

# GROUP 11

## RADIO, HEATER, VENTILATION AND AIR CONDITIONER

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## SECTION 11-A

### RADIO.

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## 11-1 BUICK RADIO DESCRIPTION AND OPERATING INSTRUCTIONS

### a. Description

The Buick push button radio is available as optional equipment on the 43000 and 44000 Series.

This is an all transistor radio which plays immediately when turned on as there are no vacuum tubes to warm up. Even though this radio plays on less than half the current required for a tube-transistor radio, it has the same station pick-up ability and the same power output as a tube-transistor radio.

A manual antenna located on the right front fender and is extended and retracted by hand.

The Buick radio installation consists of a receiver with separate speaker mounted at the center of the instrument panel. Noise suppressors are installed at various locations to eliminate interference.

The receiver has five push buttons for push-tuning of five pre-selected stations. In addition to the push buttons, a control knob permits manual selection of stations.

The radio has a current draw of 1.3 amps at 12 VDC. This includes .3 amp for the light bulb.

All speakers have an impedance of 10 ohms. When replacing a speaker, the replacement speaker should have the same impedance for satisfactory results.

### b. Switch, Volume, and Tone Control Operation

Clockwise rotation of the switch knob, to left of dial, turns the radio on, and further rotation increases the volume.

Best fidelity (true tone) is provided when the tone control knob, behind the switch knob, is at the midposition of the tone control range. A detent in the control provides a method of quick location of this position. Rotation clockwise of the tone control knob

will diminish bass response. Rotation counterclockwise will diminish treble response.

### c. Push Button Tuning Operation

To tune in the station for which the push button is set, simply push the button in as far as possible. The button will move easily at start, then a slightly harder push is required to complete the travel. At end of button travel the tuner will rest at the station for which the button has previously been set as described in paragraph 11-5.

### d. Manual Tuning Operation

The manual tuning knob is to right of the receiver dial. See Figure 11-1. This knob may be used to tune in stations other than those for which the push buttons are set; it is also used when tuning to set the push buttons for pre-selected stations.

When tuning manually, and particularly when setting up a station

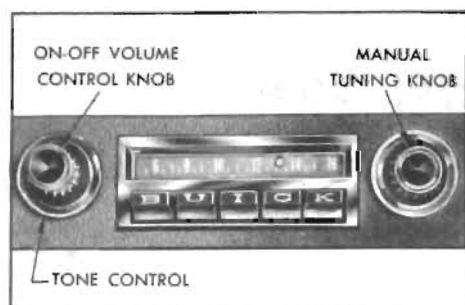


Figure 11-1—Radio Receiver Controls

on one of the push buttons, careful adjustment of the tuning knob is essential to good radio reception.

On push button selection, if the program sounds shrill or distorted, it is probably caused by improper tuning and can be corrected by adjusting the tuning knob slightly. Since the low notes are apparently more affected by tuning than the high ones, it is preferable to tune the set to a point where the low notes are heard best, and high notes are clear but not shrill. This point may be most readily found by listening to the background noise and tuning for the lowest volume and pitch of this noise. Turning the control knob back and forth until the station is almost lost on either side will enable the operator to hear the difference in reception and select the intermediate position giving best results.

## 11-2 RADIO NOISE INTERFERENCE SUPPRESSORS

Three noise suppressor capacitors are used to eliminate radio interference (see Figure 11-2). Two of the capacitors are exterior mounted, one on the voltage regulator and the other on the ig-

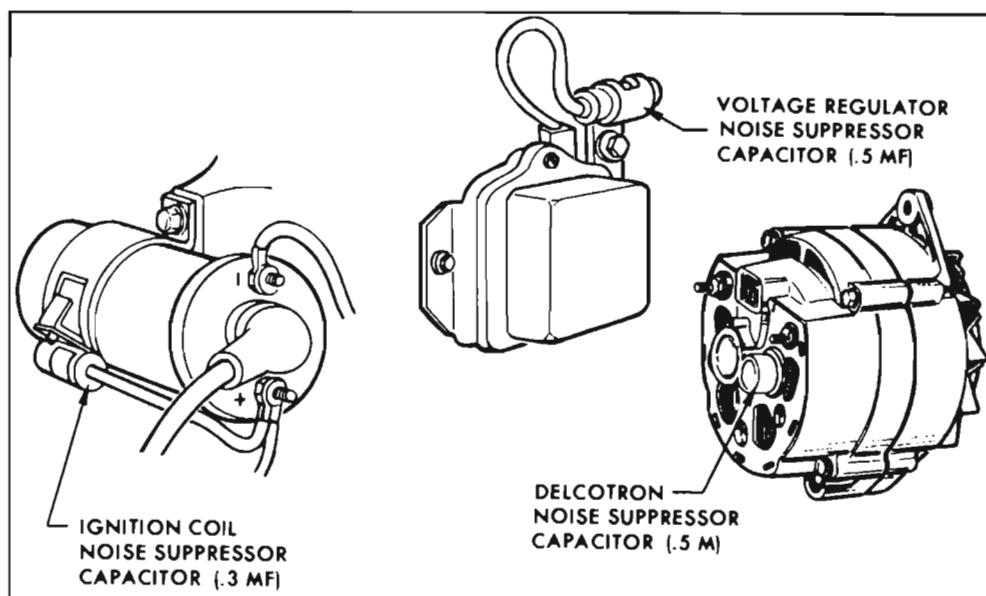


Figure 11-2—Noise Suppressors

nition coil. The third capacitor is pressed into the end bell of the delcotron. The ignition coil capacitor (0.3 MF) is connected to the positive terminal of the coil. Connection of the capacitor lead to the negative terminal will cause excessive pitting of the distributor points. The voltage regulator and delcotron capacitors are both rated at 0.5 MF. The built in resistance of each spark plug wire approximates 4000 ohms per foot.

A static collector is installed in each front wheel hub cup. For good results the cup and the center of steering knuckle spindle must be clean and free from grease. The contact button of the static collector is made of self-lubricating material.

## 11-3 RADIO TROUBLE DIAGNOSIS—ON CAR

The trouble diagnosis table is

intended as an aid in locating minor faults which can be corrected without a specialized knowledge of radio and without special radio test equipment. If the suggestions given here do not effect a correction, further testing should be done only by a trained radio technician having proper test equipment.

**CAUTION:** Never turn radio on with speaker disconnected.

**NOTE:** Because radio service problems are generally corrected by United Motors Service repair shops, there is a tendency for many dealer servicemen to remove a set when a problem is reported. The irritation to an owner of having to drive with his radio missing can frequently be avoided if the following quick checks are used to eliminate problems which are external to the radio or involve adjustment of trimmer.

## RADIO TROUBLE DIAGNOSIS

CONDITION	QUICK CHECK	POSSIBLE CAUSE AND CORRECTION
Radio Inoperative	Turn radio on and listen for thump in speaker  If no thump is heard see opposite causes	Defective Fuse—Replace with known good fuse

**RADIO TROUBLE DIAGNOSIS (Cont'd.)**

CONDITION	QUICK CHECK	POSSIBLE CAUSE AND CORRECTION
Radio Inoperative (Cont'd)	<p>If no thump is heard substitute a known good speaker</p> <p><u>NOTE: If car is equipped with a rear speaker, rotate the rear speaker knob fully clockwise instead of substituting a test speaker.</u></p> <p>If a thump is heard plug in a known good antenna and hold antenna outside car</p>	<p>Defective Power, Receiver or Speaker Connectors—Repair or replace as necessary</p> <p>Defective Speaker—Replace speaker</p> <p>Defective Antenna—Repair or replace antenna</p>
Radio Operation Intermittent	<p>Attempt to reproduce failure by tapping antenna and speaker. Also move connectors</p>	<p>Loose Antenna Connections</p> <p>Loose Speaker or Power Supply Connectors</p> <p>Defective Speaker</p> <p>Defective Antenna Lead</p>
Weak Radio Signal	<p>Check Antenna Height</p> <p>Tune radio to weak station, adjust for maximum volume and remove inner and outer knobs. Rotate trimmer screw to check for maximum volume</p> <p>Substitute a known good antenna and hold antenna outside car</p>	<p>Antenna Not Properly Extended - Extend antenna 31 inches</p> <p>Incorrect Radio Trim Adjustment - Trim radio (Refer to subparagraph 11-5, "a").</p> <p>Corroded Antenna Connections or Defective Antenna - Repair or replace as required</p>
<p>Radio Noisy</p> <p>Brake Light, Turn Signal or Window Lift Noise</p> <p>Static When Driving</p> <p>Engine Ignition Noise</p>	<p>Check that antenna connections are tight</p> <p>Visually Inspect Static Collectors</p> <p>Substitute new noise suppressors</p>	<p>Loose Antenna Connections and Mounting - Tighten</p> <p>Defective Antenna Leak - Repair or replace as necessary</p> <p>Dirty or Defective Static Collectors - Clean or replace as required</p> <p>Ignition Coil, Regulator or Delcotron Noise Suppressors Loose or Defective - Replace</p>
Poor Tone	<p>Substitute speaker with known good speaker</p> <p><u>NOTE: If car is equipped with a rear speaker, rotate the rear speaker knob fully clockwise instead of substituting a test speaker</u></p>	<p>Defective Speaker - Replace</p>

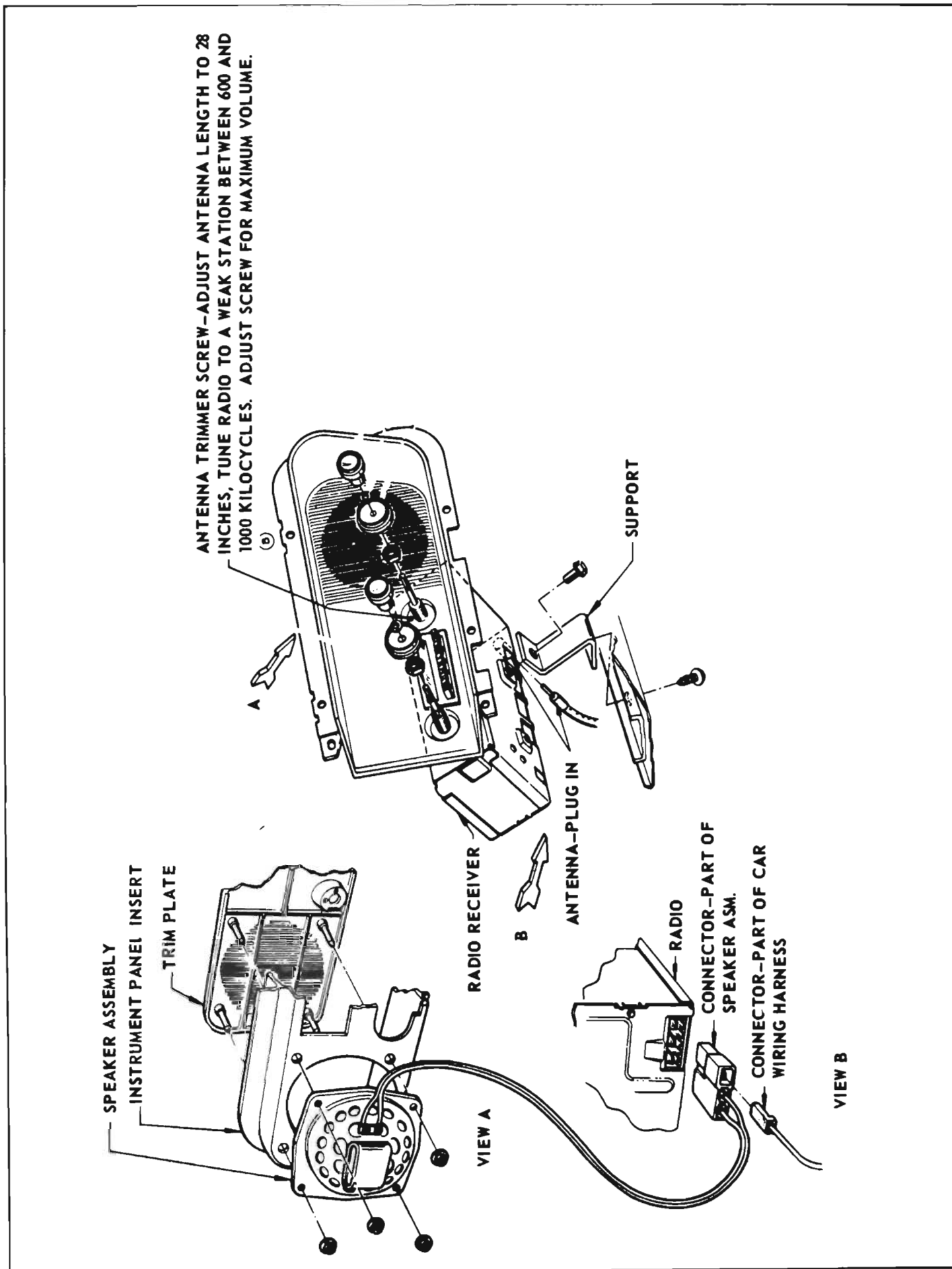


Figure 11-3—Radio Receiver and Speaker Installation

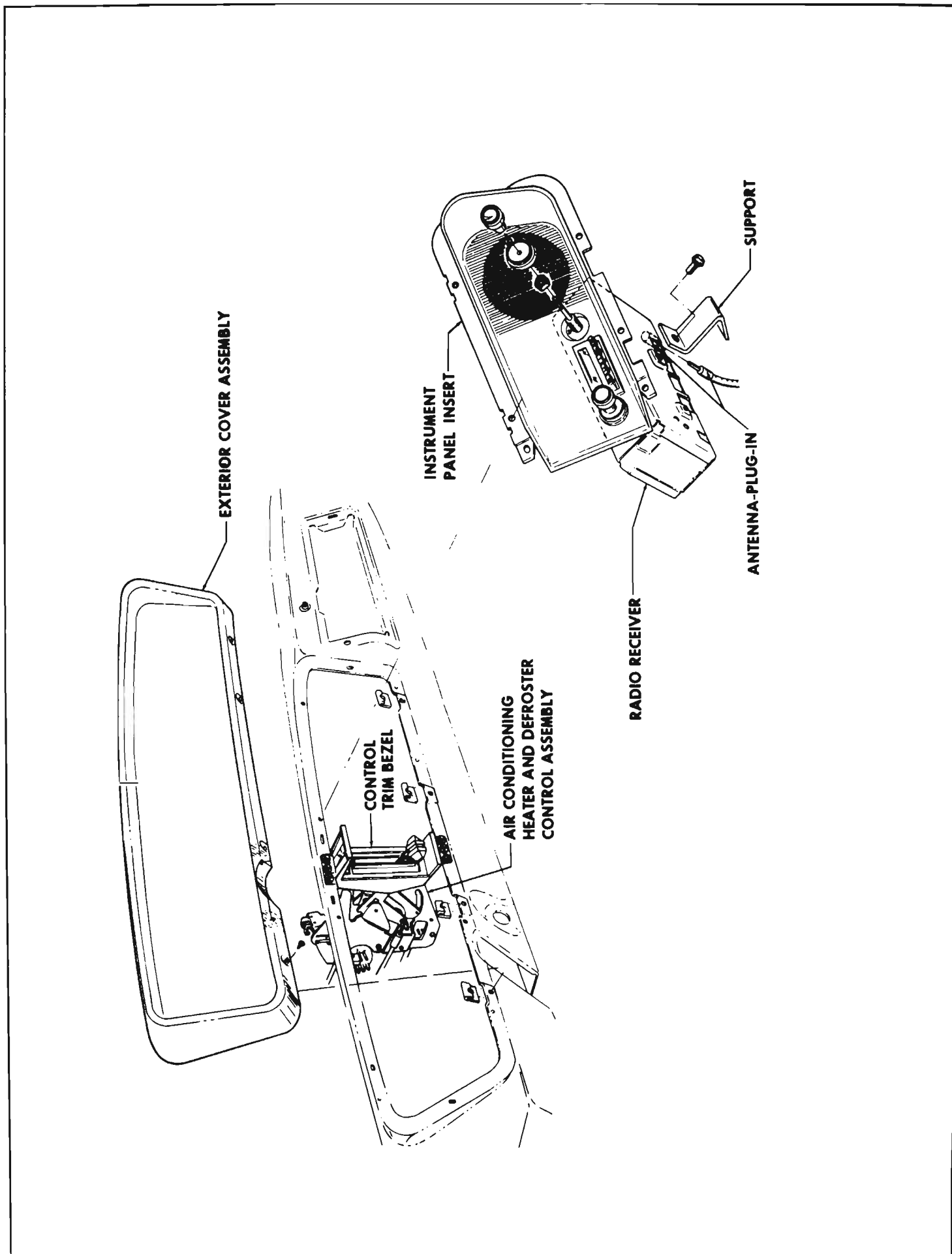


Figure 11-4—Radio Receiver Removal and Installation

## 11-4 SERVICING RADIO COMPONENTS

### a. Removal and Installation of Radio Receiver

#### REMOVAL (WITHOUT AIR CONDITIONING)

1. Disconnect battery negative lead.
2. Pull off receiver control knobs.
3. Disconnect radio lead, speaker lead, and antenna lead connectors.
4. Remove screw holding support to receiver and withdraw receiver from underside of dash.

#### REMOVAL (WITH AIR CONDITIONING)

1. Disconnect battery negative lead.
2. Remove five screws and take out exterior cover assembly (see Figure 11-4).

3. Remove four screws from control trim bezel and take out bezel.

4. Take out ash tray assembly and remove screw holding support to radio receiver.

5. Remove four screws securing instrument panel insert to instrument panel and partially withdraw insert. Disconnect radio lead and antenna lead connectors and complete removal of assembly.

6. Further disassembly and separation of receiver from instrument panel insert will be evident upon inspection.

#### INSTALLATION

7. Install radio receiver reverse of removal and trim antenna if receiver was repaired.

### b. Removal and Installation of Speaker

#### REMOVAL (WITHOUT AIR CONDITIONING)

1. Disconnect double series connected connectors from rear of receiver and separate connectors.

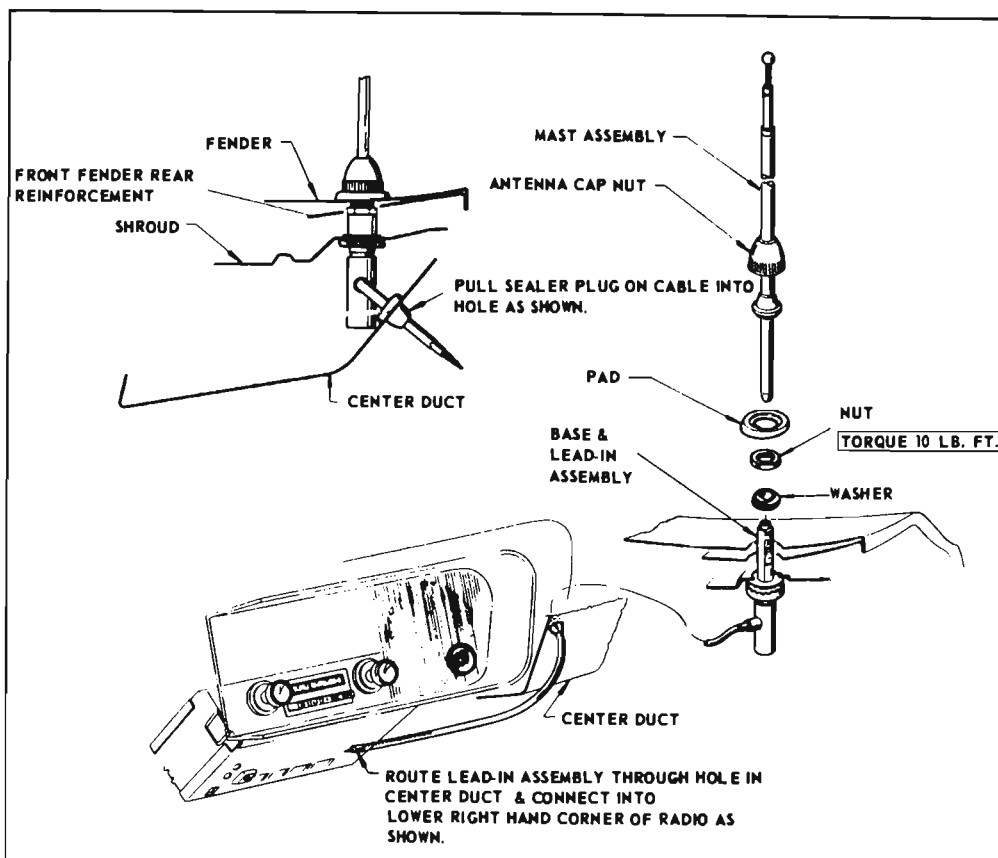


Figure 11-5—Antenna Installation

2. Remove four nuts securing speaker to trim plate and take out speaker.

#### REMOVAL (WITH AIR CONDITIONING)

1. Disconnect negative battery lead.

2. Remove five screws and take out exterior cover assembly (see Figure 11-3).

3. Remove four screws from control, trim bezel and take out bezel.

4. Take out ash tray assembly and remove screw holding support to radio receiver.

5. Remove four screws securing instrument panel insert to instrument panel and partially withdraw insert. Disconnect radio lead and antenna lead connectors and complete removal of assembly.

6. Further disassembly and separation of speaker from instrument panel insert will be evident upon inspection.

#### INSTALLATION

7. Install speaker reverse of removal.

### c. Removal and Installation of Antenna

#### REMOVAL

1. Unscrew antenna cap nut (see Figure 11-5) and lift mast assembly out of base and lead-in assembly. Remove pad.

2. Remove outside air inlet grille located forward of the windshield.

3. Unplug antenna wire from receiver, remove nut securing spacer, and also the base and lead-in assembly to shroud and withdraw base and lead-in assembly through opening in topside of cowl.

#### INSTALLATION

4. Install antenna reverse of removal procedures and trim antenna if antenna was repaired.

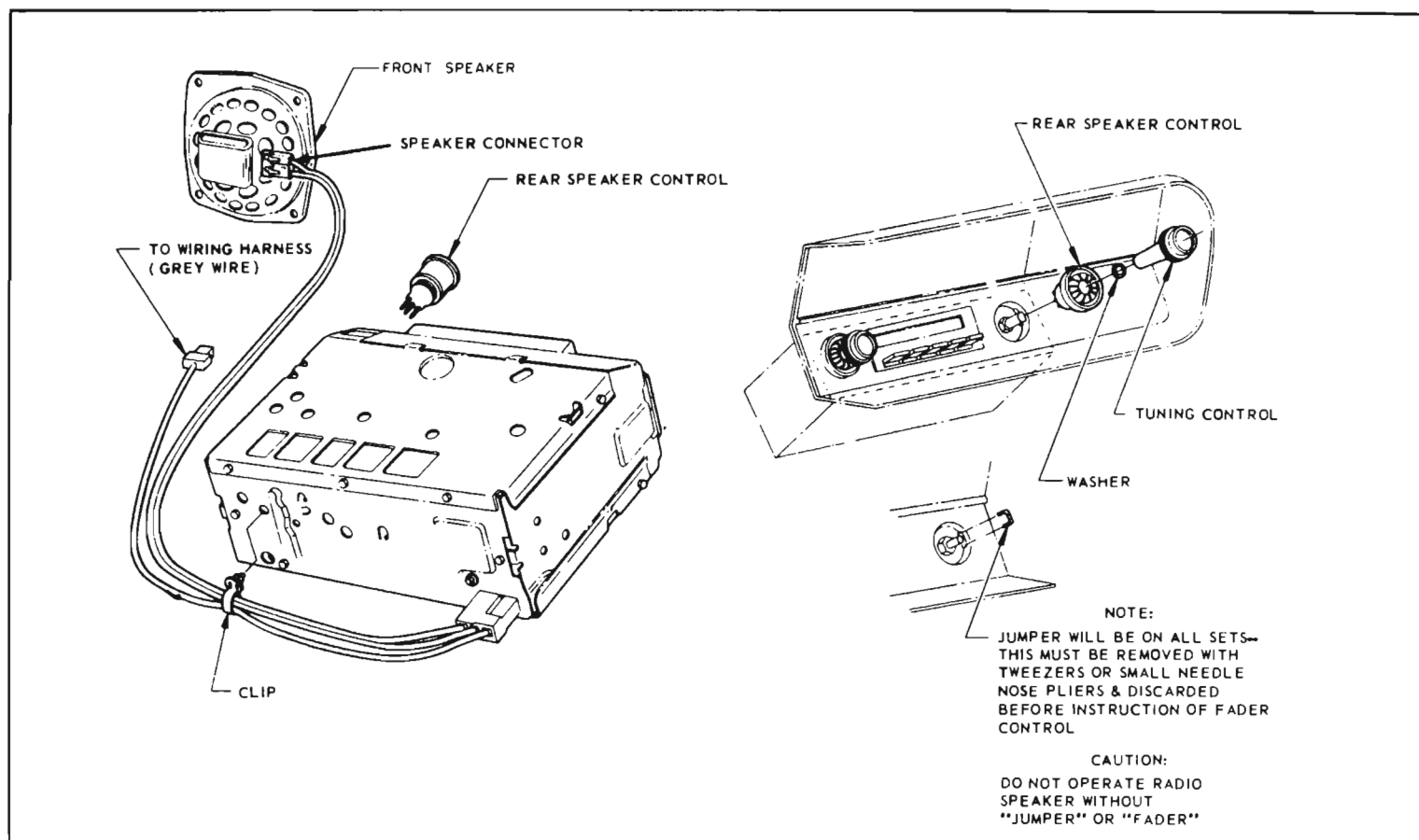


Figure 11-6—Rear Speaker Instrument Panel Connection

NOTE: The antenna is matched to the receiver within the range of the trimmer adjustment. Other antennas may not match the receiver within the range of the trimmer adjustment. Use of other than authorized replacement parts is not recommended.

### 11-5 RADIO ADJUSTMENTS—ON CAR

NOTE: When making the adjustments covered in this paragraph, it is essential to have the car in a location that is as free as possible from outside interference.

#### a. Antenna Trimmer Adjustment

An antenna trimmer adjustment is provided for matching the antenna coil in the receiver to the car antenna. This adjustment must always be made after installation of receiver and antenna, or after any repairs to these

units. This adjustment should also be performed whenever the radio reception is unsatisfactory.

1. Position antenna at a height of 31".

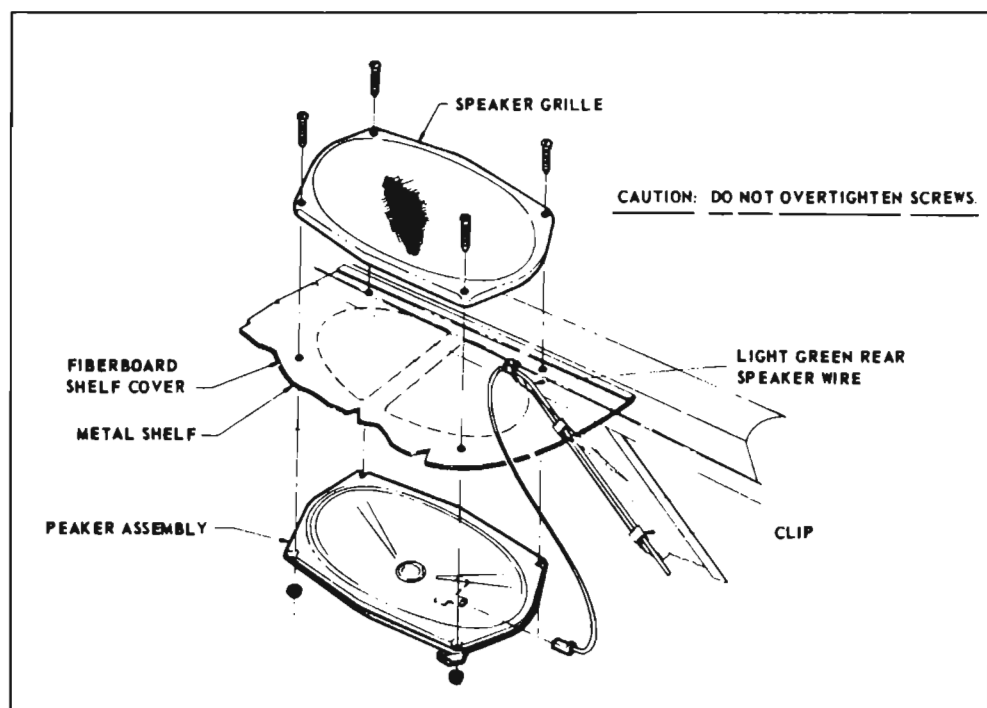


Figure 11-7—Rear Speaker Installation (Sedan)

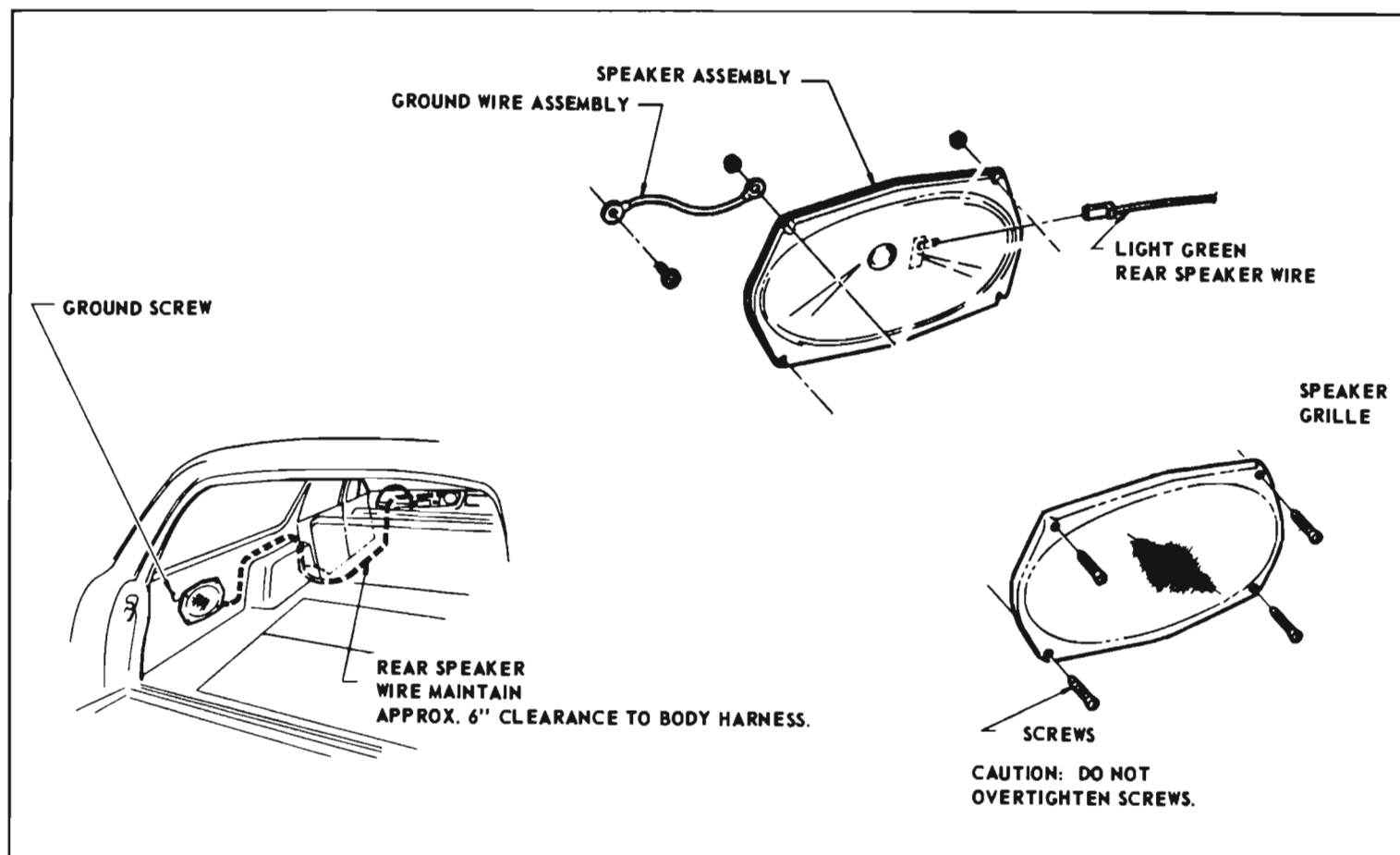


Figure 11-8—Rear Speaker Installation (Estate Wagon)

2. Tune radio to a weak station between 600 and 1000 KC that can barely be heard with volume turned full on.

3. Remove both right inner and outer knobs from radio tuning control shaft and turn antenna trimmer screw for maximum volume (see Figure 11-3).

#### b. Setting Push Buttons to Desired Stations

1. Turn on the radio.

2. Pull push button all the way out as far as it will go. It is desirable to set-up the push buttons in logical sequence. For example, lowest frequency station on first button, next higher frequency station on second button, etc.

3. Carefully tune in the desired station manually, then push the button all the way in.

4. Move dial pointer away from the selected station and push the button to make certain that the

station will be properly tuned in.

5. Turn tuning knob back and forth to make certain that best tuning is obtained with the push button. If best tuning is not obtained, repeat Steps 2, 3, and 4.

#### 11-6 REAR SPEAKER REMOVAL AND INSTALLATION

Removal and installation of rear speaker will be obvious when viewing Figures 11-7 and 11-8.



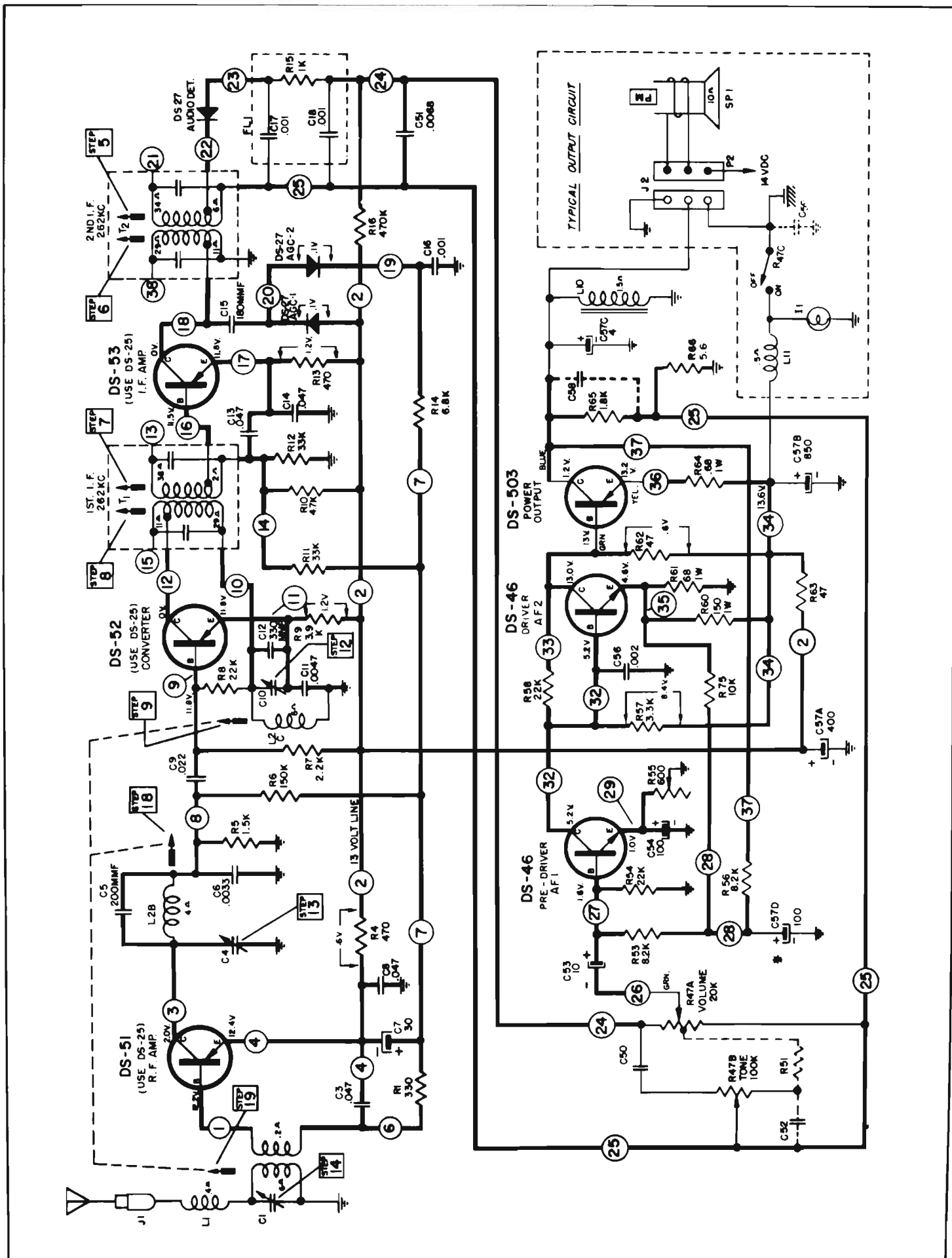


Figure 11-9—Radio Circuit Schematic