

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

**Forest Service Handbook 2409.11 – National Forest Log Scaling Handbook
Chapter 60 - Check Scaling**

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Duration: This amendment is effective until superseded or removed.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Superseded Document(s): Entire Handbook, Title Page thru 247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 outdated 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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61 - Purpose

Systematic check scaling is a necessary part of timber sale administration. The purpose of check scaling is to make and keep accurate and uniform the scale of all National Forest timber. This is done by checking the scaler's work and determining sources of errors.

The check scaler should always keep in mind the need for additional training of the scaler and note their weaknesses if any.

62 - Frequency

Standards for check scale frequency are difficult to set. However, the more frequent the check scales, the simpler it is to solve a situation that might result when they are unsatisfactory. A satisfactory check scale usually establishes as final the volume scaled to that date.

Minimum standards for check scaling are established by the Regional Forester with approval by the Chief. The following factors deserve consideration:

1. New scalers.
2. Volume scaled.
3. Result of last check.
4. Amount of defect. The more defective the timber, the more difficult the scaling job. Chances of error and variation in scale are more common. Make check scales more frequently in heavily defective timber.
5. Change in defect. Normally fewer checks are needed where sound timber is scaled. But if conditions vary and units of defective timber are presented, visit such scaling locations more frequently.
6. Variation in scaling load. The frequency of check scales should be increased when a scaler moves from a light-load station to a heavy-load station.
7. Changes in species. These may require more frequent training and checking until the scaler becomes familiar with appearances of defects and their effect in the new species.

63 - Procedure

1. Check scaling should be done by the most experienced scalers. Regions should establish more than one check scaling position where the check scaling load is heavy. This provides a good opportunity for training scalers for Regional check scaler positions.
2. Most Forest Service Regions recognize two primary check scaler positions, (a) Forest and (b) Regional. More experienced scalers on a Ranger District often need to conduct check scales to meet the frequency standards.
 - a. Forest Check Scaler. This person is selected by the Forest Supervisor for assisting Rangers in training and checking all scalers scaling on the forest.
 - b. Regional Check Scaler. This person is selected by the Regional Forester and is responsible for technical control for all scaling within a Region. They should conduct Regional scaler-training sessions, check scale to settle controversies, and check area and forest check scalers.
3. Check scale as far as practicable under conditions similar to those under which the original scale was made. Wherever possible, check soon after the original scale and without the scaler's knowledge. In mill deck scaling and often in truck scaling, it may be necessary to check scale at the time logs are scaled. Note any effort by the scaler to change his way of scaling. Usually any serious change can be detected.
4. Normally, a check scale includes at least 200 short logs (16 to 20 feet and under) or at least 100 long logs. Sample the species and defect situation as fairly as possible. Individually analyze more complex scaling situations and increase the number of logs check scaled if necessary.
5. If possible, make check scales independent of the scaler, but when check scales are made with the scaler's knowledge, first put him at ease. Explain that Forest Service check scales are required to keep the scale of all logs accurate and uniform. When the comparison of figures shows the need, training should follow.
6. When check scaling inexperienced scalers, be sure and share the results before leaving the area. Attempt to eliminate any weaknesses found. Note all important variances in measurements, defect deductions, and defect missed. Where logs checked are still available, return with the scaler and point out these variances. Be sure they are using proper methods of measurement and deduction.

64 - Standards

Use the following standards to determine the proficiency of individual scalers.

1. Gross Scale. A variance of 1 percent in gross scale is the satisfactory standard, unless otherwise justified by abnormal amounts of pieces with sloughed sap rot, fire damage, or chunks.

2. Net Scale. The allowable variance is as follows:

Check scaler's % defect in logs	Scaler's allowable variance
0 - 10%	2%
Over 10%	.2 x % defect to a maximum of 5%

Regional Foresters may supplement these standards to allow for difficult scaling situations such as very small timber or highly defective timber (defect exceeding 60%).

65 - Records and Reports

1. Check scale reports and summaries are primarily computer generated, however, hand generated forms are also acceptable and may be unique from Region to Region.

2. Each check scale record must contain the following information as a minimum:

- a. Log number
- b. Species
- c. Length
- d. Diameter (small and large end when applicable)
- e. Product code if applicable
- f. Space for comments
- g. Defect and defect type
- h. Gross volume

- i. Net volume
 - j. Grade if applicable
 - k. Sale name and contract number
 - l. Log brand
 - m. Load receipt number
 - n. Scaler name
 - o. Check Scaler name
 - p. Date and time of check scale
 - q. Region, Forest, District
 - r. Location of scaling
3. Each summary must compare the following by product or grade as a minimum:
- a. Piece count (number of logs or segments)
 - b. Species
 - c. Sum of KPIs (3P) if applicable
 - d. Sum of Ratios (3P) if applicable
 - e. Gross volume
 - f. Net volume
 - g. Percent defect
 - h. Allowable variances for gross and net volumes
 - i. Gross variance

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- j. Net Variance
 - l. Remote or non-remote check scale
 - m. Summary rating
4. Regions are encouraged to develop their own summary reports to fit local needs.