

DESCRIPTION*

The Electro-Voice 205C is a close-talking, noise-cancelling microphone of the differential carbon type. It provides highly intelligible speech transmission, even under high ambient noise conditions. Ambient noise is received by dual apertures in correct phase relationship to provide excellent cancellation. Speech which originates close to one of the apertures is fully reproduced. Articulation is 97% under quiet conditions and 88% under 115 dB of ambient noise. The blast proof, waterproof, and shock resistant head makes it an ideal choice for use under adverse physical conditions. Its case, of tough, high-impact ABS is shaped to fit the hand comfortably. Essentially flat response is provided over the entire speech range of 100 to 4,000 cps for best intelligibility. Carries FAA type approved Certificate No. 1040. Coiled cord permits easy use.

*Model 205CRA is identical to the model 205C except that its cable is terminated by a right angle plug.

SPECIFICATIONS

Type: Differential single button carbon
 Frequency Response: 100 to 4000 cps (at 1/4")
 Impedance: Approx. 100 ohms
 Polar Pattern: Bidirectional, pressure gradient
 Output Level: -50 dB (0 dB = 1 volt/dyne/cm²)
 0.031 volt (into 100 ohms) developed by normal speech. 10-50 MA button current.
 Temperature Range: -40° C (-40° F) to +85° C (+185° F)

FEATURES

- Superior noise cancellation virtually eliminates background noise
- Rugged design reduces maintenance
- Blast proof . . . shock resistant
- Human Engineering makes product easy to use properly

On/Off Switch: Leaf contacts open circuit microphone in "off" position
Cable: 3-conductor, coiled cord, 5' long, extended
Dimensions: 3-15/16" H, 2-3/8" W, depth 2"
Case Material: High-impact ABS
Finish: Black leatherette
Net Weight: 10 oz., with cable
Warranty: Electro-Voice models 205C and 205CRA are guaranteed against defects in workmanship and materials.

OVERHAUL INSTRUCTIONS

1. **Special tools required.** None.
2. **Disassembly.** (See Figure 1)
 - a. Disassembly is in the same order as the key index number assigned to the exploded view illustration, except as noted below.
 - b. Do not disassemble the head and capacitor sub-assembly (2) to (6) unless capacitor or head must be replaced. If this is necessary proceed as indicated in steps c. and d.
 - c. Remove head by first removing screws (Items 6 & 8) and switch bracket (Item 5). See Figure 1.
 - d. When head assembly is removed, unsolder all leads and replace capacitor or head, as may be required.
 - e. Do not unsolder leads to switch unless it is necessary to replace switch assembly or cable (10).

ENGINEERING DATA 205C, 205CRA CARBON MICROPHONES

3. **Cleaning.** Thoroughly clean dust and dirt from microphone by using dry compressed air to dislodge dirt from corners. Clean each part with a lint-free cloth or brush.

4. **Inspection.**

- a. Inspect switch contacts for signs of any excessive wear.
- b. Check for proper switch travel. When the switch button is fully depressed, both sets of switch contacts should close with just enough overtravel to insure a slight wiping action of the contacts. (See step 5).
- c. Check cable for signs of damage, such as cuts or cracks.

5. **Repair and Replacement.** Replace any damaged part. Check resistance across the head with an ohmmeter. It

should read from 100 to 2000 ohms. If it does not, replace with new head, following directions in reassembly procedure. If the reading falls within the required ohm span, replace old head, following the same reassembly procedures. Switch travel may be adjusted by bending leaves as required. Extreme care must be used when bending leaves!

6. **Lubrication.** None.

7. **Reassembly.** This is the reverse of the disassembly, noting these special instructions:

- a. If the head and capacitor assembly was disassembled, proceed to reassemble it as follows:
- b. Solder the capacitor (4) and leads in place across the head.
- c. Mount head in place inside the front case.
- d. Replace switch bracket.

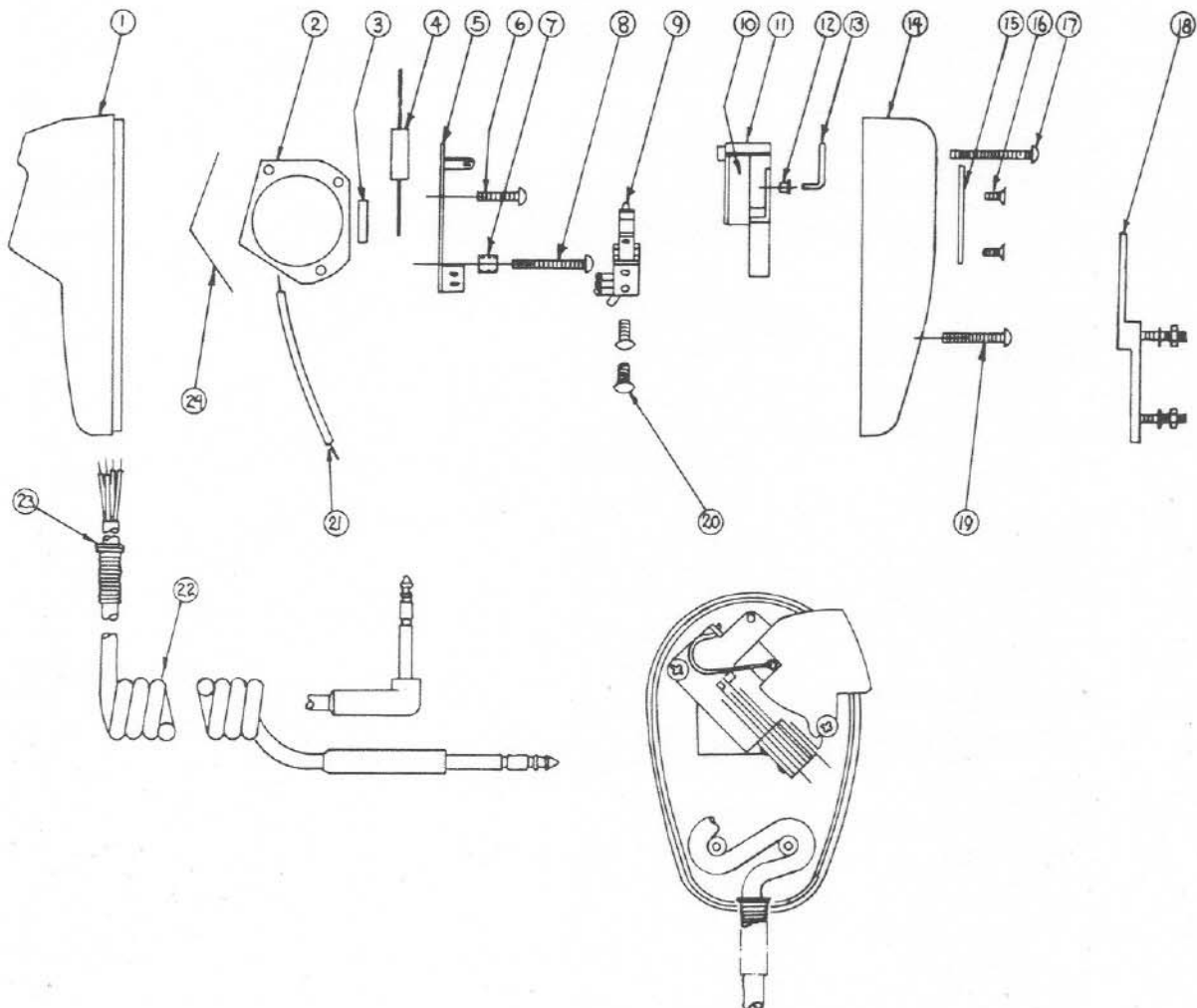


FIGURE 1 — Assembly Drawing

8. Test Procedure. (See Figure 2)

9. Check the operation of the switch as follows:

- a. With the switch released, check the resistance between the white and black leads (tip to sleeve). It should be infinite.
- b. Check the resistance between the red and black leads (ring to sleeve). It should be infinite.
- c. Depress switch and again check resistance between white and black leads (tip to sleeve). It should be zero.
- d. Check resistance between red and black (ring to sleeve). It should be 100–2000 ohms.

10. Check of Microphone Output. The best procedure for testing the microphone is to compare its output with one known to be operating properly, using the test set-up shown in Figure 2. Check the output voltage as follows:

- a. Depress shorting switch and adjust rheostat to obtain about 50 milliamperes through 100-ohm resistor. Release the shorting switch.
- b. Hold the test microphone about one-fourth inch

from the mouth and talk at normal speech level with microphone switch depressed. An output of about 0.031 volt should be obtained.

11. Check of Operation. This test requires the use of an audio oscillator and speaker as shown in Figure 2.

- a. Connect a test microphone as shown in Fig. 2 and adjust current as in step a. of the output test.
- b. Place test microphone about one-half inch from speaker.
- c. Adjust oscillator for a microphone output of 0.03 volt at a frequency of 1000 cycles.
- d. Keeping audio oscillator output constant, record output voltage for frequencies of 200, 500, 2000, 3000, and 4000 cycles.
- e. Repeat steps a. through d. for microphone under test. Deviations from the test microphone should be within the limits shown:

Below 500 cycles:	3 dB
500 to 2000 cycles:	4 dB
Above 2000 cycles:	5 dB

Item	Part No.	Number Required	Description
1	79679-NV	1	Case, Front (Black)
2	8010	1	Head Subassembly
3	79722	1	Foam Pad
4	42346	1	Capacitor, .05mfd, 200 W.V.D.C.
5	A74942	1	Bracket Switch
6	62438	1	Screw, #4-24 x 1/2
7	74941	1	Spacer
8	62534	1	Screw, #6 x 7/8
9	56063	1	Switch
10	28039-81	1	Tesamol, 1/4 x 1-1/8
11	74943-NV	1	Actuator, Switch (Black)
12	20632	1	Eyelet
13	19006	1	Spring, Actuator
14	79677-NV	1	Case, Back (Black)
15	B4810	1	Nameplate
16	660023	4	Screw, #2-56 x 3/16
17	62437	1	Screw, #4-24 x 1
18	8474	1	Mounting Bracket Subassembly
19	62489	2	Screw, #4 x 3/4
20	B60328	2	Screw, #4-32 x 1/2
21	1608-09	2	Leadwire, 4" long
22	88140	1	Straight Plug Cable Subassembly
22	88139	1	Right Angle Plug Cable Subassembly
23	19070	1	Spring, Flex Relief
24	2668	1	Grille Cloth

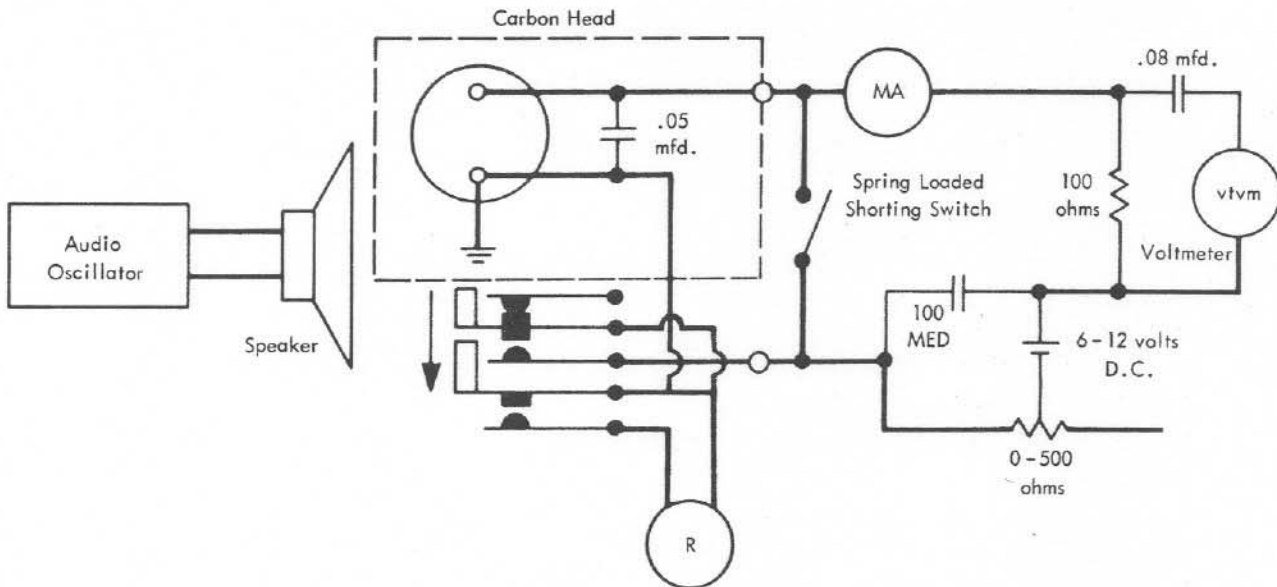


FIGURE 2 - Test set-up and wiring diagram

WARRANTY (Limited) – 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).

Electro-Voice also maintains complete facilities for non-warranty service of E-V products.

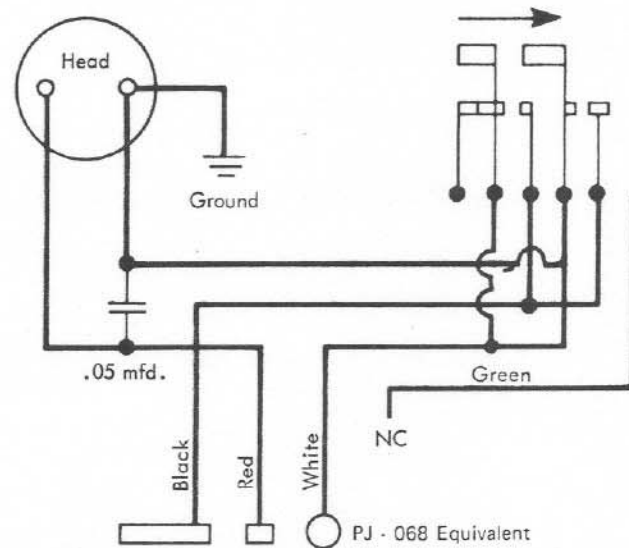


FIGURE 3 - Wiring diagram: 205C, 205CRA
Microphone connection: red and black
Relay connection: white and black

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in **TOUGHEST SERVICE**

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EXTRA RUGGED . . . LIGHT WEIGHT



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● Designed for the ultimate in speech transmission . . . E-V Mobil-Mikes *get the message through!*

Articulation percentages, with normal random noise, seldom fall below 95%. For high noise conditions (110 db or more), E-V patented Differentials* assure articulation of 90% and higher. Speech therefore is clearer, more intelligible.

E-V Mobil-Mikes sound good, too . . . are pleasant to hear . . . and prevent listener fatigue.

All E-V Mobil-Mikes are surprisingly light. Even the 600-D dynamic weighs only 8 ounces . . . the carbon models merely 7 ounces. They fit comfortably in the hand—prevent arm fatigue, even under long periods of use.

E-V Mobil-Mikes are perfectly suited for new equipment or replacement of microphones on existing systems.

They have been used exclusively by the CAA for nearly 10 years . . . they are used by most major airlines and railroads . . . proved by police, fire, marine and other emergency services everywhere . . . a natural for taxicab and similar uses.

Remember—every Mobil-Mike has the advantage of E-V engineering. It is built of finest materials in the modern Electro-Voice plant, under the special E-V laboratory-control plan.

ONLY 
Mobil-Mikes
HAVE ALL
THESE FEATURES!

★ High Articulation—Less Listener Fatigue

★ Smooth, Flat Frequency Response, without sharp peaks. Designed for highest intelligibility—checked by actual test with approved methods of measurement.

★ High Output—with More Usable Power Level. Virtually unaffected by position of microphone.

★ Low Harmonic and Intermodulation Distortion—assured by several E-V patented innovations originally incorporated in over a million microphones for the Armed Forces.

★ Great Ruggedness—High impact bakelite case, with thick $\frac{1}{2}$ " wall, is unconditionally guaranteed for one year.

★ Amazing Light Weight, Easy to Hold—prevents user fatigue.

★ Permanent Finish—retains new look indefinitely.

★ Smart, Streamlined Design.

★ Cable Anchored Firmly in Place—prevents torsional and longitudinal strain.

★ Laminated Solid Silver Switch Contacts—for long life and dependable service.

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Electro-Voice

FOR AIRCRAFT, POLICE, FIRE, MARINE,

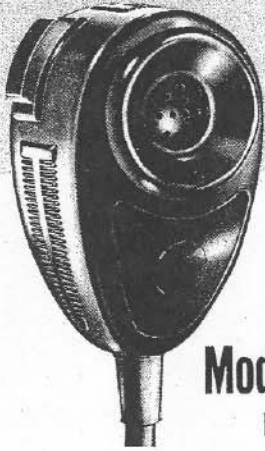
TAXI AND OTHER COMMUNICATION SERVICES

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Mobil-Mikes

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Model 600-D
DYNAMIC

Proved in the most rigorous service. Designed for close-talking pressures up to 500 dynes/cm² without appreciable distortion. Exclusive non-crushable Acoustalloy diaphragm. Frequency response substantially flat 100-6000 c.p.s. Output level -55 db. Withstands extremes of temperature, humidity and weather. Press-to-talk switch controls relay. Equipped with 6 ft. shielded cable. Size 2 1/4" x 2" x 4". Net weight 8 ounces. Includes standard dash mounting clip. Separately shielded microphone leads. Available in all impedances.

Model 600-D. List Price.....\$35.00

Model 600-DL. With switch lock.

List Price.....\$36.50

Model 602. Differential* Dynamic. Similar to Model 600-D, with E-V patented Differential* response for intense noise conditions. Reduces background noise an average of 20 db. **List Price..\$40.00**



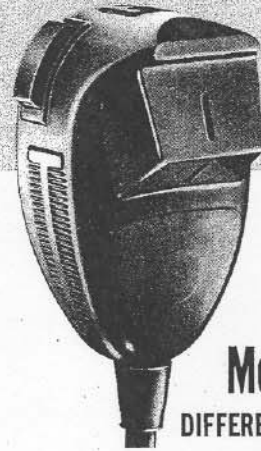
Model 210
CARBON

Extremely popular for commercial and emergency two-way communications work. Used for police, taxi, aircraft and similar services. Gives high intelligibility speech transmission. Works well in all positions. May be used indoors or outdoors in any kind of weather. Frequency response substantially flat from 100-4000 c.p.s. for high articulation. Output level 10 db below 1 volt/100 dynes/cm². Single-button. Press-to-talk switch actuates button current and relay simultaneously. Thermoplastic suspension for diaphragm, heat treated. Allows diaphragm to have even, free movement at all frequencies. (E-V patent No. 2,396,825). Fiberglass carbon retainer provides positive carbon retention without interference with diaphragm movement (E-V patent No. 2,396,824). Has standard dash mounting clip. Equipped with 5 ft. cable. Size 2 1/4" x 2" x 4". Net weight 7 ounces.

Model 210. List Price.....\$25.00

Model 210-L. With switch lock.

List Price.....\$26.50



Model 205
DIFFERENTIAL* CARBON

Close-talking, noise cancelling single-button carbon microphone with E-V patented Differential* principle originally developed for the Armed Forces for use under high ambient noise. Especially effective for fire truck, marine, industrial, aircraft and similar applications. Articulation is 90% or more under most severe service conditions. Assures maximum intelligibility. Blastproof, waterproof, shock resistant. Has wind filter. Withstands temperature extremes. Frequency response substantially flat from 100-4000 c.p.s. Output level 10 db below 1 volt/100 dynes/cm². Press-to-talk switch actuates button and relay simultaneously. Fits comfortably in the hand. Operates in all positions. Permanent black finish. High impact phenolic case, with standard dash mounting clip on back. Size 2 1/4" x 2 1/4" x 4". Net weight 7 ounces. Equipped with 5 ft. three conductor, synthetic rubber jacketed cable.

Model 205. List Price.....\$30.00

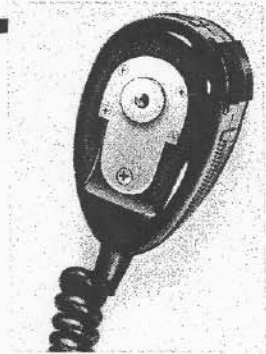
EXACT-REPLACEMENT MOBIL-MIKES for Motorola, RCA, G.E. and Similar Equipment

Carbon Microphones with all the extra features of E-V Model 210. Metal button at rear of microphone exactly fits filament control switch bracket. Interchangeable with all current Motorola, RCA and G.E. models.

Model 210-M. Has 5 ft. straight three-conductor rubber jacketed cable, without connector. **List Price.....\$25.00**

Model 210-MKK. Has Koiled Kord, 5 ft. extended, 1 ft. retracted, without connector. **List Price.....\$28.50**

Model 210-MKKC. Same as 210-MKK, but has MC-4-M connector installed on free end. **List Price.....\$30.00**



*Patent No. 2,350,010

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Electro-Voice

ELECTRO-VOICE, INC., BUCHANAN, MICHIGAN

Export: 13 East 40th St., New York 16, U.S.A. Cables: Arlab