OVER THE SOLDERING IRON

CAMDEN, N. J.
MARCH 16, 1937

PREPARED FOR THE INFORMATION AND USE OF RCA VICTOR DISTRIBUTORS' SERVICE MANAGERS

INTERMITTENT RADIO AND DISTORTION - MODEL D 22-1

A condition developing on radio operation only, which causes low and irregular sensitivity, poor AVC action, erratic Magic Eye deflection, or garbled reproduction may frequently be due to unstable alignment of the stock #5230 third I-F transformer. In most cases, this instability is caused by heat from the bleeder resistor R-44-45, which on a limited number of D-22-1 chasses, is mounted on the rear apron of the chassis directly beneath the transformer. To permanently correct the difficulty, replace the #5230 transformer, remove the resistor R-44-45 from the rear apron and re-mount it on the chassis front apron adjacent to the power transformer, keeping connections in the original relation. Figure 9 of the D 22-1 Service Note published in the 1935 RCA Bound Volume shows the resistor re-arranged as described. Re-align I-F stages after the above changes.

GRID RESISTOR - SINGLE 6L6 STAGES

Where it has been necessary to replace the 6L6 tubes in receivers such as the 9T, 9K2, 9K3, 9U, 9U2, 10T, 10K and 10K1, it is advisable to check the 470,000 ohm resistor which connects from the 6L6 grid contact to chassis, (Stock #11172) replacing it if found charred or damaged by excess current. Some failures of the 6L6 produce grid-emission current which dissipates in the resistor and causes it to change value or become intermittent.

RESISTOR CHANGE - AMATEUR RECEIVER ACR-155

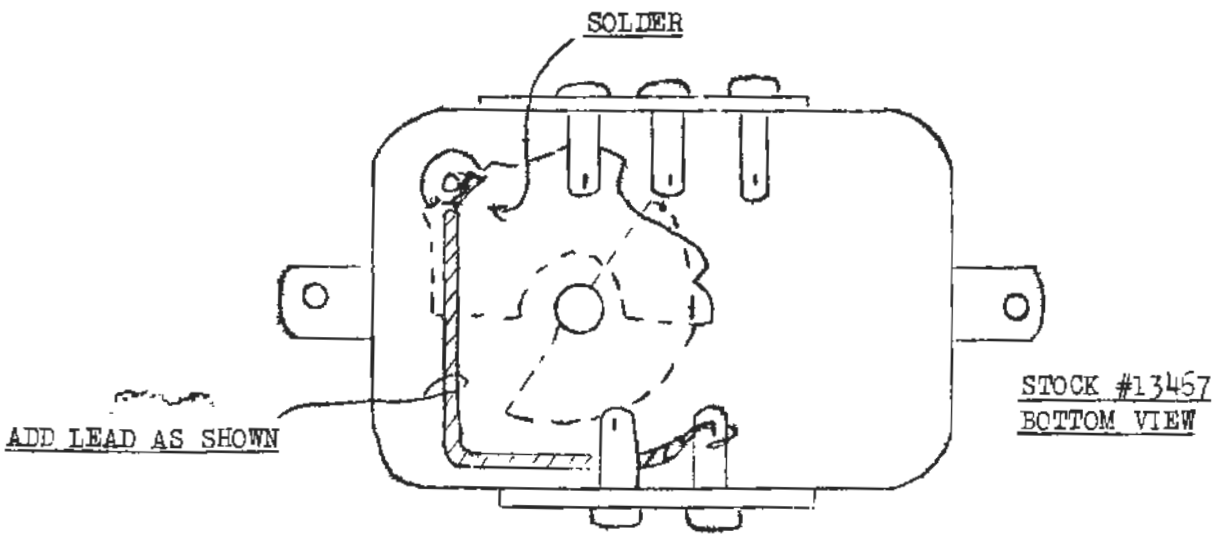
The filament series resistor shown in Service Diagrams as R-27 (.045 ohms, Stock #13887) is being omitted on receivers of late production. A jumper lead is being substituted in its place. Please arrange to effect this same modification on any receivers requiring service in the field.

POWER TRANSFORMERS - 25 CYCLE TYPE

Stock #12857, 25 cycle transformer employed on Models 9K, 9T, 9K2, 9U, 9U2, 10T and 10K has special color coding on the primary leads. The colors are RED-start of primary winding; RED & YELLOW- tap on primary winding; RED & GREEN- finish of primary winding. On all 10-tube receivers, the power line is normally connected between Red and the Red-Yellow leads. On 9-tube receivers, the power line is normally connected between the Red and the Red-Green leads. It is possible to change the tube voltages by approximately 3.3% by changing the power line connection between the tap and finish leads of the winding. On the 10-tube sets, the voltage will be lowered by changing to the Red-Green lead, whereas on the 9-tube sets, the voltages will be increased by changing to the Red-Yellow lead.

UNIVERSAL WAVE TRAP - RANGE EXTENSION

Many demands have been received for a wave trap similar to the stock #13467 type with tuning to include the 160 meter Amateur band. This facility is possible by a simple alteration of the present #13467 trap, which permits adjustment for attenuation of any signal in the range from approximately 1200kc to 2500kc. To effect such an increase in range, interconnect the lug of terminal "A" to the stator of the variable capacitor, by adding a jumper lead between the points. The connection at the stator may be soldered (carefully) to the stator plates support rod as shown by the diagram below.



The addition of the jumper, short circuits a portion of the inductance and thus increases the range. Attenuation characteristics remain substantially equivalent to the standard range.

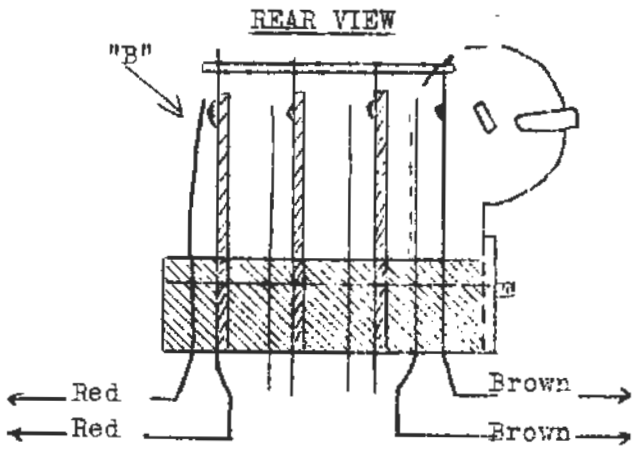
Two particular uses of the trap with extended tuning will be for reduction interfering signals from local Police transmitters on the 2500kc band, and from local Amateur transmitters on the 2000kc band. On the former, the interference will generally be due to overloading of the receiver or cross-modulation. The Amateur interference may in addition to overloading and cross-modulation, show up in the broadcast band as an image. The image interference range on receivers with 450-470kc I-F will be approximately between 860kc and 1100kc on the broadcast scale.

Adjustment of the #13467 trap is quite critical, and it is necessary to tune the condenser by very slow rotation. A listening indication of proper adjustment is not usually satisfactory, particularly on receivers with AVC. It is, therefore, desirable to use an oscillator, tuned to the frequency of the known interfering signal, and a visual output indicator to show the point of maximum reduction during the adjustment. Otherwise, the antenna should be reduced during the operation to a short length of wire so that the signal will be below the AVC threshold and the minimum point will be perceptible by ear.

A further increase of range to include frequencies up to approximately 6000kc may be effected by removing the fixed moulded capacitor from the circuit after addition of the jumper lead. This permits adjustment for the Aircraft bands and the 4000kc (80 meter) Amateur band.

BATTERY RECEIVERS - BT 7-8 and BC 7-9

It is likely, that on some receivers, harmful transients or surges of voltage may develop and impair the life of the "B" batteries and the type 30 driver tube. The transient condition, which is related to the "ON-OFF" switch, is evidenced by a blocking action when the receiver is first turned "On", preventing reception for a protracted instant. Should the filament circuits become closed prior to the plate circuits, the trouble will be present in greater degree than for simultaneous contact. It is advisable, in cases where battery life and tube life are unsatisfactory, to bend the plate contacts (connected to the red leads) of the operating switch closer together so that they will be closed before the filament contacts are made. If desirable, the switch may be replaced with one arranged for delayed closing of the filaments in respect to the plates. Stock #3913 switch is recommended and may be adapted to these receivers without mechanical alterations being necessary. It should be connected in place of the regular #11339 switch, in accordance with the diagram shown to the left. Note particularly that the contact finger "B" (plate circuit) at the left side of the switch, should be bent toward the movable finger so that there is a minimum of separation of the contacts in the "Open" position. The spacing of the filament contacts in the open position should be wide in comparison so as to give maximum delay and allow the plate transients to subside before the filaments are connected.



FLEXIBLE OCTAL-SOCKET ADAPTOR

A flexible socket adaptor, which may be used in conjunction with any octal base tube for reduction of microphonics, is available in stock as #14617. This adaptor plugs directly into the tube socket and provides an excellent shock-proof or insulative mount for the tube. It can be used to advantage in expander amplifiers to minimize howl (6L7) in short wave oscillator stages (6J7) to reduce howling tendencies on the 13, 16 and 19 meter bands, and in any other octal-tube position which is critical to microphonism.

MODEL R-99 WEAK AND DISTORTING

The output transformer mounted on the loudspeaker unit should be inspected in all cases of puzzling trouble on the R-99, to see that it is not sagged and touching against the top of one of the filter electrolytic capacitors. If this condition has developed, the speaker field and bias of the output stage may be shorted out. Bend the transformer mounting bracket so that there is ample safe clearance.