

## HIGH-FREQUENCY OSCILLATOR, RF AND MIXER STAGES ALIGNMENT

| STEP              | BAND-<br>SWITCH | RECEIVER<br>AND SIGNAL<br>GENERATOR | ADJUST FOR<br>MAXIMUM*          |
|-------------------|-----------------|-------------------------------------|---------------------------------|
| 1. (Oscillator)   | A               | 1.65 mc<br>.55 mc                   | C-16A<br>L-1                    |
| REPEAT STEP 1     |                 |                                     |                                 |
| 2. (Mixer and RF) | A               | 1.4 mc<br>.6 mc                     | C-12A then C-3<br>L-9 then L-5  |
| REPEAT STEP 2     |                 |                                     |                                 |
| 3. (Oscillator)   | B               | 4.6 mc<br>1.6 mc                    | C-16B<br>Check for image<br>L-2 |
| REPEAT STEP 3     |                 |                                     |                                 |
| 4. (Mixer and RF) | B               | 3.9 mc<br>1.75 mc                   | C-12B then C-3<br>L-10 then L-6 |
| REPEAT STEP 4     |                 |                                     |                                 |
| 5. (Oscillator)   | C               | 12.4 mc<br>4.4 mc                   | C-16C<br>Check for image<br>L-3 |
| REPEAT STEP 5     |                 |                                     |                                 |
| 6. (Mixer and RF) | C               | 10.4 mc<br>4.7 mc                   | C-12C then C-3<br>L-11 then L-7 |
| REPEAT STEP 6     |                 |                                     |                                 |
| 7. (Oscillator)   | D               | 30.0 mc<br>12.0 mc                  | C-16D<br>Check for image<br>L-4 |
| REPEAT STEP 7     |                 |                                     |                                 |
| 8. (Mixer and RF) | D               | 27.0 mc<br>13.0 mc                  | C-12D then C-3<br>L-12 then L-8 |
| REPEAT STEP 8     |                 |                                     |                                 |

\*If you have disturbed the pre-aligned setting of the slug of any of the coils, L-1 through L-12, proceed as follows:

Turn the slug counterclockwise until it is level with the top of the coil. Now turn the slug clockwise until you reach a maximum (1st maximum). Turning the slug still further clockwise you will reach another maximum (2nd maximum).

Coils L-1, L-2, L-3, L-6, L-9, L-10, and L-12 should be aligned on their first maximum, while coils L-4, L-5, L-7, L-8, and L-11 should be aligned on their second maximum.

It may help to know the original positions of the slugs in the pre-aligned coils. Approximate depths, measured from the top of the slugs to the top of the coil forms are: 3/16" (L-1, L-6); 7/16" (L-3, L-7); 1/4" (L-2); 5/8" (L-4, L-8); 5/16" (L-5, L-9, L-10, L-12); 3/4" (L-11).

**DO NOT INTERCHANGE THE SLUGS OF ANY COIL.**

## BFO ALIGNMENT

Use the same setup as for RF and Mixer alignment, except control settings that are changed in the following steps.

☒ Turn the A-B-BAND-C-D switch to "C" position. Set the receiver dial near 6 mc, selecting a point at which no station is heard. Set the generator for 6 mc modulated output and tune the generator for a maximum meter reading at the receiver.

☒ Turn the modulation off at the generator. Turn the BFO-MVC-AVC-ANL switch to BFO position.

☒ Set the BFO control in a midway position (white dot pointing to the middle reference line).

☐ Adjust the BFO coil, L-15, for zero beat using the IF alignment tool supplied.

You will be approaching zero beat when you hear a change in tone, going from a high to low pitch. Continue adjusting the coil, until you reach a zero point of no sound.

☒ Now turn the BFO control to either side of the center setting. The tone should vary in pitch, from low to high, on either side of center setting. BFO alignment is now complete.

## Q-MULTIPLIER ALIGNMENT

☒ Same as for BFO alignment, except control settings:

BFO-MVC-AVC-ANL

AVC position

A-B-BAND-C-D

A position

QX SELECTIVITY

Midway position

QX TUNE

Midway position (red pointer straight up)

☒ Set the MAIN TUNING dial near 1000 kc, selecting a point at which no station is heard. Set the generator for 1000 kc modulated output and tune the generator for a maximum meter reading at the receiver.

☒ Turn the PEAK-OFF-NULL switch to PEAK position. Now adjust L-14, the Q-Multiplier coil for maximum meter reading at the receiver. The PEAK circuit of the Q-Multiplier is now aligned.

☒ Switch the modulation off at the signal generator.

☐ Adjust R-25, the QX Null control, to half-way position.

☒ Turn the PEAK-OFF-NULL switch to NULL position. Note: The meter reading at the receiver will decrease.

☒ Slightly "rock" the QX TUNE control, to the right and then to the left of center setting, until you get the greatest meter "dip" at the receiver. Increase signal generator output during this procedure, to maintain a useable meter reading at the receiver.

☒ Turn R-25 very slowly counterclockwise, increasing the dip, until the lowest meter reading is reached.

☐ Repeat the last two steps until the greatest possible dip at the receiver meter has been achieved. The NULL circuit of the Q-Multiplier is now aligned.

☒ Install the receiver in the cabinet. Use six 6-32 x 5/16" screws.