

FIGURE 1 – Dimensions

ENGINEERING DATA EV-30, EV-300 DYNAMIC BOOM MIKE HEADSET AND HEADPHONES

DESCRIPTION AND APPLICATIONS

The 300 series headphones and headset are designed specifically for articulate speech transmissions under extremely high ambient noise environment. The EV-300 eliminates the need for the pilot to have to search for the handheld microphone in the cockpit to communicate with air traffic controllers, control towers, or other aircraft.

Both of these units (EV-30 and EV-300) have been designed with reliability and comfort as the primary prerequisites. The unique features of these two units is their being extremely lightweight. Also, the completely adjustable four axis boom is unique versus all other competitive models on the market today. The reversible earcup is unique in that it allows one earcup housing to rest ahead or behind the ear for cockpit conversation, then when approaching a high density area, flipping the earcup over and placing it over the ear for dual receiver capability makes this unit very versatile.

The EV-30 headphones permit a remarkable noise attenuating capability to be achieved from the specially designed earcup. With the headphone total weight of only 283.5 grams (ten (10) ounces), these headphones deliver the ultimate in comfort.

INSTALLATION

In a general aviation aircraft equipped with an integral push-to-talk switch, merely plug the headset into the appropriate jack(s). For planes not equipped with an integral PTT switch, order one of the switches listed in the optional accessories.

SPECIFICATIONS

Type: (Mike)	Dynamic (noise cancelling)
Frequency Response: (Mike)	200 to 4000 Hz
Impedance: (Mike with Amp)	250 ohms
Impedance: (Rec)	500 to 600 ohms
Polar Pattern: (Mike)	Bidirectional noise cancellation
Output Level:	103 dB S.P.L. 1 mW Input
Case Material:	High Impact Polycarbonate (Lexan)
Finish:	Nonreflecting black and gray
Transistor Amplifier	
Power Gain:	45 dB (12 volts)*
Current Drain:	20 mA (27 volts)*
Rated Supply Voltage:	6-30 volts
Maximum Undistorted Output:	1.0 volts
Dimensions	
Transducer Assembly	12.7 mm (1/2") dia., 25.4 mm (1") long
Microphone boom:	203 mm (8") long
Boom mike assembly:	25.7 mm (10-1/8") long
Earcup	
Outside:	101.6 mm x 28.6 mm (1-1/8")
Depth of Cavity:	19 mm (3/4")
Net Weight	
EV-30:	283.5 grams (10 oz.)
EV-300:	326 grams (11.5 oz.)
Cable	
EV-30:	2 conductor, 1.52 m (5 foot)
EV-300:	4 conductor, shielded, 1.52 m (5 foot)
Accessories Supplied:	None
Optional Accessories:	(1) Model 367 push-to-talk switch with metal strap (2) Model 369 push-to-talk switch with Velcro strap (3) Cloth cover for ear cushions
Temperature Range:	-40°C (-40°F) to +70°C (+158°F)
FAA Approval:	EV-300 – TSO-C57 and C58 EV-30 – TSO-C57

*Values relative to load impedance and series resistance.

FIELD REPAIR INSTRUCTIONS

1. Special Tools: None

2. Inspection:

Look for loose or broken connections by carefully removing the ear cushion and foam insert from the earcup into which the main cable passes. Next check the connections at the plug(s).

CAUTION - examining the microphone plug on the EV-300 takes special care. Open it only if the microphone circuit fails the function test explained below.

3. Function Test:

Earphones: EV-30 and EV-300 - connect an ohmmeter to the 1/4" phone plug and listen for an audible click. You should measure 500 to 600 ohms DC resistance. A better test can be made by connecting an audio oscillator to the 1/4" phone plug and adjusting the voltage to approximately .75 VRMS. Wear the headset and sweep through the audio band listening for distortion and breakup.

Microphone and Amplifier: Connect the microphone plug to the circuit in Figure 2. Adjust the voltage to obtain 6 to 8 volts on the DC meter. Speaking normally into the microphone should provide approximately .010 volts on the AC volt meter. If unit fails this test check to see if amplifier is drawing current. (5-10 mA.)

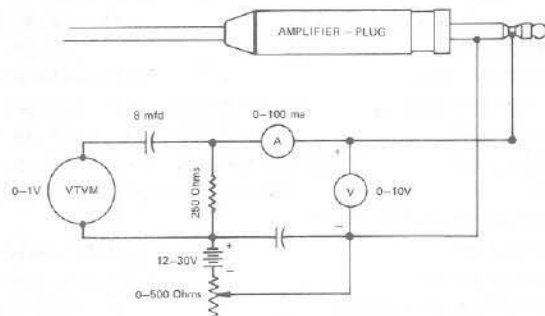


FIGURE 2 - Test Circuit

4. Repair or Replacement:

Earphones: If the earphones fail the function test remove them by gently pulling out the foam inserts containing them. Check each earphone using an ohmmeter. They should measure 300 ohms each. To replace either or both transducers use a small screwdriver and loosen the set screws.

Microphone and Amplifier: If the microphone and amplifier failed the function test above but the amplifier did draw current proceed as follows: Remove the small set screw which grips the cable at the rear of the amplifier housing (amplifier is in the microphone plug). Gripping the amplifier housing firmly such as in a bench vise, and holding the cable in one hand, carefully unscrew the housing from the rear of the amplifier.

Check to see that the two small gold pins are plugged into the rear of the amplifier. The pin with only one

white wire is plugged into the hole marked with a small

If the pins are plugged in properly and not shorting, check the resistance between them using an ohmmeter. You should measure 150 ohms and hear an audible click in the microphone, if not, check the microphone using an ohmmeter across the two set screws at the rear of the microphone. If the microphone or amplifier are found to be faulty, replace.

5. Reassembly:

Reassembly is just the reverse of the disassembly above.

PHYSICAL ADJUSTMENT AND POSITIONING

The boom mounted microphone is 360° rotational which lends the microphone positioning to the outboard side for both the pilot and co-pilot seating configuration. The dynamic noise cancelling microphone should be placed at the corner of the mouth with the lips just touching the microphone housing (front) for best voice transmissions.

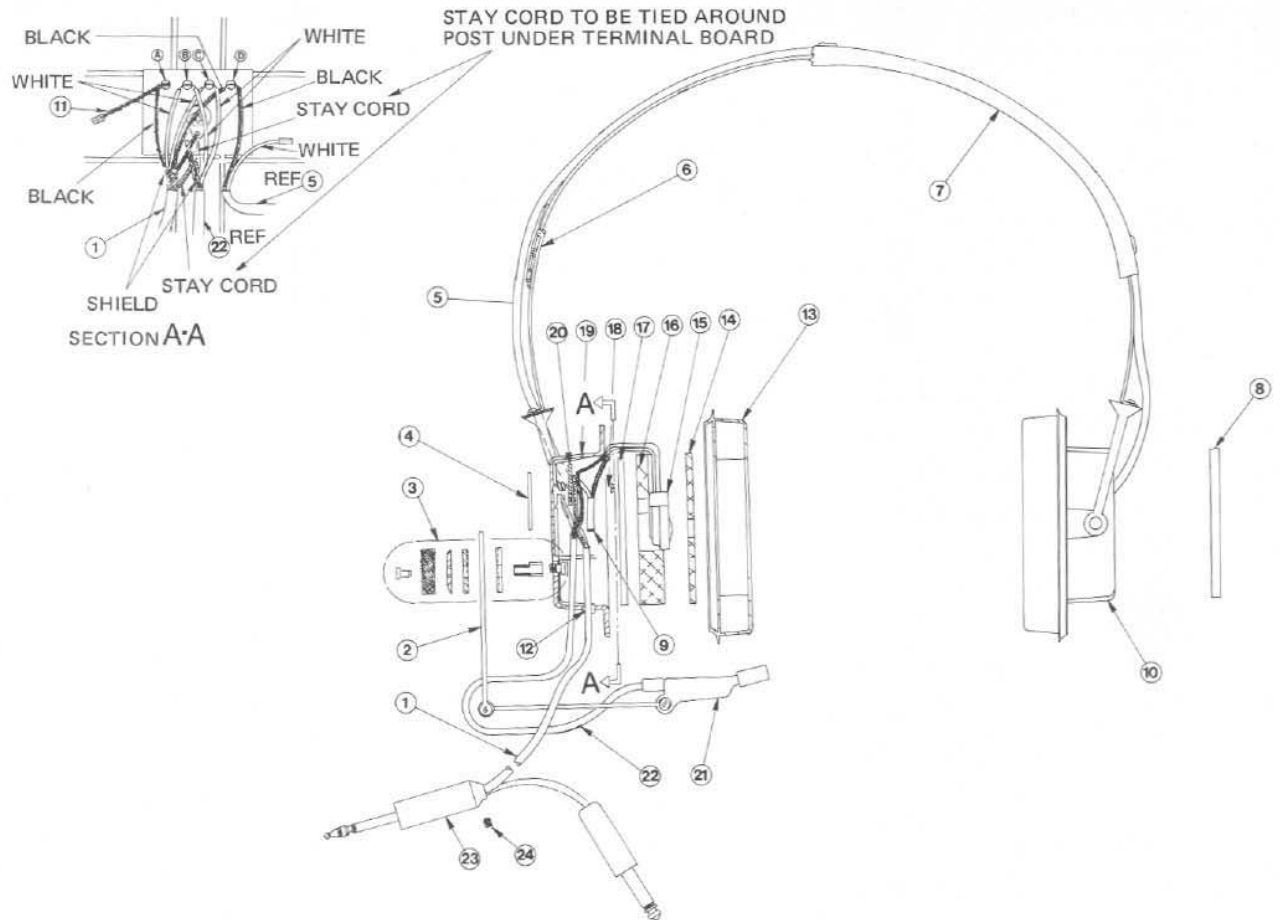
This critical placement can easily be accomplished to fit any facial configuration due to our incorporating three pivot points for maximum adjustment capability.

The headphones are easily adjusted so that the ear rests comfortably while being centered in the ear cavity opening. The headband adjustment which permits the earcup cavity to be centered is accomplished by lifting up on the metal spring tab located on each side of the headband, and then with the tab in the raised position pull down or up on the earcup cavity until it is centered on your ear. This will allow maximum noise attenuation and also the greatest degree of comfort to be realized.

WARRANTY

Electro-Voice aircraft microphones and accessories are guaranteed for **twenty-four (24) months** from date of original purchase against malfunction due to defects in workmanship and materials. If such malfunction occurs, microphone will be repaired or replaced (at our option) without charge for materials or labor if delivered prepaid to the proper Electro-Voice service facility. Unit will be returned prepaid. Warranty does not cover finish, appearance items, cables, cable connectors, or switches and does not cover malfunction due to abuse or operation at other than specified conditions. Repair by other than Electro-Voice or its authorized service agencies will void this guarantee.

For correct shipping address, instructions on return of Electro-Voice products for repair, and locations of authorized service agencies, please write: Service Department, Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107 (Phone 616/695-6831).



Item No.	Req'd EV-30	Req'd EV-300	Part No.	NOMENCLATURE
1	1		88295	Cable subassembly
1		1	88278	Cable subassembly
2		1	88251-BL	Microphone boom subassembly
3		1	88250-BL	Boom support assembly
4	1		B48485	Nameplate EV-30
4		1	A48485	Nameplate EV-300
5	1		88296	Headband cable subassembly
5		1	88261	Headband cable subassembly
6	1	1	88252	Headband subassembly
7	1	1	79528	Headband cover
8	1	1	79707	Pad, foam, vinyl laminated
9	2	2	77678	Clip, banding
10	1	1	88409	Earcup, inboard (black or gray)
11		1	88363	Wire, subassembly
12	1	1	20901	Strain relief, Heyco SR-2M-4
13	2	2	79706	Earcushion
14	2	2	79524	Insert, foam, top
15	2	2	988-9476	Earphone
16	2	2	79523	Insert, foam, center
17	2	2	79522	Insert, foam bottom
18	1		62803-AD	Screw
18	1	1	62896-CY	Screw
19	1	1	88410	Earcup, outboard (black or gray)
20		1	88262	Terminal board subassembly
21		1	693-9474	Microphone
22		1	88254	Cable, subassembly, microphone
23		1	85549	Amplifier, case subassembly
24		1	62909	Screw, stainless steel set #1-72 x 1/8"
25	1		28248	Plug, rubber
26	1		28249	Plug, rubber

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