547 CALIBRATION PROCEDURE

1. Check power supplies — Adjust -150, R616

POWER SUPPLY	TOLARANCE	RIPPLE
-150	-148.5 to 151.5	10mv
+100	97 to 103	15mv
+225	218 to 232	10mv
+350	339 to 361	25mv

2. Adjust high voltage -R840 — -1850v at test point 2% regulation

3. Adjust calibrator -R943 — +100v at cal out jack. Duty cycle +45 to +55 at cal out jack when set to 100v. Check other ranges for amplitude.

4. Trace rotation — Center or astig. pot on front panel

5. Geometry -R861

6. Vert DC Bal -R1004 — Center trace with test load in common mode

7. Vert Gain -R1017 — 4cm with 100v in to ~~TUT~~ TEST LOAD gain set position

8. Check for operation:

HORIZ DISPLAY	~~TUT~~ TEST LOAD	CHECK
A	Alt	Two traces-A time/cm
B	Alt	Two traces-B time/cm
A alt B	Alt	Two traces-one A, one B, trace separation controls A
A	Chopped	Chopped Blanking
B	Chopped	Chopped Blanking
A alt B	Chopped	Two waveforms-trace separation controls A
B inten by A	Alt	Two traces with intens zones
A Dly'd	Alt	Two traces
B intens by A A Dly'd	Alt	Four traces-two with intens zones-Trace separation controls other two.

9. Vert H.F. response (3-4cm of display)
L1157, C1029, C1076, C1105, C1106, C1126, R1076, R1106 -- Adjust for optimum response

10. Check Risetime — 7n sec or less

11. "A" Trigger — Ground junction of R217 (3.3m) and R219 (1m) at rear of trig level control.

Adjust R225 (trigger level centering) and R245 (trigger sens) so scope barely triggers on 50mv of cal waveform externally.
Adjust R209 (A int trig DC level) so sweep fires at center line in internal DC.

12. "B" trigger — Same as "A"

13. Check A and B single sweep

14. Adjust Swp/mag regis -R569 — Use B time base

15. Adjust X10 cal -R544

16. Adjust X1 cal -R566 — Check mag neon and other mag ranges.

17. Adjust B swp length -R125
Located on "B" gate — 10.5 cm

18. Check B variable and neon — 2.5 : 1 ratio min.

19. Check A variable and neon — 2.5 : 1 ratio min.

20. Adjust delay start (R418) and delay stop (R415) use 1msec and 100µsec markers, B intens by A-Alt-A Dly'd.

21. Check delay jitter

22. Adjust C186-"B" unblanking comp. Use A alt B, 50 µsec/cm. Adjust C186 so leading edge of B is same intensity as A. — LOCATED ON UPPER DECK IN SWEEP SWITCHING AREA.

23. Adjust C90 C — Use 10usec "B" swp speed .1µsec "A" swp speed, B intens by A-alt-A dly'd 10µsec marks.

24. Adjust C90 B — Use 1µsec "B" swp speed, .1µsec "A" swp speed, B intens-alt-a dly'd, 1 µsec marks.

COMPANY CONFIDENTIAL

25. Ajust C90 A and C99 (located on "B" gate) USE B SWEEP ONLY

    Use .5 µsec marks at .5 µsec/cm and adjust C90 A for timing.
    .1 µsec marks adjust C99 .1 µsec/cm for timing-repeat-interaction.

26. Check all "B" speeds for proper timing-1%
    Use delay time multiplier

27. Adjust C572 and C582

    Use 50mc sine wave--.1 usec X10-B time base
    Adjust for max center sweep expansion.

28. Adjust C591 for best center-sweep linearity

29. Adjust C576 and C586 for center sweep timing

30. Adjust C557 H (X10 mag compensation) for
    best start sweep timing.

31. Adjust C557 F (X5 mag) and C557 D (X2 mag) for best timing.

32. Adjust A swp DC level -R470

    Use 100 usec and 1 msec time marker, A Alt B, 1 msec/cm, 10x mag, trigger both time bases, superimpose start of traces horizontally with A swp DC level -R470

33. Adjust R290 Y (A swp Cal) so A and B coincide fully.

34. Adjust A swp length -R325- for 10.5 cm
    (same as B)

35.

ADJUST	SWP SPEED	~~GEN~~ 184	CHECK
C290 C	10 µsec	10 µsec	1 mark/div
C290 B	1 µsec	1 µsec	1 mark/div
C290 A	.5 µsec	.5 ~~mc~~ µsec	~~2½ cycles/cm~~ 1 MARK/DIV
C299	.1 µsec	~~10 mc~~ .1 µsec	1 ~~cycle/cm~~ MARK/DIV

36. Check timing A swp all ranges ± 2% DO NOT USE AUTO mode below 50NS/cm dummy

37. Adjust ext horiz DC Bal -R519

38. Check ext horiz grid current

39. Adjust C524 Use X1
    Adjust for optimum response

40. Adjust C503 C (on horiz display switch)
    Use X10 ext horiz and adjust for optimum response

41. Check ext horiz for:
    a) X10 atten accuracy ± 3%
    b) V_{AR} 10-1 for operation AND NOISE

42. Check
    a) Position neons
    b) Front panel wave forms → { +gate B 20v sq. wave; +gate A 20v sq. wave; Dly'd trig-10v spikes, sweep A-100v sawtooth }
    c) Vert sig out -.4v/cm