

Breastworks and Retaining-walls. Wakefield Quay, Nelson; Punguru, Hokianga Harbour; Export Wharf, Auckland Harbour; Evans Bay, Wellington Harbour; Milford Swimming-pool, Wairau Creek Estuary; Helensville Creek, Kaipara Harbour; Pannure.

Reclamation.—Haven Road, Nelson Harbour; Punguru, Hokianga Harbour; Export Wharf, Auckland Harbour; Evans Bay, Wellington Harbour.

General.—Extension to Breakwater, Oamaru Harbour; anchorages and mooring-sites, Waipapa and Kerikeri Rivers, Bay of Islands; bridge, Narrows, Waikato River; bathing-enclosure, Motueka; filling in old bed of Waiarohia Stream, Whangarei; embankments and bridges, Western Shore, Otago Harbour; water-main, Tauranga Harbour; beacons, Davey Bank, Bluff Harbour; bridge, Whenuakite River.

ESTABLISHMENT OF AERODROMES AND LANDING-GROUNDS AND AIR-ROUTE FACILITIES.

The development of aerodromes, landing-grounds, air-route facilities, and Air Force stations has in recent years become a major national undertaking, and during the period under review considerable progress has been achieved. In particular, construction and development work in connection with the expansion of the Royal New Zealand Air Force has, as a defence measure, received special attention.

CIVIL AERODROME PROGRAMME.

In pursuance of the policy adopted some years ago, development on civil aerodromes has been concentrated to provide fields to serve the established main trunk air routes and those routes which are expected to come into operation within the next few years. However, the necessity of providing for feeder services and odd fields serving particular localities has not been lost sight of. The end of this period finds the major portion of the programme well toward completion with much improved fields now available throughout the country from all viewpoints: larger available areas, improved surface conditions and drainage, clearer flying approaches, improved wireless facilities, and more satisfactory facilities for the handling of passengers and freight.

All construction work has been undertaken by the most expeditious and economical methods, utilizing a maximum of plant, while on most of the major undertakings the work has been carried out by private contractors under the supervision of the Department and to its designs.

During the period work was proceeding on a total of twenty new fields that had not previously been in use, while major improvements or extensions were in hand on eighteen existing fields and minor improvements on other grounds. The Government was also responsible for the maintenance of twenty-three landing-grounds either as Government emergency-landing grounds or as landing-grounds in remote localities, and continued maintenance after construction on thirteen fields prior to handing over to local controlling authorities.

Radio Aids to Air Navigation and Transport.—Under the guidance of the Aeradio Committee and in co-operation with the Radio Section of the Post and Telegraph Department much progress has been made with the installation of radio facilities to assist the safe and efficient operation of air services. During the year the number of aeradio-transmitting stations was brought up to fifteen, an addition of two. Aeradio-receiving and direction-finding stations are being provided at eleven aerodromes and although at the end of the period only one station was operating, all other stations are now awaiting the installation of equipment. A radio-approach beacon, to assist blind-flying approaches under conditions of bad visibility, has been installed at Taieri Aerodrome and is being operated experimentally.

To provide for the new trans-Tasman Air Service an entirely separate aeradio system is required not only to facilitate air to ground and ground to air communication, but also communication between terminals and the fixing of aircraft position by radio-direction finding. A short-wave-direction-finding station has been provided at Awarua, Southland, and an up-to-date station is being constructed at East Tamaki Head, Auckland. At the latter station temporary provision is being made initially, and a transmitting-station, a receiving-station, a medium wave Adecock DF station and a shortwave Adecock DF are being provided. Designs for the permanent buildings are in hand and will be proceeded with later. The main receiving-station will be known as "the Musick Memorial Aeradio Station" in memory of the late Captain Musick, of Pan American Airways, who pioneered the air route from America to New Zealand.

Trans-Tasman Terminal Base Auckland.—In preparation for the commencement of the Trans-Tasman Air Service later in 1939 work was placed in hand in January, 1939, to provide an air terminal base at Mechanics Bay, Auckland, to serve the flying-boats that will be operating the service. The erection of an administration building, a workshop block, and an engine-test house were commenced and completed during the period. The assembly and installation of equipment and the placing of moorings and landing-facilities are now well forward.

A hangar of sufficient dimensions to house one of the flying-boats that will be operating the service is being provided on reclaimed ground at the R.N.Z.A.F. Depot, Hobsonville. The foundations have been placed, and erection is proceeding.

ROYAL NEW ZEALAND AIR FORCE ESTABLISHMENT.

Close co-operation has been maintained between this Department and the Air Department in the design and development of Air Force Stations. This year has again seen very extensive additions to the programme already adopted, and heavy and urgent demands have been made for designs and