

5100-9D
November, 1999
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May, 1993

**U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE**

SPECIFICATION

AXES: SINGLE BIT AND DOUBLE BIT

1. SCOPE

1.1 Scope. This specification covers three types of axes used for chopping wood.

1.2 Classification. The axes shall be of the following types (see 6.2):

- Type A - Double bit (Western Style)
- Type C - Double Bit (Cruiser Style)
- Type D - Single Bit (Boy's Style)

2. APPLICABLE DOCUMENTS

2.1 Government documents. The following government documents, of the issue in effect on date of the solicitation or request for proposal, form a part of this specification to the extent specified herein.

2.1.1 Government specifications and standards.

SPECIFICATIONS

FEDERAL

TT-C-490 - Cleaning Methods for Ferrous Surfaces and Pretreatments for Organic Coatings

STANDARDS

FEDERAL

FED-STD-123 - Marking for Shipment (Civil Agencies)
FED-STD-376 - Preferred Metric Units for General Use by the Federal Government
FED-STD-595- Colors (Requirements for Individual Color Chips)

(Unless otherwise indicated, copies of federal specifications and standards are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Ave., Philadelphia, PA 19111-5094.)

Beneficial comments (recommendations, additions, deletions) and any pertinent data that may be used in improving this document should be addressed to: USDA Forest Service, Missoula Technology and Development Center, Building 1, Fort Missoula, Missoula, MT 59804-7294 by using the Specification Comment Sheet at the end of this document or by letter.

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2.1.2 Government drawings. The following form a part of this document to the extent specified herein.

DRAWINGS

USDA FOREST SERVICE

- MTDC-546 - Ax, Type A, Double Bit, 3-1/2 Pound (Western Style)
- MTDC-547 - Ax, Type C, Double Bit, 2-1/2 Pound (Cruiser Style)
- MTDC-548 - Ax, Type D, Single Bit, 2-1/4 Pound (Boy's Style)

(Copies are available from USDA Forest Service, Missoula Technology and Development Center, Building 1, Fort Missoula, Missoula, MT 59804-7294.)

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those in effect on the date of solicitation or request for proposals.

ANSI (AMERICAN NATIONAL STANDARDS INSTITUTE, INC.)

- B46.1- Surface Texture (Surface Roughness, Waviness, and Lay)

(Copies are available from the American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.)

AMERICAN SOCIETY FOR QUALITY CONTROL (ASQC)

- Z1.4 - Sampling Procedures and Tables for Inspection by Attributes

(Copies are available from the American Society for Quality Control, 611 East Wisconsin Avenue, Milwaukee, WI 53202.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- D 1002 - Standard for Strength Properties of Adhesives in Shear by Tension Loading (Metal to Metal)
- D 3951 - Standard Practice for Commercial Packaging
- D 5118 - Standard Practice for Fabrication of Fiberboard Shipping Boxes
- E 18 - Standard Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials

(Copies are available from ASTM, 100 Barr Harbor Dr., West Conshohocken, PA 19428-2959.)

IRON AND STEEL SOCIETY

- Alloy, Carbon and High Strength Steel, Semifinished for Foraging, Hot Rolled Bars; Cold Finished Steel Bars; Hot Rolled Deformation and Plain Concrete and Reinforced Bar

(Copies are available from the Iron and Steel Society, 410 Commonwealth Dr., Warrendale, PA 15086.)

NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC., AGENT

National Motor Freight Classification

(Copies are available from American Trucking Associations, Inc., 2200 Mill Rd., Alexandria, VA 22314.)

(Non-Government standards and other publications normally are available from the organizations that prepare and distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. Unless otherwise specified (see 6.2), samples of each type of ax shall be subjected to first article inspection (see 6.3) in accordance with 4.3.

3.2 Materials and construction. Each type of ax covered by this specification shall conform in all respects to the design, details, dimensions, and materials specified herein and in the referenced drawings, MTDC-546, MTDC-547, and MTDC-548 as applicable. Should there be conflicts between the text of this document and the drawings or any other referenced document, this document takes precedence.

3.2.1 Tool head. The tool head of each type of ax shall be configured as specified in the referenced Forest Service drawings and herein. The finished head weight for each type of ax shall be as follows:

- Type A - 3 pounds 8 ounces +/- 2 ounces
- Type C - 2 pounds 8 ounces +/- 2 ounces
- Type D - 2 pounds 4 ounces +/- 2 ounces

3.2.1.1 Steel composition. The tool head of each type of ax shall be forged from fully killed plain carbon AISI/SAE steel containing 0.72 to 0.93 percent carbon, 0.30 to 0.90 percent manganese, not more than 0.040 percent phosphorus, and not more than 0.050 percent sulfur. Steel composition of the head shall be determined as specified in 4.5.1.1.

3.2.1.2 Hardness. The ax bit shall have a hardness of 54 to 58 inclusive on the Rockwell C scale. This hardness shall extend to a distance of 1-1/4 inches \pm 1/4 inch back from the cutting edge. Within 1 inch of the eye of the tool, the steel hardness shall not exceed 45 on the Rockwell C scale. All hardness values shall be determined as specified in 4.5.1.2. The specified hardness shall extend through the entire thickness of the tool head steel.

3.2.1.3 Head finish. The head shall be pretreated for painting in accordance with TT-C-490, then painted with a black enamel matching color chip 27038 of FED-STD-595 to provide a rust-resistant finish. The sharpened surfaces, which shall extend back 1/2 inch from cutting edges, shall be coated with a suitable rust preventive such as light oil, lacquer, or biodegradable wax after sharpening. Working surfaces and cutting edges shall be finished as specified below. The remainder of the tool head may be as forge finished.

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3.2.1.3.1 Working surfaces. Working surfaces (except cutting edges) shall be ground to a finish having a roughness of not more than 125 microinches as defined by ANSI B46.1. The working surface is defined as extending a minimum of 2 inches back from the cutting edge on both sides of the tool.

3.2.1.3.2 Cutting edges. Cutting edges shall be ground to a finish having a roughness of not more than 64 microinches as defined by ANSI B46.1. This cutting edge finish shall extend a minimum of 1/2 inch back from the bit edge. The cutting edge of the ax shall be sharpened and ready for use in accordance with the sharpening gauge shown in the referenced drawings to meet the requirements in 4.5.2.2. The dimensions specified for the sharpening gauge are exact dimensions; no tolerances are allowed. All other exposed surfaces not defined as a working surface or cutting edge shall be smooth and pit free.

3.2.1.3.3 Sharpening gauge. The sharpening gauges shown on the referenced drawings are intended for quality assurance purposes. The dimensions specified are intended to have no tolerances.

3.2.2 Handles. The handles shall be shagbark hickory (*Carya ovate*), shellbark hickory (*Carya laciniosa*), or mockernut hickory (*Carya tomentosa*) of any natural commercial color. The handle dimensions shall conform in all respects to drawings MTDC-546 for Type A, MTDC-547 for Type C, and MTDC-548 for Type D. The high point of the handle shoulder shall be as detailed on the drawings. The handle centerline shall be parallel to the cutting edge of the ax blade. Each handle shall have a wedging slot cut in the head end as shown on the drawings for the insertion of the wedge. The handle shall fit snugly into the eye of the tool head (see 3.2.3). The knob end of the handles shall be chamfered or rounded. The wood shall be sound and free from crooks, bows, cracks, splits, scores, or other defects that may affect appearance or serviceability.

3.2.2.1 Handle finish. The handle, including the knob end, shall be smoothly finished and protected with at least one coat of clear lacquer. No wax or stain is permitted. The lacquer shall permit visual inspection of the wood, prevent absorption of water, and protect the handle over long periods of storage. The protective coating shall be applied evenly over the surface and shall be free from runs, drips, sags, blisters, wrinkles, frothing, wet or tacky spots, or other defects. Flame hardening is optional to the manufacturer.

3.2.2.2 Moisture content. Moisture content of the handle at the time of assembly shall not exceed 12 percent when tested as specified in 4.5.2.1.

3.2.2.3 Replacement handles. Replacement handles shall conform to the requirements of 3.2.2, 3.2.2.1, and 3.2.2.2.

3.2.3 Head to handle joint. The tool head shall be joined to the handle using both a plastic wedge and an epoxy adhesive to ensure a head to handle joint meeting the requirements of table I and test requirements of 4.5.2.3.

Table I. Moment Loading

Type	Description	Style	Moment Loading (inch/lb)	Tolerance (inch/lb)
A	Double Bit	Western	4500	150
C	Double Bit	Cruiser	2800	140
D	Single Bit	Boys	2800	140

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3.2.3.1 Plastic wedge. A plastic wedge of high impact polystyrene, ABS, or PVC plastic shall be used in setting the tool head to the handle. The dimensions and configuration of the wedge shall be in accordance with the specified drawings. The wedge shall be fully inserted into the tool handle's wedging slot to ensure a strong head to handle joint. The handle and plastic wedge shall be cut off flush with the tool head at the top of the tool eye.

3.2.3.2 Epoxy adhesive. The handle shall be bonded to the tool head using an epoxy adhesive meeting the following requirements:

3.2.3.2.1 Bond strength. The lap shear strength of the wood-to-metal bond at any temperature from -20°F to 70°F shall be a minimum of 2,000 psi when tested as specified in 4.5.1.4.1.

3.2.3.2.2 Heat softening (epoxy). The epoxy adhesive shall exhibit a metal-to-metal lap shear strength of 100 to 400 psi when heated uniformly to 200 ±5°F. and tested as specified in 4.5.1.4.2.

3.2.4 Pull apart strength. The head to handle joint shall not loosen or separate when subjected to the pull test specified in 4.5.2.4. Loosening shall be defined as any measurable movement within the tool head to handle connection.

3.2.5 Alignment. Handled axes shall not be misaligned or warped more than 1/2 inch from a line formed by extension of the cutting edge of the ax blade over the knob end of the handle as specified in 4.5.2.5.

3.2.6 Practical cutting ability. The tools shall be able to pass the practical cutting test as specified in 4.5.2.6 without damage or deformation of the cutting edges.

3.3 Identification marking. Each tool head shall be marked in a permanently legible manner as follows:

a. The Federal Supply System ("FSS") mark shall be metal stamped in 1/4 to 1/2-inch-high letters on the center of the tool eye as shown in the drawings or on a flat area near the ax heel.

b. The manufacturer's name or trademark shall be metal stamped adjacent to the "FSS" mark or on the opposite side of the head.

3.4 Workmanship. The head shall be free of cracks, pits, laps, rust, burrs, cupping, or other defects that may affect serviceability, durability, and appearance. The enamel paint shall be a continuous, uniform, smooth, dry coating having no area without paint except for the cutting edges, which shall be coated as specified. The tool shall conform to the quality of product established by this specification. It shall be manufactured using the best commercial workmanship in all respects.

3.5 Metric products. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pound units, provided they fall within the tolerances specified using conversion tables contained in the latest revision of FED-STD-376, and all other requirements of this specification are met.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his/her own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in this specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 Responsibility for dimensional requirements. Unless otherwise specified in the contract or purchase order, the contractor is responsible for ensuring that all specified dimensions have been met. When dimensions cannot be examined on the end item, inspection shall be made at any point or at all points in the manufacturing process necessary to ensure compliance with all dimensional requirements.

4.2 Sampling for inspections and tests. Sampling for inspections and tests shall be made in accordance with ANSI/ASQC Z1.4. The inspection level and acceptable quality level (AQL) shall be as specified. All tools manufactured at one time shall be considered a lot for purposes of acceptance inspection and test. A sample unit shall be one complete tool.

4.3 Quality conformance inspection. Each end item lot shall be sampled and inspected as specified in 4.3.2. Each lot shall be sampled and tested as specified by 4.5.2. Test reports showing compliance with 4.5.2.1 through 4.5.2.6 shall be submitted as part of quality conformance inspections. The packaging shall be inspected as specified in 4.4. Packaging is not required when first articles are presented. As part of quality conformance inspections, data analysis shall be submitted to determine compliance of the steel composition as specified in 4.5.1.1 and steel hardness as specified in 4.5.1.2. See also 4.5.1.3. In addition, test reports shall be submitted showing compliance with the requirements of 4.5.1.4. When conducting quality conformance inspections of first articles, the presence of any defect or failure of any test shall be cause for rejection of the first article.

4.3.1 Component and material inspection. To meet the requirements of 4.1, components and materials shall be inspected in accordance with all the requirements of referenced documents, drawings, and standards unless otherwise excluded, amended, modified, or qualified in this document or applicable purchase document.

4.3.2 End item examination. The end items shall be examined for the defects listed in tables II and III. The inspection level shall be S-2, the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 2.5 for major and 6.5 for minor defects.

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TABLE II. End item visual defects

Examine	Defect	Classification	
		Major	Minor
Tool head	Working and cutting surfaces not finished as specified	X	
	Not free of cracks, laps, burrs, cupping, rust	X	
	Unbeveled portion not painted to provide rust-resistant finish		X
	Beveled edges not protected with suitable rust preventive		X
	Cutting edges not sharpened as specified	X	
Plastic wedge	Missing	X	
	Not fully driven into wedging slit	X	
	Eye end of handle and wedge not cut off flush with tool head		X
Handle	Wood not as specified	X	
	Not free from crooks, bows, cracks, splits, and other defects	X	
	Centerline not parallel to cutting edge	X	
	Misaligned on tool head	X	
	Finish not as specified	X	
	Coating not free of defects such as sags, runs, and drips	X	
Markings: "FSS" and manufacturer's logo	Omitted, incomplete, incorrect, and illegible, misplaced, or size of characters not as specified		X

TABLE III. End item dimensional defects

Examine	Defect	Classification	
		Major	Minor
Tool head	Dimensions and configuration not as specified	X	
	Weight not as specified	X	
	Hardness not as specified	X	
	Cutting edge angles not as specified	X	
	Marking not as specified (FSS and manufacturer's name/symbol)		X
Plastic wedge	Dimensions and configuration not as specified	X	
Handle	Dimensions not as specified	X	
	High point of handle not as specified	X	

4.4 Packaging inspection. An examination shall be made to determine that packing and marking comply with the section 5 requirements. Defects shall be scored in accordance with the list below. The sample unit shall be one shipping container fully packaged except that it shall not be palletized and it need not be closed. Shipping containers fully packaged that have not been palletized shall be examined for defects in closure. The lot size shall be the number of shipping containers in the end item inspection lot. The inspection level shall be S-2 and the AQL shall be 2.5 defects per hundred units.

<u>Examine</u>	<u>Defect</u>
Markings	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.
Materials	Any component missing or not as specified. Any component damaged, affecting serviceability.
Workmanship	Inadequate application of components, such as: incomplete closure of container flaps, improper taping, loose strapping, inadequate stapling. Bulged or distorted container.
Contents	Number per container is more or less than required.

4.5 Tests.

4.5.1 Component material testing.

4.5.1.1 Steel composition test. A repeatable consensus standard test method shall be used to verify steel composition as required in 3.2.1.1. Any failure shall fail the lot (see 4.5.1.3).

4.5.1.2 Hardness test. Hardness tests to determine compliance with 3.2.1.2 shall be in accordance with ASTM E 18. Two samples shall be selected for testing. An ax blade cross-section shall be cut along the centerline (half way between each end of the edge) perpendicular to the plane of the blade. Cutting of the cross-section shall be done in such a manner as not to alter the state or hardness of the blade during the cutting process. Three hardness readings shall be taken on the centerline of the ax blade, at 1/4 inch, 1/2 inch, and 1 inch from the edge. Any readings not within specified requirements shall constitute a major defect (see 4.5.1.3).

4.5.1.3 Steel testing documentation. To meet the requirements of 4.5.1.1, a test report/analysis from the steel manufacturer shall be acceptable in lieu of lot by lot testing when validated by the contractor's own tests on the first lot of steel received. The contractor need not retest again unless a new steel supplier is used. To meet the requirements of 4.5.1.2, lot by lot hardness testing may be performed any time after tool heads are heat treated. A certificate of conformance shall be acceptable when supplied with test data. Hardness testing need not be repeated as part of end item testing.

4.5.1.4 Epoxy adhesive testing.

4.5.1.4.1 Bond strength test. To meet the strength requirements of 3.2.3.2.1, the epoxy adhesive shall be tested for lap shear in accordance with ASTM D 1002. The adhesive shall be prepared, applied to the test specimens, and cured according to instructions supplied by the adhesive manufacturer. Test specimens shall be maintained at test temperatures for at least 30 minutes before testing. A minimum of five specimens shall be tested at each of these test temperatures:

-20°F ±10°F and 70°F ±5°F. Test specimens shall exhibit an average lap shear of at least 2,000 psi at both temperatures.

4.5.1.4.2 Heat softening test. To meet the strength requirements of 3.2.3.2.2, five specimens shall be prepared and tested as described in 4.5.1.4.1 except that the test temperature shall be 200°F ±5°F. Lap shear strength of the specimens shall average within the range of 100 psi to 400 psi.

4.5.1.4.3 Epoxy adhesive testing documentation. To meet the requirements of 4.5.1.4, a test report from the adhesive manufacturer shall be acceptable in lieu of lot by lot testing when validated by the contractor's own tests. The contractor need not retest again unless a new supplier is used.

4.5.2 End item testing. Unless otherwise specified, the sample size for testing shall be S-2 with an AQL of 4.0 for all testing.

4.5.2.1 Handle moisture content testing. Moisture content testing to meet the requirements of 3.2.2.2 shall be part of quality conformance inspection. Using a calibrated moisture meter, readings shall be obtained from each end of the handle and its mid point. The handle's moisture content will then be determined by averaging the three readings.

4.5.2.2 Sharpening test. To comply with the requirements of 3.2.1.3.2, the ax bit of each sample tool shall meet the dimensional tolerances described below and shall be able to be inserted evenly into the sharpening gauge to within 1/32 inch of the apex of the gauge:

- a. The cutting edge is to be measured and bisected. This line shall be the centerline for the measurements.
- b. Thickness shall be measured with a caliper at the inspection point (1/4 inch, 1/2 inch, and 1 inch, $\pm 1/16$ inch from blade edge). If anywhere within the range allowed, blade thickness is acceptable, as specified by the referenced drawings, this point shall be marked and a measurement taken back to the edge.
- c. Two more points shall be chosen by moving $1/2 \pm 1/16$ inch along the edge of the ax from the bisecting line on both sides and measuring away from the edge the same distance as used in paragraph b. The thickness at these points shall be measured.
- d. The three thicknesses shall be averaged and the average used to determine compliance with the requirements.
- e. The procedure outlined in paragraphs b, c, and d shall be repeated for the remaining distances from the edge.

4.5.2.3 Tool head to handle joint test. The tool head to handle joint test to determine compliance with 3.2.3 and table I shall consist of moment loading applied through three complete cycles. The axis for the moment loading shall be a line perpendicular to the side of the tool head and projecting through the estimated center of the tool eye. The application of a full moment load in both the clockwise and counterclockwise directions shall constitute a full cycle. The contractor can select one of the two test methods illustrated in figure 1.

4.5.2.4 Pull apart test. A pull apart test to determine compliance with 3.2.4 shall be conducted as follows: Each sample tool shall be tested in a standard tensile test machine in such a manner as to pull the head off the handle. The tool shall not pull apart or loosen when subjected to a force of 3,500 pounds.

4.5.2.5 Handle alignment test. Alignment testing to determine compliance with 3.2.5 shall be conducted as illustrated in figure 2. Before clamping the blade, the center of the knob end of the handle shall be established as accurately as possible by visual sight on its circular or elliptical surface. After clamping the blade vertically, one end of a piece of thread shall be taped directly over the cutting edge and the other end shall be fastened to the rule of a carpenter's square or equivalent. With the thread held tight, the square shall be moved back and forth until the thread falls directly over the full length of the cutting edge. At this point, the distance (measured perpendicular to the handle) between the edge of the square to which the thread is tangent and the center of the handle knob shall be measured to the nearest 1/8 inch. The maximum allowable distance of this measurement shall be 1/2 inch to the left or right of the handle center.

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4.5.2.6 Practical cutting test. The practical cutting test to determine compliance with 3.2.6 shall consist of striking hardwood knots of any size a minimum of 10 heavy blows with each cutting edge. After striking a minimum of 10 heavy blows, there shall be no evidence of chipping, dulling, or turning over of cutting edges, loosening of the handles or wedges, or any other damages to the tool heads or handles.

5. PACKAGING

5.1 Preservation. The cutting edge or edges of each ax shall be protected with a fiberboard sleeve securely fastened in place. All other preservation shall be in accordance with ASTM D 3951.

5.2 Intermediate packaging. Four tools, each preserved as specified in 5.1, shall be packaged as illustrated in figure 3A or 3B, as applicable. Intermediate package boxes shall be type CF, class domestic, variety SW, grade 175 minimum, style optional, and otherwise conforming to ASTM D 5118, with inside dimensions as specified by figure 3A or 3B, as applicable. Tolerances on all box dimensions are -1/2 inch +1 inch. The intermediate box for the Type A axe shall be as shown on Figure 3A, the intermediate box for the Type C and D axes shall be as shown on figure 3B.

5.3 Packing. Three intermediate packages, as specified in 5.2, shall be packed in a shipping box. Shipping boxes shall be type CF, class domestic, variety DW, grade 500, style FTC of ASTM D 5118, with inside dimensions as specified by figure 3A or 3B, as applicable. Tolerances on all dimensions are -1/2 inch, +1 inch. Metal staples shall be used on all corners and joints. The boxes shall have the flaps outside the side panels of the body and inside the end panels of the cover. When set up, the flaps of the cover shall not overlap, but shall have sufficient length to be securely fastened to the adjoining walls with no less than five staples. The shipping box for the Type A axe shall be as shown on Figure 3A, the shipping box for the Type C and D axes shall be as shown on figure 3B. The pack shall comply with the National Motor Freight Classification.

5.4. Marking. In addition to any special marking required by the contract or purchase order, individual axes and shipping containers shall be marked as follows:

5.4.1 Individual axes. Each axe shall be marked with the "FSS" and manufacturer markings required by 3.3.

5.4.2 Shipping containers. Each shipping container shall be marked in accordance with FED-STD-123. The National Fire Equipment System number (NFES 0171) shall appear below the NSN. The required information shall be as follows:

NSN [...]
NFES [...]
[nomenclature]
[manufacturer name}
[contract number]
DATE OF MANUFACTURE [mm/dd]

6. NOTES

6.1 Intended use. These axes are used primarily for clearing brush and trees in general forestry operations, prescribed burn operations, and as part of wildland firefighting activities.

6.2 Acquisition requirements. Acquisition documents should specify the following:

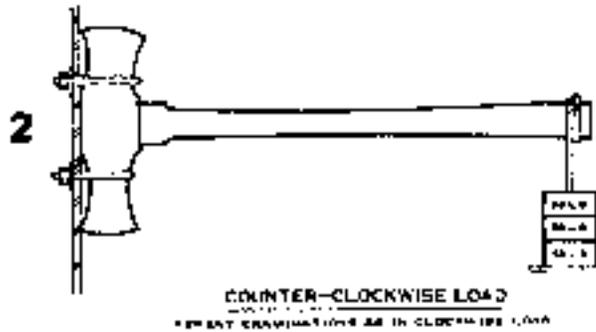
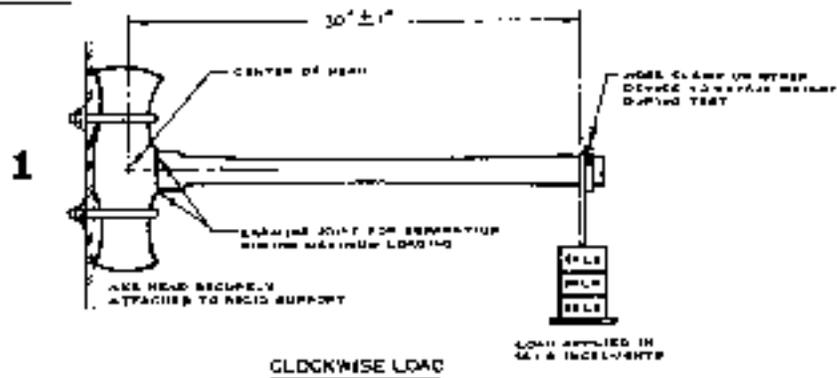
- a. Title, number, and date of this specification.
- b. Type of axe (see 1.2).
- c. When a first article sample is required (see 3.1 and 6.3).
- d. Preservation, packing, and marking instructions in addition to specification requirements.

6.3 First article. When a first article is required, it shall be inspected and approved under the appropriate provisions of Federal Acquisition Regulation (FAR) 52.209. The first article should be a preproduction sample. The contracting officer should specify the appropriate type of first article and the number of units to be furnished. The contracting officer should also include specific instructions in acquisition documents regarding arrangements for selection, inspection, and approval of the first article.

6.4 Preparing activity. USDA Forest Service, Missoula Technology and Development Center, Building 1, Fort Missoula, Missoula, MT 59804-7294.

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SUGGESTED METHOD 1-



- 3** REPEAT STEPS 1 AND 2 TWO MORE TIMES
(A TOTAL OF THREE LOAD CYCLES)
- 4** EXAMINE HEAD END OF EYE FOR JOINT SEPARATION

SUGGESTED METHOD 2-

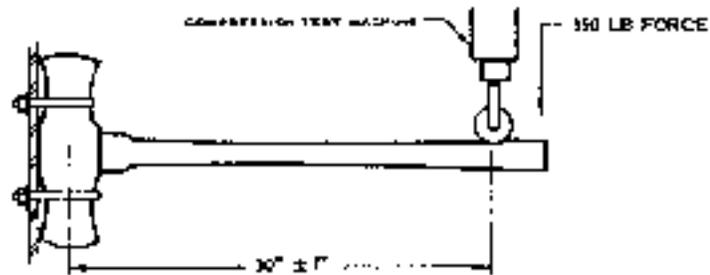


Figure 1.-Tool head-to-handle joint test.

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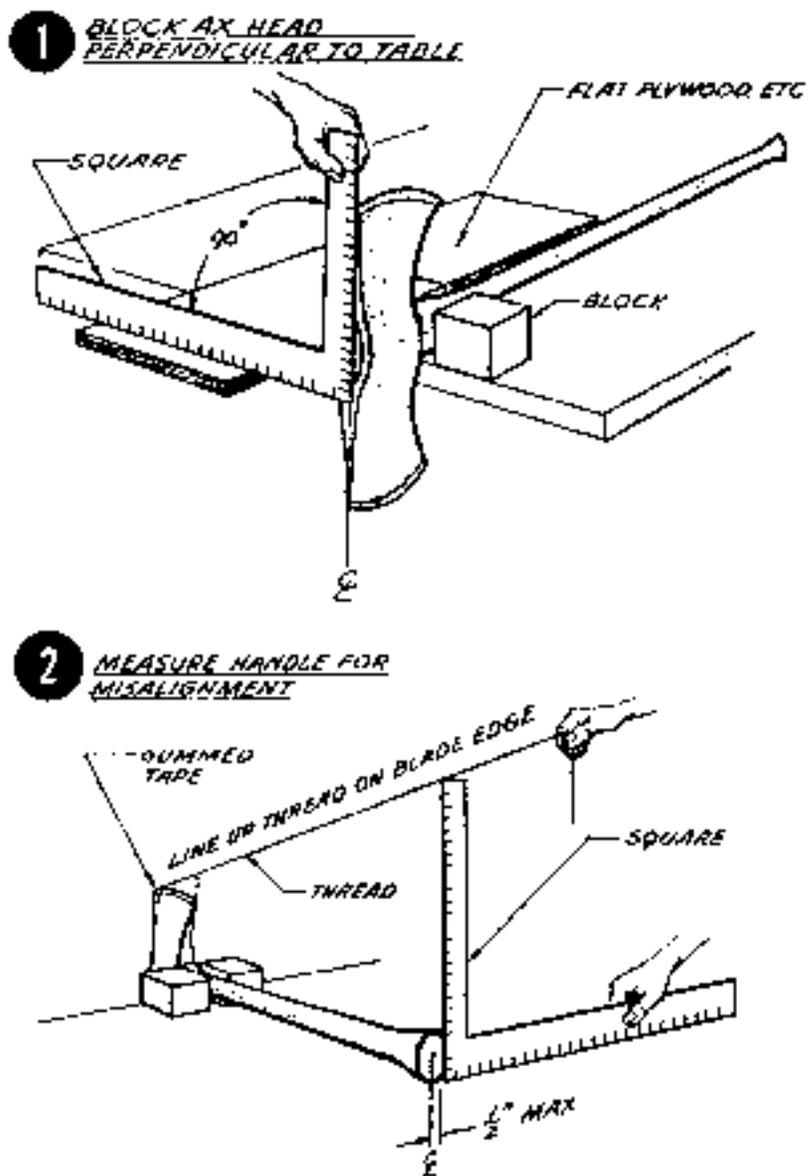


Figure 2.—Handle alignment test.

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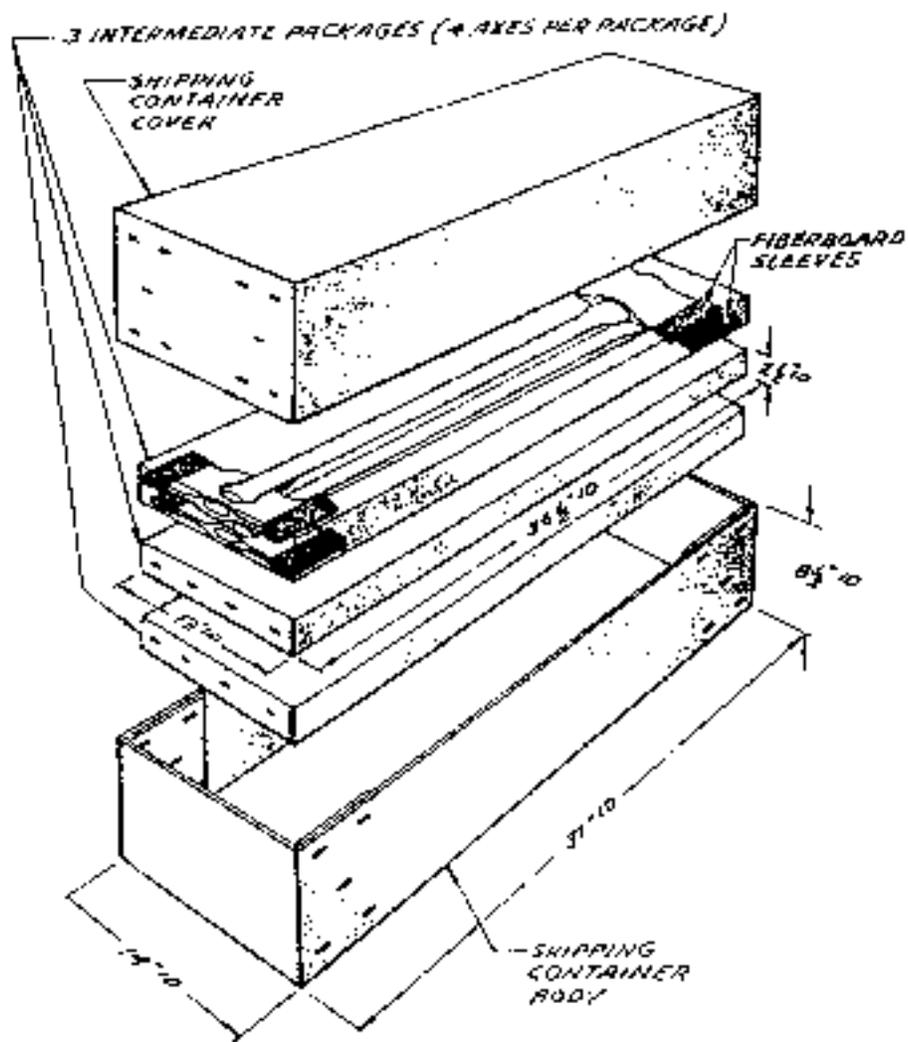


Figure 3A.-Packaging axes (Type A).

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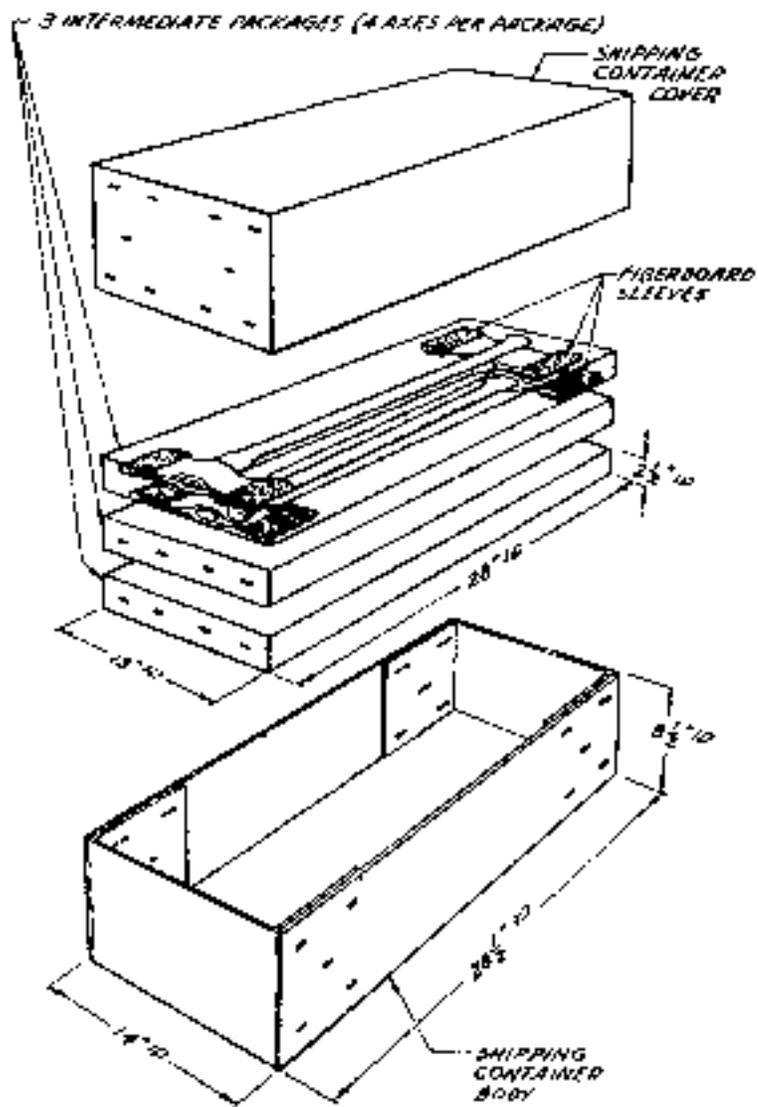


Figure 3B.-Packaging axes (Type C & D).

to:

Standardization Document Improvement Proposal

This form is provided to solicit beneficial comments that may improve this document and enhance its use. Contractors, government activities, manufacturers, vendors, and users are invited to submit comments to:

USDA Forest Service
Missoula Technology and Development Center
Bldg. 1, Fort Missoula
Missoula, MT 59804-7294

Attach any additional pertinent information that may be of use in improving this document to this form and mail in an envelope. A response will be provided when the submitter includes their name and address.

NOTE: This form shall not be used to submit requests for waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the document, or to amend contractual requirements.

Document Identification: **5100-9D - AXES: SINGLE BIT AND DOUBLE BIT**

Submitter's Name (Optional. Please print or type):

Submitter's Organization and Address:

Vendor User Manufacturer _____

Phone Number: _____

Date: _____

Has any part of the Document created problems or required interpretation in procurement use?

Is any part of the Document too rigid, restrictive, loose, or ambiguous? Please explain below:

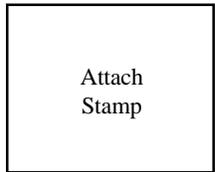
Give paragraph number and wording: _____

Recommended change(s): _____

Reason for recommended change(s): _____

Remarks:

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