VOLUME XVI

PERPETUAL

TROUBLESHOOTER'S

MANUAL

REG.U.S.PAT.OFF.

JOHN F. RIDER
**LOOP WIRING DIAGRAM**

**CHASSIS DIAGRAMS**

**ALIGNMENT CHART**

<table>
<thead>
<tr>
<th>OPERATION</th>
<th>ALIGNMENT OF</th>
<th>GENERATOR CONNECTED TO</th>
<th>DUMMY ANTENNA</th>
<th>GENERATOR FREQUENCY</th>
<th>DIAL SETTING</th>
<th>TRIMMER</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>C15.16</td>
<td>Max. Output</td>
</tr>
<tr>
<td>2</td>
<td>2nd IF</td>
<td>Pin No. 8 of 125A7 and B-</td>
<td></td>
<td>.05 mf.</td>
<td>455 KC</td>
<td>1620 KC</td>
<td>C13.14 Max. Output</td>
</tr>
<tr>
<td>3</td>
<td>1st IF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>C14</td>
<td>Max. Output</td>
</tr>
<tr>
<td>4</td>
<td>Osc. Trim</td>
<td>Antenna lead (blue wire) and B-</td>
<td></td>
<td>200 mmf.</td>
<td>1620 KC</td>
<td>1620 KC</td>
<td>C18 Max. Output</td>
</tr>
<tr>
<td>5</td>
<td>Ant. Trim</td>
<td></td>
<td></td>
<td></td>
<td>1500 KC</td>
<td>1500 KC</td>
<td>C17 Max. Output</td>
</tr>
<tr>
<td>6</td>
<td>Osc. Slug</td>
<td></td>
<td></td>
<td></td>
<td>600 KC</td>
<td>600 KC</td>
<td>T1 Max. Output</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Rock dial tuner slightly while adjusting.

Notes:
- Connect output meter to voice coil circuit.
- Volume control on full for all adjustments.
- Signal generator gain control at minimum for satisfactory output meter reading.

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### Dial Drive Diagram

**STRETCH SPRING 3/16"**

**WRAP 2 TURNS OF CORD AROUND GROOVE ON TUNING SHAFT.**

### Bottom View of Chassis

### Voltage Chart

<table>
<thead>
<tr>
<th>Tube</th>
<th>Function</th>
<th>Voltage of each socket prong to B- (Prong No. 3 of 12SK7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12SA7</td>
<td>Oscillator - Converter</td>
<td>0  90  90  0  0  -  0</td>
</tr>
<tr>
<td>12SK7</td>
<td>I-F Amplifier</td>
<td>0  0  0  0  90  -  90</td>
</tr>
<tr>
<td>12SQ7</td>
<td>Detector - AVC - 1st. Audio</td>
<td>0  0  0  0  28  -  -</td>
</tr>
<tr>
<td>50L6</td>
<td>Beam Power amplifier</td>
<td>0  115  90  0  0  -  6</td>
</tr>
<tr>
<td>35Z5</td>
<td>Rectifier</td>
<td>-  -  -  -  110 AC  -  -</td>
</tr>
</tbody>
</table>

**Notes:**
- Voltage readings are for schematic diagram in this bulletin. Allow 10% ± on all measurements.
- Always use meter scale which will give greatest deflection within scale limits.
- All DC measurements made with 1000 ohms per volt voltmeter.
- Voltages are DC unless otherwise specified.
- All voltages measured from prong No. 3 of 12SK7 tube socket, or B-.

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LEAR, INC.

MODELS 662, 663, 665, 6618
MODEL 6617PC

CHASSIS VOLTAGE CHART

All voltages shown are D.C. Measurements taken from B- with a 1000 ohm per volt voltmeter. Set operating on 117 V., 60 with Volume Control on full. Allow ±10% on all measurements.

81V.
82V.
12SA7
12SK7

35L6GT
5L6GT
38V
12SQ7

I STRETCH SPRING 5/16"

Wrap 3 turns of cord around groove on tuning shaft.

THE DIAL DRIVE DIAGRAM FOR MODEL 6617PC IS THE SAME AS THE ONE ABOVE EXCEPT FOR THIS DIFFERENCE

THE LOOP WIRING DIAGRAM FOR MODEL 6617PC IS THE SAME AS THE ONE ON THE LEFT EXCEPT THAT BROWN IS REPLACED BY WHITE AND WHITE BY BROWN

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MODELS 662, 663, 665, 6618

MODEL 6617PC

MODEL 6617PC

ALIGNMENT CHART MODELS 662, 663, 665, 6618

<table>
<thead>
<tr>
<th>OPERATION</th>
<th>ALIGNMENT OF</th>
<th>GENERATOR CONNECTED TO</th>
<th>DUMMY ANTENNA</th>
<th>GENERATOR FREQUENCY</th>
<th>DIAL AND CONDENSER SETTING</th>
<th>TRIMMER</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Set dial pointer to last mark at low frequency and of dial with gang condenser closed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2nd IF</td>
<td>Pin No. 8 of 12SA7 and B</td>
<td>.05 mF</td>
<td>455 KC</td>
<td>open</td>
<td>C19, C20</td>
<td>Max. Output</td>
</tr>
<tr>
<td>3</td>
<td>1st IF</td>
<td></td>
<td></td>
<td>455 KC</td>
<td>open</td>
<td>C21, C22</td>
<td>Max. Output</td>
</tr>
<tr>
<td>4</td>
<td>Wave Trap</td>
<td></td>
<td></td>
<td>1500 KC</td>
<td>1500 KC</td>
<td>C22</td>
<td>Max. Output</td>
</tr>
<tr>
<td>5</td>
<td>Osc. trim.</td>
<td></td>
<td></td>
<td>1500 KC</td>
<td>1500 KC</td>
<td>C21</td>
<td>Max. Output</td>
</tr>
<tr>
<td>6</td>
<td>Ant. trim.</td>
<td></td>
<td></td>
<td>600 KC</td>
<td>600 KC</td>
<td>C22</td>
<td>Max. Output</td>
</tr>
<tr>
<td>7</td>
<td>Load Coil</td>
<td></td>
<td></td>
<td>600 KC</td>
<td>600 KC</td>
<td>C22</td>
<td>Max. Output</td>
</tr>
<tr>
<td>8</td>
<td>Repeat adjustments in operations 5 and 6 until no further increase in output is obtained.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
- Connect output meter to voice coil circuit.
- Volume control on full for all adjustments.
- Signal generator gain control at minimum for satisfactory output meter reading.

ALIGNMENT CHART MODEL 6617PC

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<tr>
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<th>TRIMMER</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Set dial pointer at 1620 KC with tuning unit drive turned fully clockwise against stop.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2nd IF</td>
<td>Pin No. 8 of 12SA7 and B</td>
<td>.05 mF</td>
<td>455 KC</td>
<td>1620 KC</td>
<td>C19, C20</td>
<td>Max. Output</td>
</tr>
<tr>
<td>3</td>
<td>1st IF</td>
<td></td>
<td></td>
<td>455 KC</td>
<td>1620 KC</td>
<td>C17, C18</td>
<td>Max. Output</td>
</tr>
<tr>
<td>4</td>
<td>Wave Trap</td>
<td></td>
<td></td>
<td>1620 KC</td>
<td>1620 KC</td>
<td>C3</td>
<td>Min. Output</td>
</tr>
<tr>
<td>5</td>
<td>Osc. trim.</td>
<td></td>
<td></td>
<td>1500 KC</td>
<td>1500 KC</td>
<td>C22</td>
<td>Max. Output</td>
</tr>
<tr>
<td>6</td>
<td>Ant. trim.</td>
<td></td>
<td></td>
<td>1500 KC</td>
<td>1500 KC</td>
<td>C21</td>
<td>Max. Output</td>
</tr>
<tr>
<td>7</td>
<td>Osc. Slug</td>
<td></td>
<td></td>
<td>600 KC</td>
<td>600 KC</td>
<td>T2</td>
<td>Max. Output*</td>
</tr>
<tr>
<td>8</td>
<td>Repeat adjustments in operations 5 and 6 until no further increase in output is obtained.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Rock dial tuner slightly while adjusting T2.

Notes:
- Connect output meter to voice coil circuit.
- Volume control on full for all adjustments.
- Signal generator gain control at minimum for satisfactory output meter reading.

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