

## TRANSMITTERS AND TRANSMITTER UNITS

### IDENTIFICATION, INSTALLATION, AND MAINTENANCE

#### 1. GENERAL

##### 1.01 This section is reissued to:

- Revise Tables A and B
- Add new Fig. 13, 36, and 37

#### 2. IDENTIFICATION

##### 2.01 *Purpose:* To cover transmitters and transmitter units used in station equipment.

##### 2.02 *Ordering Guide:*

- Unit, Transmitter (Table A)
- Transmitter (Table B)

#### 3. INSTALLATION

##### 3.01 Be careful not to damage transmitters or transmitter units before installation.

3.02 Spring-type contacts which make with transmitter units, such as those in handset handles, should be clean and not bent or distorted. Some transmitter units use screw-type terminals. These terminals must be tight.

3.03 The 635A transmitter unit comes fully assembled and can be installed in existing transmitter bells.

3.04 The AC1 and AC3 transmitter units have an orientation dot next to one terminal. If replacement is necessary, the relation of the transmitter leads to the transmitter unit must be kept the same. This is to ensure that all transmitters in the system are in phase.

3.05 The 667B transmitter can be modified to make it less susceptible to pickup from mechanical vibrations when used in conjunction with 3-type speakerphone service. Order as "Transmitter 667B Modified per D-180196."

#### 4. MAINTENANCE

4.01 Transmitter housings and transmitter caps may be cleaned with a KS-14668 cloth or equivalent. A damp cloth may also be used if it is not too wet; too much moisture may damage the transmitter unit or electrical components.

4.02 Contacts of the 635A transmitter are silver-plated and should not be burnished. Tarnish on the contacts is not detrimental.

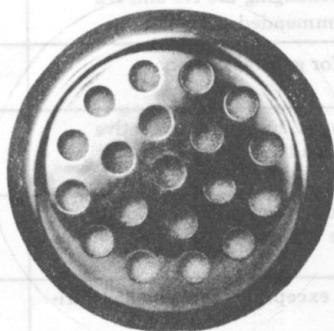
4.03 If the F1 unit used in the 635A transmitter becomes defective, it may be replaced by unscrewing the clamping plate assembly of the mouth-piece. The two lugs on the assembly form a finger grip. If the clamping plate assembly cannot be removed with finger pressure, a screwdriver may be placed across the clamping plate assembly to engage the lugs and assist in turning the assembly out of the mouth-piece.

4.04 To distinguish between line circuit noise and a noisy carbon transmitter unit, gently blow into or gently tap the side of the transmitter. A repeatable variation in the magnitude of frying noise heard indicates a defective transmitter unit that should be replaced.

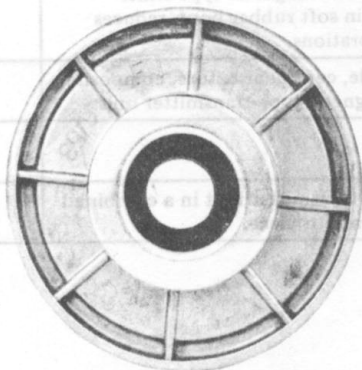
4.05 To test a magnetic-type transmitter unit (Example: AB2, AC1), remove the U1 receiver unit from a 500-type telephone set and terminate the receiver leads to the magnetic transmitter unit. Dial a test call. The response from the magnetic transmitter unit should be audible, but not comparable to that of the U1 receiver unit. If no response, the magnetic transmitter unit is defective.

**4.06** As a final test, speak directly into the transmitter in a natural conversational tone. The lips should be almost touching the mouth-piece. If there is any difficulty in being heard, replace the transmitter unit and test again.

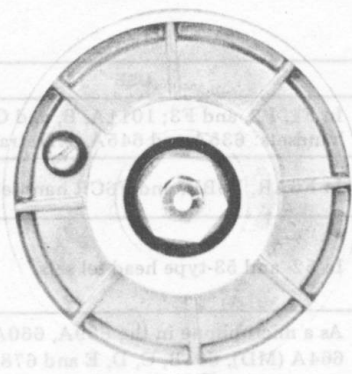
**Note:** This type of test is particularly important with noise cancellation type transmitters, KS-16664L2, L3 and KS-20043L1, L2.



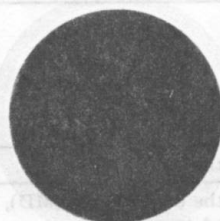
**Fig. 1—F1 and K1 Transmitter Units, Front View**



**Fig. 2—F1 Transmitter Unit, Rear View**



**Fig. 3—K1 and T3 Transmitter Unit, Rear View**



**FRONT VIEW**



**REAR VIEW**

**Fig. 4—N1 and N2 Transmitter Unit**

◆ TABLE A ◆  
TRANSMITTER UNITS

UNIT	USE	REMARKS	FIG. NO.
F1	In F1, F2, and F3; 1011A, B, and G handsets: 635A and 645A (MD) transmitters.	Carbon type — for replacement use only.	1 and 2
K1	In F6AR, F6BR, and F6CR handsets.	Carbon type — used in explosive atmospheres.	1 and 3
N1	In 52- and 53-type head tel sets.	Carbon type — designed to reduce background noises, but retain reproductive qualities.	4
N2	As a microphone in the 659A, 660A, 664A (MD), 664B, C, D, E and 678A transmitters.	Similar to the N1 unit, but has reduced carbon fill. Interchanging the N1 and N2 units is not recommended.	
T1	In G1, G3, G5, G6, G7, G8, G10, G12A, and J1A handsets.	Carbon type — for general station use.	5 and 6
T2	In F- and G-type handsets with coin telephone.	Same as the T1 unit, but has a protective grid to prevent fraudulent operation of coin telephone.	5 and 7
T3 (MD)	In G11A handset.	Same as the T2 unit, but has screw terminals for use with spade tip conductors.	3 and 7
T4		Same as T2 unit except has additional electrical insulation.	5 and 7
AB2	As a microphone in the 667B transmitter.	Magnetic type encased in a magnetic shield.	8
AC1	As a microphone in the 662B, 666A (MD), 666B, 670A and 671A transmitters.		9
AC3	As a microphone in 672A, 673A, 674A, 674B, 679A and P-29E579 transmitters.	Magnetic type encased in a magnetic shield, less rubber boot.	10
AD1	As a microphone in the 3-type speaker-phone system and in 52-type head telephone sets.	Balanced armature magnetic type tmtr unit mounted in soft rubber boot, reduces mechanical vibrations.	11
AE1	60- and 61-type operators head telephone sets.	Concentric pole, central armature, composite diaphragm magnetic type transmitter unit.	12
AF1	As a microphone in 4A Speakerphone and MOD IIC PICTUREPHONE © service.		13
635A	Forms part of 635A transmitter, used in desk stand mountings.	Consists of F1 transmitter unit in a combined faceplate and mouth piece.	14

◆ TABLE B ◆  
TRANSMITTERS

TRANSMITTER	TRANSMITTER UNIT	COLOR*	USE	REMARKS	FIG. NO.
636B A&M			In coin collectors.	Transmits coin signals.	15
645A (MD)	635A		In desk stands, wall sets, and coin collectors.	Consists of 635A trmr unit with flat back bell but not provided with a clamping bolt and screw.	14
654A			In coin collectors.	Transmits coin signals.	16
654B (MD)			In 1A and 2A coin telephones.	Same as 654A except for shape of base.	17
655A (MD)			As a trmr in 592-type (MD) tel sets and as a microphone in 656A (MD) trmr.	A magnetic type; consists of a U1 rcvr unit with screw terminals and a neoprene gasket.	18
656A (MD)	655A (MD)		With 1A and 1A1 speakerphone systems.	Consists of a 655A trmr, equalizer, and potentiometer enclosed in a plastic housing and equipped with a T11A cord.	19
658A (MD)			Replaces the 655A (MD) trmr. Provides magnetic shielding from nearby power sources.	A magnetic type; consists of an HC-3 rcvr unit, mounting assembly with screw terminals, and a neoprene gasket.	18
659A			In the 558C/D tel set with 1A home interphone system.	Consists of trmr unit, bracket, and component board.	4 and 20
660A (MD)	N2		In the 511C/D tel set with 1A home interphone system.	Same as 659A trmr; differs only in the shape of the mounting bracket.	
661A (MD)	AB1 (MD)		In 600 series tel sets with 1A and 1A1 speakerphone systems.		21
662B	AC1		With panel mounted 3-type speakerphone systems.	Equipped with 18-inch leads, clamp ring, and mounting screws.	9 and 22
664A (MD)			In 711B tel sets.	For 1A home interphone systems. All consist of trmr unit and component board, but differ in the shape of the mtg bracket used.	4
664B			In 751-, 1751-, 2751-, 752-, 1752-, 2752-, 754-, and 2754-type tel sets.		
664C			In 711B, 712B, 1712B, and 2712B tel sets.		
664D			In 1558D and 2558D tel sets.		
664E			In 1511-, and 2511F-type tel sets.		
	N2				23
					24
					25
					26

◆ TABLE B (Cont) ◆

## TRANSMITTERS

TRANSMITTER	TRANSMITTER UNIT	COLOR*	USE	REMARKS	FIG. NO.
666A (MD)	AC1	-03, -50, -51, -53, -54, -56, -58, -59, -60, -61, -62, -64	With the 3-type speaker-phone system.	Consists of a transistor amplifier and components in a molded plastic housing and equipped with a T11A cord	9 and 19
666B		-03, -50, -51, -53, -58, -59, -60, -61, -62, -64		Same as 666A (MD) trmrtr, but in addition has two capacitors to reduce radio interference and equipped with a T7A cord.	
667A (MD)	AB2		In 600 series tel sets equipped with 590 or 650 series keys used with 3-type speakerphone system.	A modular unit equipped with (MD) color coded leads.	8 and 27
667B				Same as 667A trmrtr except equipped with even count color coded leads. See 3.05.	
670A	AC1	-03, -50, -51, -53, -58, -59, -60, -61, -62, -64	In conference arrangements of the 3-type speakerphone system.	The ON button is also a 2-position switch which allows auxiliary 671A trmrtr to be included in the conference feature. Equipped with a T9A cord.	9 and 28
671A			As auxiliary trmrtr in the conference arrangement of the 3-type speakerphone system.	No cord is provided. Shielded (SK type) wire must be used to connect trmrtr to system.	
672A	AC3		With 3A speakerphone service in 3640 and 3641 type tel set.	Consists of a transistor feedback amplifier, a volume control, two pushbutton operated spring contacts and associated lamp block assembly	10 and 29
673A			With 3-type speakerphone service in 1671A7 tel set.		10 and 30
674A			With 3B speakerphone service in 3673A7 tel set.	Consists of an AC3 transmitter unit, a volume control, switch subassembly and a three-stage transistorized amplifier. On and off buttons illuminated by 51A lamp. Has seven spade tip leads.	10 and 31
674B			With 3B speakerphone service in 2671B7 tel set.	Same as 674A trmrtr except contains a MA7 relay, 53A lamp and 13 spade tip leads.	10 and 32
678A	N2		In 511D-, F-, and H-type tel sets with 1A home interphone	Similar to 660A trmrtr.	4 and 33

◆ TABLE B (Cont) ◆

## TRANSMITTERS

TRANSMITTER	TRANSMITTER UNIT	COLOR*	USE	REMARKS	FIG. NO.
679A	AC3		In 600 series tel sets equipped with 635-series keys used with 3-type speakerphone system.	Same as 672A except for key assembly.	10 and 29
KS-16664L1 (MD)		-03	In G-type handsets, except G15 for noisy locations.	Noise cancellation trmtr with output approximately 6 db less than T1 trmtr unit.	34
KS-16664L2 (MD)		-03, -50, -51, -53, -56, -58, -59, -60, -61, -62, -64			
KS-20043L1 (MD)		-03, -50, -51, -52, -53, -56, -58, -59, -60, -61, -62, -64		Noise cancellation trmtr with output equivalent to T1 trmtr unit.	35
KS-16664L3		-03, -50, -51, -53, -56, -58, -60, -62	In G-type handsets for noisy locations.	Cancels very high level noise.	36
KS-20043L2				Cancels high level noise.	
P-29E579	AC3		With 3-type speakerphone service in 752-, and 2752-type panel telephone sets.		37

\* Black (-03)  
Ivory (-50)  
Green (-51)  
Gray (-52)  
Red (-53)

Brown (-54)  
Yellow (-56)  
White (-58)  
Rose Pink (-59)  
Lt. Beige (-60)

Lt. Gray (-61)  
Aqua Blue (-62)  
Turquoise (-64)

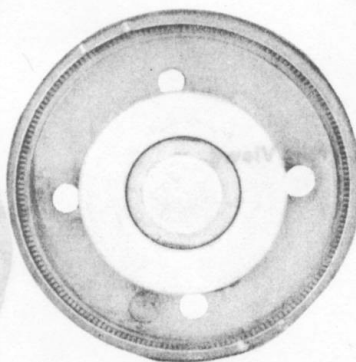


Fig. 5—T1, T2, and T4 Transmitter Unit, Rear View◆

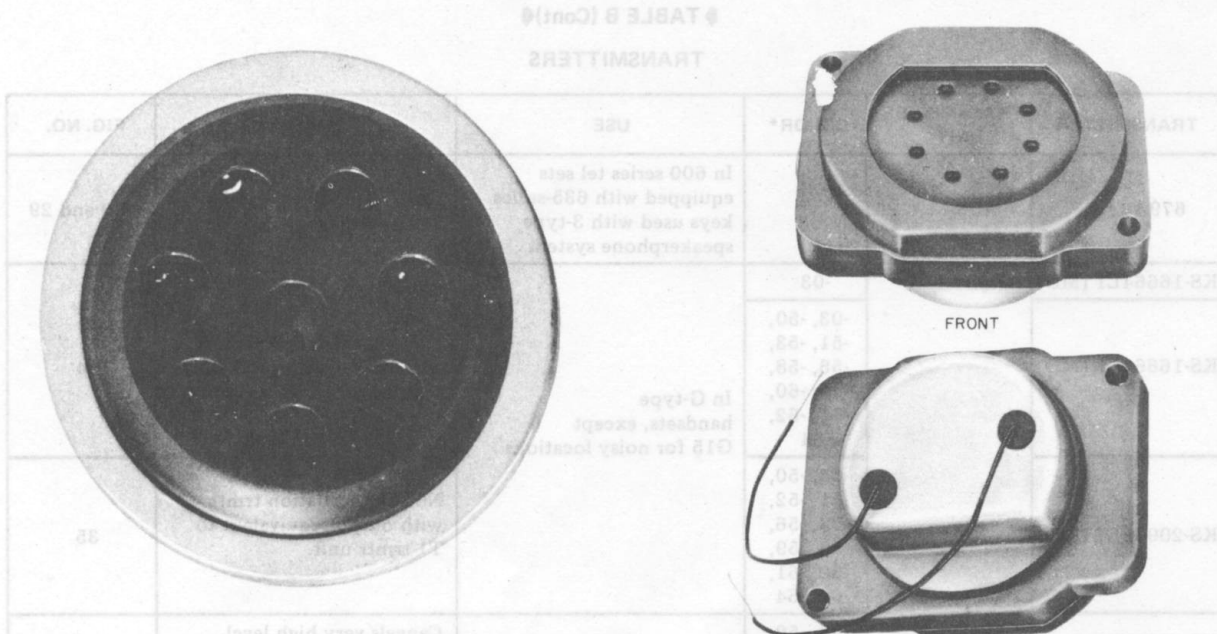


Fig. 6—T1 Transmitter Unit, Front View

Fig. 8—AB2 Transmitter Unit

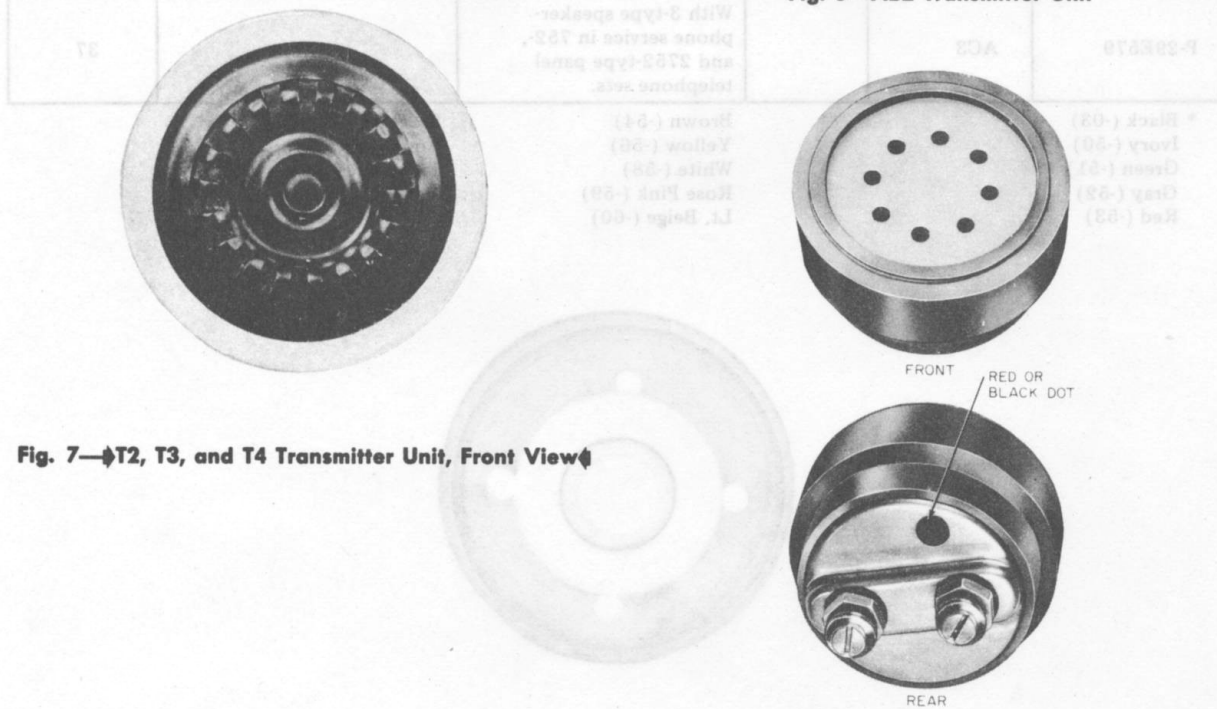


Fig. 7—T2, T3, and T4 Transmitter Unit, Front View

Fig. 9—AC1 Transmitter Unit



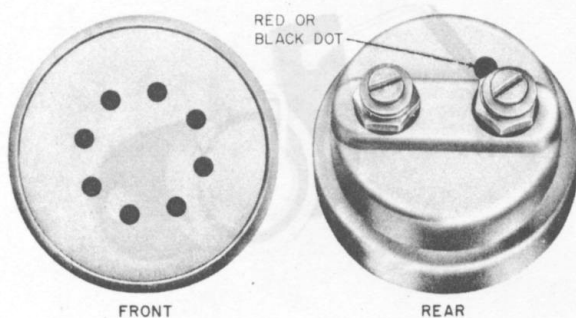


Fig. 10—AC3 Transmitter Unit

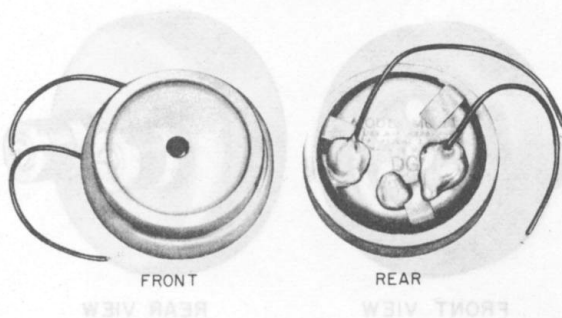


Fig. 11—AD1 Transmitter Unit

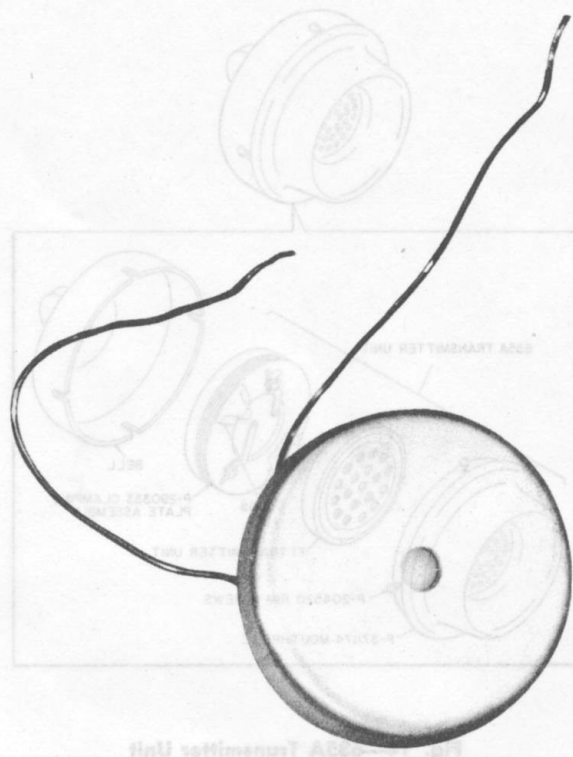


Fig. 12—AE1 Transmitter Unit

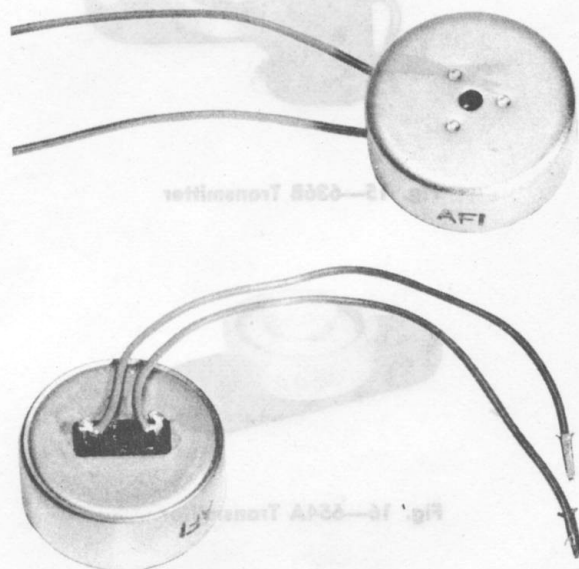
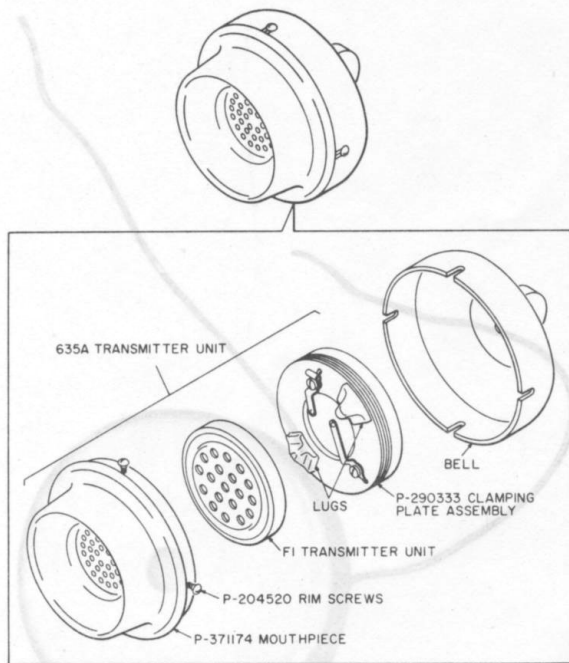


Fig. 13—AF1 Transmitter Unit

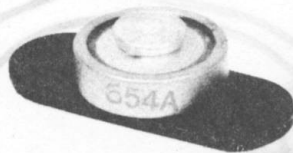




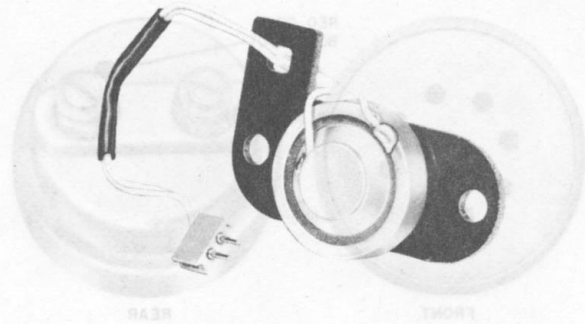
**Fig. 14—635A Transmitter Unit**



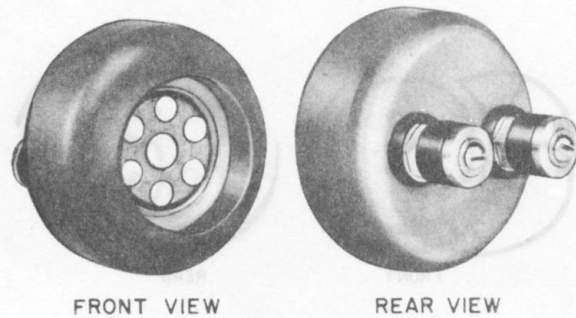
**Fig. 15—636B Transmitter**



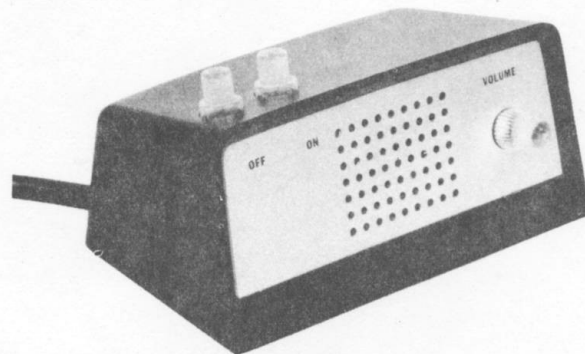
**Fig. 16—654A Transmitter**



**Fig. 17—654B (MD) Transmitter**



**Fig. 18—655A (MD) and 658A Transmitters**



**Fig. 19—656A (MD), 666A (MD), or 666B Transmitters**



Fig. 20—659A and 660A (MD) Transmitters

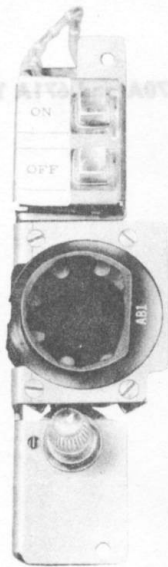


Fig. 21—661A (MD) Transmitter

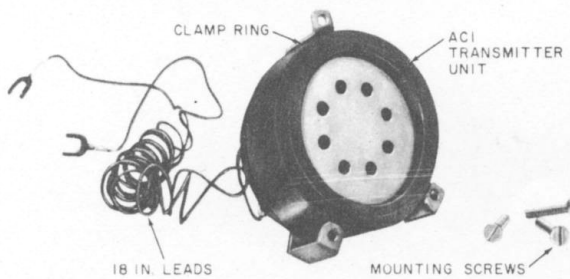


Fig. 22—662B Transmitter

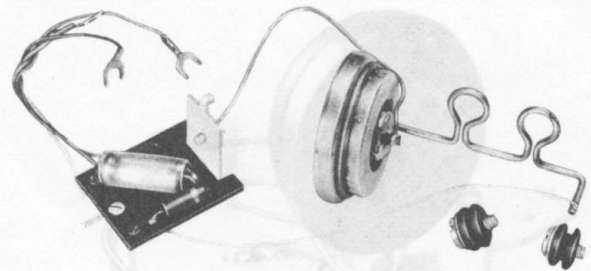


Fig. 23—664B Transmitter

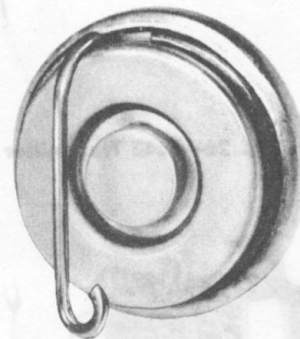


Fig. 24—664C Transmitter, Less Component Board

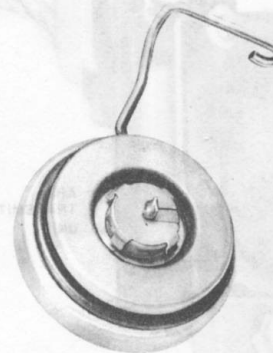


Fig. 25—664D Transmitter, Less Component Board



Fig. 26—664E Transmitter

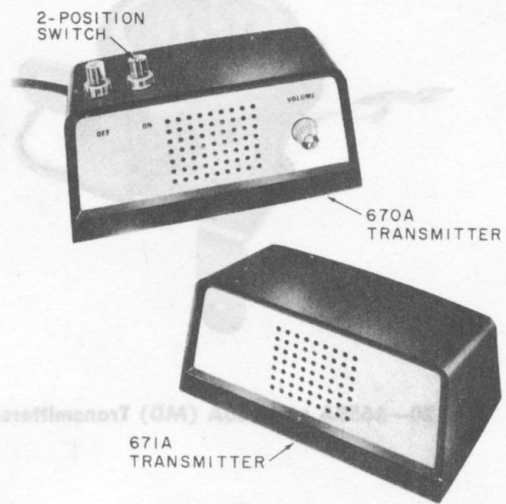


Fig. 28—670A and 671A Transmitters

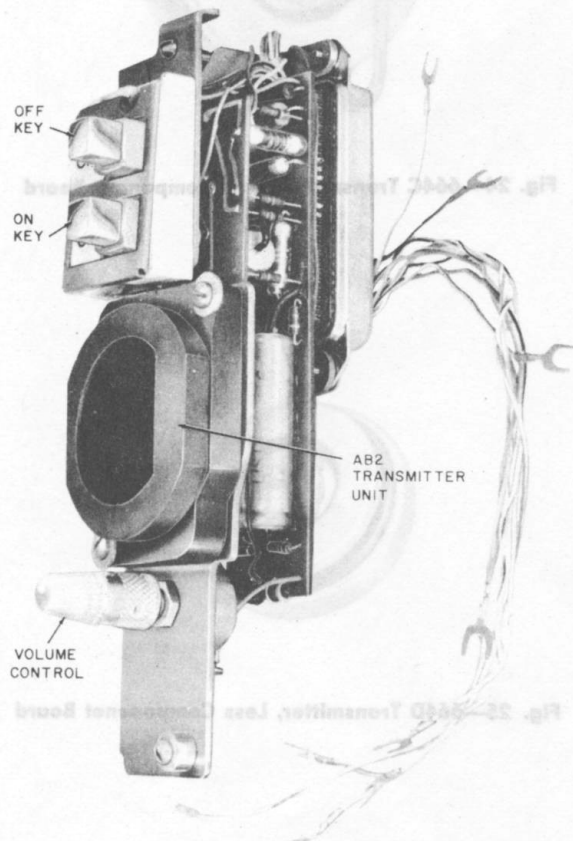


Fig. 27—667A (MD) and 667B Transmitter

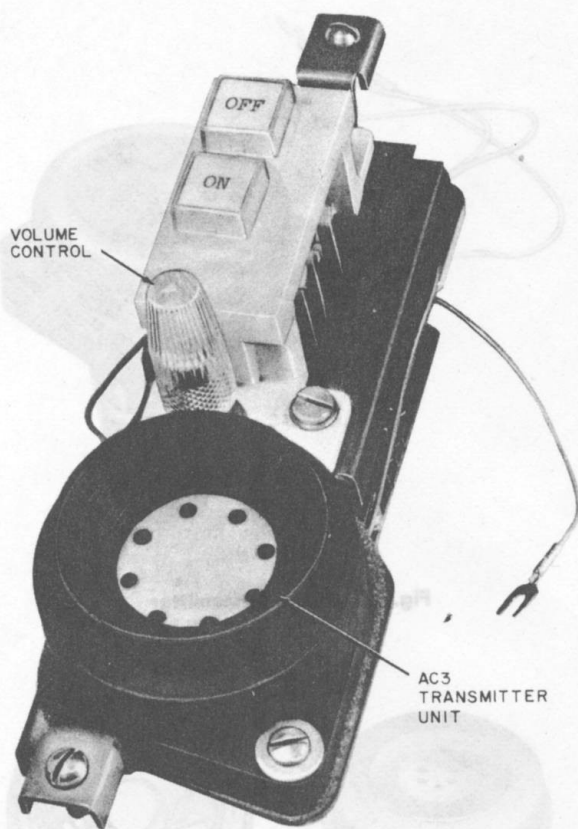


Fig. 29—672A Transmitter (679A Transmitter is similar in appearance)

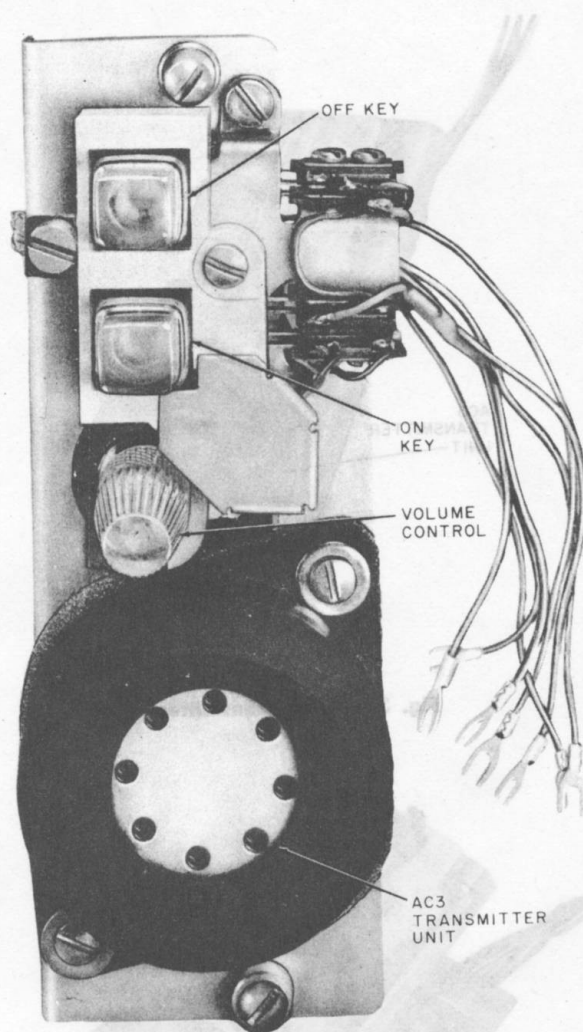
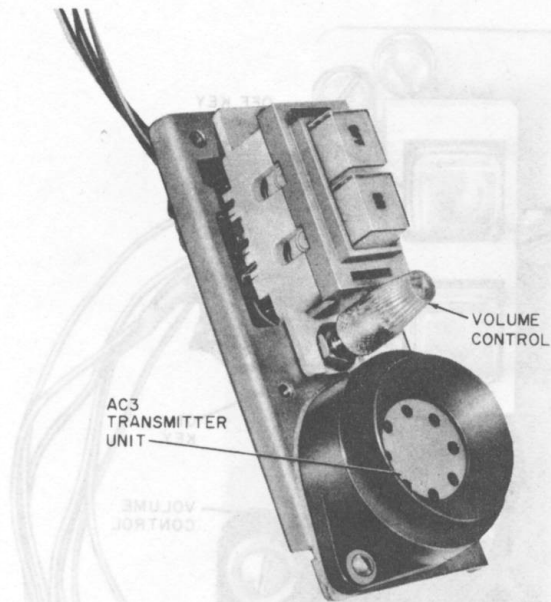
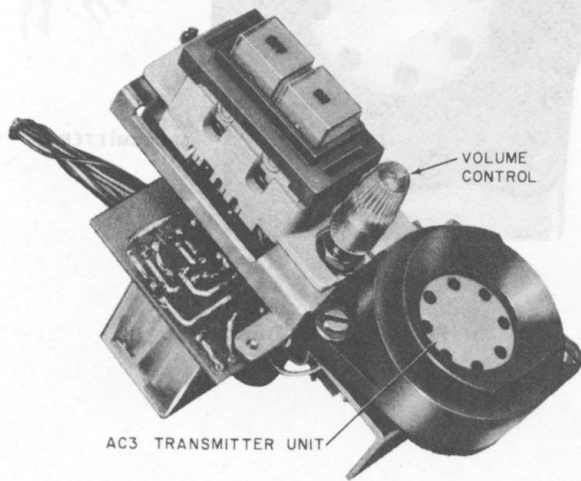


Fig. 30—673A Transmitter

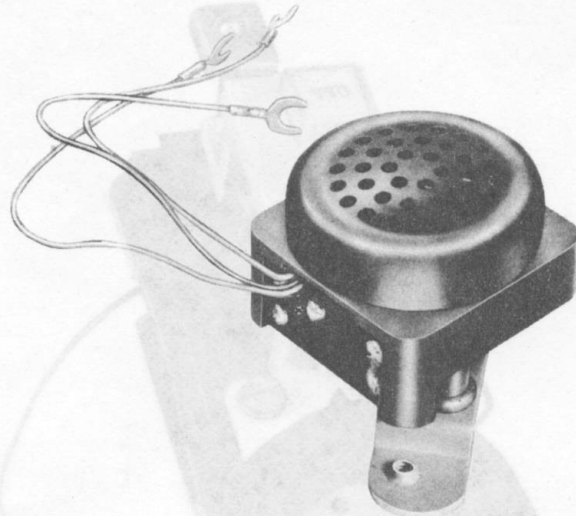




**Fig. 31—674A Transmitter**



**Fig. 32—674B Transmitter**



**Fig. 33—678A Transmitter**



**Fig. 34—KS-16664L1 (MD) and L2 (MD) Transmitters**

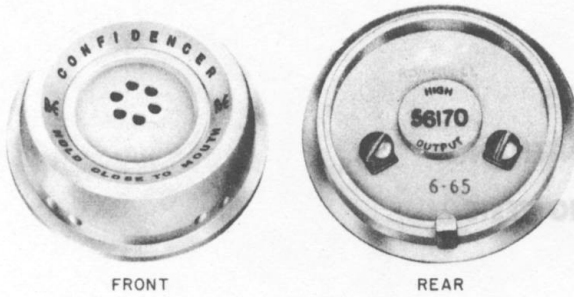


Fig. 35—KS-20043L1 (MD) Transmitter

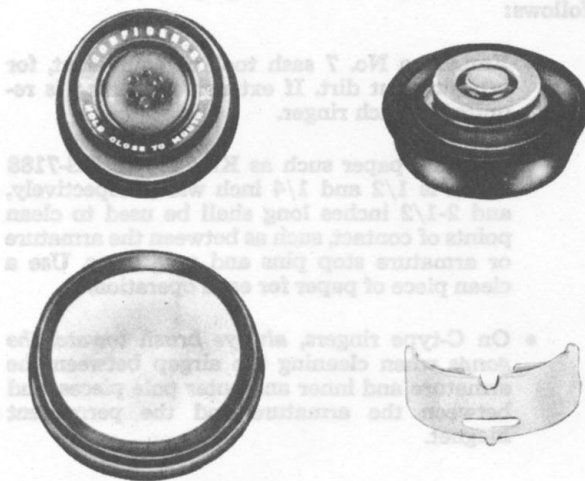


Fig. 36—KS-16664L3 and KS-20043L2 Transmitter

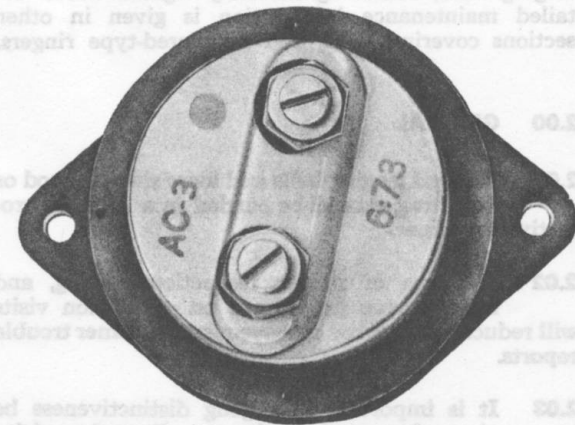
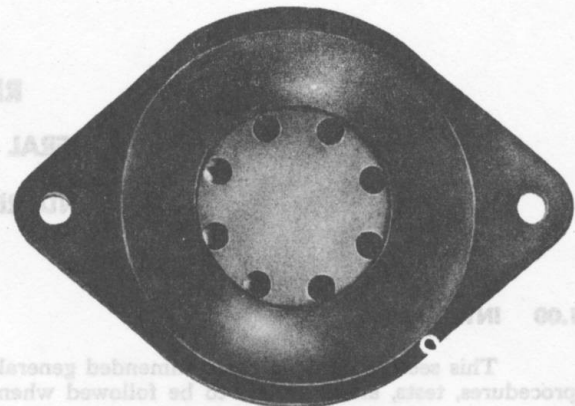


Fig. 37—P-29E579 Transmitter