bits Therefore, the machine should be enclosed completely and bulletproof glass provided

Chipper accidents are caused principally by wood rebounding from the hopper because of knots or hard places in the wood stock or, more often, by uneven wear of the knives which act as cams and bounce the wood out of the hopper spout

Knives should be inspected frequently for secureness and proper balance Chipper spouts should be built high enough to keep operators from falling into the chipper Spouts less than 36 in above the working platform should be surrounded by standard guard rails The operator's station should be out of the way and guarded from material which may be kicked back out of the chipper

A swinging baffle installed in the mouth of the chipper will permit logs to drop in but prevent chips from flying back If the operator must enter the throat of the chipper to dislodge a log, he should first lock the switch in the "off" position and tag it He should also wear a safety belt with a line attached and be attended by another worker

Two men should be assigned to the job of removing chipper knives, one to loosen the bolts and the other to take out the knives The latter should wear metal mesh gloves and should carry the knives in a special fixture made for this purpose

Hand barkers A feeding device should be used which makes it unnecessary for the operator to hold a log by hand during the barking operation Some types of hand barkers have the heads reversed so that the wood cannot kick back and injure the operator Where barker heads are not reversed, standard rails should be installed to keep the operator from standing directly behind the barker

A mechanically operated backstop should be installed behind the head to prevent the operator's hands or fingers from being drawn into the knives Also, each barker should have a positive stopping device that can be easily reached by the operator, and locked and disconnected from the power when knives are to changed or sharpened

If a barker disk is directly connected to a water wheel, a governor should be placed on the wheel to keep the speed of the disk within safe limits

When knives are changed, it is important that they be replaced with others of the same weight as those remaining in the disks Disks should be inspected regularly for cracks and other defects and for perfect balance

Some hand barkers have stops which permit barking only to a halfway point on the stick, the barker must then turn the stick around before barking the remaining half This practice helps keep the operator's hands from coming close to the knives

Hydraulic barkers The principal hazard of the hydraulic barker is that men may work on the nozzle carriage or in its path while the machine is in operation If work must be done on the nozzle carriage, it should be locked with the pistons fully extended in the end zone

In one company only the barker operator (or the steam engineer assigned to the barker) is authorized to lock the carriage, and only the steam engineer is permitted to unlock the carriage or to possess a key

Operators should work in an enclosed station and watch the operations through bulletproof glass To stop flying bark and chips, heavy canvas curtains should cover the points where the logs enter and leave the barker If such curtains are ineffective or impractical, men should wear face shields

Mechanical barkers Operators of mechanical barkers should be protected by shields If work can be thrown from the machine, backstops should be set up and the operator's position should be out of the line of wood When barker knives are being changed, the knives should be carried in holders

Intermittent drum barkers require a switch or other disconnecting device and should also have a device to prevent the drum from moving while it is being emptied or filled

Knot borers To prevent the bit of a knot borer from catching on the telescopic guard, the bit should be kept tight with the nut locked at the end of the guard's rod The treadle should be covered with a hood so that the machine cannot be accidentally operated by falling logs or other objects

Log hauls Log hauls should be provided with safety stop pushbuttons that can be operated by the float boom man The safe-