



**FOREST SERVICE HANDBOOK
PACIFIC SOUTHWEST REGION (R5)
VALLEJO, CA**

FSH 2409.12 - TIMBER CRUISING HANDBOOK

CHAPTER 60 - QUALITY CONTROL

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Posting Instructions: Supplements are numbered consecutively by Handbook number and calendar year. Post by document; remove the entire document and replace it with this supplement. Retain this transmittal as the first page(s) of this document. The last supplement to this handbook was 2409.12_60, 8/30/2012.

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Digest:

Minor editorial changes for clarification.

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61 - CRUISER TRAINING AND CERTIFICATION STANDARDS.

61.1 Qualified Cruiser

Qualified Cruiser Certification

5. A minimum of 25 trees will be cruised in the certification field test. Trees to be cruised will represent species, tree sizes, and types of defects found on the forest involved. (More than 25 trees may be used in order to adequately represent all species and defect situations.)
6. Prism plots and fixed plots will be included on the field certification exam. The purpose of the plots will be to determine "in" and "out" trees.
7. A scorecard system will be used to analyze results of the field certification exam. (See 62.1 Exhibit 01)
8. Utilization Cruiser. Certify sale administrators, contract inspectors or harvest inspectors who add or delete volume to tree measurement contracts at a minimum level of Utilization Cruiser, which is secondary to a Qualified Cruiser. Reserve the Utilization Cruiser level for personnel adding or deleting small volume during the life of tree measurement timber sale contracts.

The requirements for Utilization Cruiser Certification are:

- a. Proficiency in timber cruise fundamentals, including, as a minimum:
 - (1) Measuring trees (diameter and heights).
 - (2) Species identification.
 - (3) Defect recognition and deductions.
 - (4) Use of timber cruising equipment.
- b. Passing a Utilization Level written test, which includes accuracy standards relating to the determination of gross and net volume.
- c. Passing a field exam conducted on Regional Certified plots. Utilization cruisers shall become certified for all major species on the forest.

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61.2 – Advanced Cruiser

In addition to passing a Regionally approved written examination for advanced cruiser certification, an advanced cruiser shall also prepare a cruise design plan for a timber sale that demonstrates mastery of efficient cruise design principles. The cruise design plan shall be evaluated by a Master Cruiser. An advanced cruiser shall also demonstrate mastery of the national cruising software.

61.3 – Check Cruiser

In addition to demonstrating mastery of Advanced Cruiser skills, a person seeking to receive check cruiser certification shall independently review and check a production cruise (on which the check cruiser candidate had no previous participation) and prepare appropriate documentation for the check cruise. This check cruise will be reviewed and must be accepted by the Regional Master Cruiser in order to achieve certification.

61.5 - Maintenance of Certification

4. The Washington Office has established a roster (database) which documents the certification of cruisers. The certifying check cruiser shall enter the following into this database:
 - a. Certification or maintenance date.
 - b. Forest.
 - c. First and last name.
 - d. Check cruise type (Certification or Maintenance).
 - e. Level (Utilization, Qualified, Advanced, Check Cruiser, Master).
 - f. Type of certification (volume) by species.
 - g. Certifying Check Cruiser's name.
 - h. Check Cruiser's ID.

Contact the Regional Measurement Specialist for assistance in accessing the database.

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62 - INSPECTING INDIVIDUAL CRUISER PERFORMANCE

62.1 - Qualified Cruiser

Use form R5-2400-30 to assess cruiser performance.

63 - INSPECTING SALES

63.1 - Inspection Elements

Use form R5-2400-29 and R5-2400-30 to systematically review timber sale cruises.

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63.1 - Exhibit 01

TIMBER SALE CRUISE EVALUATION CHECKLIST INSTRUCTIONS

Use this form when evaluating WO and Regional cruise standards and procedures on a specific timber sale or when conducting a timber sale cruise evaluation on a Forest.

Part A. Sale Preparation

1. FOREST, DISTRICT, SALE NAME, EVALUATION TEAM, DATE INSPECTED, DATE CRUISED: Fill out the heading information.
2. TYPE OF SALE: Put an X in the appropriate box for Type of Sale.
3. CRUISE METHOD CODES AND UNIT NUMBERS: List the cruise methods used by each unit.
4. SALE PREPARATION ELEMENTS: Evaluate each sale preparation element A-M. Some elements can be reviewed in the office or field. Mark the appropriate box for each element. FSM/FSH references are listed on the reverse side.
5. REMARKS: Use this page for note taking.

For a specific timber sale check cruise, use the following guides.

1. FOREST, DISTRICT, SALE NAME, DATE OF REPORT, CHECK CRUISER, DATES CHECKED: Fill out the heading information.
2. UNIT #: List the unit numbers. Mark the appropriate box for plot or tree numbers. For an area base cruise list the plot numbers check cruised. For a tree base cruise list the tree numbers check cruised. Mark if the plots or trees are count or measure.
3. Attach the Field Measurement Evaluation (Section 62.1, Exhibit 1).
4. CRUISERS RESPONSIBLE FOR MEASUREMENTS: List the cruisers responsible for cruising the timber sale and the appropriate information for each.
5. FILE THIS FORM AND ALL RELATED INFORMATION IN THE OFFICIAL SALE FOLDER FOR FUTURE REVIEW.

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63.11 - Check Cruise Field Measurements Inspection

A. INSPECTING R5 CERTIFIED CRUISERS.

When check cruising timber sales cruised by R5 certified Forest Service cruisers, check a minimum of 25 trees. More trees should be checked if necessary to adequately sample all species and defect situations on the sale. For plot based cruise methods, check 5% of the plots with a minimum of 10 plots. If check cruise does not meet minimum standards, check up to ten additional trees for each major species, (5 to 10 additional plots if plot cruised). If still unsatisfactory, recruise.

B. INSPECTING CONTRACT CRUISING AND OTHER CRUISERS WHO ARE NOT R5 CERTIFIED CRUISERS.

In addition to the standards in 63.11,A., use the following check cruise standards by cruise method for timber sales of sawtimber larger than 2000 ccf that are cruised by cruisers who are not R5 certified Qualified or Advanced cruisers. Major species have ten percent or more of the estimated value of the sale.

1. Sample Tree. Check the lesser of 15 trees or 50% of measured trees for each major species.
2. 3P. Check the larger of ten percent of the measured trees or 25 trees for 3P sampling strata.
3. For All Cruise Methods.

Check at least 35 trees on a sale check cruise. These trees should represent all major species and should be selected throughout the sale area. If check cruise does not meet minimum standards, check up to ten additional trees for each major species. If still unsatisfactory, re-cruise.

For other sales cruised under contract (sales less than 2000 ccf), use standards stated in section 63.11, A. All cruise contracts should have field measurements checked.

Evaluate contract cruises using the "Field Measurement Evaluation" form (sec. 62.1, Exhibit 1).

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A Contracting Officer's Representative (COR) for the administration of a cruising contract (or the COR's delegated specialist for timber cruising) should have a minimum certification level of Advanced Cruiser.