

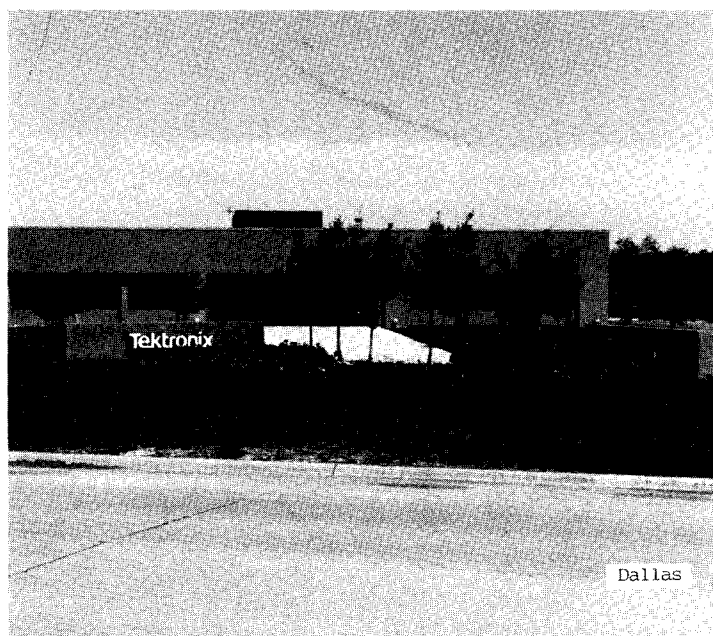
SERVICETEKNOTES



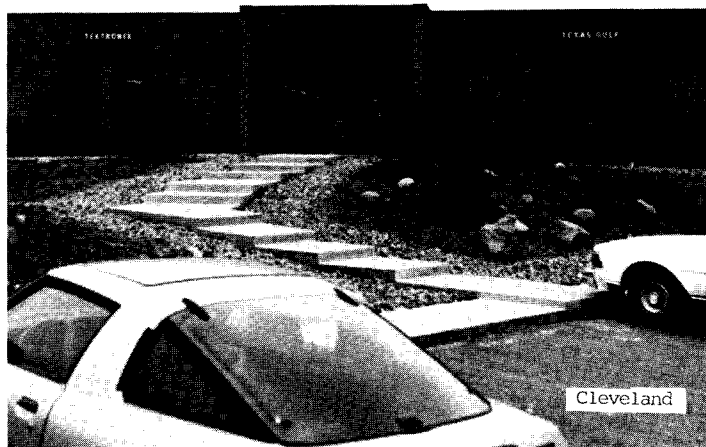
Los Angeles



Rochester



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Cleveland

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CP4165 DOESN'T POWER UP IF A POWER FAIL OCCURS, USING TEK SPS BASIC V02-02

SYMPTOM: When the CP4165 loses line power and then regains power, the boot message appears:

BOOT V01-04
DEV =

Typing in PU doesn't seem to work, after a short period of time the CP4165 goes to a halt state.

SOLUTION: After a power fail and power has been restored, the following message will be printed on the terminal:

BOOT V01-04
DEV =

At this point enter PU (no carriage return). The system will perform a sequence of power-up restoration routines and then halt. To proceed with the power-up sequence, enter a P<CR>. This will return the CP4165 back to the point where the power fail occurred.

NOTE: If the battery-pack(s) is(are) weak, this procedure will not work, and you'll have to re-boot the system.

W² Issue 12-10

DAS9100 UNUSED BOARDS IN UNPOWERED SLOTS

Some instances of errors causing the power-up diagnostics to fail the Trigger-Time Base have been traced to storing unused boards (particularly the 91P16) in slots that do not have power supplies installed. Removing the unused board has cleared all failures.

This is caused by the devices on the unused board not going to the high - Z state.

W² Issue 12-10

L3 PLUG-IN INSTRUCTION MANUAL CORRECTION TO THE FLATNESS SECTION P/N: 070-2154-02

RE: L3 INSTRUCTION MANUAL P/N 070-2154-02.
MANUAL CHANGE # C1/482

Please insert the following Display Flatness Correction into your L3 plug-in instruction manual.

Section 1, GENERAL INFORMATION, page 1-2, Display Flatness, change to read:

Maximum peak-to-peak amplitude variation is 0.7 dB from 25 Hz to 5 MHz, or 0.85 dB from 20 Hz to 5 MHz, plus quantization error if digital storage is used (see 7L5 specifications).

Section 3, PERFORMANCE CHECK, page 3-4, Step 4. Check Display Flatness, part c, change to read:

c. Simultaneously tune the signal generator frequency and the DOT FREQUENCY from 10 kHz to 5 MHz, and check that the display flatness is within 0.8 dB peak-to-peak.

W² Issue 12-10

OF150 MANUAL CORRECTION (A38) OPTICAL PULSE GENERATOR

RE: OF150 MANUAL P/N 070-3677-00
CHANGE REFERENCE C3/182

The following corrections were made to the OF150 manual at S/N B010100.

(ARTICLE CONTINUED ON THE NEXT PAGE)

OF150 MANUAL CORRECTION (A38) OPTICAL PULSE GENERATOR (cont.)

ELECTRICAL PARTS LIST AND SCHEMATIC CHANGES

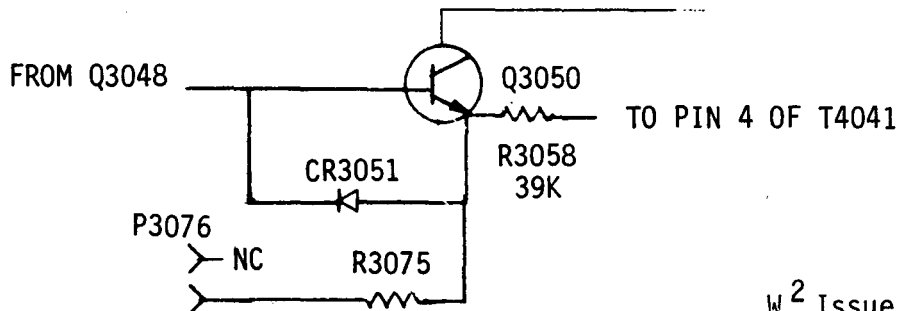
CHANGE TO:

A38C2053	290-0523-00	CAP., FXD, ELCTLT: 2.2UF, 20%, 20V
A38R3046	321-0304-00	RES., FXD, FILM; 14.3K OHM, 1%, 0.125W
A38R3050	321-0246-00	RES., FXD, FILM: 3.57K OHM, 1%, 0.125W

ADD:

A38R3058	315-0393-00	RES., FXD, FILM: 39K OHM, 5%, 0.25W
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The above parts are located on A38 Optical Pulse Generator board and shown on Diagram 2 OPTICAL PULSE GENERATOR - Partial



W² Issue 12-5

SPG 11/12 SC/H PHASE

RE: SPG 11/12 MANUAL 070-2324-00

Since PAL equipment came out, we have been calibrating SC/H phase to what we believed were usable standards. Since there was no PAL standard for SC/H phase measurement, we were setting all instruments to an "in-house" spec, thereby maintaining consistency. Now that there is an EBU standard, we will be changing procedures accordingly.

The PAL standard for subcarrier to horizontal phase (SC/H ϕ) requires that the ϕ^0 crossing of the +E'u component of the colour burst (subcarrier) must occur at the same time as the $\frac{1}{2}$ amplitude point of the leading edge of the

synchronizing pulse of line 1 field 1. A convenient way of setting or checking SC/H ϕ is with the use of the 15 LINES mode on the 1481/1485 waveform monitor, and a line of calibration subcarrier inserted onto the SPG 11/12 Black Burst signal at line 7.

The Black Burst signal is observed on the 1481/1485, 15 LINES is selected, and the variable line selector set to observe the calibration subcarrier on line 7 and the equalizing pulses simultaneously. The horizontal magnifier should be set to X50 for greater resolution, and the horizontal position control should be set to observe the

(ARTICLE CONTINUED ON THE NEXT PAGE)

SPG 11/12 SC/H PHASE (cont.)

Leading edge of the equalizing pulses that occur in the center of the lines. Now, the phase should be set so that the $\frac{1}{2}$ amplitude point of the leading edge of the equalizing pulse occurs at the same time as a positive peak of the calibration subcarrier, as viewed on the 1481/1485. Further details of the setup procedures, etc., are contained in the SPG 11/12 manual.

In PAL, the time duration between horizontal sync pulses is defined by the following equation.

$$\frac{1135 + \frac{4}{625}}{fsc \times 4} = 64 \text{ usec/line}$$

This will yield 283.7516 subcarrier cycles per line. Also, the $\frac{1}{2}$ amplitude point on the leading edges of the equalizer pulses, on the lines in which they occur, is at precisely $\frac{1}{2}$ the distance between the $\frac{1}{2}$ amplitude points of the horizontal sync pulses. Thus, when an equalizing pulse is compared with subcarrier on line 7, it corresponds to 6.5×283.7516 subcarrier cycles away from line 1 field 1 leading edge of sync, or 1844.3854 cycles. Therefore, starting with +E'u subcarrier at a positive-going zero-crossing on Line 1 Field 1, 1844.3854 cycles later is halfway through line 7. As referenced to the +E'u subcarrier, this will be at 0.3854 cycles or 138.744° past a positive-going zero-crossing, or at 48.744° past a positive peak of +E'u subcarrier. However, it is not +E'u subcarrier that is inserted on line 7. It is, instead, subcarrier which has the same phase as the burst on that line, the -V burst. This subcarrier lags the +E'u subcarrier by $\frac{1}{8}$ cycles or 45° . Subtracting 45° from 138.744° gives us 93.744° , which is 3.744° (2.3 ns) past a positive peak of the calibration subcarrier. This is where the equalizer pulses will occur in relation to the inserted calibration subcarrier on line 7 if

the SC/H ϕ is properly set to match the new EBU standard. This is, for all practical purposes, close enough to an actual positive peak of calibration subcarrier to enable this method to meet the requirements for SC/H ϕ calibrations.

W² Issue 12-5

S-3200 CABLE LABELS, WRITABLE

Labels which can be written upon are available for identifying cables. The one piece label consists of a (writable) white area and a clear acrylic tab for protection against abrasion and smudging. Order Part Number 334-1276-00 to receive one sheet of five labels.

W² Issue 12-9

S-3200 RACK STABILIZER BARS

For packaging convenience all S-3200 Series Systems are shipped with the rack stabilizer bars and mounting hardware packaged separately. The stabilizer bars **MUST** be installed on all systems. The bars are designed to prevent the rack from falling forward when a rack instrument is extended. If the stabilizers are missing and cannot be found, refer to the Power Control, Interconnect, and Racks manual, P/N 070-3471-00, to obtain a list of the necessary parts.

W² Issue 12-8

7L5 MANUAL CHANGE IN DISPLAY FLATNESS

RE: 7L5 MANUAL P/N: 070-2184-01.
C1/482

Please change the following information in your 7L5 manual P/N: 070-2184-01.

Section 3, PERFORMANCE CHECK, Page 3-3, step 3. Display Flatness, part c, change to read:

(ARTICLE CONTINUED ON THE NEXT PAGE)

7L5 MANUAL CHANGE IN DISPLAY FLATNESS
(cont.)

c. Slowly adjust the signal generator frequency so the displayed signal moves across the full width of the graticule. Monitor the signal output level and adjust as required, to maintain a constant output. Verify that the displayed signal amplitude remains within 0.7 dB of the 6 division reference as the frequency is moved through the 1 MHz frequency range.

W² Issue 12-9

7L5 OPERATORS MANUAL CORRECTION
TO DISPLAY FLATNESS SECTION

RE: 7L5 OPERATORS MANUAL P/N
070-1734-01
C1/482

Please insert the following manual correction into your 7L5 operators manual P/N: 070-1734-01.

Section 1, SPECIFICATION, page 1-2, step, Amplitude Characteristics, part, Display Flatness, change to read:

Peak to peak deviation over any selected frequency span is 0.7 dB: Quantization error must be added (see Note under Amplitude Characteristics) if digital storage is used.

- L1 0.7 dB;
- L2 0.7 dB;
- L3 0.7 dB

W² Issue 12-9

7L13 FREQUENCY SPAN/DIV AND
RESOLUTION KNOB REPLACEMENT KIT
(050-1505-00)

RE: 050-1505-00 FOR
S/N B010100 to B139999
M 37660

The 050-1505-00 Parts Replacement Kit provides the parts and instructions to replace the Frequency Span/Div and Resolution knob assembly with an improved knob assembly that is easier to adjust.

W² Issue 12-7

468 OPT. 11 X-Y PLOTTER

Option 11 provides the 468 with an analog X-Y plotter output. Service information is in the updated manual under the option section.

Option 11 can be field installed with kit P/N 040-1045-00.

Option 11 cannot be ordered or installed in an instrument that has option 2 (GPIB) without removing the GPIB option. Otherwise, Opt. 11 is compatible with all other 468 options.

W² Issue 12-8

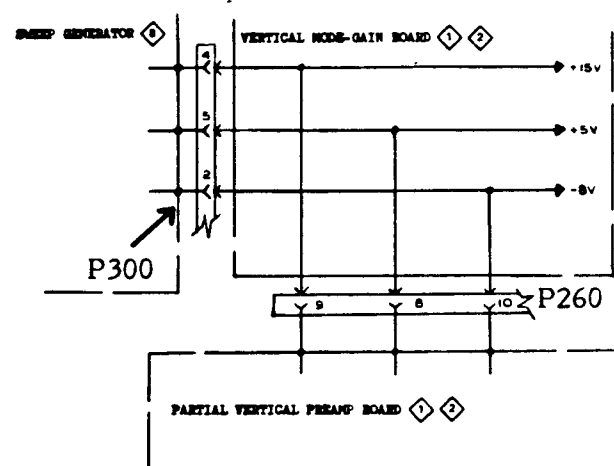
475, MANUAL ERROR ON POWER DISTRIBUTION
DIAGRAM

RE: 475 MANUAL, P/N 070-1332-01
BELOW S/N B250000
DIAGRAM 11, POWER DISTRIBUTION.
DIAGRAM 3, VERTICAL SWITCHING

The power distribution diagram in the early 475 manual, below B250000, has an error in the power supply voltages shown on the Vertical mode--gain board. The diagram below shows the correct pin numbers and voltages.

P300, shown at the left edge of diagram 3, should be changed to show the + 5 V going to pin 5.

Change power connections on P300 and P260 as follows:



W² Issue 12-7

492/P, 496/P HARMONIC DISTORTION CHECK

RE: 496/P MANUAL (070-3481-00)
PAGE 3-23, STEP 20
492/P B03 AND UP MANUAL
(070-3783-00) PAGE 3-28,
STEP 18

The 492/P and 496/P manuals call for the use of a filter to check Harmonic Distortion. A recommended filter for this use is the 110 MHz filter (FL36), P/N 119-1025-00 that is used in the 492/P instruments.

W² Issue 12-7

492/P, 496/P HIGH VOLTAGE CIRCUIT BOARD REPLACEMENT KIT (050-1542-00)

RE: 050-1542-00
M41788
492/P S/N B010100 - B042199
496/P S/N B010100 - B010217

The high voltage circuit board, A74A1, P/N 670-5559-01, replaces the high voltage circuit board, P/N 670-5559-00, which is no longer available.

The new high voltage circuit board is electrically and mechanically a direct replacement except for the addition of R2040, the new CRT bias adjustment.

W² Issue 12-7

492, A23A2 (U1013, U2026, U3024) REPLACEMENT KIT (050-1567-00)

RE: 050-1567-00 KIT FOR 492
S/N B010100 - B041819 M44590

To eliminate 500KHz sidebands in the output to the 829MHz 2nd Converter and to eliminate the need to select voltage regulators the following inductors are changed; A23A2 L2013, A23A2 L2018, and A23A2 L3011. The present 1.1HZ inductors, connected in series with the inputs of A23A2 U1013, A23A2 U2026, and A23A2 U3024, are replaced with an improved component.

W² Issue 12-7

492, 496 AMPLITUDE SPECIFICATIONS

Due to the ambiguity of the existing IF GAIN ACCURACY specifications, Engineering has changed the performance requirement to read as follows:

Within 0.2dB/1dB to a maximum of 0.5dB/9dB except at the decade transitions of -19 to -20dBm, -29 to -30dBm, -39 to -40dBm, -49 to -50dBm, -59 to -60dBm and -69 to -70dBm where an additional 0.5dB applies. All steps are to be monotonic with a maximum of +2dB over the 90dB range.

W² Issue 12-7

520 INSTRUCTION MANUALS

RE: 520 MANUAL 070-0639-01, -02

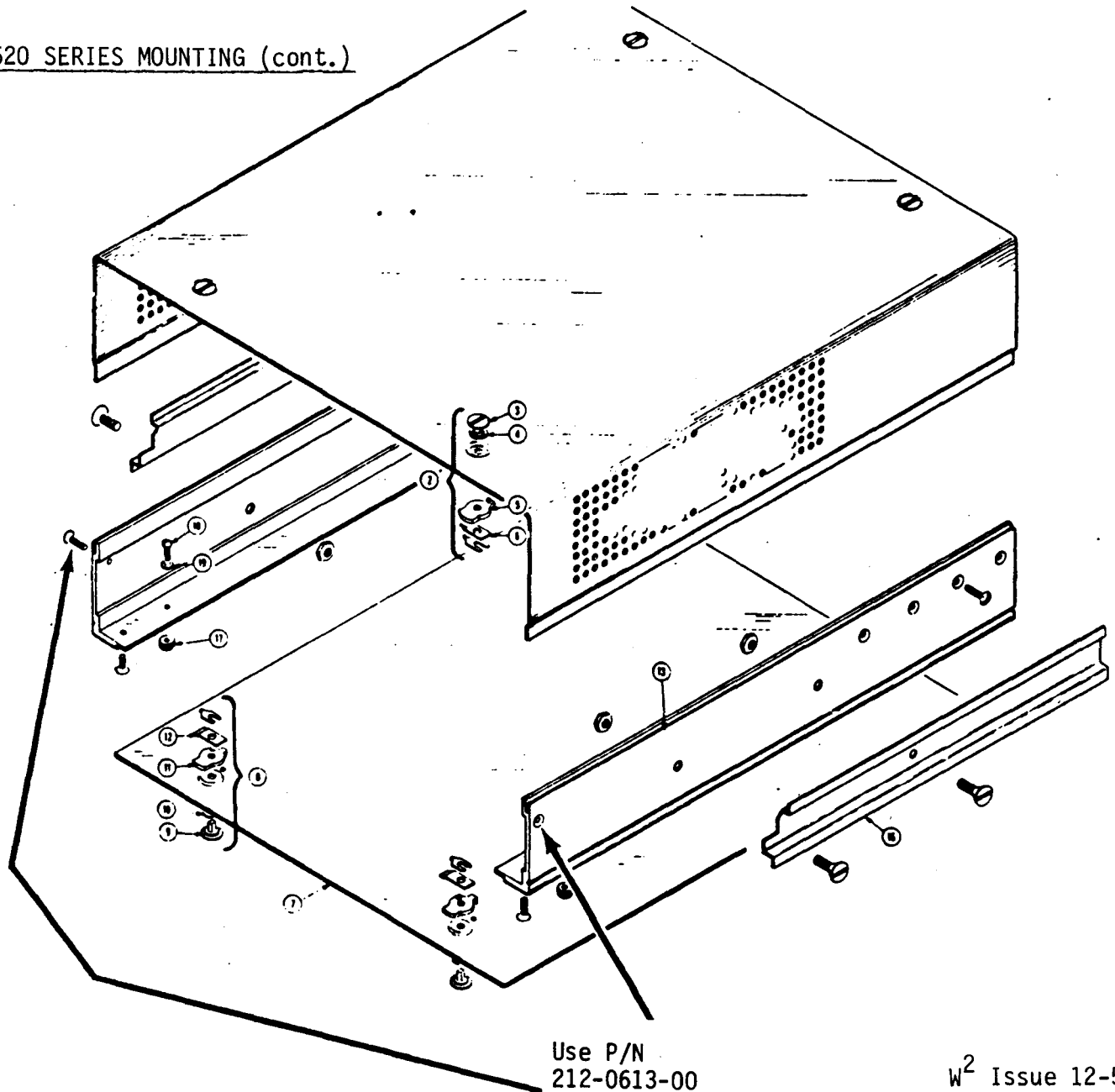
Since the 520 has now become obsolete, the instruction manual will no longer be available. Those of you that have copies of this manual in paper or microfiche are advised to keep them on hand. They contain a lot of information pertaining to vectorscope operations in the operation instructions and circuit description sections. Since these sections were substantially reduced in the 520A Manual (070-1709-00), much valuable information may be lost. This reference material will prove invaluable in troubleshooting difficult vectorscope problems, and will be a good source of training material for new technicians.

W² Issue 12-7

520 SERIES MOUNTING SCREWS

A screw of insufficient length has been used to fasten the side rails to the main chassis, causing stripped threads. Where a bad screw is found, replace with 212-0613-00 (see illustration).

(ARTICLE CONTINUED ON THE NEXT PAGE)

520 SERIES MOUNTING (cont.)

Use P/N
212-0613-00

W² Issue 12-5

634 YOKE AND YOKE DRIVER CHANGE, 44044

Yoke ringing has appeared on 634 products from time to time. It shows up as alternating light and dark vertical bands at the left edge of the raster.

To solve the problem, R334 and R335 are being matched to the yoke and mounted directly onto it by our supplier. This is being done for both standard and Option 1 products. The new yokes have part numbers 108-0944-03 for the Option 1 and 108-0946-01 for the standard.

The yoke driver board is common to both the standard and Option 1 products. To accommodate the new yokes, R334 and R335 are removed from the board. This creates a new board, part number 670-5594-05.

To prevent the possibility of encountering yoke ringing when yokes are replaced in earlier products, two parts replacement kits are available: 050-1599-00 for the standard and 050-1598-00 for the Option 1. Replacement of an early yoke driver board by the -05 level will require replacement of the yoke as well.

W² Issue 12-10

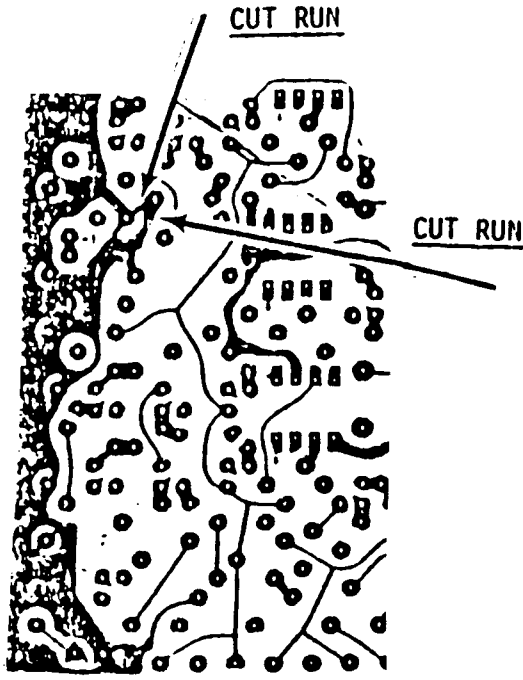
650 SERIES ECB PROBLEM

RE: 650A MANUAL, 070-2234-00

The Decoder Board (670-2611-07) has an ECB layout error which shows up as a 400KHz ripple of about 200mV P-P riding on the R-Y output. The cause is one end of R2739 being shorted to ground. The suggested fix is to cut the ground plane surrounding the bottom pad of C2641 (See illustration).

INTERIUM SOLUTION

DECODER BOARD
670-2611-07



W² Issue 12-8

690SR/6942 SERVICE MAINTENANCE INFORMATION

Miscellaneous Calibration Fixtures

There are several miscellaneous calibration fixtures that have been developed for use in the troubleshooting/maintenance of the 690SR and 6942. This document covers the following units:

<u>Part Number</u>	<u>Description</u>	<u>Man. Pt. No.</u>
067-0998-00	Min. Load Unit	070-3929-00
067-0999	Rigid Mod. Extender	062-5952-00
067-1000-00	Flex. Mod. Extender	070-3930-01
067-1034-00	Linearity Gratic. 11x15	070-3931-00
067-1054-00	Linearity Gratic. 14x17	070-3932-00
067-1055-00	Linearity Gratic. 15x20	070-3933-00

The 067-0998-00 Minimum Load Unit is a free standing passive troubleshooting aid for use in conjunction with the high-efficiency low voltage supply used in the 690SR and 6942. This unit provides the minimum-resistance loads necessary for the +200V, +15V, +8V and -8V supplies to operate even when all other circuit loads are disconnected.

The 067-0999-00 Rigid Module Extender allows the technician to extend any of the major modules used in the 690SR or 6942 away from the mainframe for ease in adjusting and troubleshooting. This extender can likewise be used to extend the individual circuit boards used in the 69MXX series of plug-in interface modules that are part of the 690SR/6942 family of products.

The 067-1034-00 Flexible Module Extender allows the Technician to extend the 69MXX series of interface modules away from the host 690SR/6942 mainframe to gain accessibility for troubleshooting/calibration.

The 067-1034-00 Linearity Graticule is used to provide test patterns which consist of various circles and lines, the shadows of which are projected onto the face of a 690SR/6942 CRT. This Graticule is used in conjunction with an 067-1039-00 Pattern Generator which provides a wide range of line frequency and raster formats. The projected pattern provides an aid to adjusting

(ARTICLE CONTINUED ON THE NEXT PAGE)

690SR/6942 SERVICE MAINTENANCE
INFORMATION (cont.)

or verifying geometry, linearity, picture size, positioning, aspect ratio, high voltage regulation and decoder underscan. The 067-1034-00 Linearity Graticule is typically used in high scan-rate, non-television applications using 11x15 line format.

The 067-1054-00 Linearity Graticule is similar to the 067-1034-00. It has, however, a 14x17 line format which is optimized for NTSC television standards. It can be used with a television crosshatch pattern such as that generated by a 1410/SPG2/TSPI, 1900, 1411/SPG12 /unmodified TSG12 or 143.

The 067-1055-00 Linearity Graticule is also similar in use and functions to the 067-1034-00. It has a 15x20 line format which is optimized for PAL television standards. It can be used with a television crosshatch pattern such as that generated by a 1411/SPG12/ TSG12 (modified for 15x20 lines).

These fixtures are available to the field and customers and are part of the required equipment for supporting the 690SR/6942. Their use is fully explained in the appropriate sections of the 690SR/6942/69MXX product manuals.

W² Issue 12-7

1503 MANUAL CALIBRATION CHANGE
TO R1603

RE: 1503 MANUAL 070-1865-01
EFFECTIVE S/N B094200 MOD #45957

The Vertical Attenuation Adjustment is difficult to bring into specification in the 18db range. To make it easier to adjust in the 18db range R1603 was made test selectable with a nominal value of 1.5K ohms. Please revise your 1503 manual as follows:

ELECTRICAL PARTS LIST, SCHEMATIC
AND TEXT CHANGES

CHANGE TO:
R1603 --- --- --- TEST
 SELECTABLE (1.5K NOMINAL)

TEXT CHANGES

SECTION 2, OPERATING INSTRUCTIONS, step 5. Vertical Attenuation Check, page 4-7, insert the following steps between step h & i and reletter the steps.

Change step i to read:

i. Set the FINE RET LOSS control to 18 dB and check for an eight division display. If the display is not eight divisions, +/-1 division, select the value of R1603 between 1.5K and 1.8M.

j. Set the fine RET Loss control to 0 dB and remove the termination and cables.

W² Issue 12-8

1804/1804A/1804B MANUAL CORRECTION

In the 1804, 1804A, 1804B Manual, Volume 2, P/N 070-3331-02, revised February 1982, there are some incorrect part numbers listed on Page 6-81. Figure 2 Index Numbers -3 through -14 need to be corrected. Listed below are the correct part numbers. Use the following listing to replace the one in the manual. Items numbered 2.1 through 14 replace items numbered 3 through 14.

(ARTICLE CONTINUED ON THE NEXT PAGE)

1804/1804A/1804B MANUAL CORRECTION
(cont.)

-2	018-0076-00	1	CKT BOARD ASSY:14 PIN ZIF	80009	018-0076-00
	-----	-	(CKT BOARD CHOICE DEPENDS UPON CAPABILITIES		
		-	DESIRED. SEE STANDARD ACCESSORIES)		
	018-0077-00	1	CKT BOARD ASSY:16 PIN ZIF	80009	018-0077-00
	-----	-	(SEE FOOTNOTE ON FIG.2-2)		
	018-0078-00	1	CKT BOARD ASSY:18 PIN ZIF	80009	018-0078-00
	-----	-	(SEE FOOTNOTE ON FIG.2-2)		
	018-0079-00	1	CKT BOARD ASSY:24 PIN ZIF	80009	018-0079-00
	-----	-	(SEE FOOTNOTE ON FIG.2-2)		
	018-0080-00	1	CKT BOARD ASSY:40 PIN ZIF	80009	018-0080-00
	-----	-	(SEE FOOTNOTE ON FIG.2-2)		
			(ATTACHING PARTS FOR EACH CKT BD)		
-2.1	214-1878-00	4	THUMBSCREW:4-40 X 0.48,0.5 DIA,SST	80009	214-1878-00
			-----*-----		
			(EACH CKT BD CONTAINS)		
-2.2	131-0556-00	64	. BUS CONDUCTOR:CKT CD,12 FEM,PH BRZ	80009	131-0556-00
-3	020-0080-00	1	ACCESS.KIT,TEST:UNDERSOCKET ASSY	80009	020-0080-00
	-----	-	(SEE STANDARD ACCESSORIES)		
-3.1	352-0139-01	2	. HOLDER,CKT CARD:	80009	352-0139-01
			(ATTACHING PARTS)		
-3.2	211-0119-00	2	. SCREW,MACHINE:4-40X0.25" 100 DEG,FLH,STL	83385	OBD
			-----*-----		
-4	354-0533-01	1	. RING,ELEC CONT:W/CONTACTS	80009	354-0533-01
-5	131-1699-00	188	. CONTACT,ELEC:POGO SPR LOADED	80009	131-1699-00
-6	129-0428-02	4	. SPACER,POST:0.45 L,2/4-40 THD THRU,0.25 HEX	80009	129-0428-02
-7	354-0541-00	2	. RING,SECURING:0.0781 ID X 0.188 OD,NYLON	80009	354-0541-00
-8	670-2831-XX	1	CKT BOARD ASSY:DC LOAD		
	-----	-	(SEE STANDARD ACCESSORIES)		
-9	131-1720-00	384	. CONTACT,ELEC:FEM RCPT TO SPR CONT,POGO	80009	131-1720-00
-10	131-0589-00	1298	. TERM,PIN:0.46 L X 0.025 SQ,PH BRZ GL	22526	47350
-11	131-1343-00	2	. TERM. SET,PIN:36-0.525 L X 0.025 SQ	22526	65501-136
-12	131-1614-00	40	. CONTACT ASSY,EL:	22526	65502-136
-13	386-1559-00	4	. SPACER,CKT BD:0.47 H,ACETAL	80009	386-1559-00
-14	131-1401-03	4	. CONTACT,ELEC:RMT OR LOAD TO SCTR,GOLD PLTD	80009	131-1401-03

W² Issue 12-10

1900 GENLOCK BOARD U431 INCONSISTENT OPERATION

RE: 1900 SERVICE MANUAL (INTERIM)
061-2281-00

Issue 22, March 1982, explained a possible problem with U431 on the Genlock board, and the recommended solution. A new kit has been produced to make this modification. Order p/n 050-1570-00.

W² Issue 12-8

4014/14-1, 4015/15-1, 4016-1 JACKSCREWS

REF: 4014/14-1, 4015/15-1 Service Manual 070-2303-00

4016-1 Service Manual 070-2661-00

The jackscrews used to secure the Display to Pedestal interconnect cables have been known to come apart and must be replaced. The manuals do not give a part number nor a picture for this part. When replacing the jackscrew, order Tek part number 213-0440-00. All three cables; p.n.s 012-0511-00 -- 4014/14-1 4015/15-1 desk mount cable, 012-0827-00 -- 4016-1 standard interconnect cable, and 012-0827-01 -- 4016-1 desk mount cable use the same jackscrews.

W² Issue 12-10

4052/4054 TEST FIXTURE MOD #M41450

There have been some modifications to the 067-0902-00 System Test Fixture and 067-0942-00 4052/54 Personality Board. Not all of these modifications were implemented at the same time. Therefore, it is possible for your fixtures to have some of the modifications but not all of them. The following is a list of materials that you need to implement the changes and instructions on how to do the changes.

Materials

2 each 156-1250-00 (74S373)
Approx. 7 ft. of insulated strapping wire.

The following steps are done on the 067-0942-00 Personality Board:

Procedure

1. Remove U265 a 74S374 (156-1046-00) and replace with a 74S373 (156-1250-00).
2. Remove U271 a 74S374 (156-1046-00) and replace with a 74S373 (156-1250-00).

NOTE

When installing U271, DO NOT solder pin 11 into the board but leave the pin out of the hole.

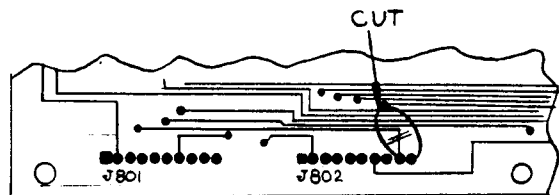
3. On the component side of the board, connect a piece of insulated wire from pin 11 of U265 to pin 11 of U271, and from pin 11 of U271 to pin 20 of U271.
4. Connect pin 4 of U105 to pin 10 of U105.
5. Connect pin 10 of U105 to pin 12 of U105.
6. Connect pin 13 of U105 to pin 1 of U111.
7. Connect pin 11 of U105 to pin 6 of U165.

8. Cut pin 5 of U215 close to the board and bend the pin up off the board.

9. Connect pin 8 of U105 to pin 5 of U215.

The next six (6) steps should be made on the backside of the board:

10. Connect pin 10 of J802 to pin 12 of U281.
11. Connect pin 8 of J802 to pin 19A of J301.
12. Connect pin 11 of U211 to pin 13 of U165.
13. Connect pin 11 of U165 to pin 12 of U165.
14. Cut run from pin 9 of J802. See Fig. 1



COMPONENT SIDE OF BOARD

15. Connect pin 9 of J802 (run connection on backside of board) to pin 10 of U165.

The following steps are done on the 067-0902-00 System Test Fixture:

1. Disconnect pin 13 of U321.
2. Connect pin 6 of U231 to pin 13 of U611.
3. Connect pin 12 of U611 to pin 13 of U321.
4. Disconnect pin 9 of U511.
5. Connect pin 6 of U321 to the ECB run that pin 9 of U511 was connected to.

(ARTICLE CONTINUED ON THE NEXT PAGE)

4052/4054 TEST FIXTURE MOD #M41450
(cont.)

6. Connect pin 8 of U511 to pin 5 of U321.

The 067-0942-00 Personality Board has some added tests. The added tests are in U185 ROM. The Tek part number of this ROM is 160-0733-01. The part numbers for ROMs U171 and U181 have also changed to: U171/160-0383-01 and U181/160-0732-01. The procedure for using the Personality Board, including the new tests, is in the new 070-4154-00 manual.

W² Issue 12-7

4643 FUSE QUANTITY FOR KIT

There are seven 1.25A Slow Blow (short length) fuses, p.n. 118-1253-00, located on the 4643 Wire Drive Board. There is one fuse for each of the seven printhead wire positions.

If an error occurs with the printer causing the printhead wires to fire at an "unsage" rate, it is common for all seven of the fuses to open. Because of this, it is advisable that each 4643 maintenance kit contain at least a set of seven fuses.

W² Issue 12-10

4643 PRINthead SOLENOID POSITION

The 4643 printhead has 14 solenoids that when activated move metal plates. These plates in turn push the wires out of the printhead into the ribbon, which impacts against the paper, leaving dots on it. After the solenoids are de-activated, springs pressing on the opposite end of the plate return the wires to their normal stored position.

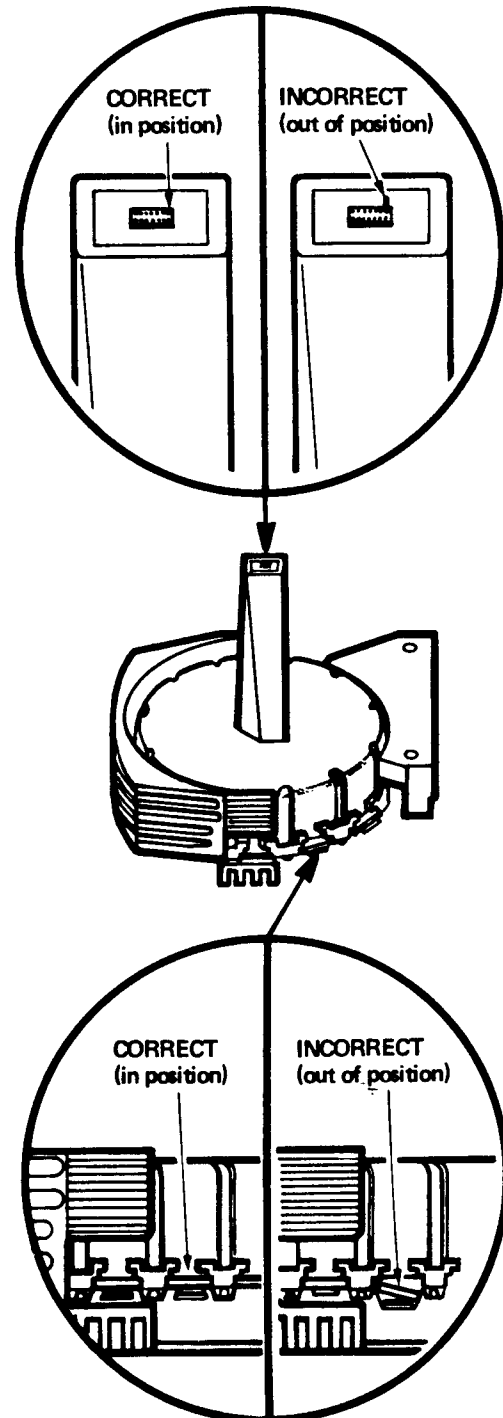
The metal plates that cause the printhead wires to move can be jarred out of position during handling or replacement.

CAUTION:

If the printhead is operated with the

solenoid plates out of position it will result in a damaged printhead.

Be sure to inspect printheads after product shipping or during printhead replacement. If a wire is protruding from the printhead, it indicates that the metal plate is lifted from its normal position. Be sure to reseat the metal plate back to its proper position. See illustration.



(ARTICLE CONTINUED ON THE NEXT PAGE)

4643 PRINthead SOLENOID POSITION (cont.)

Pay special attention to printheads removed from spares' kits, because the metal plates can be most easily jarred out of position when not in the printer.

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4662 PEN CARRIAGE POSITIONING

It is possible to jar the rear of a 4662 pen carriage into an incorrect position on the carriage slide shafts. If the rear of the carriage is incorrectly positioned, the result can be line skipping, or with option 31, pen exchange problems.

The 4662 can be visually inspected to determine if the rear of a pen carriage is positioned too high. Looking at the side of the pen carriage, observe the square hole surrounding the rear slide shaft. The slide shaft should be positioned closer to the top of the square hole. See figure 1.

If the carriage slide shaft is located closer to the bottom of the square hole, figure 2, the pen carriage needs to be correctly positioned. This can be accomplished by placing firm downward pressure on the rear of the pen carriage just above the pivot point, see figure 2, while supporting the bottom of the carriage slide shafts to keep them from becoming bent or warped. The downward pressure should cause the pen carriage to snap back into its normal operating position.

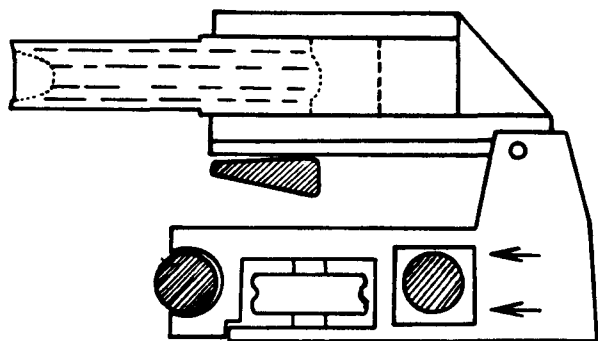


Figure 1

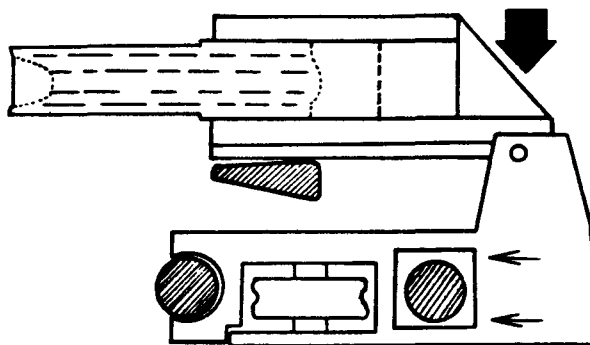


Figure 2

W² Issue 12-10

8550-8501 UTILITY CHANGE

Connecting Devices to the 8501 Auxiliary Port (J152) and switching the Device power on or off will usually cause the 8501 processor to halt, requiring a System Restart.

Manufacturing is implementing a modification on the Utility Board that moves a zero-ohm strap, W4041/42, from position "B" to position "A." Reference the picture of "Utility Board strap and jumper locations" on page 2-10 of the 8501 Service Manual. The Service Manual Schematics should also be changed to reflect the change.

W² Issue 12-9

148-0027-02 RELAY

This part is presently shipped in a package containing a relay, a spring clip, and a small board. This board is intended only for protection of the relay pins during shipment and can be discarded when the relay is put into an instrument.

W² Issue 12-7

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