	—	5

TABLE 1

Threshold Limit Values (alphabetical order) substance	ppm (See note a)	mg/M^3 (See note b)
C Dichloroacetylene	0.1	0.4
C o–Dichlorobenzene	50	300
p–Dichlorobenzene	75	450
**Dichlorobenzidine–skin	—	A[1] (See note b)
Dichlorodifluoro–methane	1,000	4,950
1,3–Dichloro–5,5–dimethyl hydantoin	—	0.2
**1,1–Dichloro–ethane	(100)	(400)
1,2–Dichloro–ethylene	200	790
**C Dichloroethyl ether—Skin	(15)	(90)
Dichloromethane, see Methylene–chloride	—	—
Dichloromonofluoro–methane	1,000	4,200
C 1,1–Dichloro–1–nitroethane	10	60
1,2–Dichloropropane, see Propylene–dichloride		
Dichlorotetra–fluoroethane	1,000	7,000
Dichlorvos (DDVP)–skin	—	1
Dieldrin—Skin	—	0.25
Diethylamine	25	75
Diethylamino ethanol—Skin	10	50
*C Diethylene triamine—Skin	1	4
Diethylether, see Ethyl ether		
Difluorodibromomethane	100	860
C Diglycidyl ether (DGE)	0.5	2.8
Dihydroxybenzene, see Hydroquinone		
*Diisobutyl ketone	(50)	(290)
Diisopropylamine—Skin	5	20
Dimethoxymethane, see Methylal		
Dimethyl acetamide—Skin	10	35
Dimethylamine	10	18
4–Dimethylaminoazo–benzene	—	A[2]
Dimethylaminobenzene, see Xylidene		
Dimethylaniline (n–dimethylaniline)—Skin	5	25
Dimethylbenzene, see Xylene		
Dimethyl,1,2–dibromo–2,2–dichloroethyl phosphate, see DiBrom		
Dimethylformamide—Skin	10	30
2,6–Dimethylheptanone, see Diisobutyl ketone		
1,1–Dimethylhydrazine—Skin	0.5	1
Dimethylphthalate	—	5
**Dimethylsulfate—Skin	(1)	(5)
Dinitrobenzene (all isomers)—Skin	—	1
Dinitro–o–cresol—Skin	—	0.2
Dinitrotoluene—Skin	—	1.5
**Dioxane (Diethylene dioxide)—Skin	100	360
Diphenyl	0.2	1
Diphenyl amine	—	10
Diphenylmethane diisocyanate (see Methylene bisphenyl isocyanate (MDI))		
Dipropylene glycol methyl ether—Skin	100	600
Di–sec–octyl phthalate (Di–2–ethylhexyl–phthalate)	—	5
Emery	—	E
Endosulfan (Thiodan[R])–skin	—	0.1

TABLE 1

Threshold Limit Values (alphabetical order) substance	ppm (See note a)	mg/M³ (See note b)
Endrin—Skin	—	0.1
Epichlorhydrin—Skin	5	19
EPN—Skin	—	0.5
1,2–Epoxypropane, see Propylene–oxide		
2,3–Epoxy–1–propanol, see Glycidol		
Ethane	F	—
Ethanethiol, see Ethylmercaptan		
Ethanolamine	3	6
**2–Ethoxyethanol—Skin	(200)	(740)
2–Ethoxyethylacetate (Cellosolve acetate)—Skin	100	540
Ethyl acetate	400	1,400
Ethyl acrylate—Skin	25	100
Ethyl alcohol (ethanol)	1,000	1,900
Ethylamine	10	18
Ethyl sec–amyl ketone (5–methyl–3–heptanone)	25	130
Ethyl benzene	100	435
Ethyl bromide	200	890
Ethyl butyl keton (3–Heptanone)	50	230
Ethyl chloride	1,000	2,600
Ethyl ether	400	1,200
Ethyl formate	100	300
Ethyl mercaptan	0.5	1
Ethyl silicate	100	850
Ethylene	F	—
Ethylene chlorohydrin—Skin	5	16
Ethylenediamine	10	25
***Ethylene dibiomide	—	—
***Ethylene dichloride	—	—
C Ethylene glycol dinitrate and/or Nitroglycerin—Skin	0.2 (See note d)	—
Ethylene glycol monomethyl ether acetate (Methyl cellosolve acetate)—Skin	25	120
Ethylene imine—Skin	0.5	1
Ethylene oxide	50	90
Ethylidine chloride, see 1,1–Dichloroethane		
n–Ethylmorpholine—Skin	20	94
Ferbam	—	15
Ferrovanadium dust	—	1
Fluoride as dust	—	2.5
**Fluorine	(0.1)	(0.2)
Fluorotrichloromethane	1,000	5,600
*C Formaldehyde	2	3
Formic acid	5	9
Furfuryl–Skin	5	20
**Furfuryl alcohol	(50)	(200)
Gasoline	—	B[2]
Glass, fibrous or dust (See note e)	—	E
Glycerin mist	—	E
Glycidol (2,3–Epoxy–1–propanol)	50	150
Glycol monoethyl ether, see 2–Ethoxyethanol		
Graphite (Synthetic)	—	E
Guthion[R], see Azinphosmethyl		
Gypsum	—	E
Hafnium	—	0.5
Helium	F	—
Heptachlor—Skin	—	0.5
Heptane (n–heptane)	500	2,000

TABLE 1

Threshold Limit Values (alphabetical order) substance	ppm (See note a)	mg/M³ (See note b)
Hexachloroethane—Skin	1	10
Hexachloronaphthalene—Skin	—	0.2
Hexane (n–hexane)	500	1,800
2–Hexanone	100	410
Hexone (Methyl isobutyl ketone)	100	410
sec–Hexyl acetate	50	300
Hydrazine—Skin	1	1.3
Hydrogen	F	—
Hydrogen bromide	3	10
C Hydrogen chloride	5	7
Hydrogen cyanide—Skin	10	11
Hydrogen fluoride	3	2
Hydrogen peroxide	1	1.4
Hydrogen selenide	0.05	0.2
***Hydrogen sulfide	—	—
Hydroquinone	—	2
Indene	10	45
Indium and compounds, as In	—	0.1
C Iodine	0.1	1
Iron oxide fume	—	10
*Iron pentacarbonyl	0.01	0.08
Iron salts, soluble, as Fe	—	1
Isoamyl acetate	100	525
Isoamyl alcohol	100	360
Isobutyl acetate	150	700
Isobutyl alcohol	100	300
**Isophorone	—	—
Isopropyl acetate	250	950
Isopropyl alcohol	400	980
Isopropylamine	5	12
**Isopropylether	—	—
Isopropyl glycidyl ether (IGE)	50	240
Kaolin	—	E
Ketene	0.5	0.9
Lead and its inorganic compounds	—	0.2
Lead arsenate	—	0.15
Limestone	—	E
Lindane	—	0.5
Lithium hydride	—	0.025
L.P.G. (Liquified petroleum gas)	1,000	1,800
Magnesite	—	E
Magnesium oxide fume	—	10
Malathion—Skin	—	10
Maleic anhydride	0.25	1
C Manganese and compounds, as Mn	—	5
Marble	—	E
***Mercury	—	—
***Mercury (alkyl)	—	—
Mesityl oxide	25	100
Methane	F	—
Methanethiol, see Methyl mercaptan		
Methoxychlor	—	10
2–Methoxyethanol–skin (Methyl cellosolve)	25	80
Methyl acetate	200	610
Methyl acetylene (propyne)	1,000	1,650
Methyl acetylene–propadiene mixture (MAPP)	1,000	1,800
Methyl acrylate—Skin	10	35
Methylal (dimethoxy–methane)	1,000	3,100
Methyl alcohol (methanol)	200	260
Methylamine	10	12

TABLE 1

Threshold Limit Values (alphabetical order) substance	ppm (See note a)	mg/M^3 (See note b)
Methyl amyl alcohol, see Methyl isobutyl carbinol		
Methyl 2-cyano-acrylate	2	8
Methyl isoamyl ketone	100	475
Methyl (n-amyl) ketone (2-Heptanone)	100	465
**Methyl bromide—Skin	—	—
Methyl butyl ketone, see 2-Hexanone		
Methyl cellosolve-skin, see 2-Methoxyethanol	—	—
Methyl cellosolve acetate-Skin, see Ethylene glycol monomethyl ether acetate	—	—
Methyl chloride	100	210
Methyl chloroform	350	1,900
Methylcyclohexane	500	2,000
**Methylcyclohexanol	(100)	(470)
**o-Methylcyclo-hexanone—Skin	(100)	(460)
Methylcyclopentadienyl manganese tricarbonyl (as Mn)—skin	0.1	0.2
Methyl demeton-skin	—	0.5
Methyl ethyl ketone (MEK), see 2-Butanone		
Methyl formate	100	250
Methyl iodide—Skin	5	28
Methyl isobutyl carbinol—Skin	25	100
Methyl isobutyl ketone, see Hexone		
Methyl isocyanate—Skin	0.02	0.05
Methyl mercaptan	0.5	1
Methyl methacrylate	100	410
Methyl parathion-skin	—	0.2
Methyl propyl ketone, see 2-Pentanone		
C Methyl silicate	5	30
C α-Methyl styrene	100	480
C Methylene bisphenyl isocyanate (MDI)	0.02	0.2
***Methylene chloride	—	—
Molybdenum (soluble compounds)	—	5
(insoluble compounds)	—	10
Monomethyl aniline—Skin	2	9
C Monomethyl hydrazine—Skin	0.2	0.35
Morpholine—Skin	20	70
Naphtha (coal tar)	100	400
Naphthalene	10	50
β-Naphthylamine	—	A[1] (See note b)
Neon	F	—
Nickel carbonyl	0.001	A[1] 0.007 (See note a)
Nickel, metal and soluble compounds, as Ni	—	1
Nicotine—Skin	—	0.5
Nitric acid	2	5
Nitric oxide	25	30
p-Nitroaniline—Skin	1	6
Nitrobenzene—Skin	1	5
p-Nitrochlorobenzene—Skin	—	1
4-Nitrodiphenyl	—	A[1] (See note a)
Nitroethane	100	310
Nitrogen	F	—
C Nitrogen dioxide	5	9
Nitrogen trifluoride	10	29

TABLE 1

Threshold Limit Values (alphabetical order) substance	ppm (See note a)	mg/M^3 (See note b)
C Nitroglycerin—Skin	0.2	2
Nitromethane	100	250
1-Nitropropane	25	90
2-Nitropropane	25	90
n-Nitrosodimethyl-amine (Dimethyl-nitrosoamine)—Skin	—	A[2]
Nitrotoluene—Skin	5	30
Nitrotrichloromethane, see Chloropicrin		
Nitrous Oxide	F	—
Octachloronaphthalene—Skin	—	0.1
Octane	400	1,900
Oil mist, particulate	—	5 (See note f)
Oil mist, vapor	B[2] (See note g)	—
Osmium tetroxide	—	0.002
Oxalic acid	—	1
Oxygen difluoride	0.05	0.1
Ozone	0.1	0.2
Paraquat—Skin	—	0.5
Parathion—Skin	—	0.1
Pentaborane	0.005	0.01
Pentachloronaphthalene—Skin	—	0.5
Pentachlorophenol—Skin	—	0.5
Pentaerythritol	—	E
Pentane	500	1,500
2-Pentanone	200	700
***Perchloroethylene	—	—
Perchloromethyl mercaptan	0.1	0.8
Perchloryl fluoride	3	14
Petroleum Distillates (naphtha)	B[2] (See note g)	—
Phenol—Skin	5	19
p-Phenylene diamine—Skin	—	0.1
Phenyl ether (vapor)	1	7
Phenyl ether-Diphenyl mixture (vapor)	1	7
Phenylethylene, see Styrene		
Phenyl glycidyl ether (PGE)	10	60
Phenylhydrazine—Skin	5	22
Phenothiazine-skin	—	5
Phosdrin (Mevinphos[R])—Skin	—	0.1
Phosgene (carbonyl chloride)	0.1	0.4
Phosphine	0.3	0.4
Phosphoric acid	—	1
Phosphorus (yellow)	—	0.1
Phosphorus pentachloride	—	1
Phosphorus pentasulfide	—	1
Phosphorus trichloride	0.5	3
Phthalic anhydride	2	12
Picric acid—Skin	—	0.1
Pival[R] (2-Pivalyl-1,3-indandione)	—	0.1
Plaster of Paris	—	E
Platinum (Soluble Salts) as Pt	—	0.002
Polychlorobiphenyls, see Chlorodiphenyls		
Polytetrafluoroethylene decomposition products	—	B[1]
Propane	F	—
β-Propiolactone	—	A[2]
Propargyl alcohol—Skin	1	—
n-Propyl acetate	200	840
Propyl alcohol	200	500

TABLE 1

Threshold Limit Values (alphabetical order) substance	ppm (See note a)	mg/M^3 (See note b)
n–Propyl nitrate	25	110
Propylene dichloride (1,2–Dichloropropane)	75	350
*Propylene glycol monomethyl ether	100	360
Propylene imine—Skin	2	5
Propylene oxide	100	240
Propyne, see Methylacetylene		
Pyrethrum	—	5
Pyridine	5	15
Quinone	0.1	0.4
RDX—Skin	—	1.5
Rhodium, Metal fume and dusts, as Rh	—	0.1
Soluble salts	—	0.001
Ronnel	—	10
*Rosin Core Solder, pyrolysis products (as formaldehyde)	—	0.1
Rotenone (commercial)	—	5
Rouge	—	E
Selenium compounds (as Se)	—	0.2
Selenium hexafluoride	0.05	0.4
Silicon Carbide	—	E
Silver, metal and soluble compounds	—	0.01
Sodium fluoroacetate (1080)—Skin	—	0.05
Sodium hydroxide	—	2
Starch	—	E
Stibine	0.1	0.5
Stoddard solvent	200	1,150
Strychnine	—	0.15
***Styrene	—	—
Sucrose	—	E
Sulfur dioxide	5	13
Sulfur hexafluoride	1,000	6,000
Sulfuric acid	—	1
Sulfur monochloride	1	6
Sulfur pentafluoride	0.025	0.25
Sulfuryl fluoride	5	20
Systox, see Demeton[R]	—	—
2,4,5 T	—	10
Tantalum	—	5
TEDP—Skin	—	0.2
Teflon[R] decomposition products	—	B[1]
Tellurium	—	0.1
Tellurium hexafluoride	0.02	0.2
TEPP—Skin	—	0.05
C Terphenyls	1	9
1,1,1,2–Tetrachloro–2,2–difluoroethane	500	4,170
1,1,2,2–Tetrachloro–1,2–difluoroethane	500	4,170
1,1,2,2–Tetrachloroethane—Skin	5	35
***Tetrachloroethylene	—	—
Tetrachloromethane, see Carbon tetrachloride		
Tetrachloronaphthalene—Skin	—	2
Tetraethyl lead (as Pb)—Skin	—	0.100 (See note h)
Tetrahydrofuran	200	590
Tetramethyl lead (as Pb)—Skin	—	0.150 (See note h)

TABLE 1

Threshold Limit Values (alphabetical order) substance	ppm (See note a)	mg/M^3 (See note b)
Tetramethyl succinonitrile—Skin	0.5	3
Tetranitromethane	1	8
Tetryl (2,4,6–trinitrophenyl–methylnitramine)—Skin	—	1.5
Thallium (soluble compounds)—Skin (as Tl)	—	0.1
Thiram[R]	—	5
Tin (inorganic compounds, except SnH_4 and SnO_2) as Sn	—	2
Tin (organic compounds)–skin (as Sn)	—	0.1
Tin oxide	—	E
Titanium dioxide	—	E
***Toluene	—	—
C Toluene–2,4–diisocyanate	0.02	0.14
o–Toluidine—Skin	5	22
Toxaphene, see Chlorinated camphene		
Tributyl phosphate	—	5
1,1,1–Trichloroethane, see Methyl chloroform		
1,1,2–Trichloroethane—Skin	10	45
***Trichloroethylene	—	—
Trichloromethane, see Chloroform		
Trichloronaphthalene—Skin	—	5
1,2,3–Trichloropropane	50	300
1,1,2–Trichloro 1,2,2–trifluoroethane	1,000	7,600
Triethylamine	25	100
Trifluoromono–bromomethane	1,000	6,100
Trimethyl benzene	25	120
2,4,6–Trinitrophenol, see Picric acid		
2,4,6–Trinitrophenyl–methylnitramine, see Tetryl		
Trinitrotoluene—Skin	—	1.5
Triorthocresyl phosphate	—	0.1
Triphenyl phosphate	—	3
Tungsten & Compounds, as W		
Soluble	—	1
Insoluble	—	5
Turpentine	100	560
Uranium (natural) sol. & insol. compounds as U	—	0.2
Vanadium (V_2O_5), as V Dust	—	0.5
*C Fume	—	0.05
Vinyl acetate	10	30
Vinyl benzene, see Styrene		
*Vinyl bromide	250	1,100
Vinyl chloride	200	510
Vinylcyanide, see Acrylonitrile		
Vinyl toluene	100	480
Warfarin	—	0.1
Xylene (xylol)	100	435
Xylidine—Skin	5	25
Yttrium	—	1
Zinc chloride fume	—	1
Zinc oxide fume	—	5
Zirconium compounds (as Zr)	—	5

* 1972 Addition
** Intended Changes

*** See Table 2

a) Parts of vapor or gas per million parts of contaminated air by volume at 25°C and 760 mm. Hg. pressure.

b) Approximate milligrams of substance per cubic meter of air.

d) An atmospheric concentration of not more than 0.02 ppm, or personal protection may be necessary to avoid headache.

e) <5–7 μm in diameter.

f) As sampled by method that does not collect vapor.

g) According to analytically determined composition.

h) For control of general room air, biologic monitoring is essential for personnel control.

NOTE: See Notice of Intended Changes (for 1972) in Appendix G.

+ TABLE 2
[See note a)]

Material	8-hour time weighted average	Acceptable ceiling concentration	Acceptable maximum peak above the acceptable ceiling concentration for an 8 hour shift.	
			Concentration	Maximum duration
Benzene (Z37.4–1969)	10 ppm	25 ppm	50 ppm	10 minutes.
Beryllium and beryllium compounds (Z37.29–1970)	2 μg/M³	5 μg/M³	25 μg/M³	30 minutes.
Cadmium dust (Z37.5–1970)	0.2 mg/M³	0.6 mg/M³		
Carbon disulfide (Z37.3–1968)	20 ppm	30 ppm	100 ppm	30 minutes.
Carbon Tetrachloride (Z37.17–1967)	10 ppm	25 ppm	200 ppm	5 minutes in any 4 hours.
Ethylene dibromide (Z37.31–1970)	20 ppm	30 ppm	50 ppm	5 minutes.
Ethylene dichloride (Z37.21–1969)	50 ppm	100 ppm	200 ppm	5 minutes in any 3 hours.
Methylene Chloride (Z37.3–1969)	500 ppm	1,000 ppm	2,000 ppm	5 minutes in any 2 hours.
Organo (alkyl) mercury (Z37.30–1969)	0.01 mg/M³	0.04 mg/M³		
Styrene (Z37.15–1969)	100 ppm	200 ppm	600 ppm	5 minutes in any 3 hours.
Trichloroethylene (Z37.19–1967)	100 ppm	200 ppm	300 ppm	5 minutes in any 2 hours.
Tetrachloroethylene (Z37.22–1967)	100 ppm	200 ppm	300 ppm	5 minutes in any 3 hours.
Toluene (Z37.12–1967)	200 ppm	300 ppm	500 ppm	10 minutes.
Hydrogen sulfide (Z37.2–1966)	10 ppm	20 ppm	50 ppm	10 minutes once only if no measurable exposure occurs.
Mercury (Z37.8–1971)	0.05 mg/M³	0.1 mg/M³		
Chromic acid and chromates (Z37.7–1971)		0.1 mg/M³		

[a] **Acceptable ceiling concentrations.** An employee's exposure to a material listed in table 2 shall not exceed at any time during an 8-hour shift the acceptable ceiling concentration limit given for the material in the table, except for a time period, and up to a concentration not exceeding the maximum duration and concentration allowed in the column under "acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift".

Example. During an 8-hour work shift, an employee may be exposed to a concentration of Benzene above 25 ppm (but never above 50 ppm) only for a maximum period of 10 minutes. Such exposure must be compensated by exposures to concentrations less than 10 ppm so that the cumulative exposure for the entire 8-hour work shift does not exceed a weighted average of 10 ppm.

+TABLE 3
DUSTS

Substance	Mppcf (See note e)	mg/M³
Silica:		
Crystalline: (See note f)		
Quartz (respirable)	300	10mg/M³m
	%SiO₂+10	%SiO₂+2
Quartz (total dust)		30mg/M³
		%SiO₂+3
Cristobalite: Use 1/2 the value calculated from the count or mass formulae for quartz.		
Tridymite: Use 1/2 the value calculated from the formulae for quartz.		
Amorphous, including natural diatomaceous earth	20	80mg/M³
		%SiO₂
Silicates (less than 1% crystalline silica):		
Mica	20	
Soapstone	20	
Talc	20	
Portland cement	50	
Graphite (natural)	15	
Coal dust (respirable fraction less than 5% SiO₂)		2.4mg/M³
		or
For more than 5% SiO₂		10mg/M³
		%SiO₂+2
Inert or Nuisance Dust:		
Respirable fraction	15	5mg/M³
Total dust	30	10mg/M³

NOTE: Conversion factors—
mppcf X 35.3 = million particles per cubic meter
= particles per c.c.

e Millions of particles per cubic foot of air, based on impinger samples counted by light-field techniques.

f The percentage of crystalline silica in the formula is the amount determined from airborne samples, except in those instances in which other methods have been shown to be applicable.

m Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size-selector with the following characteristics:

Aerodynamic diameter (unit density sphere)	Percent passing selector
2	90
2.5	75
3.5	50
5.0	25
10	0

The measurements under this note refer to the use of an AEC instrument. If the respirable fraction of coal dust is determined with a MRE the figure corresponding to that of a 2.4 mg/M³ in the table for coal dust is 4.5 mg/M³.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-08-115 (Order 79-9), § 296-62-07515, filed 7/31/79; Order 73-3, § 296-62-07515, filed 5/7/73.]

WAC 296-62-14531 Exposure to cotton dust in cotton gins. (1) Scope and Application. This section applies to the control of employee exposure to cotton dust in cotton gins.

(2) Definitions. For the purposes of this section:

(a) "Blow down" – the cleaning of equipment and surface with compressed air.

(b) "Cotton dust" – dust present in the air during the handling or processing of cotton which may contain a mixture of many substances including ground-up plant matter, fiber, bacteria, fungi, soil, pesticides, non-cotton plant matter and other contaminants which may have accumulated with the cotton during the growing, harvesting and subsequent processing or storage periods.

(c) "Director" – The Director of the Department of Labor and Industries, or his designated representative.

(3) Work Practices. Each employer shall immediately establish and implement a written program of work practices, which shall minimize cotton dust exposure for each specific job. Where applicable, the following work practices shall be included in the written work practices program:

(a) General. (i) All surfaces shall be maintained as free as practicable of accumulations of cotton dust.

(ii) The employer shall inspect, clean, maintain and repair, all engineering control equipment, production equipment and ventilation systems including power sources, ducts, and filtration units of the equipment, and at a minimum, tape or cover leaks in valves, flashing, elbows, and bands on air lines.

(iii) Cotton and cotton waste shall be stacked, sorted, baled, dumped, removed or otherwise handled by mechanical means except where the employer can show that it is infeasible to do so. Where infeasible, the method used for handling cotton and cotton waste shall be the method which most effectively reduces exposure to the lowest level feasible.

(b) Specific. (i) Floors and other accessible surfaces contaminated with cotton dust may not be cleaned by the use of compressed air.

(ii) Cleaning of clothing with compressed air is prohibited.

(iii) Floor sweeping shall be performed by a vacuum or with methods designed to minimize dispersal of dust.

(iv) Compressed air "blow-down" cleaning shall be prohibited, except where alternative means are not feasible. Where compressed air "blow-down" is done, respirators shall be worn by the employees performing the "blow-down," and employees in the area whose presence is not required to perform the "blow-down" shall be required to leave the area during this cleaning operation.

(c) Work practice plan. A written work place plan shall be kept which shall list appropriate schedules for carrying out housekeeping operations, and for cleaning and maintaining dust collection equipment. The plan shall be made available for inspection by the Director.

(4) Use of Respirators. (a) General. Where the use of respirators is required under this section, the employer shall provide, at no cost to the employee, and assure the use of respirators which comply with the requirements of this subsection.

(b) Use of respirators. Respirators shall be used in the following circumstances:

(i) By workers identified by medical surveillance under subitem (5)(f)(i)(D) of this subsection; or

(ii) During operations such as maintenance and repair activities in which work practice controls are not feasible; or

(iii) In operations specified under subitem (3)(b)(iv) of this subsection.

(c) Availability upon request. Respirators shall be made available upon request, to any employee exposed to cotton dust.

(d) Respirator selection. (i) Where respirators are required under this section, the employer shall select, provide and assure the use of any respirator tested and approved for protection against dust by the National Institute Of Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11.

(ii) Where respirators are required by this subsection, the employer shall provide either any NIOSH approved respirator or at the option of each affected worker, a NIOSH approved powered air purifying respirator with a high efficiency filter.

(e) Respirator program. The employer shall institute a respirator program in accordance with WAC 296-24-08103, 296-24-08107, 296-24-08109 and 296-24-08111.

(f) Respirator usage. (i) The employer shall assure that the respirator used by each employee exhibits minimum facepiece leakage and that the respirator is fitted properly.

(ii) The employer shall allow each employee who uses a filter respirator to change the filter elements whenever an increase in breathing resistance is detected by the employee, and shall maintain an adequate supply of filter elements for this purpose.

(iii) The employer shall allow employees who wear respirators to wash their faces and respirator facepieces to prevent skin irritation associated with respirator use.

(5) Medical Surveillance. (a) General. (i) Each employer who has an operating gin in which cotton dust is present shall institute a program of medical surveillance for all employees exposed to cotton dust.

(ii) The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and are provided without cost to the employee.

(iii) Persons other than licensed physicians, who administer the pulmonary function testing required by this section, shall complete a NIOSH approved training course in spirometry.

(b) Initial examinations. For each ginning season, at the time of initial assignment, the employer shall provide each employee who is or may be exposed to cotton dust, with an opportunity for medical surveillance that shall include:

(i) A medical history;

(ii) The standardized questionnaire in Appendix B; and

(iii) A pulmonary function measurement, including a determination of forced vital capacity (FVC) and forced expiratory volume in 1 second (FEV_1), and the percentage that the measured values of FEV and FVC differ from the predicted values, using the standard tables in Appendix C.

(iv) Based upon the questionnaire results, each employee shall be graded according to Schilling's byssinosis classification system.

(c) Mid-season retest. The determinations required under subsection (5)(b) of this section shall be made again for each employee after at least 14 days of employment and before the termination of employment for the season. The determinations shall be made following at least 24 hours or one working day after previous exposure to cotton dust. The pulmonary function tests shall be repeated during the shift, no sooner than four and no more than 10 hours after the beginning of the work shift; and, in any event, no more than one hour after cessation of exposure.

(d) Periodic examinations. (i) The employer shall provide the medical surveillance under this subsection (5) annually.

(ii) A comparison shall be made between the current examination results and those of previous examinations and a determination made by the physician as to whether there has been a significant change.

(iii) An employee whose FEV_1 is less than 60 percent of the predicted value shall be referred to a physician for a detailed pulmonary examination.

(e) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this regulation and its Appendices;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) A description of any personal protective equipment used or to be used; and

(iv) Information from previous medical examinations of the affected employee which is not readily available to the examining physician.

(f) Physician's written opinion. (i) The employer shall obtain and furnish the employee with a copy of the written opinion from the examining physician containing the following:

(A) The results of the medical examination and tests, including any determinations made under subitem (5)(d)(ii) of this section.

(B) The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from exposure to cotton dust;

(C) The physician's recommended limitations upon the employee's exposure to cotton dust or upon the employee's use of respirators;

(D) The physician's recommendations for the employee's use of a respirator where dust effects could be suppressed by respirator use;

(E) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

(ii) The written opinion obtained by the employer shall not reveal specific findings or diagnosis unrelated to occupational exposure.

(g) Spanish speaking employees. An employer whose workforce consists of a significant percentage of Spanish speaking workers who cannot communicate effectively in English, shall provide bilingual administration of the medical surveillance requirements, including use of the Spanish questionnaire provided in Appendix B.

(h) Non-duplication of medical surveillance. (i) During any one ginning season, an employer is not required to provide medical surveillance as described in subsection (5) of this section for any employee who can demonstrate that both the background medical surveillance and the mid-season retest required by subsection (5) of this section were administered during that ginning season while in the employment of another gin employer.

(ii) If an employee can demonstrate that the background medical surveillance has been administered but not the mid-season retest, the employer shall provide the mid-season medical retest of subdivision (5)(c) of this section, and comply with provisions of subdivision (5)(d)-(5)(f) of this section. Where the employer is administering only the mid-season retest, the employer shall provide the mid-season retest after at least 14 days of employment in his gin and before termination of employment for the season.

(iii) For purposes of this section, where the employer does not administer any medical surveillance, the employer shall be satisfied that an employee has undergone the medical surveillance required under subdivisions (5)(a) to (5)(c) of this section upon receipt of written notification from the employer who administered the test, or upon receipt by the physician supervising the program, of a copy of the results of medical surveillance.

(6) Employee Education and Training. (a) Training program. (i) Each employer who operates an active gin shall institute a training program for all his employees, prior to initial assignment, and shall assure that each employee is informed of the following:

(A) The specific nature of the operations which could result in exposure to cotton dust;

(B) The measures, including work practices, required by subsection (3) of this section, necessary to protect the employee from excess exposures;

(C) The purpose, proper use and limitations of respirators required by subsection (4) of this section;

(D) The purpose for and a description of the medical surveillance program required by subsection (5) of this section; and other information which will aid exposed employees in understanding the hazards of cotton dust exposure; and

(E) The contents of this standard and its appendices.

(b) Access to training materials. (i) Each employer shall post a copy of this section with its Appendices in a public location at the workplace, and shall, upon request, make copies available to employees.

(ii) The employer shall provide all materials relating to the employee training and information program to the Director upon request.

(iii) An employer whose workforce consists of a significant percentage of Spanish speaking employees who cannot communicate effectively in English shall provide bilingual administration of the provisions of this section.

(iv) In addition to the information required by subdivision (6)(a), the employer shall include as part of his training program and distribute to employees any materials pertaining to the Washington Industrial Safety and Health Act, the regulations issued pursuant to that Act, and to this cotton dust standard which are made available by the Director.

(7) Signs. (a) The employer shall post the following warning sign in each work area where there is potential exposure to cotton dust:

WARNING:

COTTON DUST WORK AREA
MAY CAUSE ACUTE OR DELAYED
LUNG INJURY (BYSSINOSIS).

(b) An employer whose workforce consists of a significant percentage of Spanish-speaking employees who cannot communicate effectively in English shall provide bilingual versions of the sign required by subdivision (7)(a) of this section.

(8) Recordkeeping. (a) Medical surveillance. (i) The employer shall establish and maintain an accurate medical record for each employee subject to medical surveillance required by subsection (5) of this section.

(ii) The record shall include:

(A) The name, social security number and description of the duties of the employee;

(B) A copy of the medical surveillance results including the medical history, questionnaire responses, results of all tests and the physician's recommendation;

(C) A copy of the physician's written opinion;

(D) Any employee medical complaints related to exposure to cotton dust;

(E) The type of protective devices worn, and length of time worn;

(F) A copy of this standard and its appendices, except that the employer may keep one copy of the standard and its appendices for all employees: provided that he references the standard in the medical surveillance records of each employee.

(iii) The employer shall maintain this record for at least 10 years.

(b) Availability. (i) The employer shall make available upon request all records required to be maintained by subsection (8) of this section to the Director for examination and copying.

(ii) The employer shall make available an employee's medical records required by this section, for examination and copying, to the affected employee or former employee or to a physician or other individual designated by such affected employee or former employee.

(c) Transfer of records. (i) Whenever the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by subsection (8) of this section.

(ii) Whenever the employer ceases to do business, and there is no successor employer to receive and retain the records for the prescribed period, these records shall be transmitted to the Director.

(iii) At the expiration of the retention period for the records required to be maintained by this section, the employer shall notify the Director at least three months prior to the disposal of such records and shall transmit those records to the Director if he requests them within that period.

(9) Effective Date. This emergency rule shall become effective immediately upon filing with the Code Reviser.

(10) Appendices. Appendices to this section are found in the Federal Register, Vol. 43, No. 122, dated 6-23-78, and the corrections in Vol. 43, No. 153, dated 8-8-78; the contents of these appendices are mandatory. [Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-02-037 (Order 79-1), § 296-62-14531, filed 1/23/79.]

Chapter 296-104 WAC
BOARD OF BOILER RULES--SUBSTANTIVE

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-104-250 Inspection of systems—Hot water heating systems. [Part IV, § 11, filed 3/23/60.] Repealed by 78-03-057 (Order 78-3), filed 2/22/78. Statutory Authority: RCW 70.79.030.

296-104-275 Inspection of systems—Hydro-pneumatic tanks. [Part IV, § 16, filed 3/23/60.] Repealed by 78-03-057 (Order 78-3), filed 2/22/78. Statutory Authority: RCW 70.79.030.

296-104-280 Inspection of systems—Electric steam generators. [Part IV, § 17, filed 3/23/60.] Repealed by 78-03-057 (Order 78-3), filed 2/22/78. Statutory Authority: RCW 70.79.030.

WAC 296-104-050 Administration--Examination for inspector. Examination for certificate of competency as inspector of boilers shall be held at the office of the chief boiler inspector for the state of Washington, or at any location to be selected by the board, four times each year, namely, the first Wednesday of the months of

March, June, September and December. Special examinations will be held when considered necessary by the board.

Applicants for examination shall have had at least three years practical experience in the construction, maintenance, repair or operation of high pressure boilers or unfired pressure vessels as a mechanical engineer, steam engineer or boiler maker, or shall have had at least three years experience as an inspector of high pressure boilers. A credit of two years of the required experience will be given to applicants holding a mechanical engineering degree from a recognized college of engineering.

Application for examination for certificate of competency shall be in writing upon a form to be furnished by the director stating the school education of the applicant, a list of his employers, his period of employment and position held with each employer. Applications containing willful falsification or untruthful statements shall be rejected. If the applicant's history and experience meet with the approval of the board of boiler rules, he shall be given a written examination dealing with the construction, installation, operation, maintenance and repair of boilers and unfired pressure vessels and their appurtenance, and the applicant shall be accepted or rejected on the merits of this examination. If the applicant is successful in meeting the requirements of the examining board, a certificate of competency will be issued by the chief inspector. After the expiration of ninety days, an applicant who fails to pass the examination will be permitted to take another written examination, and his acceptance or rejection will be determined by the board on the basis of this examination. [Statutory Authority: RCW 70.79.030. 78-03-057 (Order 78-3), § 296-104-050, filed 2/22/78; Part II, § 7, filed 3/23/60.]

WAC 296-104-065 Administration--Reciprocal commissions. Upon the request of a boiler insurance company authorized to insure and insuring against loss from explosion of boilers and pressure vessels in this State, a Commission as a Special Inspector shall be issued by the Chief Inspector to an Inspector in the employ of such company provided the inspector has had the experience prescribed in RCW 70.79.130 and holds a Certificate of Competency or Commission issued by a State which has adopted one or more sections of the ASME Code and which holds a written examination equivalent to that required by the State of Washington and a National Board Commission. Application for a reciprocal Commission shall be made on a form to be furnished by the Chief Inspector, and shall be accompanied by a photostatic copy of the applicant's Commission and Certificate of Competency. [Statutory Authority: RCW 70.79.030. 78-03-057 (Order 78-3), § 296-104-065, filed 2/22/78; Order 74-37, § 296-104-065, filed 11/8/74; Part II, § 10, filed 3/23/60.]

WAC 296-104-170 Inspection of systems--Shop inspections. Shop inspections shall be as outlined in the applicable sections of the ASME code. Only inspectors holding a national board commission and a commission issued by the state of Washington shall make shop inspections in this state. [Statutory Authority: RCW 70-.79.030. 78-03-057 (Order 78-3), § 296-104-170, filed 2/22/78; Part III, § 15, filed 3/23/60.]

WAC 296-104-200 Inspection of systems--Standard for new construction. The standard for new construction shall be the 1977 edition of the ASME Code with all addenda made thereto prior to February 1, 1979[.] The 1977 code as applicable may be used on and after the date of issue and becomes mandatory twelve months after adoption by the board as defined RCW 70.79.050(2). The board recognizes that the ASME code states that new editions (of the code) becomes mandatory on issue and that subsequent addenda becomes mandatory six months after the date of issue. Also, in circumstances such as nuclear systems the time period for addenda becoming mandatory is defined in the Code of Federal Regulations. Note: Editions of the ASME Code including semi-annual addendas will be adopted in accordance with the Administrative Procedure Act. Check with the Office of the Chief Boiler Inspector for current code date. [Statutory Authority: RCW 70.79-.030. 79-05-054 (Order 79-7), § 296-104-200, filed 4/30/79; 78-10-096 (Order 78-19), § 296-104-200, filed 10/3/78; Order 77-23, § 296-104-200, filed 11/8/77; Order 77-9, § 296-104-200, filed 5/26/77; Order 75-35, § 296-104-200, filed 10/29/75; Order 74-37, § 296-104-200, filed 11/8/74; Order 73-1, § 286-104-200, filed 3/22/73; Order 72-17, § 296-104-200, filed 9/28/72; Order 72-11, § 296-104-200, filed 7/7/72; Part IV, § 1, filed 3/23/60.]

WAC 296-104-235 Inspection of systems--Safety relief valves. The boilers and tanks covered by WAC 296-104-230 shall be protected by the installation of ASME code relief valves with trial levers, set pressure not to exceed 160 psi. Relief valves shall be installed on top of tank or on outlet piping as close as possible to the boiler or tank, with a minimum of fittings and no valves intervening. The outlet of the relief valve shall be run full size to a safe place. [Statutory Authority: RCW 70-.79.030. 78-03-057 (Order 78-3), § 296-104-235, filed 2/22/78; Part IV, § 8, filed 3/23/60.]

WAC 296-104-245 Inspection of systems--Oil heaters. Steam or hot water oil heaters shall be so designed and constructed that in the event of failure of any part, oil cannot enter the boiler water. [Statutory Authority: RCW 70.79.030. 78-03-057 (Order 78-3), § 296-104-245, filed 2/22/78; Part IV, § 10, filed 3/23/60.]

WAC 296-104-250 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-104-275 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-104-280 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-104-285 Unfired pressure vessels in places of public assembly. Unfired pressure vessels in places of public assembly shall be exempt from the rules of this chapter when they do not exceed 1 1/2 cubic feet in volume and have a safety value [valve] setting of 150 psi, or less; or when they are less than 6 inches in diameter, and do not exceed 5 cubic feet in volume regardless of pressure. [Statutory Authority: RCW 70.79.030. 78-03-057 (Order 78-3), § 296-104-285, filed 2/22/78.]

WAC 296-104-315 New installations--Blow off tanks. Blow off tanks, if of metal, shall be designed in accordance with the "National Board Blowoff Equipment" standards, 1973 edition[.] [Statutory Authority: RCW 70.79.030. 78-03-057 (Order 78-3), § 296-104-315, filed 2/22/78; Part V, § 4, filed 3/23/60.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

Chapter 296-116 WAC
PILOTAGE RULES

WAC

WAC 296-116-010 Time and place of meeting. The regular monthly meeting of the board of pilotage commissioners shall be on the second Thursday of each month at 9:00 a.m. at Pier 52, Seattle, Washington in the offices of the Washington state ferries unless another time and place has been designated by the chairperson at the last previous meeting. If the aforementioned day falls on a holiday, the meeting shall take place on the following Thursday at the same hour. [Statutory Authority: RCW 88.16.035 and 88.16.155. 78-09-057 (Order 78-2, Resolution 78-2), § 296-116-010, filed 8/23/78; Order 2-68, § 296-116-010, filed 11/1/68; § 1, effective 11/25/58.]

WAC 296-116-020 Special meeting. A special meeting of the board of pilotage commissioners may be called by the chairperson, or by any two members of the board, by serving notice, in writing, upon all other members of the board not less than five days prior to the meeting date. The notice calling a special meeting shall state the purpose for which the meeting is called and the date, hour and place of such meeting and shall be in conformance with the provisions of chapter 42.30 RCW. [Statutory Authority: RCW 88.16.035 and 88.16.155. 78-09-057 (Order 78-2, Resolution 78-2), § 296-116-020, filed 8/23/78; Order 2-68, § 296-116-020, filed 11/1/68; § 2, effective 11/25/58.]

WAC 296-116-030 Emergency meeting. An emergency meeting may be called by the chairperson, or by any two members of the board without notification whenever an accident of any importance, such as stranding, collision or the like, shall occur to any vessel while utilizing the services of a state licensed pilot, for the purpose of making an investigation into the cause of such accident. The findings of such an emergency meeting shall be submitted to the board for appropriate action at the next regular monthly meeting. [Statutory Authority: RCW 88.16.035 and 88.16.155. 78-09-057 (Order 78-2, Resolution 78-2), § 296-116-030, filed 8/23/78; Order 2-68, § 296-116-030, filed 11/1/68; § 3, effective 11/25/58.]

WAC 296-116-040 Quorum defined. Five members of the board shall constitute a quorum. [Statutory Authority: RCW 88.16.035 and 88.16.155. 78-09-057 (Order 78-2, Resolution 78-2), § 296-116-040, filed 8/23/78; Order 2-68, § 296-116-040, filed 11/1/68; § 4, effective 11/25/58.]

WAC 296-116-060 Personnel. The board shall employ the necessary personnel for the conduct of its business following the personnel practices and salary schedules of the Washington state ferries. [Statutory Authority: RCW 88.16.035 and 88.16.155. 78-09-057 (Order 78-2, Resolution 78-2), § 296-116-060, filed 8/23/78; Order 2-68, § 296-116-060, filed 11/1/68; § 6, effective 11/25/58.]

WAC 296-116-070 Collection of fees. All pilots shall pay an annual license fee of six hundred dollars for every year in which they perform any pilotage services. If a licensed pilot does not perform pilotage services during a calendar year, his fee for that year shall be reduced to three hundred dollars upon application to the board. The board of pilotage commissioners shall receive all fees for licenses or for other purposes and make proper accounting of same and transmit all such funds to the pilotage account. [Statutory Authority: RCW 88-.16.035. 79-11-063 (Order 79-5, Resolution 79-5), § 296-116-070, filed 10/18/79. Statutory Authority: RCW 88.16.035 and 88.16.155. 78-09-057 (Order 78-2, Resolution 78-2), § 296-116-070, filed 8/23/78; Order 2-68, § 296-116-070, filed 11/1/68; § 7, effective 11/25/58.]

WAC 296-116-080 Licensing of pilots and limitations. (1) No person shall be licensed by the board unless he has complied with the requirements of the pilotage act and the rules and regulations of the board. The examining committee shall consist of the board of pilotage commissioners. They shall examine applicants

for a state license as provided in the pilotage act and the rules and regulations of the board.

(2) The majority of the entire board shall pass on the licensing of a state pilot. All licenses shall be signed by the chairperson of the board. Licenses shall be issued by the board after successful completion by applicants of the pilotage examination, prescribed familiarization trips and other requirements of the board, including, in the case of Puget Sound applicants, satisfactory completion of a training program. The training program shall commence after an applicant has passed the examination and shall require applicants to pilot vessels under the supervision of Puget Sound pilots with more than ten years experience. After every such assignment the supervisory pilots shall fill out, on a form provided by the board, an evaluation of the applicant's performance. After completion of the training period, the board shall evaluate the applicant's performance in shiphandling skills on the basis of these forms and other relevant information before the board and decide whether the applicant should be licensed. Applicants shall pilot under such supervision for a minimum period of six months during which they shall have at least 100 assignments.

(3) The initial license issued by the board to a pilot who has successfully completed his examination and training program shall not authorize such pilot to perform pilotage services on any vessel of a size of 25,000 gross tons or more for the first year that such licensee becomes an active pilot. During the second year of piloting under an initial license the pilot may perform pilotage on vessels in excess of 25,000 gross tons if such pilotage does not include the docking or undocking of the vessel. The initial license shall contain the above limitations and the date of the commencement and expiration of such periods of limitation.

(4) After issuance of a pilotage license for pilots in the Puget Sound Pilotage District the board shall specifically assess their experience with respect to tug and tow boat assists to vessel movements. If necessary, the board shall require that applicants make a certain number of observation trips aboard tug or tow boats prior to commencing duty as a Puget Sound pilot.

(5) Subsections (2) and (4) of this section shall not apply to applicants for pilotage licenses who have passed the pilotage examination prior to October 15, 1979. [Statutory Authority: RCW 88.16.035. 79-11-063 (Order 79-5, Resolution 79-5), § 296-116-080, filed 10/18/79; 79-05-023 (Order 79-2, Resolution 79-2), § 296-116-080, filed 4/17/79; Order 75-8, § 296-116-080, filed 3/10/75; Order 73-6, § 296-116-080, filed 5/11/73; Order 2-68, § 296-116-080, filed 11/1/68; § 8, effective 11/25/58.]

WAC 296-116-081 Rest period. (1) Pilots shall observe rest period requirements as set out in RCW 88.16-.103 as now or hereafter amended. For purposes of applying this rule an assignment shall begin at the pilot's dispatched departure time if the pilot is on board, regardless of when the ship actually sails. The assignment ends when the pilot leaves the vessel. Travel time shall not be included in an assignment. [Statutory Authority: RCW 88.16.035. 79-05-023 (Order 79-2, Resolution 79-2), § 296-116-081, filed 4/17/79; Order 73-6, § 296-116-081, filed 5/11/73.]

WAC 296-116-120 Physical requirements. (1) In order to determine the physical fitness of persons to continue to serve as licensed pilots under the provisions of the pilotage act, all licensed pilots shall be required to pass a general physical examination annually within forty-five days prior to the date their annual state pilot license fee is due. Such examination shall be obtained at the expense of the licensed pilots from a physician or physicians designated in advance by the board. The secretary of the board shall give each pilot reasonable written notice of the date when any such physical examination becomes due and shall specify the name of the physicians then approved by the board to conduct such physical examination.

(2) The physical examination required of all pilots shall demonstrate that he is in all respects physically fit to perform his duties as a pilot. The examination shall assure that one's abilities as a pilot will not be impaired by eyesight, hearing or other bodily function and shall include examination of the pilot's eyes (including tests for color blindness, depth perception, night vision, disease, field of vision and reflexes); ears; heart; blood pressure; blood components; pulse; speech capabilities; history of diseases (including diabetes, cancer, arthritis, arrhythmia, asthma, bronchitis, emphysema, ulcers, alcoholism and other illnesses) and any other type of information which the physician feels is relevant.

(3) In the case of renewal of license as pilot, should the pilot be temporarily physically incapacitated at the time his license is due to be renewed, the commission shall not revoke such license until a further physical examination to be given at the expiration of three months. This procedure shall be carried on until it is evident that the pilot is permanently incapacitated; provided further, that no pilot shall be carried on the inactive list for longer than one year if disabled. Any pilot who is physically incapacitated shall not serve as a pilot during such period of incapacitation. [Statutory Authority: RCW 88.16.035. 79-11-063 (Order 79-5, Resolution 79-5), § 296-116-120, filed 10/18/79; Order 73-6, § 296-116-120, filed 5/11/73; Order 2-68, § 296-116-120, filed 11/1/68; § 12, effective 11/25/58.]

WAC 296-116-205 Vessel certification. (1) Upon boarding a vessel in the Puget Sound or Grays Harbor and Willapa Bay pilotage district, a pilot shall request on the form provided in WAC 296-116-2051 that the master of the vessel certify that: (a) The engine room is properly staffed, able to maneuver, and all related equipment is in good order; (b) there are no defects listed against the ship by the United States Coast Guard which would prevent it from sailing; (c) the vessel is not leaking oil; (d) the vessel is experiencing no propulsion or maneuvering difficulties.

If the master is unable to certify that all of the above conditions are met, he shall be asked to certify that the United States Coast Guard captain of the port has been

notified of said deficiencies and has authorized the vessel to proceed.

If the master is unable or unwilling to certify that either of the above are the case, the pilot shall not offer pilotage services to said vessel. Instead, the pilot shall disembark from the vessel as soon as practicable, immediately inform the captain of the port of the conditions and circumstances by the best possible means and forward a written report to the board of pilotage commissioners no later than 24 hours after disembarking from the vessel. Any Washington licensed pilot who offers pilotage services to a vessel on which the master has failed to make a certification required by this section shall be subject to the penalties provided in RCW 88.16.100 and 88.16.150.

(2) Upon boarding vessels in either the Puget Sound pilotage district or the Grays Harbor and Willapa Bay pilotage district, the pilot shall also request to see the vessel's SOLAS certificate, and the Federal Maritime Commission certificate of financial responsibility.

The pilot shall also inspect the following of the ship's equipment and conditions and indicate their suitability:

VHF radio, channels 13, 14; radar; gyrocompass; rudder angle indicator; whistle; wheelhouse staffed by an officer and helmsman, one of whom speaks English; local, up–to–date charts; and wheelhouse to engine room communications.

(3) The form appearing in WAC 296–116–2051 shall be used by pilots and masters in complying with the above requirements.

(4) Forms completed by masters and pilots which indicate that the vessel is in compliance and nondeficient shall be forwarded to the offices of the board of pilotage commissioners where they will be retained for a period of at least six months. Forms indicating a vessel not in compliance or deficient and forms upon which either the master or the pilot have failed to make the required certification shall be forwarded to the board of pilotage commissioners and retained for a period of at least twelve months. [Statutory Authority: RCW 88.16.035. 79–11–063 (Order 79–5, Resolution 79–5), § 296–116–205, filed 10/18/79. Statutory Authority: RCW 88.16-.035 and 88.16.155. 78–09–057 (Order 78–2, Resolution 78–2), § 296–116–205, filed 8/23/78.]

WAC 296–116–2051 Vessel certification form.

Washington State Board of Pilotage Commissioners

Date:

Vessel Name:

Flag:

MASTER'S CERTIFICATION

I, ----------, Master of this vessel, certify the following information:

	Yes	No
Is The engine room properly staffed, the engine able to maneuver, and all related equipment in good order?	☐	☐
Are There any defects listed against this ship by the U.S. Coast Guard which would prevent it from arriving or departing?	☐	☐
Is This vessel leaking oil?	☐	☐
Is This vessel experiencing propulsion or maneuvering difficulties?	☐	☐

I have notified the U.S. Coast Guard Captain of the Port of any deficiencies noted above and he has authorized the vessel to proceed.

Master's Signature

PILOT'S REPORT

I, ----------, Puget Sound Pilot, certify that upon boarding the above–named vessel on this date:

1) I requested to see the following certificates:

Certificate	Acceptable	Not Readily Available or Unacceptable
SOLAS Certificate	☐	☐
FMC Certificate of Financial Responsibility	☐	☐

2) I inspected the ship's equipment and conditions listed below and found them to be as indicated:

Equipment	Acceptable	Deficient
VHF Radio, Channels 13, 14	☐	☐
Radar	☐	☐
Gyrocompass	☐	☐
Rudder Angle Indicator	☐	☐
Whistle	☐	☐
Wheelhouse staffed by officer and helmsman, one of whom speaks English	☐	☐
Local, up–to–date charts	☐	☐
Wheelhouse to engine room communications	☐	☐

3) I have informed the Coast Guard Captain of the Port via VTS of any deficiencies noted above.

Pilot's Signature

[Statutory Authority: RCW 88.16.155. 79-11-097 (Order 79-6, Resolution 79-6), § 296-116-2051, filed 10/29/79. Statutory Authority: RCW 88.16.035 and 88.16.155. 78-09-057 (Order 78-2, Resolution 78-2), § 296-116-2051, filed 8/23/78.]

WAC 296-116-300 Pilotage rates for the Puget Sound pilotage district. These rates shall become effective on June 1, 1979.

CLASSIFICATION	RATE
Ship Length Overall (LOA) Charges:	per LOA rate schedule in this section
Boarding Fee Per each boarding/deboarding at the Port Angeles Pilot station. Note: The boarding fee is to finance the building of the pilot boat Puget Sound and the replacement boat for the pilot boat Pilot. When both boats are fully amortized, the boarding fee will be terminated.	$20.00
Harbor Shift – Live Ship (Seattle Port)	LOA Zone I
Harbor Shift – Live Ship (Other than Seattle Port)	LOA Zone I
Harbor Shift – Dead Ship	Double LOA Zone I
Dead Ship Towing Charge: LOA of tug + LOA of tow + beam of tow Any tow exceeding seven hours, two pilots are mandatory. Harbor shifts shall constitute and be limited to those services in moving vessels from dock to dock, from anchorage to dock, from dock to anchorage, or from anchorage to anchorage in the same port after all other applicable tariff charges for pilotage services have been recognized as payable.	Double LOA Zone
Waterway and Bridge Charges: Ships up to 90' beam: A charge of $81.00 shall be in addition to bridge fees for any vessel movements both inbound and outbound required to transit south of Spokane Street Bridge in Seattle and south of Eleventh Street Bridge in any of the Tacoma waterways. Any vessel movements required to transit through bridges shall have an additional charge of $38.00 per bridge.	
Ships 90' beam and/or over: A charge of $108.00 shall be in addition to bridge fees for any vessel movements both inbound and outbound required to transit south of Spokane Street Bridge in Seattle and south of Eleventh Street Bridge in any of the Tacoma waterways. Any vessel movements required to transit through bridges shall have an additional charge of $76.00 per bridge. (The above charges shall not apply to transit of vessels from Shilshole Bay to the limits of Lake Washington.)	
In a case where two pilots are employed for a single vessel waterway or bridge transit, a second pilot charge shall be levied in the amount of a harbor shift only.	
Compass Adjustment	108.00
Radio Direction Finder Calibration	108.00
Launching Vessels	162.00
Trial Trips, 6 hours or less (Minimum $260.00)	43.00 per hr.
Trial Trips, over 6 hours (two pilots)	87.00 per hr.
Shilshole Bay — Salmon Bay	63.00
Salmon Bay — Lake Union	50.00
Lake Union — Lake Washington (plus LOA zone from Webster Point)	63.00
Cancellation Charge	LOA Zone I
Cancellation Charge — Port Angeles (When pilot is ordered and vessel proceeds without stopping for pilot)	LOA Zone I
Docking Delay after Anchoring Applicable Harbor Shift rate to apply, plus $43.00 per hour standby. No charge if delay is 60 minutes or less. If the delay is more than 60 minutes, charge is $43.00 for every hour or fraction thereof.	43.00
Sailing Delay No charge if delay is 60 minutes or less. If the delay is more than 60 minutes, charge is $43.00 for every hour or fraction thereof.	43.00 per hr.
Slow–Down — $43.00 per hour for all time in excess of time spent in that particular transit for that speed of advance normal for vessel that is slowed.	43.00 per hr.

CLASSIFICATION	RATE
Super Ships — Additional charge to LOA zone mileage of $0.0269 a gross ton for all gross tonnage in excess of 20,000 gross tons up to 50,000 gross tons. In excess of 50,000 gross tons, the charge shall be $[0.0322] per gross ton.	
Delayed Arrival — Port Angeles (When pilot is ordered and vessel does not arrive within four hours without notification of change of ETA)	43.00 per hr.
Transportation to vessels on Puget Sound	
March Point – Anacortes	$80.00
Bangor	40.00
Bellingham	88.00
Bremerton	[20.00]
Cherry Point	97.00
Dupont	47.00
Edmonds	20.00
Everett	30.00
Ferndale	96.00
Manchester	30.00
Mukilteo	30.00
Olympia	60.00
Point Wells	20.00
Port Gamble	35.00
Port Townsend	50.00
Semiahmoo	109.00
Tacoma	31.00
Winslow	20.00

(a) Interport shifts: Transportation paid to and from both [points.]

(b) Intraharbor shifts: Transportation to be paid one way only. If intraharbor shift is cancelled, transportation paid one way only.

(c) Cancellation: Transportation both ways if pilot has started travel.

Delinquent payment charge: 1% per month after 60 days from first billing.

Non Use of Pilots: Ships taking and discharging pilots without using their services through all Puget Sound and adjacent inland waters shall pay full pilotage fees on the LOA zone mileage basis from Port Angeles to destination, from place of departure to Port Angeles, or for entire distance between two ports on Puget Sound and adjacent inland waters.

LOA RATE SCHEDULE

The following rate schedule is based upon distances furnished by National Oceanic and Atmospheric Administration, computed to the nearest half-mile and includes retirement fund contributions.

LOA	ZONE I	ZONE II	ZONE III	ZONE IV	ZONE V	ZONE VI
	Intra Harbor	0–30 Miles	31–50 Miles	51–75 Miles	76–100 Miles	101 Miles & Over
Up to 449	76	119	206	309	417	542
450 – 459	78	121	208	314	422	544
460 – 469	80	123	210	319	428	546
470 – 479	82	126	212	325	431	548
480 – 489	84	128	214	330	434	550
490 – 499	87	130	217	336	439	552
500 – 509	89	133	220	341	442	554
510 – 519	91	136	223	347	446	558
520 – 529	93	140	226	349	451	563
530 – 539	95	143	230	352	457	569
540 – 549	97	146	233	355	465	574
550 – 559	100	149	236	360	469	579
560 – 569	103	153	239	363	473	585
570 – 579	106	156	243	365	478	590
580 – 589	109	159	246	367	482	596
590 – 599	114	162	249	369	487	601
600 – 609	119	166	252	371	493	606
610 – 619	125	169	256	374	498	612
620 – 629	131	172	259	376	504	617
630 – 639	138	175	262	378	509	623
640 – 649	144	179	265	380	514	628
650 – 659	152	182	269	382	520	634
660 – 669	156	185	272	384	525	639
670 – 679	160	188	275	390	531	644
680 – 689	165	192	278	395	536	650
690 – 699	169	195	282	401	542	661
700 – 719	178	201	288	406	552	671
720 – 739	186	208	295	412	563	682
740 – 759	195	217	301	417	574	693
760 – 779	204	225	308	422	585	704
780 – 799	212	234	314	428	596	715
800 – 819	221	243	321	433	606	726
820 – 839	230	251	327	439	617	736
840 – 859	238	260	334	444	628	747
860 – 879	247	269	340	455	639	758
880 – 899	256	277	347	466	650	769
900 – 919	264	286	353	477	661	780
920 – 939	273	295	360	487	671	791
940 – 959	282	303	366	498	682	801
960 – 979	290	312	373	509	693	812
980 – 999	299	321	379	520	704	823
1000 & over	308	329	386	531	715	834

[Statutory Authority: RCW 88.16.035(4). 79-07-033 (Order 79-4, Resolution 79-4), § 296-116-300, filed 6/19/79. Statutory Authority: Chapter 88.16 RCW and 1977 ex. sess. c 337, §§ 1 and 4. 78-02-008 (Order 78-1), § 296-116-300, filed 1/6/78, effective 2/10/78; Order 77-18, § 296-116-300, filed 9/20/77, effective 11/1/77; Order 76-24, § 296-116-300, filed 7/22/76; Order 75-3, § 296-116-300, filed 2/10/75; Order 74-2, § 296-116-300, filed 1/8/74; Order 73-8, § 296-116-300, filed 6/20/73 and Emergency Order 73-10, filed 7/19/73, effective 8/14/73; Order 70-7, § 296-116-300, filed 7/16/70; 7/25/67; 2/18/64.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-116-320 Retirement fund contribution. With respect to $750 per month for a full time pilot and $375 per month for a half time pilot retirement fund contributions:

(1) Each active pilot member of the Puget Sound Pilots Association shall make a retirement fund contribution of $750 per month for a full time pilot and $375 per month for a half time pilot for retirement purposes which shall be accumulated and payable upon death or retirement only, and shall be deposited in a joint account in the name of the individual pilot and Puget Sound Pilots, in a qualified public depository approved for the purpose by the commission: *Provided, however,* The commission grants further authority, subject to the following withdrawal limitations, for a portion or all of the retirement fund contributions for pilots on and after July 18, 1975, to be placed into trust programs limited to interest bearing notes or fixed income accounts designed to comply with the HR-10 Self-Employed Individuals Tax Retirement Act of 1962, as amended by the Employee Retirement Income Security Act of 1974, when such trust plans are submitted to the commission for prior approval. Participation in such approved self-employment retirement plans shall be conditioned upon the following:

(a) Once established these plans shall not be terminated except upon the death or retirement of the participating pilot.

(b) Each participating pilot shall issue to the trustee of the self-employment retirement plan signed instructions directing the trustee to give advance notice to the Office of the Chairperson of the Board of Pilotage Commissioners of any application for distribution or termination of an established self-employment retirement plan. Any pilot, or any person acting on behalf of said pilot's estate, making such an application for distribution or termination at any time other than upon the event of death or retirement of the pilot, shall be directed by the commission to withdraw such application.

(c) Should a pilot have not elected retirement prior to age 70 1/2, said pilot shall be permitted to receive a distribution in whatever form he elects, under the provisions of his self-employment retirement plan, thereby complying with the mandatory distribution requirements of the above-mentioned retirement laws, provided that any and all funds so distributed be immediately deposited into a joint account in the name of the individual pilot and Puget Sound Pilots, in a qualified public depository approved for the purpose by the commission, and thereafter withdrawn only upon actual death or retirement.

(d) It is to be understood by any pilot electing to direct contributions toward these self-employed plans and trust programs, that such activity is at their own financial choosing and the general approval by the commission for such arrangement is not to be taken as any kind of recommendation or positive approval by the commission as to these types of programs. This contribution of $750 per month for a full time pilot and $375 per month for a half time pilot shall be derived from the pilot's gross revenues.

(2) On quarterly reports required under RCW 88.16-.110, the pilot shall state for the preceding quarter the total retirement fund contribution received, through that quarter and shall itemize all withdrawals or payments from such fund. Further, the pilot shall reflect what portion of his retirement funds, on a quarterly basis, have been diverted into KEOGH approved investment retirement plans.

(3) All persons hereafter licensed by the board to pilot on the waters of Puget Sound under the provisions of the Pilotage Act, chapter 88.16 RCW shall be deemed to have agreed to and be bound by the foregoing.

(4) These regulations have been enacted pursuant to the Board of Pilotage Commissioners' authority to fix rates of pilotage as set forth hereinabove. Failure to comply with any aspect of these regulations controlling the use of the $750 per month for a full time pilot and $375 per month for a half time pilot contribution amount granted for retirement purpose shall result in disciplinary action pursuant to RCW 88.16.120 and such violation may be charged as a misdemeanor pursuant to RCW 88.17.150. [Statutory Authority: Chapter 88.16 RCW and 1977 ex. sess. c 337, §§ 1 and 4. 78-02-008 (Order 78-1), § 296-116-320, filed 1/6/78, effective 2/10/78; Order 77-18, § 296-116-320, filed 9/20/77, effective 11/1/77; Order 76-24, § 296-116-320, filed 7/22/76; Order 76-12, § 296-116-320, filed 4/22/76; Order 73-8, § 296-116-320, filed 6/20/73 and Emergency Order 73-10, filed 7/19/73, effective 8/14/73; Order 70-7, § 296-116-320, filed 7/16/70; 7/25/67.]

WAC 296-116-351 Pilotage rates for Grays Harbor and Willapa Bay pilotage district. These rates are effective February 20, 1979 through December 31, 1979 and thereafter until changed by the board.

CLASSIFICATION OF PILOTAGE SERVICE	RATE
Piloting of vessels in the inland waters, tributaries of Grays Harbor & Willapa Bay,	$21.40 Per Meter or
Per Meter or Per Foot of Draft	6.53 Per Foot
and Per Net Registered Ton	.0562 Per N.R.T.
Minimum Charge for Net Registered Tonnage	214.00
Extra Vessel (in case of tow)	133.75
Boarding Fee: Per each boarding/deboarding from a boat. Note: The boarding fee is to finance the purchase of the pilot boat Chehalis. When the boat is fully amortized, the boarding fee will be terminated.	25.00
The Following Travel Allowance Shall be Charged:	
Boarding a vessel off Grays Harbor or Willapa Harbor entrance	30.00
Disembarking a vessel off Grays Harbor or Willapa Harbor entrance	30.00
Returning to Grays Harbor from piloting a vessel to Raymond	30.00
Traveling to Raymond to pilot a vessel to sea	30.00
Harbor Shifts:	
Grays Harbor:	
One dock to another dock	107.00
Anchorage to dock or dock to anchorage (Upper Bay)	107.00
Dock to anchorage (Lower Bay)	133.75
Anchorage in Lower Bay to berth Upper Bay	133.75
Cancellation Charge at dock	53.50
Cancellation Charge if boat operation involved	214.00
Delays Per Hour	32.10
Willapa Bay:	
Same as Grays Harbor	

CLASSIFICATION OF PILOTAGE SERVICE	RATE
Pilot when traveling to an outlying port to join a vessel or returning through an outlying port from a vessel which has been piloted to sea shall be paid one hundred and seven dollars ($107.00) for each day or fraction thereof and the following travel expense allowances:	
From Aberdeen to:	
Seattle	65.00
Tacoma	55.00
Olympia	45.00
Port Angeles	65.00
Longview	60.00
Portland	70.00
Astoria	65.00
Transportation and living expenses for other ports as incurred.	
Bridge Transit:	
Charge if vessel transits one or more bridges	70.00
Late Payment Charge: The balance of amounts due for pilotage rates not paid within 60 days of invoice will be assessed a 1% per month late charge.	
Change In Sailing or Shifting Time: At least a two-hour notification shall be required for a change in sailing or shifting time.	

[Statutory Authority: RCW 88.16.035. 79-05-023 (Order 79-2, Resolution 79-2), § 296-116-351, filed 4/17/79; Statutory Authority: RCW 88.16.005 and 88-.16.035. 79-02-030 (Order 79-1, Resolution 79-1), § 296-116-351, filed 1/19/79; 78-02-008 (Order 78-1), § 296-116-351, filed 1/6/78, effective 2/10/78; Order 75-1, § 296-116-351, filed 1/14/75.]

Chapter 296-126 WAC
STANDARDS OF LABOR FOR THE PROTECTION OF THE SAFETY, HEALTH AND WELFARE OF EMPLOYEES FOR ALL OCCUPATIONS SUBJECT TO CHAPTER 49.12 RCW

WAC

WAC 296-126-200 Applicability. WAC 296-126-200 through 296-126-226 shall apply to persons employed in counselor staff occupations in organized seasonal recreational camps as herein defined. [Statutory Authority: RCW 49.12.091. 78-03-004 (Order 78-1), § 296-126-200, filed 2/3/78.]

WAC 296-126-202 Definitions. (1) "Department" shall mean the Department of Labor and Industries.

(2) "Committee" shall mean the Industrial Welfare Committee of the Department of Labor and Industries.

(3) "Organized camps," as used herein, shall refer to established resident group camps, which are established and maintained for recreation, education, vacation, or religious purposes, for use by organized groups wherein the activities are conducted on a closely supervised basis, and where day-to-day living facilities, including food and lodging, are provided either free-of-charge or by payment of fee.

(4) "Employ" means to engage, suffer, or permit to work.

(5) "Employee" shall mean any person who is employed in a counselor staff occupation in an organized seasonal recreational camp as herein defined.

(6) "Employer" means any person, association, partnership, private or public corporation who employs or exercises control over wages, hours, or working conditions of one or more employees.

(7) "Minor" shall mean any person under eighteen years of age.

(8) "Counselor staff occupations" shall include all work involving duties primarily relating to guidance, instruction, supervision, and care of campers in organized camps, whether such work involves direct charge of, or responsibility for, such activities, or merely assistance to persons in charge; but shall not include pre-season training courses. Counselor staff occupations include, but are not limited to: head counselor, assistant head counselor, specialist counselor or instructor (such as swimming counselor, arts and crafts counselor, etc.), group or division leader, camp parent, teacher, supervising counselor, senior counselor, counselor, general counselor, bunk counselor, assistant counselor, junior counselor, counselor aide, and kitchen helpers working no more than 27 hours in a given work week.

(9) "Resident counselor staff" shall mean staff who receive lodging and meals from the employer.

(10) "Nonresident counselor staff" shall mean staff who do not receive lodging and meals from the employer.

(11) "Counselor I," "Counselor II," and "Counselor III," shall be defined for purposes of this standard as follows: "Counselor I" is one never before employed in any counselor staff occupations; "Counselor II" is one who has had at least one season's employment in a counselor staff occupation; "Counselor III" is one who has had at least three seasons of employment in a counselor staff occupation.

(12) "Season of employment" is defined as a period of not less than six weeks, nor more than 12 weeks in any one calendar year, except that counselors employed less than six weeks in any one season may accumulate their employment experience from year to year to meet the minimum requirements for counselor grade. [Statutory Authority: RCW 49.12.091. 78-03-004 (Order 78-1), § 296-126-202, filed 2/3/78.]

WAC 296-126-204 Minimum wage. Except as otherwise provided by chapter 49.46 RCW: (1) The minimum wage for kitchen helpers working in excess of 27 hours per week, camp cooks, and all employees other than counselor staff, shall be no less than $2.00 per hour for employees 18 years of age or older, and no less than $1.75 for employees under age 18.

(2) Minimum wage rates for counselor staff occupations shall be as follows:

MINIMUM WEEKLY RATE

	Nonresident Employee (6-day week)	Resident Employee (6-day week)
COUNSELOR III	$66.00	$51.00
COUNSELOR II	45.00	30.00
COUNSELOR I	36.00	21.00

(3) The minimum daily wage rate for resident or nonresident counselor staff shall be prorated from the six-day basis.

(4) Minimum wage provisions shall not apply to resident campers under the age of 18 who are engaged in an in-training program, which provides prepared instructions and supervision by qualified counselor staff, and which requires no more than 24 on-duty hours weekly. Such resident campers shall (a) carry no responsibility for other campers and no bunk responsibility, except as a defined part of the training program and (b) shall not enter such a program unless their parents or guardians sign an authorization, which includes an outline of the program and a description of the duties and responsibilities involved. [Statutory Authority: RCW 49.12.091. 78-03-004 (Order 78-1), § 296-126-204, filed 2/3/78.]

WAC 296-126-206 Limitation on number of employees paid in Counselor I and Counselor II rates. In any week, an employer may pay the Counselor I rate to no more than 30 percent of the total number of employees in counselor staff occupations. Furthermore, the total number of employees paid at the Counselor I and Counselor II rates may not exceed 80 percent of the total staff. In small camps (40 campers or under) where the above percentage limitations may be unworkable, the supervisor of employment standards shall have authority to make reasonable adjustments of these limitations upon a showing that the above limitations will work a hardship. [Statutory Authority: RCW 49.12.091. 78-03-004 (Order 78-1), § 296-126-206, filed 2/3/78.]

WAC 296-126-208 Premium pay for resident counselor staff occupations. At termination of employment, a resident counselor staff member shall be entitled to premium payment of an additional 25 percent of the staff member's weekly rate of pay for each week of employment, unless he or she received 24 hours per week off-duty, 12 hours of which must have been in sequence. The 24 hours off-duty time need not have been accumulated in any one week. [Statutory Authority: RCW 49.12.091. 78-03-004 (Order 78-1), § 296-126-208, filed 2/3/78.]

WAC 296-126-210 Board, lodging, and other services. The minimum wage rates of resident counselor staff shall be subject to no charge by an employer for lodging or meals furnished by the employer or for any other services furnished in connection with camp business within reason. [Statutory Authority: RCW 49.12-.091. 78-03-004 (Order 78-1), § 296-126-210, filed 2/3/78.]

WAC 296-126-212 Travel expenses. The employer shall pay the fare or make transportation available for any counselor staff member who is required or permitted to supervise, or assist in supervising, campers in transit. [Statutory Authority: RCW 49.12.091. 78-03-004 (Order 78-1), § 296-126-212, filed 2/3/78.]

WAC 296-126-214 Records. Records showing the names of employees, dates of employment, wages paid, and days worked by them shall be kept by every employer for a period of at least three years and available for inspection by the representatives of the Industrial Welfare Committee of the Department of Labor and Industries at all reasonable times. [Statutory Authority: RCW 49.12.091. 78-03-004 (Order 78-1), § 296-126-214, filed 2/3/78.]

WAC 296-126-216 Agreements. All employees must enter into a written agreement with the camp administration setting forth the remuneration, room and board, special services provided, and the nature of the work assignment as counselors and leaders. Resident camper parental authorizations and employee agreements are to be kept on file for a three-year period. [Statutory Authority: RCW 49.12.091. 78-03-004 (Order 78-1), § 296-126-216, filed 2/3/78.]

WAC 296-126-218 Work permits. No minor shall be employed until the employer has applied for and received a permit to employ minors from the Department of Labor and Industries, and has obtained a parental authorization and proof of age document for each minor employee. [Statutory Authority: RCW 49.12.091. 78-03-004 (Order 78-1), § 296-126-218, filed 2/3/78.]

WAC 296-126-220 Minors' occupations. No minor worker shall be employed in any occupation which the Department of Labor and Industries, through the Industrial Welfare Committee, shall declare to be particularly hazardous for minors under the age specified in the minor work permit regulation, chapter 296-125 WAC. [Statutory Authority: RCW 49.12.091. 78-03-004 (Order 78-1), § 296-126-220, filed 2/3/78.]

WAC 296-126-222 Sanitation and safety. (1) All places of employment shall be maintained in a sanitary condition in conformity with the requirements for sanitation for camps set by the Health Services Division, Department of Social and Health Services and/or the

Washington Industrial Safety and Health Act (WISHA).

(2) All places of employment shall be maintained in a safe condition in conformity with the WISHA standards of the Department of Labor and Industries, Division of Industrial Safety and Health.

(3) First aid requirements of the WISHA standards of the Department of Labor and Industries shall be met. In addition, the provision of an infirmary with the full-time services of a physician and/or registered nurse is recommended for camps operated by one organized group for more than two weeks.

(4) Transportation shall be available at all times for use in case of an emergency and shall be of a nature to render reasonable comfort to an injured person.

(5) If preemployment physical examinations, including preventive inoculations, recommended by public health authorities are required of employees, such examinations shall not be at the expense of the employee.

(6) No employee shall be required or permitted to lift or carry excessive weights. Where weights in excess of 20 pounds are to be lifted, carried, pushed, or pulled as a normal part of an employee's responsibility:

(i) The lifting, carrying, pushing or pulling duties shall be made known to the prospective employee at the time of recruitment, initial employment or reassignment to a lifting job.

(ii) Instruction shall be given such employees on proper lifting techniques in accordance with instructions provided or approved by the Department of Labor and Industries.

(iii) Assurance that adequate instruction in weight lifting techniques have been given as provided in (ii) shall be furnished the committee or its authorized agent upon request.

(7) Employee assignments to counseling duties shall be in keeping with the employee's maturity, knowledge, and skills. The health and welfare of the employee shall be considered in the determination of adequate counselor staff-camper ratios. Personnel should be selected on the basis of standards currently prescribed in the American Camping Association Resident Camp standards. [Statutory Authority: RCW 49.12.091. 78-03-004 (Order 78-1), § 296-126-222, filed 2/3/78.]

WAC 296-126-224 Wearing apparel. Whenever an employer requires the employees to wear a uniform or other article of wearing apparel of a specific style or color, it must be furnished by the employer. Usual and customary wearing apparel in conformance to a general dress standard need not be furnished by the employer. [Statutory Authority: RCW 49.12.091. 78-03-004 (Order 78-1), § 296-126-224, filed 2/3/78.]

WAC 296-126-226 Penalties. The department shall investigate the complaint of any individual alleging that these standards have been violated. Any employer employing any person in violation of these standards shall upon conviction thereof be punished in accordance with RCW 49.12.170, which states as follows: "Any employer employing any person for whom a minimum wage or standards, conditions, and hours of labor have been specified, at less than said minimum wage, or under standards, or conditions of labor or at hours of labor prohibited by the rules and regulations of the committee; or violating any other of the provisions of this 1973 amendatory act, shall be deemed guilty of a misdemeanor, and shall, upon conviction thereof, be punished by a fine of not less than twenty-five dollars nor more than one thousand dollars." [Statutory Authority: RCW 49.12.091. 78-03-004 (Order 78-1), § 296-126-226, filed 2/3/78.]

Chapter 296-155 WAC
SAFETY STANDARDS FOR CONSTRUCTION WORK

WAC

WAC 296-155-330 Rigging equipment for material handling. (1) General.

(a) Rigging equipment for material handling shall be inspected prior to use on each shift and as necessary during its use to ensure that it is safe. Defective rigging equipment shall be removed from service.

(b) Rigging equipment shall not be loaded in excess of its recommended safe working load, as prescribed in Tables F-1 through F-20 in this Part.

(c) Rigging equipment, when not in use, shall be removed from the immediate work area so as not to present a hazard to employees.

(d) Special custom design grabs, hooks, clamps, or other lifting accessories, for such units as modular panels, prefabricated structures and similar materials, shall be marked to indicate the safe working loads and shall be proof-tested prior to use to 125 percent of their rated load.

(2) Alloy steel chains.

(a) Welded alloy steel chain slings shall have permanently affixed durable identification stating size, grade, rated capacity, and sling manufacturer.

(b) Hooks, rings, oblong links, pear-shaped links, welded or mechanical coupling links, or other attachments, when used with alloy steel chains, shall have a rated capacity at least equal to that of the chain.

(c) The use of job or shop hooks and links, or makeshift fasteners, formed from bolts, rods, etc., or other such attachments, shall be prohibited.

(d) Rated capacity (working load limit) for alloy steel chain slings shall conform to the values shown in Table F-1.

(e) Whenever wear at any point of any chain link exceeds that shown in Table F-2, the assembly shall be removed from service.

(f) If at any time any three foot length of chain is found to have stretched one-third the length of a link it shall be discarded.

(g) The practice of placing bolts or nails between two links to shorten chains is prohibited.

(h) Splicing broken chains by inserting a bolt between two links with the heads of the bolt and the nut sustaining the load, or passing one link through another and inserting a bolt or nail to hold it, is prohibited.

(i) Wherever annealing of chains is attempted, it shall be done in properly equipped annealing furnaces and under the direct supervision of a competent person.

(3) Wire rope.

(a) Table F–3 through F–14 shall be used to determine the safe working loads of various sizes and classifications of improved plow steel wire rope and wire rope slings with various types of terminals. For sizes, classifications, and grades not included in these tables, the safe working load recommended by the manufacturer for specific, identifiable products shall be followed, provided that a safety factor of not less than 5 is maintained.

(b) Protruding ends of strands in splices on slings and bridles shall be covered or blunted.

(c) Wire rope shall not be secured by knots.

(d) The following limitations shall apply to the use of wire rope:

(i) An eye splice made in any wire rope shall have not less than three full tucks.

NOTE: This requirement shall not preclude the use of another form of splice or connection which can be shown to be as efficient and which is not otherwise prohibited.

(ii) Except for eye splices in the ends of wires and for endless rope slings, each wire rope used in hoisting or lowering, or in pulling loads, shall consist of one continuous piece without knot or splice.

(iii) Wire rope shall not be used, if in any length of eight diameters, the total number of visible broken wires exceeds 10 percent of the total number of wires, or if the rope shows other signs of excessive wear, corrosion, or defect.

(e) When U–bolt wire rope clips are used to form eyes, Table F–20 shall be used to determine the number and spacing of clips.

(f) When used for eye splices, the U–bolt shall be applied so that the "U" section is in contact with the dead end of the rope.

(g) Eyes in wire rope bridles, slings or bull wires shall not be formed by wire rope clips or knots.

NOTE: See Table F–20 for number of clamps and spacing requirements.

CORRECT METHOD OF ATTACHING WIRE ROPE CLIPS

U–Bolt of all clips on dead end of rope

(4) Natural rope, and synthetic fiber.

(a) General. When using natural or synthetic fiber rope slings, Tables F–15, F–16, F–17 and F–18 shall apply.

(b) All splices in rope slings provided by the employer shall be made in accordance with fiber rope manufacturers' recommendations.

(i) In manila rope, eye splices shall contain at least three full tucks, and short splices shall contain at least six full tucks (three on each side of the centerline of the splice).

(ii) In layed synthetic fiber rope, eye splices shall contain at least four full tucks, and short splices shall contain at least eight full tucks (four on each side of the centerline of the splice).

(iii) Strand end tails shall not be trimmed short (flush with the surface of the rope) immediately adjacent to the full tucks. This precaution applies to both eye and short splices and all types of fiber rope. For fiber ropes under 1–inch diameter, the tails shall project at least six rope diameters beyond the last full tuck. For fiber ropes 1–inch diameter and larger, the tails shall project at least 6 inches beyond the last full tuck. In applications where the projecting tails may be objectionable, the tails shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).

(iv) For all eye splices, the eye shall be sufficiently large to provide an included angle of not greater than 60° at the splice when the eye is placed over the load or support.

(v) Knots shall not be used in lieu of splices.

(vi) All fibre rope used for hoisting purposes or for the support of scaffolds, or any part thereof, shall be of high grade Manila hemp (abaca). Fibre rope used for the support of scaffolds, or any part thereof, except rope used for lashing or tying purposes, shall be not less than 3/4–inch in diameter.

(vii) The maximum safe working load for fibre rope shall not exceed 1/6 of the maximum strength as shown in the following table:

STRENGTH OF HIGH GRADE MANILA (ABACA) ROPE
COMMON LAY THREE STRAND

Approximate Diameter in inches	Circumference in inches	Safe Load in Pounds
3/16 (6 yarns)	1/2	98
1/4 (6 yarns)	3/4	116
5/16 (6 yarns)	1	200
3/8 (12 yarns)	1 1/8	241
7/16 (15 yarns)	1 1/4	291
15/32 (18 yarns)	1 3/8	350
1/2 (21 yarns)	1 1/2	408
9/16	1 3/4	526
5/8	2	666
3/4	2 1/4	816

Approximate Diameter in inches	Circumference in inches	Safe Load in Pounds
13/16	2 1/2	983
7/8	2 3/4	1,166
1	3	1,366
1 1/16	3 1/4	1,683
1 1/8	3 1/2	1,833
1 1/4	3 3/4	2,083
1 5/16	4	2,365
1 3/8	4 1/4	2,666
1 1/2	4 1/2	2,916

NOTE: This table is based on data contained in the U.S. Department of Commerce circular of the Bureau of Standards, No. 324.

(5) Synthetic webbing (nylon, polyester, and polypropylene).

(a) The employer shall have each synthetic web sling marked or coded to show:

(i) Name or trademark of manufacturer.

(ii) Rated capacities for the type of hitch.

(iii) Type of material.

(b) Rated capacity shall not be exceeded.

(6) Shackles and hooks.

(a) Table F–19 shall be used to determine the safe working loads of various sizes of shackles, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products, provided that a safety factor of not less than 5 is maintained.

(b) The manufacturer's recommendations shall be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. All hooks for which no applicable manufacturer's recommendations are available shall be tested to twice the intended safe working load before they are initially put into use. The employer shall maintain a record of the dates and results of such tests.

(c) Hooks shall not be modified by welding and/or drilling unless written approval by the manufacturer has been received.

(7) Slings.

(a) When slings are provided as a part of the hoisting equipment, every precaution shall be taken to keep them in a serviceable condition.

(i) Cable slings shall be frequently inspected and oiled.

(ii) Slings shall not be left where they can be damaged by traffic or form stumbling hazards.

(iii) Blocks or heavy bagging shall be used at corners of the load to protect the sling from sharp bending.

(b) When a load is lifted by a multiple rope sling the sling shall be so arranged that the strain can be equalized between the ropes.

(i) When using a sling with both ends engaged in the hoisting block, the sling shall be adjusted so as to equalize the stress.

(ii) Slings shall be placed on the load at safe lifting angles.

(8) Material handling—General.

(a) When necessary to store building material on public thoroughfares, care shall be exercised to see that it is so piled or stacked as to be safe against collapse or falling over.

(b) Material shall be so located as not to interfere with, or present a hazard to employees, traffic or the public. [Statutory Authority: RCW 49.17.040, 49.17-.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–155–330, filed 7/31/79; Order 76–29, § 296–155–330, filed 9/30/76; Order 74–26, § 296–155–330, filed 5/7/74, effective 6/6/74.]

WAC 296–155–480 Ladders. (1) General requirements.

(a) All applicable rules for design, construction, maintenance, operation, testing, and use of ladders contained in WAC 296–24–780 through 296–24–81013 of the General Safety and Health Standards shall be complied with.

(b) Except where either permanent or temporary stairways or suitable ramps or runways are provided, ladders described in this Part shall be used to give safe access to all elevations.

(c) The use of ladders with broken or missing rungs or steps, broken or split side rails, or other faulty or defective construction is prohibited. When ladders with such defects are discovered, they shall be immediately withdrawn from service. Inspection of metal ladders shall include checking for corrosion of interiors of open end hollow rungs.

(d) Manufactured portable wood ladders provided by the employer shall be in accordance with the provisions of the American National Standards Institute, A14.1–1968, Safety Code for Portable Wood Ladders.

(e) Portable metal ladders shall be of strength equivalent to that of wood ladders. Manufactured portable metal ladders provided by the employer shall be in accordance with the provisions of the American National Standards Institute, A14.2–1972, Safety Code for Portable Metal Ladders.

(f) Fixed ladders shall be in accordance with the provisions of the American National Standards Institute, A14.3–1956, Safety Code for Fixed Ladders.

(g) Feet of portable ladders shall be placed on a substantial base, and the area around the top and bottom of the ladder shall be kept clear.

(h) Portable ladders shall be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is about one–quarter of the working length of the ladder (the length along the ladder between the foot and the top support). Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.

(i) Ladders shall not be placed in passageways, doorways, driveways, or any location where they may be displaced by activities being conducted on any other work, unless protected by barricades or guards.

(j) The side rails shall extend not less than 36 inches above the landing. When this is not practical, grab rails, which provide a secure grip for an employee moving to or from the point of access, shall be installed.

(k) Portable straight ladders in use shall be tied, blocked, equipped with safety shoes or otherwise secured to prevent their being displaced.

(l) Portable metal ladders shall not be used for electrical work or where they may contact electrical conductors.

(m) Unless otherwise stated, all lumber sizes shall be nominal.

(n) When working from a ladder over 25 feet from the ground or floor, the ladder shall be secured at both top and bottom.

(o) No type of work shall be performed on a ladder over 25 feet from the ground or floor that requires the use of both hands to perform the work, unless a safety belt is worn and the safety lanyard is secured to the ladder.

(p) Work, such as sandblasting or spray painting, that requires wearing eye protection, respirators, and handling of pressure equipment, shall be limited to not over 30 feet from the ground or floor while working on a ladder.

(2) Job-made ladders.

(a) Job-made ladders shall be constructed for intended use.

(b) If a ladder is to provide the only means of access or exit from a working area for twenty-five or more employees, or simultaneous two-way traffic is expected, a double cleat ladder shall be installed.

(c) Double cleat ladders shall not exceed 24 feet in length.

(d) Single cleat ladders shall not exceed 30 feet in length between supports (base and top landing). If ladders are to connect different landings, or if the length required exceeds this maximum length, two or more separate ladders shall be used, offset with a platform between each ladder. Guardrails and toeboards shall be erected on the exposed sides of the platforms.

(e) The width of single cleat ladders shall be at least 15 inches, but not more than 20 inches between rails at the top.

(f) It is preferable that side rails be continuous. If splicing is necessary to attain the required length however, the splice must develop the full strength of a continuous side rail of the same length.

(g) 2-inch by 4-inch lumber shall be used for side rails of single cleat ladders up to 16 feet long; 3-inch by 6-inch lumber, or the equivalent, shall be used for single cleat ladders from 16 to 30 feet in length.

(h) 2-inch by 4-inch lumber shall be used for side and middle rails of double cleat ladders up to 12 feet in length; 2-inch by 6-inch lumber for double cleat ladders from 12 to 24 feet in length.

(i) 1-inch by 4-inch lumber shall be used for cleats of single and double cleat ladders.

(j) Cleats shall be inset into the edges of the side rails one-half inch, or filler blocks shall be used on the rails between the cleats. The cleats shall be secured to each rail with three 10d common wire nails or other fasteners of equivalent strength. Cleats shall be uniformly spaced, 12 inches top-to-top.

(k) Side rails shall be parallel or flared top to bottom by not more than one-quarter of an inch for each 2 feet of ladder.

(l) Wood side rails of ladders having cleats shall be not less than 1-1/2 inches thick and 3-1/2 inches deep (2 inches by 4 inches nominal) when made of Group 2 or Group 3 woods (see Table J-18). Wood side rails of Group 4 wood (See Table J-18) may be used in the same cross-section of dimensions for cleat ladders up to 20 feet in length. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-155-480, filed 7/31/79; Order 76-29, § 296-155-480, filed 9/30/76; Order 76-6, § 296-155-480, filed 3/1/76; Order 74-26, § 296-155-480, filed 5/7/74, effective 6/6/74.]

WAC 296-155-485 Scaffolding. (1) General requirements.

(a) All applicable rules for design, construction, maintenance, operation, testing, and use of scaffolds contained in chapter 296-24 WAC, "General Safety and Health Standards", shall apply within the construction industry. (See WAC 296-24-825 through 296-24-84013.)

(b) Scaffolds shall be erected in accordance with requirements of this section.

(c) The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. Unstable objects such as barrels, boxes, loose brick, or concrete blocks, shall not be used to support scaffolds or planks.

(d) No scaffold shall be erected, moved, dismantled, or altered except under the supervision of competent persons.

(e) Guardrails and toeboards shall be installed on all open sides and ends of platforms more than 10 feet above the ground or floor, except needle beam scaffolds and floats. The guardrail shall not be more than 18 inches from the edge of the outside platform plank on the outside face (opposite the building wall or structure) except on plasterer's and lather's scaffolds as permitted by WAC 296-155-485(18)(l). On the inside face (next to building or structure) the scaffold shall be as close to the building or structure as possible, but in no case shall the platform planks be more than 18 inches from the building or structure unless a standard guardrail is provided on the inside face of the scaffold. Scaffolds 4 feet to 10 feet in height, having a minimum horizontal dimension in either direction of less than 45 inches, shall have standard guardrails and toeboards installed on all open sides and ends of the scaffold platform.

(f) Where persons are required to work or pass under the scaffold, scaffolds shall be provided with a screen

between the toeboard and the guardrail, extending along the entire opening, consisting of No. 18 gauge U.S. Standard wire 1/2-inch mesh, or the equivalent.

(g) Scaffolds and their components shall be capable of supporting without failure at least 4 times the maximum intended load.

(h) Any scaffold including accessories such as braces, brackets, trusses, screw legs, ladders, etc. damaged or weakened from any cause shall be immediately repaired or replaced.

(i) All load-carrying timber members of scaffold framing shall be a minimum of 1,500 fiber (Stress Grade) construction grade lumber. All dimensions are nominal sizes as provided in the American Lumber Standards, except that where rough sizes are noted, only rough or undressed lumber of the size specified will satisfy minimum requirements.

(j) All planking shall be Scaffold Grades, or equivalent, as recognized by approved grading rules for the species of wood used. The maximum permissible spans for 2- x 10-inch or wider planks shall be as shown in Table J-1.

(k) The maximum permissible span for 1 1/4- x 9-inch or wider plank of full thickness shall be 4 feet with medium duty loading of 50 p.s.f.

(l) All planking or platforms shall be overlapped (minimum 12 inches), or secured from movement and the platform shall be a minimum of two 2-inch by 10-inch planks in width or a minimum of 18 inches.

(m) An access ladder or equivalent safe access shall be provided.

(n) Scaffold planks shall extend over their end supports not less than 6 inches nor more than 12 inches.

(o) The poles, legs, or uprights of scaffolds shall be plumb, and securely and rigidly braced to prevent swaying and displacement.

(p) Overhead protection shall be provided for persons on a scaffold exposed to overhead hazards.

(q) Slippery conditions on scaffolds shall be eliminated as soon as possible after they occur.

(r) No welding, burning, riveting, or open flame work shall be performed on any staging suspended by means of fiber or synthetic rope. Only treated or protected fiber or synthetic ropes shall be used for or near any work involving the use of corrosive substances or chemicals. Specific requirements for boatswain's chairs and float or ship scaffolds are contained in subsections (12) and (24) of this section.

(s) Wire, synthetic, or fiber rope used for scaffold suspension shall be capable of supporting at least 6 times the rated load.

(t) The use of shore or lean-to scaffolds is prohibited.

(2) Wood pole scaffolds.

(a) Scaffold poles shall bear on a foundation of sufficient size and strength to spread the load from the pole over a sufficient area to prevent settlement. All poles shall be set plumb.

(b) Where wood poles are spliced, the ends shall be squared and the upper section shall rest squarely on the lower section. Wood splice plates shall be provided on at least two adjacent sides and shall be not less than 4 feet in length, overlapping the abutted ends equally, and have the same width and not less than the cross-sectional area of the pole. Splice plates or other materials of equivalent strength may be used.

(c) Independent pole scaffolds shall be set as near to the wall of the building as practicable.

(d) All pole scaffolds shall be securely guyed or tied to the building or structure. Where the height or length exceeds 25 feet, the scaffold shall be secured at intervals not greater than 25 feet vertically and horizontally.

(e) Putlogs or bearers shall be set with their greater dimension vertical, and long enough to project over the ledgers of the inner and outer rows of poles at least 3 inches for proper support.

(f) Every wooden putlog on single pole scaffolds shall be reinforced with a 3/16- x 2-inch steel strip, or equivalent, secured to its lower edge throughout its entire length.

(g) Ledgers shall be long enough to extend over two pole spaces. Ledgers shall not be spliced between the poles. Ledgers shall be reinforced by bearing blocks securely nailed to the side of the pole to form a support for the ledger.

(h) Diagonal bracing shall be provided to prevent the poles from moving in a direction parallel with the wall of the building, or from buckling

(i) Cross bracing shall be provided between the inner and outer sets of poles in independent pole scaffolds. The free ends of pole scaffolds shall be cross braced.

(j) Full diagonal face bracing shall be erected across the entire face of pole scaffolds in both directions. The braces shall be spliced at the poles. The inner row of poles on medium and heavy duty scaffolds shall be braced in a similar manner.

(k) Platform planks shall be laid with their edges close together so the platform will be tight with no spaces through which tools or fragments of material can fall.

(l) Where planking is lapped, each plank shall lap its end supports at least 12 inches. Where the ends of planks abut each other to form a flush floor, the butt joint shall be at the centerline of a pole. The abutted ends shall rest on separate bearers. Intermediate beams shall be provided where necessary to prevent dislodgment of planks due to deflection, and the ends shall be secured to prevent their dislodgment.

(m) When a scaffold materially changes its direction, the platform planks shall be laid to prevent tipping. The planks that meet the corner putlog at an angle shall be laid first, extending over the diagonally placed putlog far enough to have a good safe bearing, but not far enough to involve any danger from tipping. The planking running in the opposite direction at an angle shall be laid so as to extend over and rest on the first layer of planking.

(n) When moving platforms to the next level, the old platform shall be left undisturbed until the new putlogs or bearers have been set in place, ready to receive the platform planks.

(o) All wood pole scaffolds 60 feet or less in height shall be constructed and erected in accordance with Tables J-2 to J-8. If they are over 60 feet in height,

they shall be designed by a qualified engineer competent in this field, and it shall be constructed and erected in accordance with such design.

(3) Tube and coupler scaffolds.

(a) A light duty tube and coupler scaffold shall have all posts, bearers, runners, and bracing of nominal 2–inch O.D. steel tubing. The posts shall be spaced no more than 6 feet apart by 10 feet along the length of the scaffold. Other structural metals when used must be designed to carry an equivalent load. No dissimilar metals shall be used together.

(b) A medium duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal 2–inch O.D. steel tubing. Posts spaced not more than 6 feet apart by 8 feet along the length of the scaffold shall have bearers of nominal 2 1/2–inch O.D. steel tubing. Posts spaced not more than 5 feet apart by 8 feet along the length of the scaffold shall have bearers of nominal 2–inch O.D. steel tubing. Other structural metals, when used, must be designed to carry an equivalent load. No dissimilar metals shall be used together.

(c) A heavy duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal 2–inch O.D. steel tubing, with the posts spaced not more than 6 feet by 6 feet–6 inches. Other structural metals, when used, must be designed to carry an equivalent load. No dissimilar metals shall be used together.

(d) Tube and coupler scaffolds shall be limited in heights and working levels to those permitted in Tables J–8, J–9 and J–10. Drawings and specifications of all tube and coupler scaffolds above the limitations in Tables J–8, J–9 and J–10 shall be designed by a qualified engineer competent in this field.

(e) All tube and coupler scaffolds shall be constructed and erected to support four times the maximum intended loads, as set forth in Tables J–8, J–9 and J–10, or as set forth in the specifications by a licensed professional engineer competent in this field.

(f) Posts shall be accurately spaced, erected on suitable bases, and maintained plumb.

(g) Runners shall be erected along the length of the scaffold, located on both the inside and the outside posts at even height. Runners shall be interlocked to the inside and the outside posts at even heights. Runners shall be interlocked to form continuous lengths and coupled to each post. The bottom runners shall be located as close to the base as possible. Runners shall be placed not more than 6 feet–6 inches on centers.

(h) Bearers shall be installed transversely between posts and shall be securely coupled to the posts bearing on the runner coupler. When coupled directly to the runners, the coupler must be kept as close to the posts as possible.

(i) Bearers shall be at least 4 inches but not more than 12 inches longer than the post spacing or runner spacing.

(j) Cross bracing shall be installed across the width of the scaffold at least every third set of posts horizontally and every fourth runner vertically. Such bracing shall extend diagonally from the inner and outer runners upward to the next outer and inner runners.

(k) Longitudinal diagonal bracing on the inner and outer rows of poles shall be installed at approximately a 45° angle from near the base of the first outer post upward to the extreme top of the scaffold. Where the longitudinal length of the scaffold permits, such bracing shall be duplicated beginning at every fifth post. In a similar manner, longitudinal diagonal bracing shall also be installed from the last post extending back and upward toward the first post. Where conditions preclude the attachment of this bracing to the posts, it may be attached to the runners.

(l) The entire scaffold shall be tied to and securely braced against the building at intervals not to exceed 30 feet horizontally and 26 feet vertically.

(4) Tubular welded frame scaffolds.

(a) Metal tubular frame scaffolds, including accessories such as braces, brackets, trusses, screw legs, ladders, etc., shall be designed, constructed, and erected to safely support four times the maximum rated load.

(b) Spacing of panels or frames shall be consistent with the loads imposed.

(c) Scaffolds shall be properly braced by cross bracing or diagonal braces, or both, for securing vertical members together laterally, and the cross braces shall be of such length as will automatically square and aline vertical members so that the erected scaffold is always plumb, square, and rigid. All brace connections shall be made secure.

(d) Scaffold legs shall be set on adjustable bases or plain bases placed on mud sills or other foundations adequate to support the maximum rated load.

(e) The frames shall be placed one on top of the other with coupling or stacking pins to provide proper vertical alinement of the legs.

(f) Where uplift may occur, panels shall be locked together vertically by pins or other equivalent suitable means.

(g) To prevent movement, the scaffold shall be secured to the building or structure at intervals not to exceed 30 feet horizontally and 26 feet vertically.

(h) Maximum permissible spans or planking shall be in conformity with (1)(j) of this section.

(i) Drawings and specifications for all frame scaffolds over 125 feet in height above the base plates shall be designed by a registered professional engineer.

(5) Manually propelled mobile scaffolds.

(a) When freestanding mobile scaffold towers are used, the height shall not exceed four times the minimum base dimension.

(b) Casters shall be properly designed for strength and dimensions to support four times the maximum intended load. All casters shall be provided with a positive locking device to hold the scaffold in position.

(c) Scaffolds shall be properly braced by cross bracing and horizontal bracing conforming with subsection (4)(c) of this section.

(d) Platforms shall be tightly planked for the full width of the scaffold except for necessary entrance opening. Platforms shall be secured in place.

(e) A ladder or stairway shall be provided for proper access and exit and shall be affixed or built into the

scaffold and so located that when in use it will not have a tendency to tip the scaffold. A landing platform must be provided at intervals not to exceed 35 feet.

(f) The force necessary to move the mobile scaffold shall be applied near or as close to the base as practicable and provision shall be made to stabilize the tower during movement from one location to another. Scaffolds shall only be moved on level floors, free of obstructions and openings.

(g) The employer shall not allow employees to ride on manually propelled scaffolds unless the following conditions exist:

(i) The floor or surface is within 3° of level, and free from pits, holes, or obstructions;

(ii) The minimum dimension of the scaffold base when ready for rolling, is at least one-half of the height. Outriggers, if used, shall be installed on both sides of staging;

(iii) The wheels are equipped with rubber or similar resilient tires;

(iv) All tools and materials are secured or removed from the platform before the mobile scaffold is moved.

(h) Scaffolds in use by any persons shall rest upon a suitable footing and shall stand plumb. The casters or wheels shall be locked to prevent any movement.

(i) Mobile scaffolds constructed of metal members shall also conform to applicable provisions of subsections (2), (3), and (4) of this section, depending on the material of which they are constructed.

(6) Elevating and rotating work platforms. Applicable requirements of American National Standards Institute A92.2-1969, Vehicle Mounted Elevating and Rotating Work Platforms, shall be complied with for such equipment, as required by the provisions of WAC 296-155-580.

(7) Outrigger scaffolds.

(a) Outrigger beams shall extend not more than 6 feet beyond the face of the building. The inboard end of outrigger beams, measured from the fulcrum point to anchorage point, shall be not less than 1 1/2 times the outboard end in length. The beams shall rest on edge, the sides shall be plumb, and the edges shall be horizontal. The fulcrum point of the beam shall rest on a secure bearing at least 6 inches in each horizontal dimension. The beam shall be secured in place against movement and shall be securely braced at the fulcrum point against tipping.

(b) The inboard ends of outrigger beams shall be securely anchored either by means of struts bearing against sills in contact with the overhead beams or ceiling, or by means of tension members secured to the floor joists underfoot, or by both if necessary, or by a securely fastened solid body counterweight. (Water in an open container or loose material in bags shall not be permitted.) The inboard ends of outrigger beams shall be secured against tipping and the entire supporting structure shall be securely braced in both directions to prevent any horizontal movement.

(c) Unless outrigger scaffolds are designed by a registered professional engineer competent in this field, they shall by constructed and erected in accordance with Table J-11. Outrigger scaffolds, designed by a registered professional engineer, shall be constructed and erected in accordance with such design.

(d) Planking shall be laid tight and shall extend to within 3 inches of the building wall. Planking shall be secured to the beams.

(8) Masons' adjustable multiple-point suspension scaffolds.

(a) The scaffold shall be capable of sustaining a working load of 50 pounds per square foot and shall not be loaded in excess of that figure.

(b) The scaffold shall be provided with hoisting machines that meet the requirements of Underwriters' Laboratories, Factory Mutual Engineering Corporation, or other agency or laboratory approved by the Department of Labor and Industries.

(c) The platform shall be supported by wire ropes, capable of supporting at least 6 times the intended load, suspended from overhead outrigger beams.

(d) The scaffold outrigger beams shall consist of structural metal securely fastened or anchored to the frame or floor system of the building or structure.

(e) Each outrigger beam shall be equivalent in strength to at least a standard 7-inch, 15.3-pound steel I-beam, at least 15 feet long, and shall not project more than 6 feet 6 inches beyond the bearing point.

(f) Where the overhang exceeds 6 feet 6 inches, outrigger beams shall be composed of stronger beams or multiple beams and be installed under the supervision of a competent person.

(g) All outrigger beams shall be set and maintained with their webs in a vertical position.

(h) A stop bolt shall be placed at each end of every outrigger beam.

(i) The outrigger beam shall rest on suitable wood bearing blocks.

(j) The free end of the suspension wire ropes shall be equipped with proper size thimbles and secured by splicing or other equivalent means. The running ends shall be securely attached to the hoisting drum and at least four turns of wire rope shall at all times remain on the drum. The use of fiber rope is prohibited.

(k) Where a single outrigger beam is used, the steel shackles or clevises with which the wire ropes are attached to the outrigger beams shall be placed directly over the hoisting drums.

(l) The scaffold platform shall be equivalent in strength to at least 2-inch planking. (For maximum planking spans, see subsection (1)(j) of this section.)

(m) When employees are at work on the scaffold and an overhead hazard exists, overhead protection shall be provided on the scaffold, not more than 9 feet above the platform, consisting of 2-inch planking, or material of equivalent strength, laid tight, and extending not less than the width of the scaffold.

(n) Each scaffold shall be installed or relocated under the supervision of a competent person.

(9) (Swinging scaffolds) two-point suspension.

(a) Two-point suspension scaffold platforms shall be not less than 20 inches nor more than 36 inches wide

overall. The platform shall be securely fastened to the hangers by U-bolts or by other equivalent means.

(b) The hangers of two-point suspension scaffolds shall be made of mild steel, or other equivalent materials, having a cross-sectional area capable of sustaining 4 times the maximum rated load, and shall be designed with a support for guardrail, intermediate rail, and toeboard.

(c) When hoisting machines are used on two-point suspension scaffolds, such machines shall be of a design tested and approved by Underwriters' Laboratories, Factory Mutual Engineering Corporation, or by an agency or laboratory approved by the Department of Labor and Industries.

(d) The roof irons or hooks shall be of mild steel, or other equivalent material, of proper size and design, securely installed and anchored. Tiebacks of 3/4-inch manila rope, or the equivalent, shall serve as a secondary means of anchorage, installed at right angles to the face of the building, whenever possible, and secured to a structurally sound portion of the building.

(e) Two-point suspension scaffolds shall be suspended by wire, synthetic or fiber ropes capable of supporting at least 6 times the rated load. All other components shall be capable of supporting at least four times the rated load.

(f) The sheaves of all blocks, consisting of at least one double and one single block, shall fit the size and type of rope used.

(g) All wire ropes, fiber and synthetic ropes, slings, hangers, platforms, and other supporting parts shall be inspected before every installation. Periodic inspections shall be made while the scaffold is in use.

(h) On suspension scaffolds designed for a working load of 500 pounds, no more than two persons shall be permitted to work at one time. On suspension scaffolds with a working load of 750 pounds, no more than three persons shall be permitted to work at one time. On suspension scaffolds with a working load of 1,000 pounds, no more than four persons shall be permitted to work at one time. Each employee shall be protected by an approved safety life belt attached to a dropline. The droplines shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the employee in case of a fall. In order to keep the dropline continuously attached, with a minimum of slack, to a fixed structure, the attachment point of the dropline shall be appropriately changed as the work progresses.

(i) When a multi-tiered two-point suspension scaffold is provided with safety droplines that attach to each end of the scaffold through an approved quick acting safety device, in case either or both of the main suspension lines should break, the lanyard of the safety belt shall be tied off to a substantial member of the scaffold itself or to a horizontal lifeline substantially attached to each end of the scaffold or a sliding device on the horizontal lifeline. The two additional safety droplines shall be individually suspended from roof irons, hooks, or other approved devices and shall be in the near proximity to the suspension droplines to prevent unnecessary side impact. The safety dropline shall also have a 6 to 1 safety factor.

(j) Two-point suspension scaffolds shall be securely lashed to the building or structure to prevent the scaffolds from swaying. Window cleaners' anchors shall not be used for this purpose.

(k) The platform of every two-point suspension scaffold shall be one of the following types:

(i) Ladder-type platforms. The side stringer shall be of clear straight-grained spruce or materials of equivalent strength and durability. The rungs shall be of straight-grained oak, ash, or hickory, at least 1 1/8 inch in diameter, with 7/8-inch tenons mortised into the side stringers at least 7/8-inch. The stringers shall be tied together with the rods not less than one-quarter inch in diameter, passing through the stringers and riveted up tight against washers on both ends. The flooring strips shall be spaced not more than five-eighths inch apart except at the side rails where the space may be 1 inch. Ladder-type platforms shall be constructed in accordance with Table J-12.

(ii) Plank-type platforms. Plank-type platforms shall be composed of not less than nominal 2- x 10-inch unspliced planks, properly cleated together on the underside, starting 6 inches from each end; intervals in between shall not exceed 4 feet. The plank-type platform shall not extend beyond the hangers more than 12 inches. A bar or other effective means shall be securely fastened to the platform at each end to prevent its slipping off the hanger. The span between hangers for plank-type platforms shall not exceed 8 feet.

(iii) Beam-type platforms. Beam platforms shall have side stringers of lumber not less than 2 x 6 inches set on edge. The span between hangers shall not exceed 12 feet when beam platforms are used. The flooring shall be supported on 2- x 6-inch cross beams, laid flat and set into the upper edge of the stringers with a snug fit, at intervals of not more than 4 feet, securely nailed in place. The flooring shall be of 1- x 6-inch material properly nailed. Floor boards shall not be spaced more than one-half inch apart.

(iv) Light metal-type platforms, when used, shall be tested and listed according to Underwriters' Laboratories, Factory Mutual Engineering Corporation, or the Department of Labor and Industries.

(10) Stone setters' adjustable multiple-point suspension scaffolds.

(a) The scaffold shall be capable of sustaining a working load of 25 pounds per square foot and shall not be overloaded. Scaffolds shall not be used for storage of stone or other heavy materials.

(b) When used, the hoisting machine and its supports shall be of a type tested and listed by Underwriters' Laboratories, Factory Mutual Engineering Corporation or the Department of Labor and Industries.

(c) The platform shall be securely fastened to the hangers by U-bolts or other equivalent means. (For materials and spans, see item (ii) of subsection (9)(j), Plank-type Platforms and Table J-12 of this section.)

(d) The scaffold unit shall be suspended from metal outriggers, iron brackets, wire rope slings, or iron hooks.

(e) Outriggers, when used, shall be set with their webs in a vertical position, securely anchored to the building or structure and provided with stop bolts at each end.

(f) The scaffold shall be supported by wire rope capable of supporting at least 6 times the rated load. All other components shall be capable of supporting at least 4 times the rated load.

(g) The free ends of the suspension wire ropes shall be equipped with proper size thimbles, secured by splicing or other equivalent means. The running ends shall be securely attached to the hoisting drum and at least four turns of wire rope shall remain on the drum at all times.

(h) When two or more scaffolds are used on a building or structure, they shall not be bridged one to the other; but shall be maintained at even height with platforms abutting closely.

(11) Single-point adjustable suspension scaffolds.

(a) The scaffolding, including power units or manually operated winches, shall be of a type tested and listed by Underwriters' Laboratories, Factory Mutual Engineering Corporation or the Department of Labor and Industries.

(b) The power units may be either electrically or air motor driven.

(c) All power-operated gears and brakes shall be enclosed.

(d) In addition to the normal operating brake, all power-driven units shall have an emergency brake which engages automatically when the normal speed of descent is exceeded.

(e) The hoisting machines, cables, and equipment shall be regularly serviced and inspected.

(f) The units may be combined to form a two-point suspension scaffold. Such scaffold shall then comply with subsection (9) of this section.

(g) The supporting cable shall be vertical for its entire length, and the basket shall not be swayed nor the cable fixed to any intermediate points to change the original path of travel.

(h) Suspension methods shall conform to applicable provisions of subsections (8) and (9) of this section.

(i) For additional details not covered in this subsection applicable technical portions of American National Standards Institute, A120.1-1970, Power-Operated Devices for Exterior Building Maintenance Powered Platforms, shall be used.

(12) Boatswain's chairs.

(a) The chair seat shall not be less than 12 x 24 inches, and 1-inch thickness. The seat shall be reinforced on the underside by cleats securely fastened to prevent the board from splitting.

(b) The two fiber rope seat slings shall be of 5/8-inch diameter, reeved through the four seat holes so as to cross each other on the underside of the seat.

(c) Seat slings shall be of at least 3/8-inch wire rope when an employee is conducting a heat-producing process, such as gas welding.

(d) The employee shall be protected by a safety belt and lifeline in accordance with WAC 296-155-225. The attachment point of the lifeline to the structure shall be appropriately changed as the work progresses.

(e) The tackle shall consist of correct size ball bearing or bushed blocks and properly spliced 5/8-inch diameter first grade manila rope, or equivalent.

(f) The roof irons, hooks, or the object to which the tackle is anchored, shall be securely installed. Tiebacks, when used, shall be installed at right angles to the face of the building and securely fastened.

(13) Carpenters' bracket scaffolds.

(a) The brackets shall consist of a triangular wood frame not less than 2 x 3 inches in cross section, or of metal of equivalent strength. Each member shall be properly fitted and securely joined.

(b) Each bracket shall be attached to the structure by means of one of the following:

(i) A bolt, no less than 5/8-inch in diameter, which shall extend through to the inside of the building wall;

(ii) A metal stud attachment device;

(iii) Welding to steel tanks;

(iv) Hooking over a well-secured and adequately strong supporting member.

(c) The brackets shall be spaced no more than 8 feet apart.

(d) No more than two employees shall occupy any given 8 feet of a bracket scaffold at any one time. Tools and materials shall not exceed 75 pounds in addition to the occupancy.

(e) The platform shall consist of not less than two 2- x 10-inch planks extending not more than 12 inches or less than 6 inches beyond each end support.

(14) Bricklayers' square scaffolds.

(a) The squares shall not exceed 5 feet in width and 5 feet in height.

(b) Members shall be not less than those specified in Table J-13.

(c) The squares shall be reinforced on both sides of each corner with 1- x 6-inch gusset pieces. They shall also have diagonal braces 1 x 8 inches on both sides running from center to center of each member, or other means to secure equivalent strength and rigidity.

(d) The squares shall be set not more than 5 feet apart for medium duty scaffolds, and not more than 8 feet apart for light duty scaffolds. Bracing, 1 x 8 inches, extending from the bottom of each square to the top of the next square, shall be provided on both front and rear sides of the scaffold.

(e) Platform planks shall be at least 2 x 10-inch. The ends of the planks shall overlap the bearers of the squares and each plank shall be supported by not less than three squares.

(f) Bricklayers' square scaffolds shall not exceed three tiers in height and shall be so constructed and arranged that one square shall rest directly above the other. The upper tiers shall stand on a continuous row of planks laid across the next lower tier and be nailed down or otherwise secured to prevent displacement.

(g) Scaffolds shall be level and set upon a firm foundation.

(15) Horse scaffolds.

(a) Horse scaffolds shall not be constructed or arranged more than two tiers or 10 feet in height.

(b) The members of the horses shall be not less than those specified in Table J-14.

(c) Horses shall be spaced not more than 5 feet for medium duty and not more than 8 feet for light duty.

(d) When arranged in tiers, each horse shall be placed directly over the horse in the tier below.

(e) On all scaffolds arranged in tiers, the legs shall be nailed down or otherwise secured to the planks to prevent displacement or thrust and each tier shall be substantially cross braced.

(f) Horses or parts which have become weak or defective shall not be used.

(16) Needle beam scaffold.

(a) Wood needle beams shall be not less than 4 x 6 inches in size, with the greater dimension placed in a vertical direction. Metal beams or the equivalent, conforming to subsections (1)(h) and (j) of this section, may be used and shall not be altered or moved horizontally while they are in use.

(b) Ropes or hangers shall be provided for supports. The span between supports on the needle beam shall not exceed 10 feet for 4- x 6-inch timbers. Rope supports shall be equivalent in strength to 1-inch diameter first-grade manila rope.

(c) The ropes shall be attached to the needle beams by a scaffold hitch or a properly made eye splice. The loose end of the rope shall be tied by a bowline knot or by a round turn and a half hitch.

(d) The scaffold hitch shall be arranged so as to prevent the needle beam from rolling or becoming otherwise displaced.

(e) The platform span between the needle beams shall not exceed 8 feet when using 2-inch scaffold plank. For spans greater than 8 feet, platforms shall be designed based on design requirements for the special span. The overhang of each end of the platform planks shall be not less than 6 inches and not more than 12 inches.

(f) When needle beam scaffolds are used, the planks shall be secured against slipping.

(g) All unattached tools, bolts, and nuts used on needle beam scaffolds shall be kept in suitable containers, properly secured.

(h) One end of a needle beam scaffold may be supported by a permanent structural member conforming to subsections (1)(h) and (j) of this section.

(i) Each employee working on a needle beam scaffold shall be protected by a safety belt and lifeline in accordance with WAC 296-155-225.

(17) Plasterers', decorators', and large area scaffolds.

(a) Plasterers', lathers', and ceiling workers' inside scaffolds shall be constructed in accordance with the general requirements set forth for independent wood pole scaffolds. (See subsection (2) of this section and Tables J-5, J-6 and J-7.)

(b) All platform planks shall be laid with the edges close together.

(c) When independent pole scaffold platforms are erected in sections, such sections shall be provided with connecting runways equipped with substantial guardrails.

(18) Plasterers' and lathers' tubular welded frame scaffolds.

(a) Plasterers' and lathers' scaffolds shall be erected in accordance with requirements of this section.

(b) The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. Unstable objects such as barrels, boxes, loose brick, or concrete blocks shall not be used to support scaffolds or planks.

(c) No scaffold shall be erected, moved, dismantled, or altered except under the supervision of competent persons.

(d) Scaffolds, including accessories such as braces, brackets, trusses, screw legs, ladders, etc., shall be designed, constructed, and erected to safely support four times the maximum rated loads.

(e) Spacing of panels or frames shall be consistent with the loads imposed.

(f) The frames shall be placed one on top of the other with coupling or stacking pins to provide proper vertical alinement of the legs.

(g) Where uplift may occur, panels shall be locked together vertically by pins or other equivalent suitable means.

(h) To prevent movement, the scaffold shall be secured to the building or structure at intervals not to exceed 30 feet horizontally and 26 feet vertically.

(i) The outside face (opposite the building wall) of the scaffold shall be fully cross braced with a horizontal continuous guardrail attached to the lower cross brace lock pins. (See Figure J-1.)

(j) The inside face (next to building wall) of the scaffold shall have a continuous horizontal brace attached to the upper cross brace lock pins.

(k) The outrigger plank shall be no more than 18 inches from the finished wall.

(l) The scaffold platform shall be planked to leave no more than a 22-inch maximum opening between the outside plank and the outside vertical member of the scaffold frame. (See Figure J-2.)

NOTE: The scaffold frame may be utilized to travel from one working level to another working level, provided the scaffold is of the type typified in Figure J-2.

(m) Any scaffold over three frames high shall have a standard inside ladder installed.

(n) All end runs shall be provided with a standard top rail and mid rail.

(o) All outside ends of turns shall be provided with a standard top rail and mid rail or with a cross brace and horizontal rail at the bottom of the cross brace.

(p) If no wall or studs are present on the building side of any scaffold over ten feet high, safety belts shall be used.

(19) Interior hung scaffolds.

(a) An interior hung scaffold shall be hung or suspended from the roof structure or ceiling beams.

(b) The suspending wire or fiber rope shall be capable of supporting at least 6 times the rated load. The rope shall be wrapped at least twice around the supporting members and twice around the bearers of the scaffold, with each end of the wire rope secured by at least three standard wire–rope clips properly installed.

(c) For hanging wood scaffolds, the following minimum nominal size material shall be used:

(i) Supporting bearers 2 x 10 inches on edge;

(ii) Planking 2 x 10 inches, with maximum span 7 feet for heavy duty and 10 feet for light duty or medium duty.

(d) Steel tube and coupler members may be used for hanging scaffolds with both types of scaffold designed to sustain a uniform distributed working load up to heavy duty scaffold loads with a safety factor of four.

(20) Ladder jack scaffolds.

(a) All ladder jack scaffolds shall be limited to light duty and shall not exceed a height of 20 feet above the floor or ground.

(b) All ladders used in connection with ladder jack scaffolds shall be heavy–duty ladders and shall be designed and constructed in accordance with American National Standards Institute A14.1–1968, Safety Code for Portable Wood Ladders, and A14.2–1968, Safety Code for Portable Metal Ladders. Cleated ladders shall not be used for this purpose.

(c) The ladder jack shall be so designed and constructed that it will bear on the side rails in addition to the ladder rungs, or if bearing on rungs only, the bearing area shall be at least 10 inches on each rung.

(d) Ladders used in conjunction with ladder jacks shall be so placed, fastened, held, or equipped with devices so as to prevent slipping.

(e) The wood platform planks shall be not less than 2 inches in thickness. Both metal and wood platform planks shall overlap the bearing surface not less than 12 inches. The span between supports for wood shall not exceed 8 feet. Platform width shall be not less than 18 inches.

(f) Not more than two employees shall occupy any given 8 feet of any ladder jack scaffold at any one time.

(21) Window jack scaffolds.

(a) Window jack scaffolds shall be used only for the purpose of working at the window opening through which the jack is placed.

(b) Window jacks shall not be used to support planks placed between one window jack and another or for other elements of scaffolding.

(c) Window jack scaffolds shall be provided with guardrails unless safety belts with lifelines are attached and used by the employee.

(d) Not more than one employee shall occupy a window jack scaffold at any one time.

(22) Roofing brackets.

(a) Roofing brackets shall be constructed to fit the pitch of the roof.

(b) Brackets shall be secured in place by nailing in addition to the pointed metal projections. When it is impractical to nail brackets, rope supports shall be used. When rope supports are used, they shall consist of first–grade manila of at least 3/4–inch diameter, or equivalent.

(c) A catch platform shall be installed below the working area of roofs more than 16 feet from the ground to eaves with a slope greater than 4 inches in 12 inches without a parapet. In width, the platform shall extend 2 feet beyond the protection of the eaves and shall be provided with a guardrail, midrail, and toeboard. This provision shall not apply where employees engaged in work upon such roofs are protected by a safety belt attached to a lifeline.

(23) Crawling boards or chicken ladders.

(a) Crawling boards shall be not less than 10 inches wide and 1 inch thick, having cleats 1 x 1 1/2 inches. The cleats shall be equal in length to the width of the board and spaced at equal intervals not to exceed 24 inches. Nails shall be driven through and clinched on the underside. The crawling board shall extend from the ridge pole to the eaves when used in connection with roof construction, repair, or maintenance.

(b) A firmly fastened lifeline of at least 3/4–inch diameter rope, or equivalent, shall be strung beside each crawling board for a handhold.

(c) Crawling boards shall be secured to the roof by means of adequate ridge hooks or other effective means.

(24) Float or ship scaffolds.

(a) Float or ship scaffolds shall not be used to support more than three persons and a few light tools, such as those needed for riveting, bolting, and welding. They shall be constructed as designed in subdivisions (b) through (f) of this subsection, unless substitute designs and materials provide equivalent strength, stability, and safety.

(b) The platform shall be not less than 3 feet wide and 6 feet long, made of 3/4–inch plywood, equivalent to American Plywood Association Grade B–B, Group I, Exterior, or other similar material.

(c) Under the platform, there shall be two supporting bearers made from 2– x 4–inch, or 1– x 10–inch rough, "selected lumber," or better. They shall be free of knots or other flaws and project 6 inches beyond the platform on both sides. The ends of the platform shall extend 6 inches beyond the outer edges of the bearers. Each bearer shall be securely fastened to the platform.

(d) An edging of wood not less than 3/4 x 1 1/2 inches or equivalent shall be placed around all sides of the platform to prevent tools from rolling off.

(e) Supporting ropes shall be 1–inch diameter manila rope or equivalent, free from deterioration, chemical damage, flaws, or other imperfections. Rope connections shall be such that the platform cannot shift or slip. If two ropes are used with each float, they shall be arranged so as to provide four ends which are to be securely fastened to an overhead support. Each of the two supporting ropes shall be hitched around one end of bearer and pass under the platforms to the other end of the bearer where it is hitched again, leaving sufficient rope at each end for the supporting ties.

(f) Each employee shall be protected by an approved safety lifebelt and lifeline, in accordance with WAC 296–155–225.

(25) Form scaffolds.

(a) Form scaffolds shall be constructed of wood or other suitable materials, such as steel or aluminum members of known strength characteristics. All scaffolds shall be designed and erected with a minimum safety factor of 4, computed on the basis of the maximum rated load.

(b) All scaffold planking shall be a minimum of 2– x 10–inch nominal Scaffold Grade, as recognized by approved grading rules for the species of lumber used, or equivalent material. Maximum permissible spans shall not exceed 8 feet on centers for 2– x 10–inch nominal planking. Scaffold planks shall be either nailed or bolted to the ledgers or of such length that they overlap the ledgers at least 6 inches. Unsupported projecting ends of scaffolding planks shall be limited to a maximum overhang of 12 inches.

(c) Scaffolds shall not be loaded in excess of the working load for which they were designed.

(d) Figure–four form scaffolds:

(i) Figure–four scaffolds are intended for light duty and shall not be used to support loads exceeding 25 pounds per square foot unless specifically designed for heavier loading. For minimum design criteria, see Table J–15.

(ii) Figure–four form scaffold frames shall be spaced not more than 8 feet on centers and constructed from sound lumber, as follows: The outrigger ledger shall consist of two pieces of 1– x 6–inch or heavier material nailed on opposite sides of the vertical form support. Ledgers shall project not more than 3 feet 6 inches from the outside of the form support and shall be substantially braced and secured to prevent tipping or turning. The knee or angle brace shall intersect the ledger at least 3 feet from the form at an angle of approximately 45°, and the lower end shall be nailed to a vertical support. The platform shall consist of two or more 2– x 10–inch planks, which shall be of such length that they extend at least 6 inches beyond ledgers at each end unless secured to the ledgers. When planks are secured to the ledgers (nailed or bolted), a wood filler strip shall be used between the ledgers. Unsupported projecting ends of planks shall be limited to an overhang of 12 inches.

(e) Metal bracket form scaffolds:

(i) Metal brackets or scaffold jacks which are an integral part of the form shall be securely bolted or welded to the form. Folding type brackets shall be either bolted or secured with a locking–type pin when extended for use.

(ii) "Clip–on" or "hook–over" brackets may be used, provided the form walers are bolted to the form or secured by snap ties or shea–bolt extending through the form and securely anchored.

(iii) Metal brackets shall be spaced not more than 8 feet on centers.

(iv) Scaffold planks shall be either bolted to the metal brackets or of such length that they overlap the brackets at each end by at least 6 inches. Unsupported projecting ends of scaffold planks shall be limited to a maximum overhang of 12 inches.

(v) Metal bracket form scaffolds shall be equipped with wood guardrails, intermediate rails, toeboards, and scaffold planks meeting the minimum dimensions shown in Table J–16. (Metal may be substituted for wood, providing it affords equivalent or greater design strength.)

(f) Wooden bracket form scaffolds:

(i) Wooden bracket form scaffolds shall be an integral part of the form panel. The minimum design criteria set forth herein and in Table J–17 cover scaffolding intended for light duty and shall not be used to support loads exceeding 25 pounds per square foot, unless specifically designed for heavier loading.

(ii) Scaffold planks shall be either nailed or bolted to the ledgers or of such length that they overlap the ledgers at each end by at least 6 inches. Unsupported projecting ends of scaffold planks shall be limited to a maximum overhang of 12 inches.

(26) Pump jack scaffolds.

(a) Pump jack scaffolds shall:

(i) Not carry a working load exceeding 500 pounds; and

(ii) Be capable of supporting without failure at least four times the maximum intended load.

(iii) The manufactured components shall not be loaded in excess of the manufacturer's recommended limits.

(b) Pump jack brackets, braces, and accessories shall be fabricated from metal plates and angles. Each pump jack bracket shall have two positive gripping mechanisms to prevent any failure or slippage.

(c) The platform bracket shall be fully docked and the planking secured. Planking, or equivalent, shall conform with subsection (1) of this section.

(d) (i) When wood scaffold planks are used as platforms, poles used for pump jacks shall not be spaced more than 10 feet center to center. When fabricated platforms are used that fully comply with all other provisions of this subsection, pole spacing may exceed 10 feet center to center.

(ii) Poles shall not exceed 30 feet in height.

(iii) Poles shall be secured to the work wall by rigid triangular bracing, or equivalent, at the bottom, top, and other points as necessary, to provide a maximum vertical spacing of not more than 10 feet between braces. Each brace shall be capable of supporting a minimum of 225 pounds tension or compression.

(iv) For the pump jack bracket to pass bracing already installed, an extra brace shall be used approximately 4 feet above the one to be passed until the original brace is reinstalled.

(e) All poles shall bear on mud sills or other adequate firm foundations.

(f) Pole lumber shall be two 2 x 4's, of Douglas fir or equivalent, straight–grained, clear, free of cross–grain, shakes, large loose or dead knots, and other defects which might impair strength.

(g) When poles are constructed of two continuous lengths, they shall be two by fours, spiked together with the seam parallel to the bracket, and with 10d common

nails, no more than 12 inches center to center, staggered uniformly from opposite outside edges.

(h) If two by fours are spliced to make up the pole, the splices shall be so constructed as to develop the full strength of the member.

(i) A ladder, in accordance with WAC 296-155-480, shall be provided for access to the platform during use.

(j) Not more than two persons shall be permitted at one time upon a pump jack scaffold between any two supports.

(k) Pump jack scaffolds shall be provided with standard guardrails, unless safety belts with lifelines are used by employees.

(l) When a work bench is used at an approximate height of 42 inches, the top guardrail may be eliminated, if the work bench is fully decked, the planking secured, and is capable of withstanding 200 pounds pressure in any direction.

(m) Employees shall not be permitted to use a work bench as a scaffold platform.

(27) Factory-built scaffold units. Factory-built or prefabricated scaffold units intended for assembly on the job, prefabricated plank, staging, etc., mechanical hoisting units, or other devices for use on or in connection with any type scaffolds, shall be approved by an agency or laboratory approved by the Department before being used.

(28) Waler bracket scaffolds.

(a) Waler brackets shall be constructed of 1 5/8" x 1 1/2" x 3/16" angle iron minimum size, or material of equivalent strength.

(b) All steel connections shall be welded and riveted or bolted, except where detrimental to strength of materials.

(c) The maximum length of horizontal leg shall not be more than 36" between bracket hook and railing standard.

(d) A 4" x 4" x 3/16" gusset plate shall be securely welded at inside of leg angle.

(e) Nailing Holes shall be provided in lower end of vertical leg for purpose of securing bracket against lifting or shifting.

(f) Waler hook or hooks shall be a minimum of 4-inch depth and be constructed of material of a strength to support a minimum of 400 pounds at extreme outer end of bracket.

(29) Ladder supported scaffolds.

(a) Box scaffolds.

(i) A step ladder scaffold, trestle scaffold, or an extension trestle scaffold shall be composed of two or more step ladders, or trestle ladders, or trestle, or extension trestle placed in line and supporting the platform in the interval or intervals, or in paralleled lines supporting stringers in the interval or intervals, upon which are supported kick plank platforms, not exceeding one platform to each bay. Such scaffolds are also known as "box scaffolds."

(ii) The number of persons working on each bay shall not exceed three at any one time.

(b) Step ladder scaffolds.

(i) Platforms more than 8 feet above the floor level shall not be supported on step ladders.

(ii) Platforms shall not be supported on the top step of a step ladder unless it is provided with stops at least one inch high at each side to prevent the plank from slipping off.

(c) Trestle ladder scaffolds.

(i) Platforms more than 16 feet above the floor level shall not be supported on trestle ladders.

(ii) The top of the trestle ladder shall be at least three steps above the level of the scaffold platform.

(iii) Where an extension trestle ladder is used to support a scaffold platform the maximum height of the platform shall be 20 feet above the floor level and the point of support on the extension section shall not be more than 6 feet above the apex of the base section.

(d) Extension trestle scaffolds.

(i) Platforms supported on extension trestles shall not be more than 16 feet above the floor level.

(ii) Ladders shall be provided for access to extension trestle scaffolds. Workers shall not climb up or down on the extension trestle.

(iii) It shall be the individual responsibility of the supervisor and of each worker to make sure that all clamps and fastenings on the extension trestle are secure before employees are allowed to work on the scaffold.

(30) Chimney, stack and tank bracket scaffolds.

(a) General. A chimney, stack or tank bracket scaffold shall be composed of a platform supported by brackets which are hooked over a steel cable which surrounds the circumference of the chimney, stack or tank approximately in a horizontal plane. The platform shall be not less than two planks wide and be designed with a safety factor of not less than 4.

(b) All brackets shall have a mild steel suspension hook 2 inches by 1/4-inch with at least 3 inches projecting beyond the throat of the hook. Hooks shall be integral with or securely attached to the bracket.

(c) Wood spacer blocks shall be provided to hold the suspending cable away from the structure at the points where brackets are hooked on. These spacer blocks shall be not less than 2 inches by 4 inches by 12 inches.

(d) All suspending cables shall be improved plow steel 6 x 19 wire rope or equivalent. In no case shall less than 1/2-inch diameter wire rope be used.

(e) The turnbuckle used to tighten suspending cables shall be not less than 1 inch drop forged steel. The cables shall be provided with thimbles and not less than 3 U-bolt type clips at each end and be attached to the turnbuckles by means of shackles. Open hooks shall not be used.

(f) All chimney, stack and tank bracket scaffolds shall be provided with standard guard rails, intermediate rails and toeboards.

(g) For access to a chimney, stack or tank bracket scaffold, ladders or a boatswain's chair shall be used.

(h) All chimney, stack or tank brackets for scaffolds shall be welded and riveted or bolted.

(31) Scaffold platforms supported by catenary or stretch cables.

(a) When a scaffold platform is supported by cables at least 4 cables shall be used, two near each end of the scaffold.

(b) The cables shall be attached to the scaffold by means of U-bolts or the equivalent through which the cables pass.

(c) Cables shall not be tightened beyond their safe working load. A hanger or set of falls shall be used approximately every 50 feet to pick up the sag in the cable. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-155-485, filed 7/31/79; Order 76-29, § 296-155-485, filed 9/30/76; Order 76-6 § 296-155-485, filed 3/1/76; Order 74-26, § 296-155-485, filed 5/7/74, effective 6/6/74.]

Chapter 296-305 WAC
SAFETY STANDARDS FOR FIRE FIGHTERS

WAC
296-305-005 Scope and application.

WAC 296-305-005 Scope and application. (1) The rules of this chapter shall apply with respect to any and all activities, operations and equipment of employers and employees involved in providing fire protection services which are subject to the provisions of the Washington Industrial Safety and Health Act of 1973 (chapter 49.17 RCW): Provided, That any other provision of this chapter notwithstanding, those fire fighters that are not fully paid are excluded from the requirements of this chapter.

(2) The provisions of this chapter apply to all work places where fire fighters are employed, including the fire combat scene. Although enforcement of applicable standards will result from provable violations of these standards which occur at the fire combat scene, agents of the Department will not act in any manner that will reduce or interfere with the effectiveness of the emergency response of a fire fighting unit. Activities directly related to the combating of a fire will not be subjected to the immediate restraint provisions of RCW 49.17.130.

(3) The provisions of this chapter shall be supplemented by the provisions of the safety and health standards of the Department of Labor and Industries, chapters 296-24 and 296-62 WAC. In the event of conflict between any provisions of this chapter and any provision of either of the two chapters last cited, the provisions of this chapter shall apply. The requirements of this chapter should be reviewed by the appropriate labor-management committee at least every two years. [Statutory Authority: RCW 49.17.040, 49.17.050, 49-.17.240, chapters 42.30, and 43.22 RCW. 78-09-092 (Order 78-16), § 296-305-005, filed 8/31/78; Order 77-20, § 296-305-005, filed 10/18/77 and Emergency Order 77-24, filed 11/17/77, effective 12/17/77.]

Chapter 296-306 WAC
SAFETY STANDARDS FOR AGRICULTURAL CODE

WAC
296-306-010 Purpose and scope.
296-306-025 Management's responsibility.

WAC 296-306-010 Purpose and scope. (1) The standards in this chapter apply to all agricultural operations with one or more employees, when such employees are covered by the Washington Industrial Safety and Health Act (WISHA).

(2) In the event that the provisions of this chapter conflict with the provisions contained in any other chapter of Title 296 WAC, this chapter shall prevail. Sections of other chapters 296-24 WAC apply only when specifically referenced in this chapter.

(3) When employees are assigned to perform tasks other than those directly related to agricultural operations, the proper chapter of Title 296 WAC shall apply.

(4) The air contaminant standards contained in WAC 296-62-073 through 296-62-07345 and 296-62-075 do not apply to chapter 296-306 WAC, Safety Standards for Agricultural Code.

NOTE: Such assignments may involve logging, mining, sawmills, etc., when the products of such activities are removed from the farm site for commercial distribution.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-306-010, filed 7/31/79; Order 75-2, § 296-306-010, filed 1/24/75.]

WAC 296-306-025 Management's responsibility. (1) It shall be the responsibility of management to maintain and supervise:

(a) A safe and healthful working environment.

(b) An accident prevention program as required by these standards.

(c) A system for reporting and recording accidents that will fulfill statistical requirements of the Department of Labor and Industries. (See chapter 296-27 WAC).

(d) Safety education and training programs.

(e) Temporary Labor Camps, as prescribed in WAC 296-24-125 through 296-24-12523, and shall comply with these rules and regulations.

(2) It shall be the responsibility of management to furnish potable water to employees as follows:

(a) Portable drinking water dispensers shall be designed, constructed, and serviced so that sanitary conditions are maintained, capable of being closed, and equipped with a tap.

(b) Ice in contact with drinking water shall be made of potable water and maintained in a sanitary condition.

(c) Open containers such as barrels, pails, or tanks for drinking water where the water must be dipped or poured are prohibited, whether or not they are fitted with a cover.

(d) A common drinking cup and other common utensils are prohibited.

(e) Where single service cups (used but once) are supplied, a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided.

(f) Outlets for nonpotable water, such as water for industrial, firefighting or irrigation purposes, shall be posted or otherwise marked in a manner that will indicate clearly the water is unsafe and not to be used for drinking; cooking; washing of the person; washing of food, cooking and eating utensils, or food preparation and processing premises; personal service rooms, or for washing clothes.

(g) Construction of nonpotable water systems or systems carrying any other nonpotable substances shall be such to prevent backflow or backsiphonage into a potable water system. Nonpotable water may be used for cleaning work premises other than food processing and preparation premises and personal service rooms: *Provided*, That the nonpotable water does not contain concentrations of chemicals, fecal coliform, or other substances which could create unsanitary conditions or be harmful to employees.

(h) Employees shall not be permitted to drink from irrigation ditches, creeks or rivers. Potable water shall meet the requirements of the United States Public Health Service Drinking Water Standards, published in 42 CFR part 72, or water which is approved for drinking purposes by the state or local authority having jurisdiction.

NOTE: Drinking water should be made available within 200 feet of any location where employees are regularly engaged in work.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-306-025, filed 7/31/79; Order 77-12, § 296-306-025, filed 7/11/77; Order 75-2, § 296-306-025, filed 1/24/75.]