

PRELIMINARY INSTRUCTIONS

FOR

AMPLIFIER BC-730-B (CONSTANT OUTPUT)

Manufactured by

AMPLIFIER CO. of AMERICA

NEW YORK, N. Y.

FOR REFERENCE

NOT TO BE TAKEN FROM THIS ROOM

PUBLISHED BY AUTHORITY

OF

THE CHIEF SIGNAL OFFICER

Order No. 21197-Phila-42

Copy # 1



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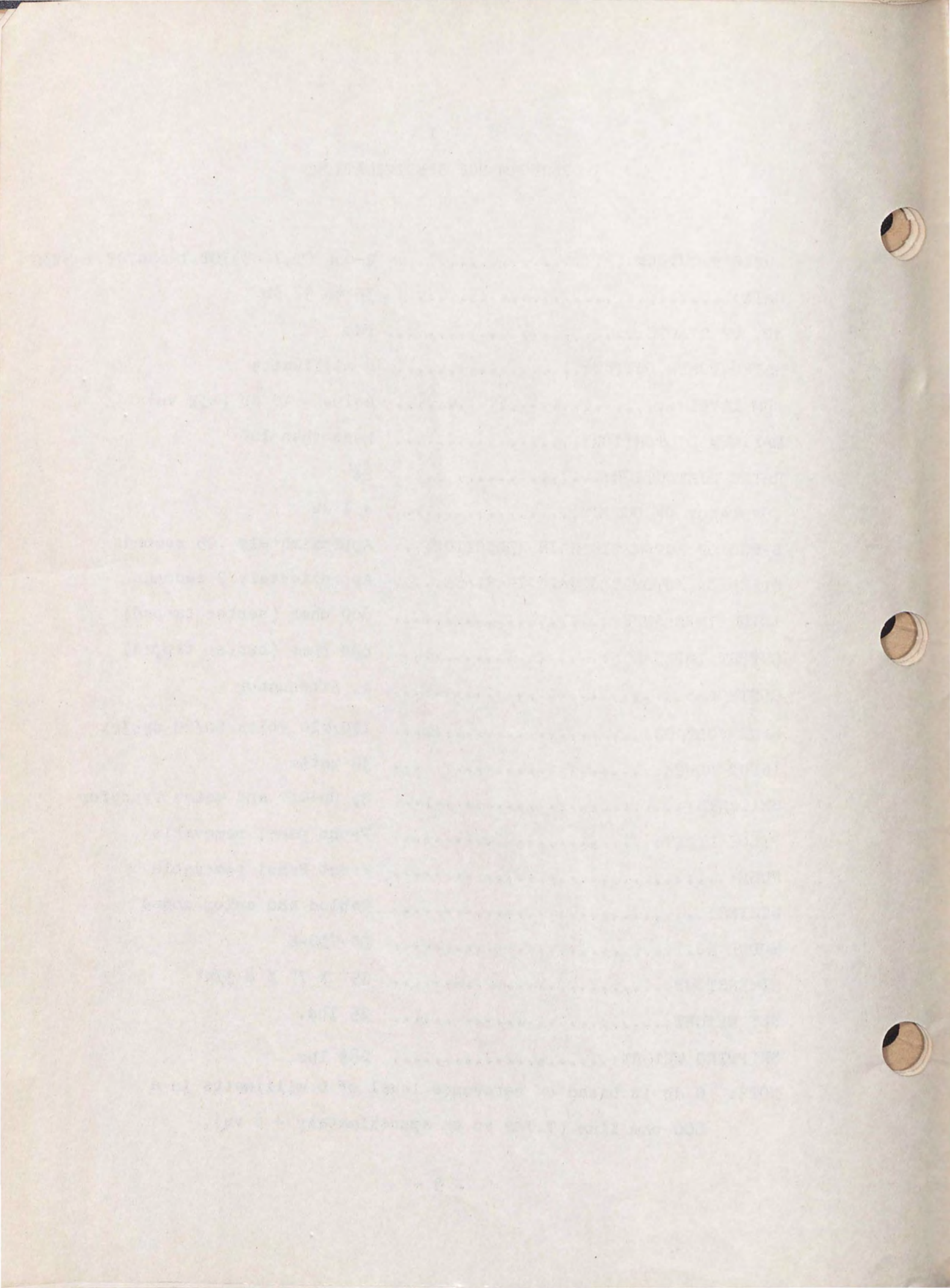
TABLE OF CONTENTS

	Page
I PERFORMANCE SPECIFICATIONS.....	5
II GENERAL DESCRIPTION.....	7
III INSTALLATION.....	14
IV PREPARATION FOR USE.....	15
V OPERATION.....	17
VI MAINTENANCE.....	18
VII ADJUSTMENTS.....	19
VIII SUPPLEMENTARY DATA	
TABLES	
1. Wiring and Transformer Color Codes.....	22
2. Tube Socket Voltages.....	23
3. Tube Socket Terminal Resistances.....	24
PARTS LISTS	
Parts List.....	25
Spare Parts List.....	27
List of Manufacturers.....	28
DIAGRAMS	
Schematic Diagram - Fig. 2.....	29
PHOTOGRAPHS	
Front View Constant Output Amplifier - Fig. 3.....	30
Rear View (dust cover removed) - Fig. 4.....	31
Bottom View (bottom plate removed) - Fig. 5.....	32

I

PERFORMANCE SPECIFICATIONS

TUBES REQUIRED:.....	2-6SK7GT,1-6SQ7GT,1-6SN7GT,1-5Y3G
GAIN:.....	35 to 38 db
NO. OF STAGES:.....	Two
RATED POWER OUTPUT:.....	6 milliwatts
HUM LEVEL:.....	Below - 40 db (-32 vu)
MAXIMUM DISTORTION:.....	Less than 10%
RATED DISTORTION:.....	2%
CONSTANCY OF OUTPUT:.....	± 1 db
SPEED OF AUTOMATIC GAIN REDUCTION:...	Approximately .05 seconds
SPEED OF AUTOMATIC GAIN INCREASE:....	Approximately 2 seconds
INPUT IMPEDANCE:.....	600 ohms (center tapped)
OUTPUT IMPEDANCE:.....	600 ohms (center tapped)
CONTROLS:.....	1, Attenuator
LINE VOLTAGE:.....	110/220 volts 50/60 cycles
INPUT POWER:.....	30 watts
SWITCHES:.....	2, On-Off and Meter Transfer
PILOT LIGHT:.....	Front panel removable
FUSE:.....	Front Panel removable
WIRING:.....	Cabled and color coded
MODEL NO.:.....	BC-730-B
DIMENSIONS:.....	19" X 7" X 8 3/4"
NET WEIGHT:.....	25 lbs.
SHIPPING WEIGHT:.....	28½ lbs.
NOTE:	0 db is based on reference level of 6 milliwatts in a 600 ohm line (7.782 vu or approximately + 8 vu).



II

GENERAL DESCRIPTION

PERFORMANCE. The type BC-730-B Constant Output Amplifier is intended for use in conjunction with a radio broadcast transmitter. The constant output feature prevents over-modulation of the transmitter. This is accomplished by automatically limiting the amplitude of the output to within 1 db of 6 milliwatts in a 600 ohm line (0 db or + 7.782 vu).

MECHANICAL. The various components of the amplifier are mounted directly on a steel chassis which is fastened to a standard type "D" 7" X 19", 1/8" thick steel panel. Two side brackets are used to reinforce the fastening of the chassis to the front panel. These brackets also act as the sides of the dust cover. Both the dust cover and bottom plate are fastened with self-tapping screws.

ELECTRICAL. The amplifier basically consists of a two stage push-pull arrangement employing two 6SK7GT's as a push-pull input stage. The operating conditions of this input stage have been carefully selected so as to provide optimum limiter action with minimum distortion. A twin triode 6SN7GT is used as a push-pull output stage. An independent triode circuit of the 6SQ7GT is provided for the limiter action. The output of this triode section is rectified by its self-contained diodes which produce a dc voltage to vary the gain of the push-pull first stage, so as to attain constant output. With the volume control turned on full, the circuit is adjusted so that limiting action does not occur until the input level reaches approximately - 35 db (-27 vu). The output is kept constant to with-

in 1 db with an increase of input level to - 25 db (-17 vu).

The input of the amplifier is composed of a center tapped 600 ohm to push-pull grid transformer (T1). The primary of the transformer is terminated on a terminal strip marked INPUT at the rear of the chassis. Neither side nor center tap of the input is grounded internally. An auxiliary grounding post marked G is provided on the same terminal strip for external grounding of the input circuit. This arrangement provides for connecting the input of the amplifier directly to either a balanced 600 ohm line, or a line which has either or neither side grounded.

The secondary of the input transformer is connected across the dual 500,000 ohm attenuator (R5). The movable arms of the attenuator are, in turn, directly connected to the grids of the push-pull input stage, composed of two 6SK7GT's (V1 and V2). The center tap of the secondary of the input transformer, and the low end of the dual attenuator, are connected to ground through a 2 meg. resistor (R1) shunted by a 1 mfd. condenser (C1). This resistor-condenser network is part of the timing circuit which is described in a subsequent paragraph. Both cathodes of the input stage are grounded together with their respective suppressor grids. Screen potential is obtained through the dropping resistor, R6, in series with the current control R8. This potential is approximately 9 volts positive with respect to ground. Plate voltage is supplied through the common resistor R2 and the individual plate load resistors R3 and R4.

The output of the push-pull first stage is capacitatively coupled through C2 and C3 to the grids of the 6SN7GT (V3) push-pull output tube. The grids of the output stage are returned to ground through

resistors R13 and R14. The cathodes of the output tube are connected to ground through a 250 ohm (R9) bias resistor. The push-pull plates of the output stage are connected directly to the primary of the output transformer (T2); the center tap of which is connected directly to the output of the filter network of the power supply.

The secondary of the output transformer (T2) is terminated on a bakelite terminal strip marked OUTPUT on the rear of the chassis. Neither side nor center tap of the output is grounded internally. An auxiliary grounding post marked G is provided on the same terminal strip for external grounding of the output circuit. This arrangement provides for connecting the output of the amplifier directly to either a balanced 600 ohm line or a line which has either or neither side grounded. The 600 ohm secondary of the output transformer is also connected to a rectifier (MR) in series with a calibrating resistor R12 for the output level indicator circuit.

The triode section of the 6SQ7GT (V4) is used to independently amplify a portion of the signal voltage. The output of the triode is capacitatively coupled through C7 to both its diodes for rectification of the amplified signal voltage. The pulsating DC voltage produced is then filtered through R11 and C1, and applied as a variable DC bias voltage across R1, which is fed to the control grids of V1 and V2 through the secondary of transformer T1.

The current control (R8) determines the input level (for any given setting of the attenuator) at which limiter action will occur. This is accomplished by biasing the cathode of the 6SQ7GT V4, so that the diodes will not rectify until some predetermined peak voltage is exceeded. If this control is set at its maximum

counterclockwise position, or insufficiently advanced, then limiter action will occur at very low input levels. On the other hand, if this control is advanced too far, the cathode bias becomes high enough to prevent rectification and subsequent limiting action, until a relatively high input level is attained. In this amplifier, the cathode is biased to + 3 volts. With this setting, and the gain control on full, (with the threshold control R10 properly adjusted, as described under ADJUSTMENTS, Page 19) limiter action will begin at an input level of - 35 db (-28 vu). The threshold control R10, determines the degree of limiting action which will take place for any predetermined increase of signal level. For example, this control is normally adjusted (as described under ADJUSTMENTS, Page 19) so that an increase of input level of 10 db will maintain the output of the amplifier constant to within 1 db. If this control is set at its maximum counterclockwise position, or insufficiently advanced, none or limited AVC action will occur. The output will increase by more than 1 db for a 10 db increase of input level. On the other hand, if this control is advanced too far, then the output level will actually decrease with an increase in input level.

The constants for the control amplifier and its associated diode circuit, have been carefully selected to provide optimum operating conditions. The triode section operates without bias (for the control grid is returned directly to its cathode through the threshold control R10.). The auxiliary condenser C6 is shunted from grid to ground, to flatten the frequency response when the limiter is operating. The input of the control amplifier is capacitatively coupled to the signal amplifier through C5. A 25,000 ohm resistor R7 serves

as a plate load for the triode section.

To compress sudden signal peaks, the speed of the control circuit (attack timing) is made comparatively rapid. The time constant of this circuit is equal to

$$TC = R \times C$$

where

TC - Time Constant in Seconds

R - Resistance in Megohms

C - Capacitance in Mfds.

By using a 50,000 ohm resistor to charge a 1 mfd. condenser, an attack time constant of approximately .05 seconds is attained. To prevent the gain from fluctuating at low audio or syllabic frequencies, the speed of the release control circuit is made comparatively slow (approximately 2 seconds). The compression bias voltage applied to the grids of V1 and V2 leaks off slowly through the 2 meg. discharge resistor (R1), which is connected across the 1 mfd. condenser (C1).

A special double scale meter is made to serve two functions. It is switched (by the meter transfer switch SW2) either to the output of the copper oxide rectifier (MR) for output level readings, or into the common plate circuit of both input tubes for attenuation reading. (Across R2). When the gain of the push-pull input stage is automatically lowered by an increase in bias, the plate current naturally decreases. The reduction in plate current is directly indicated on the meter which has a calibrated scale to approximately relate the gain reduction in db in terms of plate current reduction.

The series feed plate resistor R2 is used to maintain plate current to the input stage when the meter is switched to the output circuit. When the transfer switch is in the OUT position, the meter is switched to the output of the rectifier which is connected in series with the calibrating resistor R12 (across the 600 ohm output line), so that 0 db (+ 7.782 vu) is indicated when 1.9 volts appears across the secondary of the output transformer. A full size meter scale is shown in Fig. 1.



FIG. 1. Full Size Meter Scale

It will be noted that the upper scale is calibrated from - 20 to + 3. As 0 position has been adjusted to correspond to 6 milliwatts in a 600 ohm line; actual output level in db may be read directly. If the output level is to be read in VU, + 7.782 should be added to the meter reading.

When the transfer switch is in the ATT. position, the meter is reading the approximate combined plate currents of the push-pull input stage. The lower scale will indicate the approximate amount of gain reduction taking place at any given time. With the attenuator turned on full, the automatic gain reducing feature of the amplifier will become operative when the level of the input signal rises a-

bove - 35 db (-27 vu).

Input power is supplied to the amplifier through a 6 foot rubber line cord which is soldered to a terminal strip inside the chassis. This terminal strip makes available a 220 volt tap for higher primary voltages. The terminals of the high voltage secondary of the power transformer (T3), are connected to the plates of the 5Y3G full wave high vacuum rectifier (V5). The center tap of the high voltage secondary is grounded. A 5 volt winding on the power transformer provides filament voltage for the rectifier. An additional 6.3 volt winding provides heater voltage for the amplifier tubes V1, V2, V3, and V4. One side of this latter winding is grounded.

The filter circuit is made up of a single choke (L1) and a triple 10 mfd. condenser. One of the 10 mfd. sections is used as the input condenser of the filter network. The remaining two sections are paralleled, to provide a 20 mfd. filter output condenser. A bleeder, composed of R6 and R8 is connected directly across the output of the filter, and acts as a voltage divider for supplying screen voltage to both input tubes as well as furnishing means to bias the cathode of the 6SQ7GT tube (V4).

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III
INSTALLATION

The air-cushioned carton in which the equipment has been shipped, should be opened from the top. (Amplifier Co. of America name and address is printed on top of carton) The amplifier has been shipped with tubes installed in their proper sockets. The dust cover should be removed from the amplifier in order to make sure that all tubes are firmly set into their proper sockets. This is done by removing eight nickle-plated #6 self-tapping Parker Kalon screws around the ends of the dust cover. Do not loosen the flat-head screws which fasten the side brackets to the front panel. The dust cover may be left off until the equipment is found to be operating satisfactorily. This will avoid an additional operation, should further examination be required.

In selecting the operating position for the Constant Output Amplifier, it should be borne in mind that hum-producing equipment, such as soldering irons, power transformers, etc., should be kept away from the input side of the amplifier, so as to avoid excessive extraneous hum pickup by the input transformer.

If the amplifier is to be used on a 220 volt power line, one of the line cord leads (normally connected to the 115 volt terminal) must be resoldered to the 220 volt tap in accordance with instructions given under PREPARATION FOR USE.

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IV

PREPARATION FOR USE

If the power supply voltage is 220 volts, it will be necessary to remove the bottom plate and unsolder the power line cord, which is normally connected to the 115 volt tap. The cord should be soldered to the 220 volt terminal.

CAUTION

THE AMPLIFIER LEFT THE FACTORY WITH THE LINE CORD CONNECTED TO THE 115 VOLT TERMINAL. DO NOT PLUG THE LINE CORD INTO A 220 VOLT POWER SUPPLY, UNLESS THE CORD HAS BEEN INTERNALLY CHANGED TO THE CORRECT TAP. THIS UNIT HAS BEEN DESIGNED FOR OPERATION ON 50/60 CYCLES POWER LINES. DO NOT USE ON 25 CYCLE OR D.C. POWER LINES.

Connect the input terminals to the incoming line. If the line is balanced, an external ground may be connected to the post marked G. Connect a wire jumper between this post and the post marked CT. If either side of the incoming line is grounded, it may not be necessary to use an external ground at the amplifier. The post marked G, however, should be connected to the grounded side of the incoming line.

The 600 ohm output terminals may be connected either to a balanced line, in which case the center tap should be grounded to the ground lug and some external ground, or it may be connected to an unbalanced line, in which case, either of the 600 ohm terminals may be grounded.

If the output line is grounded, it may not be necessary to use an external ground at the amplifier output. The post marked G, however, should be connected to the grounded side of the output line.

CAUTION

ONE OF THE THREE INPUT TERMINALS MUST BE
CONNECTED TO THE TERMINAL MARKED G. ONE
OF THE THREE OUTPUT TERMINALS MUST BE
CONNECTED TO THE TERMINAL MARKED G.

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V

OPERATION

Although the EC-730-B Constant Output Amplifier is capable of unusual performance, it is extremely simple to operate. Two switches and a single attenuator are the only controls involved. Plug the line cord into any 115 volt 50/60 cycles outlet (or 220 volt, after internal tap adjustment has been made). Snap the ON-OFF switch (SW1) to the ON position. Snap the meter transfer switch (SW2) to the ATT. position. Turn the attenuator control to the extreme counterclockwise position. The meter should read within 1 db of 0 setting (lower scale). With an average input signal, the gain control should be slowly advanced clockwise until the meter reading begins to decrease. If no decrease is indicated, keep the attenuator at its maximum clockwise position. The amplifier is now adjusted for proper operation with an average input signal level. The attenuator need not be further adjusted unless there is a marked departure in the input level. Snap the transfer switch to the OUT position. Variations in output level can now be observed.

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VI
MAINTENANCE

The amplifier has been carefully inspected and tested at the factory. All vacuum tubes should be tested at regular intervals and those indicating low sensitivity should be replaced. Routine inspection of all input and output connections and internal wiring should be made at reasonable intervals. The pilot light is replaceable from the front, by unscrewing the jewelled bezel. The fuse may be replaced by unscrewing the inner red fuse cap. Do not turn the outer black body of the fuse holder. If the amplifier stops operating, test the amplifier fuse. Check all tubes. Test for continuity of output line. Check for short or open in input line. Check all tube sockets for correct voltages. (See Tube Socket Voltages, Page 23). Check all tube socket terminals for resistance measurement. (See Tube Socket Terminal Resistances, Page 24). Circuit test all condensers for open or shorts. This test should be made with one end of the condenser under test, disconnected.

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VII
ADJUSTMENTS

The amplifier has been accurately adjusted at the factory, for proper limiting action. Under normal operating conditions, it should retain this adjustment indefinitely. If a major repair is made on the amplifier, or limiting action appears to be abnormal, it may be desirable to recheck the limiter adjustment. This adjustment involves only two controls on the rear of the chassis. These are the Limiter Threshold (R10), and the Current Control (R8). If the following instructions are carefully followed, no difficulty should be experienced in restoring the original performance of the amplifier.

CAUTION

ANY CHANGES FROM ORIGINAL SETTINGS WILL BE RELATIVELY SMALL, AND EXTREME CARE SHOULD BE EXERCISED WHEN MAKING READJUSTMENTS. THIS IS ESPECIALLY TRUE OF THE LIMITER THRESHOLD CONTROL, WHICH SHOULD NOT BE DISTURBED UNLESS THE LIMITING ACTION IS DEFINITELY KNOWN TO BE ABNORMAL. DO NOT MANIPULATE THESE CONTROLS UNNECESSARILY. THE AVERAGE SETTING OF BOTH CONTROLS HAVE BEEN INDICATED BY TWO RED DOTS, ONE AT ONE EXTREMITY OF THE SLOT IN THE SHAFT, AND THE OTHER ON THE FASTENING NUT. WHEN THESE DOTS ARE ALIGNED, THE SETTING WILL COINCIDE WITH THE ORIGINAL FACTORY ADJUSTMENTS. IF RESETTING IS

NECESSARY, ANOTHER MARK SHOULD BE PLACED ON THE
FASTENING NUT.

Instructions for Limiter Adjustment

1. Connect a 600 ohm resistor (1/2 watt or greater) across the extremities of the output secondary. Ground one side of the output to the ground lug.
2. Adjust the current control (R8) so that the center arm is approximately 3 volts from ground (measured from shaft of current control to ground post on rear of chassis with 1,000 ohm per volt meter). This measurement can be made without removing the bottom plate, as the shaft of this control is not insulated from the center arm of the control. It is, however, insulated from the chassis proper.
3. If a calibrated oscillator with 500 or 600 ohm output is available, adjust its output level to - 35 db (-27 vu) at 1,000 cycles, and connect to amplifier input.
4. Snap meter transfer switch to OUT position.
5. The threshold control should be turned to its maximum counter-clockwise position. (Looking at the control from the rear of the amplifier.)
6. Turn attenuator control on full.
7. Turn the threshold control slowly clockwise until output level is decreased approximately 0.6 db.
8. Increase input signal to - 25 db (-17 vu). Output level should

not increase more than 1 db.

9. If output level increases more than 1 db, repeat step 7, but turn limiter threshold control until output level drops 1 db.
10. Repeat step 8.
11. If output level increases by more than 1 db, the 6SQ7GT tube (V4) or its associated circuit is not operating properly. Resistance and voltage measurements should be taken, and compared with Tube Socket Voltages and Tube Socket Terminal Resistances, listed on Pages 23 and 24).
12. If a calibrated oscillator is not available, an approximate adjustment may be made with the use of a 600 ohm microphone, in the following manner:
 - (a) See steps 1, 2.
 - (b) Connect the 600 ohm microphone to the input terminals.
 - (c) See steps 4, 5.
 - (d) Turn attenuator on full.
 - (e) Sustain a constant vowel, such as "Ah", into the microphone, at a sufficient level to produce 0 reading on the output meter.
 - (f) See step 7.

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VIII
SUPPLEMENTARY DATA

TABLE NO. 1 - WIRING AND TRANSFORMER COLOR CODES

WIRING

Ground.....	Black
Filaments.....	Black-Orange Tracer
Cathodes.....	Yellow-Black Tracer
Screen Grids.....	Red-Green Tracer
Plates.....	Blue-Black Tracer
B+ Voltages.....	Red-Black Tracer

INPUT TRANSFORMER

OUTPUT TRANSFORMER

Primary.....	Green	Primary.....	Blue
Center Tap.....	Yellow	Center Tap.....	Red
Secondary.....	Blue	Secondary.....	Green
Center Tap.....	Red	Center Tap.....	Yellow

POWER TRANSFORMER

Primary (Common).....	White
Primary (110 V.).....	Green
Primary (220 V.).....	Blue
Rectifier Filament.....	Yellow Cambric
6.3 V. Filaments.....	Black Cambric
High Voltage AC.....	Red
Center Tap.....	Yellow
Electrostatic Shield.....	Yellow-Black Tracer

TABLE NO. 2 - TUBE SOCKET VOLTAGES

Line Voltage:..... 115 Volts Line Current: .25 Amperes

Input Power:..... 30 Watts

Measure D.C. and A.C. voltages with 1,000 ohm per volt meter.

TUBE SOCKET VOLTAGES

(All A.C. and D.C. voltages measured from ground)

TUBE NO.	TUBE TYPE	Prong Terminals (RMA No.)							
		1	2	3	4	5	6	7	8
V1	6SK7GT	-	6.3#AC	-	-	-	9#DC	-	130 DC
V2	6SK7GT	-	-	-	-	-	9#DC	6.3#AC	130 DC
V3	6SN7GT	-	165 DC	4#DC	-	165 DC	4#DC	6.3#AC	-
V4	6SQ7GT	-	-	3#DC	-	-	138 DC	6.3#AC	-
V5	5Y3G	-	180 DC	-	168 AC	-	168 AC	-	180 DC

NOTE: All voltages measured on 300 volt scale, excepting those marked #. Meter transfer switch to be in OUT position.

REMARKS: Voltage readings are based on indicated power line voltage. Higher or lower line voltages result in corresponding variation in voltage readings. An approximate $\pm 10\%$ tolerance of all readings are permissible.

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TABLE NO. 3 - TUBE SOCKET TERMINAL RESISTANCES

(Resistance in ohms measured from ground)

TUBE NO.	TUBE TYPE	Prong Terminals (RMA No.)							
		1	2	3	4	5	6	7	8
V1	6SK7GT	0	0	0	2 meg.	0	1000	0	60M
V2	6SK7GT	0	0	0	2 meg.	0	1000	0	60M
V3	6SN7GT	500M	16M	250	500M	16M	250	0	0
V4	6SQ7GT	0	250M	240	2 meg.	2 meg.	40M	0	0
V5	5Y3G	-	16M	-	120	-	120	-	16M

NOTE: All resistances measured with tubes cold or removed from socket. Volume control on full. Turn amplifier off. Remove line cord from power outlet.

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PARTS LIST - AMPLIFIER BC-730-B (CONSTANT OUTPUT)

SYMBOL	NAME OR FUNCTION	DESCRIPTION	ACA PART NO.	MANUFACTURER	
				NAME	TYPE
A1	Chassis	16 1/2" X 8" X 2"	1033	ACA	1033
A2	Front Panel	19" X 6 31/32" X 1/8"	1034	ACA	1034
A3	Left-Hand Bracket	8" X 7 7/16"	1035	ACA	1035
A4	Right-Hand Bracket	8" X 7 7/16"	1036	ACA	1036
A5	Dust Cover	Special	1037	ACA	1037
A6	Bottom Plate	16 3/8" X 7 7/8"	1038	ACA	1038
A7	Magnetic Shield	4 1/4" X 3 3/4"	1044	ACA	1044
A8	Front Panel Nameplate	Cellulose Acetate	1042	ACA	1042
A9	Rear Apron Escutcheon	Cellulose Acetate	1043	ACA	1043
C1	Capacitor, Timing	1 Mfd. 200 V. Tubular	1000	S	P353
C2	Capacitor, Coupling	.1 Mfd. 400 V. Tubular	1001	S	014AA
C3	Capacitor, Coupling	Same as C2	1001	S	014AA
C4	Capacitor, Filter	3X10 Mfd. 450V. Elec.	1002	S	D8324
C5	Capacitor, Coupling	Same as C2	1001	S	014AA
C6	Capacitor, By-Pass	250 Mmfd. 400V. Tubular	1003	S	3254AA
C7	Capacitor, Coupling	.01 Mfd. 400V. Tubular	1004	S	114AA
R1	Resistor, Release Timing	2 Meg. 1/2 W.	1005	CN	C 1/2
R2	Resistor, Att. Shunt	250 Ohm 1/2 W.	1006	CN	C 1/2
R3	Resistor, V1 Plate	50,000 Ohm 1/2 W.	1007	CN	C 1/2
R4	Resistor, V2 Plate	Same as R3	1007	CN	C 1/2
R5	Volume Control	Dual 500,000 Ohm Pot.	1008	CE	4-010-053
R6	Resistor, Voltage Divider	15,000 Ohm Wire Wound	1009	L	10 Watt
R7	Resistor, V4 Plate	25,000 Ohm 1/2 W.	1010	CN	C 1/2
R8	Current Control	1000 Ohm Wire Wound Pot.	1011	CL	MH
R9	Resistor, V3 Cathode	Same as R2	1006	CN	C 1/2
R10	Threshold Limiter Control	500,000 Ohm Pot.	1012	CE	31-010-042
R11	Resistor, Attack Timing	Same as R3	1007	CN	C 1/2
R12	Resistor, Output Meter	800 Ohms 1/2 W. $\pm 5\%$	1013	CN	C 1/2
R13	Resistor, Grid	500,000 Ohms 1/2 W.	1045	CN	C 1/2
R14	Resistor, Grid	Same as R13	1045	CN	C 1/2

(continued)

PARTS LIST - AMPLIFIER BC-730-B (CONSTANT OUTPUT) (Continued)

SYMBOL	NAME OR FUNCTION	DESCRIPTION	ACA PART NO.	MANUFACTURER	
				NAME	TYPE
T1	Transformer, Input	600 Ohm to P.P. Grids	1014	ACA	1014
T2	Transformer, Output	P.P. Plates to 600 Ohm	1014	ACA	1014
T3	Transformer, Power	110/220 V. 50/60 cy.	1015	ACA	1015
L1	Filter Choke	300 Ohm, 65 Mil.	1018	ACA	300CH65
V1	Vacuum Tube, First Stage	6SK7GT	----	SY	6SK7GT
V2	Vacuum Tube, First Stage	6SK7GT	----	SY	6SK7GT
V3	Vacuum Tube, Push Pull Output	6SN7GT	----	SY	6SN7GT
V4	Vacuum Tube, AVC Amp. & Rect.	6SQ7GT	----	SY	6SQ7GT
V5	Vacuum Tube, Power Rectifier	5Y3G	----	SY	5Y3G
X1	Socket for V1	Molded Octal	1028	AM	MIP8
X2	Socket for V2	Molded Octal	1028	AM	MIP8
X3	Socket for V3	Molded Octal	1029	AM	MIP8
X4	Socket for V4	Molded Octal	1030	AM	MIP8
X5	Socket for V5	Molded Octal	1031	AM	MIP8
X6	Socket for C4	Metal	1041	S	36-17
TS1	Terminal Strip	Audio Input	1021	ACA	1021
TS2	Terminal Strip	Audio Output	1022	ACA	1022
TS3	Terminal Strip	110/220 Volts	1040	ARH	458
TS4	Mounting Bracket	Dual 10 Lugs	1039	J	2010
M1	Meter, Atten. & Output Level	Dual Scale 20/0;-20/+3	1019	ACA	1019
MR	Rectifier, Copper Oxide	Mounted	1020	ACA	1020
SW1	Switch, On-Off	S.P.S.T. Toggle	1016	CA	16
SW2	Switch, Meter Transfer	D.P.D.T. Toggle	1017	CA	316
FLA	Fuse	1 Amp.	1023	G	3AG 1
FH	Fuse Holder	Molded Bakelite	1024	LI	1075
WL	Power Line Cord & Plug	6 Ft. 2-Cond. Rubber	1025	ACA	1025
PL	Pilot Light	6-8 Volt, 150 Ma.	1026	SY	S40
PLS	Pilot Light Assembly	Front Panel, Removable	1027	DR	30-S
KL	Knob, Gain Control	Studio Type	1032	ACA	1032

LIST OF SPARE PARTS FOR AMPLIFIER BC-730-B (CONSTANT OUTPUT)

SYMBOL	QUAN.	NAME OR FUNCTION	DESCRIPTION	ACA PART NO.	MANUFACTURER	
					NAME	TYPE
C1	1	Capacitor, Timing	1 Mfd. 200 V. Tubular	1000	S	P353
C2,C3,C5	2	Capacitor, Coupling	.1 Mfd. 400 V.	1001	S	014AA
C4	1	Capacitor, Filter	3X10 Mfd. 450V. Elec.	1002	S	D8324
C6	1	Capacitor, By-Pass	250 Mmfd.400V.Tubular	1003	S	3254AA
C7	1	Capacitor, Coupling	.01 Mfd.400V. Tubular	1004	S	114AA
R1	1	Resistor, Release Timing	2 Meg. 1/2 W.	1005	CN	C 1/2
R2,R9	1	Resistor, Att. & V3 Cathode	250 Ohm 1/2 W.	1006	CN	C 1/2
R3,R4,R11	2	Resistor, Plate, Attack Timing	50,000 Ohm 1/2 W.	1007	CN	C 1/2
R5	1	Dual Volume Control	Dual 500,000 Ohm Pot.	1008	CE	4-010-053
R6	1	Resistor, Voltage Divider	15,000 Ohm Wire Wound	1009	L	10 Watt
R7	1	Resistor, V4 Plate	25,000 Ohm 1/2 W.	1010	CN	C 1/2
R8	1	Current Control	1,000 Ohm Pot.	1011	CL	MH
R10	1	Threshold Limiter Control	500,000 Ohm Pot.	1012	CE	31-010-042
R12	1	Resistor, Output Meter	800 Ohms 1/2 W. ±5%	1013	CN	C 1/2
R13,R14	1	Resistor, Grid	500,000 Ohms 1/2 W.	1045	CN	C 1/2
T1,T2	1	Transformer, Push-Pull	Input or Output	1014	ACA	1014
T3	1	Transformer, Power	110/220 V. 50/60 cy.	1015	ACA	1015
L1	1	Filter Choke	300 Ohm, 65 Mil.	1018	ACA	300CH65
V1,V2	6	Vacuum Tube, First Stage	6SK7GT	----	SY	6SK7GT
V3	3	Vacuum Tube, Push Pull Output	6SN7GT	----	SY	6SN7GT
V4	3	Vacuum Tube, AVC Amp. & Rect.	6SQ7GT	----	SY	6SQ7GT
V5	3	Vacuum Tube, Power Rectifier	5Y3G	----	SY	5Y3G
M1	1	Meter, Atten. & Output Level	Dual Scale 20/0;-20/+3	1019	ACA	1019
FLA	10	Fuse	1 Amp.	1023	G	3AG 1

LIST OF MANUFACTURERS

Abbrev.	Name and Address
ACA	Amplifier Co. of America 17 West 20th Street New York City, N. Y.
AM	American Phenolic Corporation 1830 S. 54 Avenue Chicago, Illinois
ARH	American Radio Hardware 476 Broadway New York City, N. Y.
CA	Carling Tool & Machine Company 626 Capitol Avenue Hartford, Connecticut
CE	Centralab 900 E. Keefe Avenue Milwaukee, Wisconsin
CL	Clarostat Manufacturing Company 285 North 6th Street Brooklyn, New York
CN	Continental Carbon Company 13900 Lorain Avenue Cleveland, Ohio
DR	Drake Manufacturing Company 1713 West Hubbard Street Chicago, Illinois
G	G & G Specialty Mfg. Company 36 W. 15 Street New York City, N. Y.
J	Howard B. Jones 2300 Wabansia Avenue Chicago, Illinois
L	Lectrohm, Inc. 5133 W. 25 Place Cicero, Illinois
LI	Littelfuse, Inc. 4757 Ravenswood Avenue Chicago, Illinois
S	Sprague Specialties Company North Adams, Massachusetts
SY	Sylvania Electric Products, Inc. Emporium, Pennsylvania

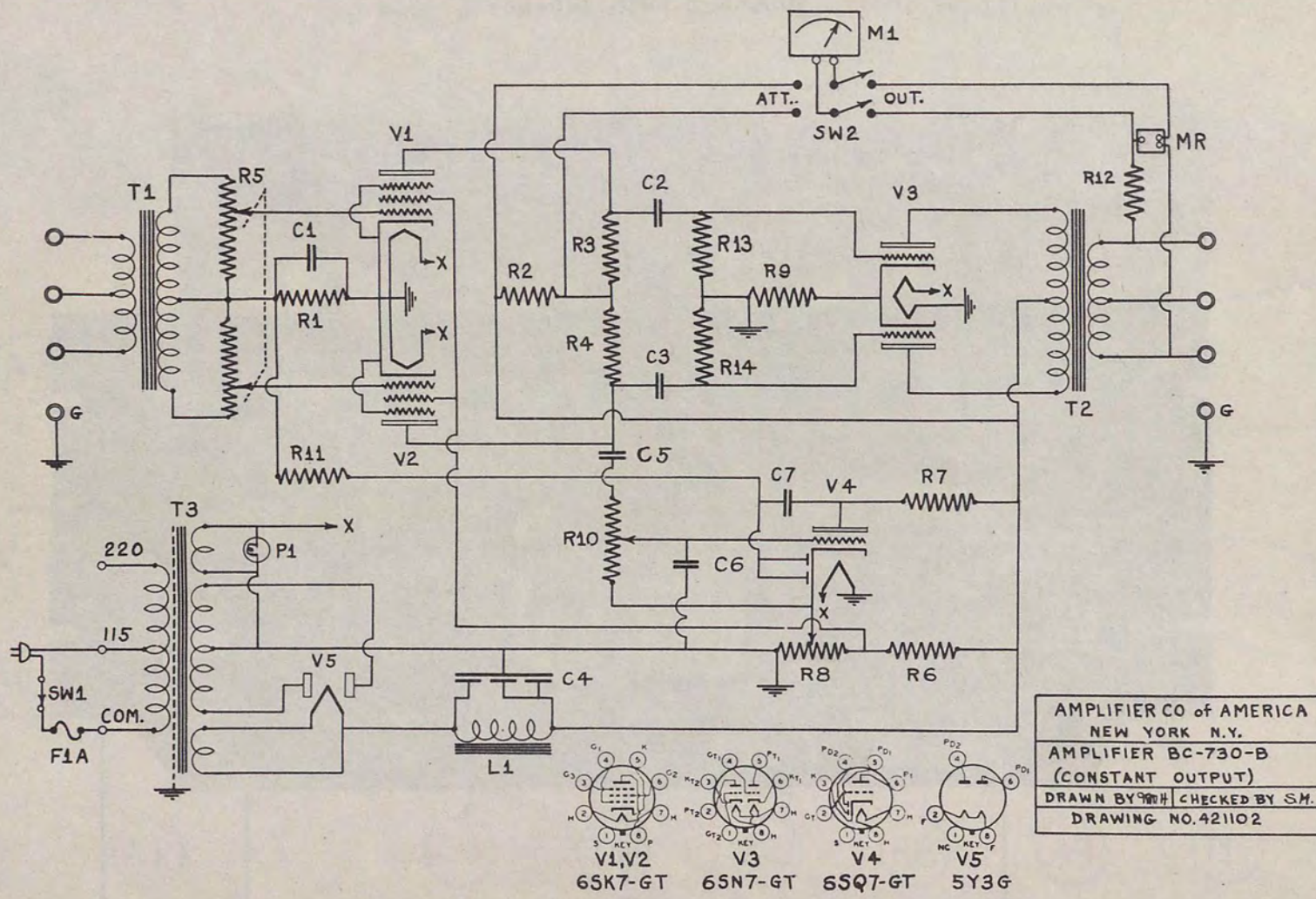
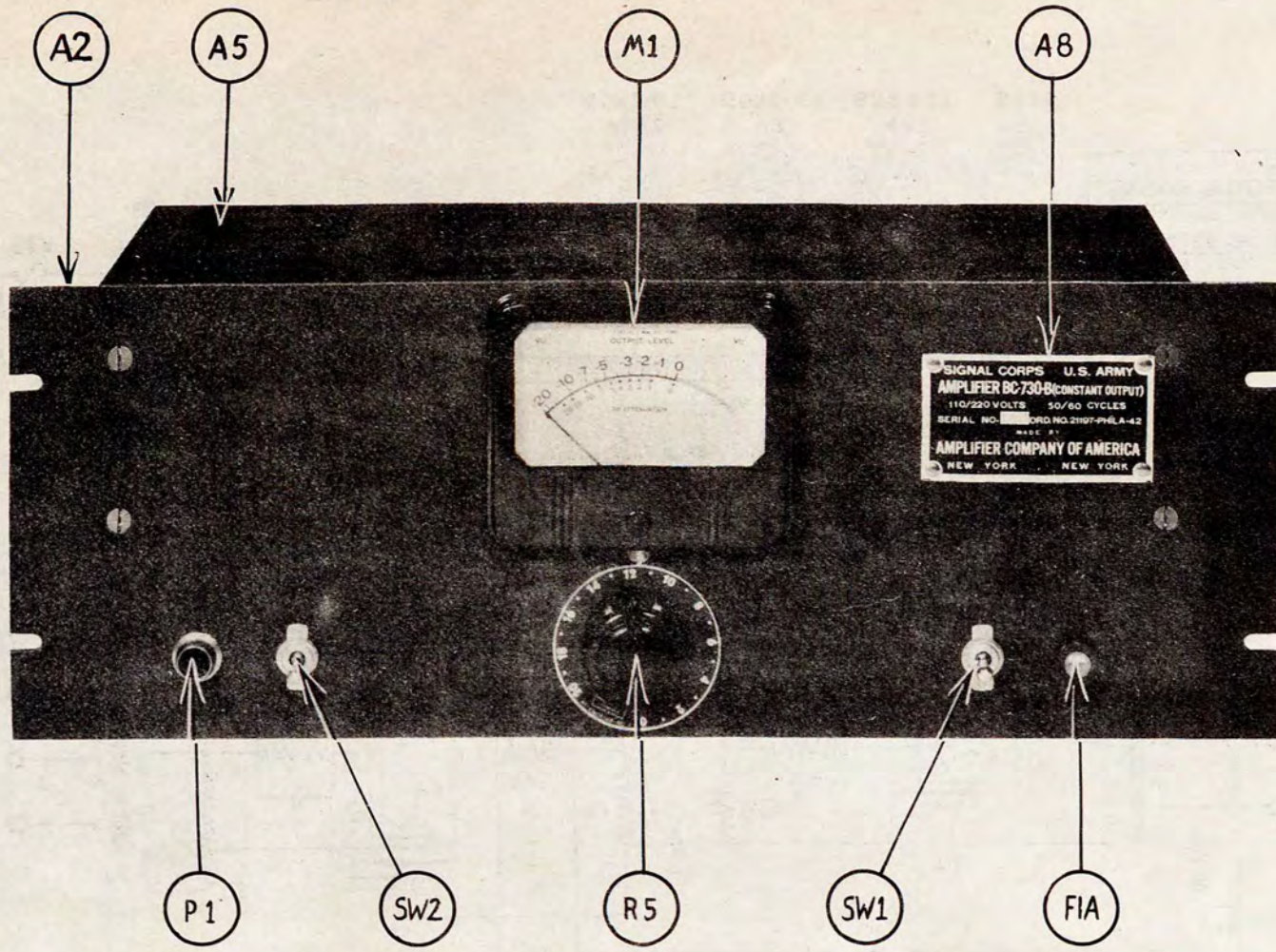


FIG. 2 - Schematic Diagram Constant Output Amplifier



- 30 -

FIG. 3 - Front View Constant Output Amplifier

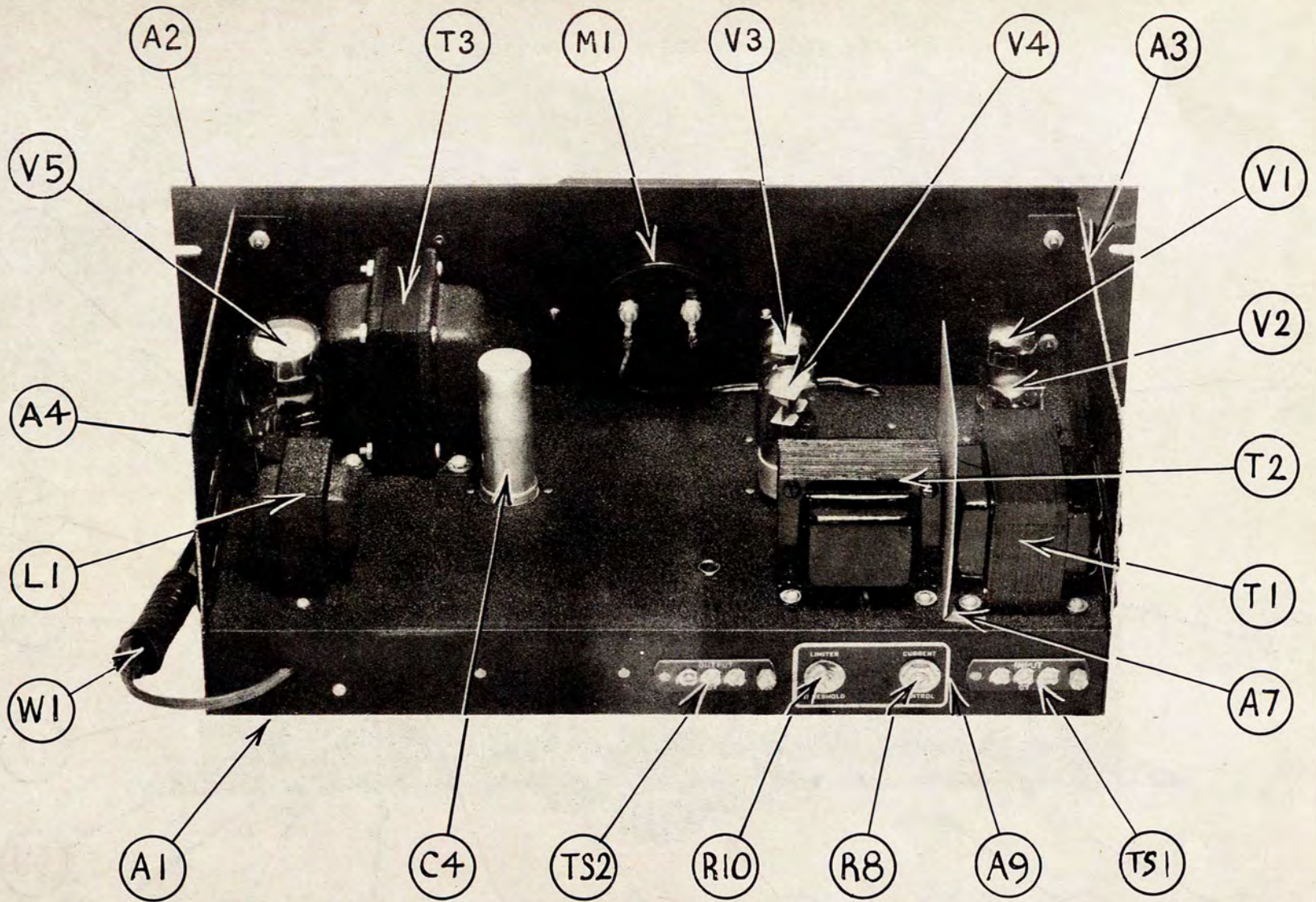


FIG. 4 - Rear View (Dust Cover Removed)

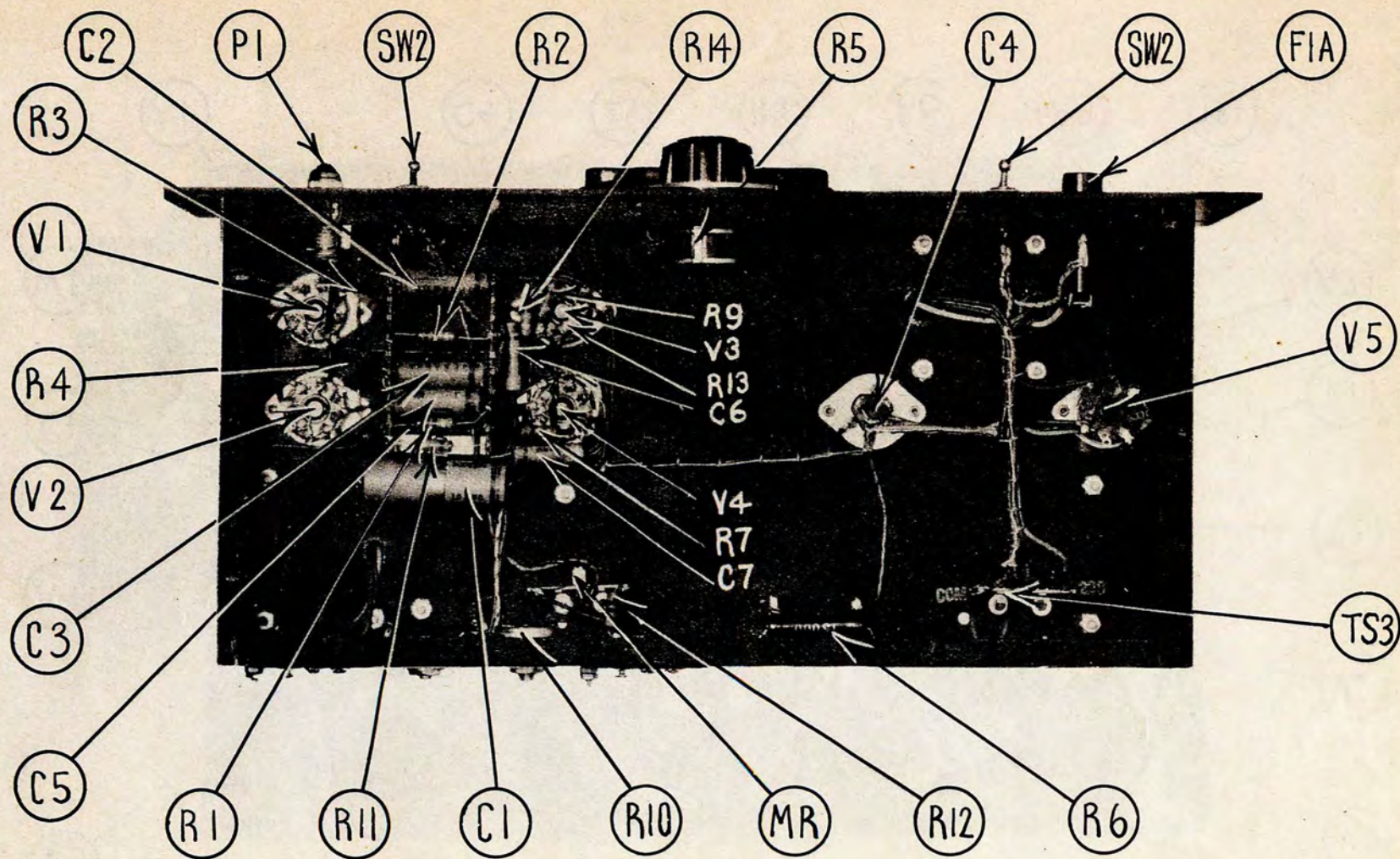


FIG. 5 - Bottom View (Bottom Plate Removed)

BC-730-B

Amplifier Bc-730-B (Constant Output)

AUTHOR

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