

PROPOSAL
R. C. A. SOUND AMPLI-
FICATION SYSTEM
CHURCH OF THE ASSUMPTION
REV. WM. P. KENNEDY,
PASTOR

The Howard & Barber Co.

FURNITURE, CARPETS, DRY GOODS

Derby, Conn. July 26, 1940

Reverend William P. Kennedy
Church of the Assumption
Ansonia, Connecticut

Dear Rev. Kennedy:

The following letters detail complete plans for the proposed installation of an R. C. A. Sound Amplification System for the Church of the Assumption.

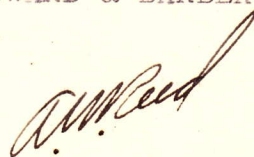
The total cost of this installation will be \$906.80, including \$717.80 for equipment and \$189.00 for installation and wiring.

Work can be started as soon as approval is given and completed on or before September 1st, 1940.

We wish to thank you for the opportunity of submitting this bid and trust we will have the pleasure of serving you.

Yours very truly,

THE HOWARD & BARBER CO.



AMR:YMR

General Manager

The Post & Lester Co.

OF HARTFORD, INC.

172 Elm St.

~~NO CROSSEXCHANGES~~

Bridgeport, Conn.

~~HARTFORD, CONN.~~

July 26, 1940

Mr. John O'Keefe
Howard & Barber Company
Derby, Connecticut

Re: Church of the Assumption
Ansonia, Connecticut

Dear Sir:

We wish to express our appreciation for the opportunity to offer you a proposal covering the installation of a Sound Amplification System for the Church of the Assumption in Ansonia, Conn., Rev. Father Kennedy, pastor.

The equipment which we propose to install will render the following functions:

- (a). Amplification of sound from the pulpit
- (b). Remote control of volume from the pulpit

The equipment we propose to install is as follows:

- 1 - MI4228D 50 Watt Amplifier
- 1 - MI4297A Voltage Amplifier Assembly
- 1 - MI4043 Uni-Directional Microphone
- 1 - MI4068A Microphone Stand
- 2 - MI9429A Proscenium High Fidelity Speakers
- 1 - MI4728 Amplifier Cabinet and Panel to house Amplifying Equipment.
- 1 - Set of tubes for Amplifying Equipment.
- 1 - MI4123A Remote Control and Cable

Our total price for the above equipment, installed and ready for operation, with exception of speaker conduit, AC convenience outlet, microphone line and speaker grilles, is \$717.80. The aforesaid excepted items are to be installed by electrical contractor under separate contract and are not included in the above price. The above material is guaranteed for one year against mechanical and electrical defects.

Thanking you again for the opportunity of quoting, we are

Very truly yours

C. Sauer
POST & LESTER CO.

C. Sauer
Sound Dept.

FRANK J. SCARPA

Electrical Contractor

Telephones: 3904-W and 3904-R

29 MINERVA STREET

DERBY, CONNECTICUT

July 25, 1940

Mr. J. O'Keefe
c/o The Howard & Barber Co.
Main Street
Derby, Connecticut

Dear Mr. O'Keefe:

My price for installing wiring for the amplification system to be installed at the Church of the Assumption in Ansonia, Connecticut, per Mr. C. R. Sauer, is one hundred and eighty-nine dollars (\$189.00).

Very truly yours,


Frank J. Scarpa

RCA 50 WATT AMPLIFIER
CLASS "A"

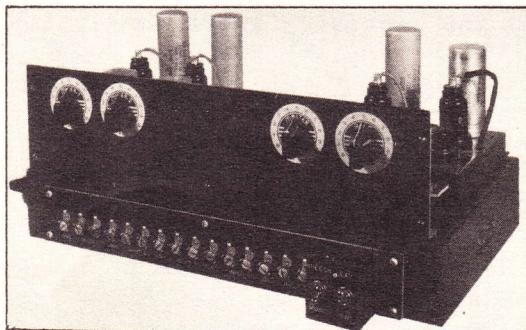
Model MI-4297-A/4288-D

CLASSIFICATION:

All Purpose Amplifiers
and Housings.

BULLETIN NO. SP-1081-A

- ** High Power - 50 watts output.
- ** Newly designed high level mixing circuits.
- ** Remote mixing - either permanent or portable - permits efficient noiseless mixing of input circuits. Mixer can be located at any remote point.
- ** Mixing controls not directly connected to signal input circuits - eliminates: noise, necessity of frequent cleaning, elaborate shielding and mixer circuits in lead wiring.
- ** Input circuits connected to individual units, easily removed and entirely isolated from output circuits. Each unit on separate base.
- ** No insertion loss - no frequency discrimination.
- ** Two rubber mounted input units supplied, separately filtered - input impedance 250 ohms.
- ** Two additional 250 ohm input units can be easily added.
- ** High impedance input (grid circuit) can be obtained by installing MI-4733.
- ** Master mixer volume control supplied.
- ** Special type tubes used to insure proper operation of mixer - special circuits insure long tube life.
- ** Metal tubes.
- ** Built in expander and suppressor circuits - expander circuits enhance musical reproduction - suppressor circuits prevent blasting and overloading.
- ** Degeneration circuits give excellent output regulation and low distortion.
- ** Screw type terminal board easily accessible for connecting remote mixing controls.
- ** Extra Power Amplifiers can be added. Voltage Amplifier will drive one to three Power Amplifiers.
- ** Voltage and Power Amplifier units can be housed in new type modernistic cabinet MI-4666.
- ** This flexible unit is ideal for any application requiring high power where multiple mixing positions or remote mixing control - either fixed or portable - may be desired, and is particularly adapted to large indoor and outdoor installations - auditoriums, ballrooms, dance halls, fairs, race tracks and open air applications of every description, rail and ship terminals, etc., etc.



Standard Model MI-4297-A Voltage Amplifier as shipped from factory, consists of:

- 2 - Electric Mixer Amplifiers
- 1 - Master Electric Mixer Amplifier
- 1 - Compander Amplifier
- 1 - Base with control units, and wired

Tubes: 4 RCA-1612 (Special Tested 6L7 Tubes)
1 RCA-6H6

Commercial Sound Section

RCA MANUFACTURING COMPANY • INC

CAMDEN • NEW JERSEY

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Inputs: 2 - 250 ohms with provisions for two additional 250 ohm inputs.
The additional inputs are as follows:

For third position: MI-4726 Code Word - SCYUH
For fourth position: MI-4727 Code Word - SCYWJ

Dimensions: 16" x 11 $\frac{1}{4}$ " x 8".

Weight: 11 lbs.

Shipping Weight: 16 lbs.

Will drive one to three MI-4288 Power Amplifiers.

Code: SCOV.

The RCA Manufacturing Co., Inc. is proud to announce a new Electric Mixing System which is positive in its action and does not cause frequency discrimination with changes in volume. The standard unit as shipped from the factory contains two Electric Mixing Amplifier Units, one Master Electric Mixer Amplifier Unit and a Comander Amplifier Unit rubber mounted to a single rigid base. Provision is made for adding two additional Electric Mixer Amplifier Units to this same base. The input impedance of each of these signal mixing units is 250 ohms. Grid circuit impedance can be obtained by connecting to secondary of the input transformers or an additional high impedance input can be obtained (MI-4733). On the same base mounting with the above units and easily accessible is a terminal board properly marked for connecting remote Electric Mixer Control cables; and also the Master Electric Mixer and Comander Control Cables.

To operate the remote control units, it is only necessary to turn the amplifier controls to the remote position in order to control volume and Comander action. The remote control units can be located up to 2000 feet from the amplifier, making it possible to place the controls in any desired location for proper monitoring purposes. By means of this new electric mixing unit, there is no cross-talk, no insertion losses, no frequency discrimination and extremely low distortion even at the lowest volume levels. Each unit is a sub-unit in itself, mounted on its own particular base with its complete filtering system, each unit being rubber mounted to the large base.

For compensating between music and voice pickup, there is a switch for cutting out low frequencies. By means of the Comander circuit, phonograph records can be reproduced exactly as recorded. The suppressor circuit prevents blasting and overloading.

By adjustment of the Comander Amplifier Control, microphone pickup can be so controlled automatically that the pickup is practically the same from any location in the near vicinity of the microphone.

A heavy terminal board is provided for making the necessary input connections.

Model MI-4288-D - Power Amplifier

Model MI-4288-D Power Amplifier.

Power Output: 50 watts - 5% distortion.

" " 40 watts - 2% distortion.

Tubes: 2 - RCA-6C5

4 - RCA-6L6

2 - RCA-5Z3

Net Weight: 37 lbs.

Shipping Weight: 54 lbs.

Input Power (Underwriter's Rating) 200 watts.

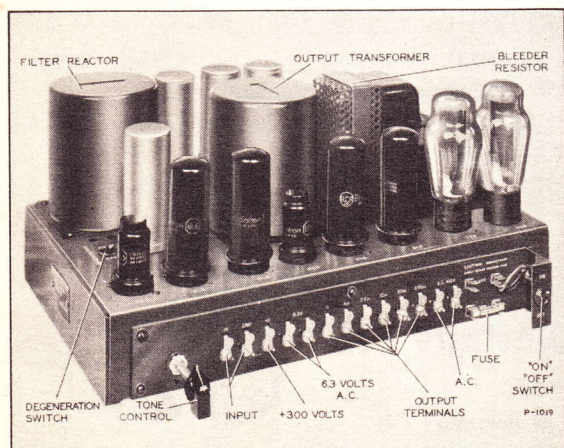
105-125 volts - 50/60 cycles.

Average Operating Wattage - 280 watts.

Dimensions: 16" x 11 $\frac{1}{4}$ " x 7 $\frac{1}{4}$ ".

Output Impedances: 4, 7 $\frac{1}{2}$, 15, 60 and 250 ohms.

Code Word: SCQAW.



Technical Description of MI-4288-D Power Amplifier

This unit is a 50 watt amplifier using metal tubes. In order to insure long life of tubes and good quality output, the voltages have been so adjusted that the tubes are working well below their normal rating. A high frequency tone control is provided for adjusting the high frequency response. On this unit is supplied a Terminal board with the following marked impedances: 4, $7\frac{1}{2}$, 15, 60 and 250 ohms. Additional impedances can be obtained by making connections to the following terminals:

<u>Connections between</u>	<u>Impedances</u>	<u>Connection between</u>	<u>Impedances</u>
4 to $7\frac{1}{2}$ ohms	0.5	4 to 60 ohms	34.0
$7\frac{1}{2}$ to 15 "	1.2	60 to 250 "	64.5
4 to 15 "	3.3	15 to 250 "	142.00
15 to 60 "	16.0	$7\frac{1}{2}$ to 250 "	170.00
$7\frac{1}{2}$ to 60 "	26.0	4 to 250 "	192.0

The power required maximum (Underwriters' Rating) is 280 watts with a power factor of .9. The normal operating power is 250 watts - 105-125 volts - 50/60 cycles.

Degeneration circuits have been applied to the power amplifier driver circuit providing low distortion and effective loudspeaker dampening. Due to this degeneration, the output impedances can be varied from partial (one loudspeaker) load to full load with only a 3 db rise in the power applied to the partial load.

Technical Description of Combined MI-4288-D/4297-A

Overall characteristics of the combined units MI-4288-D/4297-A.

Overall gain - 107 db at 1000 cycles Degeneration Switch on.

" " - 119 db at 1000 " " " off.

Finish: Gray.

Code Word: SCQID.

When controls are in position for maximum response, the frequency response is within plus or minus 2 db from 50 to 10,000 cycles. With the switch in the speech position, the cut at 30 cycles is 20 db. When the tone control is in its minimum position, the cut at 10,000 cycles is 20 db.

When MI-4297-A is used to drive 4 or more MI-4288-D Amplifiers, booster Amplifier MI-4263 should be used.

Architects' and Engineers' Specifications

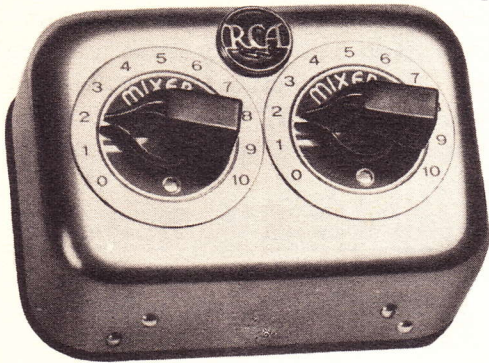
The overall net gain of combined Voltage Amplifier and Power Amplifier shall be 105 db at 1000 cycles. The power output shall be 50 watts at less than 5% distortion and at least 40 watts at less than 2% distortion. The overall frequency response shall be flat within plus or minus 2 db from 50 to 10,000 cycles. The Amplifier shall consist of two units individually base mounted, one containing the Voltage Amplifier and the other the Power Amplifier. The Voltage Amplifier shall contain 2* - 4* Electric mixing units, a master control and a compander unit. The dimensions of each base shall not exceed 16" x $11\frac{1}{4}$ " x 8". Should the load be variable from partial load to full load, there shall not be more than 3 db rise in the power applied to the partial load. All tubes shall be metal except rectifier.

* Cross out one not desired.

REMOTE MIXER UNITS

Models MI-4123 - MI-4123A

Models MI-4124 - MI-4126



Dimensions - 3-1/8" x 4 1/2" x 2 1/2" high

Weight - 2 lbs.

Shipping Weight - 4 lbs.

Finish - Black felt base - Chromium case

Code Word - MI-4123 - SCRUC

Code Word - MI-4123A with 30 ft. 5-conductor cable and plug - SCUSJ

Code Word - MI-4685 - 50 ft. extension cable for use with MI-4123A - SCUWN

Code Word - MI-4124 - SCRYS

Code Word - MI-4126 - SCRIC

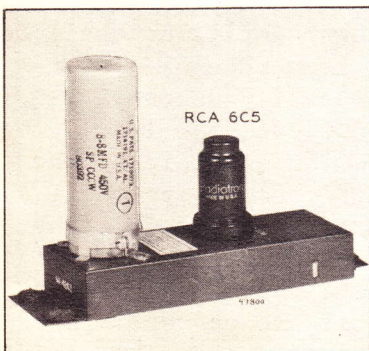
These units are for use with amplifiers having electric mixing when it is desired to mix from a remote point. MI-4123 has controls for mixing inputs 1 and 2 on amplifier MI-4297. MI-4123A is identical with MI-4123, except that it has a 30 foot cord and plug for use with portables. MI-4124 is used for controlling the master electric mixer amplifier and the compander amplifier on the MI-4297, while MI-4126 is used for remotely mixing positions 3 and 4 on amplifier MI-4297. Two mounting holes are supplied in the base for permanently locating units, if so desired. The bases are heavily weighted. The volume controls have been especially designed to give proper attenuation over the entire sweep. It is not necessary to clean pad contacts periodically - thus insuring quiet mixing.

When using MI-4123A more than 30 feet away from the amplifier, there is available a 50 foot extension cable known as MI-4685.

When permanently mounting equipment, it is sometimes desirable to mount the mixer units on one special panel or on a wall plate. To take care of this provision, controls, less the mounting case, are available as listed below. Each unit consists of the volume control, escutcheon and knob.

MI-4720	Remote Equipment for #1 Position	-	Code Word - SCYHV
MI-4721	" " " #2 "	Code Word - SCYIW	
MI-4722	" " " #3 "	Code Word - SCYKY	
MI-4723	" " " #4 "	Code Word - SCYLZ	
MI-4724	" " " Master "	Code Word - SCYOB	
MI-4725	" " " Compander "	Code Word - SCYQD	

MI-4263 Booster Amplifiers



When it is desired to operate more than three MI-4288 power amplifiers from the MI-4297 or 4297A voltage amplifiers, an MI-4263 booster amplifier must be used. This unit is similar in size to the MI-4118, or 4118A unit and employs an RCA-6C5 amplifying tube. If all the spaces on the MI-4297 or 4297A base are not used, the MI-4263 may be mounted in any unused space.

A terminal board and set of connecting leads are supplied with the MI-4263 amplifier, for use when all spaces on the MI-4297 or 4297A are used. The booster amplifier may then be mounted in any convenient location.

FORM 4076

RCA
UNI-DIRECTIONAL MICROPHONE
MI-4043 - Type 77B1

Classification:
MICROPHONES AND
ACCESSORIES

Bulletin No. SP-1122



Frequency Range 40-10,000 cycles.
Output impedance 50-250-500 ohms.
Output level (10 bars) minus 55 db. (.001 watts)
(Open Circuit) " 63 db. (.006 watts)
" 66 db. (.0125 watts)

Weight 2 lbs.
Shipping Weight 5 lbs.
Type of Finish - Black and Polished Chrome.
Cable furnished 30' 3-cond. shielded less plug.
Stand. fitting size 1/2" pipe thread.
Adjustable mounting.
Code - SETGA
Dimensions: Length 8"
(with yoke for stand. fitting 10").
Width 3-3/4"
Depth 2-5/8"

- ** Alnico type magnets - marked increase in sensitivity - much higher signal to noise ratio.
- ** Three impedances, 50 - 250 and 500.
- ** Streamlined, modernistic styling. Case finished in black, screen and mounting in chromium.
- ** Adjustable mount - highly flexible.
- ** Fits standard 1/2" pipe thread stand.
- ** Equipped with 30' 3-conductor shielded cable, less plug.
- ** Eliminates shocks - Rubber cushioning.
- ** Not affected by temperature or pressure changes.
- ** Uni-directional average response from back minus 20 db.

This new RCA Uni-directional Velocity Microphone is scarcely larger than a standard type velocity microphone. Very excellent frequency response is obtained. Due to its design it helps to reduce echos in large auditoriums. It eliminates pick-up of unwanted sound in the rear and may be placed close to the wall in small studios so that studio space may be used more effectively. The output of this unit has been greatly improved. The weight has been reduced to a minimum, making it very easily handled. Provisions are made for using this microphone at either 50 ohms, 250, or 500 ohms impedance.

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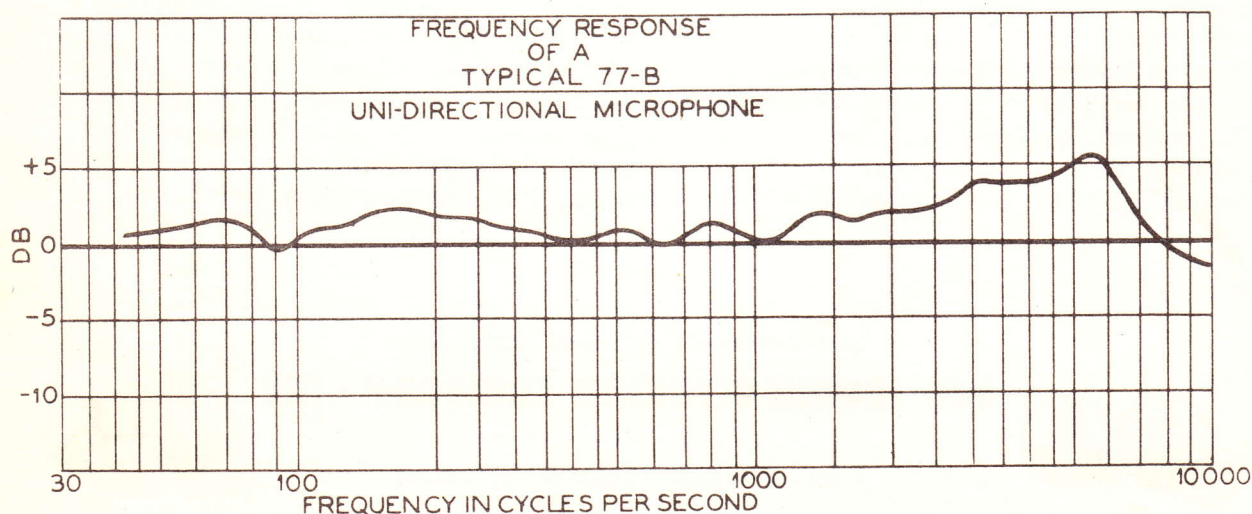
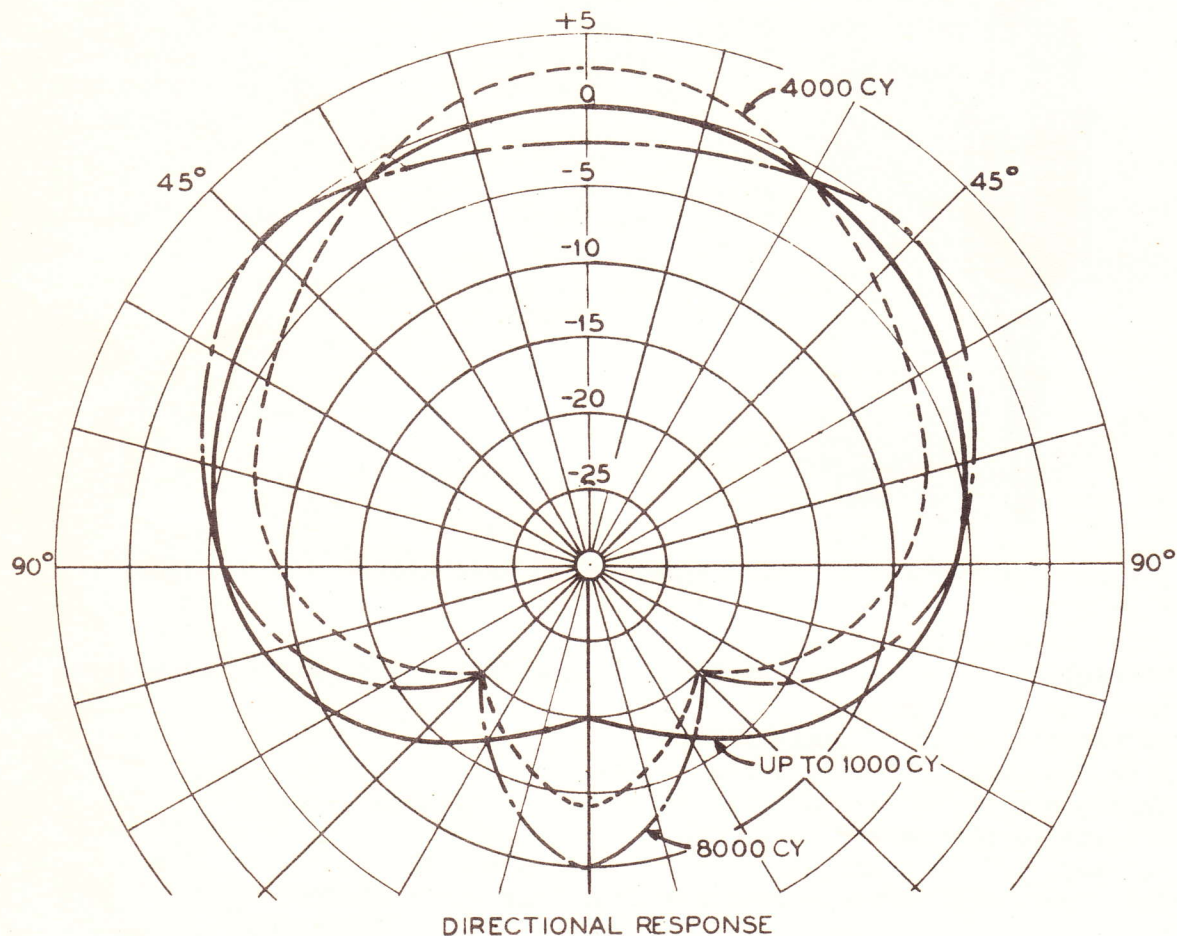
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ARCHITECT AND ENGINEERING SPECIFICATIONS

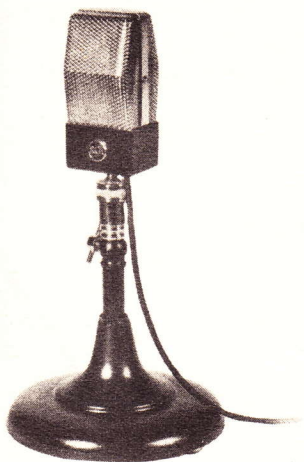
The microphone shall be a uni-directional velocity type microphone with a frequency range of from 40 to 10,000 cycles. Impedance shall be 250 and 50 ohms, and adjustable mounting brackets shall be supplied. The mounting brackets shall have facilities to mount the microphone on a stand having 1/2" standard pipe threads. The finish shall be chromium and black. Average operating level shall be minus 63 db. with a ten bar signal across open circuit. A 30-foot cable shall be supplied.



RCA MICROPHONE STANDS

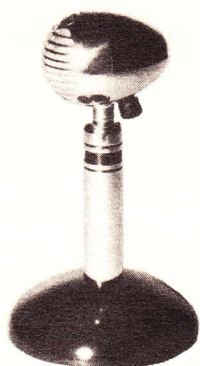
Classification:
MICROPHONES AND
ACCESSORIES

Bulletin No. SP-1090-A



**MI 4065-A
ANNOUNCE STAND**

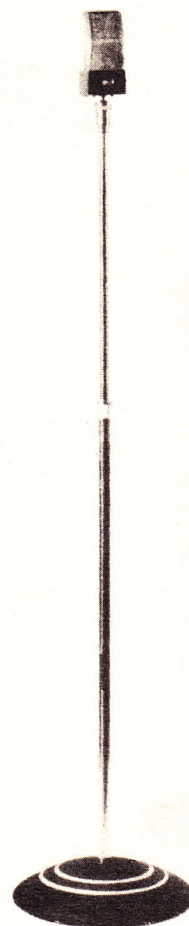
This smartly designed announce stand is adjustable from 8 to 10½ inches, ample for all announcing uses. It is finished in attractive chromium and black and features a heavy cast base. Has ½-inch standard pipe thread fitting. Code CROYZ.



MI 6227

TABLE STAND FOR AERODYNAMIC MICROPHONE

A striking, chromium-plated stand, having a heavy black base and black trimmings. Makes ideal table or hand stand. Has felt cover on base and is 6 inches in height. Not easily turned over. Fitting is for standard ⅛-inch pipe thread. Code SCIDG.



MI 4068-A

STUDIO FLOOR STAND

A heavy base, rugged microphone stand, for use with any of the RCA Velocity Type Microphones. Its modern design is in keeping with today's studio design, and its chromium and black finish is in harmony with all colors. Adjustable from 35 inches to 67 inches. Has ½-inch standard pipe thread fitting. Code SCAAL.

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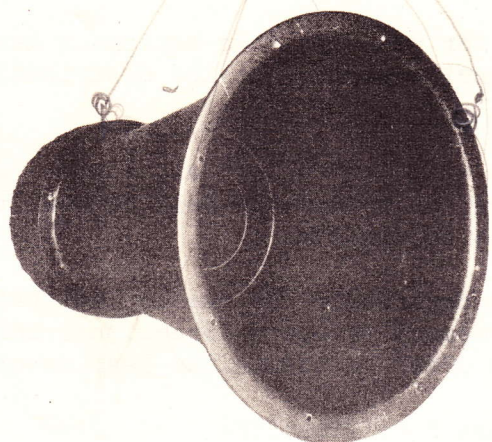
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RCA PROSCENIUM LOUDSPEAKER
MI-9429-A
Mechanism Only
MI-9430A

CLASSIFICATION:
LOUDSPEAKERS AND
ACCESSORIES

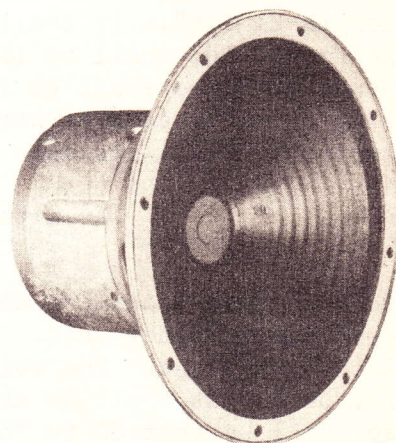
Bulletin No. SP-1115



Specifications MI-9429-A
Complete Speaker

Length overall - $21\frac{3}{4}$ ".
Bell diameter - $12\frac{7}{8}$ ".
Bell Length - 16".
Mounting hole dia. - $13\frac{5}{8}$ ".
Max. Dia. - $14\frac{3}{4}$ ".
Finish - Black.
Type of Bell - Metal Exponential Horn.
Speaker Mechanism - MI-9430-A
Net Weight - 17 lbs.
Shipping Weight - 45 lbs.
Code Word MI-9429 - SEPOM

Specifications MI-9430A Mechanism only.
Voice coil impedance 15 ohms.
Field - Permanent Magnet.
Dimensions 8" diameter - 5" deep.
Mounting Dimensions - 8-7/32 holes.
45° apart - on diameters of 7-9/16".
Weight - Net $11\frac{1}{4}$ lbs.
Shipping Weight - $12\frac{1}{2}$ lbs.
Cone - Paper.
Code Word SERHD.



- *** True quality reproduction.
- *** Requires no field excitation.
- *** Acoustic throat for smooth full range response
- *** Flanged bell for mounting to flat baffle.
- *** High efficiency.
- *** Convenient overall size - easy to handle.
- *** Mounted on flat baffle in wall; frequency response 60-7500 cycles.
- *** 50° distribution angle.
- *** Will handle - 20 watts complex wave.
- *** Sensitivity 23.3 dynes per square centimeter at 4' distance on 6 ft. baffle.
- *** A high quality loudspeaker designed for use where space is at a premium.

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The RCA Proscenium Loudspeaker Unit is a new idea in loudspeakers which overcomes many of the difficulties encountered where speakers must be mounted at the sides or over the top of stage proscenium openings, or in the wall. This unit has a flanged bell which permits it to be attached to a small diameter opening in a wall or baffle. This feature, together with a permanent field dynamic unit, acoustic throat for full range response--compact in size yet powerful, makes it ideal for concealed speaker work.

The acoustic throat which has been designed for use with this equipment makes possible an even distribution of high frequencies throughout the distribution angle of the baffle.

This unit has been finished black so that it will not reflect any light. When mounted in the wall the larger the baffle and the better the seal between the baffle and the wall, the more low frequency response obtainable.

The mechanism as a MI-9430-A can be obtained separately for use on flat baffles or other directional baffles. Should it be necessary to use a directional baffle it is recommended that the MI-9429-A be used in order to obtain the best results.

Architects and Engineers Specifications
(For Complete Speaker)

MI-9429-A Loudspeaker. This unit shall be a directional baffle complete with its speaker mechanism. The bell diameter shall be 12-7/8", the bell length 16", overall length 21-3/4". It shall be finished black. The voice coil impedance of the speaker mechanism shall be 15 ohms. The distribution angle shall be 50° and the frequency response shall be from 60 to 7500 cycles. This unit shall be capable of handling 20 watts complex wave. The sensitivity shall be 23.3 dynes per square centimeter at 4 ft. distance on 6 ft. baffle.

Architects and Engineers Specifications
(For Mechanism only)

MI-9430-A. This mechanism shall be designed for flat baffle operation. It shall be a permanent magnet unit. Dimensions - 8" diameter, 5" deep. The net weight shall be 11-1/4 lbs. The voice coil impedance shall be 15 ohms. When mounted on a 6 ft. baffle it shall be able to handle 20 watts complex wave. Frequency response shall be from 60 to 7500 cycles.