SAWMILLING PRACTICES FOR HARDWOODS

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Abstract.—The Sawmill Improvement Program (SIP) provides guidance to improve the bottom line of a sawmill both by recovering more lumber from a log and by using simplified procedures to produce more grade lumber. Lessons learned from SIP have led to improved yields of grade lumber through improved log manufacturing, reducing sawing variation by using thinner kerf saws and better decisionmaking from debarking of logs to edging of grade lumber, and better product sizing by reducing dimensional oversizing and excessive planning allowances. Developing higher grades of lumber requires a skillful edger and trim saw operator as well as a skillful sawyer.

State and Private Forestry of the U.S. Forest Service began the Sawmill Improvement Program (SIP) in the 1970s to extend the Nation’s timber resources by identifying practices both to increase lumber recovery and to mill hardwood logs more efficiently. Lessons learned from SIP have led to improved yields of grade lumber through improved log manufacturing, reducing sawing variation by using thinner kerf saws and better decisionmaking from debarking of logs to edging of grade lumber, and better product sizing by reducing dimensional oversizing and excessive planning allowances. Lumber lost was estimated to be 15 percent from oversizing, 12 percent from excessive sawing variation, 20 percent from heavy slabbing, 20 percent from overedging, and 6 percent from excessive saw kerf. Losses in log volume were estimated to be as high as 10 to 15 percent from poor debarking and 2 to 8 percent from poor processing decisionmaking.

Figures 1, 2, and 3 illustrate a portion of the simplified procedure for developing grade lumber from hardwood logs (Malcolm 2000). A working knowledge of the hardwood grade rules of the National Hardwood Lumber Association is essential for processing grade lumber (American Hardwood Export Council 2002). Of first importance in sawing for grade is recognizing external indicators of internal defects. The position of the other three sawing faces is fixed as soon as the first face is sawn. Defects should be located at the edges or corner of sawn lumber where they can be edged off. The poorest face should be sawn first to provide a firm bearing from which to saw the better faces for grade. Walnut should be opened to a 5.5-inch face and other hardwoods should be opened to a 6.5-inch face. Wide boards should be ripped into two boards when more than half the original surface can be raised one grade and the remaining board does not drop more than one grade.

LITERATURE CITED


Figure 1.—Series of slides listing the findings of the Sawmill Improvement Program and illustrating the importance of identifying defects before opening a log to produce grade lumber (Illustrations from Malcolm 2000).
Figure 2.—Series of slides illustrating how to open a log and when to rotate to maximize production of grade lumber (illustrations from Malcolm 2000).
Figure 3.—Series of slides illustrating how to open logs with sweep, seams, and rot, and how to edge and rip for production of grade lumber (illustrations from Malcolm 2000).

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