Note: Despite the fact that the HSN1000B unit has significant circuitry differences from the HSN1000A unit, this manual was shipped with each of several HSN1000B speakers.
### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Voltage</td>
<td>+13.8 V dc negative ground</td>
</tr>
<tr>
<td>Audio Input</td>
<td>2400 ohms with input level adjust</td>
</tr>
<tr>
<td>Input Sensitivity</td>
<td>0.5 volt input for full output</td>
</tr>
<tr>
<td>Audio Output to Speaker</td>
<td>6 Watts, with less than 10% distortion</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>+1, -3 dB 300-3000 Hz</td>
</tr>
<tr>
<td>Speaker</td>
<td>5&quot; Permanent Magnet, 2 ohm</td>
</tr>
<tr>
<td>Battery Drain:</td>
<td></td>
</tr>
<tr>
<td>Standby</td>
<td>less than 0.1 amp</td>
</tr>
<tr>
<td>Full Output</td>
<td>0.75 amp</td>
</tr>
</tbody>
</table>

### SPEAKER AMPLIFIER MODEL COMPLEMENT

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLN4559A</td>
<td>Speaker Amplifier Board</td>
</tr>
<tr>
<td>HSN4015A</td>
<td>Speaker and Housing</td>
</tr>
</tbody>
</table>

### ADDITIONAL ACCESSORY CABLE ASSEMBLIES

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKN4149A</td>
<td>Speaker Cable 15'</td>
</tr>
<tr>
<td>HKN4151A</td>
<td>Speaker Cable 30'</td>
</tr>
<tr>
<td>HKN4152A</td>
<td>Speaker Cable 50'</td>
</tr>
<tr>
<td>HKN4132A</td>
<td>Ground Extender (6-pin)</td>
</tr>
<tr>
<td>HKN4150A</td>
<td>Speaker Cable 8'</td>
</tr>
</tbody>
</table>

Note: When used with the MTR2000 station, use cable #0185180U01. Instructions for fabricating this cable are found in the MTR2000 section, in the RBTIP.
1. DESCRIPTION

1.1 The speaker/amplifier consists of a 6-watt integrated circuit amplifier and a 2.0 ohm speaker enclosed in a rugged weather-resistant housing. The housing is designed to be mounted either inside or outside of a school bus, truck, emergency van or other similar vehicle.

1.2 The speaker/amplifier is used in conjunction with public address options for the Mostar radio (options B330, B589, and B700) described in instruction section 68P81112E86.

1.3 To facilitate connection of multiple wires to single pinouts from the radio, 6-pin ground extenders are supplied with each radio. Their use is illustrated in instruction section 68P81112E86.

1.4 The speaker/amplifier includes a trunnion bracket, hanger bracket, and wall mount bracket, which permits the speaker to be mounted in a variety of ways. Refer to Details A and B of Figure 1. The trunnion bracket provides a large variety of permanent mountings (dashboard and accessible firewall areas) for the speaker while permitting it to be tilted or angled for best results. The hanger bracket (already attached to the speaker) by itself permits temporary mounting on projections such as automobile windows, etc. In this case, the trunnion bracket must be removed. The wall mount bracket can be used for permanent mountings if the trunnion bracket is too large to fit in some inaccessible areas. In this case, the trunnion bracket is removed and the speaker is attached to the wall mount bracket by the hanger bracket. Security screws are included for optional use in place of wing screws.

1.5 When the speaker is mounted external to the vehicle, it should be mounted under the engine hood near the front grille. The location selected should provide best audio projection while affording maximum protection from the weather and environmental elements.

2. INSTALLATION

2.1 TOOLS REQUIRED FOR INSTALLATION

Center Punch
Hammer
Drill (1/4" Chuck)
#22 Twist Drill (0.157" for self-tapping screws)
#38 Twist Drill (0.101" for self-tapping screws)
Nut Driver (1/4"
Nut Driver (5/16"

2.2 TRUNNION BRACKET INSTALLATION PROCEDURE (Refer to Detail A of Figure 1.)

Step 1. Remove the trunnion bracket by loosening the two wing screws.

Step 2. Remove the three paper retainers and screws from the trunnion bracket.

Step 3. Remove the wall mount bracket from its taped position on the hanger bracket (retain for future use).

Step 4. Using the trunnion bracket as a template, mark the location of the three desired mounting holes.

Step 5. Centerpunch and drill a 0.157" diameter hole at each location.

Step 6. Mount the trunnion bracket using the supplied screws.

Step 7. Remount the speaker into the trunnion bracket and retighten the two wing-screws.

2.3 WALL MOUNT BRACKET INSTALLATION PROCEDURE (Refer to Detail B of Figure 1.)

Step 1. Remove the wall mount bracket from its taped position on the hanger bracket.

Step 2. Remove the trunnion bracket and trunnion wing-screws (retain for future use).
Step 3. Remove the two paper retainers and screws from the wall mount bracket.

Step 4. Determine the location for installation.

Step 5. Using the bracket as a template, mark the location for the screws.

Step 6. Centerpunch and drill a 0.101" diameter hole at both locations.

Step 7. Mount the wall mount bracket to the surface with the supplied screws.

Step 8. Firmly seat the hanger bracket (attached to the speaker) in the wall mount bracket.

2.4 DUAL TRUNNION AND WALL MOUNT INSTALLATION

In some installations, such as school buses, where the speaker may be subject to excess strain or abuse it may be desirable to use both the trunnion mounting bracket and the wall mount bracket. In this case follow the procedures in both 2.2 and 2.3 but use the template in Figure 2 to locate the hole centers.

2.5 ELECTRICAL CONNECTIONS

Install the radio following the preinstallation and installation procedures described in the basic radio manual. Use the following procedure to install the extension speaker.

2.5.1 Ground Connection

Step 1. Insert male pin from the BLACK speaker wire into any location on one of the HKN4132A ground extenders supplied with the P.A. option kit.

Step 2. Insert the gold male pin from the HKN4132A ground extender into the correct position in the HLN4472A options connector as indicated in instruction section 68P81112E86.

2.5.2 Input Connection

Step 1. Insert male pin from the BLUE speaker wire into any location on another HKN4132A ground extender supplied with the P.A. option kit.

Figure 1. Physical Installation Details

Figure 2. Dual Trunnion and Wall Mount Template
Step 2. Insert the gold male pin from the HKN4132A
ground extender into the correct position in the
HLN4472A options connector as indicated in instruc-
tion section 68P81112E86.

2.5.3 Power Connection

Step 1. Insert male pin from the RED speaker wire into
any location on another HKN4132A ground extender
supplied with the P.A. option kit.

Step 2. Insert the gold male pin from the HKN4132A
ground extender into the correct position in the
HLN4472A options connector as indicated in instruc-
tion section 68P81112E86.

2.5.4 Multiple P.A. Speakers (Option B589)

2.5.4.1 Both RED and both BLACK wires are
grouped on one HKN4132A ground extender. Each BLUE wire should be connected to an individual
HKN4132A ground extender. Follow schematic
diagram and instructions in instruction section
68P81112E86.

2.5.4.2 Plug P1 of each speaker/amplifier into J1
of each HKN4149A cable assembly.

3. ADJUSTMENT

Step 1. Adjust the radio as described in the radio in-
struction manual.

Step 2. Set up conditions to provide a signal to the
speaker such as a PA message with PA mode selected
for public address speakers.

Step 3. Adjust the speaker/amplifier volume control
(on speaker circuit board) for a convenient listening
level clearly heard throughout the vehicle. Make sure
that this level does not cause acoustic feedback howl
when the microphone is held near the operator's mouth.
FUNCTION

The speaker/amplifier consists of a 6-watt integrated circuit amplifier and a 2.0 ohm speaker mounted in a rugged weather resistant housing.

Notes:
1. UNLESS OTHERWISE SPECIFIED
   RESISTOR VALUES ARE IN OHMS
   CAPACITOR VALUES ARE IN MICROFARADS
2. JUMPER 21-3 TO 21-6 IS NORMALLY SUPPLIED
   AS PART OF CABLE KIT. JUMPER CAN BE
   REMOVED AND POWER AMP. USED TO
   DRIVE ANY 1.5 TO 4 OHM REMOTE SPEAKER.

Motorola No. PEPS-35994-O
3/18/83 - UP

4A