ELECTRICAL AND MECHANICAL
ENGINEERING REGULATIONS
(By Command of the Army Council)

TELECOMMUNICATIONS
~~Z 451~~/2

OSCILLATOR, TEST, NO. 2

TECHNICAL HANDBOOK - OPERATOR'S INSTRUCTIONS

GENERAL

1. The Oscillator, test, No. 2 provides an R.F. output over the frequency band 20-80Mc/s in two ranges, 20-40Mc/s and 40-80Mc/s. The output, which can be varied in 2db steps from 1μV to 100mV, may be C.W., A.M., or F.M. For A.M. the modulation is pre-set to approximately 30% at 1kc/s, and for F.M. the deviation may be varied up to 40kc/s. In addition, the A.M. tone is available at separate terminals for checking A.F. circuits.

2. The instrument may be operated from a 12V battery or from A.C. mains, which may be 100, 115, 120, 220, 230 or 240V, 45-66c/s. To allow for this range of mains supply voltages tappings are provided on the transformer; adjustment of the tapping point involves opening up the instrument, making the adjustment (Fig 2) and re-sealing the case. After any such adjustment, the mains voltage indicator on the right-hand side of the lower front panel flange must be similarly changed. Spare fuses are carried in the lid and to change a fuse the instrument must be opened and re-sealed. Note: The opening of the instrument must not be carried out unless a drying equipment, such as Apparatus drying, telecommunications, is available.

PRELIMINARY

3. Connect the instrument to the supply, using the appropriate lead. Plug in the R.F. lead to the oscillator and connect via the terminating unit to the equipment under test. The leads from the terminating unit should be as short as possible. Use the termination (either 75Ω or 7.5Ω)appropriate to the equipment under test, remembering that with the 7.5Ω termination the output is reduced to approximately one tenth of the indicated value.

4. Switch on the oscillator by setting the system switch to the required setting. Allow about 10 minutes for the set to warm up.

A.M. operation.

5. Put the system switch to A.M. Set the TUNING control and the range switch to the required frequency. Put the MOD/CAR switch to MOD and set the meter to read CAL by means of the SET MOD control. Now put the MOD/CAR switch to CAR and by means of the SET CAR control set the meter to the CAL position. Put the MOD/CAR switch back to MOD and check that the meter still reads CAL. Re-adjust SET MOD if necessary.

6. The oscillator can now be used for normal tests on the equipment. The coarse attenuator will vary the output in 20db steps and the fine attenuator will vary the output in 2db steps, although the latter is marked in μV and the former is marked as a multiplier, from X1 to X10,000.

7. For signal-to-noise ratio tests the system switch has a position H.T. OFF. This removes the H.T. from the instrument, while keeping the heaters on and hence the oscillator is immediately available for use.

F.M. operation

8. Put the system switch to F.M. and repeat the procedure of para 5. The deviation can be varied as necessary by means of the DEVIATION kc/s control. This control indicates actual deviation, irrespective of the settings of TUNING and range controls.

C.W. operation

9. Put the system switch to C.W. and with the MOD/CAR switch to CAR, use the SET CAR control to set the meter to CAL. For quieting tests the H.T. OFF position of the system switch may be used.

A.F. output

10. A source of A.F. at 1kc/s is available across the MOD TONE terminals. The output voltage can be varied to some extent by the SET MOD control and has a maximum value of about 30V in 50,000Ω. The load on these terminals should not be less than 600Ω.

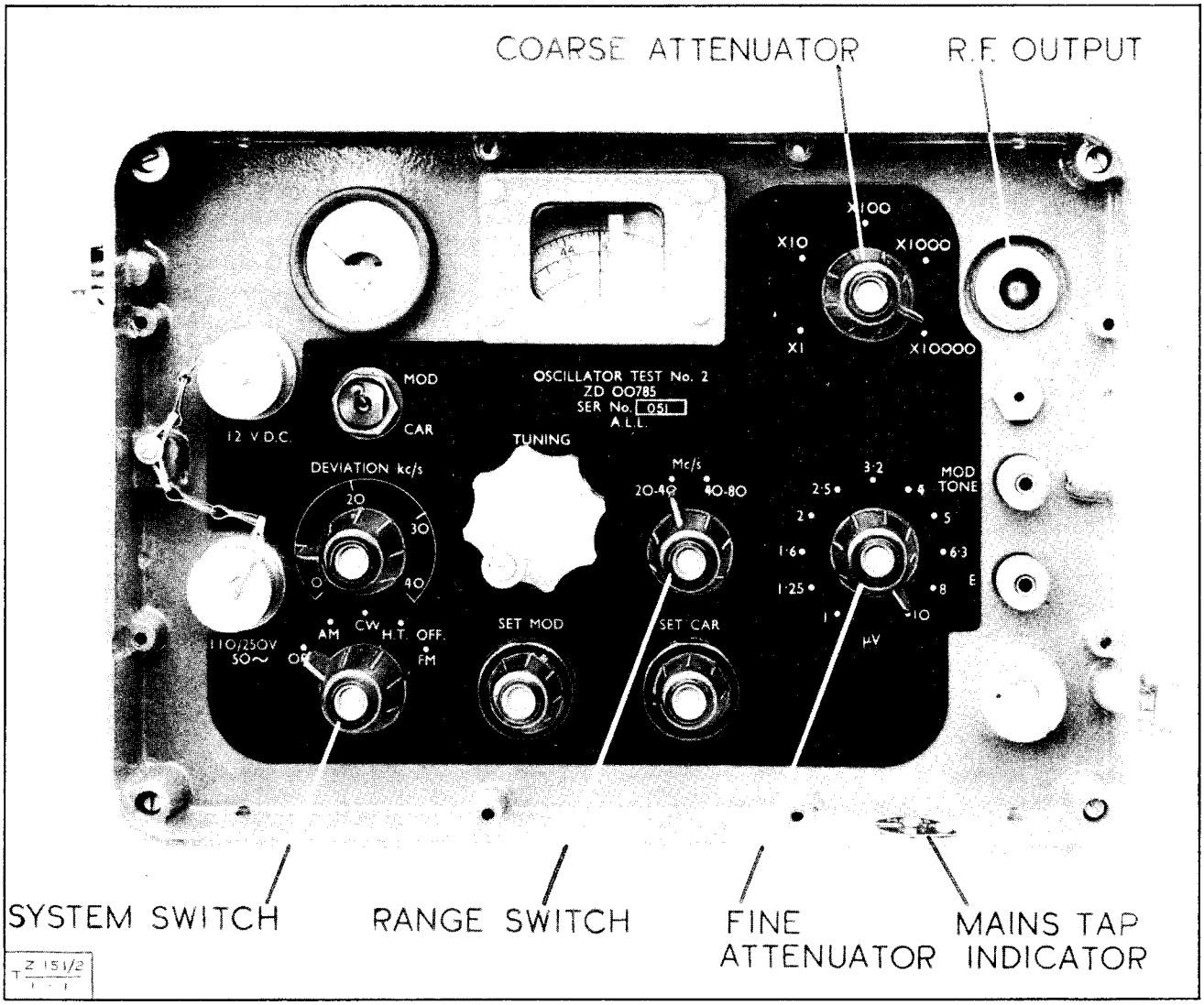
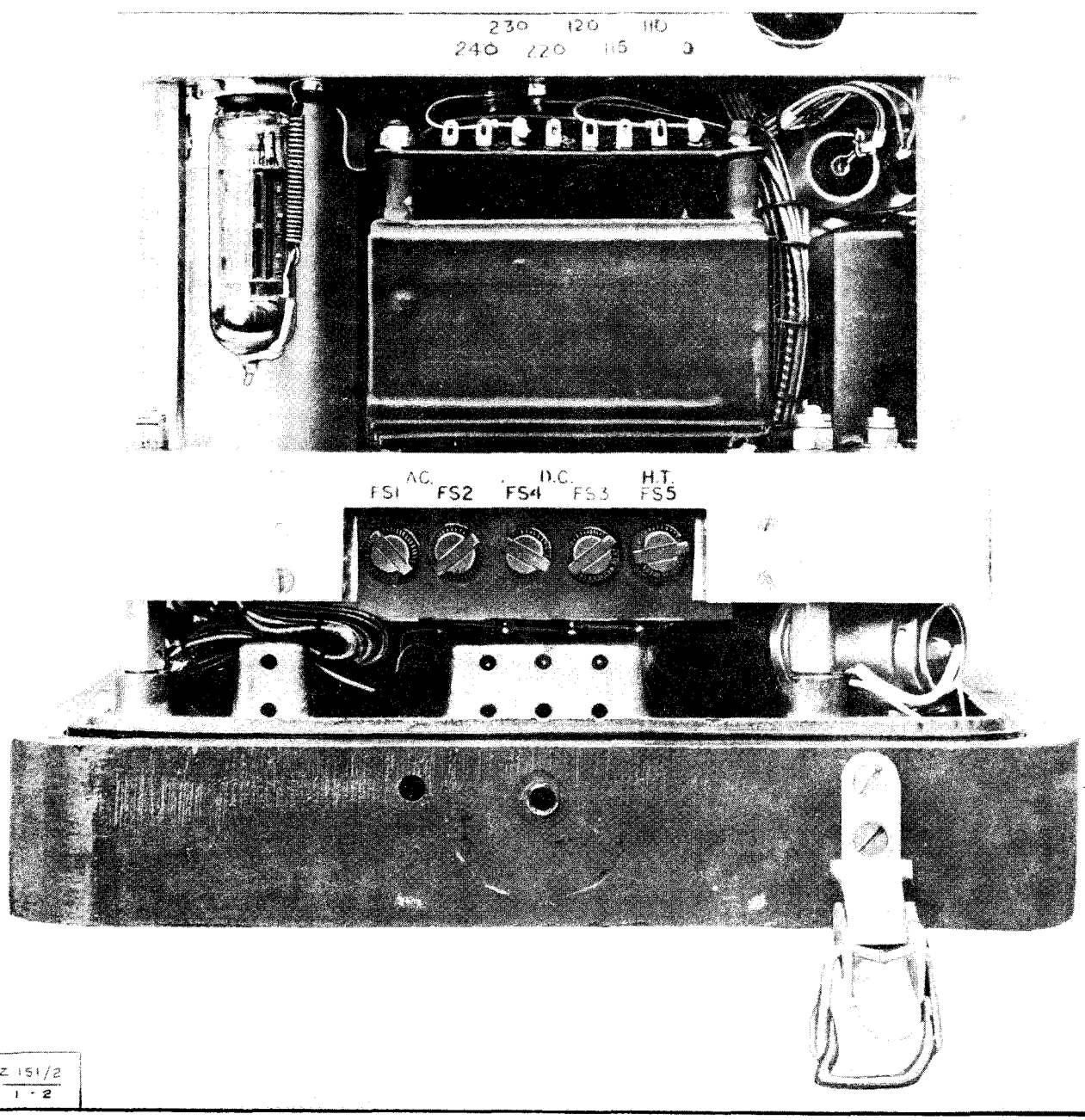


Fig 1 - Controls - front panel layout



57/Maint/2678 Fig 2 - Mains transformer, voltage adjustment

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