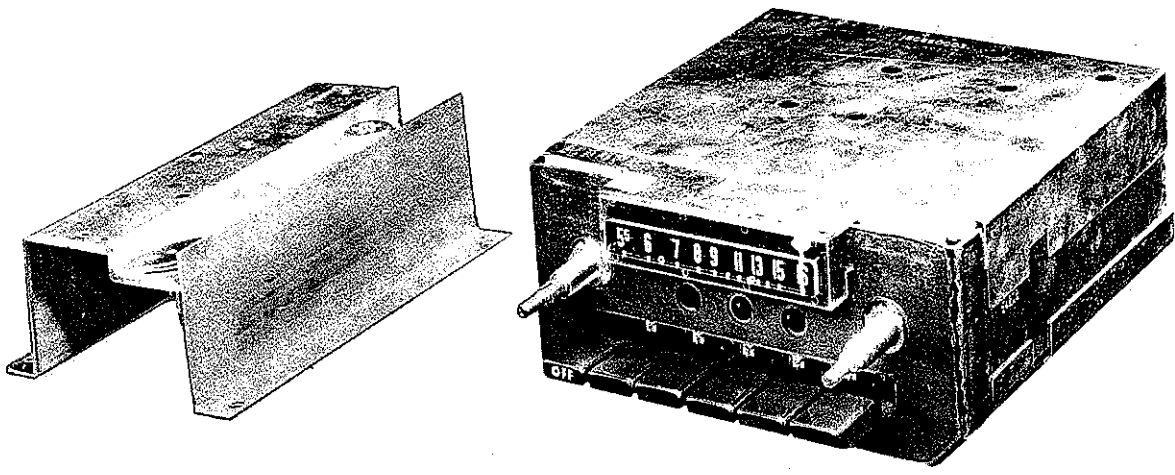




FORD  
MODEL 84MS (FEV-18805-F)



|                        |  |                                 |
|------------------------|--|---------------------------------|
| TRADE NAME             | Ford Model 84MS (FEV-18805-F) For 1958 Ford Thunderbird Automobiles                    |                                 |
| MANUFACTURER           | Motorola Inc., 4545 W. Augusta Blvd., Chicago 51, Illinois                             |                                 |
| TYPE SET               | Battery Operated Custom Built AM Automobile Receiver with Transistorized Output        |                                 |
| TUBES (Four)           | Types 12AF6 RF Amplifier, 12AD6 Converter, 12BL6 IF Amplifier, 12DL8 Det. -AVC-AF Amp. |                                 |
| POWER SUPPLY           | 12 Volt Storage Battery  | RATING 1.8 Amp. @ 12.6 Volts DC |
| TUNING RANGE—BROADCAST | 535KC to 1610KC  |                                 |

### ALIGNMENT INSTRUCTIONS

| ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT   |  |                            |                                  |                   |                |  |
|---|--|----------------------------|----------------------------------|-------------------|----------------|--|
| Top and bottom covers should be in place.<br>Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.       |  |                            |                                  |                   |                |  |
| DUMMY ANTENNA   | SIGNAL GENERATOR COUPLING  | SIGNAL GENERATOR FREQUENCY | RADIO DIAL SETTING               | OUTPUT METER      | ADJUST         | REMARKS  |
| 1. .lmfd  | High side to antenna receptacle. Low side to chassis.  | 262.5KC (400% Mod)         | High Freq. End Stop              | Across Voice Coil | A1, A2, A3, A4 | Adjust for maximum output.                                     |
| 2. Fig. 1   | Thru dummy to antenna receptacle.  | 1610KC                     | "                                | "                 | A5, A6, A7     | "  |
| Steps 3 and 4 are not necessary unless tuner has been tampered with or associated components have been replaced. If necessary, back tuning cores (A8, A9, A10) 1/4" out of coils. (Alignment tool Motorola #86A76278 may be used). Repeat step 2. |  |                            |                                  |                   |                |  |
| 3. Fig. 1   | Thru dummy to antenna receptacle.  | 1180KC                     | 1 9/64" from High Freq. End Stop | Across Voice Coil | A8, A9, A10    | Adjust for maximum output.                                     |
| 4. "  | "  | 1610KC                     | High Freq. End Stop              | "                 | A5, A6, A7     | Adjust for maximum output. Repeat steps 3 and 4. Cement cores. |
| 5. "  | "  | 600KC @ 5 microvolts       | Tune for 600KC signal            | "                 | R3             | Adjust for 1.79 volts output.                                  |
| 6.  | With radio installed in car and antenna fully extended, tune in a weak station near 1200KC and adjust A7 for maximum output. |                            |                                  |                   |                |  |

**PUSHBUTTON ADJUSTMENT**

1. Pull pushbutton out.
2. Tune manually to desired station.
3. Press pushbutton in firmly.
4. Repeat for remaining buttons.

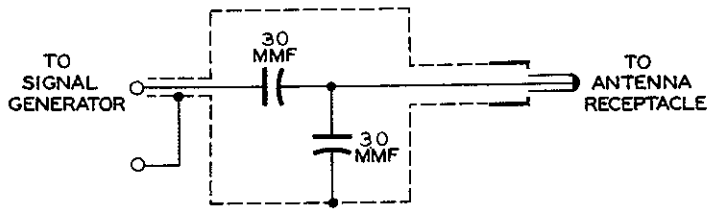


FIG. 1

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of H592

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FORD  
MODEL 84MS (FEV-18805-F)

# PARTS LIST AND DESCRIPTIONS TUBES ( GENERAL ELECTRIC, SYLVANIA )

| ITEM No. | USE                    | TYPE  | NOTES | ITEM No. | USE                           | TYPE  | NOTES |
|----------|------------------------|-------|-------|----------|-------------------------------|-------|-------|
| V1       | RF Amplifier Converter | 12A76 |       | V3       | IF Amplifier Det.-AFC-AF Amp. | 12BL6 |       |
| V2       |                        | 12AD6 |       | V4       |                               | 12DL8 |       |

## TRANSISTORS

| ITEM No. | ORIG. TYPE | USE    | REPLACEMENT DATA |              |                   |                   | NOTES |
|----------|------------|--------|------------------|--------------|-------------------|-------------------|-------|
|          |            |        | CBS PART No.     | RCA PART No. | PAYTHEON PART No. | SYLVANIA PART No. |       |
| X1       | 2N176      | Output | CBS-2N155        | 2N176        |                   | 2N176             |       |
| X2       | 2N176      | Output | CBS-2N155        | 2N176        |                   | 2N176             |       |

## ELECTROLYTIC CAPACITORS

| ITEM No. | RATING CAP. VOLT. | USE | REPLACEMENT DATA  |                  |                           |                  | SPRAGUE PART No. |                  |                  |
|----------|-------------------|-----|-------------------|------------------|---------------------------|------------------|------------------|------------------|------------------|
|          |                   |     | MOTOROLA PART No. | AEROVOX PART No. | CORNELL DUBILIER PART No. | MALLORY PART No. |                  | PYRAMID PART No. | SANGAMO PART No. |
| C1A      | 100 16            |     | 23B560487         | AFH3-00-90       |                           |                  |                  |                  |                  |
| C B      | 500 16            |     |                   |                  |                           | WP300.51         |                  |                  | R2664 *          |
| C C      | 100 16            |     |                   |                  |                           |                  |                  |                  |                  |

① In some versions CID is 400mfd (C1 Part #23B542329).  
\* Non-catalog item.

## FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

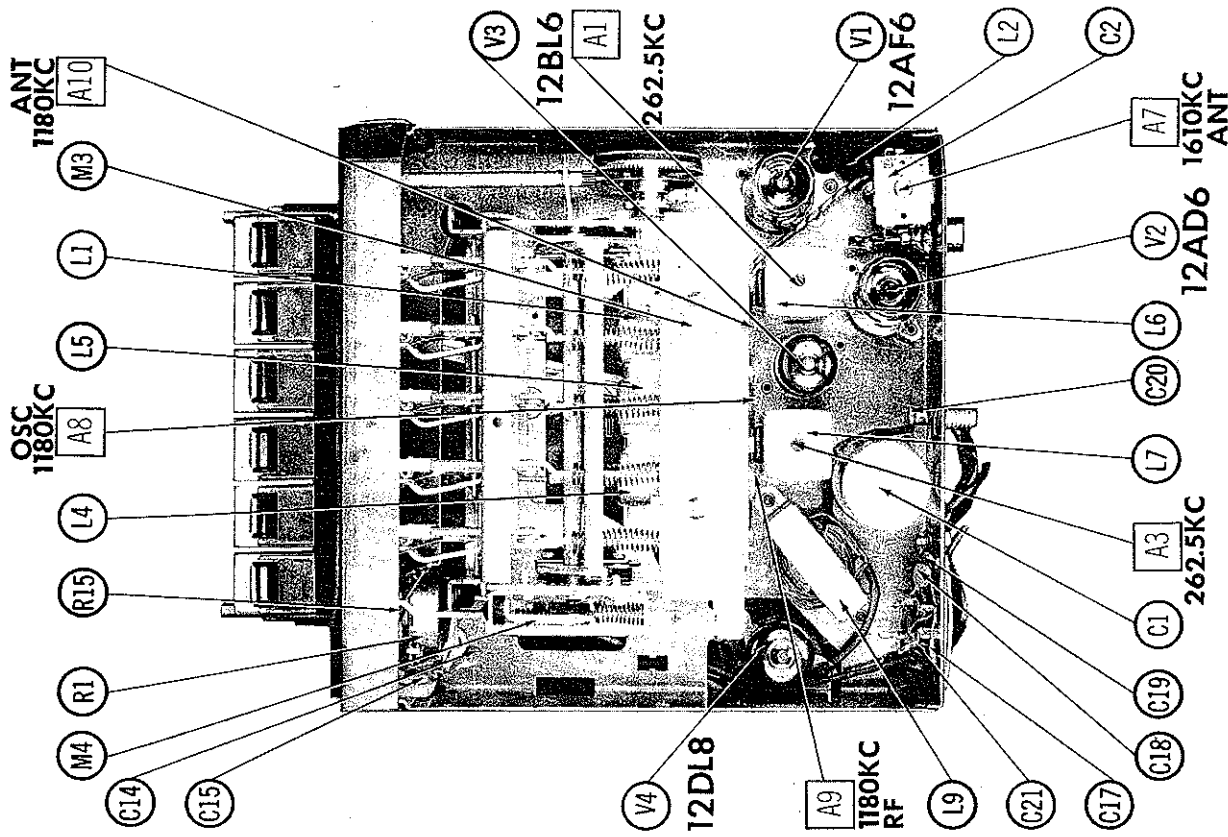
| ITEM No. | RATING CAP. VOLT. | USE | REPLACEMENT DATA  |                  |                    |                           |                  |                  | NOTES    |
|----------|-------------------|-----|-------------------|------------------|--------------------|---------------------------|------------------|------------------|----------|
|          |                   |     | MOTOROLA PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL DUBILIER PART No. | MALLORY PART No. | SPRAGUE PART No. |          |
| C2       | 20-180            |     | 20B560719         | N750-DI 150      | DTN-150            | C10715U                   | GEM-201          | 5TCU-T15         | N750 10% |
| C3       | 150               |     | 21R121228         | N750-DI 22       | DTN-22             | C10715U                   |                  | 5TCU-Q22         | N750 10% |
| C4       | 22                | 200 | 21R20659          | P288N-1          | DF-104             | CUB2P1                    |                  | 2TM-P1           |          |
| C5       | .1                |     | 8R121573          |                  |                    |                           |                  |                  |          |
| C6       | 75-380            |     | 20K51136          | N750-DI 47       | DTN-47             | C10Q47U                   |                  | 5TCU-Q47         | N750 10% |
| C7       | 47                |     | 21R14207          | N750-DI 47       | DTN-47             | C10Q47U                   |                  | 5TCU-Q47         | N750 10% |
| C8       | 47                |     | 21R14207          |                  |                    |                           |                  |                  | N750 5%  |
| C9       | 47                |     | 21R25763          |                  |                    |                           |                  |                  |          |
| C10      | 400-520           |     | 20K560628         |                  |                    |                           |                  |                  |          |
| C11      | 10000             |     | 21R482726         | BPD-01           | DD-103             | BYA051                    |                  | 5HK-S1           | N750 10% |
| C12      | 100               |     | 21R40036          | N750-DI 100      | DTN-100            | C1071U                    |                  | 5TCU-T1          | N750 10% |
| C13      | 100               |     | 21R40036          | N750-DI 100      | DTN-100            | C1071U                    |                  | 5TCU-T1          | N750 10% |
| C14      | 1000              |     | 21R40127          | BPD-001          | DD-102             | BYA6D1                    |                  | 5HK-D1           |          |
| C15      | 1000              |     | 21R40127          | BPD-001          | DD-102             | BYA6D1                    |                  | 5HK-D1           |          |
| C16      | 5000              |     | 21R15312          | BPD-005          | DD-502             | BYA0D5                    |                  | 5HK-D5           |          |
| C17      | 220               |     | 21R40115          | BPD-00022        | DD-221             | L10T22                    |                  | 5GA-T22          |          |
| C18      | 220               |     | 21R40115          | BPD-00022        | DD-221             | L10T22                    |                  | 5GA-T22          |          |
| C19      | 220               |     | 21R40115          | BPD-00022        | DD-221             | L10T22                    |                  | 5GA-T22          |          |
| C20      | 220               |     | 21A580232         |                  |                    |                           |                  |                  |          |
| C21      | 220               |     | 21A580232         |                  |                    |                           |                  |                  |          |

## CONTROLS

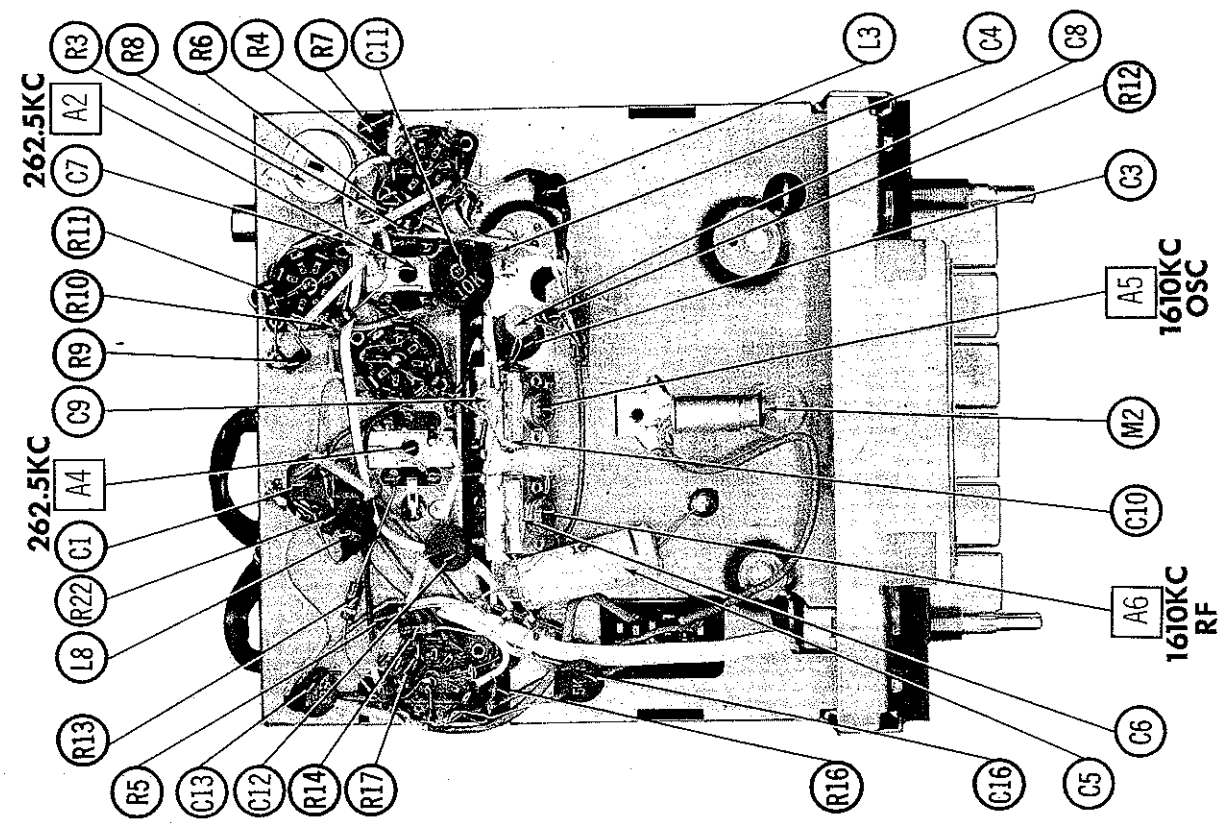
| ITEM No. | RATING RESIST. ANCE | WATTS | REPLACEMENT DATA  |                    |                    |              | INSTALLATION NOTES |                  |
|----------|---------------------|-------|-------------------|--------------------|--------------------|--------------|--------------------|------------------|
|          |                     |       | MOTOROLA PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | IBC PART No. |                    | MALLORY PART No. |
| R1A      | 4meg                |       |                   |                    |                    |              |                    |                  |
| R B      | 1meg                |       | 18B560007         |                    |                    |              |                    |                  |
| R2       | 4000                |       | 18B541877         |                    |                    |              |                    |                  |
| R3       | 1000Ω               |       | 18K732740         |                    |                    |              |                    |                  |

\* "STA-LOC" Equivalent: FF481, C61187, RUI16T55, 51687.

# CHASSIS—TOP VIEW



# CHASSIS—BOTTOM VIEW



# PARTS LIST AND DESCRIPTIONS (Continued)

## RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

| ITEM No. | RATING |      | MOTOROLA PART No. | NOTES | MOTOROLA PART No. | NOTES |
|----------|--------|------|-------------------|-------|-------------------|-------|
|          | OHMS   | WATT |                   |       |                   |       |
| R4       | 3.3meg |      | 6K119407          |       | 6R476065          |       |
| R5       | 1.5meg |      | 6R8460            |       | 6K127641          |       |
| R6       | 8.2meg |      | 6R5585            |       | 6K119408          |       |
| R7       | 15000  |      | 6R6038            |       | 6R118245          |       |
| R8       | 47000  |      | 6K121847          |       | 17K542316         |       |
| R9       | 3.3meg |      | 6K124484          |       | 6K542314          |       |
| R10      | 3.3meg |      | 6K121278          |       | 17K542316         |       |
| R11      | 53K    |      | 6K121277          |       | 6K542314          |       |
| R12      | 47K    |      | 6K121704          |       | 6R118245          |       |
| R13      |        |      | 6K121687          |       |                   |       |

## COILS (RF-IF)

| ITEM No. | USE          | REPLACEMENT DATA  |                  |                 | NOTES  |
|----------|--------------|-------------------|------------------|-----------------|--|
|          |              | MOTOROLA PART No. | Meister PART No. | Miller PART No. |  |
| L1       | Ant. Coil    | 24C535458         |                  |                 |  |
| L2       | RF Choke     | 24A538910         |                  |                 |  |
| L3       | IF Trap Coil | 24K580753         | TV-193           | 6110            | Note 1<br>Includes 15mmf Cap.<br>63 Microhenries |
| L4       | RF Coil      | 24C535459         |                  |                 | Note 1   |
| L5       | Coac. Coil   | 24C535456         |                  |                 | Note 1   |
| L6       | Input IF     | 24K560419         | 16-6752          | 12-HI           | RF-3   |
| L7       | Output IF    | 24B542371         | 19-3180          | 6180            | VP-5   |
| L8       | RF Choke     | 24C533914         |                  |                 | 180 Microhenries                                 |

Note 1. Part of M3.

## FILTER CHOKE

| ITEM No. | RATINGS            |                  | REPLACEMENT DATA  |                      |                |                  |                |
|----------|--------------------|------------------|-------------------|----------------------|----------------|------------------|----------------|
|          | CURRENT (Measured) | DC RES. (1000 Ω) | MOTOROLA PART No. | Hollidorsen PART No. | Merit PART No. | Stencor PART No. | Triad PART No. |
| L9       | 1.8A               | .3Ω              | .004 Hx.          | 25K350710            |                |                  |                |

## TRANSFORMER (INTERSTAGE)

| ITEM No. | Turns Ratio |       | REPLACEMENT DATA  |                      |                |                  | NOTES |
|----------|-------------|-------|-------------------|----------------------|----------------|------------------|-------|
|          | PR1         | SEC.1 | MOTOROLA PART No. | Hollidorsen PART No. | Merit PART No. | Stencor PART No. |       |
|          | 5.5:1       | SEC.2 | 25K542303         |                      |                |                  |       |
| T1       | 5.5:1       | SEC.2 |                   |                      |                |                  |       |

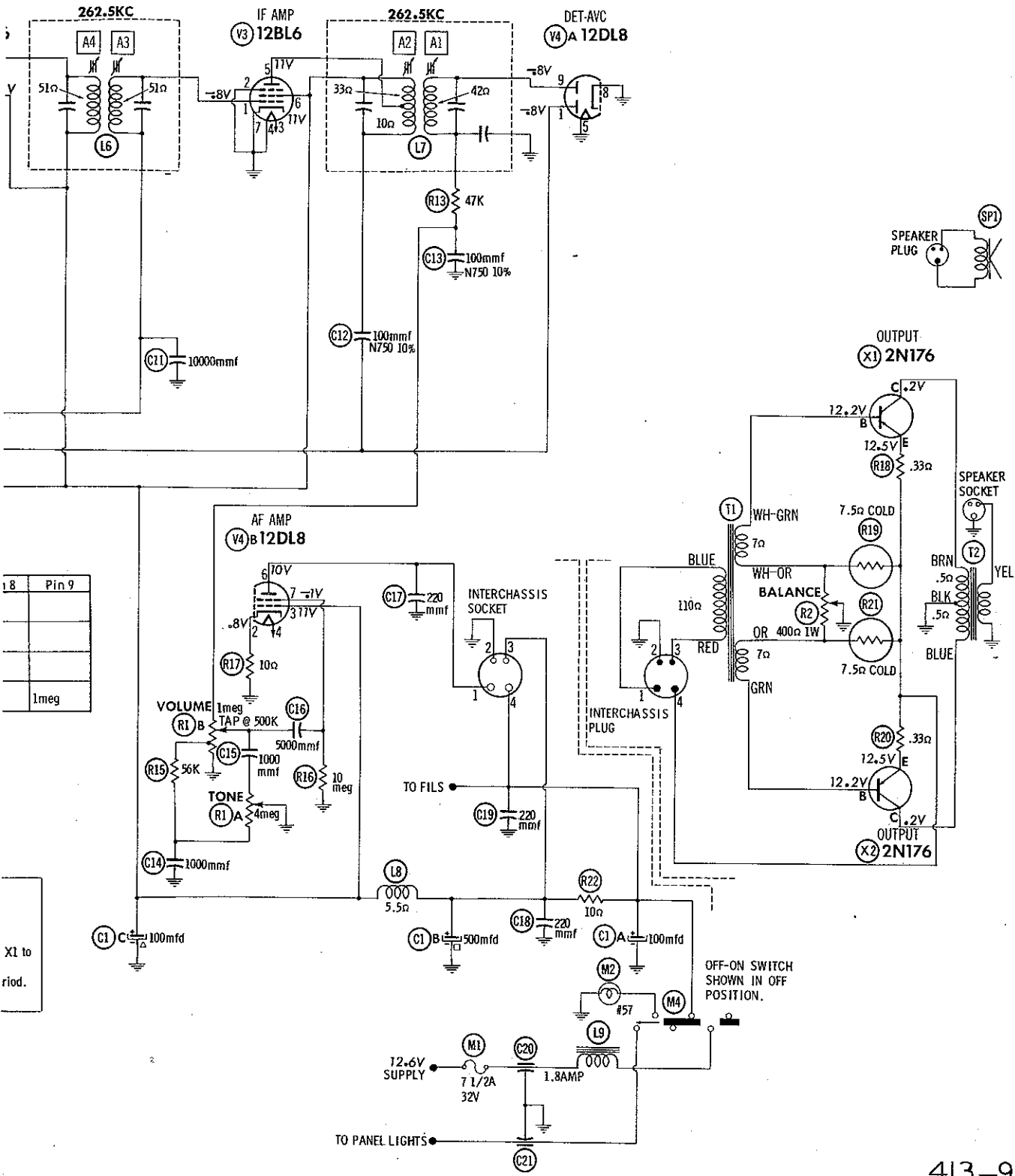
## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE |      | REPLACEMENT DATA  |                      |                |                  | NOTES |
|----------|-----------|------|-------------------|----------------------|----------------|------------------|-------|
|          | PR1       | SEC. | MOTOROLA PART No. | Hollidorsen PART No. | Merit PART No. | Stencor PART No. |       |
|          | 47Ω       | 3-4Ω | 25K542313         |                      |                |                  |       |
| T2       | 47Ω       | 3-4Ω |                   |                      |                |                  |       |

## SPEAKER

| ITEM No. | TYPE            | REPLACEMENT DATA  |               | NOTES |
|----------|-----------------|-------------------|---------------|-------|
|          |                 | MOTOROLA PART No. | QUAM PART No. |       |
| SP1      | 6" x 8" PM 3-4Ω | 80D542405         |               |       |

# Right Portion



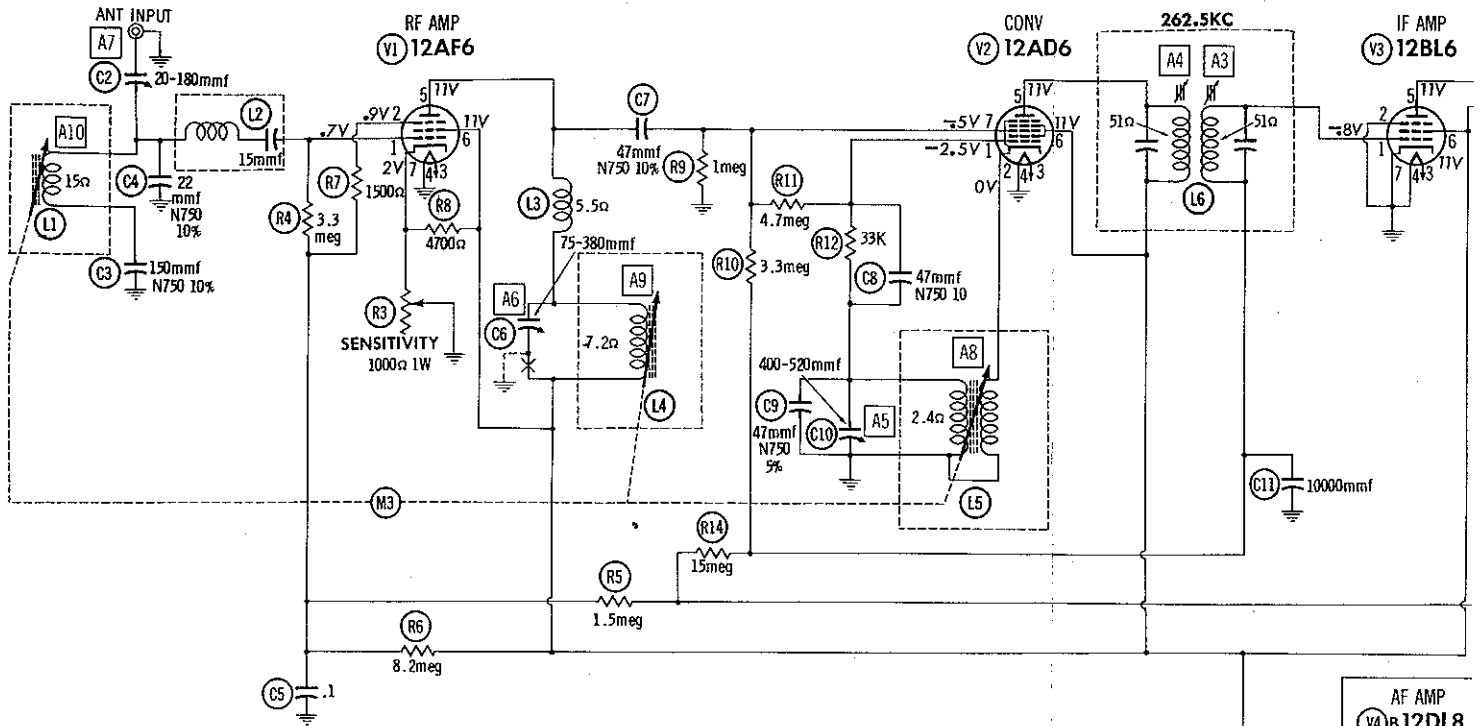
|    |       |
|----|-------|
| 18 | Pin 9 |
|    |       |
|    |       |
|    |       |
|    | 1meg  |

X1 to  
riod.

OFF-ON SWITCH  
SHOWN IN OFF  
POSITION.

Left Portion

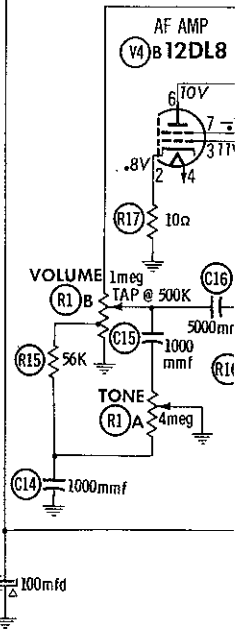
Note overlap



RESISTANCE READINGS

| ITEM | TUBE  | Pin 1  | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| V1   | 12AF6 | 9meg   | 9meg  | 1.2Ω  | 0Ω    | †28Ω  | †15Ω  | 550Ω  |       |       |
| V2   | 12AD6 | 33K    | .6Ω   | 1.2Ω  | 0Ω    | †66Ω  | †15Ω  | 730K  |       |       |
| V3   | 12BL6 | 3.2meg | 0Ω    | 1.2Ω  | 0Ω    | †48Ω  | †15Ω  | 0Ω    |       |       |
| V4   | 12DL8 | 5.3meg | 10Ω   | †15Ω  | 1.2Ω  | 0Ω    | †120Ω | 10meg | 0Ω    | 1meg  |

TRANSISTOR CIRCUIT RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.  
 † MEASURED FROM POSITIVE TERMINAL OF CIA.



BALANCE ADJUSTMENT (R2)

- After replacing a transistor, the bias should be checked.
1. Set R2 to its mid-range.
  2. Connect an accurate low range DC VTVM from the collector of X1 to the collector of X2.
  3. Apply power to the receiver and allow a 15 minute warm-up period.
  4. Adjust R2 for a zero meter reading.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 12.6 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

### TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE   | REPLACEMENT DATA  |                    |                  |              |                  |                      | NOTES |
|----------|-------------|-------------------|--------------------|------------------|--------------|------------------|----------------------|-------|
|          |             | MOTOROLA PART No. | Helderson PART No. | Merritt PART No. | Ram PART No. | Stoncor PART No. | Thornderson PART No. |       |
| T2       | 41Ω 3-4Ω CT | 25K542313         |                    |                  |              |                  |                      |       |

### SPEAKER

| ITEM No. | TYPE       | REPLACEMENT DATA  |                |            | NOTES |
|----------|------------|-------------------|----------------|------------|-------|
|          |            | MOTOROLA PART No. | GUAN. PART No. | V. C. IMP. |       |
| S21      | 6" x 9" PM | 3-4Ω              | 50DS42405      |            |       |

## PARTS LIST AND DESCRIPTIONS (Continued)

### FUSES

| ITEM No. | TYPE | RATING   | REPLACEMENT DATA  |                     |               |        |
|----------|------|----------|-------------------|---------------------|---------------|--------|
|          |      |          | MOTOROLA PART No. | LITTELFUSE PART No. | BUSS PART No. | HOLDER |
| M1       |      | 7.5A 32V | 68R123246         | 9K581110            |               |        |

### MISCELLANEOUS

| ITEM No. | PART NAME   | MOTOROLA PART No. | NOTES  |
|----------|-------------|-------------------|--|
| M2       | Lamp        | 68P535080         | #57  |
| M3       | Xmer Switch | 77DS00028         | (A1-229) Complete, Less Manual Tuning Shaft. |
| M4       |             | 40A580051         | On-Off, Slide Type                           |

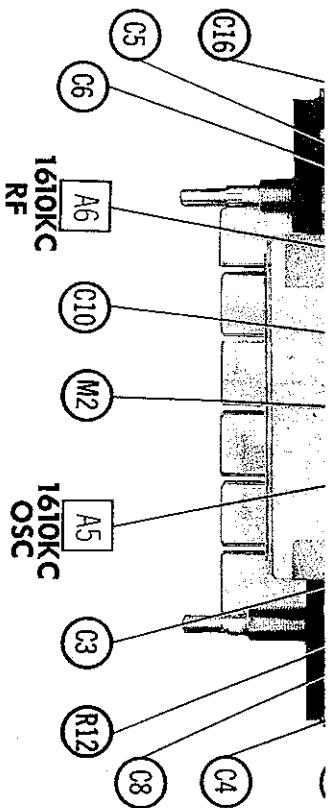
### CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

| NAME       | PART NO.  | DESCRIPTION               |
|------------|-----------|---------------------------|
| Knob       | 38B539472 | Volume & Tuning           |
| Knob       | 38B580028 | Disc, Tone & Dimmy        |
| Pushbutton | 38B580075 | Station Selector (3 used) |
| Pushbutton | 38K580075 | Off                       |
| Dial Scale | 38B580051 |                           |

### WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 9830 (Solid) Available in Ten Colors  
 Shielded Hook-up Wire ..... Use BELDEN No. 8824 (Stranded) Available in Ten Colors  
 Bonding Strap ..... Use BELDEN No. 9681



### POWER CHASSIS

