

(1) *Alarm System.*

A consideration of the particulars given in Table III shows that twenty-eight of the fire districts, including all the cities and the larger towns, have established a fire-alarm system with street boxes. In most of the smaller towns arrangements have either been made for constant attendance on the fire-station telephone, or an electrically operated alarm bell or syren has been installed, with a distant-control switch situated in the telephone exchange. Immediately a fire call is given to the exchange attendant this switch is operated and the bell or syren sounded. It is, of course, only possible to operate this system where a twenty-four-hour telephone service is available. It is not expensive to install and is reasonably effective, since every telephone in the area becomes an alarm-point. It will be seen from Table IV that only eight of the municipal brigades have a street-alarm system. A number of the Councils have installed a syren alarm, but a considerable proportion of the brigades are still dependent on the manual operation of the fire-bell.

(2) *Brigade Turnout.*

All the cities have a staff of permanent firemen ready for service at all times, and, in addition, a reserve of auxiliary firemen available for night duty or for large daytime fires. Most of the larger towns have a nucleus of permanent firemen, and in all but three of the fire districts, and in thirty-nine out of the seventy-three municipal brigades, there are a number of volunteer firemen resident on the station at night. These resident firemen are an important factor in the efficiency of the organization, since, owing to the fact that fewer people are about, the alarms received at night are usually given at a later stage of the fire than in the case of daytime calls, and the fires are consequently more difficult to deal with. The presence of the firemen on the station ensures a minimum of delay in reaching the scene of the fire after the call is received. Many of the larger secondary towns have established a system under which at least one fire-engine crew is available on the station at all times between 7 p.m. and 7 a.m.

The "turnout" of many of the country brigades has improved greatly in recent years, and the conditions now existing are very satisfactory. At a recent surprise test alarm in one of these towns where six men were sleeping on the station the fire-engine was out of the building in 1 minute 2 seconds, and the crew had water on at the scene of the alarm, nearly half a mile distant, in 2 minutes 12 seconds. The "turnout" of the city and larger town brigades is usually well under the minute.

(3) *Water-supply.*

Most of the New Zealand towns have installed a high-pressure water-supply. Provision has been made for fire-fighting by the installation of ball hydrants at reasonably close intervals, and the mains in the business area are usually of adequate size, having regard to the nature of the supply. In a number of cases, however, the fire service is handicapped, firstly, owing to the mains in the residential areas being too small (3 in.), and, secondly, by the fact that the supply is carried from the intake or reservoir through long lengths of 6 in. to 9 in. mains. Under the conditions of heavy draw-off required for fire-fighting the greater velocity of the water causes the pressure to drop rapidly, and the nozzle pressures obtainable if more than one or two fire streams are used, are too low for dealing effectively with serious fires. Experience has also shown that in most reticulations even of the better type there are areas in the outlying districts, or in the hilly portions of the town, where the supply is insufficient to give satisfactory fire streams.

It is therefore desirable that in probably 90 per cent. of the towns the brigade should be equipped with a fire pump on the engine. This provision enables the firemen to utilize the full volume of water available at any point and to discharge it on the fire at high nozzle pressure. Apart from this use, the pump is also of very considerable value where long lengths of hose have to be used and for increasing the pressure where large streams of water are required for dealing with serious fires in the business area. Until recently the minimum cost of a fire-engine equipped with pump was about £1,200, but machines are now available fitted with a pump suitable for boosting purposes from £600 upwards, depending on the type of body required—a price which is within the financial compass of most of even the smaller towns. It is hoped that as the present motor-tenders require replacement this type of combination unit will be installed.

(4) *Equipment.*

It will be noted that all except one of the Fire Board brigades are provided with motor fire-engines, and that twenty-seven of them are at present equipped with fire-pumps. The supply of fire-hose is in practically all cases sufficient not only for the equipment of the fire-engine, but for a reserve to replace hose being cleaned and dried after use at fires or in practice. Of the municipal brigades, sixteen are equipped with hand-drawn hose-reels only, ten have motor-pumps, and the remainder are equipped with motor fire-engines. In a number of cases the supply of hose is insufficient to provide a reasonably adequate reserve.

(5) *Training.*

The personnel of the New Zealand fire brigades consists mainly of volunteers, there being only 250 permanent firemen (of whom 218 are members of city brigades), as compared with 2,215 volunteers. With very few exceptions, the standard of training is satisfactory, and, generally speaking, the training is carried out along sound lines. This is in large measure due to the activities of the United Fire Brigades' Association, and its provincial district associations. District competitions are arranged annually, and the Dominion competitions every two years, although, owing to the present financial position, no Dominion competitions have been held since 1930.