

**Forest Service Handbook
National Headquarters - Washington Office
Washington, DC**

**Forest Service Handbook 2409.11 – National Forest Log Scaling Handbook
Chapter 50 - General Scaling Requirements**

Amendment: 2409.11-2006-1

Effective date: October 30, 2006

Duration: This amendment is effective until superseded or removed.

Approved by: Gregory Smith, For Joel Holtrop, Deputy Chief

Date approved: April 20, 2006

Responsible Staff:

Last Change: Amendment No. 7

Superseded Document(s): Entire Handbook, Title Page thru 247

Digest: Following is an explanation of the changes throughout the directive by section.

10: Corrects minor typographical and technical errors throughout the chapter. Substantive changes are as follows:

13: Clarifies in paragraph 1 that the standard unit for saw timber scaling will be in cubic foot log scale, although board foot log scale is used under certain circumstances.

17.12: Changes the caption in exhibit 02 to clarify direction to allow full trim in the length measurement and record in 2 foot multiples.

17.18: Adds new direction and an exhibit for length measurements on forked logs.

17.2: Clarifies scalers will notify the contracting officer when improper trim allowance is detected.

17.3: Adds direction on how to record logs that are further reduced to the lower 2 foot multiple, but the diameter increases to the next diameter class, the increased diameter will be recorded as the proper scaling diameter.

17.33: Adds a list of butt characteristics to assist in identifying butt cut logs.

20: Corrects minor typographical and technical errors throughout the chapter. There are no changes to the substantive direction in this chapter.

30: Corrects minor typographical and technical errors throughout the chapter. Substantive changes are as follows:

33: Establishes defect types and new deduction procedures for: Burls, Foreign Material, Pecky Rot, Pistol Butt Defect, Pitch Pockets, and Spiral Grain.

Slope of Grain, and Twist have been included in the Spiral Grain definition.

Barber Chair and Pull, Stump or Sliver has been included in the Breaks and Splits definition.

Bark Seam has been included in the Pitch Seam, Heart Check, Frost Crack definition.

Adds new direction and exhibits for crook defect deduction process.

Combines Knots, large and Knots, clusters into a single new defect type, Knots. Establishes new knot size limits and knot deduction guide.

Adds definition of massed pitch and clarification of when a deduction is necessary.

Adds clarification of scaling cylinder position when deducting for sweep.

Reformats and rennumbers entire section to conform to FSH 2409.11a - Cubic Scaling Handbook, chapter 20.

40: Corrects minor typographical and technical errors throughout the chapter. Substantive changes are as follows:

44: Changes caption from Stump Scaling to Timber Trespass. Provides direction for measurements to be performed by certified scalers and cruisers and requires coordination with Law Enforcement staff prior to beginning field work.

44.1: Changes caption from Timber Trespass to Stump Scaling.

44.2: Changes caption from Scaling when Stump and other Direct Evidence is lacking to Stump Cruising.

44.3: Established this code and recodes direction formerly at section 44.2 to this section.

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51: Changes caption to selection of scaling locations. Changes responsibility for selection of scaling locations from District Ranger to Contracting Officer. Also removes direction on selecting truck-scaling locations.

52: Removes requirement for Forest Supervisor to develop additional safety specifications for scaling.

53: Removes the direction which discusses the need for the purchaser to keep government logs separate from private logs up to the point of scaling and for the use of distinctive marking between various sales.

54.1: Changes the direction for team scaling from "discouraged" to "must not be used." Also removes direction Regional Forester to authorize team scaling in limited situations. Changes the responsibility for taking corrective action when scalers to not perform to standard from District Ranger to Contracting Officer.

54.2: Removes direction on the benefits of mill visits and specific direction concerning various items to be observed while conducting a mill visit.

55.2 - 55.4: Removes obsolete direction, which referenced out of date equipment, processes and procedures.

55.5: Revises and recodes to section 55.2. Changes the responsibility for completing the Scaler Information Form from the Forest Service Representative to the Contracting Officer.

55.61: Removes section on standard scaling forms.

55.62: Recodes to section 553.

55.63: Recodes to section 55.4. Removes significant amount of instruction, including exhibit's 01 and 02, on how to fill in scaling sheets. Stresses the use of field data recorders to record scaling information.

55.64 - 55.65: Removes obsolete direction from handbook.

56.1: Removes obsolete from handbook.

56.21: Removes obsolete direction from handbook.

56.22: Recodes to section 56.1.

56.3: Removes obsolete direction from handbook.

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60: Corrects minor typographical and technical errors throughout the chapter. Substantive changes are as follows:

64: Increases situations where Regional Foresters may deviate from established check scale standards.

65: Revises to require minimum check scale record and summary information. Removes out-dated policy, procedures, and forms.

70: Reformats chapter.

71: Updates CFR reference.

80: Corrects minor typographical and technical errors throughout the chapter. Substantive changes are as follows:

82: Deletes previous documentation which was incomplete and adds reference to National Forest Cubic Scaling Handbook (FSH 2409.11a) for handbook direction.

85: Adds a cross reference on sample scaling to Forest Service Handbook 2409.11a, National Forest Cubic Scaling Handbook, chapter 50.

85.5: Recodes to section 86.1.

85.6: Recodes to section 86.2.

87.42: Establishes new direction for Fiber Scaling.

Appendix: Renames exhibits from "Table" to "Appendix." Removes Table 1A, Table VIII, Table IX - Exhibit A, Table XIV. Adds Appendix 15 - Factors for Computing Scribner decimal C Volumes and Appendix 16 - Scribner Decimal C Recorded Length and Segment Lengths.

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51 - Selection of Scaling Locations

The Contracting Officer is responsible for selection of scaling locations. Determination of the scaling location shall consider:

- (1) the need for proper scale under safe working conditions with minimum expense to the Government and the purchaser, and
- (2) adequate provisions for check scaling.

Practice economy in scaling insofar as possible. Losses from poor scaling caused by inadequate tools, training, or log presentation quickly exceed apparent savings. Inform the Contracting Officer when logs cannot be scaled efficiently and accurately. Purchasers are required by the timber sale contract to present logs so they can be scaled economically and safely.

52 - Safety In Scaling

The varied hazards present in all types of scaling require the scaler to be safety minded at all times. FSH 6709.11, Health and Safety Code Handbook, provides information on good safety practices to follow in all types of scaling. Each scaler should have a copy of that handbook. Follow the safety rules of the Health and Safety Code, as well as applicable Occupational Safety and Health Administration (OSHA) standards.

53 - Requirements of Purchaser

Purchasers may be required to present, assemble, or hold logs for scaling in the manner prescribed by the Forest Service. Special requirements are usually covered by the timber sale contract. Methods of scaling should consider safety, efficiency of scaling, provisions for check scales, and the operating needs of the purchaser.

54 - Scaler Qualifications and Proficiency Requirements

54.1 - General

The scaler makes the final determination of volume of National Forest products removed from sale areas. The scaler must be equipped with good tools, and have the ability and skill to measure length and diameters systematically and accurately. The scaler must properly identify species, detect defect, and use skill and good judgment in making deductions and in performing other phases of the job.

Team scaling can be less accurate than individual scaling and therefore must not be used. A scaler's accuracy is determined by check scales. Specific standards for satisfactory scaling are established. These are listed in chapter 60 of this handbook. Any check scale showing

unsatisfactory scaling by a scaler, contract scaling organization, or third-party scaling organization (TPSO) indicates the need for corrective action. This is the responsibility of the Contracting Officer.

The ability of a scaler to identify logs by species is extremely important. Wide differences in value result in variations in merchantability specifications by species. Species identity should be determined by bark characteristics, color and amount of sapwood and heartwood, presence of pitch, and the size and distribution of knots.

54.2 - Mill Visits to Develop Judgment

A proficient scaler must know how defects extend into logs and must keep that knowledge current. The best way to acquire skill and judgment in making defect deductions is to see defective logs opened on the saw carriage and note the losses caused by various defects.

In a mill visit the scaler should be concerned primarily with peculiarities of defects in timber from certain localities, and not quality, just as the scaler avoids scaling to include certain grades of lumber to the exclusion of other grades.

Defect in timber changes with localities, sites, and species. The scaler should make scheduled, periodic mill visits to observe sawing of logs similar to the ones being scaled. By this means the scaler can correctly maintain his judgment and proficiency.

Mill visits should be considered part of the routine of the scaler's initial and followup training.

55 - Scaling Equipment

55.1 - General

All scaling equipment must be kept serviceable and safe to use. For accurate length measurements and for checking trim allowances, a 50-foot steel tape with end hook should be carried and a steel hand-tape makes accurate diameter measurements possible and should always be carried. Scalers should use a spud, or an equivalent device to locate and identify defect in the ends and sides of logs.

In most types of scaling, a hand held data recorder has become the best way for recording log length, diameter, net scale, and defect as standard equipment, however, a scalebook or scale sheets may be used.

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55.2 - Scaler's Information Form

Each Region shall provide a standard form for informing scalers of scaling requirements, sampling information, applicable National Forest Log Scaling Handbook (FSH 2409.11) supplements, and any other pertinent scaling information such as abnormal delay.

The Contracting Officer is responsible for the completion and distribution of these scaler information forms to scalers and check scalers (and scaling organizations, when necessary) prior to hauling. Scalers shall have them available for references at the scaling site.

55.3 - Accountability

Regional Foresters issue instructions for scale data accountability, and for the place and system of storage for completed scale tickets and volume reports (electronic and hardcopy) or books and series numbered scale sheets. Keep these records for the required number of years after the sale is closed.

55.4 - Recording Log Scale Data and Scale Sheets

Use approved scale sheets or field data recorders to record log scale data. The minimum data include:

HEADER	LOG DATA
Sale Name	Log Number
Contract Number	Species
Date/Time Scaled	Length
Receipt Number	Diameters
Scaler I.D.	Defect
Scaling Location	
Stratum I.D. (Sample Scale)	

Make corrections on the paper copy by drawing a single line through the incorrect entry and writing the correct figure beside it.

Regional Office Forest Management staff must verify that field data recorder programs identify changes or corrections to the original scale data after the load has been scaled and closed out on the field data recorder.

56 - Log Accountability

56.1 - Stamping

Forest Service scalers normally stamp logs which they have scaled with the symbol "US" as evidence that the logs have been scaled and to assist in accountability control. Specific requirements may be established by the Regional Forester.