



- b. Skidders. Skidders are used to transport felled trees singly or in bunches to a landing. When a gate type delimber is being used, the skidder will push the trees through the gate to break off the limbs by fracturing. Skidders are subjected to the severest service and the most operator abuse of all forest machinery. They operate over rough skid trails at the highest possible speeds transmitting tremendous stress to the machine components. The constant environment of dust and various debris combined with the usual oil leaks increases the risk of engine fires and makes insurance coverage for skidders the highest of all forestry equipment.

The typical skidder is a four wheel drive, rubber tired machine with articulated frame steering and is powered by a seventy (70) to two hundred (200) horsepower diesel engine. The machines come in various sizes so they are suitable for all types of harvesting operations and most terrains. The machines can cause ground damage in soft or wet soil conditions but can be fitted with low ground pressure tires to overcome these specific conditions. Per the APA report, rubber tired skidders make up seventy-seven (77) percent of all skidders in operation.

Tracked crawler-type skidders make up less than three (3) percent of operating machines due to their slow ground speed and expensive track maintenance costs. They are generally utilized only for specialized soil conditions.

A third type of skidder is a two-wheel drive farm or industrial tractor fitted with a skidding attachment. The machines are normally diesel powered (fifty (50) to one hundred (100) horsepower) and are priced from \$15,000 to \$35,000 for the complete tractor and skidding attachment. The attachment can be purchased separately and utilized on an existing tractor. This provides the farmer the opportunity to expand the utilization of his farm equipment during the non-agricultural seasons. The low cost of this equipment makes it attractive to small landholders as well as farmers for harvesting on a small scale. APA estimates that eighteen (18) percent of the operating skidders are of this type.

Another type which is used primarily in swampy areas is the low ground pressure (less than 4 psi) tracked vehicle. These machines are equipped with gasoline or diesel powered engines in the range of one hundred fifty (150) to two hundred fifty (250) horsepower and are priced from \$60,000 to \$175,000. The initial cost and the cost of track and undercarriage maintenance makes them prohibitive for other than specialty logging.

Skidders are equipped with either of two types of log transport equipment. Approximately two-thirds of the existing skidders have a cable winch powered by a power take-off. Chokers are set on the various logs to be skidded and the logs are winched to the stationary skidder. Because of smaller logs, speed of operation, and compatibility of handling log stacks produced by feller-bunchers, there has been a trend to convert to hydraulic grapples instead of cable winches. The standard hydraulic grapple has been the scissor type with dual hydraulic cylinders.