

Film-Tech

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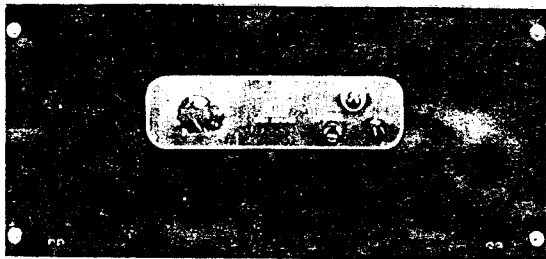
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1569A AMPLIFIER



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:	30/50, 125/150, 250/300, 500/600 ohms with 4665 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, 60 cps, 240 watts
External Power Available:	117 volt ac receptacle on chassis
Tubes:	2-6CG7, 4-6CA7/EL34, 2-5U4GB
Dimensions:	8 $\frac{3}{4}$ " 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:	4665 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 $\frac{3}{4}$ "") 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 4665 Transformer, balanced or unbalanced lines of 30/50, 125/150, 250/300 and 500/600 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. For quiet operation, it is necessary to secure the 4665 Transformer after plug-in by means of screws provided.

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.

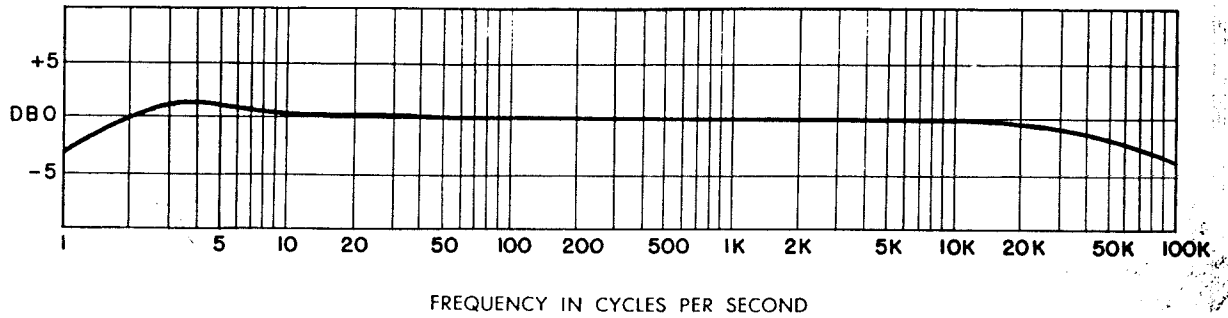
Effect of High Pass Filter

Source Impedance	Strapping	250	500	1000	2000 cps
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

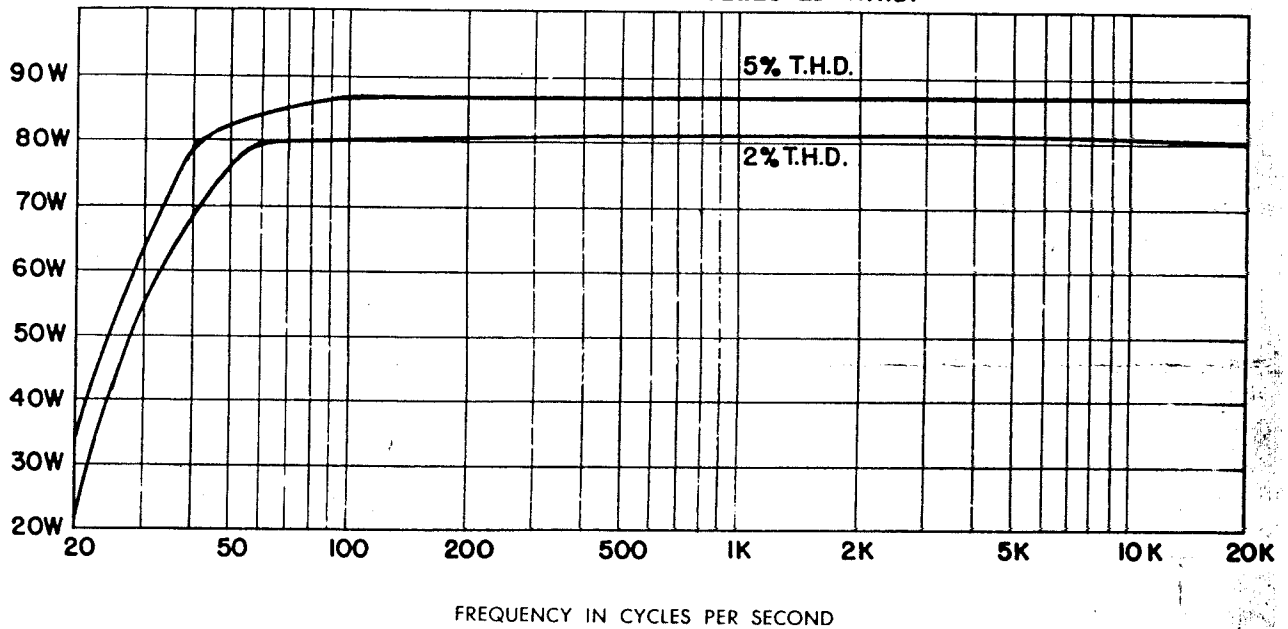
CONTROLS

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**



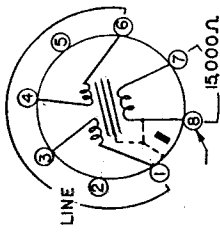
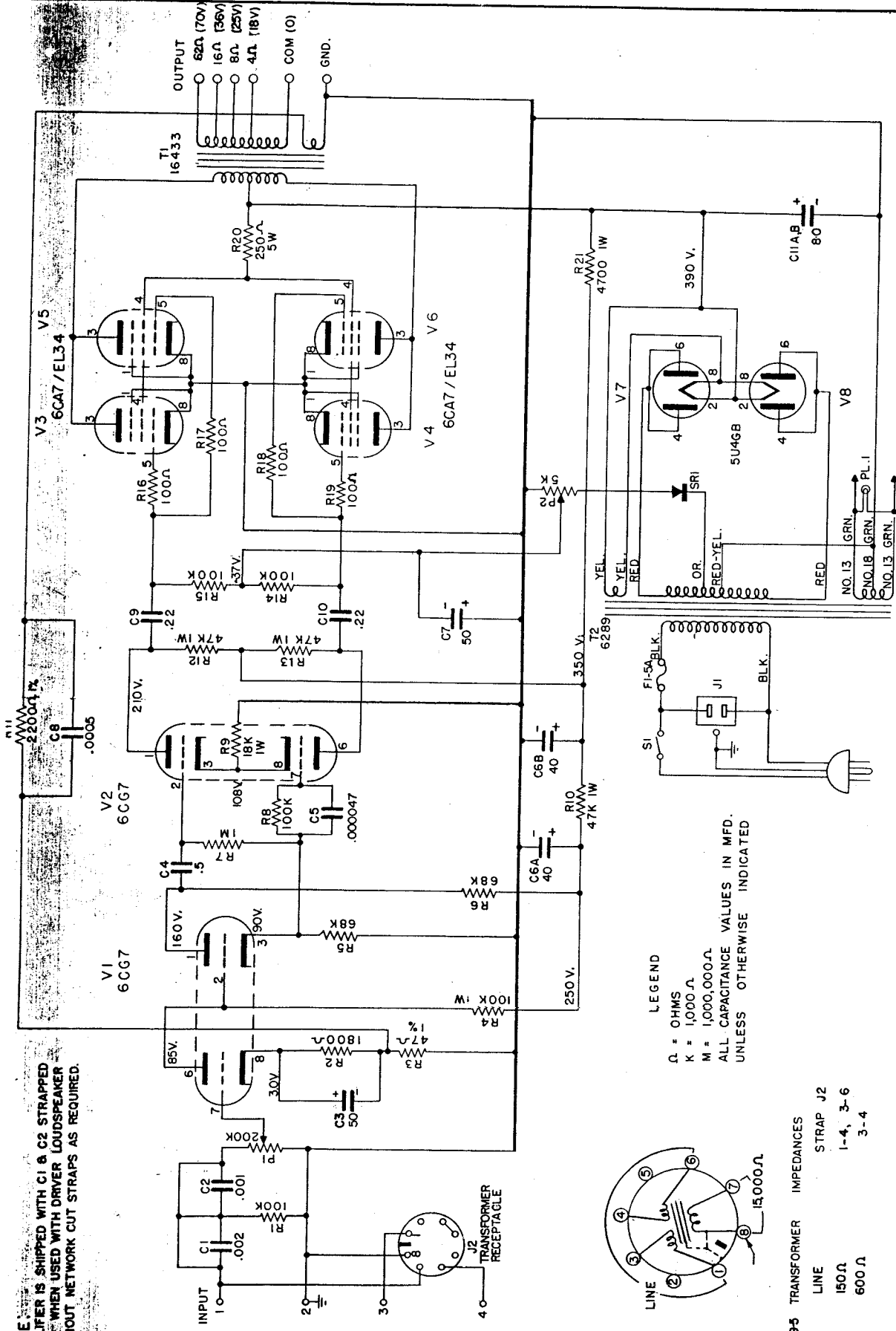
**I569 A AMPLIFIER
FREQUENCY VS POWER AT SELECTED T.H.D.**



PARTS LIST

C1	.002 mfd. \pm 10% ceramic disc Erie 811-202	R10, 12, 13	47,000 ohms \pm 10% 1 watt
C2	.001 mfd. \pm 10% ceramic disc Erie 811-202	R11	2200 ohms \pm 1% ½ watt deposited carbon
C3	50 mfd. 6 V. Mallory TT	R16, 17, 18, 19	100 ohms \pm 10% ½ watt
C4	.5 mfd. 400 V. CD PJ4P5	R20	250 ohms 5 watt Ohmite Brown Devil
C5	.000047 mfd. \pm 10% ceramic disc Erie 831-470	R21	4700 ohms \pm 10% 1 watt
C6, 11	40 x 40 mfd. 500 V. Mallory FP288	P1	200,000 ohms Altec Lansing 12435
C7	50 mfd. 50 V. Mallory TC	P2	5000 ohms Altec Lansing 12547
C8	.0005 mfd. \pm 10% ceramic disc Erie 811-501	F1	5 amp. 3 AG
C9, 10	.22 mfd. 400 V. Astron BP4-22	PL1	Mazda #44
R1, 8, 14, 15	100,000 ohms \pm 10% ½ watt	S1	Altec Lansing 12536 switch
R2	1800 ohms \pm 10% ½ watt	SR1	Selenium rectifier, Union Switch & Signal S-3U5PL
R3	47 ohms \pm 1% ½ watt deposited carbon	J1	Alden 402 ACEHG receptacle
R4	100,000 ohms \pm 10% 1 watt	T1	Peerless 16433
R5, 6	68,000 ohms \pm 10% ½ watt	T2	Peerless 6289
R7	1 megohm \pm 10% ½ watt	V1, 2	6CG7 vacuum tube
R9	18,000 ohms \pm 10% 1 watt	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 LOUDSPEAKER WITHOUT NETWORK CUT STRAPS AS REQUIRED.



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

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

ALTEC LANSING 1569A AMPLIFIER

FIRST MADE FOR
 TOLERANCES EXCEPT AS NOTED: FRACT. 3 1/4% DEC. 3 JUMP HOLE REES & TO 1/16" ± .001 OVER 1/16" ± .000 ANGULAR ± 1/16"

REV	DATE	BY	CHKD
2	12-15-54	J.S. WEE	(C1)

CHANGE
 .5 WEE EE (C1)

ALTEC
 ANAHEIM, CALIFORNIA
 1569A AMPLIFIER
 -S SCHEMATIC
 6-340