



TOP: This F.M. Receiver Tester TF 913 (top instrument) is being checked by John Harrison, Test Maintenance, who is using a CR 100 Communications Receiver and the Deviation Test Unit PTF 221. The 'carrier disappearance' is shown on the cathode ray tube of the PTF 221

ABOVE: Dennis Brown, Calibration, standardising a TF 1066 F.M./A.M. Signal Generator, one of the new M.I. instruments. The M.I. test gear he is using comprises a Decade Attenuator, a Beat Frequency Oscillator, and two types of Crystal Calibrators

RIGHT: Len Groves, Chief of Test Maintenance, and Ken Sturgess carrying out the test procedures on a Precision Frequency Measuring Equipment TME 2, prior to its installation in Calibration Section. Len has been twenty-two years with the organisation

EXTREME RIGHT: Ken Kapota, Standards Room, checking a PTF 136 by means of a Vernier Potentiometer. The PTF 136, made by Test Maintenance, is used generally in the testing of pH meters and measures millivolts with great accuracy

## NO ROOM FOR ERROR

WHERE possible, the normal range of equipment manufactured by Marconi Instruments is used as a standard in testing and calibrating M.I. products. But in many cases, specialised apparatus is essential. This is where Test Maintenance comes into the picture.

This section has the job of designing and making specialised equipment to the specification issued by R. W. Darvill, Chief of Test. It acts as a compact unit capable of carrying out all operations from machining to the assembly and electrical wiring of components. In many cases, Test Maintenance handles 'one off' of an instrument, but batch production is sometimes necessary—nine new



insulation testers have recently been produced—and then the section draws on resources of Machine Shop and Assembly, after the prototype has been thoroughly tested.

In addition to the supply of new equipment, Test Maintenance is responsible for the repair and reconditioning of all test gear used by Assembly, Calibration, Final Test, Design, Development, and Winding Test. In Calibration alone there are over seven hundred items of test equipment, ranging from the TME 2 Precision Frequency Measuring Equipment (and we mean *precision*, for it has an accuracy of one part in a hundred million) down to small test jigs in which Modulation Transformers are adjusted before impregnation and assembly. Incidentally, these test jigs are exact replicas of the circuit in which the component to be adjusted will work. Test Maintenance also sees to the checking of proprietary equipments before

they are put into service on production testing. Equipment for repair is sent through from the section concerned, and the Faulty Apparatus label may contain such laconic information as 'No Output'. In all cases, the unit is thoroughly overhauled and returned as good as new.

What happens to new equipment after it leaves Test Maintenance? 'No room for error' is the watch-word, so it is sent to the Standards Room, where it is put on trial. Eventually, a Standards Certificate is issued, one copy of which is kept in the Standards Room, the other accompanying the instrument to the section concerned, where it is kept in Test Gear Store and may be referred to at any time by the operator.

Test Maintenance, then, is one of the links in the chain which deals with the test equipment which tests the test equipment. It's not a Chinese puzzle, but an exhaustive system which ensures complete reliability.

