

1. Summary

STC Type 28-SU-236 20W valve amplifier. S.N. unmarked.

One MIC input channel, and one PU input channel PA amplifier. EF86 amp for mic. EF86 mixer stage with bass and treble. 12AU7 fixed bias, floating paraphase variant PI stage to 6L6 PP with common bypassed cathode bias, and transformer winding feedback to PI stage. SS diode rectifier with capacitor input filter for output stage B+. OC3 dropper to screen and other stages. Line output transformer with 35/50/75/100/150/300/600Ω tapings.

Output Transformer	Unknown, not marked 8kΩ PP (BRN,RD,BLU) 7 output winding sections 0,35R,50R,75R,100R,150R,300R,600R. 1 F/B winding 35R.
Power Transformer	Ferguson PF163. dated 9-64 0-230-240V (BLK, GRN, RED). ES (GRY) 325-0-325V @ 125mA (YEL,BLU,YEL); 6V3 CT 2.5A (YEL,BLU,YEL); 6V3 2A (BRN,BRN); 0-5V-6.3V 2A (RED,GRN, OR).
POTs	SP65498A 71, 70
WW	61 49, 61 19
Caps	Ducon 110 , 082, 085 ; Simplex ; Microcap black.
Valves	6L6 x2 12AX7 x1: Brimar 3K0/1573 EF86 x2: 8Y3 5oC OC3 x1 3x octal, 4x noval (1x with tree and shock chassis)

Poor condition – chassis and internal panels badly bent.

Done:

- Prepared schematic.
- Removed parts and checked transformers.

Aim:

- Repair chassis and refit panels and transformers.
- Decide what to do.

2. Measurements

PF163 power transformer resistances: primary 13.3, 14.0 Ω ; secondary = 94+99 Ω . All windings megger OK at 1kVDC. ES capacitance to one HV twice that of other HV. Core bolts have insulating washer at one end, and internal plastic tube (some bolt end threads are bent so can't remove all bolts).

30VAC 50Hz signal applied to half primary winding of unmarked output transformer.

Winding	Voltage rms	Impedance for 8K pri; Spec level; Notes
Pri P-P: BRN to BLU	60.1	8k
Sec: WH to YEL	16.3	589 Ω ; 600 Ω ; 1000T
Sec: PUR to YEL	11.63	300 Ω ; 300 Ω ; 713T
Sec: OR to YEL	8.18	148 Ω ; 150 Ω ; 502T
Sec: YEL to YEL	6.69	99 Ω ; 100 Ω ; 410T
Sec: WH to YEL	5.79	74 Ω ; 75 Ω ; 355T
Sec: PUR to YEL	4.74	50 Ω ; 50 Ω ; 291T
Sec: OR to YEL	3.84	33 Ω ; 35 Ω ; 236T
F/B: GRN to BLK	3.87	33 Ω ; 35 Ω ; 237T

Output transformer primary DC resistance: 51+57 Ω plate-to-plate 8k.

All windings and core megger ok to 1kVdc.

The 150-300 section is effectively 26 ohm (211 turns).

The 100-150 section is effectively 5.0 ohm (92 turns).

The 75-150 section is effectively 12.8 ohm (147 turns).

The 50-150 section is effectively 26 ohm (211 turns).

The 50-100 section is effectively 8.3 ohm (119 turns).

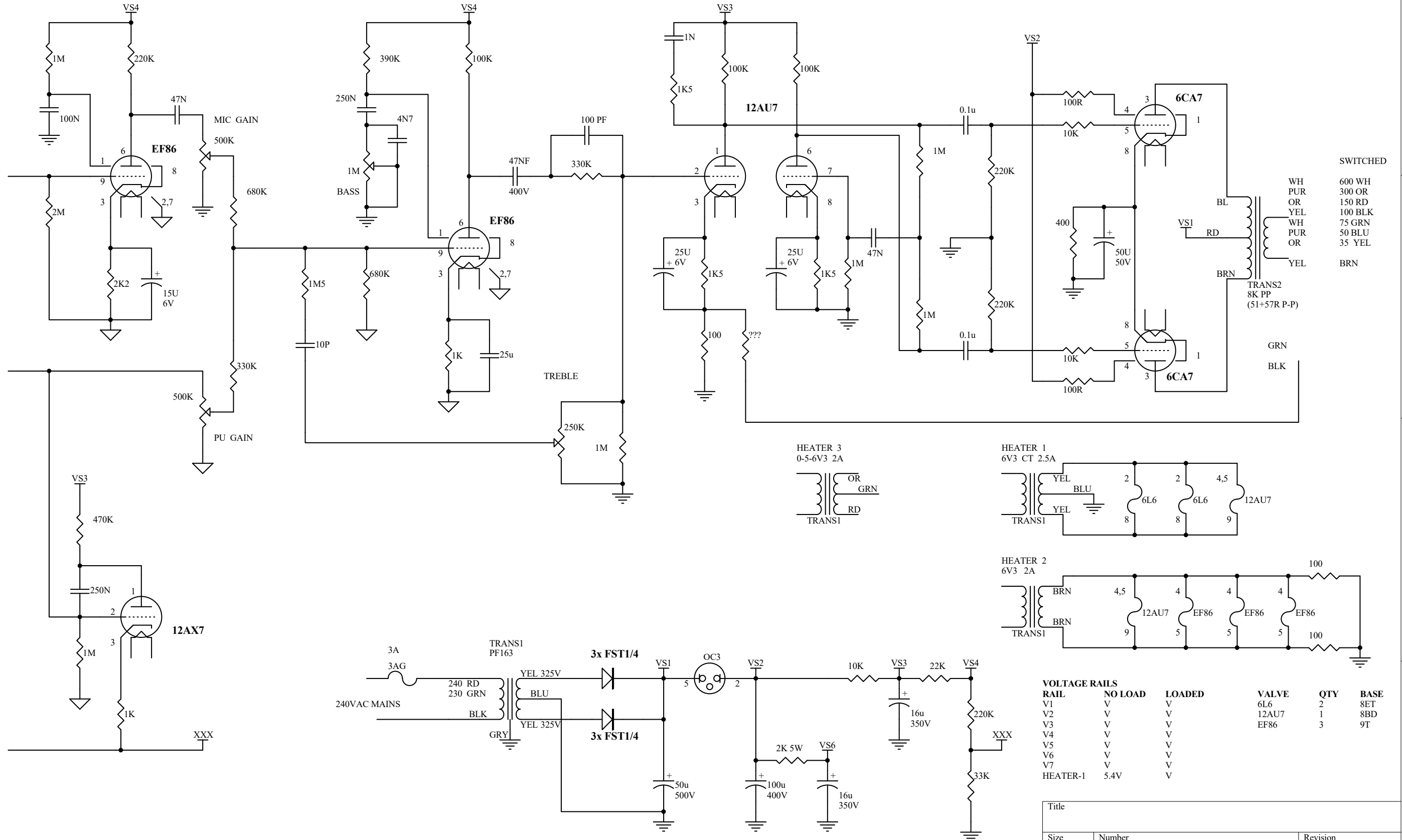
The 35-100 section is effectively 17.9 ohm (174 turns).

The 35-75 section is effectively 8.3 ohm (119 turns).

There is one option to split windings at the 150 ohm tap and then parallel the 50-150 and 150-300 sections, which would allow a 5kPP to 16 ohm speaker impedance ratio – but would depend on being able to split the tap and not cause accidental shorting.

STC 28-SU-236 20W PA

~1964



VOLTAGE RAILS	RAIL	NO LOAD	LOADED	VALVE	QTY	BASE
	V1	V	V	6L6	2	8ET
	V2	V	V	12AU7	1	8BD
	V3	V	V	EF86	3	9T
	V4	V	V			
	V5	V	V			
	V6	V	V			
	V7	V	V			
	HEATER-1	5.4V	V			

Title		
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BY

Standard Telephones and Cables Pty. Ltd.



MIC. GAIN

PICK UP GAIN



BASS

TREBLE



原廠
정품
Hóp m
76

75 • 100
50 • 150
35 • 300
• 600

STC
MADE IN AUSTRALIA
20W AMPLIFIER
TYPE 28-SU-236

A
MIC. 2
PU



PF153