NOTE REGARDING FACTORY CALIBRATION PROCEDURES AND TEST SPECIFICATIONS

Factory Calibration Procedures and Test Specifications are intended for use at the factory as a general guide for calibrators and quality control men. Most of the tolerances listed in these sheets are closer than advertised specifications. This is done purposely in order to insure that the instrument will meet or exceed advertised specifications when it reaches the customer.

These calibration procedures and test specifications should be used, therefore, as a guide only.

Some of the test equipment referred to in the calibration procedures is not available commercially; the Tektronix field engineer will be glad to suggest alternate approaches.

TYPE 81

F A C T O R Y
C A L I B R A T I O N P R O C E D U R E
(Tentative)

Recommended Test Equipment:

Type 581 or 585 Oscilloscope
Type 105 Square Wave Generator
Type "K" Plug-in Unit
Type "P" Plug-in Unit
Type TU-2 Test Load Unit
Bench Test Scope for checking Power Supply
Bench Test Meter for resistance and power supply measurements.

Preliminary Inspection:

Check for unsoldered joints, rosin joints, wrong connections, poor wire dress, and loose hardware. Check all controls for smooth operation. Check all transistor and diode connections carefully to prevent possible burn out and damage to other parts.

1. PRESET CONTROLS

Set GAIN and POSITION ADJ. controls to mid-range. Set C521 and C527 to approximately 60% of full capacitance. Preset L513 and L514 slugs above the windings.

2. CHECK RESISTANCE OF INPUT AND OUTPUT CONNECTORS.

Check resistance of input and output connectors for possible wiring errors. Approximate resistances to ground are:

INPUT CONN.

Term.		Term.	
1. Inf.	9.35kΩ	1. 35k	9. Inf
2. Gnd.	10. 270kΩ	2. 270kΩ	10. Gnd
3. Inf	11. Inf.	3. Inf	11. Inf
4. N. C.	12. Inf.	4. Inf	12. Inf
5. N. C.	13. Inf.	5. Inf	13. Inf
6. N. C.	14. Inf.	6. Inf	14. 3kΩ
7. N. C.	15. 5kΩ	7. Inf	15. 3.5Ω
8. Inf.	16. 1.8MegΩ	8. N. C.	16. 3kΩ

Check between terminals 12 and 13 on the output connector for a possible short. It should read approximately 50Ω. Check between terminals 5 and 6 on the output connector for a possible short--it should read infinity.

3. CHECK 75 V SUPPLY

Install the TYPE 81 in a calibrated TYPE 581 or 585 test scope. Install a TYPE TU-2 test load unit in the TYPE 81. Turn on the test scope and allow for proper warm-up time.

Check the +75 volt supply in the TYPE 81 for proper voltage and regulation at low and high line voltages.
The +75 volt supply should read 75 volts ±2%. Ripple should not exceed 10 mv peak to peak. High frequency spikes which are typical of supplies with silicon rectifiers should not exceed 50 mv.

4. SET OUTPUT VOLTAGE AND CHECK DUAL TRACE OPERATION

Short the input leads of the TYPE 81 by pressing the input shorting button on the TU-2. Adjust R524 to center the trace on the electrical center of the test scope. Switch TU-2 to DUAL TRACE and check operation.

5. CHECK FOR MICROPHONIC TUBES

Check for microphonic tubes by rapping lightly on the front of the plug-in.

6. SET GAIN

Apply 50 volts of CALIBRATOR signal to the TU-2 with the input switch set to 250:1. Set R518 for 2 cm of signal on the CRT. (Recheck step #4 for proper trace center.)

7. SET 10KC SQUARE WAVE RESPONSE

Replace the TU-2 with a TYPE "K" plug-in unit. Supply a 10kc square wave signal from the TYPE 105 to the "K" unit. Set the 105 AMPLITUDE control for 2 cm of signal on the CRT. Adjust C521, C527 for optimum square wave response. C521 and C527 should be set to approximately the same capacitance.

8. SET HIGH FREQUENCY RESPONSE

Replace the "K" unit with a TYPE "P" plug-in unit. Adjust the TYPE "P" for 2 cm of signal. Set L513 and L514 for optimum square wave response.

9. CHECK RISETIME

Check the risetime of the "P" unit, type 81, and test scope combination. The combined risetime should be less than 12 nano-seconds.