

# BOGEN



## MODEL MTA10

TRANSISTOR  
10 WATT PUBLIC ADDRESS AMPLIFIER



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## INSTALLATION AND OPERATING MANUAL

READ THOROUGHLY BEFORE OPERATING EQUIPMENT

## INTRODUCTION

The model MTA10 is a general purpose 10 watt public address amplifier. Separate microphone and auxiliary inputs and volume controls permit mixing of the two inputs. A treble control is provided for adjusting tonal balance. A Speech-

Music switch provides optimum speech response.

Outputs are provided for all standard speaker impedances and for operation with 25 volt and 70 volt long line speaker systems.

## TECHNICAL SPECIFICATIONS

**POWER OUTPUT:** 10 watts at less than 3% distortion; 20 watts peak.

**FREQUENCY RESPONSE:** 50 to 20,000 cycles,  $\pm 2$  db.

**POWER RESPONSE:**  $\pm 2$  db, 50 to 16,000 cps at 10 watts with less than 5% distortion.

### HUM & NOISE:

MIC INPUT: 60 db (weighted) below rated power.

AUX INPUT: 80 db (weighted) below rated power.

### GAIN:

MIC INPUT: 105 db

AUX INPUT: 95 db

### SENSITIVITY:

MIC INPUT: 0.4 millivolts

AUX INPUT: 0.2 volt

**INPUTS:** 1 microphone (low impedance), 1 auxiliary (high impedance-high level), 1 input for optional WMT-1 (500/600 ohm) transformer, 1 bridging input.

**OUTPUTS:** 4, 8; balanced 16 ohms; 25 volts (62 ohm) balanced C.T.; 70 volts balanced (500 ohm).

**TONE CONTROL ACTION:** TREBLE (10 KC) -23 db.

**CONTROLS:** Microphone Volume, Auxiliary Volume, Treble, Speech Music filter Switch, and Power Switch.

**TRANSISTORS & DIODES:** 5 transistors and dual diode.

**POWER CONSUMPTION:** 30 watts.

**DIMENSIONS:** 10 5/8" wide, 5" high, 6 1/2" deep.

**SHIPPING WEIGHT:** 11 lbs.

## ACCESSORIES

### BOGEN MODEL WMT-1

#### LINE MATCHING TRANSFORMER

Used for distribution of background music directly from leased telephone line wired music systems. Provides a perfect impedance match between 500/600 ohm balanced line and high impedance input of amplifier.

This transformer can also be utilized as an output ac-

cessory for feeding a 500/600 ohm zero-level signal for transmission over a telephone line.

The transformer is housed in a compact metal enclosure which is conveniently mounted to the amplifier chassis by two screws. The chassis is pre-drilled for easy mounting. The WMT-1 has a 3-screw terminal strip and a shielded cable terminated in a phono plug. No wiring or soldering required for input connections.

## INSTALLATION

### UNPACKING

Inspect shipping container and unit for indications of improper handling. The unit was carefully checked before leaving factory. If unit has been damaged, make an immediate claim to dealer or distributor from whom it was purchased. If unit was shipped to you, notify transportation company without delay and place your claim.

### CONNECTIONS BETWEEN COMPONENTS

Use single conductor, low capacity shielded wire for connecting the record player, tape recorder, and other components (except speakers) to amplifier. Keep leads under ten feet in length.

Speakers may be connected with standard flexible line

cord ("zip cord") and up to 100 feet of cable may be used without appreciable loss.

Make certain that all audio cables are kept from speaker cables, power cables, and power transformers, and that speaker cables are kept away from power cables.

### GROUNDING THE UNIT

Ground amplifier by attaching a wire from a GND terminal on the chassis rear to a good ground such as the metal frame of the wall outlet or a water or steam pipe.

### POWER

Connect the line cord to a wall outlet supplying 117-volt AC, 60 cycle power.

## INPUT CONNECTIONS

### MICROPHONE

Any low impedance microphone (500 ohms or less, 200 ohms nominal) may be used. The microphone should be connected using single conductor shielded audio cable and a connector, Amphenol type 75-MCIF (or equivalent).

The microphone input circuit includes a built-in RF filter coil and shunt capacitor to eliminate RF interference. The microphone input is extremely sensitive and if the amplifier is used in the presence of hum fields in a quiet room with a single speaker the hum pickup may be objectionable. To avoid this possible hum the RF filter has been jumpered; however, the jumper should be removed if RF interference occurs. To remove jumper cut red wire across the RF coil at both sides and remove.

### AUXILIARY

A phonograph with a ceramic or crystal type cartridge may be connected to the AUX receptacle on the amplifier chassis. Use single conductor shielded cable terminated in a standard phono plug. It is recommended that a separate ground wire be connected between the phono player base and the amplifier GND terminal to minimize hum pickup.

The AUX input may be used for sources other than a phonograph. Any signal source having a high level, high impedance output may be connected to the AUX input. This includes virtually all tuners and tape recorders having preamplifiers. An input signal level of approximately 0.2 volts is required to obtain full signal output.



### WMT-1

The amplifier may be used in conjunction with a low impedance (500/600 ohm) signal source (e.g. wired background music system) by using the Bogen Model WMT-1 Line Match-

ing Transformer. The WMT-1 may feed more than one MTA10 by paralleling BRIDGING terminals and GND. See WMT-1 instruction sheet for connection details. The WMT-1 is attached to pre-drilled holes on the MTA10 chassis.

## OUTPUT CONNECTIONS

The amplifier may be used in conjunction with speakers rated at 4, 8, and balanced 16 ohms and with 25 volt (62 ohm) balanced or 70 volt (500 ohm) balanced constant voltage speaker systems. For detailed information on installing multiple speaker systems, refer to Speaker Installation Bulletin (No. 54-5001-01) furnished with this unit.

For 4 or 8 ohm output, connect one speaker lead to proper terminal corresponding to speaker impedance and other lead to GND terminal. For balanced 16 ohm, 25 volt or 70 volt output, connect one speaker lead to terminal corresponding to speaker system impedance and other lead to COM 2 terminal.

For 25 volt balanced (C. T.) operation connect the high sides of the line to 25 volt and COM 2 terminals, connect the center tap to the 16 ohm terminal. For unbalanced or grounded systems (16 ohm, 25 volt or 70 volt) connect jumper wire between COM 2 and GND terminals.

By utilizing a Bogen WMT-1 a zero-level output at 500/600 ohms may be obtained for feeding a telephone line. The WMT-1 accessory is connected across the 25 volt output. For connection details see instruction sheet furnished with WMT-1.

## CONTROL FUNCTIONS

### POWER

This slide switch, located on the front panel, is used to turn the amplifier on and off.

### MICROPHONE VOLUME

This control adjusts the volume level of the microphone input. Rotate the control clockwise (to higher numbers) to increase volume. Set the control to the minimum position (0) when the microphone input is not used.

### AUXILIARY VOLUME

This control adjusts the level of the auxiliary input. Rotate this control clockwise (to higher numbers) to increase volume. Set the control to minimum position (0) when the auxiliary input is not in use.

**NOTE:** Each volume control is provided with a reset marker on the skirt of the knob. These markers make it possible to instantly reset a control to a previously determined level. After the desired volume setting has been established for each control, slide the reset marker to coincide with

the midpoint mark on the front panel. The knob may now be set to zero or any other point required, and then instantly reset to the setting indicated by the marker for each control.

### TREBLE

This control adjusts the tonal balance of the amplifier output. The extreme clockwise position provides full frequency response and is generally used when program sources and speaker system are of highest quality. Rotation of the control in a counterclockwise direction reduces (cuts) the high frequency response of the amplifier. Hence, the control would be used to remove high frequency noise (e.g. record scratch), compensate for speakers having poor low frequency response (e.g. paging or outdoor type speakers) or reduce the likelihood of acoustic feedback (howling).

### SPEECH-MUSIC SWITCH

The SPEECH-MUSIC switch is located on top of the amplifier chassis. Set this switch to SPEECH position to provide optimum speech response.

## INSTALLATION AND OPERATING HINTS

### FEEDBACK

If speakers are located too close to microphone, acoustic feedback (squealing or howling) may result. In this case, adjust the volume and/or Treble controls to the point where feedback is eliminated. In addition, move the speakers to increase the distance between the speakers and microphone.

Check for broken wires, shields and poor connector contacts. In the case of a phono player, it may be necessary to connect a separate ground wire from the chassis of the phono player to the GND on the rear of the amplifier.

### HUM

A low frequency hum may be heard if the connections between the signal sources and the amplifier are incorrect or defective. Recheck all connections for continuity if hum occurs. Try reversing the amplifier power plug and the plugs of other units such as the phono player connected in the system.

### MICROPHONE TECHNIQUE

Speak directly into microphone in a normal voice, at a distance of approximately 6 inches to one foot from the microphone.

Speak deliberately with even speed and loudness. Don't shout. Leave a space between words and pronounce each word. Sound final consonants and do not drop words here and there.



## SERVICE

### FUSES

Two fuses are provided in the unit, located in holders on top of the chassis. A 0.3-ampere slow-blow fuse is on the left. To replace this fuse, press spring-loaded cap inward, rotate counterclockwise and withdraw cap and fuse. To remove the 2 ampere C-2 type fuse, press downward on spring-loaded fuse and rotate counterclockwise and withdraw fuse. To replace C-2 type fuse, press inward and rotate fuse clockwise. Use only a fuse of the same rating for replacement. If the replacement fuse blows, do not make any further attempt to operate equipment. Contact a Bogen representative or qualified serviceman for inspection of the unit.

### BOGEN SERVICE

We are interested in your Bogen unit for as long as you have it. If trouble develops with unit, please do not hesitate to contact us. Information can be obtained by writing to:

Service Department, Bogen Communications, P.O. Box 500, Paramus, New Jersey 07652.

When communicating with us give the model number and series number of the unit. Completely describe the difficulty encountered. Describe the effects each operating control has upon the symptoms of trouble. Include details on electrical connections to associated equipment and list such equipment.

When we receive this information we will send you service information if the trouble appears to be simple. If trouble requires servicing, we shall send you the name and address of the nearest Bogen authorized service agency to which you can send your unit for repair.

When shipping your unit, pack instrument carefully, using sufficient filler material to prevent damage in transit. Send unit, fully insured and prepaid, via railway express. Do not ship via parcel post unless so instructed. The unit will be promptly repaired and returned to you.

## WARRANTY

Bogen equipment is guaranteed against all defects in material and workmanship for one year from date of sale to original purchaser (see Warranty card). The registration card enclosed with the equipment must be filled out and mailed to us within 5 days of purchase to place warranty in effect.

