



Air Board Photo from 3000 ft. altitude

by Major B. D. Hobbs and J. R. Cairns.

Forest burned off completely at Bird Lake, Manitoba, viewed from the air

Scientific Forest Protection

Some Further Hints on Organization of Fire-Fighting Forces

By PROF. W. N. MILLAR.

The duties of suppression staff officers in a Forest Protection Organization are five in number and give rise to five separate departments, but it is seldom, even in a very dangerous region, that all are separately organized.

Transport

The transportation problem becomes important only when relatively large fires must be fought at a considerable distance from a base of supplies. Its difficulties arise more from the poor quality of the lines of communication over which transportation takes place than from any other factor. Crews seldom exceed 100 men though more than 1,000 have at times been engaged in one locality. Distances are sometimes considerable, frequently 25 miles beyond the railways, sometimes more than 100 miles. Wagons, boats, or pack-horses are the usual equipment employed. Sometimes motor-cars may be used but on the other hand it is sometimes necessary to pack supplies on men's backs. When, as is nearly always the case in the western forests, pack-horses are the only feasible means of transport, the maintenance of a hundred men on a

fire-line is quite as difficult a transport problem as is the maintenance of 2,000 or 3,000 men in a country where modern motor-trucks may be employed.

The transport service in a specialized force is seldom under the direct charge of the supervisory officer having immediate charge of the smallest fire-protection district or unit of area. As a rule ten or more such districts are combined under an officer of higher rank and the transport service for the entire group is handled from a central headquarters. Where necessary a chief transport officer, generally called the "pack-master," is employed for this purpose.

A very important element of transportation is the condition of the lines of communication, such as roads and trails. It must be the constant aim of a forest-protection force to improve these lines at every possible opportunity. In the accomplishment of this an intercommunicating system is of the highest importance. Its value arises from the fact that in scarcely any forest region is the fire season continuous, but owing to rains there are periods of greater or less length when no fire is likely to occur. The efficient organization will plan to use the fire-

protection staff during such periods for the extension or improvement of lines of communication. This is accomplished by preparing in advance careful plans for necessary improvements to roads, trails, or other permanent works, distributing the work as much as possible to all districts. Immediately on the occurrence of a heavy rain, the fire-control force is swung on to improvement work through the medium of the intercommunication system and is kept employed on this work at the discretion of the supervising officer until conditions again require a return to fire-control duties. The amount of work that may be accomplished in this way depends on the seasonal conditions but it rarely happens that a fairly considerable total does not result from careful preliminary preparation and skilful use of opportunity and of the means of communication available.

Commissary

The bulk of the material handled by the transport service to fire-fighting crews is food. This is supplied in the most successfully organized forest districts through a central

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