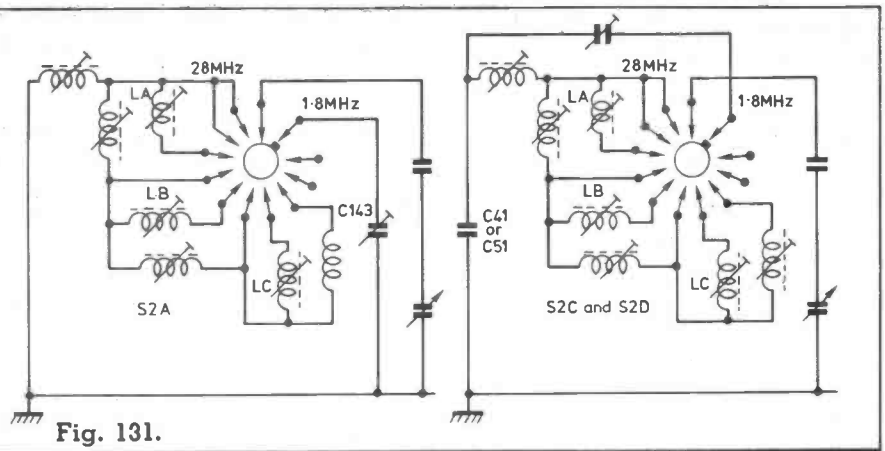

Fig. 131.

route additional leads to the pi-tank coil using PTFE covered copper wire as in **Fig. 133.** It is as well at this point to check the condition of the existing wiring to the PA coil, since we found that in some cases it had deteriorated to such an extent that the insulation actually fell from the wires when touched! At G3TNO it was found easier to carry out the above modification by first removing the sections of shaft coupling the bandswitch wafers to the front panel indexing mechanism and then, with great care, to remove each wafer in turn from the transceiver, so that it could be modified on the bench instead of in situ. Care should be taken when re-installing the wafers to make sure that the wipers of all switch sections are correctly aligned before refitting the shaft.

The wiring changes to the bandswitch will, of course, alter what this switch does in practice, so **Table 100** lists the old and new (ie. modified) band positions.

After carrying out the modifications, or any part of them, a complete re-alignment of the front end is needed as per the instructions in **Part 3** of this series. In addition, the new bands will need to be aligned. Ideally, the equipment used for this should consist of:—

1. Signal generator with *accurate* frequency calibration.
2. RF millivoltmeter with high impedance input.
3. General coverage receiver.
4. RF wattmeter/dummy load.
5. Absorption wavemeter.

Alignment of the new bands

This should be carried out *after* the complete procedure for alignment given in Part 3 has been performed.

1. HF oscillator: Select the 24MHz band and remove the crystal for that band. Connect the RF millivoltmeter to pin 1 of V9 and the signal generator to pin 1 of V10 (HF osc). Set the signal generator to 27.955MHz and adjust the core of L_D (additional coil mounted on S2H) for maximum reading on the millivoltmeter, making sure that the core is not screwed fully in or fully out. Reduce the signal generator output so that the millivoltmeter reading does not exceed 500 MV. and re-check the setting of L_D, again adjusting for maximum reading.

Next select the 18 MHz band and repeat the above procedure, this time setting the signal generator to 21.155MHz and adjusting L_E for maximum millivoltmeter reading as before. Finally select 10 MHz, set the generator to 13.155MHz and adjust L_F for maximum reading.

If you do not have, and cannot borrow a high impedance RF millivoltmeter it is possible, with great care, to align the HF oscillator using a general coverage receiver tuned to the frequencies listed above. The receiver should be coupled lightly to the HF oscillator as in **Part 2** of this series, using a piece of wire wrapped around the glass envelope of V10, and L_D, L_E and L_F should be adjusted

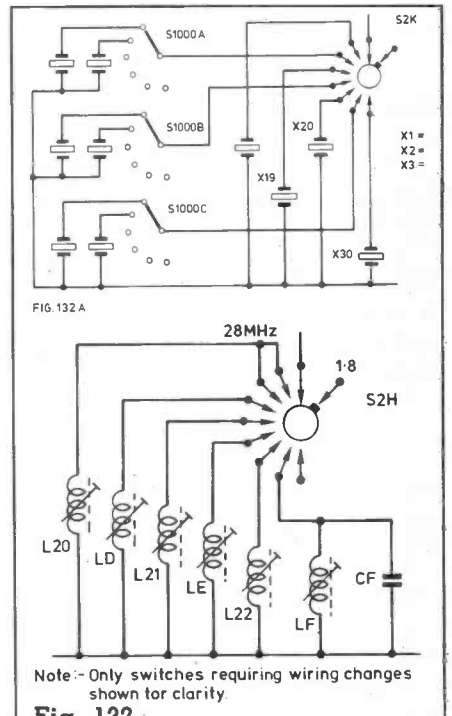

Fig. 132.

on the appropriate bands for maximum signal. If you do not have access to a decent signal generator (or worse still any at all!), it is possible to align L_D-L_F by using the

Table 100

Band select positions before modification	Band select positions after modification
28.6-28.8MHz	29.4-29.6 (OSCAR DOWNLINK)
28.4-28.6MHz	28-30MHz (Depends on settings of S1000 and XTALS CHOSEN)
28.0-28.2MHz	24MHz band
21.3-21.5MHz	21.0-21.5MHz (Depends on settings of S1000 and XTALS CHOSEN)
21.0-21.2MHz	18MHz band
14.2-14.4MHz	14-16MHz (Depends on settings of S1000) Note XTALLED FOR 14.0-14.6 and 15.6-16. For use with 144MHz transverter
14.0-14.2MHz	10.0-10.2MHz

All other switch positions remain unchanged