Deaths and Injuries in Fires.

The number of fatalities due to fire recorded during the year was seventeen, including no less than six children, as compared with seven for each of the last two years. The immediate causes of death were—persons trapped in burning buildings (7), clothing catching on fire from open fires, &c. (5), and the use of petrol or similar inflammable spirits inside buildings (5). The number of injuries caused by fire appears to have been lower than in most years, only twelve cases being reported which were sufficiently serious to necessitate the removal of the patient to hospital.

Fire-protection Service.

During the past few years there has been a very definite advance in the general organization and equipment, and a consequential improvement in the fire-fighting methods, of the fire brigades of New Zealand. As indicated in the comments regarding the Dominion fire losses, the opinion has been formed that this advance has been a more important factor than is generally realized in the reduction which has been achieved in the fire wastage. A careful study of the results obtained by individual brigades offers convincing evidence that the general extension of the developments which are taking place will produce results in the saving of life and property which will more than justify the cost. The principal matters to which attention is directed are—

(1) *Alarm System.*—Most of the larger towns have a street-alarm system with an attendant always on duty at the fire station. In the smaller towns the method usually adopted is the placing of a distant-control switch in the telephone exchange, by which the exchange attendant operates the alarm bell or syren. There are still a number of towns in which the arrangements for calling the brigade are defective.

(2) *Brigade Turnout.*—A considerable improvement is noticeable in the brigade response to fire calls. In even the smaller towns arrangements are now made for some of the brigade members to sleep on the station, but in many cases there is evident a weakness in the organization with respect to evening and week-end calls. In a number of the larger towns where limited permanent personnel is available arrangements have been made for a squad of volunteer or auxiliary firemen to be on duty from 7 p.m. to 7 a.m., which is the period when most severe fires occur. An extension of this system is desirable. It has been noted that with even the permanent brigades an improvement in turnout time is obtained by the use of a timing clock, which introduces a competitive factor. The average over the past twelve months for one city station operating with this device was 25·8 seconds for day time and 30·2 seconds for night calls. It is now becoming standard practice to turn out two machines to every call where they are available, unless the fire is known to be of a minor nature. This insures against breakdown or accident.

(3) *Fire-engines.*—This is the principal weakness in most brigade organizations. The great majority of the brigades are equipped with hose-tenders, which are, properly speaking, not fire-engines at all, and are effective only for the transport of personnel and equipment. For the reasons set out in last year's report the provision of fire-pumps is essential for efficiency, except in a few towns where either both the pressure and the volume of water available are exceptional or where the supply-system is operated by pumps which maintain the pressure under the heavy drawoff required in fighting fire. The modern light, high-powered trucks have now been adapted for fire-engine purposes and can be purchased complete with pump and body adapted for local requirements at a cost of £600 to £900. The motor-vehicle regulations give fire-engines the right of way and provide for the carrying of a distinguishing red light at night. Owing to the improved acceleration and braking this type of vehicle can safely be driven at an average speed of 30 m.p.h. in traffic and at considerably higher speeds when the route is clear. Their use not only improves the operating efficiency, but by reducing the running-time lessens the delay in attacking the fire and increases the effective radius of operation from the individual fire stations. Nine brigades—Wellington (2), Wanganui, Nelson, Auckland, Te Aroha, Te Awamutu, Tauranga, Wairoa, and Timaru—have been equipped with new fire-pumps during the year under review.

(4) *Smoke-protection Equipment.*—The advantages of efficient apparatus for protection against heavy smoke and toxic atmospheres have been amply demonstrated during the past few years. Its use has enabled the firemen to penetrate to the seat of the fire under conditions that would be impossible for unprotected operation, and has resulted in the extinguishing of a number of fires in their early stages which would otherwise have resulted in heavy loss. It has also been found of great service in salvaging work and in the ventilation of buildings to lessen the smoke damage. Two types of apparatus are in use, one similar to the war-time gas-mask, but fitted with a special filtering-canister for fire-brigade work, and the other a self-contained oxygen-breathing apparatus of the type used for mine rescue work. The supply of these appliances is at present confined to the city and a few of the large town brigades, and the general extension of their use is desirable both in the interests of operating efficiency and to provide protection to the firemen against the gruelling conditions experienced at the more serious fires.

(5) *Salvage Equipment.*—Most of the large brigades now carry salvaging equipment consisting of canvas sheets for covering furniture and goods against water damage, sawdust, towels, &c., to prevent the spread of water, and brooms, mops, &c., for clearing up after fires are extinguished. The use of this equipment has undoubtedly resulted in a considerable