Appendix A—Full Page Ax Illustrations

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• Parts of an Axe
• Common Single-Bit Axe Head Patterns
• Common Double-Bit Axe Head Patterns
• Axe Handles
Parts of an Axe

- Cutting edge
- Perfect eye
- Tapered eye
- Wedge
- Axe blade
- Toe
- Heel
- Lug (lip)
- Handle (helve, haft)
- Grip
- Belly
- Bevel
- Microbevel
- Wedge kerf
- Poll (pole)
- Shoulder
- Weight
- Maker marks
- Roll pin
- Cheek (face)
- Throat
- Knob
- Back
- Parts of an Axe
Common Single-Bit Axe Head Patterns

LONG ISLAND
2-1/2 TO 3-1/2 LBS

NARROW WISCONSIN
3 TO 5 LBS

NEW ENGLAND
OR
IMPROVED WISCONSIN
2-1/2 TO 6 LBS

YANKEE
3 TO 8 LBS

DELAWARE
OR
WIDE BIT DAYTON
3 TO 5 LBS

DAYTON
3 TO 8 LBS

MICHIGAN
3 TO 8 LBS

HOOSIER
3 TO 5 LBS

RAFTING
3 TO 8 LBS

CEDAR
OR
NATIONAL
2-1/2 TO 4 LBS

WEDGE
3 TO 5 LBS

HALF WEDGE
3 TO 5 LBS

CONNECTICUT
2-1/2 TO 5 LBS

COMPETITION STYLE
4-1/2 TO 7 LBS

HUDSON BAY
1-1/2 TO 3-1/2 LBS

TURPENTINE
OR BOXING
3 TO 7 LBS

ROCKAWAY
3 TO 6 LBS

BALTIMORE JERSEY
3 TO 6 LBS

PHILADELPHIA
JERSEY
3 TO 6 LBS

WESTERN CROWN
OR OHIO
3-1/2 TO 5 LBS

NORTH CAROLINA
3 TO 7 LBS

KENTUCKY
3 TO 7 LBS

BALTIMORE KENTUCKY
3 TO 7 LBS

JERSEY
2-1/2 TO 6 LBS
Common Double-Bit Axe Head Patterns

- **WEDGE** 3 TO 4 LBS
- **NARROW MICHIGAN** 3 TO 4 LBS
- **MICHIGAN** 2-1/2 TO 7 LBS
- **WISCONSIN** 3 TO 4 LBS
- **REGULAR WISCONSIN** 3 TO 4 LBS
- **YOUNG** 3 TO 5 LBS
- **WESTERN OR PENNSYLVANIA** 3 TO 7 LBS
- **WESTERN OR LIPPENCOTT** 3 TO 4-1/2 LBS
- **REDWOOD OR HUMBOLDT** 3 TO 5 LBS
- **REVERSIBLE OR HALF PEELING** 3 TO 6 LBS
- **FULL PEELING** 3 TO 5 LBS
- **NARROW SWAMPING** 3-1/2 TO 4-1/2 LBS
- **FALLING** 3-1/2 TO 5 LBS
- **PUGET SOUND FALLING** 4 TO 5 LBS
- **SWAMPING** 3 TO 5 LBS
Axe Handles

- Single-bit tapered eye
- Double-bit tapered eye
- Perfect eye
- Oval handle
- Octagonal handle
- Shaped handle

Symmetrical knobs

Inline grain (desirable)

Cross grain (less desirable)

Asymmetrical knobs
Appendix B—Technical Drawings

- **Handles**
  - Single Bit Curved 28" (Boy's Style)
  - Single Bit Straight 34"
  - Single Bit Curved-Octagonal 36"
  - Single Bit Straight-Octagonal 27" (Miner's Style)
  - Single Bit Curved-Octagonal 31"
  - Double Bit Straight 28" (Cruiser Style)
  - Double Bit Straight 36" (Western Style)
  - Double Bit Straight-Octagonal 44" (Felling Style)

- **Sheaths**
  - Leather Axe Sheath (Western)
  - Leather Axe Sheath (Cruiser)
  - Leather Axe Sheath (Boys)
  - Leather Sheath (Pulaski)

- **Handle Jigs**
  - Axe Handle Jig Assembly
  - Axe Handle Removing Jig (Steel)
  - Axe Handle Removing Jig (Primitive)

- **Drift Pin Assemblies**
  - Single Bit Axe Drift Pin Assembly
  - Double Bit Axe Drift Pin Assembly
  - Single Bit Boys or Camp Axe Drift Pin Assembly
  - Double Bit Cruiser Axe Drift Pin Assembly

- **Gauges**
  - Handtools Sharpening Gauge
  - Axe Sharpening Gauge
SINGLE BIT
STRAIGHT-OCTAGONAL 27"
(MINER’S STYLE)

SINGLE BIT
CURVED-OCTAGONAL 31"
(NOT TO SCALE)
LEATHER AXE SHEATH (BOYS)

SHEATH ASSEMBLY

BUCKLE STRAP

STRAP

RIVET

BELT LOOP

8 OZ. LEATHER
(1 REQ'D)

8 OZ. LEATHER
(1 REQ'D)

8 OZ. LEATHER
(1 REQ'D)

STRAP 8 OZ. LEATHER
(1 REQ'D)

RIVET-CAP STYLE
3/8 OD HEAD
CORROSION RESISTANT
(13 REQ'D)

BUCKLE 1/2-INCH
CORROSION RESISTANT
(1 REQ'D)

BUCKLE STRAP 8 OZ. LEATHER
(1 REQ'D)

NOTE:
SHEATH MAY BE STITCHED
WITH WAXED LINEN CORD,
5# STITCHES PER INCH.

NOT TO SCALE
AXE HANDLE REMOVING JIG (WOOD)

BOX ASSEMBLY

AXE HANDLE JIG ASSEMBLY

NOT TO SCALE
CUT OFF HANDLE.
USE DRIFT PIN AND HAMMER TO DRIVE
REMAINING HANDLE FROM BOTTOM OF EYE
THROUGH TOP OF EYE.

AXE HANDLE REMOVING JIG (STEEL)

SCHEDULE 40 PIPE, STEEL
AXE HANDLE REMOVING JIG (PRIMITIVE)

DRILL 1-1/2 X 3 INCH HOLE THROUGH 8 X 8 POST.

WOOD GUIDES CAN BE SCREWED INTO POST AT AN ANGLE TO HOLD AXE HEAD SECURE.

CUT OFF HANDLE. USE DRIFT PIN AND HAMMER TO DRIVE REMAINING HANDLE FROM BOTTOM OF EYE THROUGH TOP OF EYE.
About the Author

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About NTDP

The U.S. Department of Agriculture, Forest Service, National Technology and Development Program, provides Forest Service employees and partners with practical, science-based solutions to resource management challenges. We evaluate, design, and develop new technologies, products, and systems to solve problems and deliver solutions.
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Library Card


This manual provides information about different types of axes and their historic and current usage in the U.S. Department of Agriculture, Forest Service. Subjects covered include the anatomy of an ax, types of axes and related tools, selecting the right ax for you, the art of filing, sharpening an ax head, restoring or replacing an ax handle, using an ax, maintaining an ax, and purchasing an ax. The manual also includes a list of resources and information about ax manufacturers and suppliers.

Keywords: adzes, ax, axes, crosscut saws, double-bit axes, felling, handtools, hand tools, heritage, logging, lumberjacks, primitive skills, primitive tools, pulaskis, single-bit axes, survival skills, traditional skills, traditional tools, trails, two-man saw, wilderness