



Same as Mach 3, except as follows:

Due to the increase in power, more attention must be paid to the tuning. Tuning for resonance or maximum must be done more exactly. At this power level (approximately 600 watts input), even a little off resonance or maximum meter and bulb indication can cause severe damage to the output tubes.

The more exact you are in tuning, the more you will lengthen the life of your amplifier.

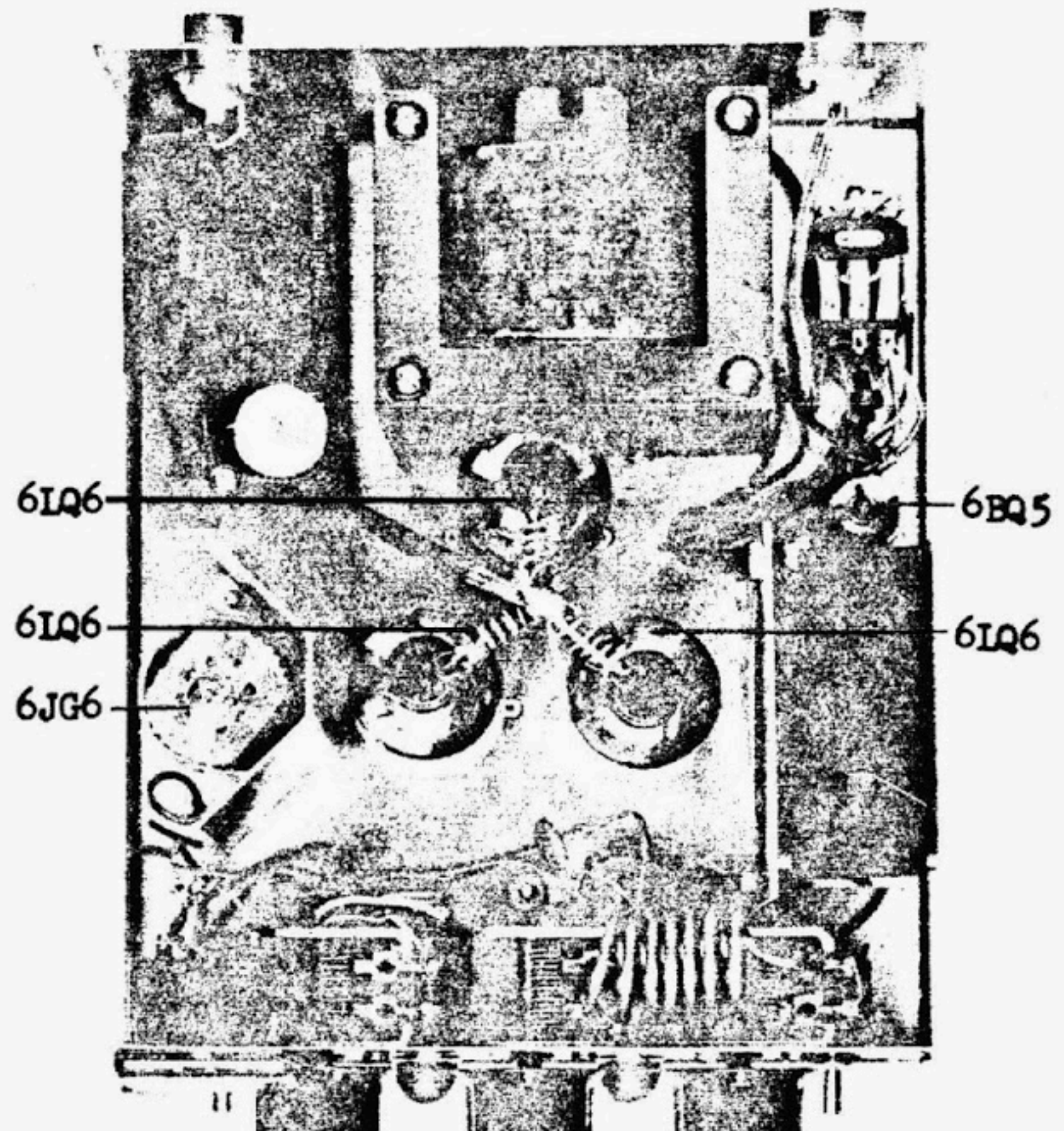
The meter located on the front panel is a relative output meter and is used for tuning purposes only.

In some areas, line voltages are higher than 120 VAC. In such cases of high input voltage, the plate dissipation of the tubes will be far in excess of rated value. The result, shortened tube life, arcing tubes, blown fuses, blown diodes, blown filters, and in cases where units have been overfused, the power transformer itself can be blown out. Occasionally there will be no indication on the meter, but the red light will glow properly. Usually this is caused by a mismatch in the antenna system.

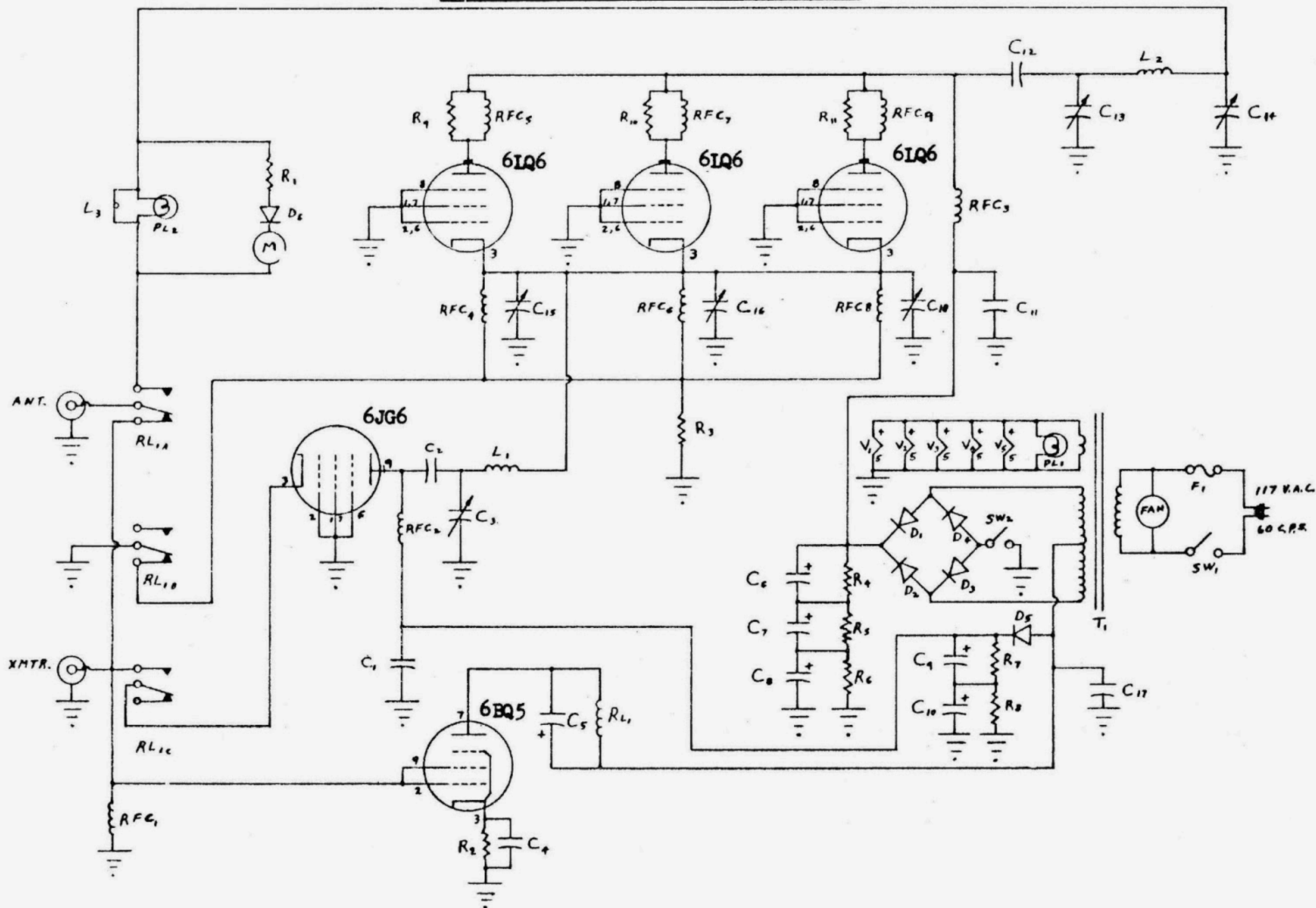
Do not attempt to operate under these mismatched conditions or severe damage to the unit will result, as the great amount of R. F. produced by the Kris 3+3 will have nowhere to go, except to circulate within the unit itself. The resultant heat rise will cause severe damage to all components.

Your Kris 3+3 Linear was bench-tested no less than three times at the factory to give approximately 220 watts output with as little as 3 watts input, depending on line voltages. Under no circumstances drive the linear with more than 5 or 6 watts. If this linear or any linear is over-driven, the results are usually shortened tube life, downward modulation, mushy or distorted audio. Use extreme caution when attempting service, as the voltages therein are lethal.

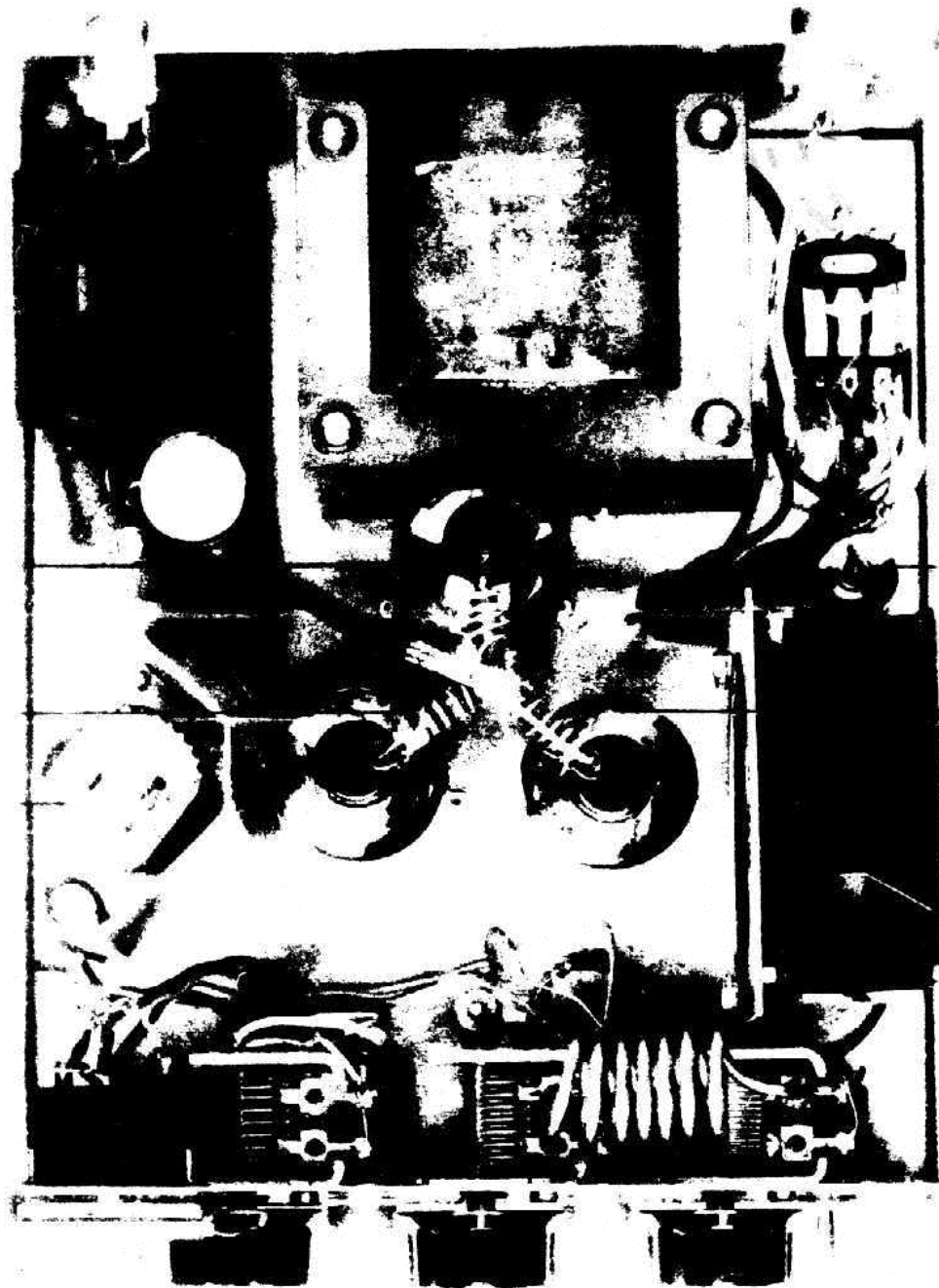
SYMBOL	DESCRIPTION
R7	Res 100K 1/2-20
R9 R10 R11	Res 330-1-20
R1	Res 82K 1/2-10
R3	Res 1K 2-20
R4 R5 R6	Res 100K-2-20
R2	Res 560-2-10
C1 C2 C4 C11 C12 C17	Cap .001MFD-3K
C9 C10	Cap 10MFD 450V
C6 C7 C8	Cap 30MFD-500V
C5	Cap 10MFD-50V
C14	Var Cap V2393
C3 C13	Var Cap V2394
C15 C16 C18	Trimmer 463
T1	XFMR 93-P-11
RFC 4 6 8	Choke 100UH
RFC 2	Choke 3.6UH
RFC 1	Choke 192UH
RFC 3	Choke 8.3UH
D6	Diode 1N3064
D1 2 3 4 5	Diode 1500PIV-1A
RL1	Relay 3PDT 115V
M	Meter 0-500
F1	Fuseholder
F	Fuse 10 Amp
PL2	Pilot Lite Red
PL1	Pilot Lite Green
P.B. 1-2	Bulb BB 6-8V



KRIS MACH 3 + 3 LINEAR SCHEMATIC



KRIS MACH 3 + 3



INSTALLATION AND TUNE UP

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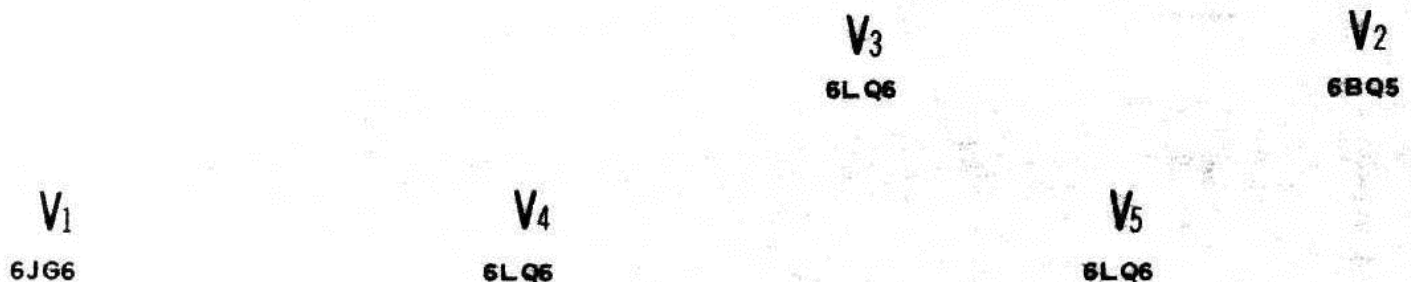
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TUBE LAYOUT FOR KRIS MACH 3+3



FRONT TOP VIEW

REMOVE TUBES FROM CARTON AND INSTALL IN UNIT

REPLACE COVER AND INSTALL METAL SCREWS

SERVICE HINTS FOR LINEARS

Do not attempt a "do it yourself" service job to your equipment without adequate knowledge, tools, test equipment, and experience. Consult your local service man, dealer, or write to Kris, Inc. for assistance.

Whenever service is attempted, be absolutely certain power supply is off and filter capacitors are completely discharged. Use extreme caution when high voltage is on.

There is no such thing as a "slight electrical shock" from power supplies such as these.

Amplifiers of this quality and power level deserve the best of treatment.

Toward this end it is therefore recommended that the operator familiarize himself with its operation.

A dummy load and a wattmeter is recommended to insure proper drive, (3 watts recommended) and proper loading.

Improper operation will ruin your linear amplifier quicker than anything else.

HINTS FOR SPOTTING PROBLEMS

1. In the event your unit blows fuses, do not over-fuse. Use only exact replacement.

Fuse blowing is usually caused by:

- A. High input AC Voltage (over 120 VAC)
- B. Amplifier improperly loaded.
- C. Short in power supply.
- D. Short in one or all output tubes.
- E. Short on B+ Circuit.

2. In the event your unit does not key at all or keys improperly... Above condition is usually caused by:

- A. Keying relay not seating properly.
- B. Not enough drive to unit.
- C. Faulty 6BQ5 or faulty transistor.

Keying relay not seating properly is usually caused by rough handling in shipment. It is necessary to key unit rapidly several times to seat it again. Should rapid keying fail to reseat relay, it may be necessary to manually hold relay down in the make position, then key unit several times. (Use an insulated screw-driver.)

Tube failure represents about 95% of service problems. Premature tube failure is almost always caused by improper operation. (Amplifier not tuned to exact resonance.) If your output tubes show color (dull red) (cherry red) your unit is being driven too hard or is loaded too heavily.

Using the automobile analogy, while your car will go 120 MPH, it will live much longer at 60 MPH. Rather than drive a small amplifier too hard, purchase a larger amplifier and let it loaf along.

Regarding mushy or distorted audio...

Above condition usually caused by

- A. Unit being overdriven.
- B. Improper loading (antenna system not 50 ohms)
- C. Downward modulation (too much drive and improper tune up.) (It is usually better to have too little drive than too much.)
- D. Audio bad from driver unit. (A linear will exactly reproduce only what it sees coming in.)

It is very much to your advantage to provide some method (a wattmeter either borrowed or purchased) to measure the drive to your amplifier.

Due to the hi power of the Kris Mach 3 and Mach 3+3, antennae with loading coils should not be used.

We thank you for your patronage and hope these suggestions will prove helpful.

Please do not hesitate to write or call us for assistance, if needed.

Cordially,

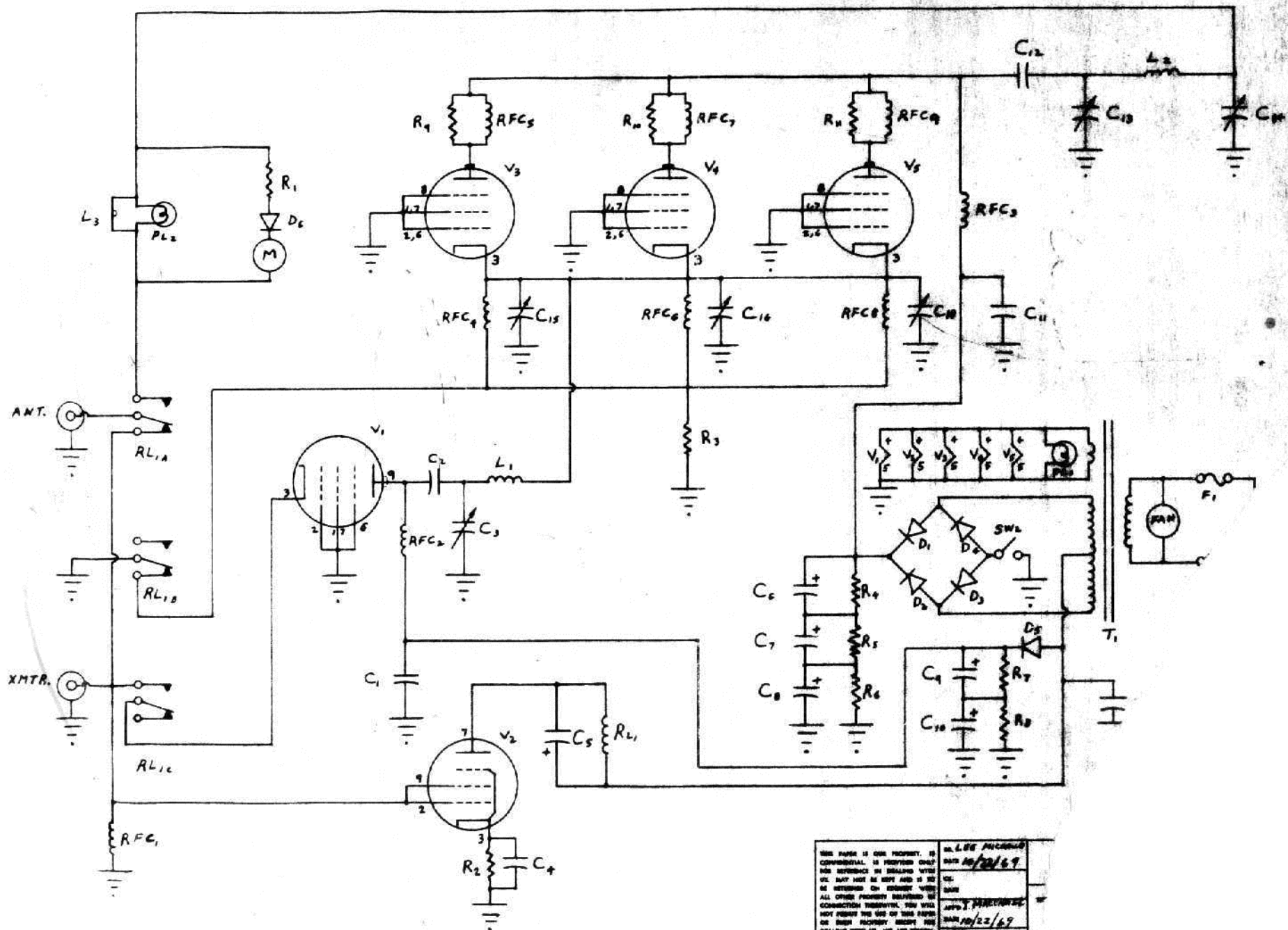
KRIS INC.

Cedarburg, Wisconsin

PARTS LIST FOR MACH 3+3

SYMBOL	DESCRIPTION	PART NO.	QUANTITY
R7	Res 100K 1/2-20	1011043	2
R9 R10 R11	Res 330-1-20	1013313	3
R1	Res 82K 1/2-10	1018232	1
R3	Res 1K 2-20	1031023	1
R4 R5 R6	Res 100K-2-20	1031043	3
R2	Res 560-2-10	1035612	1
C1 C2 C4 C11 C12 C17	Cap .001MFD-3K	1201001	6
C9 C10	Cap 10MFD 450V	1202001	2
C6 C7 C8	Cap 30MFD-500V	1202002	3
C5	Cap 10MFD-50V	1203003	1
C14	Var Cap V2393	1301001	1
C3 C13	Var Cap V2394	1301002	2
C15 C16 C18	Trimmer 453	1302001	3
T1	XFMR 93-P-11	1402004	1
RFC 4 6 8	Choke 100UH	1500002	3
RFC 2	Choke 3.6UH	1500003	1
RFC 1	Choke 192UH	1500004	1
RFC 3	Choke 8.3UH	1500005	1
D6	Diode 1N3064	1800008	1
D1 2 3 4 5	Diode 1500PIV-1A	1800005	1
RL1	Relay 3PDT 115V	1900003	1
M	Meter 0-500	2100001	1
F1	Fuseholder	2202001	1
F	Fuse 10 Amp	2301003	1
PL2	Pilot Lite Red	2401003	1
PL1	Pilot Lite Green	2401004	1
P.B. 1-2	Bulb BB 6-8V	2501001	2
SW1	Switch SPST	2600001	1
SW2	Switch DPDT	2600002	1
TS, L-9	Tube Socket	2801001	4
TS, S-9	Tube Socket	2801002	1
2C	Coax Conn w/nut	2808001	2
	Term Strip 3PT	2805001	3
	Term Strip 4PT	2805002	1
	Tube 6JG6A	2900002	1
	Tube 6BQ5	2900003	1
	Tube 6LQ6	2900004	3
	P.C. Board	3100001	1
	Chassis AC	3400006	1
	Back Plate AC	3400009	1
	Tube Shield AC	3400010	1
	Fan Bracket	3400019	1
	Bottom Wrapper AC	3400028	1
	Top Wrapper AC	3400029	1
	Frt. Panel 3+3	3500005	1
	Antenna Decal	3500007	1
	XMTN Decal	3500008	1
	Serial No. Decal	3500009	1
	Grommet 1/4 in. ID	9102001	4
	Grommet 3/8 in. ID	9102003	1
	Cord 18-2x6	9103001	1
	Knob 16531L	9104001	3
	Tube Cap	9105002	3
	Tube Cap Insert	9105003	3
	Stand off 6/32-1	9106002	2
	MTG Feet	9107001	4
	Solder Lug 46	9109001	3
	Fan	9112001	1

IN 4007 Tubes



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3-1/2" White/Brown

FEEDBACK #1

3-1/2" White/Green

2-1/2" WHITE

INPUT (COLLECTOR)

13.8 VDC BLACK (twisted)
2"

1 KHz.

2-1/2" RED

3-1/2" White/Brown

FEEDBACK #2

3-1/2" White/Green

1.13"
MAX

2.65"
MAX

YELLOW 3-1/2"

OUTPUT

750 V. 200 MA.

BLUE 3-1/2"

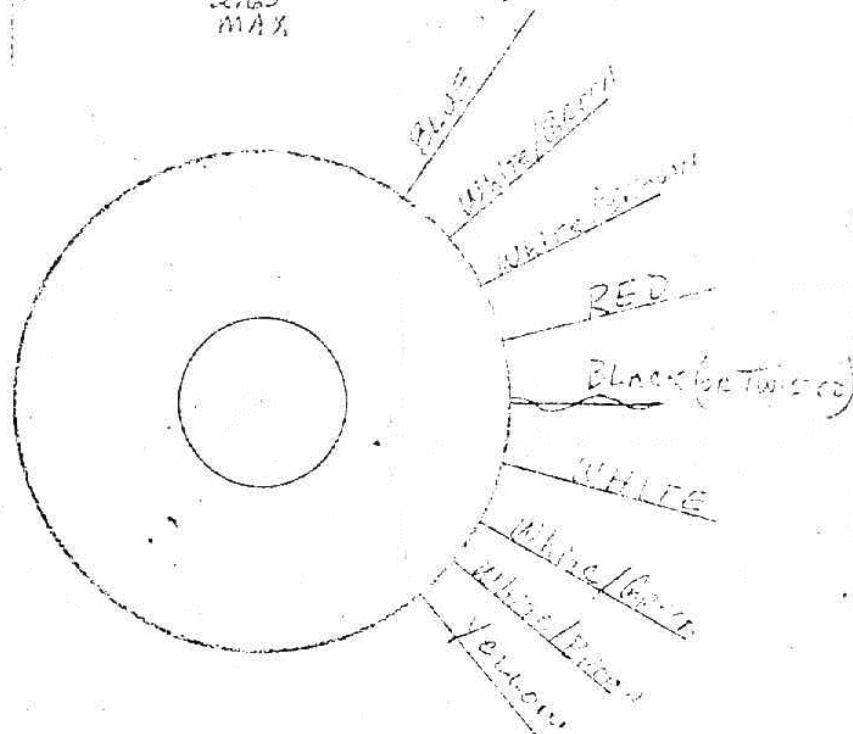
MILLIGAL #22 STRANDED

150° PVC OR EQUIV.

EXCEPT COLLECTOR

LEADS ARE #16 SOLID

150° PVC OR EQUIV.



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SCALE

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CEDARBURG, WISCONSIN

TITLE:

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