



**OPERATING
INSTRUCTIONS**

SPECIFICATIONS

Type:	Compressor Amplifier
Gain:	56 db from 15,000 ohm source: 42 db bridging 600 ohm line
Maximum Compression:	30 db (50 db change in input results in 20 db change in output)
Power Output:	+19 dbm at 30 db compression; +24 dbm as straight amplifier
Frequency Response:	±1.5 db, 30 to 15,000 cycles
Input Impedance:	15,000 ohms bridging transformer (ungrounded)
Source Impedance:	Any up to 15,000 ohms
Load Impedance:	150/600 ohms
Noise Level:	74 db below rated output: -111 dbm equivalent input noise
Controls:	Input gain control; AC power switch
Power Supply:	117 volts, 60 cycles, 20 watts
Tubes:	6BC8, 6CG7, 6AL5
Dimensions:	19" L, 3½" H, 6" D
Color:	Dark Green
Weight:	8½ lbs.
Special Features:	Compression meter
Attack Time:	50 milliseconds
Recovery Time:	1 second for 63% recovery
Harmonic Distortion:	at 25 db of compression, less than 1.5%, 35 to 15,000 cps; at 30 db of compression, less than 2.5%, 35 to 10,000 cps.



A Subsidiary of Ling-Temco Electronics, Inc.

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DESCRIPTION

The 436B Amplifier is a self-powered unit which occupies 3½" of rack space, with input gain control, power switch, fuse, pilot light and compression meter mounted on a hinged front panel. It is equipped with a bridging input transformer. Output loads of 150 or 600 ohms may be accommodated. The threshold and amount of compression, as well as the attack and recovery time of the circuit, are fixed quantities considered optimum for average program service.

APPLICATIONS

The 436B Amplifier is intended for use in automatic level control applications in public address systems. It may be used to control level differences between two or more medium-level program sources or as a program line compressor, or it may be used for automatic fading for voice-over-music announcements. Level differences caused by individual voice intensities and unequal distances of performers from the microphone, where single microphone pickup is employed, can be minimized by the use of the 436B Compressor. In industrial locations where sudden high level sounds might cause "blasting" with attendant danger to amplifiers and loudspeakers, the 436B Amplifier will prevent such overloading.

The 436B can be used as a line amplifier by simply removing the 6AL5 tube from its socket.

INSTALLATION AND OPERATION

The design of the 436B Compressor Amplifier is versatile enough that it can be connected into any high- or low-impedance line between preamplifiers and power amplifiers, without adapters or other modification.

In high-impedance lines, as exemplified by the Altec Lansing 1500 series P.A. amplifiers, the bridging input transformer of the 436B Amplifier provides a suitable load for the mixer-preamplifiers. The output of the 436B Amplifier, when terminated with 600 ohm resistance, is of sufficient level to operate directly into the high impedance of the power amplifiers.

Where it is desired to insert the 436B into a transmission line of 500/600 ohms, a resistive termination of 600 ohms should be installed and the input of the 436B Amplifier connected across this load. The 600 ohm output then provides a suitable source for the input of the following power amplifier.

A 600 ohm line level of +7 dbm (1.7 volts) will drive the 436B Amplifier to full 30 db compression, with a level of +19 dbm at the output of the compressor. Since this level is great enough to overdrive most power amplifiers, it is necessary to install a suitable loss pad at the input of the power amplifier, unless the power amplifier is already equipped with a gain control.

Level Adjustments

For unattended sound reinforcement systems in lecture halls and other places where the microphone and loudspeaker are in the same room, precautions must be taken to prevent acoustic feedback when no performer is at the microphone. Level-setting procedure for this case is as follows: adjust input gain so that the average voice speaking at a normal distance from the microphone causes the meter on the 436B Amplifier to indicate 5 db of compression. Then, in the absence of the performer, adjust the power amplifier gain to the maximum level available without acoustic feedback. With this level adjustment, the weaker voices are reinforced the maximum possible. Louder voices will automatically be compressed.

Where the microphone is not in the same location as the loudspeaker, input levels to the 436B Compressor Amplifier should be adjusted so that average program material will drive the compressor into 10 to 15 db of compression, as indicated on the meter. System output should then be set for appropriate volume by means of the power amplifier gain control. With the levels adjusted as above, input variations of ± 15 db from average program level will result in only ± 5 db change at the output of the 436B Amplifier.

When it is desired to automatically fade "background" music for voice announcements, the gain control of the music channel should be set so that for average music level, the compression threshold is barely reached. Proper listening level is then set by means of the power amplifier gain control. The voice channel gain control is adjusted to provide approximately 25 db of compression, as shown on the meter, during normal announcements.

The above settings will result in announcements at a level approximately 15 db above the original music level. At the same time, the music will drop to a level about 40 db below the announcement level.

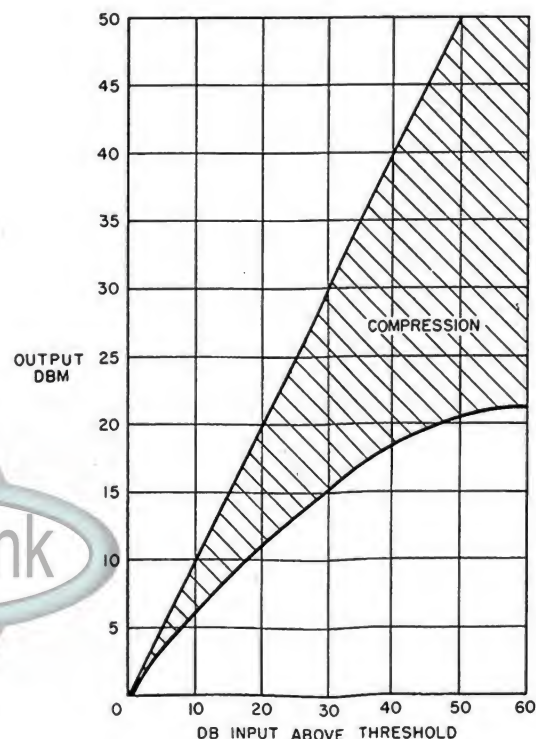
COMPRESSION METER

It is usually desirable to have the compression meter visible from the operating position. When conditions dictate a remote location for the 436B Amplifier, an Altec #6049 meter should be ordered for installation at the console. The additional meter is connected in parallel with the 436B Amplifier meter by means of a pair of wires extended to the console location.

SERVICING

All circuit components are easily reached by opening the hinged front panel of the unit. Normal servicing can be done with a voltmeter. All pertinent information is shown on the schematic.

436B Amplifier
Average Compression Characteristics

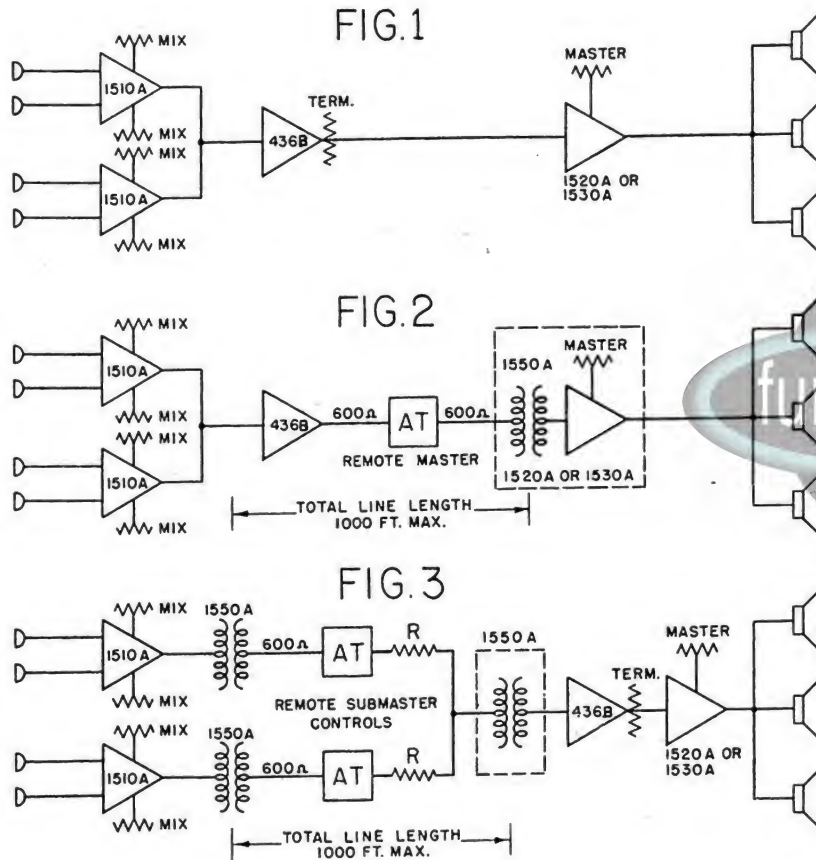


TYPICAL APPLICATIONS

Fig. 1 The 436B Amplifier in typical high impedance line. A 600 ohm terminating resistor must be connected across the output of the 436B as shown.

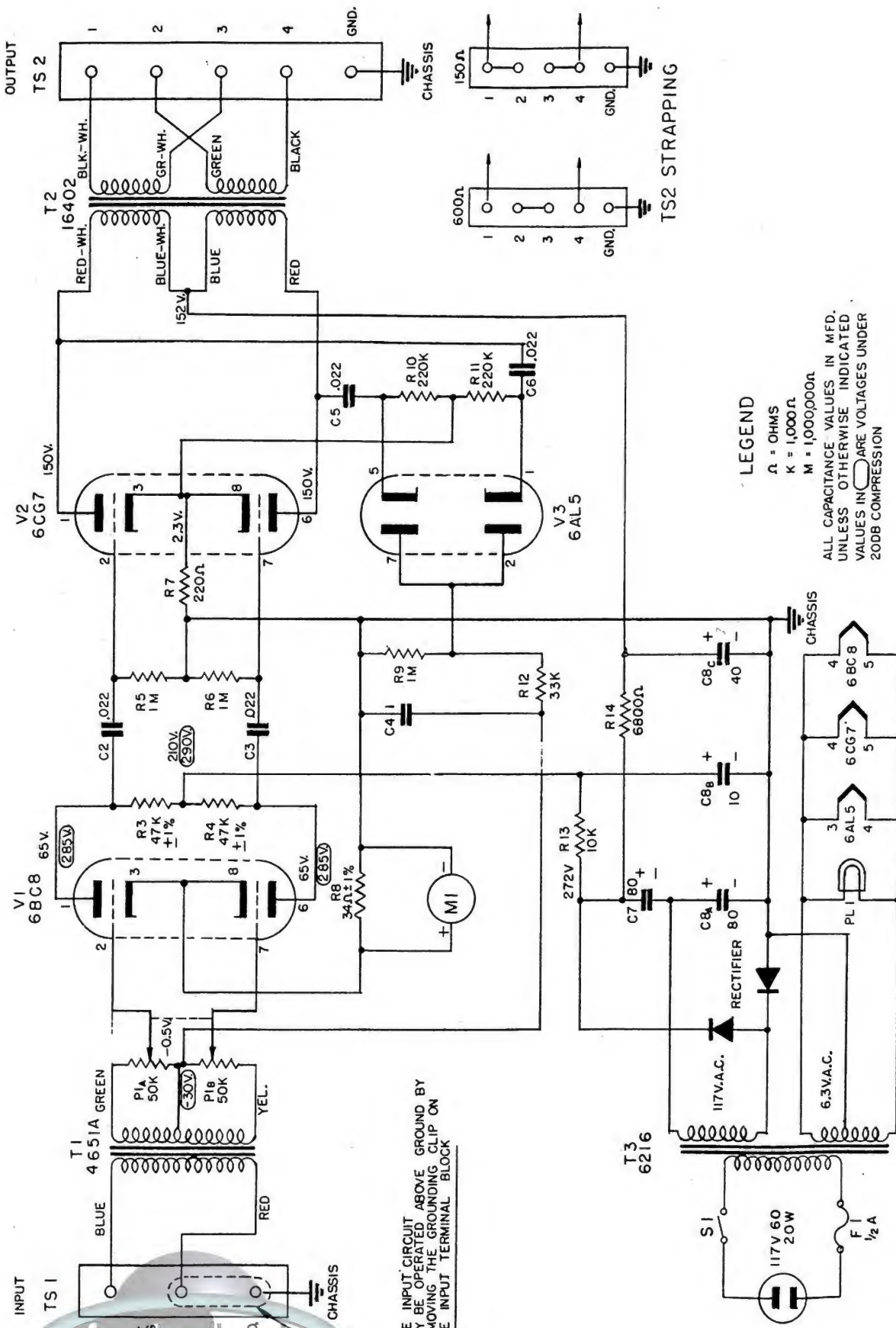
Fig. 2 A typical low impedance line installation. The remote fader serves as proper termination for the 436B.

Fig. 3 Low impedance line with remote submasters. The 600 ohm terminating resistor must be installed at the output of the 436B Amplifier. The 1550A Apparatus Unit feeding the 436B should be strapped for a secondary impedance of 17,500 ohms.



PARTS LIST

C2, 3, 5, 6	.022 mfd, 400 V., Micamold Tropicap	P1	Altec Lansing 13021
C4	1 mfd, 200 V., Astron ML-2-1M	T1	Peerless 4651A
C7	80 mfd, 350 V., Mallory FP-138	T2	Peerless 16402
C8	80-40-10 mfd/200-450-450 V., Mallory FP 370	T3	Peerless 6216
R3, 4	47,000 ohms, $\pm 1\%$, $\frac{1}{2}$ watt, Deposited Carbon	M1	Altec Lansing 6049
R5, 6, 9	1 megohm, $\pm 10\%$, $\frac{1}{2}$ watt	PL1	Mazda #44
R7	220 ohms, $\pm 10\%$, $\frac{1}{2}$ watt	F1	$\frac{1}{2}$ amp 3AG Fuse
R8	34 ohms, $\pm 1\%$, $\frac{1}{2}$ watt, Deposited Carbon	S1	Altec Lansing 12180
R10, 11	220,000 ohms, $\pm 10\%$, $\frac{1}{2}$ watt	Rectifier	Sarkes Tarzian 58-D
R12	33,000 ohms, $\pm 10\%$, $\frac{1}{2}$ watt	V1	6BC8 Vacuum Tube
R13	10,000 ohms, $\pm 10\%$, 1 watt	V2	6CG7 Vacuum Tube
R14	6,800 ohms, $\pm 10\%$, 1 watt	V3	6AL5 Vacuum Tube



THE INPUT CIRCUIT
MAY BE OPERATED ABOVE GROUND BY
REMOVING THE GROUNDING CLIP ON
THE INPUT TERMINAL BLOCK

LEGEND

- Ω = OHMS
 - K = 1,000 Ω
 - M = 1,000,000 Ω
- ALL CAPACITANCE VALUES IN MFD.
UNLESS OTHERWISE INDICATED
VALUES IN \square ARE VOLTAGES UNDER
20DB COMPRESSION

FIRST MADE FOR
TOLERANCES EXCEPT AS NOTED: FRACT. \pm 1/4% DEC. \pm .004% OVER 1/4" \pm .004% ANGULAR \pm 1/4°

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1	11/25/58	

CHANGE

ALTEC
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436B AMPLIFIER
SC' 4ATIC
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ALTEC LANSING 436 B COMPRESSOR AMPLIFIER

