

Axes and their maintenance

For each of 120 cutters in this study a record was obtained of the make, pattern and weight of axe head used, axe bit profile, degree of sharpness, and length of the handle.

Pattern. — Approximately 10 patterns of axe heads could be distinguished, but about one-third of all axes were of the type shown in Fig. 10A, while the patterns such as shown in Fig. 10B and D were the next in frequency of their use. Five out of 120 axes were double bitted. Their use in this region is very limited and in some cases restricted to road work.

Weight. — The average weight of the axe heads was 2.6 lbs. Two-thirds of the axes were 2½ lbs. weight; 2¾ and 3 lb. axes were represented each by about 15% of the total number; leaving less than 3% to the axes below 2½ lbs. weight, not usually available at logging camps. Both "good" and "poor" cutters used axes of the same weight on the average, and our records do not show any correlation between the

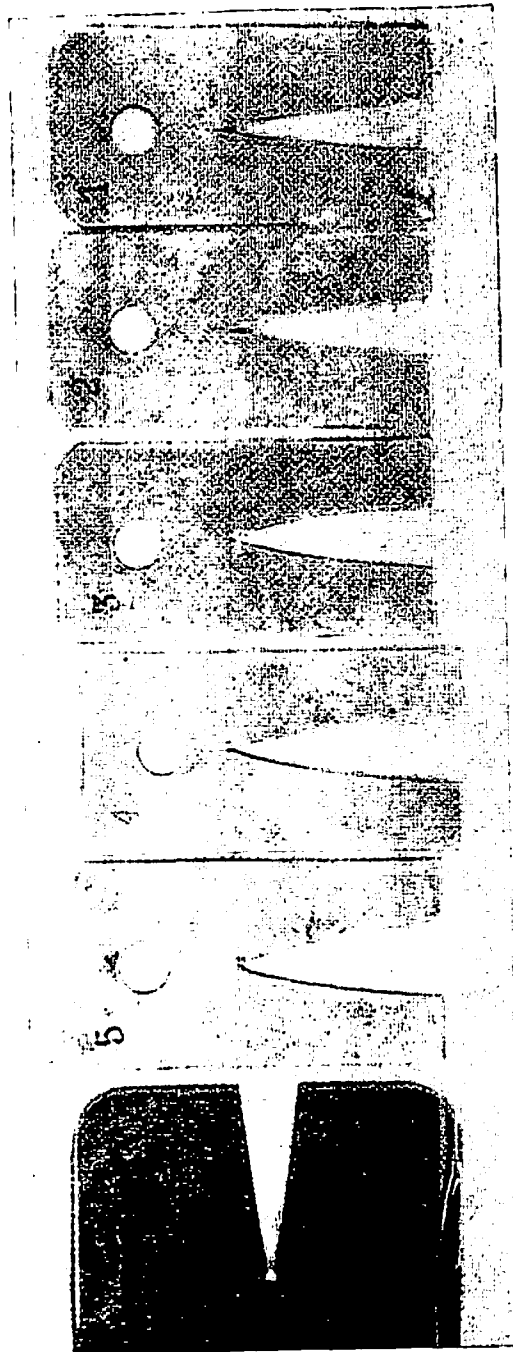


Fig. 12. Axe bit gauges (actual size). No. 1 gauge, too thin; No. 5, too thick. Gauge shown on the left, made by an axe manufacturer, is close to our gauge No. 3.

weight of axes used and the size of timber. Two-thirds proved of their axes, and the criticisms presented by rather conflicting, although many more cutters complained of softness than of the hardness of the steel.

Bit profile. — Shape of axe bit profile as dependent on design and particularly on grinding is an comparatively neglected consideration. It definitely affects work, its safety, and may also effect the working life of an axe bit ground too thin may thereby be weakened and bind in wood; too thick a bit makes chopping harder and glancing off of axe.

Sets of five axe bit gauges, as shown in Fig. 12 were used to our patterns, of sheet aluminum and used to determine thickness of axe bits. Gauge 3 represents the average found obtained from the pulp and paper companies in the Wood membership as samples of allegedly proper grinding. In our 120 cases on the average were slightly heavier than gauge 3 but not thick enough to fit gauge 4 (3% of the axes—1); 19%—thin; 32%—average; 41%—thick; 5%—very thick. A much higher percentage of axes fitting gauge 3 considerably smaller number of thick (gauges 4 and 5) were men in "poor" cutter groups. Even such a rather arbitrary standard can be used to advantage to eliminate extreme practices. Establishment of fully reliable, accurate standards would require considerable additional study of this matter with due regard to factors as variations in the properties of axe steel.

As issued by the manufacturers, axe heads usually were too thick, requiring some grinding by cutters before their use.

Sharpness. — According to ocular evaluation of the axes were conspicuously dull in 10%, medium in 52% of all the cases with a definitely better record for sharpness. About 60% of all cutters ground their axes on a grindstone a week, while 17% of the men did this less often than once a week or even not at all. Two-fifths of all the cutters never ground their blade with a pocket stone, while one-third of them (cutters) did it daily.

Handles. — The average length of axe handle, measured in inches; with the range from 24 to 36 inches. The lengths were: 27 inches (28.3% of all), 28 inches (10.8% (10%).