

**OPERATING
INSTRUCTIONS**

SPECIFICATIONS

Type:	Power Amplifier
Gain:	68 db
Input Sensitivity:	0.9 volt
Power Output:	80 watts at less than 2% thd 60 to 20,000 cps 80 watts at less than 5% thd 40 to 20,000 cps
Frequency Response:	±1 db, 5-30,000; ±5 db, 1-100,000 cps
Input Impedance:	70,000 ohm potentiometer
Source Impedance:	150, 600 ohms with 15095 Plug-in Transformer
Load Impedance:	4 (18 v), 8 (25 v), 16 (36 v), 62 (70 v) ohms ungrounded
Output Impedance:	Less than 15% of nominal load impedance
Noise Level:	80 db below rated output
Controls:	Volume control, continuously variable, composition
Power Supply:	117 volts, 50/60 cps, 240 watts
External Power Available:	117 volt ac receptacle on chassis
Tubes:	2-6CG7, 4-6CA7/EL34, 2-5U4GB
Dimensions:	8 3/4" high, 19" wide, 8" deep
Color:	Dark green
Weight:	27.5 lbs.
Special Feature:	Two stage high-pass-filter for protection of horn loaded drivers
Accessory:	15095 Plug-in Transformer

GENERAL DESCRIPTION

The 1569A Amplifier is a rack mounted, AC operated power amplifier intended for use in sound reinforcing, paging, music distribution, or any application requiring low distortion, wide frequency range, complete stability with any type of load, reliability of operation, ease of servicing or low cost.

At 80 watts distortion is less than 2% at any frequency from 60 to 20,000 cycles per second. The frequency response is within 5 db of mid range value from 1 cycle per second to 100 KC. The feedback circuit is designed for stability under conditions of varying line voltage, varying tube characteristics, and all types of loads including long unloaded speaker lines having considerable capacitance. The tubes are conservatively operated under CCS (continuous commercial service) ratings of their manufacturer, and the amplifier has been shown to withstand "hot switching" and other punishment which might be encountered in the hands of untrained operators. As many as three output tubes and one rectifier may fail without interrupting operation.

The amplifier occupies five units of rack space (8 3/4") and has a hinged front panel on which are mounted the power switch, fuse, pilot light and a continuously variable gain control. All circuitry is completely accessible for servicing when the front panel is open. The amplifier is equipped with a 3-wire power cord terminating in a 3-pin cap. Input and output terminals are provided in the form of barrier-type terminal blocks mounted on the outer surface of the chassis.

INPUT CONNECTIONS

The 1569A Amplifier is equipped with two pairs of input connections. Terminals 1 and 2, connecting directly to the input potentiometer, are provided for unbalanced high impedance sources, and to bridge unbalanced low impedance lines having a signal voltage of 0.9 volt or higher.

Terminals 3 and 4 connect to a standard octal socket which accommodates the accessory plug-in transformer. With the 15095 Transformer, balanced or unbalanced lines of 150, 600 ohms up to a level of +8 dbm may be connected to input 3-4. The octal socket is normally connected for 500/600 ohm operation; the other impedances may be obtained by strapping the terminals in accordance with the diagram shown on the schematic.

OUTPUT CONNECTIONS

Outputs accommodate nominal loads of 4, 8, 16 and 62 ohms, the corresponding full-drive output voltages being 18, 25, 36 and 70 volts.

Speaker Matching: Use the output tap which most nearly equals the total speaker impedance. If the load impedance falls between two output terminal values, favor the terminal of lower impedance.

70 Volt Line: The 70 volt distribution system permits connection to a large number of speakers, each to operate at its own power level as required, without the necessity for computing impedances. In this system each speaker is equipped with a transformer containing a number of taps rated in terms of power, and the tap is selected which gives the power desired for that speaker. The total of the power settings for all speakers should be equal to or less than the amplifier system power rating. The 1569A Amplifier is equipped with outputs to drive both a 70 volt line and a 25 volt line.

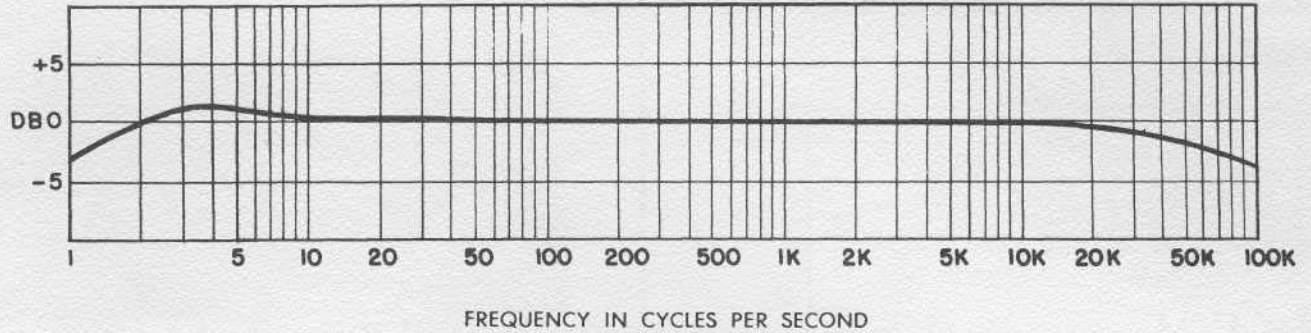
Protection of Horn Loaded Drivers: Driver loudspeakers coupled to horns are used in paging or voice reinforcing systems where excellent intelligibility is required in the presence of high noise levels, effects of wind, and other disturbances. When a loudspeaker system dividing network is not available the diaphragm of the driver loudspeaker may be protected from low frequency power by the use of the R-C low frequency cut-off filter in V1 grid circuit (see schematic). As shipped, capacitors C1 and C2 are strapped out. By cutting one or both of these straps attenuation is introduced as shown in the table, depending upon the impedance of the source.

Effect of High Pass Filter					
<u>Source Impedance</u>	<u>Strapping</u>	<u>250</u>	<u>500</u>	<u>1000</u>	<u>2000 cps</u>
100,00 ohms	One strap cut	-6.5	-3	-1	-0.2 db
	Both straps cut	-16	-8	-3.5	-1.2 db
Low	One strap cut	-13	-8	-3.5	-1.2 db
	Both straps cut	-22	-12	-4.2	-1.5 db

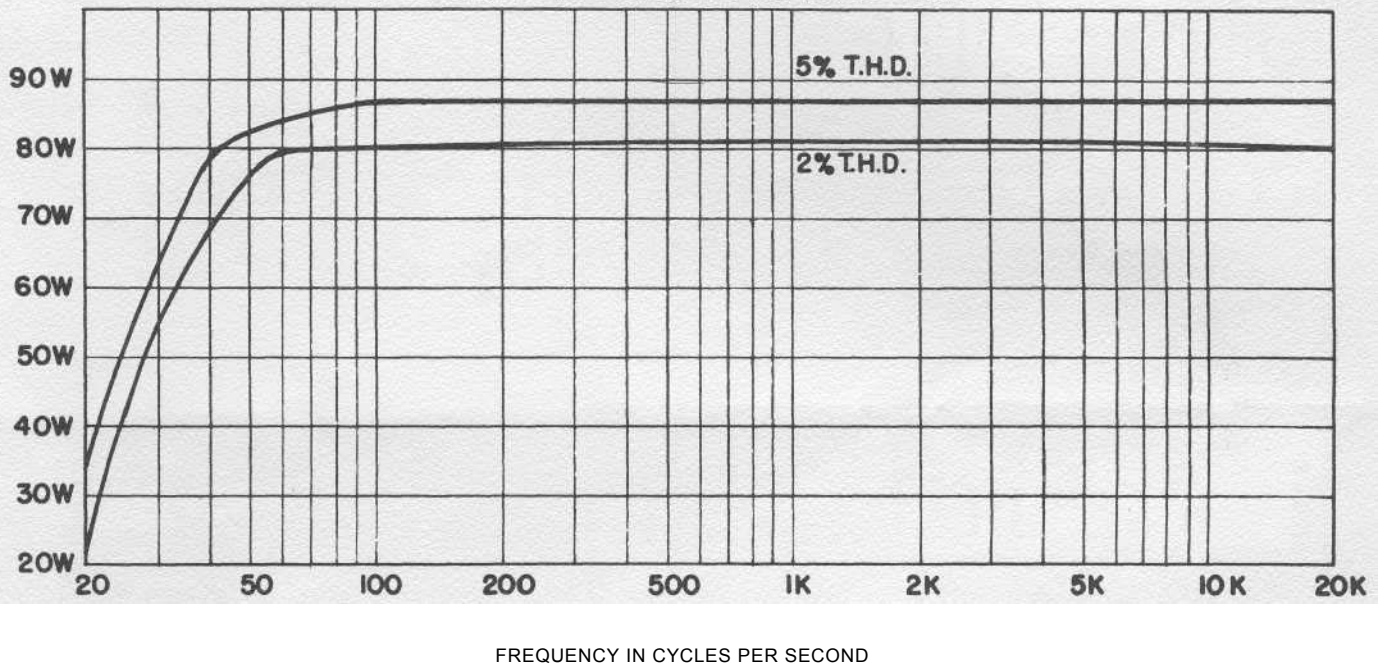
CONTROLS

The only controls on this amplifier intended for normal operation are the power switch and the gain control. Potentiometer P2, which establishes the bias voltage for the output tubes, is set at the factory and will probably not require readjustment over a long period of operation. If, due to ageing of the rectifier, the bias voltage should drop below the value indicated on the schematic, it will be desirable to reset P2. Measurement should be made with an accurate voltmeter, at a line voltage of 117 volts, and with no signal applied.

**I569 A AMPLIFIER
TYPICAL FREQUENCY RESPONSE**



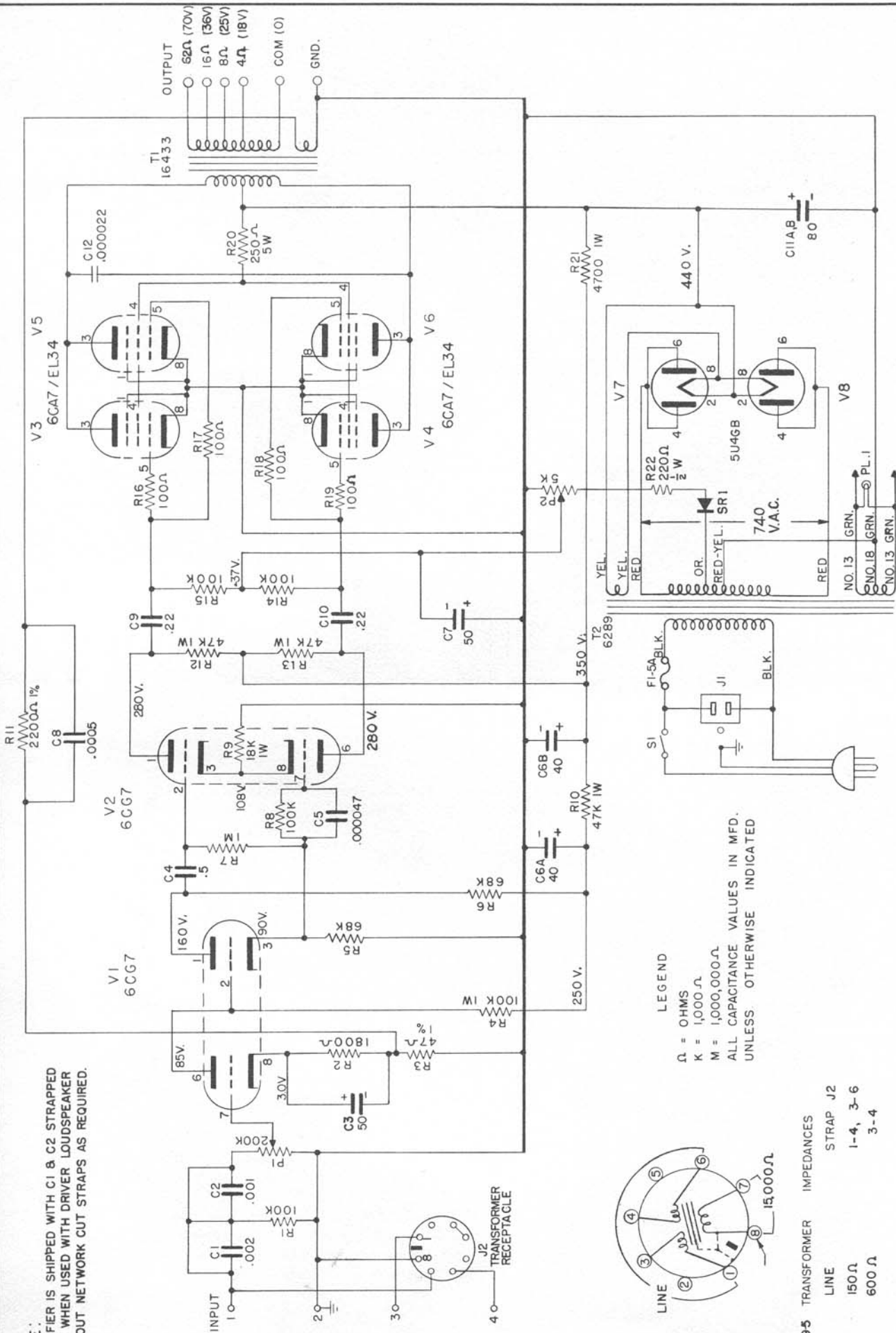
**I569 A AMPLIFIER
FREQUENCY VS POWER AT SELECTED T.H.D.**



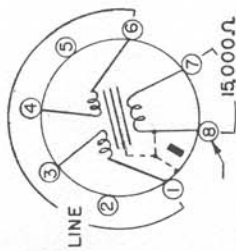
PARTS LIST

C1	.002 mfd. ± 10% ceramic disc Erie 811-202	R10,12,13	47,000 ohm ±10%, 1 W.
C2	.001 mfd. ±10% ceramic disc Erie 811-202	R11	2200 ohm ±1%, 1/2 W. deposited carbon
C3	50 mfd. 6 V. Mallory TT	R16,17,18, 19	100 ohm ±10%, 1/2 W.
C4	.5 mfd. 400 V. CD PJ4P5	R20	250 ohm 5 Watt Ohmite Brown Devil
C5	.000047 mfd. ±10% ceramic disc Erie 831-470	R21	4700 ohm ±10%, 1 W.
C6,11	40 x 40 mfd. 500 V. Mallory FP288	R22	220 ohm ±10%, 1/2 W.
C7	50 mfd. 50 V. Mallory TC	P1	200,000 ohm Altec 12435
C8	.0005 mfd. ±10% ceramic disc Erie 811-501	P2	5,000 ohm Mel-Rain type FFF-1
C9,10	.22 mfd. 400 V. Sprague 4TM-P-22	F1	5 amp., 3 AG
C12	.000022 mfd. 2500 V. mica, Arco VCM 20-220	PL1	Mazda #44
R1,8,14,15	100,000 ±10%, 1/2 W.	S1	Switch Altec 12536
R2	1800 ohm ±10%, 1/2 W.	SR1	Rectifier— G.E. 1N1491
R3	47 ohm ±1%, 1/2 W. Deposited carbon	J1	Alden 402 ACEHG receptacle
R4	100,000 ohm ± 10%, 1 W.	T1	Output Transformer Altec 16433
R5,6	68,000 ohm ±10%, 1/2 W.	T2	Power Transformer Altec 6289A
R7	1 megohm ±10%, 1/2 W.	V1, 2	6CG7 Vacuum Tube
R9	18,000 ohm ±10%, 1 W.	V3,4,5,6	6CA7/EL34 Vacuum Tube
		V7,8	5U4GB Vacuum Tube

NOTE:
AMPLIFIER IS SHIPPED WITH C1 & C2 STRAPPED
OUT. WHEN USED WITH DRIVER LOUSPEAKER
WITHOUT NETWORK CUT STRAPS AS REQUIRED.



LEGEND
 Ω = OHMS
 K = 1,000 Ω
 M = 1,000,000 Ω
 ALL CAPACITANCE VALUES IN MFD.
 UNLESS OTHERWISE INDICATED



15095 TRANSFORMER IMPEDANCES
 STRAP J2
 LINE 150 Ω 1-4, 3-6
 600 Ω 3-4

ALTEC LANSING I569A AMPLIFIER

FIRST MADE FOR
TOLERANCES EXCEPT AS NOTED FRACT. 5 1/16" DEC. 5 .005 HOLE SIZES 6 TO 1/16" 1 .001 OVER 1/16" 5 .008 ANGULAR 2 1/8"

CHANGE

ISSUE	APPROVED	DATE	CHANGE
1		6-12-57	
2	11	9-24-58	5 WAS 22 (C4)
3	12	10-15-58	AC RECTIFY WAS GROUNDED
4	13	1-21-59	C4 & C2 ADDED C12
5	14	1-21-59	ADDED C12
6	15	5-21-59	REVISED VOLT-TAPS W/5

ALTEC
 CORPORATION

ANAHEIM, CALIFORNIA

I569A AMPLIFIER

SCHEMATIC

DR. BY A.B. 6340-6