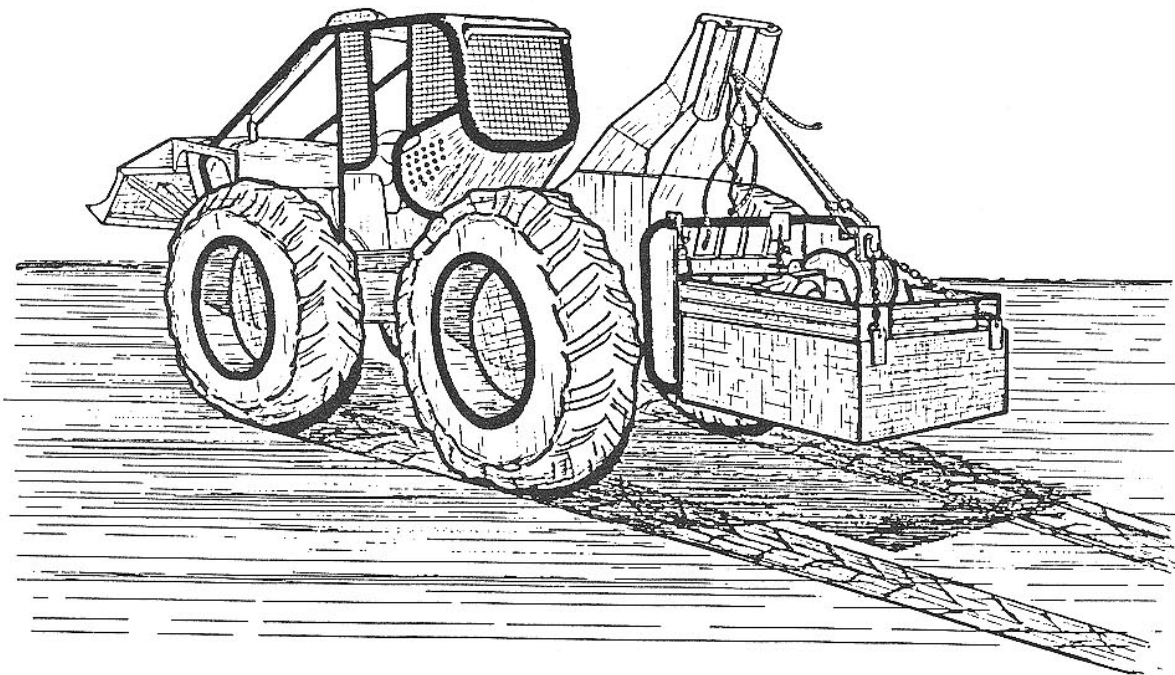
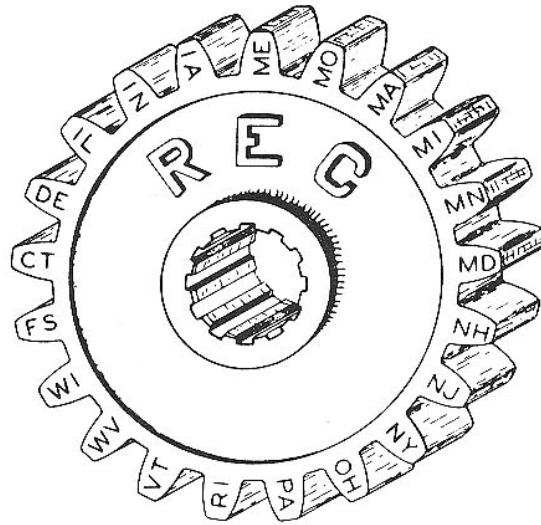


Roscommon
Equipment
Center
Program

Project No. 26



PORTABLE FIRE FIGHTING UNIT FOR SKIDDERS

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Northeast Forest Fire Supervisors

in Cooperation with

Michigan's Forest Fire Experiment Station



REC Project #26 Portable Fire Fighting Unit for Skidders

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Acknowledgements

This design was provided by the Maine Forest Service. Taken largely from early drawings, some changes have evolved through the years. Alternatives to the design are noted in the text.

Disclaimer

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REC Project #26

Portable Fire Fighting Unit for Skidders

Maneuverability, speed, and durability make forestry skidders ideal machines for incorporation in forest fire control. The utility of the skidder has been previously documented in the REC Equipment Evaluation Report, "Skidders in Fire Control." The Maine Forest Service developed a system for making a skidder a temporary fire unit by designing and utilizing a portable tank and pumping system that is picked up with the main winch cable of a skidder and cradled in the logging arch. It allows fire control use of skidders based at logging operations. This project details the design of the system, using the cable type skidders. Prior to fabrication check the skidder's logging bumper to be sure the taper matches this tank design. With modification, the concept could also be used with grapple-type skidders.

Tank and Pump System

The Maine system consists of a 185 gallon tank, made largely of 1/4 inch steel plate. A Homelite XL 1-1/2-4 pump mounts on top of the tank. There is considerable room for the pump, allowing other alternatives for the user. Analyze your projected use and the volume of water needed for the job and select a pump that fits your standard.

A small hose reel is a desirable option. In this booklet, the design utilizes the fabricated reel from REC Project #34 (3/4 Ton Tanker Study). Several commercial alternatives are available. Half-inch (1/2 inch) line on the reel will be adequate. Make sure the hose and fittings are pressure rated above the highest pressure produced by the pump. Plan the pumping system so that an alternate discharge outlet is available for either 1 inch or 1-1/2 inch forestry hose. Print #0-745 shows a suggested plumbing schematic.

Design Alternatives

A second design option applies to use with some large skidders. Up to four inches can be added to the total tank height as shown. Before building a taller tank, check the height that the tank can be winched for each skidder unit that you might use. Then measure to make sure you have adequate ground clearance. Other dimensions in the details must be adjusted. The increase in weight will be about 65 pounds of steel. The total water capacity will be about 230 gallons, adding an additional 375 pounds of water load to the 185 gallon tank illustrated in this project.

Hose Storage

A 6 inch high railing on top of the tank provides a storage area for hose and other tools. Carry two sections of 10 foot suction hose for drafting as well as needed forestry hose.

Transportation and Loading

The portable tank can be moved to the skidder site by using a suitable sized trailer. A pickup truck can also be utilized. In either case, load the front end of the tank toward the tailgate so it is easy for the skidder to back up to the front of the tank for hookup. After the skidder is in position for hookup, the front

of the tank is winched as high as possible against the skidder's logging bumper. The hookup mechanisms are placed on the skidder and the front chains are connected as tight as possible. The skidder's winch is released allowing the tank to be supported by the hookup mechanism. A choker is hooked to the rear chain of the tank and the tank is winched into the working position.

Caution: This tank is of considerable weight. Stand clear of tank when winching in position. Watch fingers, thumbs, and limbs!

Follow these steps in reverse to unload tank.

Weight of the empty tank is approximately 1,345 pounds. The user should make sure the load capacity of the trailer or truck is adequate for hauling the tank.

Cache Basket

Similar to the tank in overall configuration, baskets made of steel framework and expanded metal turn a skidder into a hauling vehicle for fire tools. The system has been used to carry portable pumps, hose and hand tools to remote sites, again taking advantage of the skidder's maneuverability in these conditions. Hookup to, and transportation with, the skidder is identical to the water tank.

MAINE SKIDDER TANK DATA	
Standard Height Version (Detailed in Project)	
Construction:	Welded Mild Steel
Water Capacity:	185 Gallons (700 liters)
Overall Dimensions w/o Pump or Hose Reel:	
Height, with rail:	22-5/8" (58 cm)
Length:	61" (155 cm)
Width:	48" (122 cm)
Tank Weights, 1/4" Steel Plate Version:	
Empty w/o pump or reel:	995 lbs. (450 kg)
Empty w/pump and reel:	1,130 lbs. (510 kg)
Full w/pump and reel:	2,670 lbs. (1,210 kg)
Extra Height Version (See Text, Page 1)	
Construction:	Welded Mild Steel
Water Capacity:	230 Gallons (870 liters)
Overall Dimensions w/o Pump or Hose Reel:	
Height with rail:	26-5/8" (58 cm)
Length:	61: (155 cm)
Width:	48" (122 cm)
Tank Weights, Standard Height Version:	
Empty w/o pump or reel:	1,060 lbs. (480 kg)
Empty w/pump and reel:	1,195 lbs. (545 kg)
Full w/pump and reel:	3,110 lbs. (1,415 kg)

DRAWING INDEX

REC Project #26: Portable Fire Fighting Unit for Skidders

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3 of 19	Skidder Water Tank Details	0-737
4 of 19	Skidder Water Tank Details	0-738
5 of 19	Skidder Water Tank Details	0-739
6 of 19	Skidder Tank: Top Railing Assembly	0-740
7 of 19	Top Railing Assembly Details	0-741
8 of 19	Tank Vent & Filler Port Details	0-742
9 of 19	Lift Clevis, Hookup Mechanism & Chains	0-743
10 of 19	Tank Plumbing Assembly	0-744
11 of 19	Plumbing Intake	0-745
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