TRADE NAME  Collins Model 51J-3
MANUFACTURER Collins Radio Co., Cedar Rapids, Iowa
TYPE SET  AC Operated Multi-Bna AD Superheterodyne Communication Receiver
TUBES  Eighteen
POWER SUPPLY  110-120, 220-240 Volts 45 to 75 Cycles  RATING .82 Amp. at 117 Volts AC
TUNING RANGE  500KC - 30.5MC
ALIGNMENT INSTRUCTIONS

**ADJUSTMENT INSTRUCTIONS - READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT**

Alignment of this equipment should be attempted only by authorized and competent service personnel with proper test facilities.

Allow a 15 minutes warm-up period for receiver and test equipment.

The following test equipment and alignment tools should be used:

a. 500KC in 30.5MC signal generator
b. DC vacuum tube voltmeter and oscilloscope
c. Two fiber or bakelite aligning tools having diameters of 1/8” and 5/16” and using screwdrivers type bits.

d. Preset CAL course frequency trimmer at mid-capacity front panel screwdriver adjustment (location to left of zero ADJ knob)
e. Use a secondary frequency standard and adjust ADJ 1 to calibrate the 100KC crystal oscillator.

Set AVC to “on” position and calibrate to “off” position.

Note: The calibration oscillator may be used if a signal generator is not available. Set calibrate to “on” position and follow procedure outlined below. Using the "Kilocycle Knob" tune receiver to each alignment frequency until a peak reading is obtained on the input meter. Make the indicated adjustments but use the "input meter" on panel to indicate maximum readings.

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<th>SIGNAL GENERATOR COUPLING</th>
<th>SIGNAL GENERATOR FREQUENCY</th>
<th>BAND SWITCH POS.</th>
<th>BAND SWITCH SETTING</th>
<th>CONNECT VTVM</th>
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<tbody>
<tr>
<td>1</td>
<td>2MMF</td>
<td>High side to pin 1 (grid) of 6AK5 (v1). Low side to chassis.</td>
<td>29.5MC (Unmod)</td>
<td>30</td>
<td>29.5MC</td>
<td>A3</td>
<td>Preset A2 to MINIMUM capacitance. Adjust for maximum deflection if less than 2 volts is obtained at VTVM. If more than 2 volts deflection is obtained re-adjust (decrease toward MINIMUM capacitance) until 2 volts deflection is obtained.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>27.5MC</td>
<td></td>
<td></td>
<td>A4</td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td></td>
<td></td>
<td>25.5MC</td>
<td></td>
<td></td>
<td>A5</td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td></td>
<td></td>
<td>23.5MC</td>
<td></td>
<td></td>
<td>A6</td>
<td></td>
<td></td>
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<tr>
<td>5</td>
<td></td>
<td></td>
<td>21.5MC</td>
<td></td>
<td></td>
<td>A7</td>
<td></td>
<td></td>
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<tr>
<td>6</td>
<td></td>
<td></td>
<td>19.5MC</td>
<td></td>
<td></td>
<td>A8</td>
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<td>7</td>
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<td>17.5MC</td>
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<td>A9</td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td></td>
<td></td>
<td>15.5MC</td>
<td></td>
<td></td>
<td>A10</td>
<td></td>
<td></td>
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<tr>
<td>9</td>
<td></td>
<td></td>
<td>13.5MC</td>
<td></td>
<td></td>
<td>A11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td>1.5MC</td>
<td></td>
<td></td>
<td>A12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td>DC probe thru 470K to pin 7 (grid 3) of 6B66 (V2). Common to chassis.</td>
<td></td>
<td></td>
<td>A13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CONNECT THE GENERATOR TO PIN 7 (GRID 3) OF V5. CONNECT A CLIP LEAD TO THE LOW SIDE OF C52 (OUTPUT OF CRYSTAL OSCILLATOR). HOLD OTHER END OF CLIP LEAD NEAR GRID OF V5. SET CALIBRATION TO "ON" POSITION AND ZERO BEAT SIGNAL GENERATOR TO 500KC. SET CALIBRATION TO "OFF" POSITION. SET SELECTIVITY TO "0" POSITION. ATTENUATE GENERATOR OUTPUT TO MAINTAIN NOT MORE THAN 3 VOLTS OF VTVM.

In step 19 the VFO pitch oscillator is aligned using a signal generator. An alternate method of alignment without a signal generator is as follows:

a. Disconnect antenna. Turn calibrate and BFO to "on" positions.

b. Tune to a 100KC check point on bands 2 or 3. For example, Tune receiver to 2.0MC.

c. If the "BFO Pitch" knob has never been removed from the shaft, rotate the knob until the line on the knob lines up with the line on the panel. If the knob has ever been removed from the shaft, adjust A1 to produce a best note. Turn BFO pitch knob to right or left of the panel mark until the beat note reaches maximum pitch. The BFO pitch capacitor plates are now fully closed or open. Loose set screws on BFO pitch knob and turn knob until line on knob is 90 degrees from panel mark. Tighten set screws and align mark on knob with mark on panel. The BFO pitch is now at midpoint.

d. Tune receiver 10KC off of any 0.1KC point on bands 2 or 3 and advance AUDIO GAIN until a constant pitch beat note is heard. If the constant pitch beat note is not available, adjust A21 until it is. If there is no constant pitch beat note and note whether the pitch of the note remains constant. This constant pitch beat note (on bands 2 and 3 only) is the result of 6th harmonic from 100KC oscillator that looks into the IF strip and bears the signal from the BFO. Due to the greater strength of the calibration beat note near 100KC check point, this constant pitch beat note is more audible mid-way between check points.

If the BFO pitch knob has never been removed from the shaft, align the BFO as follows: Turn BFO to "on" position. Adjust A21 to produce a best note. Set BFO pitch knob so that mark on knob coincides with mark on cabinet, then turn knob either to right or left of panel mark until a point where maximum pitch is obtained. The BFO pitch capacitor are now either fully open or fully closed. Loose set screws and BFO pitch knob and turn knob until mark on knob is 90 degrees from panel mark. Tighten set screws. Turn knob so that mark coincides with mark on panel. Adjust A21 for zero beat.

To align L25 use scope and FM signal generator having a sweep rate of 4 cycle per second, a frequency excursion of approximately 20KC and a Carrier frequency between 1.5 and 3.5MC.

Set the mark on the phasing control knob to coincide with mark on panel. Set the phasing capacitor to its mid-range as follows: Lock into right hand hole in top of crystal filter cover (use flash light) in order to see phasing capacitor plates. Rotate phasing control until rotor plates completely mesh with the rotor plates. Loosen set screws in phasing control knob and turn knob so that is 90 degrees to the left of the panel mark. Tighten set screws and rotate knob until marks coincide the phasing capacitor is now at its mid-range position.

Switch Selectivity position 1"5. Turn AVC Limiter, BFO and Calibrate to "off" positions.
21. (IMDD) High side to pin 7 (grid 3) of 68616, Low side to chassis. 2.5MC (20KC Loop) 2 See Remarke. Vert. Amp. to input (+) for proper operation of generator. Low side to chassis.

A2Z Turn RF gain to mid-range and synchronize scope. If two symmetrical peaks (each peak is an IF frequency curve) do not appear on scope, adjust receiver tuning, RF gain and scope controls until they do. Turning phasing control to left should cause reseaction notch to appear at one side of each peak. If notch does not appear set phasing control approximately 1/8 turn to left of zero point and adjust A27 until wall defined notch appears on scope pattern. Adjust untill no evidence of damped oscillations remains. Turn phasing control approximately 1/8 turn to the right of zero. The reseaction notch should appear on opposite side of each peak. If notch is not well defined with no evidence of damped oscillations BLOKOUT 68616. Repeat step 21 until a symmetrical notch with no evidence of damped oscillations appears on both sides of the response curve as outlined above.

Sensitivity V: An input signal of 25 to 40 microvolts at pin 7 (grid 3) of 68616 should produce 4 volts on VPOVM at point (+). Selectivity
1. A heterodyne signal generator for 4 volts at point (+). Use voltage at point (+) and output level of signal generator as reference voltage.
2. A heterodyne signal generator output 68616 (double the voltage). The bandwidth may be determined by noting how far on either side of resonance the generator signal must be detuned to lower the voltage at point (+) to 4 volts.
3. Repeat procedure in step 2 for 5060 nanovolts (1000 times the signal input voltage level).
4. The overall selectivity specifications are:
   a. Minimum selectivity:
      1. 400K 5.5KC Min. 6.5KC Max.
      2. 200KC 17.0KC Min. 20.0KC Max.
   b. Maximum selectivity (crystal filter in):
      1. 0.2KC Max. 0.6KC Max.
      2. 0.2KC Max. 12.0KC Max.

ALIGNMENT OF DIALS WITH VFO

A. MECHANICAL DIAL POINTER
   1. If the dial pointer has been accidentally slipping along the dial cord then set pointer as follows. Remove the encouter plate, turn the kilocycle knob clockwise until it reaches the maximum stop. Then turn it clockwise until the zero mark lines up with the fiducial mark. Turn the kilocycle knob exactly 5 turns clockwise. Slide the meccuray pointer along the dial cord to the center frequency of the band. For example: 2.12MC is the exact center of band 2.

B. KILOCYCLE DIAL
   1. If the kilocycle dial reading is incorrect it will be necessary to determine the magnitude and direction of the errors first. Do this, set receiver band 2. Set kilocycle fiducial line to the center mark on the encouter opening by rotating zero adjustment knob. Set mark on BFO pitch knob to coincide with mark on panel (this sets BFO at 500KC as outlined in step 18C). Set calibrator to "On" position. Rotate kilocycle knob to zero beat. Note magnitude and direction of error in kilocycle dial reading. Tune receiver to 2.5MC. Leave BFO pitch knob set at 500KC and rotate kilocycle knob to point of zero beat. Again, note magnitude and the direction of error in the kilocycle dial reading.
   2. If the kilocycle dial reading is incorrect by less than 3KC in the same direction by equal amount at both ends of the meccuray dial correct as follows:
      a. Make certain BFO pitch knob is set at 500KC.
      b. Tune the receiver for zero beat at the 100KC check point nearest the dial setting for which maximum accuracy is desired. For example: if maximum accuracy is desired at 1.35MC, tune for zero beat at 1.8MC by rotating the kilocycle knob.
      c. Set kilocycle fiducial line to zero on kilocycle dial by rotating zero adjustment knob.
      d. Leave the setscrews in circular kilocycle dial and set to zero-zero. Tighten setscrews.
      e. Set kilocycle fiducial line to the 100KC check point nearest the dial setting for which maximum accuracy is desired. For example: if maximum accuracy is desired at 1.35MC, tune for zero beat at 1.8MC by rotating the kilocycle knob.
      f. Set kilocycle fiducial line to zero on kilocycle dial by rotating zero adjustment knob.
      g. Leave the setscrews in circular kilocycle dial and set to zero-zero. Tighten setscrews.
      h. Set kilocycle fiducial line to the 100KC check point nearest the dial setting for which maximum accuracy is desired. For example: if maximum accuracy is desired at 1.35MC, tune for zero beat at 1.8MC by rotating the kilocycle knob.
      i. Set kilocycle fiducial line to zero on kilocycle dial by rotating zero adjustment knob.
   3. If the two errors in kilocycle dial reading are either opposite in direction or very small in size, it indicates that VFO end points have shifted. Correct as follows:
      a. Check to see that BFO pitch knob is at 500KC then tune receiver to zero beat at 1.5MC on band 2.
      b. Check to see that BFO pitch knob is at 500KC then tune receiver to zero beat at 1.5MC on band 2.
   4. Set zero mark on kilocycle dial line within the linear on encouter opening, set kilocycle fiducial line to zero-zero on the kilocycle dial by rotating the zero adjustment knob.
   5. If the zero-zero mark fails outside the lines on the encouter opening, loosen setscrews in the kilocycle dial. Set fiducial mark to the center mark on the encouter opening. Turn kilocycle dial line until zero-zero mark coincides with the fiducial. Tighten setscrews.
   6. Turn kilocycle knob approximately 10 turns counter clockwise to zero beat. This procedure should tune the receiver to 2.5MC.
   7. If this error is less than 3KC, set the fiducial to 2.5MC by rotating the zero adjustment knob. This establishes the point of maximum accuracy at 2.5MC. If maximum accuracy is desired at some other point in the band, the receiver may be tuned to zero beat at the desired check point. Then adjust fiducial to zero-zero on the kilocycle dial.
   8. If the error is more than 3KC refer to VFO alignment.

C. VFO FREQUENCY CHECK
   1. The VFO frequency should be checked against a known source to determine if the VFO shaft has been displaced a full turn, thereby shifting the VFO frequency exactly 100KC. Use a signal generator having an accuracy of ±1% or 2KC or another 513-3 receiver known to be properly aligned and check as follows:
      a. Set BFO pitch knob at 500KC and tune calibrator to "On" position.
      b. If signal generator is used, connect high side to pin 7 (grid 3) of 68616 (V5). Low side to chassis. Set generator to 2.0MC. Tune receiver for zero beat at 2.0MC. If the BFO shaft is displaced a full turn, zero beat should occur within 20KC of 1.8MC or 2.2MC instead of 2.0MC.
      c. If signal generator is used, connect high side to pin 7 (grid 3) of 68616 (V5). Low side to chassis. Set generator to 2.0MC. Tune receiver for zero beat at 2.0MC. If the BFO shaft is displaced a full turn, zero beat should occur within 20KC of 1.8MC or 2.2MC instead of 2.0MC.
      d. If signal generator is used, connect high side to pin 7 (grid 3) of 68616 (V5). Low side to chassis. Set generator to 2.0MC. Tune receiver for zero beat at 2.0MC. If the BFO shaft is displaced a full turn, zero beat should occur within 20KC of 1.8MC or 2.2MC instead of 2.0MC.
      e. If signal generator is used, connect high side to pin 7 (grid 3) of 68616 (V5). Low side to chassis. Set generator to 2.0MC. Tune receiver for zero beat at 2.0MC. If the BFO shaft is displaced a full turn, zero beat should occur within 20KC of 1.8MC or 2.2MC instead of 2.0MC.
      f. If signal generator is used, connect high side to pin 7 (grid 3) of 68616 (V5). Low side to chassis. Set generator to 2.0MC. Tune receiver for zero beat at 2.0MC. If the BFO shaft is displaced a full turn, zero beat should occur within 20KC of 1.8MC or 2.2MC instead of 2.0MC.
      g. If signal generator is used, connect high side to pin 7 (grid 3) of 68616 (V5). Low side to chassis. Set generator to 2.0MC. Tune receiver for zero beat at 2.0MC. If the BFO shaft is displaced a full turn, zero beat should occur within 20KC of 1.8MC or 2.2MC instead of 2.0MC.
      h. If signal generator is used, connect high side to pin 7 (grid 3) of 68616 (V5). Low side to chassis. Set generator to 2.0MC. Tune receiver for zero beat at 2.0MC. If the BFO shaft is displaced a full turn, zero beat should occur within 20KC of 1.8MC or 2.2MC instead of 2.0MC.
      i. If signal generator is used, connect high side to pin 7 (grid 3) of 68616 (V5). Low side to chassis. Set generator to 2.0MC. Tune receiver for zero beat at 2.0MC. If the BFO shaft is displaced a full turn, zero beat should occur within 20KC of 1.8MC or 2.2MC instead of 2.0MC.
      j. If signal generator is used, connect high side to pin 7 (grid 3) of 68616 (V5). Low side to chassis. Set generator to 2.0MC. Tune receiver for zero beat at 2.0MC. If the BFO shaft is displaced a full turn, zero beat should occur within 20KC of 1.8MC or 2.2MC instead of 2.0MC.

VARIABLE IF ALIGNMENT

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<th>GENERATOR</th>
<th>FREQUENCY</th>
<th>SWING</th>
<th>POL</th>
<th>BAND</th>
<th>ADJUST</th>
<th>REMARKS</th>
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<td></td>
</tr>
<tr>
<td>BFO</td>
<td>IF (discriminator)</td>
<td>Low side to chassis.</td>
<td>1.5MC (Unmod.)</td>
<td>2</td>
<td>1.6MC</td>
<td>DC probe to point (+). Common to chassis.</td>
<td>A24, A25</td>
<td>A26 Set A23 (ant. Trim) to mid-range position. Turn BFO to &quot;On&quot; position and adjust generator to zero beat at 1.6MC. Turn BFO to &quot;On&quot; position. Adjust A24, A25 and A26 for maximum deflection. Repeat step 21 and 22 until maximum deflection is obtained on VTFM.</td>
</tr>
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### ALIGNMENT INSTRUCTIONS • cont•

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<th>SIGNAL GENERATOR COUPLING</th>
<th>SIGNAL GENERATOR FREQUENCY</th>
<th>BANDSWITCH POS.</th>
<th>RADIO DIAL SETTING</th>
<th>CONNECT VTVM</th>
<th>ADJUST</th>
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<tr>
<td>24 4TU</td>
<td>Resistor in series with 100uMFF capacitor</td>
<td>High side thru dummy to antenna receptacle. Low side to chassis.</td>
<td>2.6MC</td>
<td>3</td>
<td>2.6MC</td>
<td>DC probe to point &lt;A&gt;: Common to chassis.</td>
<td>A30</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Turn BFO to &quot;0&quot; position and adjust generator to zero beat at 2.6MC. Turn BFO to &quot;0&quot; position. Adjust for maximum deflection.</td>
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### RF ALIGNMENT BANDS 4-7

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<th>SIGNAL GENERATOR FREQUENCY</th>
<th>BANDSWITCH POS.</th>
<th>RADIO DIAL SETTING</th>
<th>CONNECT VTVM</th>
<th>ADJUST</th>
<th>REMARKS</th>
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<tbody>
<tr>
<td>26 4TU</td>
<td>Resistor in series with 100uMFF capacitor</td>
<td>High side thru dummy to antenna receptacle. Low side to chassis.</td>
<td>4.0MC (Unmod)</td>
<td>4</td>
<td>4.0MC</td>
<td>DC probe to point &lt;A&gt;: Common to chassis.</td>
<td>A36</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>Turn BFO to &quot;0&quot; position and adjust generator to zero beat at 4.0MC. Turn BFO to &quot;0&quot; position. Adjust for maximum deflection.</td>
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### RF ALIGNMENT BANDS 8-15

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<tr>
<th>DUMMY ANTENNA</th>
<th>SIGNAL GENERATOR COUPLING</th>
<th>SIGNAL GENERATOR FREQUENCY</th>
<th>BANDSWITCH POS.</th>
<th>RADIO DIAL SETTING</th>
<th>CONNECT VTVM</th>
<th>ADJUST</th>
<th>REMARKS</th>
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<tbody>
<tr>
<td>28 4TU</td>
<td>Resistor in series with 100uMFF capacitor</td>
<td>High side thru dummy to antenna receptacle. Low side to chassis.</td>
<td>8.0MC (Unmod)</td>
<td>8</td>
<td>8.0MC</td>
<td>DC probe to point &lt;A&gt;: Common to chassis</td>
<td>A42</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Turn BFO to &quot;0&quot; position and adjust generator to zero beat at 8.0MC. Turn BFO to &quot;0&quot; position. Adjust for maximum deflection.</td>
<td></td>
</tr>
</tbody>
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### RF ALIGNMENT BANDS 16-30

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<th>SIGNAL GENERATOR FREQUENCY</th>
<th>BANDSWITCH POS.</th>
<th>RADIO DIAL SETTING</th>
<th>CONNECT VTVM</th>
<th>ADJUST</th>
<th>REMARKS</th>
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</thead>
<tbody>
<tr>
<td>30 4TU</td>
<td>Resistor in series with 100uMFF capacitor</td>
<td>High side thru dummy to antenna receptacle. Low side to chassis.</td>
<td>16.0MC (Unmod)</td>
<td>16</td>
<td>16.0MC</td>
<td>DC probe to point &lt;A&gt;: Common to chassis</td>
<td>A48</td>
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<tr>
<td></td>
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<td></td>
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<td></td>
<td>Turn BFO to &quot;0&quot; position and adjust generator to zero beat at 16.0MC. Turn BFO to &quot;0&quot; position. Adjust for maximum deflection.</td>
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### RF ALIGNMENT BANDS 1

<table>
<thead>
<tr>
<th>DUMMY ANTENNA</th>
<th>SIGNAL GENERATOR COUPLING</th>
<th>SIGNAL GENERATOR FREQUENCY</th>
<th>BANDSWITCH POS.</th>
<th>RADIO DIAL SETTING</th>
<th>CONNECT VTVM</th>
<th>ADJUST</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>32 4TU</td>
<td>Resistor in series with 100uMFF capacitor</td>
<td>High side thru dummy to antenna receptacle. Low side to chassis.</td>
<td>0.6MC (Unmod)</td>
<td>1</td>
<td>0.6MC</td>
<td>DC probe to point &lt;A&gt;: Common to chassis</td>
<td>A53</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Turn BFO to &quot;0&quot; position and adjust generator to zero beat at 0.6MC. Turn BFO to &quot;0&quot; position. Adjust for maximum deflection.</td>
<td></td>
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</tbody>
</table>

### If the VFO unit becomes sufficiently misaligned as indicated by the procedure outlined under "Alignment of Dials With VFO", paragraph B3, the unit should be returned to the factory for permanent alignment. Temporary alignment may be attempted by a qualified technician only in case of emergency.

CAUTION: Do not, under any circumstances, remove the outer cylindrical cover. To do so will break the hermetic seal and expose the frequency control mechanism and the carefully compensated frequency-determining elements. If the VFO is to be returned to the factory use instructions under "Complete VFO Removal".
ALIGNMENT INSTRUCTIONS

VFO ALIGNMENT PROCEDURE

1. Set the BFO pitch line so that the white lines coincide (when lines coincide, BFO is set at 750KC). Turn calibrator to "Off" position.
2. A signal generator with an accuracy of ±20KC at 1.5MC should be used.
3. Loosen set screws in VFO coupler and slide coupler hubs apart. Remove front panel of receiver and VFO mounting screws. Pull out the VFO and allow it to hang on the connecting wires. Fabricate a small circular dial having a linear scale from 0 to 100 completely around its outer edge. Mount the dial on the VFO shaft. Attach a small wire (use as pointer) to one of the VFO mounting screws. Let one division on dial equal one kilocycle.
4. Turn the set on and short antenna terminal to chassis. Since some of receivers tuned circuits are used in this alignment it will not be necessary to set the receiver dials.
5. Couple the signal generator 1.5MC output to pin 1 (grid 1) of 6B66 (V5).
6. Locate the low frequency end point (2.0MC) of the VFO by rotating the VFO shaft clockwise to the last zero beat obtainable in that direction. (do not try to force VFO shaft after it reaches the stop at either end of its range.)
7. The VFO is now with in 20KC of its 2.0MC setting. To adjust more accurately, remove the signal generator and connect a clip lead from the cold side of C92 (100KC oscillator output) to pin 1 (grid 1) of 6B66 (V5). Turn calibrator to "Out" position. Carefully turn VFO shaft to the nearest zero beat. The VFO is now set to exactly 2.0MC. Place the VFO dial pointer at zero using care to retain the zero beat setting.
8. Turn VFO shaft exactly 10 turns counter clockwise. Locate zero beat by turning the VFO shaft a few divisions toward either side of the 10-turn mark.
9. Should zero beat occur on either side of the 10-turn mark, note the amount and direction of error by counting divisions between zero and pointer. Multiply the number of error divisions by 1.5.
10. Should zero beat occur at least 10 turns, turn the VFO shaft counterclockwise by the number of divisions obtained at step 9.
11. Should zero beat occur at more than 10 turns, turn the VFO shaft clockwise by the number of divisions obtained at step 9.
12. Remove the hex plug from the front of oscillator. With the VFO adjustment tool (supplied with equipment) loosen the lock nut which becomes visible when hex plug is removed. Insert the screwdriver end of the adjustment tool into outer portion. Adjust trimmer screw until zero beat is again obtained. Tighten lock nut using care to retain zero beat.
13. The 2.0 and 3.0MC zero beat positions should now be exactly 10 turns apart. If this is not so, repeat the above procedure until they are.

4MC BAD SUPPRESSION COIL ADJUSTMENT

Turn VFO to "Out" position and tune in spurious signal at 1250KC. Adjust A60 for maximum attenuation of spurious signal.

COMPLETE VFO REMOVAL

- Remove front panel and let it swing forward on the wires.
- Loosen set screws in flexible coupler. Pull coupler apart and remove center disc.
- Identify the VFO connecting wire so they may be reconnected correctly. Unthread wires.
- Remove the three retaining screws that VFO to chassis.
- Slip the VFO back and tip the rear downward.
- The VFO may now be pulled from the receiver.
CHASSIS TOP VIEW INDUCTOR AND ALIGNMENT IDENTIFICATION
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