

DUMONT

First with the Finest in Television

ALIGNMENT PROCEDURE

for

TELESET MODEL

RA-109A

Winslow

Hanover

Sherbrooke

ALLEN B. DU MONT LABORATORIES, INC.

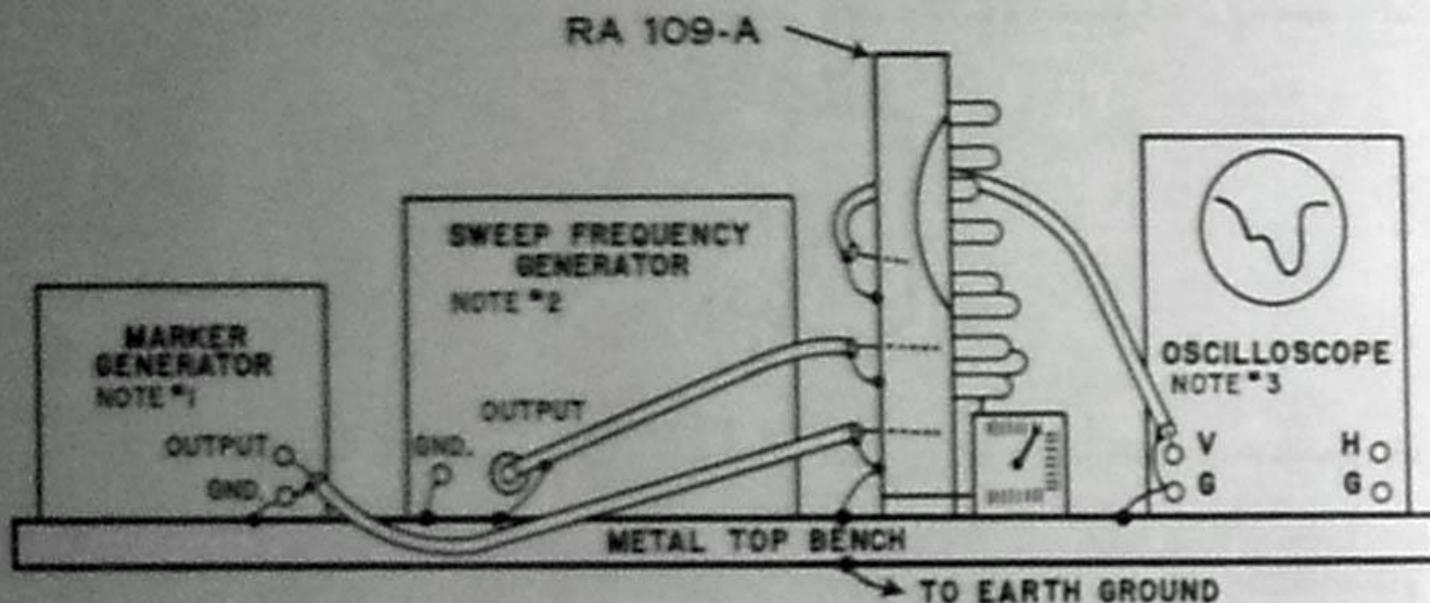
TELESET SERVICE CONTROL DEPT.

MARKET STREET, EAST PATERSON, NEW JERSEY

NOT TO BE REPRODUCED WITHOUT THE CON-
SENT OF ALLEN B. DU MONT LABORATORIES, INC.

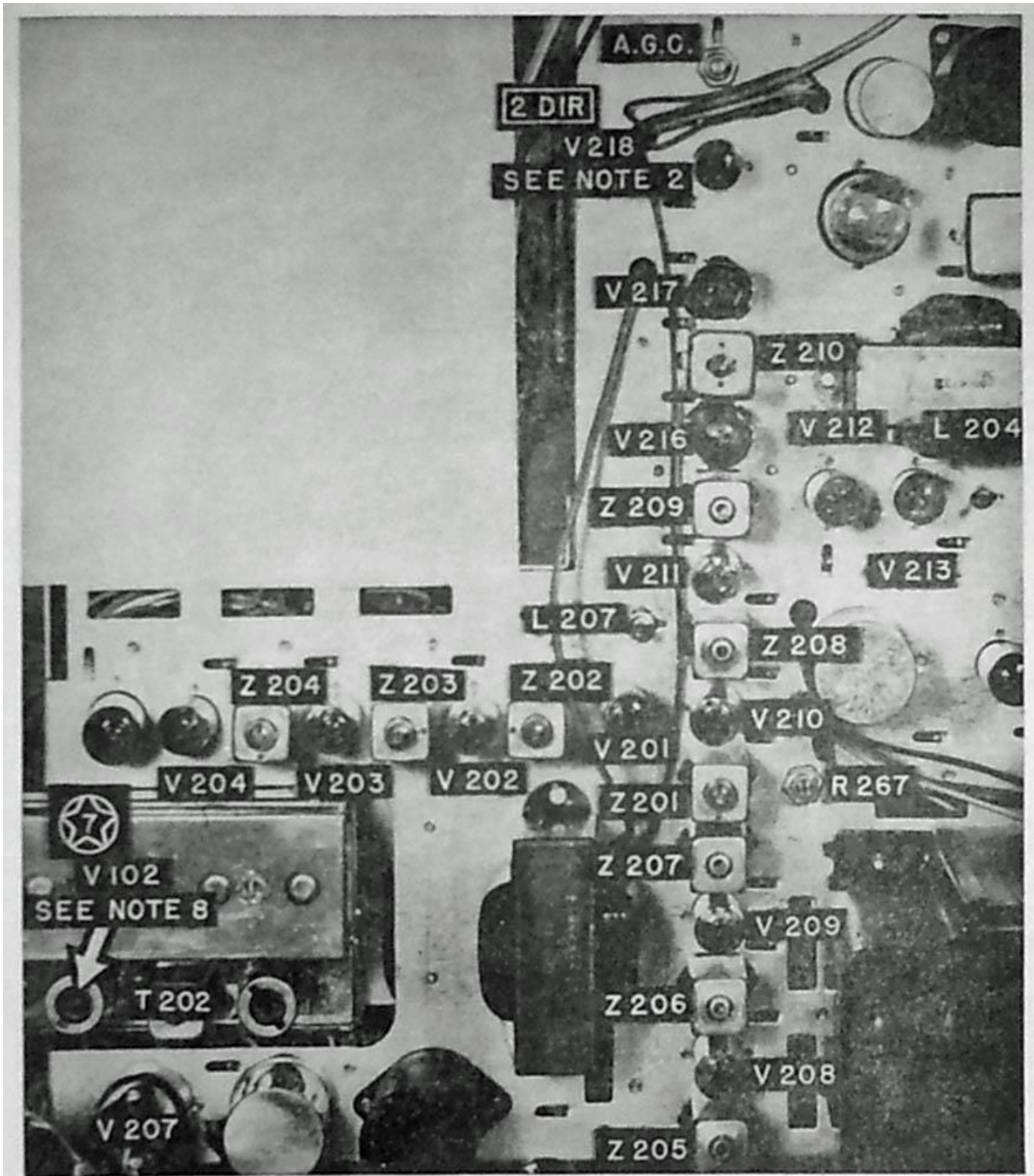
ALIGNMENT SET-UP

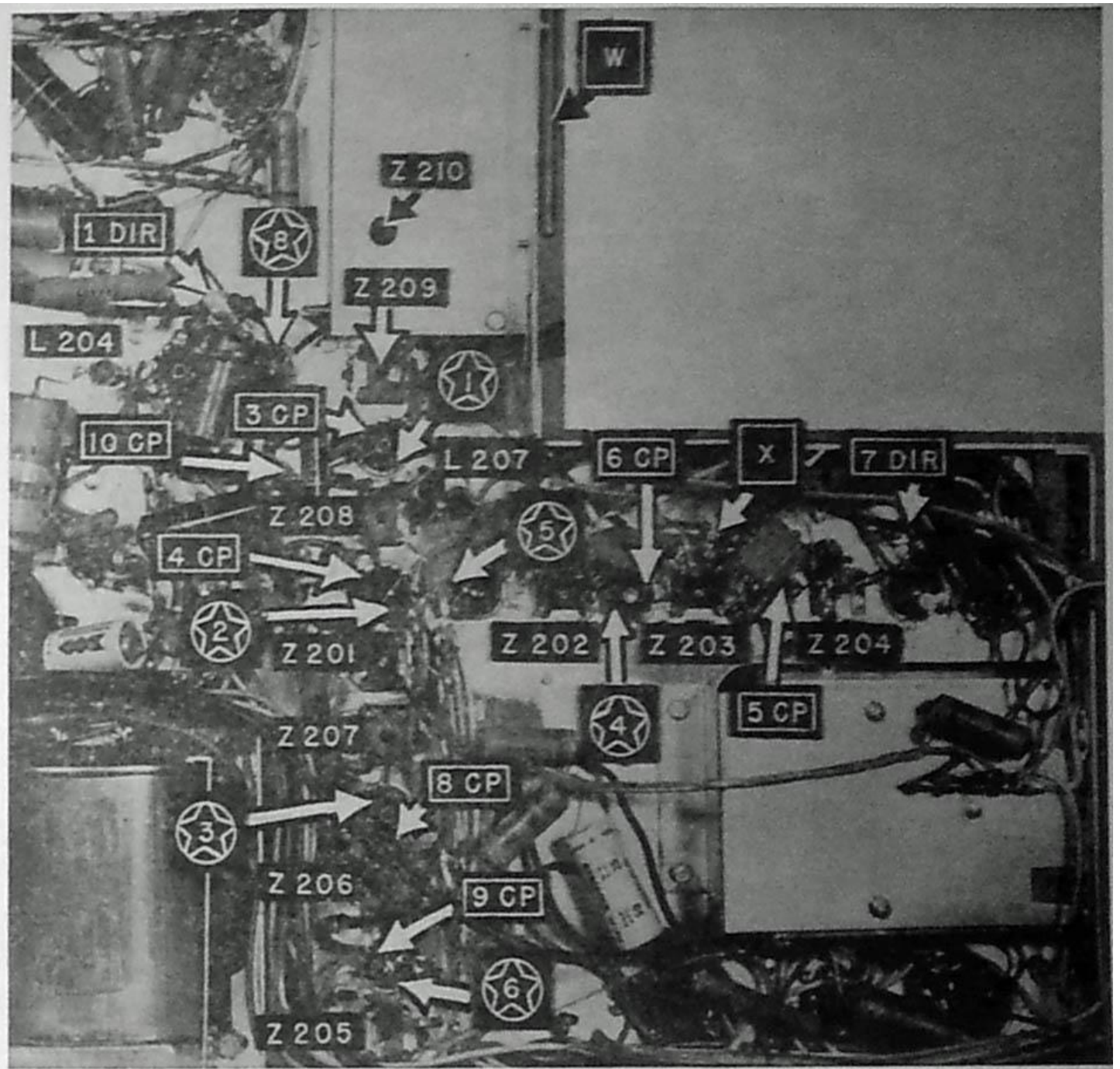
1. Keep all coax cables as short and as well shielded as possible.
2. Ground metal bench to a good earth ground.
3. To test set-up feed signal into grid of mixer thru a 100 mmf condenser. If placing hand on any chassis or adding additional grounds at any point affects waveform or if Teleset has a tendency to oscillate, grounding must be added until these effects disappear.

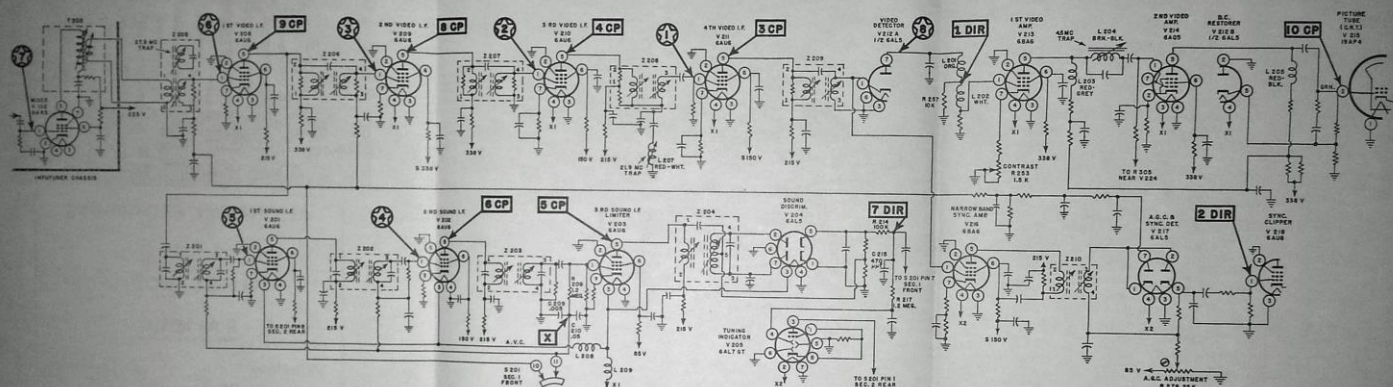


NOTES:

1. Unmodulated and amplitude modulated RF should cover 20 to 30 mc range. Also 4.5 mc. Not necessary if marker is built into sweep frequency generator.
2. Should have center frequency range from 20 to 30 mc. Sweep should be adjustable up to 6 mc at least.
3. We recommend use of internal saw-tooth sweep. Waveforms shown were taken using this sweep. External sweep from sweep frequency generator may be used if preferred.







PRELIMINARY STEPS

CAUTION: IT IS IMPORTANT THAT ALL NOTES BE READ IN CONJUNCTION WITH ALIGNMENT.

The following preliminary steps should be followed:

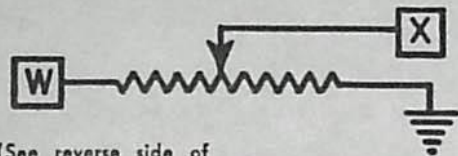
Remove 6W4 (V232 and V233) damper tubes, 6A34 (V103) oscillator, 6A85 (V102) mixer, 6V6 GT (V202), AF output tube (1) and 6A06 (V218) sync clipper.

Adjust AGC control (R278) fully counter-clockwise.

Turn selector switch to tele. position.

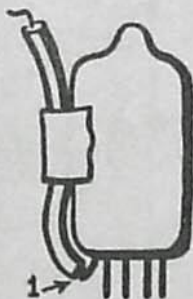
ALIGNMENT NOTES

1. 6V6 GT (V207) may be left in position only if speaker is connected, however, it is advisable to remove this too.
2. Insert 6AU6 adapter at V218. This is a 6AU6 with pins 3 and 4 clipped off and an extension attached to pin 1. (Pin 1 is not clipped.)
3. Use 100K potentiometer for bias as shown below:

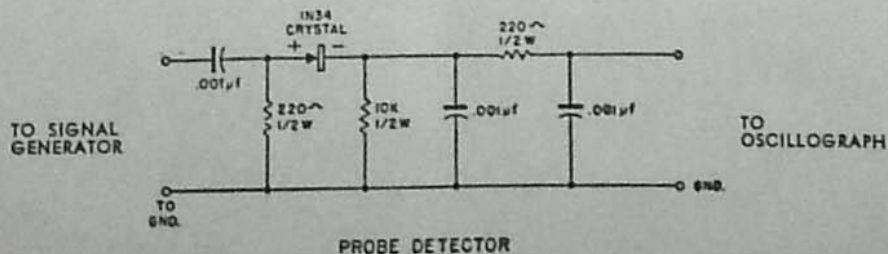


(See reverse side of sheet for location of "W")




















4. If the sweep generator has no internal marker, a signal generator may be connected to the output cable of the sweep generator through a 100 mmf condenser to act as a marker generator.
5. Du Mont Telesets are designed to receive television and high fidelity FM and must, therefore, be aligned with full FM bandwidth requirements.
6. The use of two (2) aligning tools simultaneously will decrease the difficulties to be encountered.
7. The bottom slug of the transformer is available through the hole in the shield on the bottom of the chassis.
8. Insert 6AK5 adapter at V102. This adapter is a 6AK5 with pin 1 clipped off and an extension attached to the remainder of pin 1 as shown.



9. The bandwidth of the 1st stage of video IF is controlled by a coupling loop in the mixer transformer, T202. This is adjusted and sealed in position in the factory and should not be touched. However, in case of replacement of the tuner, it should be adjusted for the curve shown in step No. 12 of the Alignment Table. Steps No. 11 and 12 of the Alignment Table MAY have to be performed in order to obtain the proper curve. After adjustment, fasten the coupling loop in T202 with Miracle Adhesive C2M55, which is obtainable from Du Mont Spare Parts Sales Department.
10. Maximum possible output of sweep generator should be used, checking for overload.
11. Connect sweep generator to set through 270 mmf condenser.
12. Reference is made in the Alignment Table to the use of a crystal probe. This device is merely a crystal rectifier with the necessary filter.



ALIGNMENT TABLE

Step No.	Connect Sweep Gen. (Notes 4 & 10)	Marker Gen. Freq. mc.	Sweep Gen. Center Freq. mc.	Connect Oscillograph To:	Adjust	Remarks
1	Pin 1 V211 	21.9, 22.4 22.9, 25.65 26.4	24 mc. 8 mc. deviation min.	Junction of L201, L202, R257 direct 	Z209	Adjust for curve shown
2	As Above	25.65, 26.4	24 mc. 2 mc. dev. min.	Pin 1 V218 direct Note 2 	Z210 Note 7	Adjust for curve shown
3	Pin 1 V210 	21.9 AM mod.	Not used	Pin 5 V211 thru crystal probe 	L207	Adjust for min. scope indication
4	As Above	22.4, 22.9 25.65, 26.4	24 mc. 8 mc. dev. min.	As above	Z208	Adjust for curve shown
5	Pin 1 V209 	21.9, 22.4 22.9, 25.65 26.4	As above	Pin 5 V210 thru crystal probe 	Z207	Adjust for curve shown
6	Pin 1 V202 	22.0 21.9 21.8	21.9 mc. 1 mc. dev. min.	Pin 5 V203 thru crystal probe 	Z203	Adjust for curve shown. Selector switch must be in FM position
7	Pin 1 V201 Note 11 	22.0 21.9 21.8	As above	Pin 5 V202 thru crystal probe 	Z202	Connect bias (note 3) to point X on schematic. Adjust bias to prevent overload. Adjust for curve shown.
8	Pin 1 V208 Note 11 	22.0 21.9 21.8	As above	Pin 5 V203 thru crystal probe 	Z201	Adjust for curve shown. Adjust bias to prevent overload.
9	As Above	22.0 21.9 21.8	As above	Junction of R214, R217, C215, Direct 	Z204	Adjust for curve shown. Adjust bias to give reasonable deflection on scope.
10	As Above	21.9, 22.4 22.9, 25.65 26.4	24 mc. 8 mc. dev. min.	Pin 5 V209 thru crystal probe 	Z206	Disconnect bias. Turn selector switch to tele. position. Adjust for curve shown.
11	Pin 1 V102 Note 8 	27.9 AM mod.	Not used	Pin 5 V208 thru crystal probe 	Top Z205	Adjust for min. scope indication
12	As Above	21.9, 22.4 22.9, 25.65 26.4	24 mc. 8 mc. dev. min.	As above	Bottom of Z205 Top of T202	Adjust for curve shown Note 9
13	Pin 7 V212 	4.5 mc. AM mod.	Not used	CRT grid thru crystal probe 	L204	Adjust for min. scope indication
14	Remove V217 and adjust AGC potentiometer, R278, so that VTVM on pin 2 of V217 reads 16 volts with no signal.					
15	Replace original tubes.					

NOTE: CP indicates that oscillograph is connected through crystal probe.
DIR indicates that oscillograph is connected directly.
Refer to top and bottom photos on reverse side of this sheet for reference points.

