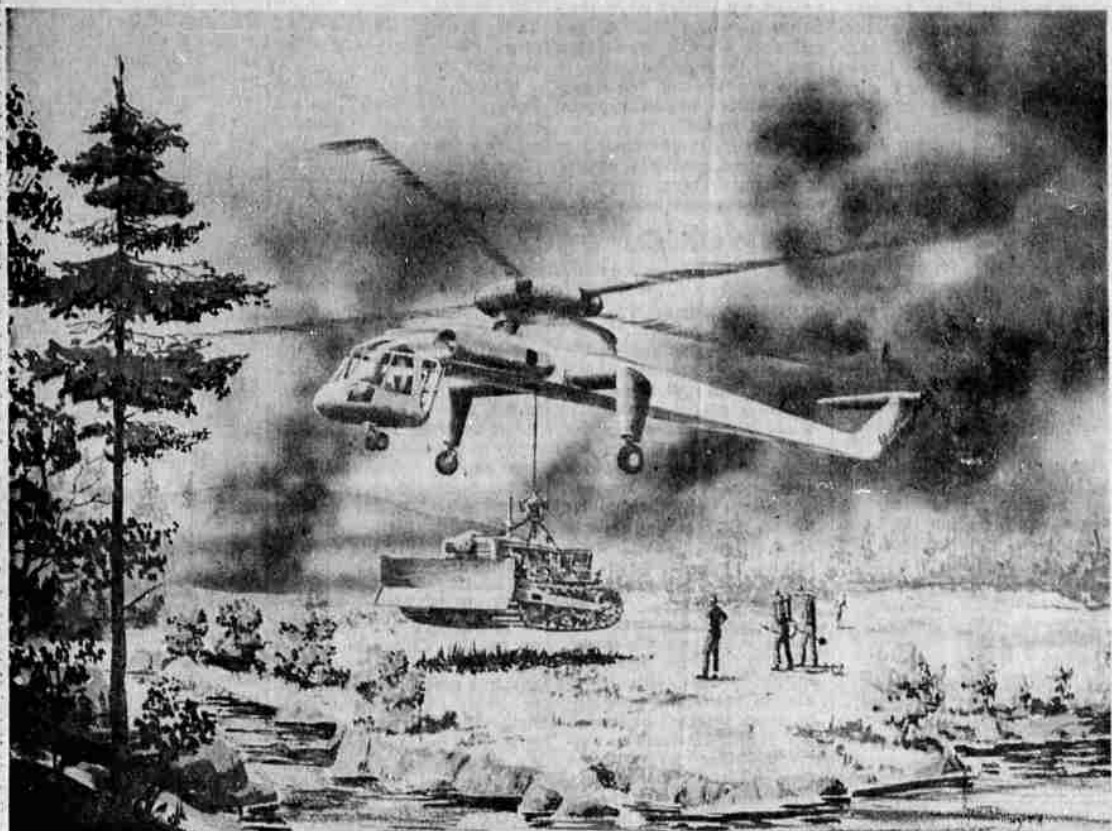


Use of Helicopter in Logging Industry Reviewed at Meeting Here



USE IN FOREST—This is an artist's conception of how the Sikorsky S-64 helicopter could be used in fighting forest fires. Fast action by this type machine could control forest fires before they become major conflagrations. The use-

Sikorsky S-64 Designed as Lifting Unit

The Sikorsky S-64 All-Purpose Transport Helicopter is a \$1.75 million machine designed as a basic lifting unit. It was developed at the aircraft's plant in Stratford, Conn., after recognition of the fact that the passenger cabin is superfluous—dead weight, and carried no useful purpose when the conventional helicopter is used for carrying cargo or equipment.

The structural weight of the aircraft is reduced by eliminating a floor stressed for cargo loads and a cabin, resulting in a heavier payload than conventional helicopters

of comparable size. In the S-64, there is no passenger cabin, and no structure within 9½ feet of the ground, except the cockpit and the landing gear. This permits the helicopter to straddle large loads, which can be fastened directly to attachment eyes along the bottom of the boom-like fuselage when the helicopter is on the ground.

Special purpose "pods" for passengers or other specific mission work may be similarly attached. The S-64 helicopter is readily adaptable to logging pur-

poses, since it can fly into position astride the load. It can accept a rectangular load weighing more than eight tons of any reasonable length, 10 feet wide and 8 feet high under the structure with adequate clearance.

Sikorsky officials note that it is not necessary for the helicopter to hover during the time it is being loaded. Snuggling the load close to the fuselage also eliminates oscillations during flight, allowing greater maneuvering freedom close to the terrain. Glenn Jackson, Medford, who reviewed the Sikorsky

S-64 at a meeting of the Pacific Northwest section, Forest Products Research Society here last night, also reviewed other advantages of the helicopter, especially in relation to logging. The technique of hoisting the load may be used while the helicopter is hovering as high as 100 feet above the ground, Jackson pointed out. This is especially useful in selective logging operations in wilderness areas, inaccessible areas, national parks and other areas where aesthetic value is of prime importance.

The 15,000-pound capacity hoist is hydraulically powered. The winch is located about in the center of the helicopter, and the fuselage attachment point is chosen to give good aircraft handling qualities and load behavior. Fastened By One Man

The cargo hook may be fastened to the load by one man, and the load released either automatically upon touchdown or at the pilot's discretion. The integral winch and cargo hook arrangement allows the pilot to hover the helicopter above obstacles and to raise or lower the load as the situation requires.

The pilot's cabin in the S-64 is a capsule suspended from

The use of helicopters in the woods operation of the forest industry is almost unlimited.

A helicopter would be able to remove overripe timber, diseased trees, snags or other select trees from areas inaccessible to conventional logging equipment.

It could improve conservation of forest soil by reducing erosion on steep mountain sides.

It could be used in fighting forest fires, by transporting men and heavy equipment to sides which would take conventional equipment several hours.

Uses of a powerful helicopter—the Sikorsky S-64—were reviewed by Glenn Jackson, Medford, at a meeting of the Pacific Northwest Section, Forest Products Research Society, here last night.

Plans are being formulated to use the Sikorsky S-64 in removing 167 overripe trees in a mapped area of Oregon Caves National monument.

Jackson has discussed the proposal with Sen. Wayne Morse, who recently outlined the plan in the Senate. He also has discussed the proposal with forest service officials, who have prepared an appraisal of logging by helicopter.

The forest service has noted that logging by Sikorsky S-64 helicopter "can be done at costs essentially competitive with conventional logging."

Comparative Costs The service noted that conventional logging costs about \$35.47 per thousand board feet at the mill. Helicopter logging, with the department of defense assuming depreciation on the machine, would cost about \$35.57 a thousand based on 1,000 hours of use annually.

However, if the helicopter is used 1,500 hours annually, the estimated operating cost is reduced to \$32.81 a thousand with the department of defense assuming depreciation.

In its appraisal of helicopter logging, the forest service made several assumptions. Among them are:

1. Merchantable timber is available for logging in a tree selection or partial cutting method from an area where it is unnecessary, uneconomical or undesirable to develop the road system that would provide opportunity for conventional logging methods.

2. The average timber stand is assumed to be 25,000 board feet per acre of sawlog and peeler log material. Of this stand, 40 per cent, or 10,000 board feet per acre, is available for harvest in the first cut.

3. Servicing the area by truck, if permitted, would cost \$4 per thousand based on the need of one mile of road costing \$16,000 per mile for each 160 acres.

4. If the logging area is 5,000 feet, about two miles airline distance and 2,000 feet above a log landing or the nearest truck road, at least five miles of truck haul would be required to cover the distance.

5. Cutting and bucking cost for helicopter logging would be essentially the same as for the conventional logging. 2,000 Board Feet

6. The S-64 could haul an average of 2,000 board feet of logs per trip, and 12 round trips per hour over the two-mile route.

7. Cost of loading logs onto trucks and of truck haul from roadside landing would be the same.

The forest service also noted that logging by helicopter would be limited only when snow became too deep for cutting, and could be almost a year-round operation. This would eliminate cold-decking and increase the average value of the log in the winter.

"This higher value is because the purchaser would not have to go to the expense of cold decking the logs for winter mill operation, the lower truck haul rates that are available during winter months and the absence of deteriora-

tion in logs that normally takes place in stored logs under even the best conditions," the forest service said.

Operating Cost

The cost of the helicopter based on annual use of 1,000 hours is \$369.46 per hour for operation and maintenance. Depreciation cost of \$249.90 per hour would be absorbed by the department of defense and not charged against the logging industry, the service noted.

However, if the depreciation is charged to the logging industry, the \$35.57 per thousand board feet for 1,000 hours of helicopter use would increase to \$45.98 a thousand. On the basis of 1,500 hours of use, the cost would be \$39.75 a thousand if the logging industry assumed depreciation.

A preliminary agreement has been reached, however, between the department of defense, the forest service and Sikorsky because the department of defense is interested in the helicopter's use for tactical purposes.

Intangible Values

The forest service said there are certain intangible values in logging by helicopter. Among these are:

1. Value of better conditions for timber growth resulting from helicopter selective logging leaving a partial growing stock on ground.

2. Reforestation costs would be avoided.

3. There also would be premium value of better watershed and aesthetic conditions. "The landowner," the for-

est service said, "could recognize and compensate for some such values resulting from helicopter logging by making a reduction in the asked stumpage price, if necessary to do so, to secure this specialized method."

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S-64 "can be done at costs essentially competitive with conventional operations; provided, depreciation of machine is not charged to the logging."

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Counsel With...

Mr. Insurance—Fred Brennan

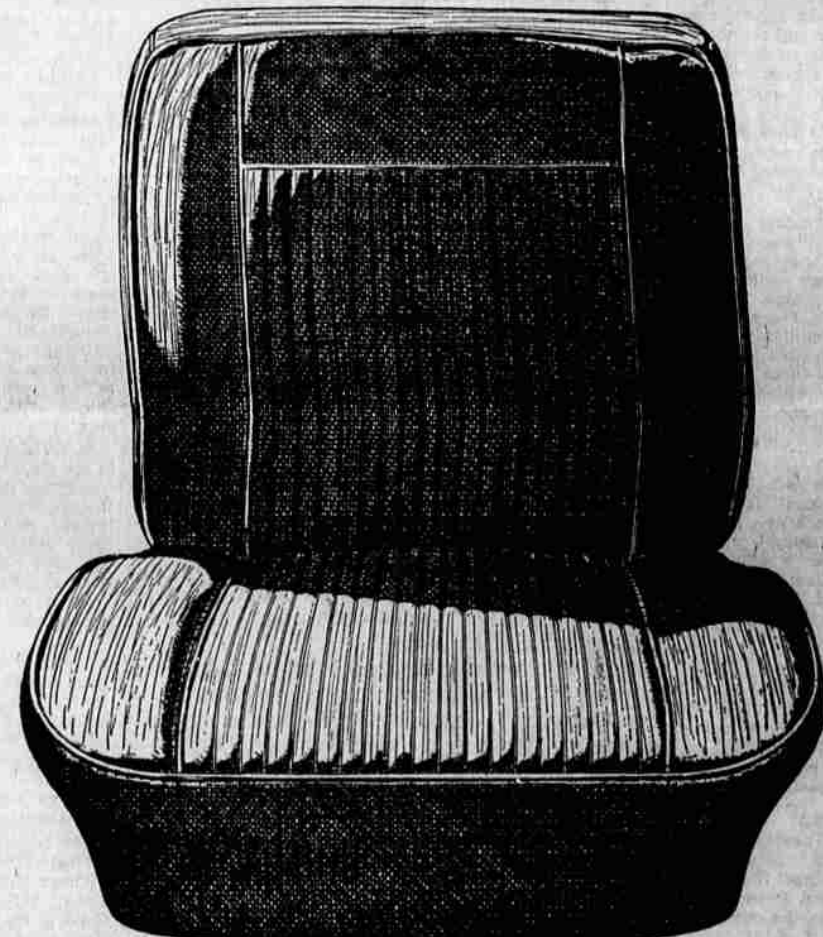


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