Now switch to LSB, and, if zero beat is not obtained, adjust the link on L28, which is accessible through a hole in the side of the VFO, for zero beat. Re-check for zero beat on USB and then LSB, adjusting main VFO tuning on USB and the link on LSB, until zero beat is obtained in both positions.

Adjustment of wide-band coupler

Tune the receiver to 3.6MHz and inject a signal at 3.6MHz into the aerial socket.

2. Connect the swamping tool between pin 4 of IFT2 and chassis (see Fig. 3 for location of IFT2). Adjust lower core of IFT2 for peak on S-meter, reducing input signal if necessary to keep reading below S5. *SWITCH OFF KW2000.*
3. Connect swamping tool between pin 6 of IFT2 and chassis. Switch rig back on, and adjust upper core of IFT2 for peak on S-meter. *SWITCH OFF.*
3. Connect swamping tool between pin 4 of IFT3 and chassis. Switch on, and adjust lower core of IFT3 for S-meter peak. *SWITCH OFF.*
4. Connect swamping tool between pin 6 of IFT3 and chassis. Switch on, and adjust upper core of IFT3 for S-meter peak. *SWITCH OFF.*
5. Repeat steps 1-4 in that order until no further improvement can be obtained.

NB It is important to switch off between steps in the above procedure as there is 250 volts HT on some of the IFT pins mentioned above!

Receiver front – end alignment

The following points should be remembered when aligning the front-end:-

1. As the receiver comes into alignment the input signal should be reduced to keep the S-meter reading below S5. For the final 'touch-up' below S3 is preferable.
2. Use acetone to free the cores of the inductances without formers. After freeing, allow at least half an hour for the coils to dry out before commencing alignment.
3. Set pre-selector control to just short of the LF edge of the appropriate band marking on the front panel, except on 160m, where it should be set to the centre of the band segments.
4. **Table 1** gives the sequence of adjustments to be followed, and **Fig. 4** shows the position of the various tuned circuits. Always tune to the first peak arrived at by screwing the tuning core into the coil, ie. nearest the top of the coil former for the upper core; nearest the lower edge of the former for lower cores.

Alignment of IF trap

Set KW2000 to 3.5MHz and inject a low level 3.5MHz at the aerial socket. Set RF gain to maximum AF gain midway, and tune the pre-selector for maximum signal. Now remove the 3.5MHz signal and inject a 3.155MHz signal to the aerial socket; tune L19 for *minimum* signal.

An alternative method, which can be used if no signal generator is available, is to set the controls as above and connect the rig to an aerial. If the pre-selector is rotated clockwise from the 80 meter peak and the VFO is tuned HF by a few kHz non-amateur signals should be heard. Having tuned to such a signal, adjust L19 for minimum signal level. Note that L19 is on the same former as L1, but is the upper core whereas L1 is the lower. After tuning L19, retune rig to 3.5MHz and retune L1 and L6 for maximum signal.

4.190MHz trap

Set KW2000 as above except for the frequency which should be 3.8MHz. Inject 4.190MHz to aerial socket of rig. Move VFO back and forth a little to locate the signal and adjust L29 for minimum signal on S-meter.

Transmitter alignment

The transmit and receive alignment have deliberately been separated since it has been found easier to get the receiver going first. When adjusting the transmitter alignment it is important that, prior to aligning the driver stage tuning, the pre-selector control is peaked for optimum on *receive* and is then left untouched whilst the PA grid circuit and the neturalising are adjusted.

The rig should be set up as shown in **Fig. 6** and switched to TUNE. The MIC GAIN should then be set to give a PA current of 50mA or less, and the PA tuned for maximum output into the dummy load. The PA grid coil is then adjusted for maximum PA current, reducing the MIC GAIN as necessary to keep the PA current below 100mA. After this, the neutralisation is checked, and the PA grid circuit readjusted if it has been necessary to alter the neutralisation setting, since this will affect the tuning of the grid circuit. Neutralisation adjustment is not necessary on 7, 8.5, and 1.8MHz. **Table 2** gives the sequence of adjustments, and **Fig. 4** shows the position of the components concerned.

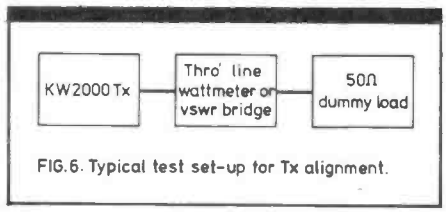

FIG.6. Typical test set-up for Tx alignment.

After alignment has been completed and before re-locking the cores in the various tuned circuits, it is as well to re-check the transceiver performance by giving it an on air check. The following should be noted:

General receive performance
Transmitter drive
The transmitter should not have any signs of instability or poor neutralisation.

It is also important to note that the setting of the pre-selector for optimum receive performance should coincide with that giving maximum transmitter drive.

HF crystal oscillator alignment

The tuned circuits associated with the HF crystal oscillator are very stable even over a period of years, and hence very rarely require adjustment. However, if alignment is required, procede as follows:-

1. Connect an RF milivoltmeter to