

GROUP 11

RADIO, HEATER, VENTILATION AND AIR CONDITIONER

SECTIONS IN GROUP 11

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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 4000 and 4100 Series.

A manual antenna located on the right front fender, which may be extended and retracted by hand, is included with the radio option.

The Buick radio installation consists of a receiver with separate speaker mounted at the center of the instrument panel. The radio uses suppression parts 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.

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 mid position of the tone control range. A detent in the circuit provides a method of quick location of this position. Rotation clockwise of the tone control knob will diminish bass speaker response. Rotation counterclockwise will diminish treble speaker 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.

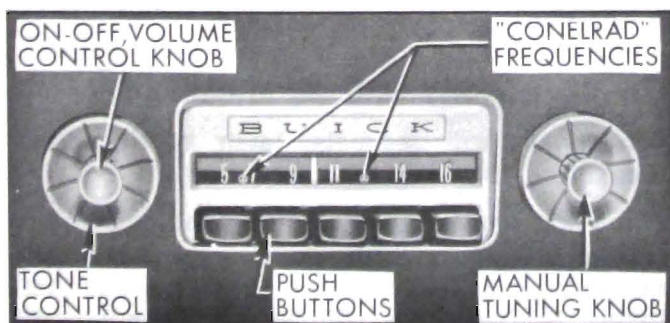


Figure 11-1—Radio Receiver Controls

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 buttons for selected stations.

When tuning manually, and particularly when setting up a station 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 a good plan 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 TROUBLE DIAGNOSIS—
ON CAR**

The trouble diagnosis information in this paragraph is of a non-technical nature. It 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.

a. Radio Is Inoperative or "Dead"

1. Turn on the radio. The dial should light and a pop should be heard in the speaker. If a pop is not heard, check speaker connections first.

2. If dial does not light, check the bulb, and the fuse located in fuse block. If fuse is okay check radio lead cable for proper connection to fuse block. Check cable for open circuit. If source of trouble has not been found, remove receiver for test by a trained radio technician.

3. If fuse and tubes are satisfactory, substitute a test antenna consisting of a piece of wire about 10 feet long connected to a standard antenna lead-in cable. Place test antenna outside and away from the car. If radio operates near normal with substitute antenna, some part of car antenna or lead-in is at fault.

4. Lead-in wire may be checked for "grounds" by removing lead-in cable connector from radio receiver and checking with an ohmmeter from connector tip to car body. This check should show an entirely "open" circuit. **CAUTION:** Do not check with a lamp or any device drawing current, since the conductor inside loom is only .010" in diameter and will burn off easily if grounded.

5. If source of trouble has not been found, remove the receiver and check the tubes by replacing one at a time until the bad one is located, or test the tubes with a reliable checker if available.

6. If radio is still inoperative it should be tested by a trained radio technician.

b. Radio Reception Is Weak

1. Fully extend the antenna and turn on radio. Turn volume control to maximum position and tune across the dial.

2. If reception seems just slightly weak, tune in a station having good volume for listening and grasp the antenna rod with your hand. If volume increases adjust the antenna trimmer (par. 11-5). If volume decreases proceed with the following steps.

3. Substitute a test antenna as described in subparagraph a, above.

4. Check for weak tubes by replacing one at a time until the faulty one is located, or test the tubes with a reliable checker if available. If this does not reveal source of trouble, remove the receiver for test by a trained radio technician.

c. Radio Noisy with Car Standing Still

1. Close and securely latch hood before checking for noise.

2. Start engine, turn on radio and tune radio to a spot between stations. Engine noise will usually appear in radio as a clicking sound that varies in frequency with speed of engine. If noise is present disconnect antenna lead-in cable from receiver.

3. If engine noise stops when antenna is disconnected, check all high tension wires for full seat in sockets of coil and distributor cap.

4. Check antenna lead-in cable shield for proper ground.

5. If engine noise continues with antenna disconnected, check ignition coil and generator capacitors for clean, tight connections; also check the bond straps between engine and cowl to make sure that there are clean tight connections at both ends. Observe generator armature and brushes; if sparking is excessive, check for open armature.

6. If source of noise has not been found, check ignition coil and generator capacitors against known good ones. Ignition coil capacitor lead must be attached to battery terminal of coil. Generator capacitor lead must be connected to "A" terminal of generator. Regulator capacitor must be connected to "BAT" terminal of regulator. All capacitors must have clean metal ground contact.

d. Radio Noisy with Car Moving at High Speed

1. Turn on radio and check for engine noise as described in subparagraph c above. If engine noise is present, correct as outlined.

2. Drive over a dry pavement with radio on and tuned between stations. Listen for presence of wheel or tire static. In mild form this static shows up as a click in radio that increases with speed; when more severe it shows up as heavy static or a constant roar. The surface of the road determines the strength of static discharge. Wheel or tire static very seldom occurs on dirt, gravel or wet roads.

3. If wheel or tire static is present, apply brakes lightly and if noise decreases check front wheels to see that static collectors have been properly installed and make sure that all grease has been wiped off contacts.

e. Radio Noisy on Rough Road

1. Turn on radio and check for engine noise as described in subparagraph c above. If engine noise is present, correct as outlined.

2. Jar the receiver by striking the case with heel of hand, or a rubber mallet. If this produces noisy reception, tap each tube with handle of screwdriver until noisy tube is found. Make sure that all tubes are firmly pressed

into sockets. If this does not correct the noise, remove receiver for test by a trained radio technician.

3. If noisy reception is not produced when receiver is jarred, fully extend antenna and turn radio volume control on full. If noise appears in speaker check antenna and lead-in wire for loose connections. If movement of lead-in does not cause noise, rap antenna rod with insulated end of screwdriver; if noise then appears, check antenna for shorting to car body or corrosion between antenna sections.

f. Radio Noisy When Car Equipment is Operated

When excessively loud "clicks" and "pops" are heard in the radio due to the operation of directional signals, brake lights, power seats or power windows, all ground connections to the radio antenna and lead-in wire should be thoroughly checked. A poor ground connection at any point can produce the above trouble.

11-3 RADIO REMOVAL AND INSTALLATION

a. Removal of Radio Receiver and Speaker

NOTE: On air conditioner cars it is necessary to lower evaporator assembly.

1. Disconnect antenna lead-in wire, speaker wire and battery wire from receiver.

2. Remove knobs, escutcheons and retaining nuts from receiver control shafts.

3. Remove the support bracket to receiver cap screw located at right side of receiver and lower receiver from under instrument panel.

4. Remove the two speaker to instrument panel nuts located at front edge of speaker mounting plate and remove speaker and mounting plate assembly.

b. Installation of Receiver and Speaker

If radio parts are removed from car for any reason, the following instructions must be carefully observed to insure proper reinstallation and satisfactory operation. These instructions cover reinstallation only; if an original installation is to be made, carefully follow instructions contained in the parts package, particularly with reference to cutting holes in sheet metal and trim.

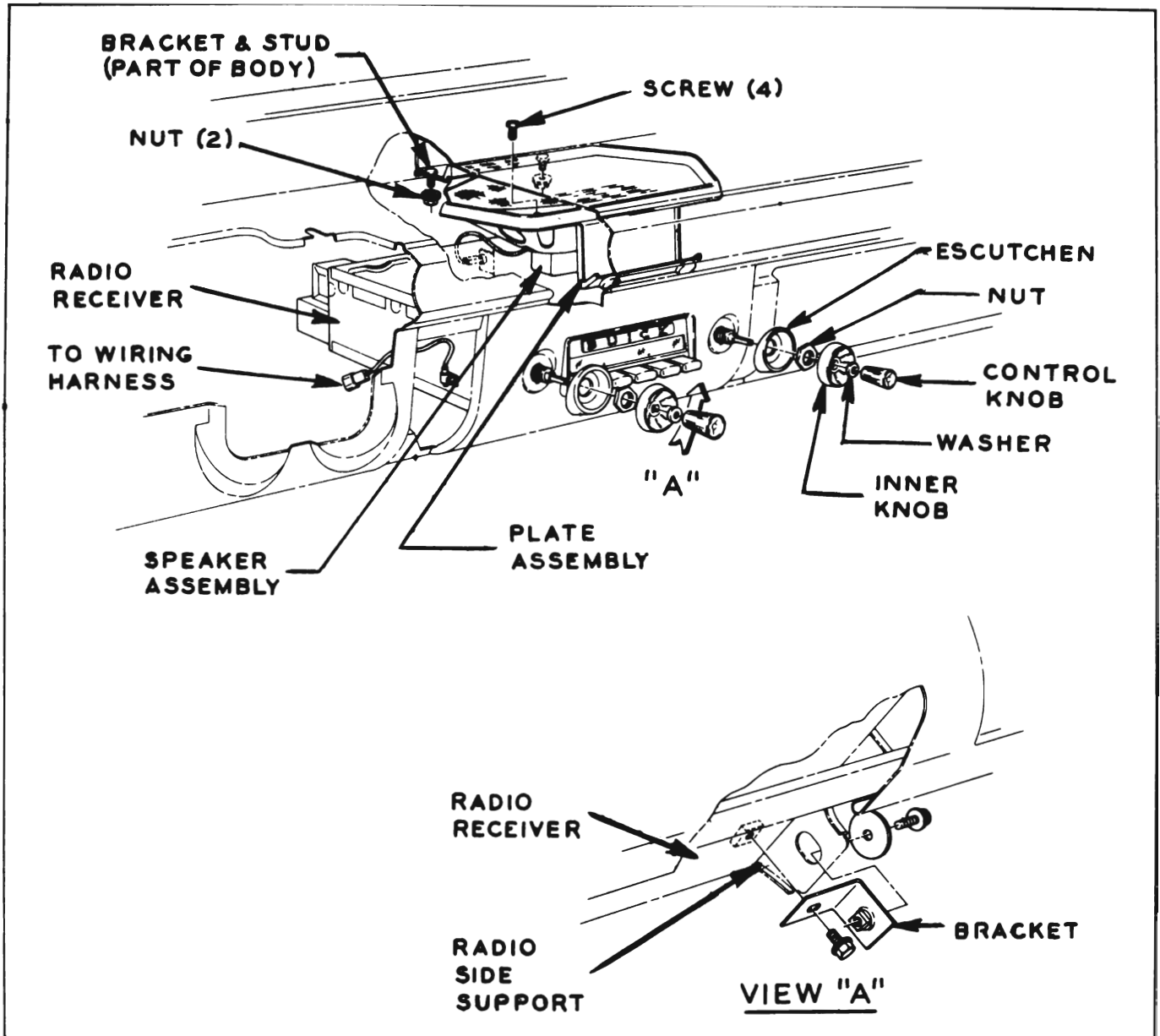


Figure 11-2—Radio Receiver and Speaker Installation

IMPORTANT: The standard Buick 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; therefore the use of other than a standard Buick antenna and lead-in cable is not recommended.

1. Position speaker to instrument panel and install the two retaining nuts.

2. Install receiver from beneath, inserting threaded bushings through control holes in instrument panel. Install and tighten hex nuts on bushings. See Figure 11-2.

3. Install and tighten the support bracket to receiver cap screw.

4. Install escutcheon and tone control knob on shaft to left of the dial. Install escutcheon and inner knob on shaft to right of dial. Install felt washers and control knobs, making sure spring clips properly engage flats of control shafts.

5. Plug in speaker wire, antenna lead in wire and battery wire.

6. Make antenna trimmer adjustment (par. 11-5, subpar. a).

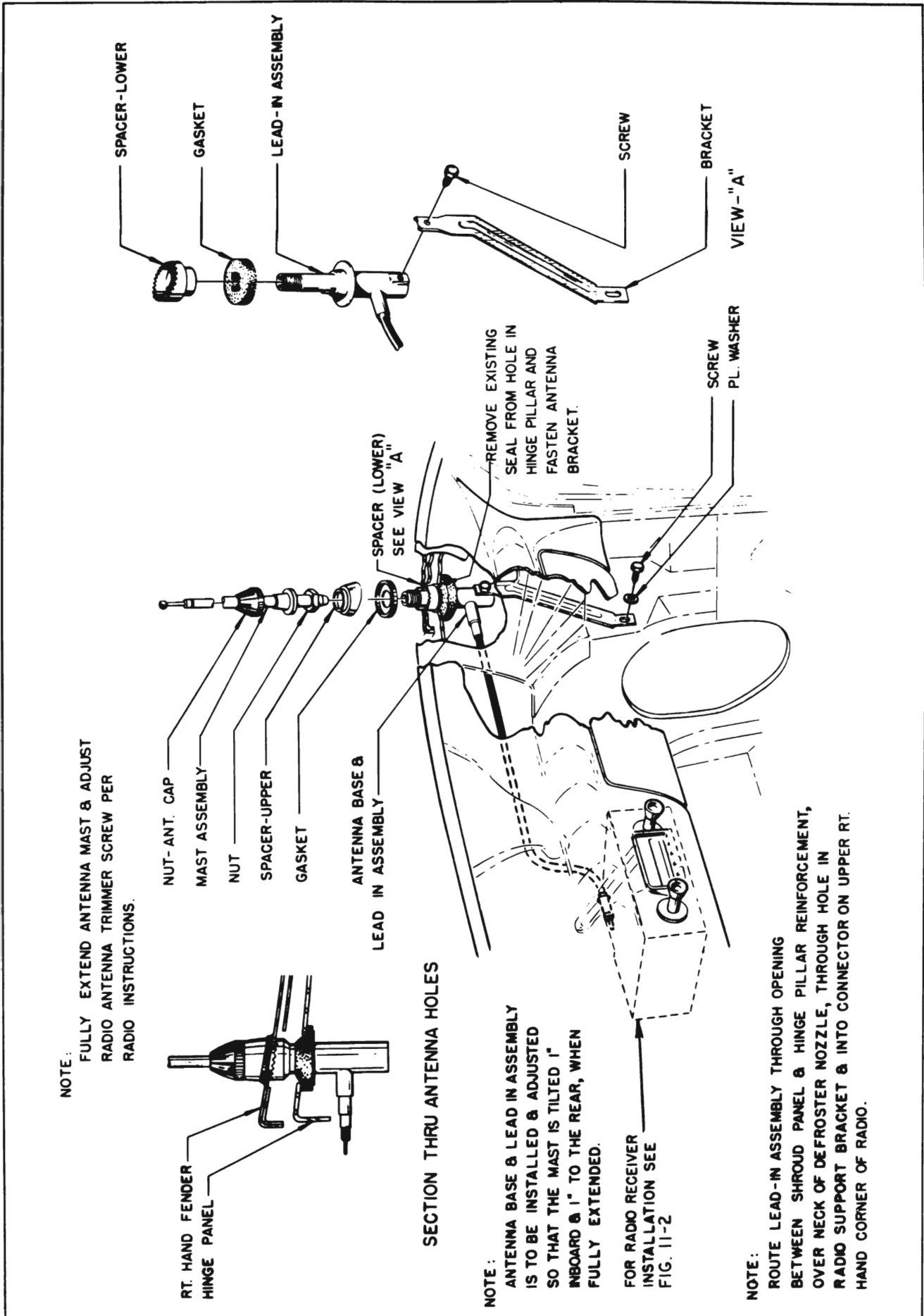


Figure 11-3—Antenna Installation

c. Installation of Interference Suppression Parts

The capacitor leads are connected to the armature ("A") terminal of generator (.33MF) and to the "BAT" terminal generator of regulator (.50MF). Capacitors must never be connected to the field ("F") terminal of either unit as this will cause bad pitting of the voltage regulator points, thus preventing it from operating properly. See Figures 10-72 and 10-73.

The built-in resistance of each spark plug wire approximates 4,000 ohms per foot.

The coil capacitor (.33MF) is mounted on the coil bracket and the lead is connected to the battery position (+) terminal of coil. If capacitor is connected to the distributor negative (-) terminal, excessive pitting of distributor contact points will result.

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.

In addition to the items mentioned above, ground straps are connected between the cowl and the rear corners of the engine.

11-4 ANTENNA REMOVAL AND INSTALLATION

a. Removal of Antenna Assembly

1. Remove antenna cap nut. Pull mast out of antenna base.
2. Remove antenna base nut, upper spacer and gasket.
3. Remove right shroud foundation (cowl trim pad) and screw that attaches lower antenna mounting bracket to shroud.
4. Remove the antenna lead-in wire nut and unplug lead-in. Remove antenna base.

b. Installation of Antenna Assembly

1. Position antenna base in hole with lower spacer and gasket in place in fender and attach lower mounting bracket to shroud.
2. Plug lead-in wire in antenna and tighten nut.

3. Reinstall shroud foundation.

4. Install antenna upper gasket, upper spacer and nut.

5. Insert mast in antenna base and tighten cap nut.

11-5 RADIO ADJUSTMENTS—ON CAR

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. The adjustment should also be checked whenever the radio reception is unsatisfactory.

1. Raise antenna to maximum height.
2. Tune radio to a weak station between 600 and 1000 K.C. that can barely be heard with volume turned full on.
3. Insert a screwdriver up through the opening in the rear of the bottom of the receiver. Carefully turn the trimmer screw back and forth until a position is found that gives maximum volume.

b. Setting Push Buttons to Desired Stations

1. Turn on the radio.
2. Pull button all the way out. It is desirable to set up the push buttons in logical sequence. For example, lowest frequency desired 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 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, 4.

