

If the worst error reads above the scale reading, set the KHz drum to read 150 plus twice the error with tuning capacitor fully closed.

(e.g. If calibrated KHz drum reads 510 KHz for 500 KHz, reset KHz drum to read 130 KHz).

8. Reset oscillator alignment and re-peak R.F. stages.

**NOTE:** The KHz calibration should be checked against a stable crystal controlled generator having harmonics at 100 KHz intervals. The errors in this scale should not be greater than  $\pm 5$  KHz.

#### ALIGNMENT OF 42,5 MHz HARMONIC AMPLIFIER

1. Connect a D.C. 300 mV meter via 4 K7 between TP2 and chassis (R65 - C92 - D5).
2. Connect a 42,5 MHz signal from a crystal controlled oscillator source to the first 42,5 MHz coil (L4 - TP1) via a 1K isolation resistor, and peak L4, L8, L9, L12 and L13 for maximum output as indicated on 300 mV meter. This tuning is accomplished by compressing or expanding the coils with a non-metallic alignment tool. Ensure that output level of oscillator is low enough to detect peak. The bandpass should be approximately 300 KHz.

**NOTE:** If a reading is observed on the 300 mV meter without excitation from the signal generator, it should be attributed to one of the harmonics from the harmonic generator breaking through after mixing has taken place at the balanced mixer (D2, D3). This breakthrough will take place at every whole megahertz point on the MHz dial when alignment is completed, and can be easily removed by a slight rotation of the megahertz dial. The same breakthrough may be used as a sensitivity check of the 42,5 MHz amplifier, and should produce a reading of approximately 90 mV at the 3rd mixer, provided that the output from the harmonic generator is normal.

#### ALIGNMENT OF 45 MHz 1ST I.F.

1. Connect the D.C. 300 mV meter to TP2 as for 42,5 MHz alignment.
2. Connect a 45 MHz signal from a crystal controlled source to TP4, and peak L5, L7, L14 and L15, by compressing or expanding coils, taking care not to alter the coupling between pairs, which has been Factory preset. Overcoupling between pairs will result in a noticeable trough in the bandpass shape. (Bandpass approximately 1,3 MHz).
3. Check bandpass response by sweeping with variable generator, and re-peak if necessary until bandpass response conforms as closely as possible to that shown in fig. 2 of the circuit diagram.

#### ALIGNMENT OF FIRST OSCILLATOR

(Should be carried out with front panel on)

1. Loosen the grub screws holding the thumbwheel and the calibrated MHz drum on the two ganged capacitor shaft.
2. Set tuning capacitor fully open.
3. Set MHz drum to read 0 MHz and tighten grub screws.
4. Reset thumbwheel for equal overtravel at ends of scale.
5. Connect RF signal generator to base of RF stage (TR5) via a blocking capacitor, and use built in AVC meter to tune for maximum deflection.
6. Set KHz drum to read 500 KHz.
7. Use R.F. signal generator at two alignment points (1,5 MHz and 28,5 MHz) and set up oscillator circuit by adjusting L3 at the 1,5 MHz end of the scale, and C32 at the 28,5 MHz end of the scale.

**NOTE:** Calibration of the intermediate positions of this scale has been corrected at the Factory to be within 1,5 mm (1/16 inch) of the dial scale readings. Further bending of the tuning capacitor plates to correct calibration is not recommended and should difficulty arise due to maladjustment or damage it is advisable to contact the authorised service agents.

#### HARMONIC GENERATOR

1. Tune receiver to known time signal, e.g. 5 MHz or 10 MHz or alternatively to any other accurate whole MHz frequency source, e.g. 2 MHz, 3 MHz, 4 MHz, etc.
2. Adjust trimmer C6 to produce zero beat in AF amplifier.