

( ) = RF mV

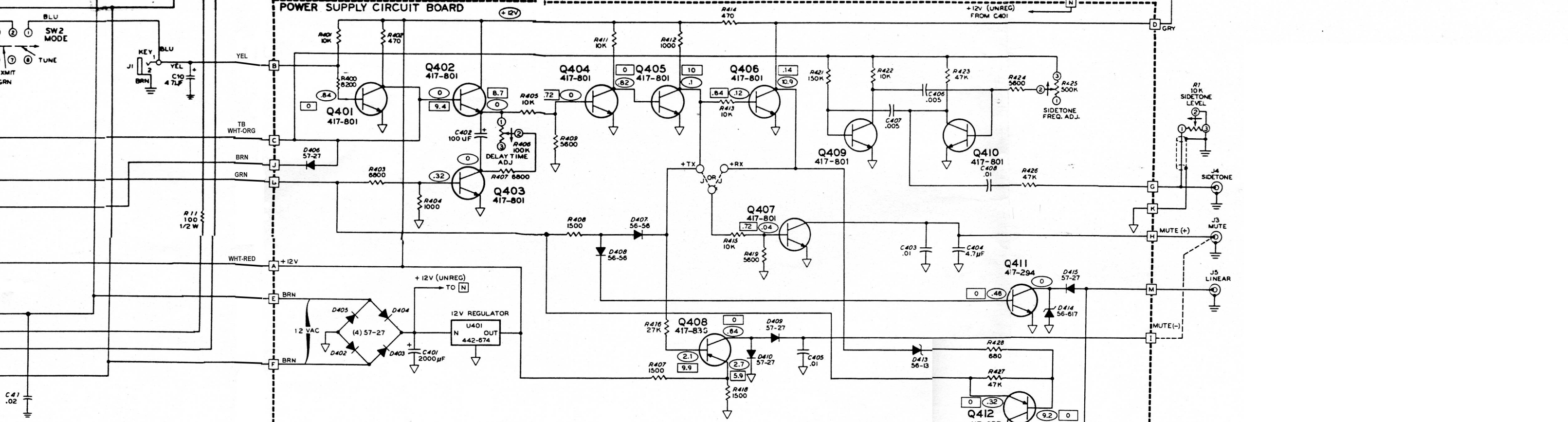
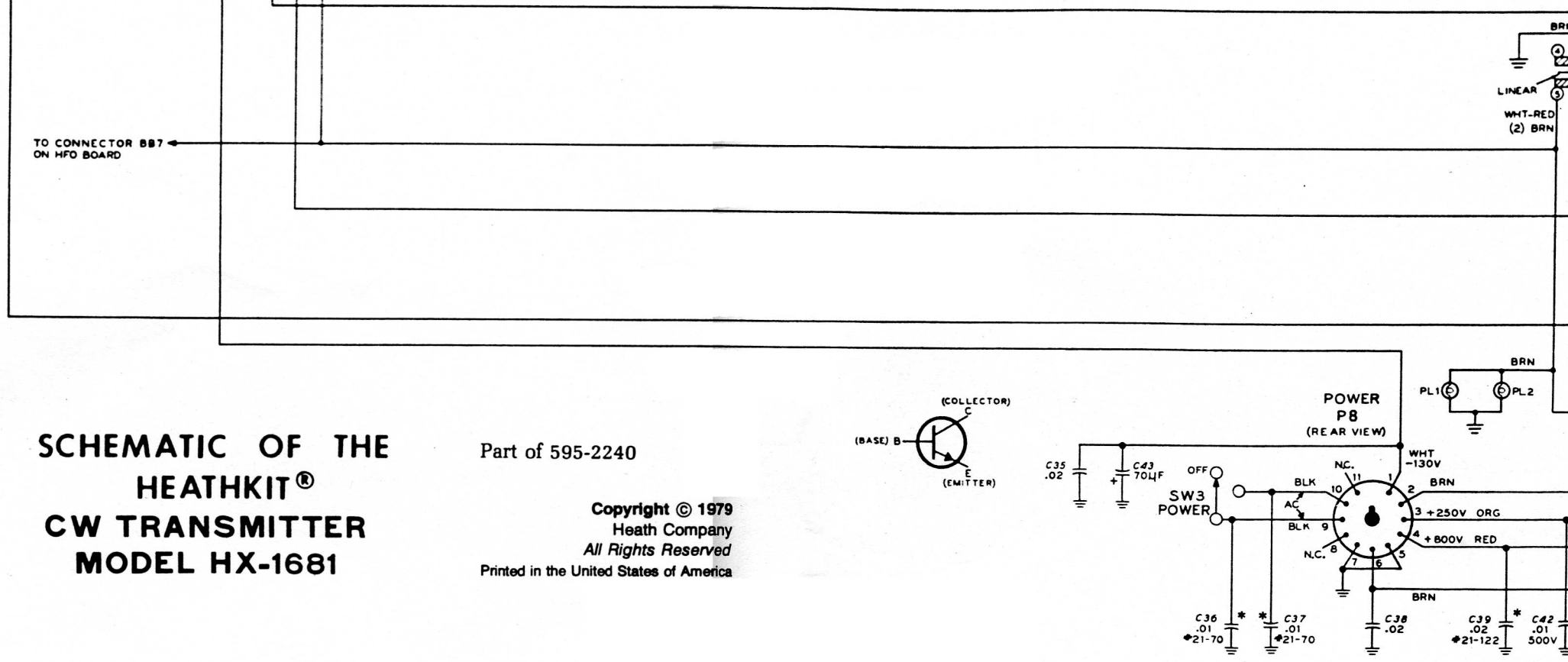
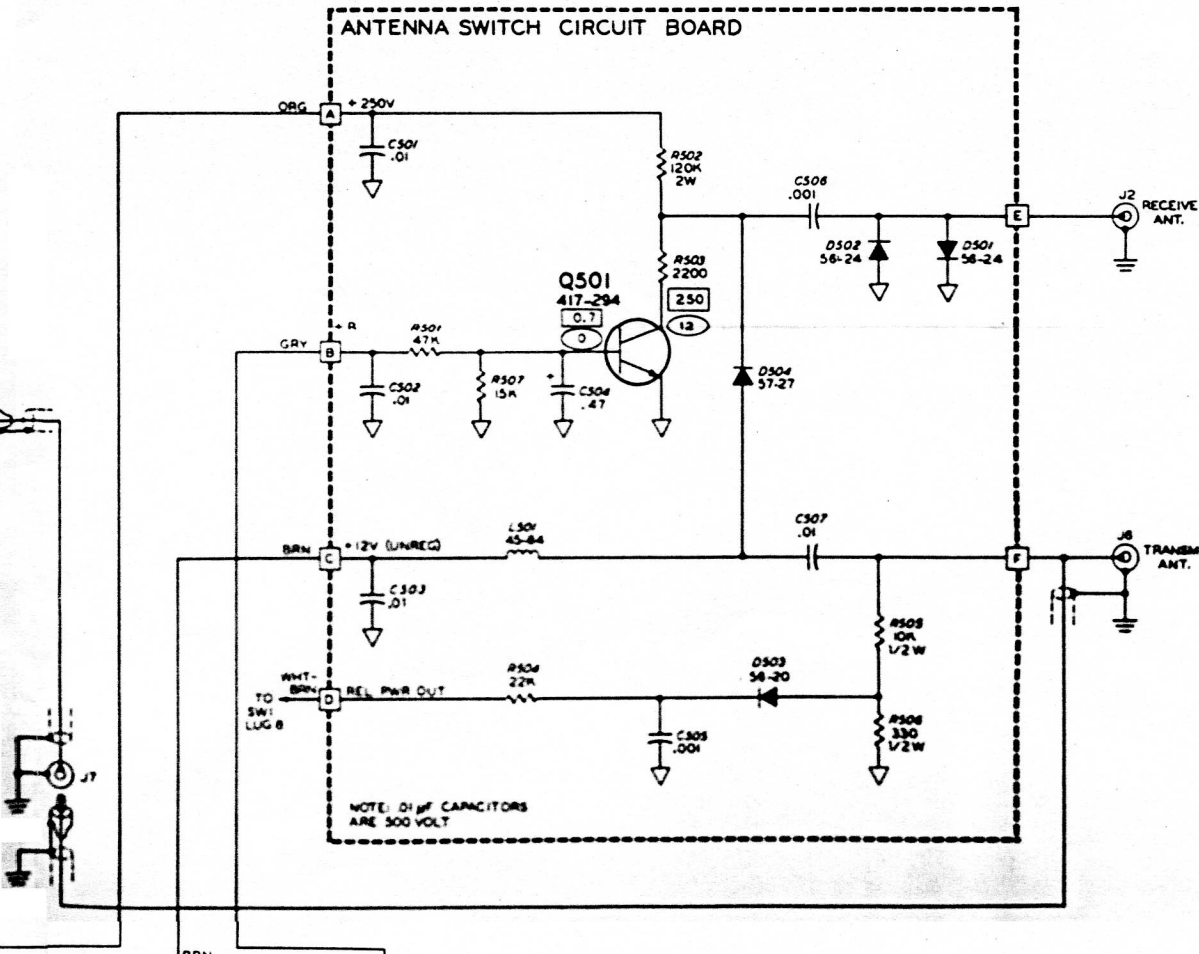
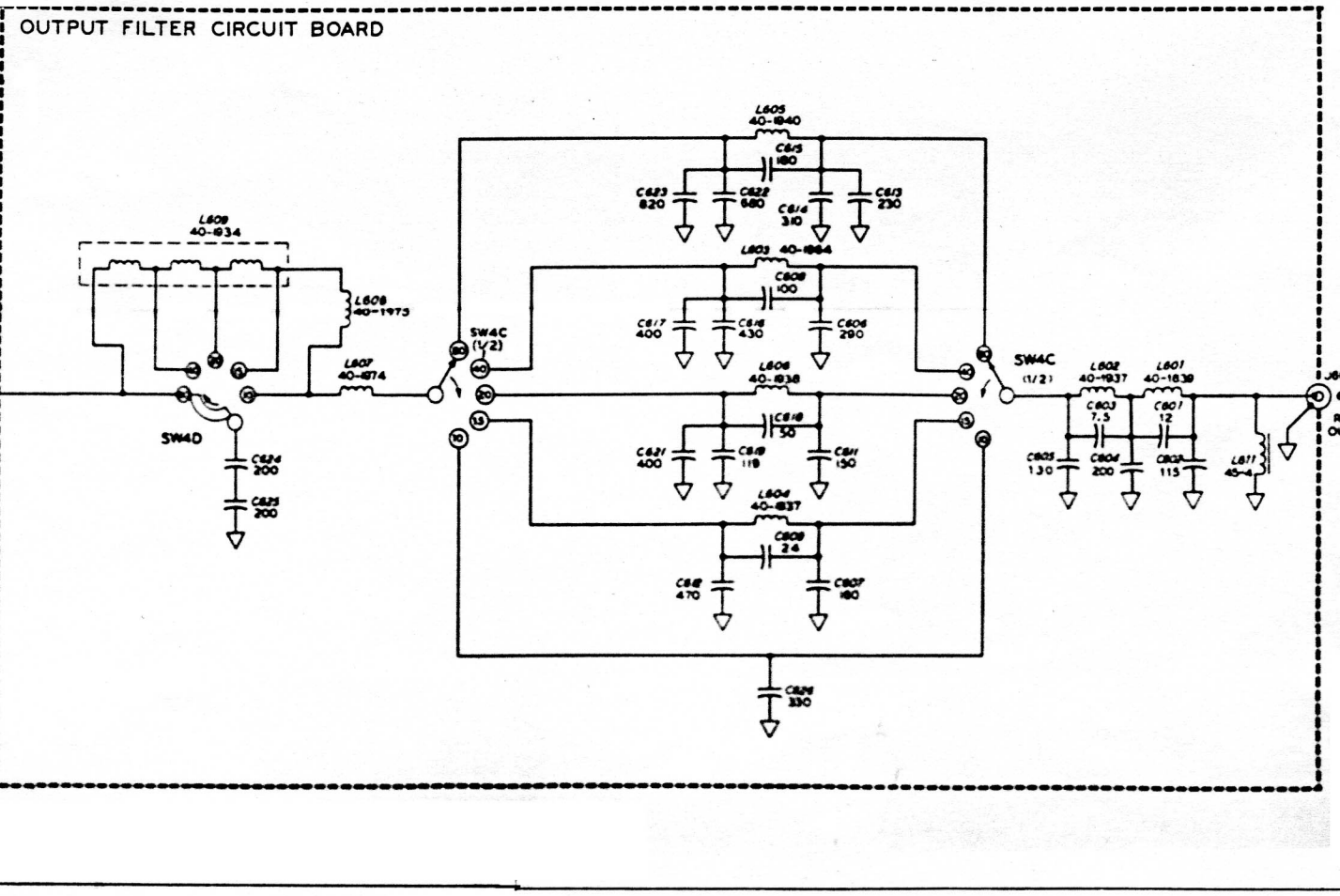
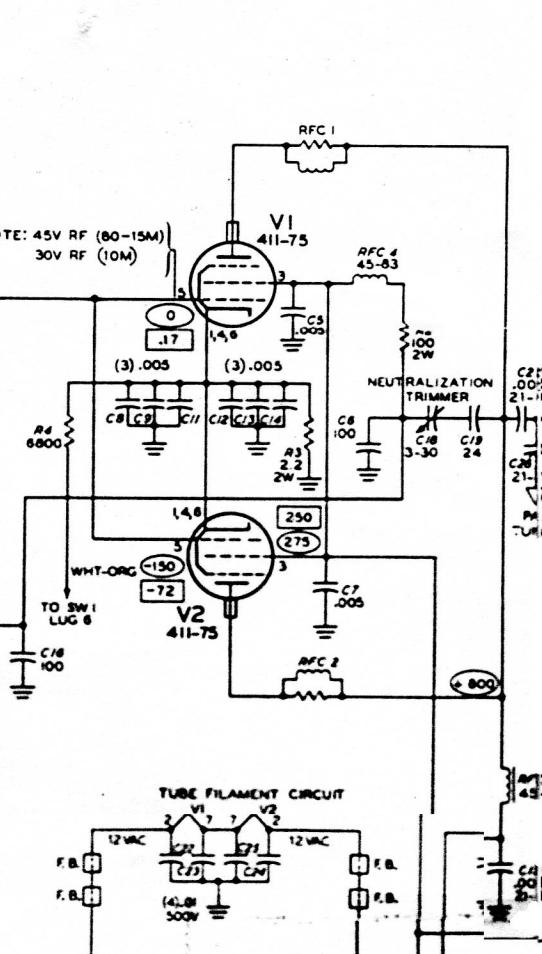
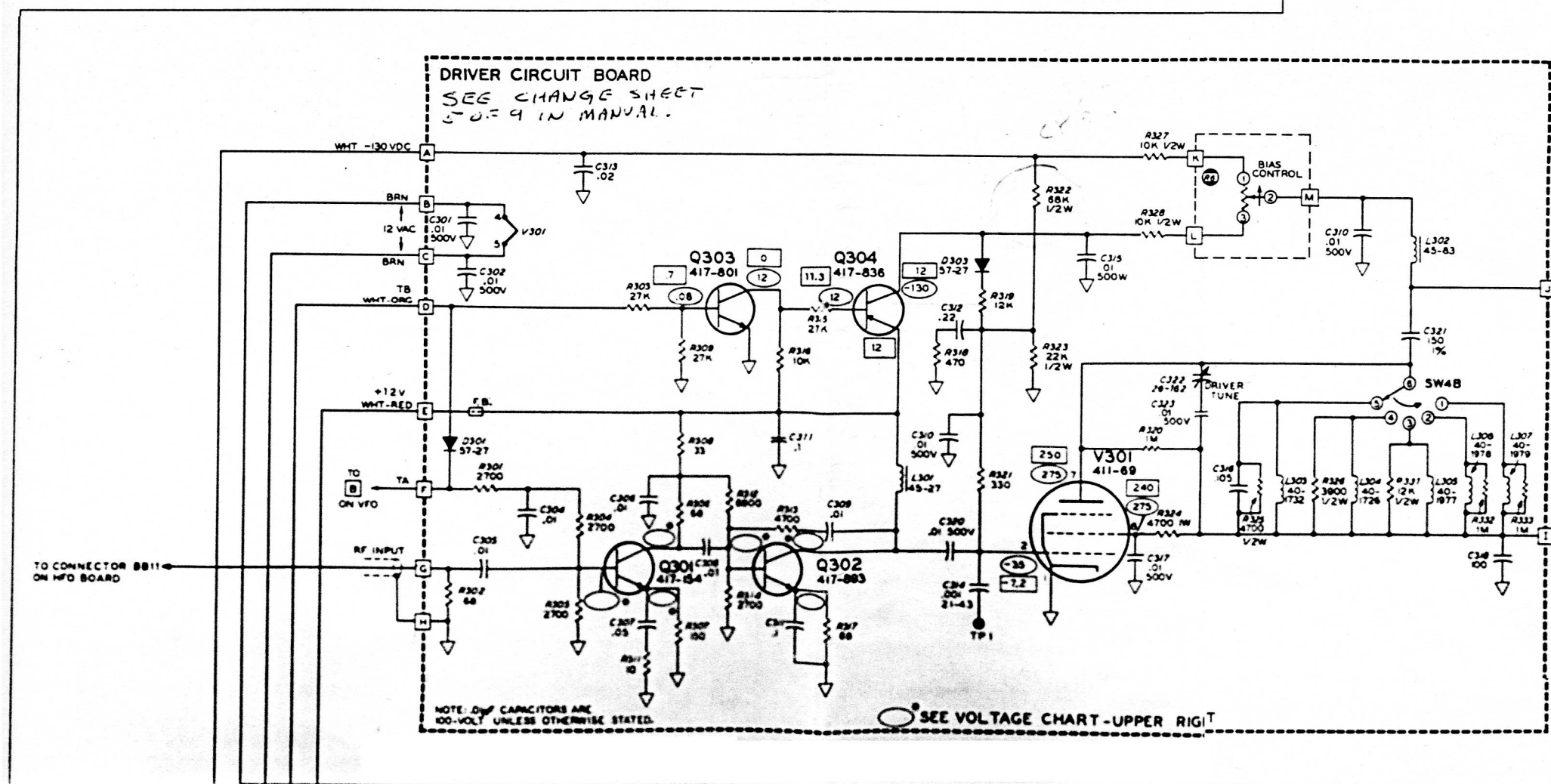
**DRIVER CIRCUIT BOARD  
VOLTAGE CHART**

Transistor	Lead	Receive Mode Opn.	MODE SWITCH POS.			
			Spot	Tune (No RF)	Tune (20 M, 100 W)	Tune (20 M, 100 W)
Q301	E	0 V	2.2 V (0)	2.0 V (0)	2.0 V (0)	
	B	0 V	2.9 V (55)	2.7 V (17)	2.7 V (21)	
	C	12 V	10.5 V (120)	10.5 V (11)	10.5 V (29)	
Q302	E	2.5 V	2.5 V	2.5 V	2.5 V	
	B	3.2 V	3.2 V (120)	3.2 V (3.5)	3.2 V (28)	
	C	12.0 V	12.0 V (5.3)	12.0 V (17)	12.0 V (1.7)	

**HFO/MIXER VOLTAGE CHART**

NOTE: READ + DC VOLTS. XMTR KEYS OR UNKEYED

Transistor	Lead	BAND SWITCH POSITION				
		80	40	20	15	10
Q101	E	3.2 V	3.2 V			
	B	4.0 V	4.0 V	(NOT USED)		
	C	8.5 V	8.5 V			
Q102	E	2.5 V	2.5 V	2.5 V	2.5 V	2.5 V
	B	3.4 V	3.4 V	0 V	0 V	0 V
	C	6.0 V	6.0 V	6.0 V	6.0 V	6.0 V
Q103	E			2.0 V	2.1 V	3.4 V
	B	(NOT USED)	(NOT USED)	2.7 V	3.1 V	4.0 V
	C			11.0 V	10.0 V	10.0 V
Q104	E	2.5 V	2.5 V	2.5 V	2.5 V	2.5 V
	B	0 V	0 V	3.4 V	3.4 V	3.4 V
	C	6.0 V	6.0 V	6.0 V	6.0 V	6.0 V



**SCHEMATIC OF THE  
HEATHKIT®  
CW TRANSMITTER  
MODEL HX-1681**

Part of 595-2240

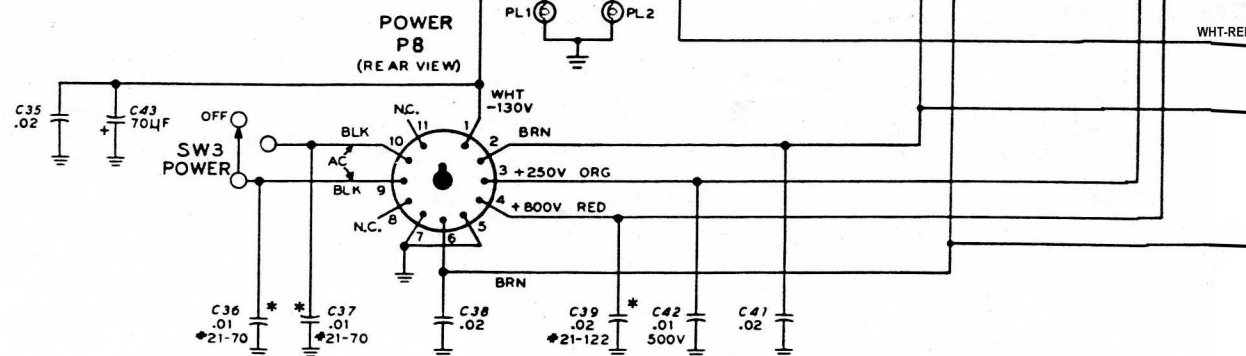
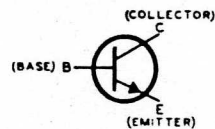
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- NOTES:
- COMPONENT NUMBERS ARE IN THE FOLLOWING GROUPS.
    - 1-99 PARTS MOUNTED ON THE CHASSIS.
    - 100-199 PARTS MOUNTED ON THE HFO/MIXER CIRCUIT BOARD.
    - 200-299 PARTS MOUNTED ON THE DRIVER CIRCUIT BOARD.
    - 300-399 PARTS MOUNTED ON THE VFO CIRCUIT BOARD.
    - 400-499 PARTS MOUNTED ON THE POWER SUPPLY CIRCUIT BOARD.
    - 500-599 PARTS MOUNTED ON THE ANTENNA SWITCH CIRCUIT BOARD.
    - 600-699 PARTS MOUNTED ON THE OUTPUT FILTER CIRCUIT BOARD.
  - ALL RESISTORS ARE 1/4-WATT, 5% TOLERANCE, UNLESS OTHERWISE NOTED. RESISTOR VALUES ARE IN OHMS (K=1,000, M=1,000,000).
  - CAPACITORS LESS THAN 1 ARE IN μF (MICROFARADS), ALL OTHER CAPACITORS ARE IN pF (PICOFARADS) UNLESS OTHERWISE NOTED.
  - ARROWS AT CONTROLS INDICATE CLOCKWISE ROTATION AS VIEWED FROM THE SHAFT END OF THE CONTROL.
  - THIS SYMBOL INDICATES A DC VOLTAGE (±10%) MEASURED WITH A HIGH-INPUT IMPEDANCE VOLTMETER FROM THE POINT INDICATED TO CHASSIS GROUND UNDER THE FOLLOWING CONDITIONS.
    - A. THE TRANSMITTER IS UNKEYED.
    - B. MODE SWITCH IN THE XMIT POSITION.
  - THIS SYMBOL INDICATES A DC VOLTAGE (±10%) MEASURED AS IN STEP 5, UNDER THE FOLLOWING CONDITIONS.
    - TRANSMITTER KEYS OR MODE SWITCH IN THE TUNE POSITION.
  - THIS SYMBOL INDICATES A CIRCUIT BOARD GROUND.
  - THIS SYMBOL INDICATES A CHASSIS GROUND.
  - THIS SYMBOL INDICATES A CHASSIS-MOUNTED PART, SHOWN ON A CIRCUIT BOARD.
  - THIS SYMBOL INDICATES A CIRCUIT BOARD WIRING CONNECTION.
  - THIS SYMBOL INDICATES AN EDGE-MOUNTED CIRCUIT BOARD CONNECTION.
  - THIS SYMBOL, SHOWN ON THE HFO/MIXER CIRCUIT BOARD, INDICATES A TEMPORARILY MOUNTED CAPACITOR USED ONLY DURING ALIGNMENT.
  - REPLACE CAPACITORS ONLY WITH HEATHKIT PART NUMBERS SHOWN.
  - REFER TO THE "CIRCUIT BOARD X-RAY VIEWS" FOR THE PHYSICAL LOCATION OF PARTS.

# SCHEMATIC OF THE HEATHKIT® CW TRANSMITTER MODEL HX-1681

Part of 595-2240

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**NOTES:**

1. COMPONENT NUMBERS ARE IN THE FOLLOWING GROUPS.

- 1-99 PARTS MOUNTED ON THE CHASSIS.
- 100-199 PARTS MOUNTED ON THE HFO/MIXER CIRCUIT BOARD.
- 200-299 PARTS MOUNTED ON THE VFO CIRCUIT BOARD.
- 300-399 PARTS MOUNTED ON THE DRIVER CIRCUIT BOARD.
- 400-499 PARTS MOUNTED ON THE POWER SUPPLY CIRCUIT BOARD.
- 500-599 PARTS MOUNTED ON THE ANTENNA SWITCH CIRCUIT BOARD.
- 600-699 PARTS MOUNTED ON THE OUTPUT FILTER CIRCUIT BOARD.

2. ALL RESISTORS ARE 1/4-WATT, 5% TOLERANCE, UNLESS OTHERWISE NOTED. RESISTOR VALUES ARE IN OHMS (K=1000), (M=1,000,000).

3. CAPACITORS LESS THAN 1 ARE IN µF (MICROFARADS). ALL OTHER CAPACITORS ARE IN pF (PICOFARADS) UNLESS OTHERWISE NOTED.

4. ARROWS AT CONTROLS INDICATE CLOCKWISE ROTATION AS VIEWED FROM THE SHAFT END OF THE CONTROL.

5. ○ THIS SYMBOL INDICATES A DC VOLTAGE (±10%) MEASURED WITH A HIGH-INPUT IMPEDANCE VOLTMETER FROM THE POINT INDICATED TO CHASSIS GROUND UNDER THE FOLLOWING CONDITIONS.

- A. THE TRANSMITTER IS UNKEYED.
- B. MODE SWITCH IN THE XMIT POSITION.

6. □ THIS SYMBOL INDICATES A DC VOLTAGE, (±10%) MEASURED AS IN STEP 5, UNDER THE FOLLOWING CONDITIONS.  
TRANSMITTER KEYED OR  
MODE SWITCH IN THE TUNE POSITION.

7. ▽ THIS SYMBOL INDICATES A CIRCUIT BOARD GROUND.

8. ≡ THIS SYMBOL INDICATES A CHASSIS GROUND.

9. ⊙ THIS SYMBOL INDICATES A CHASSIS-MOUNTED PART, SHOWN ON A CIRCUIT BOARD.

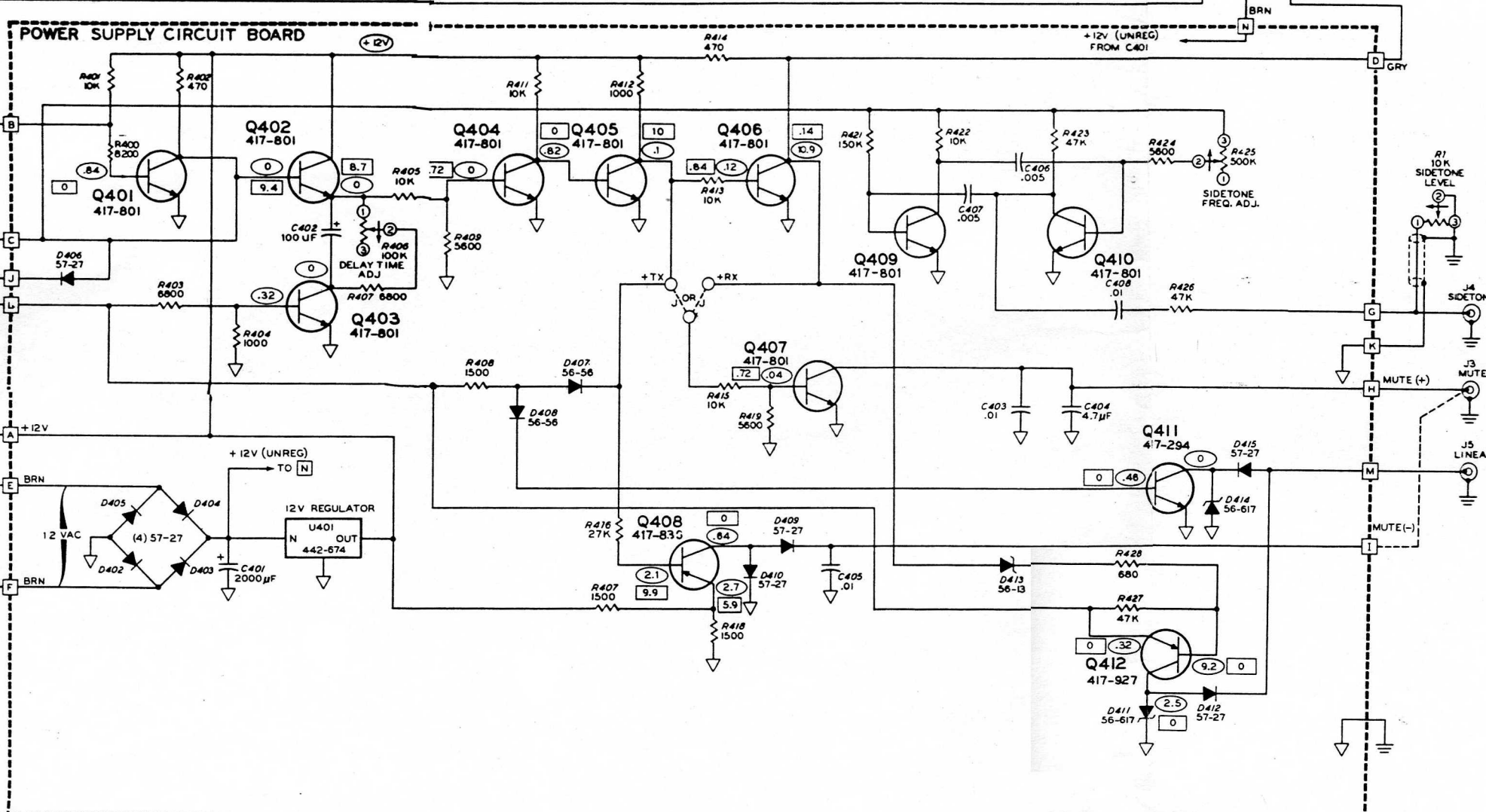
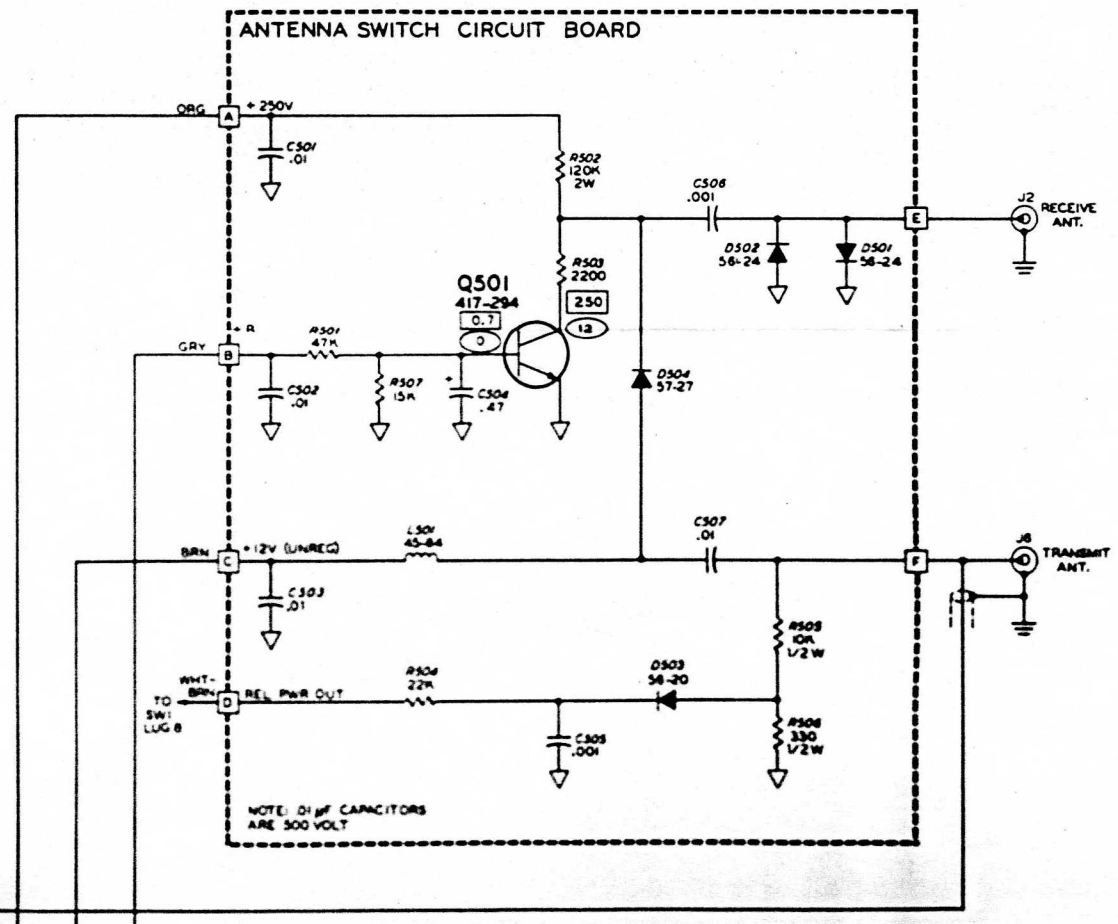
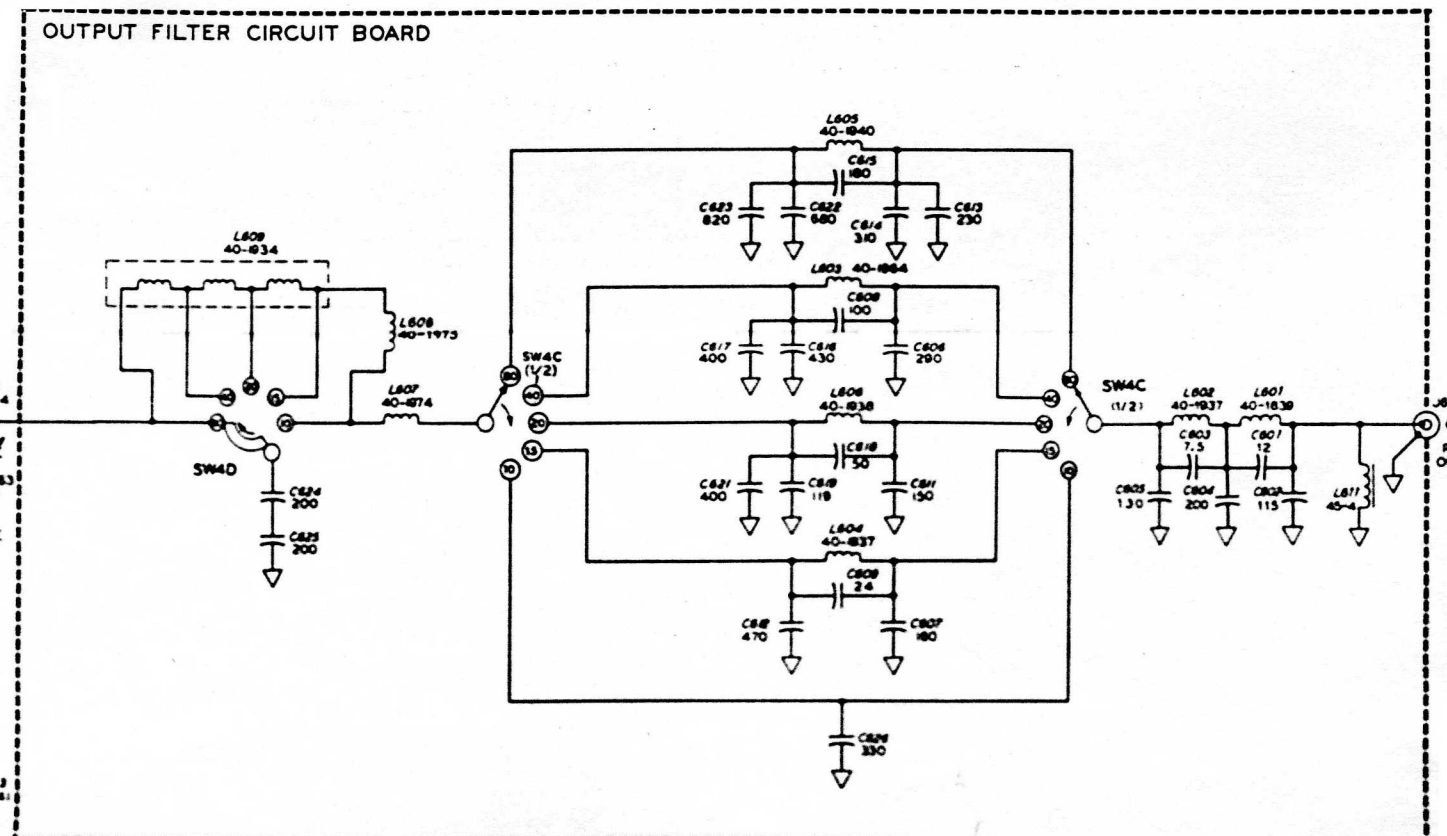
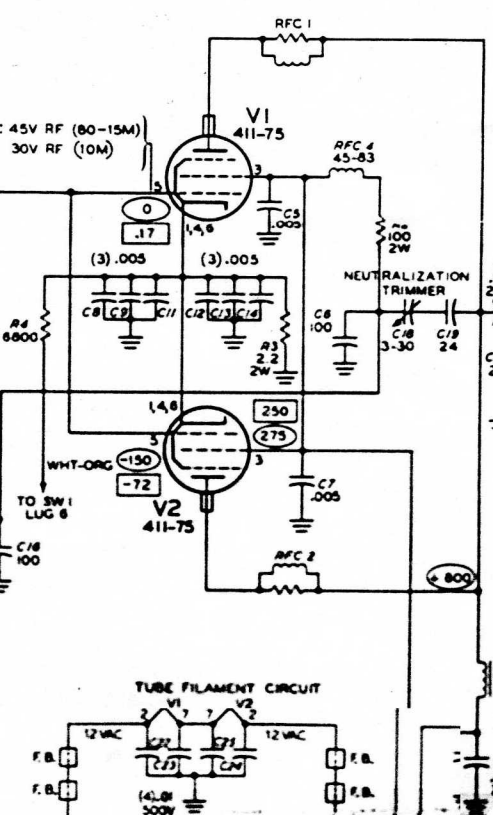
10. □ THIS SYMBOL INDICATES A CIRCUIT BOARD WIRED CONNECTION.

11. ≪ THIS SYMBOL INDICATES AN EDGE-MOUNTED CIRCUIT BOARD CONNECTION.

12. Ⓞ THIS SYMBOL, SHOWN ON THE HFO/MIXER CIRCUIT BOARD, INDICATES A TEMPORARILY MOUNTED CAPACITOR USED ONLY DURING ALIGNMENT.

13. Ⓢ\* REPLACE CAPACITORS ONLY WITH HEATHKIT PART NUMBERS SHOWN.

14. REFER TO THE "CIRCUIT BOARD X-RAY VIEWS" FOR THE PHYSICAL LOCATION OF PARTS.

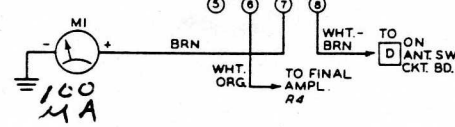


CIRCUIT BOARD WIRED CONNECTION.

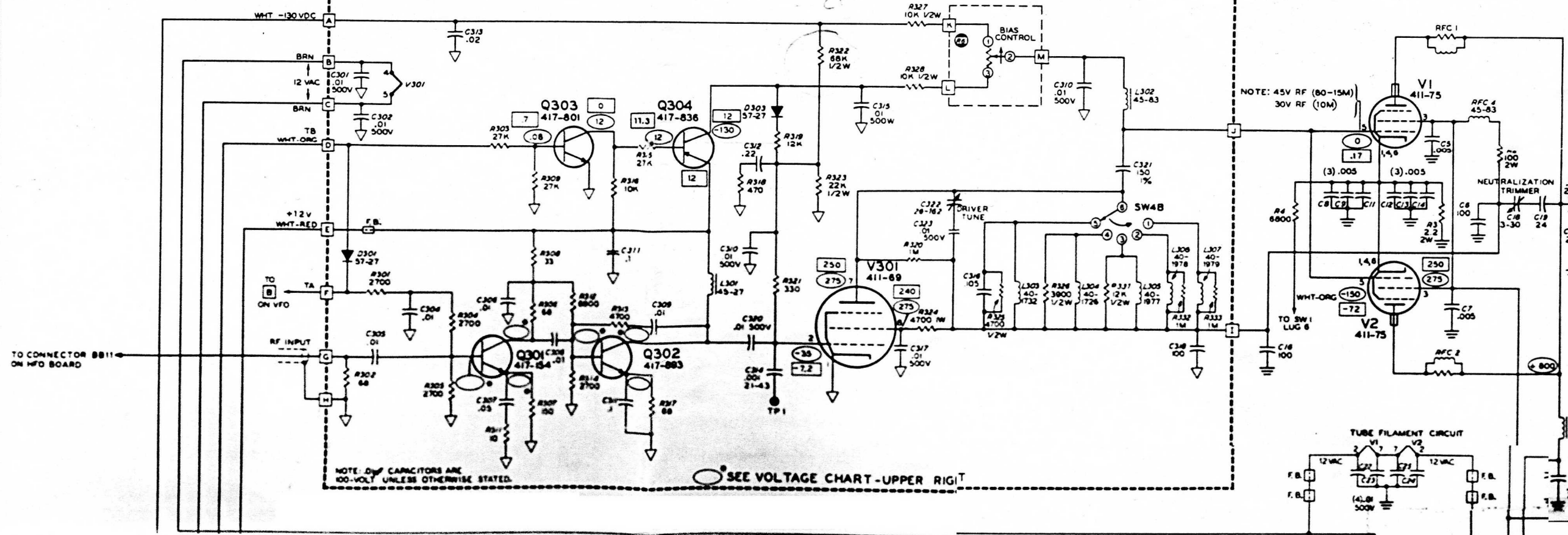
N EDGE-MOUNTED CIRCUIT BOARD

HE HFO/MIXER CIRCUIT BOARD.

MOUNTED CAPACITOR USED



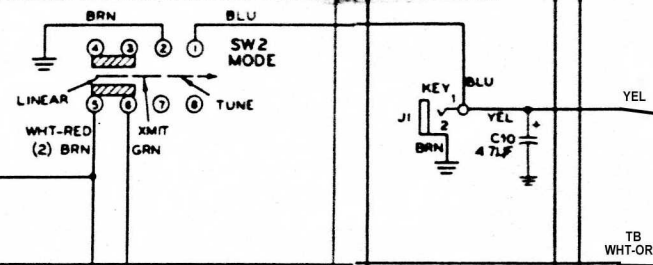
DRIVER CIRCUIT BOARD  
SEE CHANGE SHEET  
5-0-9 IN MANUAL.



NOTE: .01μF CAPACITORS ARE 100-VOLT UNLESS OTHERWISE STATED.

SEE VOLTAGE CHART - UPPER RIGHT

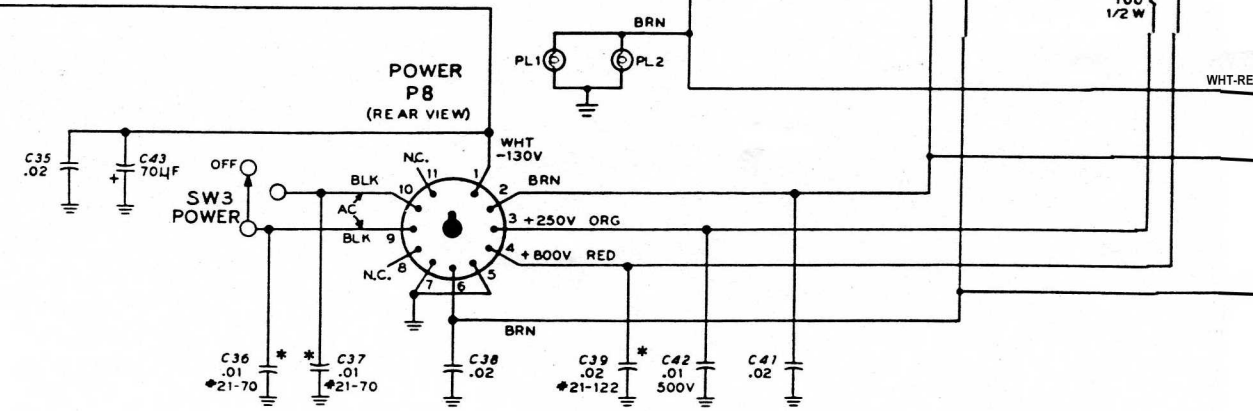
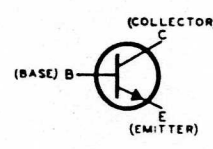
TO CONNECTOR BB7 ON HFO BOARD



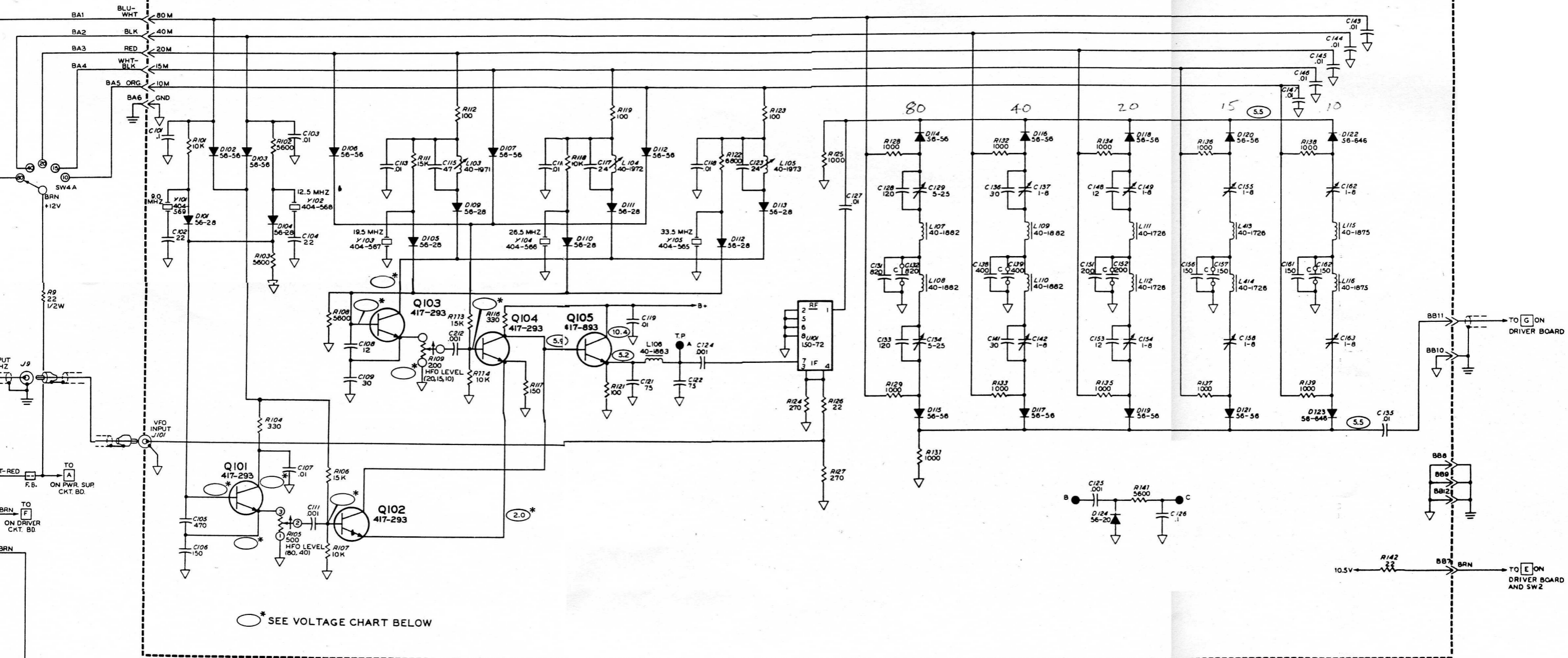
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HFO/MIXER CIRCUIT BOARD



\* SEE VOLTAGE CHART BELOW

① PWR.  
 ② WHT.-BRN TO ON ANT. SW. CKT. BD.  
 ③ FINAL I.P.L.

TO G ON DRIVER BOARD  
 TO E ON DRIVER BOARD AND SW2

VFO CIRCUIT BOARD

