

The assistance received from the Weather Office in correlating recorded conditions at Forest Service stations with their own daily records from widely dispersed stations, in issuing broadcast warnings and special forecasts, and in the urgent establishment of mobile reporting stations linked by radio in remote areas during a period of exceptional hazard has been invaluable.

The erection of two more important lookout stations at Opango and Reporoa, on Kaingaroa State Forest, has further improved the facilities for locating fires by the resection of bearings and by direct observation. These buildings are of the standard type developed for the purpose, complete with modern detection and communication equipment. At Eyrewell State Forest the old lookout tower, which had become overtopped by the trees, has been replaced with a new 100 ft. tower giving an extensive view of the forest and surrounding country. It has already proved of great value in the early detection of fires.

The aerial fire patrol provided by the Air Department proved of inestimable value during the Taupo fire emergency in the Rotorua Conservancy, and also in the Auckland and Wellington Conservancies, to which it was extended at short notice. As a result of air observation many fires were quelled in the incipient stage, and only by the aid of this patrol and observation service was it possible to use fire-fighters and equipment to maximum effect and avoid much more serious losses than were sustained. The normal practice at Rotorua was to keep one aircraft standing by at the Rotorua Airfield, but an increase to two was made when the situation became dangerous. A total of 141 patrol flights were made from Rotorua, 90 of these taking place after the 9th February. Supplementary reconnaissance and patrol flights were also made by the Beechcraft aeroplane operated by New Zealand Aerial Mapping Services, Ltd., these flights extending over the Urewera country, Tauranga, Coromandel, and as far west as Mangapechi. A forest officer was carried as observer in nearly all cases, information being radioed to headquarters or direct to fire-fighting parties. Two mishaps occurred in landing at Taupo, but no injury was received by the crews, and substitute aircraft were made available without delay. Full use was made of the landing-strip formed at Kaingaroa. A hangar erected at Rotorua by the Forest Service for the Air Department was completed in time to permit the efficient functioning of the patrol service. From the Ohakea Airfield 7 flights were made over forest areas in the King-country and Wairarapa, providing information that could not have been obtained in any other manner. Radio contact was established with Army wireless trucks as required. The ready co-operation of the Air Department and Air Force personnel in providing these services is gratefully acknowledged.

The seventeen "Desert Mule" forest fire-engines referred to in last year's report are now completed and stationed at suitable forest locations. The successful performance of these machines during the Taupo fires has justified the development of this type of equipment, but the experience gained has necessitated certain improvements being incorporated in both existing and new machines now being built. In addition to the fire-engines, twenty-eight "Desert Mule" 800-gallon water-tankers are under construction. These machines comprise a specially designed sectional tank, with pump and suction hose capable of filling the tank from all forms of water-supply, and all parts are standardized with those of the fire-engines. The tankers have been designed to maintain a continuous supply of water to the fire-engines and can, like the fire-engines, traverse rough country. If so required, they are able to pump directly on to a fire. Nine "Desert Mule" chassis have also been acquired for development as hose-layers. E.P.S. fire-pump units have been fitted to four of them, together with the necessary hose lockers, and sufficient pumping units to equip the remainder are being obtained.

Communications at the Taupo fires functioned almost perfectly. Radio contact between land stations and land and air patrols was maintained at an effective level throughout the emergency, but valuable experience was gained and certain operating and equipment weaknesses were disclosed. As a result, new types of equipment are now being developed to give wider coverage and to allow of complete North Island control