



# INSTRUCTIONS

## for

# HIGH PATCH

R. L. DRAKE COMPANY

### I. GENERAL

The High Patch incorporates a special bifilar transformer. With the NULL LINE control it is possible to balance out the signal which would otherwise pass through the Patch from your receiver to your transmitter. The balance will change some with each circuit you select; that is, each new call may require small adjustment for best balance. The better the balance the less tendency for the receiver to trip the transmitter.

### II. INSTALLATION INSTRUCTIONS

1. Make up shielded cable to go between High Patch and exciter or transmitter mike input. Connectors are supplied.
2. Connect your microphone to the MIKE input on the High Patch.
3. Connect the two wires, which would normally go to the speaker voice coil, to the RCVR terminal and the C terminal on the High Patch.
4. Connect two wires from the SPKR terminal and the C terminal on the High Patch to the speaker voice coil.
5. Connect PH. LINE on High Patch to L1 and L2 at the telephone or telephone terminal board. These may usually be quickly identified as the red and green wires. The yellow wire in the phone is usually ground. Here you need not use shielded cable.
6. The carbon button on each telephone microphone in your house should be bypassed for R.F. Most telephone companies have a standard bypass for this purpose and will install them free if requested to do so. An .01 ceramic condenser is supplied with the Patch and can be used for this purpose. This bypassing is very important, since the carbon buttons act as rectifiers and can feed audio from your transmitted signal back into your transmitter through the Patch. This interferes with proper voice control operation with the Patch.

### III. INITIAL NULL ADJUSTMENT

1. Turn switch to MIKE, RCVR OUTPUT control to end counter-clockwise, NULL LINE to approximate center of range.
2. Tune in a signal on your receiver and set the level in the speaker for normal listening.
3. Call someone on your phone to set up normal operating conditions.
4. While connected to the other party and while listening in your own phone, turn switch to PATCH and increase RCVR OUTPUT control until you hear the received signal at a normal telephone listening level. (Too high a level will cause cross-talk and will interfere with other telephone services.)
5. Plug a pair of high impedance headphones into the XMTR jack on the back of the Patch, turn XMTR INPUT control fully clockwise and adjust NULL LINE control for minimum receiver signal in the headphones.

6. Disconnect headphones and connect cable between XMTR jack and transmitter microphone input. Your High Patch is now ready to operate.

#### IV. MIKE OPERATION

With the switch in the MIKE position the phone line is disconnected and the microphone is connected straight through to the transmitter for normal operating.

If an audio band pass filter (such as R. L. Drake Model 587) is used in the microphone cable to restrict the audio spectrum, place the filter at the MIKE input of the High Patch, not at the microphone input of transmitter. Keep audio leads short.

#### V. PATCH OPERATION

1. Call the party on the telephone, then turn the switch to PATCH position.
2. While you (or your party) are talking in the phone, adjust XMTR INPUT gain control so the proper level is fed to your transmitter.
3. Slight adjustment of the NULL LINE control one direction and the other will cause the receiver signal to trip the transmitter. The correct adjustment is centered between these points.
4. While listening in the phone, adjust RCVR OUTPUT control for normal telephone level.
5. With the controls on the Patch properly set, it is not normally necessary to change adjustments on your exciter voice control or anti-trip.
6. When telephone and speaker are placed close together, there may be a sound path between them which would defeat the purpose of a hybrid patch. For this reason internal switching is provided in the High Patch to disable the speaker when patching (you don't need it, as you are listening in the telephone).

#### VI. DON'TS FOR PATCHING

DON'T tie up party lines. DON'T accept commercial calls for patching.

DON'T cause cross-talk by putting too loud a signal on line.

DON'T install unauthorized telephone extensions.

DON'T leave Patch connected when not in use. Turn switch off.

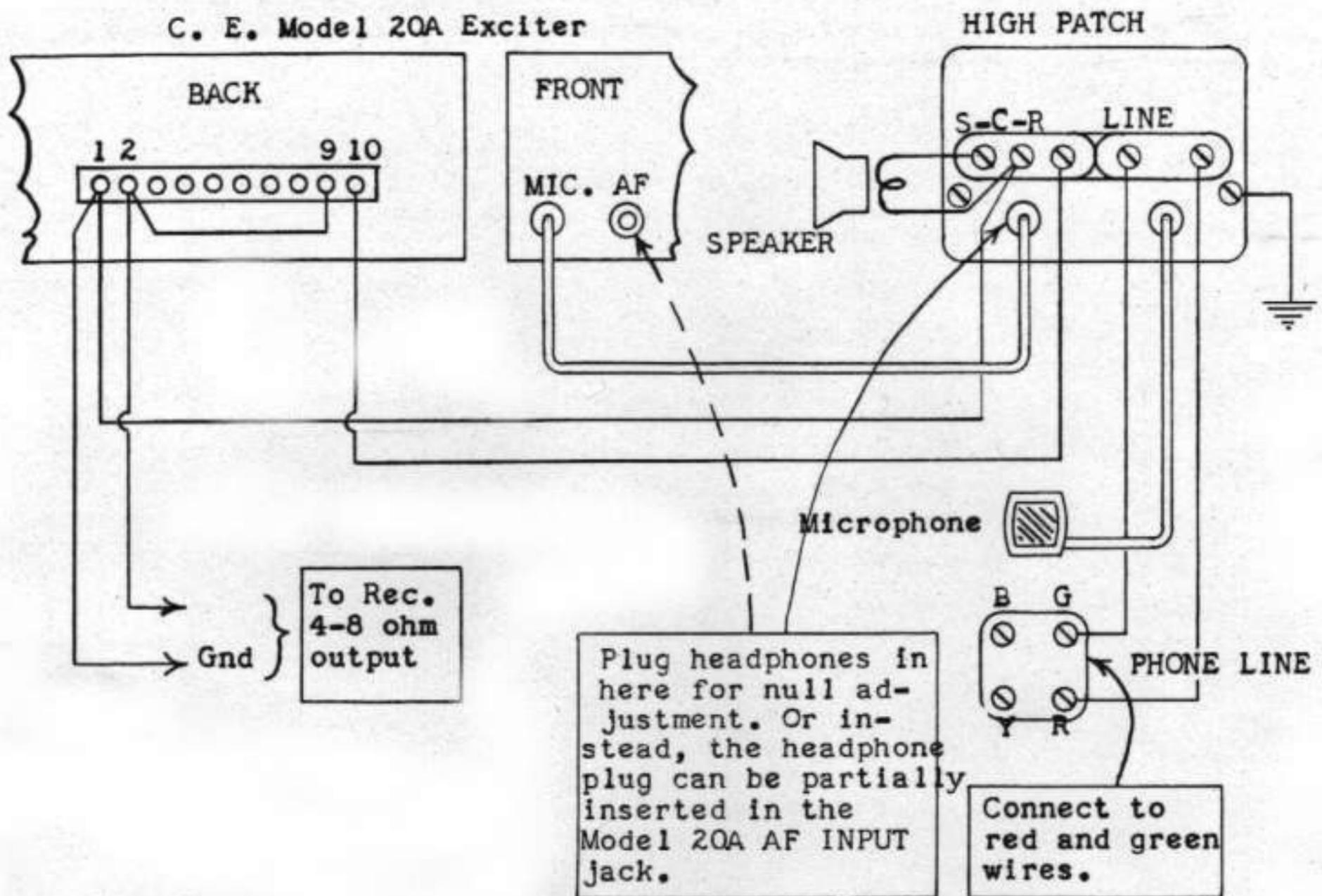
DON'T let anything get out on the air that might cost you your license.

DON'T fail to read the article in September 1954 CQ magazine, "The Phone Patch and the Law", page 13.

DON'T let dial tone, dial clicks or operator's voice go out over the air. Keep switch on MIKE position until conversation starts.

TYPICAL INSTALLATION  
(using a Model 20A Exciter)

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## NOTE:

If the speaker is connected according to the 20A instructions, the voice control relay contacts open the "ground" side of the voice coil leads. The Patch will not work properly if connected the same way. In the circuit diagram above, the "hot" side of the voice coil leads are opened by terminals 9 & 10 which are internally connected to NC contacts of the relay. This must be done to avoid capacity coupling through the Patch into the transmitter which causes feedback and holds the transmitter "on" after the talking has stopped.

If terminals 9 & 10 are already in use for operating an antenna relay, then use the extra NC contacts on the antenna relay to open the "hot" voice control lead between 20A and Patch.

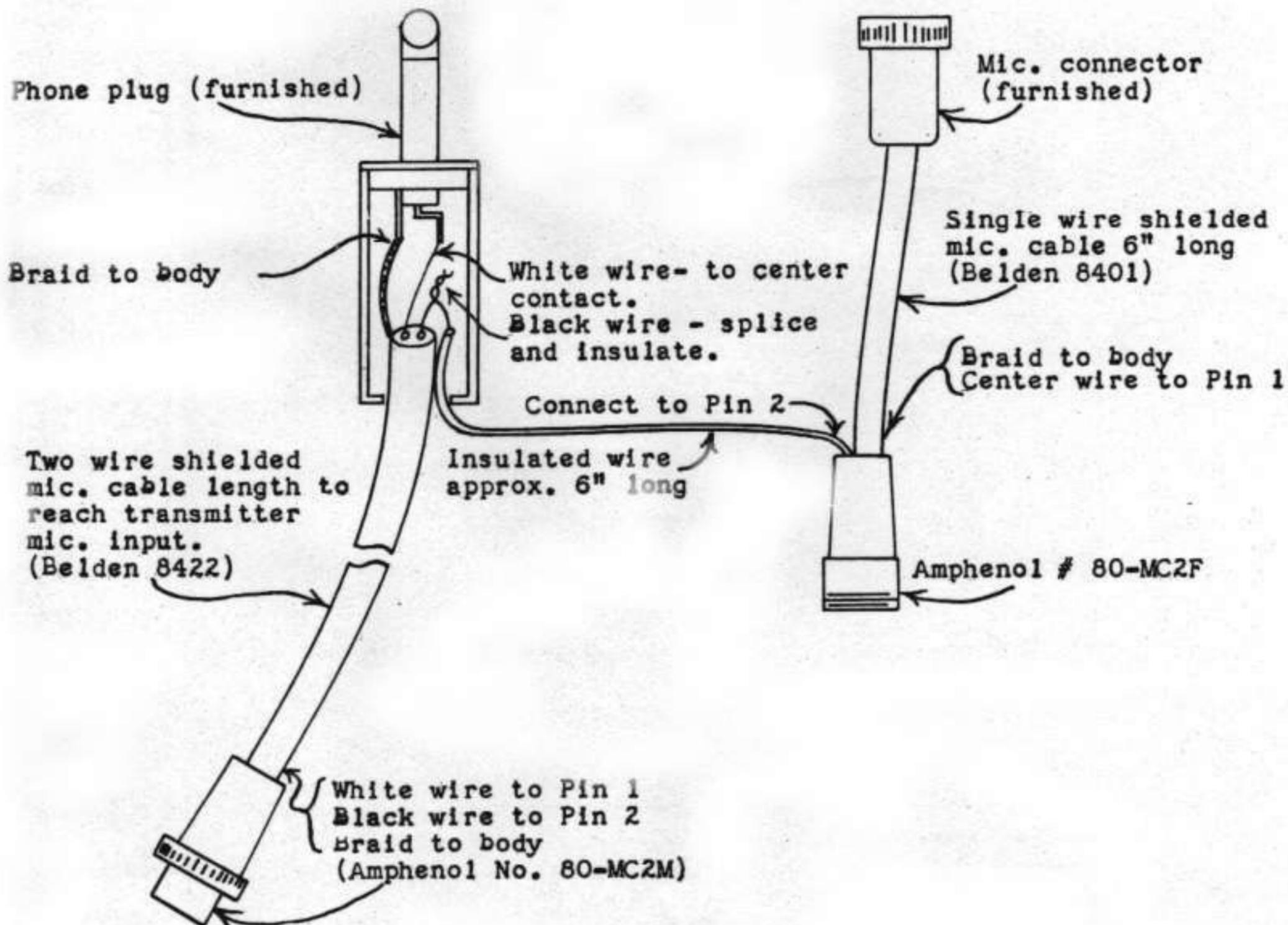
Another method if terminals 9 & 10 are in use is as follows:

1. Remove the 20A from it's case.
2. Open the internal jumper between terminals 2 & 3.
3. Find the pair of NC contacts on the voice control relay which are not connected.
4. Connect these contacts to terminals 2 & 3.
5. Put the 20A back in the case.
6. Connect the receiver output to terminals 1 & 2 as in the diagram above.
7. Connect a wire from terminal 3 to RCVR terminal on Patch. Connect a wire from terminal 4 to COM terminal on Patch.

INSTALLATION OF "HIGH PATCH" 584-A WITH  
COLLINS RADIO EQUIPMENT

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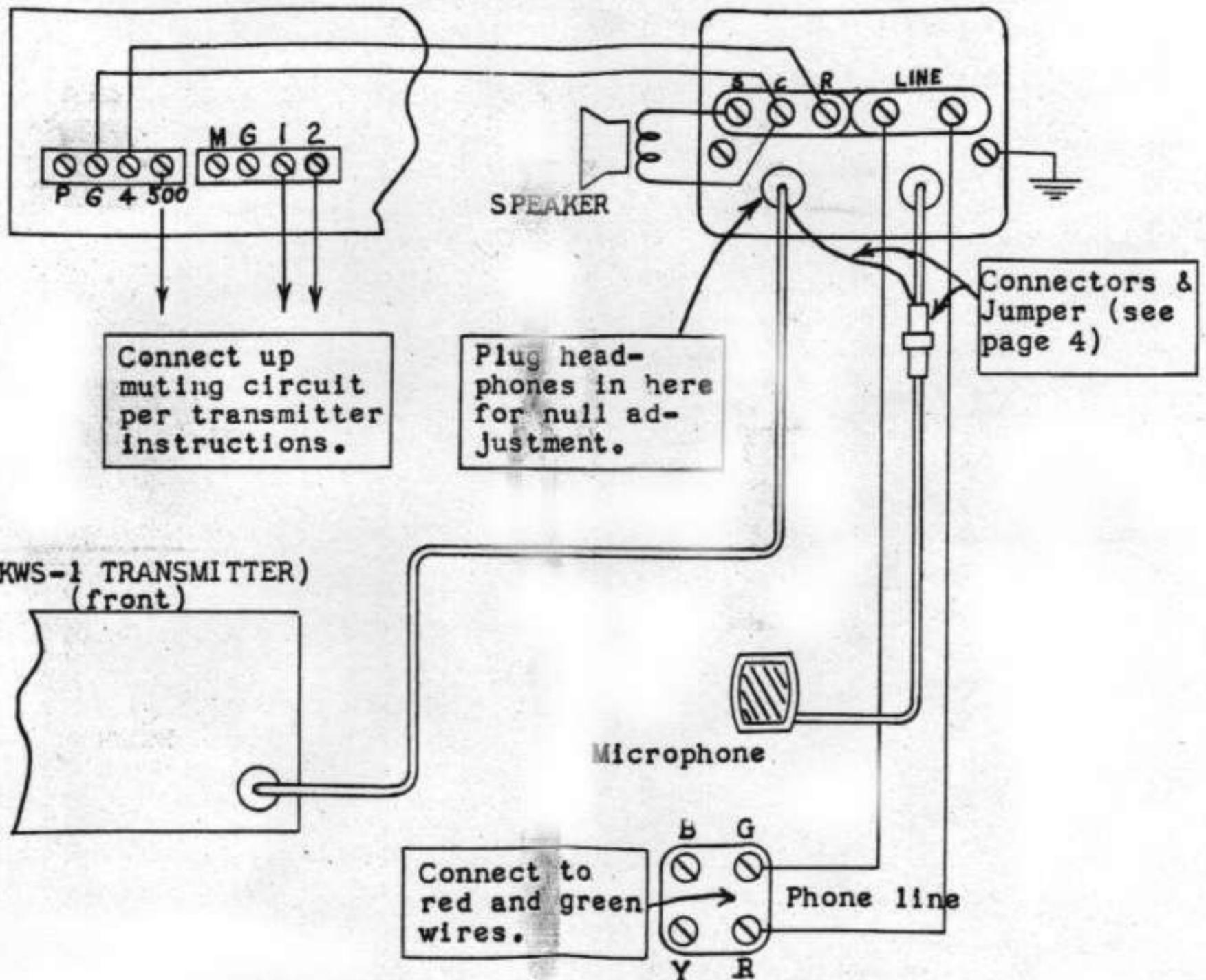
**Note:**The microphone input to Collins transmitters, incorporates two-circuit connectors. One circuit is for the microphone and the other circuit is for push-to-talk operation. If push-to-talk operation is desired, make up a cable assembly as follows:



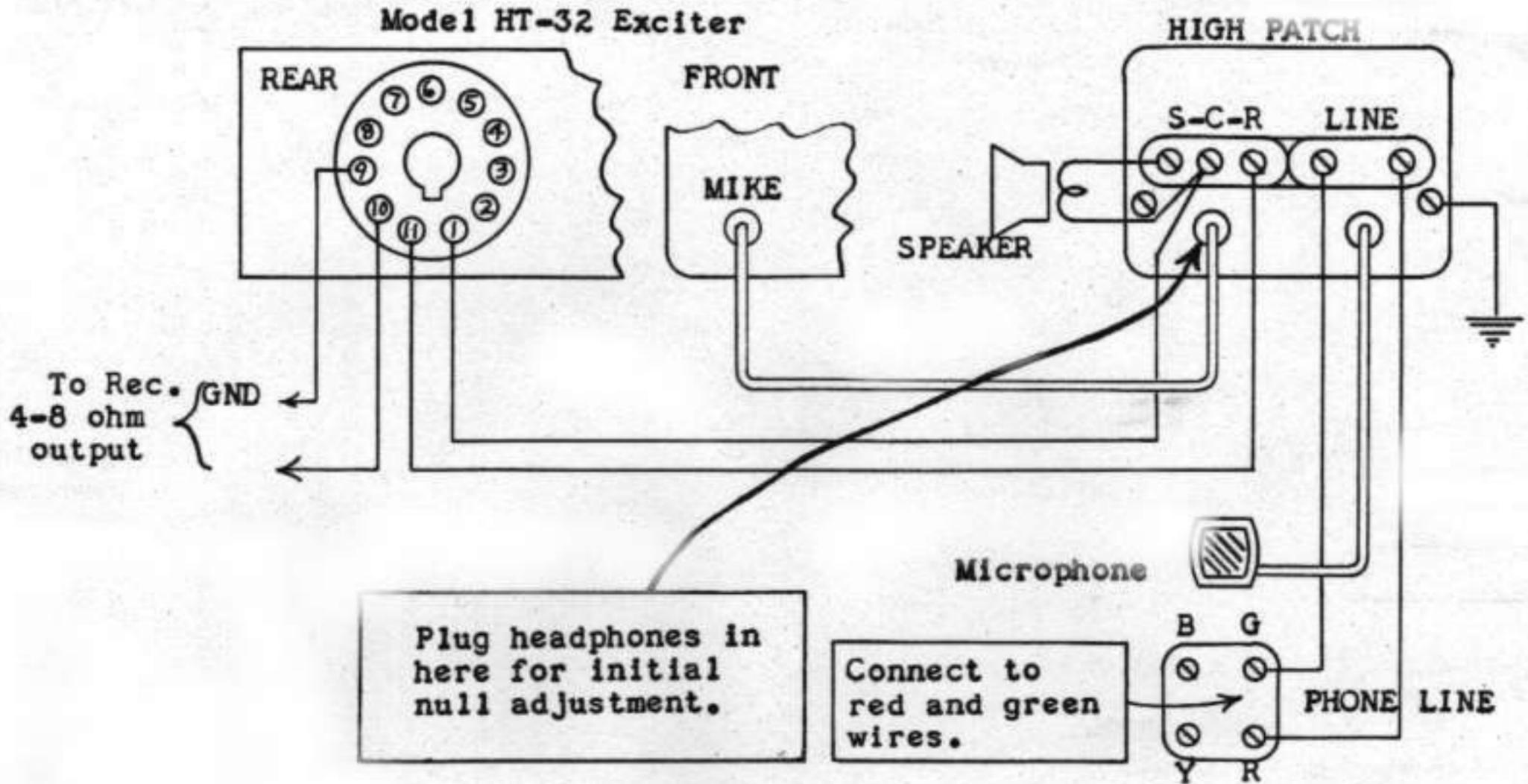
TYPICAL INSTALLATION  
 (Using Collins KWS-1 and 75A4)

75A4 Receiver (back)

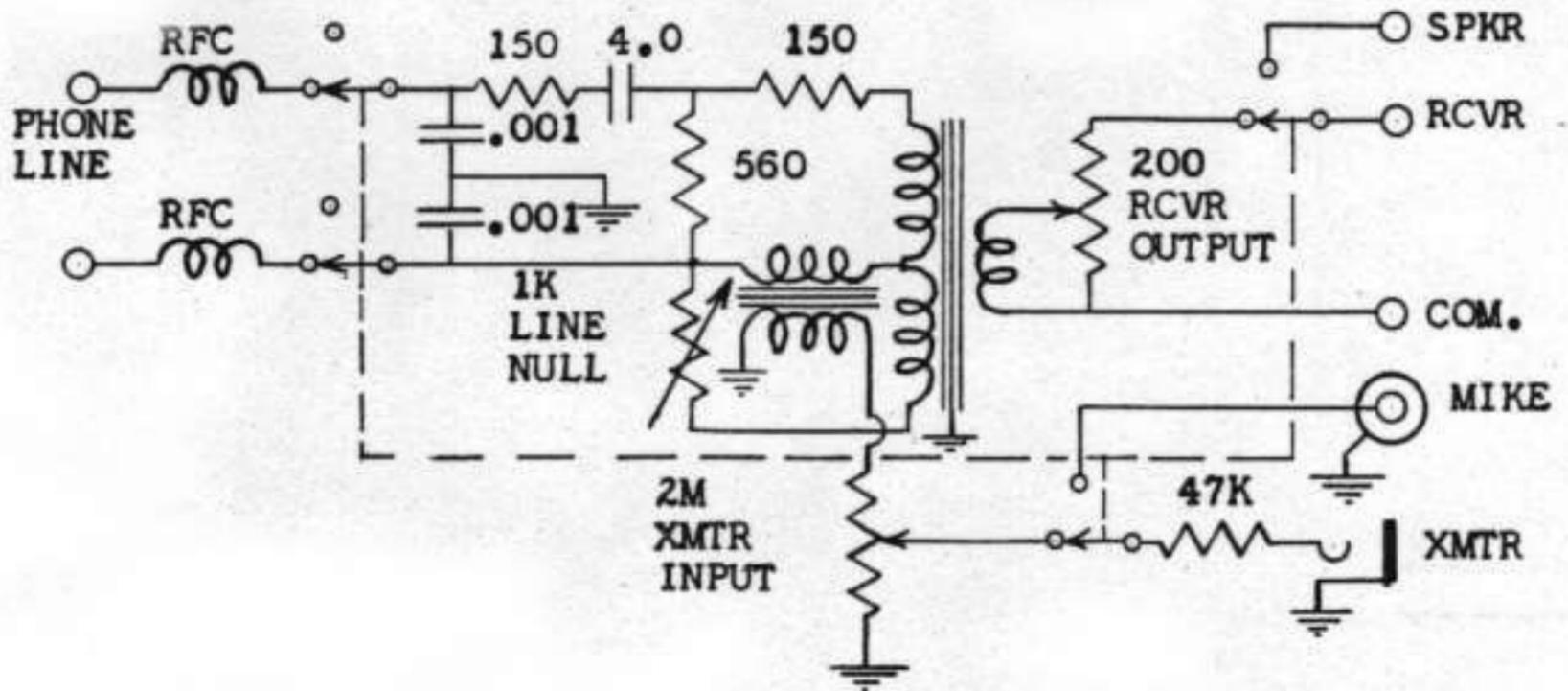
HIGH PATCH (back)



**TYPICAL INSTALLATION**  
 using a Hallicrafters' HT-32 Exciter



**SCHEMATIC DIAGRAM**



TYPICAL INSTALLATION  
( Using Collins KWM-1 )

KWM-1 Back

HIGH PATCH (Back)

