

PERSONNEL

The present technical personnel to carry out this programme are—

- (a) Director, who also supervises the activities of the district office.
- (b) Four section heads—mechanical design, electronics design, physical and optical work, metallurgy.
- (c) One assistant engineer, one assistant electrical engineer, one assistant physicist, one workshop foreman.
- (d) Two draughtsmen, one tracer (who acts as librarian), one optical worker.
- (e) Two instrument-makers, two precision machinists.

WORK COMPLETED DURING THE PERIOD COVERED BY THIS REPORT

Although the branch has been in active operation for a little over six months and a considerable amount of effective time has been occupied in establishment, the results so far achieved augur well for its future. The following work has been completed during this period and is enumerated in order to give a picture of what requests have been made for assistance :—

(a) Investigation of performance of mattress-tufting machine, and readjustments of knotting mechanism—a mechanical engineering problem.

(b) The design and prototype production of an automatic 150-ton press for tabletting of dehydrated vegetables. This press preheats and forms six rectangular “briquettes” of dehydrated carrot or cabbage per stroke, thereby saving up to 85 per cent. in shipping-space. It has a fully automatic cycle and is capable of producing 2,880 briquettes per normal working-day. Trial runs have been completed with satisfactory results.

(c) Design of a tablet-counting machine and a fish-liver disintegrator used in the production of fish-liver oil vitamin products, the manufacture of this equipment being carried out by local engineering firms.

(d) Assistance in obtaining a satisfactory bronzing process for high-quality builders’ hardware.

(e) Assistance in developing a high-efficiency heating-element for use in domestic appliances.

(f) Reports on the acoustic properties of a clothing-factory and the lighting of a office (in conjunction with the Industrial Psychology Division).

(g) The design and production of soil-testing equipment for the Soil Laboratory recently installed by the Auckland City Council at the site of the new earth dam at lower Nihotupu.

(h) The design and production of condenser lenses for local theatres.

(i) Upwards of one hundred precision tools, gauges, or components requiring thread grinding, form relieving, or profile grinding. Here it is our particular service to make the special machines held at the Dominion Physical Laboratory available to the Auckland manufacturers, as it is recognized by most manufacturers to be not economic in New Zealand for even large firms to possess this equipment and the scientific apparatus necessary for its control.

(j) Upwards of one hundred and sixty high-speed steel tools for heat treatment by the salt-bath method.

(k) Optical components for Navy. Some eighty components, including binocular prisms, doublet lenses, aluminized mirrors, and special graticules have been produced for Navy. We have usually been supplied with the broken pieces of a lens and have had to recalculate to obtain identical performance with the particular optical glass available.

(l) Repair and recalibration of precision electrical equipment. About twenty instruments have been handled in this section, including four pH meters of various types. This section cannot be regarded as being on a satisfactory basis until our substandards and auxiliary equipment come to hand.

(m) Several jobs entailing the use of a portable magnetic crack-detector, the most important of these being a report on the magnitude and extent of cracks in a cylindrical Navy boiler.