ADVANCES IN FIRE PROTECTION METHODS AND EQUIPMENT 1929

By C. R. MILLS

IN view of the extreme weather conditions throughout the greater part of the Dominion during the season of 1929, it was expected that there would be some new developments in fire fighting methods and fire fighting equipment. In this, however, we are disappointed, possibly because the hazard was such that the majority of the forest services had little time to spend in the development of new ideas or at least to bring to a conclusion those ideas which may have been prompted by reason of the exceptional season.

Following is just a brief outline of the information received from the different organizations.

BRITISH COLUMBIA FOREST BRANCH.

Three-way valve.—A three-way valve was developed for use on fire-fighting hose lines instead of the Siamese usually used.

The chief claim to merit for this valve is that it is impossible to stall the fire pump by shutting off both hose lines by accidental turning of the wrong valve. No matter what the position of the shutter in the new valve, all the openings cannot be closed. Even if the shutter is turned opposite the opening from the pump, a spring behind the shutter permits the continuous flow of the water. Either or both outlets may be used at any time, but both cannot possibly be closed at once.

Radio telephony.—This service has been using for some time a system of radio telephony. During the past season, however, a different type of transmitter was developed such as would be portable and effective in lookout work, that is in detecting fires. This transmitter was assembled by one of the radio operators from materials purchasable in any radio supply store. The power used was 500 volts from ordinary 45-volt dry batteries connected in series. The set was operated on a wave length of 86.7 metres or a frequency of 3,460 kilocycles. The power absorbed by the transmitter was about 40 watts. The transmitter itself is of the valve type, operating on a modulated continuous wave. A receiver competent to tune in with this transmitter was constructed in the same way and operated in conjunction with a 300-watt station, which is the central station for the whole system.

The ordinary "Marconi Type IX" receiver was installed at the lookout point and received signals from the 300-watt station. That is, communication one way was on 194.8 metres and the other way, on 86.7 metres. The distance covered by this instrument was approximately 20 miles and loud-speaker volume could be attained from the receiving end at the short-wave set. Periodic sessions at set times were held during normal weather, but dur-

ing hazardous weather the receiver was kept in circuit with the loudspeaker at all times and the operator was on duty during practically the whole of the daylight hours. It was found at the end of the season that the original set of dry batteries was still good for considerable service.

DOMINION FOREST SERVICE.

This service has nothing new to offer, although having passed through what was the worst fire season in its experience it had impressed upon it what might almost be called axioms of forest protection. These are,—

1st—The old adage that "Prevention is better than cure."

2nd—The necessity for a greater application of the principle of concentration of effort designed to give the maximum of protection to the more valuable areas.

3rd—Organization and equipment designed to provide adequate protection for the normal year is not good enough. The whole basis of protection must be planned on the abnormal year.

4th—The necessity for proper burning regulations and the necessity of the enforcement of these by every possible means.

QUEBEC FOREST PROTECTION SERVICE.

No new developments.

QUEBEC FOREST INDUSTRIES ASSOCIATION, LIMITED.

The study by Professor L. H. Nichols commenced in 1928 was continued during the season of 1929 in connection with the meteorological and forest fire hazard conditions in the Province of Quebec.

Professor Nichols' report contains additional observations and results of studies made which have a bearing on forest fire hazard.

NEW BRUNSWICK FOREST SERVICE.

Fire Finders.—A new fire finder has been designed which is so arranged that the view of the observer is not obstructed by the corners of the lookout cabin. This instrument is not yet perfect.

ONTARIO FORESTRY BRANCH.

Radio.—A portable radio set differing somewhat from that mentioned in the report of a year ago has been designed for use on fire fighting operations or wherever communication may be required temporarily.

This set has a daylight working radius up to 50 miles under any but the most adverse conditions. The weight of the set is 65 pounds. Power is supplied by a 1½ H.P. Johnson single cylinder motor, coupled direct to a specially designed generator which supplies the current for a 7½ Watt tube. Cost of the complete equipment is approximately \$500.

The only modification necessary to the Johnson motor is a change of the

manifold connections and a special mounting for the water pump. The magneto does not interfere with the operation of the set.

Dispatcher system.—The necessity of providing a means for solving the location of fires which are sighted from one or more tower stations is obvious whenever telephone lines permit. It has been found that the best method for insuring quick action and precise location is to have all lookout towers within a district report directly to one central control,—the dispatcher. This systematizes the procedure in reporting, avoids duplication, makes one man responsible for the work instead of leaving it to many and it allows one man to become specially proficient in this work. It strengthens the suppression organization as it allows the Chief and Deputy Chief Fire Rangers to spend more time away from their headquarters and to take personal charge of more fires, as control of the suppression forces, if necessary, can be placed entirely in the hands of the dispatcher.

Protection of Repeating Coils.—The 58AP arrester combined with the 11-C 7 ampere and 60A-3 ampere fuses have been used very successfully.

Lead-in Wires on Telephone Lines.—In place of soldering the lead-in to the line wire the Northern Electric Bridge Connector may be used which eliminates the necessity of soldering on the pole and is also much quicker.

Wheel Puller.—A wheel pulling devise for use with Evinrude fire fighting pumps has been developed which pulls the fly wheel without difficulty.

Uniforms.—All Chief Fire Rangers and Fire Inspectors in Ontario were in uniform during the 1929 season. These khaki uniforms, which are supplied by the Department, are very similar to the old Royal Air Force uniform.

They give to the men a certain dignity as well as a sense of authority, which is in turn impressed upon the public in general and prove a considerable advantage to the service.