SAO-HRC-LOG-97-277
DR# SCM10
Data Type: 3

Volume III

HRC-500

HIGH RESOLUTION CAMERA (HRC)

LOG BOOK

Prepared in accordance with DR# SCM10

Prepared for:
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National Aeronautics and Space Administration
Marshall Space Flight Center, AL 35812

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EQUIPMENT LOG BOOK

1.0 PURPOSE

A contractual requirement exists to maintain an accurate chronology of one or more tests in an equipment log book as they are performed on a system or subsystem. Data entered in the equipment log book will facilitate a quality assurance assessment of a system or subsystem.

The equipment log book provides a running account for all periods of time, including idle periods, specific events and movements of hardware from the time of initial electrical and mechanical activation to the time of shipment. It is imperative to record all events as they occur.

Entries must be complete and entered such that a reviewer can reconstruct the history of the hardware during any interval.

Each equipment log book contains 50 life history forms to be completed according to the instructions provided in paragraph 2.0. When the equipment log book becomes filled, it shall be returned to the project engineer, and an additional log book shall be issued, with the requirement that the volume number shall be changed to the next highest number. When the particular equipment log book activity is completed, the last volume used shall be returned to the project engineer to add to the documentation required for this DR.

2.0 FORM COMPLETION

This paragraph provides guidance in completing each life history form. In addition to the prime purpose of testing, the equipment may also be categorized as follows:

- Repairs: corrective action for operating failures.
- Preventive maintenance: an action to prevent failures, including replacement of age-sensitive component parts and materials, and retrofitting components and subsystems where required.
- Storage: a status where the hardware will be inactive.
- In-transit: a status where the hardware is transferred from one location to another.

2.1.1 Page of Pages. Number each page sequentially in the first box and write the number 50 in the second box.

2.1.2 Event No. Each event shall be numbered sequentially. This number will provide reference without the need to repeat the entry information.

2.1.3 Subject. The nature of the event in brief, such as ATP, QTP, Repair.

2.1.4 Date. Record the date of the event in military format: the day of the month using one or two digits, followed by the first three letters of the month, followed by the last two digits of the year; e.g. 24 Nov. 90.

2.1.5 Summary of Chronological Events. The items to be covered shall include the description of the events printed on the form under this category, as well as any other event of interest. In addition, a separate line entry shall be made stating the change whenever the equipment is moved to another location. Also, a separate line entry shall be made whenever a failure occurs; note the type of failure and the failure report number under the event subject heading.

When the equipment is under test, the line entry shall include the test paragraph and the nature of the test.

When replacements are made during installation, testing and final checkout, indicate the serial and part numbers of articles removed, as well as those substituted.

2.1.6 Running Time/Other. The four categories under this topic are explained below:

- Start: Note the time when the event has started, using military time. For example PM is 1500 and midnight is 0000.

- Stop: Note the conclusion of the event using military time as described above.

- Total time: This category is the elapsed time for each event as determined by the difference between Start and Stop. This may be recorded in either hours and minutes or in operating cycles of a known character, whichever is applicable. When entered as hours and minutes, the hours digits are followed y a colon followed by two digits; e.g. 4:32.

- Cumulative total: This category represents the sum of the elapsed time entries brought forward.

2.1.7 Stamp or Initial. The person entering an event shall initial each completed event.

START OF CDT

LIFE HISTORY

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EVENT NO.	EVENT SUBJECT	DATE	SUMMARY OF CHRONOLOGICAL EVENTS (TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.)	RUNNING TIME/OTHER (HOURS AND MINUTES) START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
670	HANDLING	14APR97	HRC REMOVE FROM BALL MGSE AND PLACED					
			ON A NEWPORT TABLE IN CLEAN ROOM.					
			HRC IS STILL ATTACHED TO A BALL ADAPTOR					
			PLATE WHICH IS RESTING ON TWO PC's					
			ON CHANNEL ON TOP OF TABLE. PURGE					
			LINE REMOVED TEMPORARILY (~20 MIN)					
			WHILE HRC WAS MOVED FROM REAR OF					
			CLEAN ROOM TO FRONT CORNER.		1005			BKA
671	IMG DOT	4/14/97	CONNECT CTVE/RCTU/HRC/CHG CAL CABLES	1800 CDT				JG
	TEST IN 2K		HRC IS IN CLEAN ROOM, GSE IS OUTSIDE					
	CLN ROOM							
	OUTSIDE CH.		VERIFIED 28V POWER SUPPLY SETTINGS	2012				JG
			RUN CMD FILE PWRUPI.CMD I=1,363	2015				
			(TOOK CTVE FILES TLM002D4, D5)					
672	DOT TEST	4/14	PØØ41497a (APPEARS NORMAL)		2042			
	HRC-I							
673		4/14	POWER DOWN (PWRDOWN.CMD)					
			BUS SW OFF, P/S OFF, TEST EQ OFF		2045			

LIFE HISTORY

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674	PWRUPI	4/15	POWER UP FOR TESTS OF A/B TRIGGER LEVELS	0820				N
			pwrupI.cmd 1.39A	0828				
			SIDE A — IMG DET:					
			W/ NO TEST INJECT SIGNALS, CAN LOWER TRIGGER					
			TO sd2903 (sd2902 HAS ~20-30 TE COUNTS)					
			WITH Ø TOTAL EVENT RATE.					
			FILE TL002 TL00 NEEDS sd 2906 FOR					
			TE TO BE ZERO.					
			FILE TL006, @ 2905 TE = VE = 98					
			NEEDS sd 2911 TO BE Ø.					
			RUNS GREAT, EVEN AT 2904 — BUT SOME EXTRA					
			EVENTS @ 2903.					
			USING LFFT PROC. W/ TL002 + sd 2904,					
			HAVE TE = VE ~ 30/SEC. (PROC. HAS Ø).					
			@ TL006, TE = VE = 97-98.					
			pwrdown @		0943			
	PUMP DOWN	15APR97	STARTED PUMP DOWN OF NRC WITH PUMP					GKA

CART LOCATED OUTSIDE OF CLEAN ROOM. BACKING LINE IS ~15' LONG (ALL SECTIONS USED)

LIFE HISTORY

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615	pwrupS		TRIG LVL TEST W/ SPECT DETECTOR	0945				
			pwrupS.cmd 1.39A					
			TL002, sd2904 TE ~ 5/s (TRIG IS SI)					
			TL006, TE ~ 97-98 OK					
			@TL002, sd 2905 YIELDS TE = 0.					
			pwrdown		0957			
616	TRIG CHK, SIDE B SP		VERIFIED ABABAB (TO RUN HRC-S ON SIDE B) (NO HV)	1000				
			BUS B ON I = 100 Ma					
			initb.cmd (LV RDGS NORMAL) I: 1.363					
			Spectb.cmd (SET S TO SIDE B) - VERIFIED					
			TL002, sd2904 TE ~ 40/s					
			TL006, TE 97-98 OK					
			@TL002, sd 2905 YIELDS TE = 0.					
			spf		1012			

LIFE HISTORY

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617	TRIG CK		SEND pwrcfg2, GET ABBAAB (OK)	1015				
	SIDE B, IM		pwr bus B ON, 103 ma.					
			initb.cmd 1.36A, LV (OK)					
			imagb.cmd I = SIDE B (OK)					
			TL002, sd 2904 TE ~ 15/s (TE=VE)					
			sd 2905 YIELDS TE=0					
			TL006, sd 2904 TE = VE = 97,98					
			∴ SIDE A PERFORMANCE SEEMS TO					
			BE IDENTICAL TO SIDE B					
			(IT WAS NOT IN CAMBRIDGE AND					
			AT BAKE).					
			SPF		1024			
		4/15						
618	PWRUP for shield tests		pwrupI.cmd (PREP FOR SHIELD TESTS) 1.3PA		1150			
			shvon.cmd OK, ANALOG=8P, SH RATE ~ 15/s					
			STEP 4, 24/s; STEP 8 ~ 50/s, STEP 12 DIDN'T TAKE, STAY 8.					
			APR 15 ~ 17:02. (GMT).					
			SEND STEP 12 MANUALLY 060C. SHR ~ 130-170 /s. ANALOG = 80					

LIFE HISTORY

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			w/ Co^{60} SOURCE, RATE ~ 14500/s.					
			HP POWER SUPPLY ACCIDENTALLY TURNED OFF		1207			
619	SHIELD 2 TESTS		POWER UP w PCfg1.cmd ABABBA	1208				
			bus A, 99ma (OK)					
			initai.cmd 1.38A (OK) LV OK					
			sh2a.cmd SIDE A = SH2 OK					
			s2hvon.cmd ON, ANALOG = 87 ~ 40/SEC.					
			s2hv04.cmd ANALOG = 85, STEP 4 ~ 130-170/SEC					
			w/ Co^{60} SOURCE, RATE ~ 13200/s.					
			TRW R/O mf 16, w385 IS 34. REM SOURCE = 0.		1220			
			pwrdown.cmd		1220			
620	ACCESS PANEL		START REMOVAL OF ACCESS PANELS	1222				
630	PWRUP I		PREPS TO LOOK AT HV RIPPLE	1350				
			pwrupI.cmd 99ma → 1.38A					
			HPI0387 – PULSES PROPAGATE OK					

LIFE HISTORY

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631	90 KHz	15APR97	TURNED ON NRC-I LV @ STOP 0. STARTED					
	INVESTIGATION		DATA FILE A97041Sa PRIOR TO TURN-ON.					
			BEFORE TURN-ON, SLOW TRIGGER NOISE					
			< 10 mV P-P, FREQ < 90 KHz					
			NO CHANGE AT TURN-ON.		1515			GKA
			STARTED PULSE INJECTION SIMULTANEOUSLY & SAW					
			VERY RATTY LOOKING PH DISTRIBUTION		1521			GKA
			PULSER STOPPED, THEN RESTARTED		1523			
			PULSER STOPPING AFTER ATTEMPTS TO SHIELD					
			PULSE INJECT LINES, WHICH IMPROVED					
			DISTRIBUTION.					
			RAISED REAR PLATE VOLTAGE TO 112V (sd0B13)		1530			
			NOISE LEVEL 60mV P-P @ ~100 KHz					
			RAISED FRONT PLATE VOLTAGE TO 110V (sd0A08)		1532			
			NOISE LEVEL 36mV P-P @ 100 KHz					
			RAISED REAR PLATE TO 212V (sd0b18)		1534			
			NOISE LEVEL 42mV					
			RAISED FRONT PLATE TO 210V (sd0a0d)					
			NOISE LEVEL NO CHANGE		1535			
			[DETECTOR PRESSURE 1.7×10^{-5} AT CLUSTER]		1536			GKA

LIFE HISTORY

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631	CONT'D	15APR97	REAR PLATE TO 313 V (sd0b1d)					
			NO CHANGE		1536			GKA
			FRONT PLATE TO 310 V (sd0a12)					
			NOISE NOW 60 mV P-P		1538			
			ENABLE HVPS CL (sd0c01)		1541			
			REAR PLATE TO 413 V (sd0b22)		1542			
			NOISE DOWN TO 50 mV P-P					
			FRONT PLATE TO 410 V (sd0a17)					
			NOISE UP TO 70 mV P-P		1544			GKA
			REAR PLATE UP TO 513 V (sd0b27)					
			NO CHANGE					
			FRONT PLATE TO 510 V (sd0a1c)					
			NOISE 90 mV P-P		1546			GKA
			HV OFF (call hvoff)		1547			GKA
632		15APR97	SWITCH TO HRC-S (spect)	1547	1551			GKA
			MONS SCOPE TO SUM OF ALL 3 HRC-S TRIGGERS,					
			STARTED DATA RUN s9704156		1554			
			NOISE 6 mV P-P WITH NO 100 KHz					
			TURN ON SPECT HV hvsp0000		1555			
			ENABLING CURR. LIMIT (sd0401)		1556			
			NO CHANGE IN NOISE					

FILE NOT ACTUALLY STARTED

LIFE HISTORY

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632	CONT'D	15APR97	PLATE VOLTAGE NOISE CTUD					
			REAR 100 150 m-V sd0313	1558				GKA
			FRONT 91 180 mV sd0208					
			REAR 200 215 sd0318	1600				
			FRONT 191 250 sd0208	1601				
			REAR 300 275 sd031d	1601				
			FRONT 291 300 sd0212					
			REAR 400 350 sd0322	1602				
			FRONT 391 350 sd0217	1603				
			REAR 500 390 sd0327	1603				
			FRONT 491 400 sd021c	1604				
			HV OFF all hv off		1605			GKA
633	PWR OFF	15APR97	S/C pwrdwn		1619			GKA
634	PRESSURE	15APR97	PRESSURE 1.5/1.6 $\times 10^{-5}$ AT CLUSTER		1624			GKA
			" 9.9×10^{-6} " "		2238			GKA
635	TEMP READING	16APR97	COLD TURN ON FOR TEMPERATURE DATA	0818				
			JHC DATA, CTUE TLM DATA.					
			pwroff.cmd		0956			

LIFE HISTORY

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636	PWRUP	4/16	PWRUP I.Cmd .099 / 1.37A	1028				JG
			(PREP FOR PULSER GAIN REFERENCE CHECKS)					
			PØØ41697a.rd PULSER FILE CPH03067	1059				
			PHA ~ 240					
			1ØØ41697b.rd PULSER FILE CPI03067	1101				
			PHA ~ 60					
			Pwrdown.cmd	1103				JG
637	UNCABLING	16APR97	REMOVED I/F CABLES & SIGNAL INJECTION					
			CABLES LEAVING CONNECTOR SAVERS ON HRC					SKA
638	DISASSY	16APR97	REMOVED THE FOLLOWING DWB ASSY'S FOR					
			SHIPMENT TO SAO FOR MODIFICATION:					
			SLOT NO. PART NO. SER NO.					
			CEJ27 -5261 01					
			CEJ28 " 02					
			CEJ15 -5270 02					
			CEJ16 " 01					
			FEJ31 -5257 03					
			FEJ32 " 04					
			FEJ33 -5258 01					

LIFE HISTORY

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638	CONT'D	16APR97	FEJ34 -5258 02					
			FEJ17 -5253 02					
			FEJ18 " 05					
			FEJ19 " 03					
			FEJ20 " 01					
			TEMPORARILY RE-INSTALLED ACCESS PANELS					
			TO PROTECT PWB'S DURING SUBSEQUENT					
			HANDLING		1205			GKA
639	PRESSURE	16APR97	PRESSURE: 5.7×10^{-6} @ CUSTOM		1732			GKA
		17APR97	4.7×10^{-6} "		0804			GKA
			4.5×10^{-6} "		1332			
640	PUMP CART	17APR97	CLOSED BLOCK VALVE ON HRC & REPRESSED	1445				
	REPRESS		PUMP CART LINE UP TO BLOCK VALVE.					
			REMOVED CONNECTION OF PUMP CUSTOM					
			AT BLOCK VALVE TO PERMIT ROTATION					
			OF HRC.		1456			GKA
641	DEMATE	17APR97	REMOVED HRC FROM BALL I/F PLATE	1456				
	FROM		& INSTALLED IT ON ITS OWN TRANSPORT					
	BALL PLATE		PLATE PER SP-HRC-5506					GKA
642	HRC	17APR97	ROTATED HRC TO THE +X UP POSITION PER					
	ROTATION		SECTION 2 OF SP-HRC-5505		1846			GKA

1876

1920

9.9×10^{-6}

1924

7×10^{-4}

5.2×10^{-5}

1930

3.0×10^{-5}

1994

1.8×10^{-5}

2005

1.2×10^{-5}

0.90

2.1×10^{-6}

9/18

LIFE HISTORY

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643	PUMPING	17APR97	CONNECTION PUMPING CLUSTER TO HRL BLOCK	1846				GKA
			VALVE WITH FLEX HOSE. STARTED PUMP-					
			DOWN OF SYSTEM UP TO HRL VALVE					
			PRESSURE IN FLEX LINE DOWN TO 4.9×10^{-6}	1920				
			OPENED HRL BLOCK VALVE & PRESSURE	1921				
			ROSE TO $\sim 7 \times 10^{-4}$. NOW PUMPING ON					
			HRL IS RESUMED					
			5.2×10^{-5}	1924				
			3.0×10^{-5}	1930				
			1.8×10^{-5}	1945				
			1.2×10^{-5}	2005				GKA
		18APR97	2.1×10^{-6}	0808				GKA
644	STRAY LIGHT SH.	18APR97	The 2 PIECE STRAY LIGHT SHIELD WAS	~~1808~~				
			removed to rework the TANTALUM					
			SECTION. The ALUMINUM SECTION will					
			be remade. NO TROUBLE EXTRACTING					
			SCREWS.					
645	PRESSURE	18APR97	2.0×10^{-6}	1432				GKA
			1.9×10^{-6}	1542				GKA
			1.9×10^{-6}	1834				GKA

LIFE HISTORY

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645	CONT'D	4/19/97						
		~~0755~~	1.7×10^{-6}	0935				
		20APR97	1.5×10^{-6}	1751				SKA
		21APR97	1.5×10^{-6}	0755				SKA
		22 Apr 97	1.4×10^{-6}	0825				
			1.4×10^{-6}	1748				SKA
646	PWB	22APR97	REMOVE CDA & FEA ACCESS COVERS & INSTALLED	1300				
	INSTALL		REWORKED PWB'S REMOVED IN STEP 638.					
			REINSTALLED ACCESS COVERS		1515			
647	FIT CHECK	22APR97	FIT CHECKED NEW PORTION OF STRAY LIGHT SHIELD	1515	1710			
648	CABLING	22APR97	CONNECTED 4 I/F CABLES & PULSE INJECTION	1710				
			CABLES TO CONN. SAVERS ON HRL		1752			SKA
649	PWR UP	22APR97	STARTED FILE p042297a TO CAPTURE TURN-ON	1811				
			T/M. HOOKED FAILSAFES DISABLED. PWR					
			CONFIG 0 (ABABAB). STARTED FILE					
			PWRUPI. EGSERTD & CEDISP BOTH					
			CRASHED WHEN FILE GOT TO INIT.		1818			
			RESTARTED PROCESSES & SENT FILE PWRDOWN.CMD	1822				
			STARTED FILE p042297b & SENT CMD FILE					
			PWRUPI. PWR IS UP BUT PRI SEL ON					
			CEDISP IS NOT WORKING.		1836			

LIFE HISTORY

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			SENT A DOT FROM PULSAR & DOTS APPEAR					
			ON RTD & ROLLING DISPLAY ON CED:SP					
			IS WORKING		1837			GKA
650	IMAGOR	22APR97	STARTED NEW IMAGE p042297c & SENT FILE	1838				
	DOT TEST		idots1 FROM PULSAR		1853			
651	PWR DWN	22APR97	SENT PWRDWN.CMD. BOTH CED:SP & DESERTA					
			CRASHED W/O TURNING OFF HRE. HRE TURNED					
			OFF @ BUSS SWITCH BOX & LVPS		1901			GKA
652	VACUUM	23 APR 97	@ 7:10 AM 1.4X10-6	07:10				WM
653	REBOOT	23APR97	REBOOTED ALL 5 COMPUTERS. STARTED UP AGAIN,					
			ABLE TO CONNECT CTUE, ENTERPRISE & NCC1701A					
			& HRE5, BUT CANNOT CONNECT TO NETS1					
			WHEN OTHERS ARE CONNECTED TO EACH OTHER.					
			CTUE STILL FLAKY, DRAWS BLACK BARS ON					
			DISPLAY. PWRED W/O NETS1, BUT REMOVED		0803			GKA
			COVER ON CTUE & RESTARTED BOARD.					
			CAN'T CONNECT CTUE NOW. REMOVE COVER					
			& TRY AGAIN					
			CTUE HAS BEEN STABLE		1738			GKA

LIFE HISTORY

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654	PWR UP	23APR97	STARTED DATA FILE i0970423a	12:40				
			STARTED CMD FILE pwrupI (NOTE THAT					
			TODAY pwrupI IS WRITTEN FOR STAND ALONE					
			MODE. WHEN RUN YESTERDAY, THE FILE					
			CALLED UP WAS THE ONE USED FOR CALIB)					
			THE PWRUP FILE JUST USED IS IN THE /eng					
			DIRECTORY. COMPARISON WITH /sci PWRUP					
			FILES SHOWS THAT YESTERDAY & LAST WEEK					
			WE WERE RUNNING IN THE /sci DIRECTORY					
			WHICH PROBABLY HAS THE LATEST T/HOLD					
			SETTINGS.					
			REVIEW OF /sci & /eng COMMAND LOGS					
			SHOWS THAT WE WERE VARIOUSLY IN THE					
			/eng & /sci DIRECTORIES LAST WEEK, BUT					
			THAT RIPPLE MEASUREMENTS ON 16APR WERE					
			DONE IN /sci. ∴ POWER-DOWN & COME					
			UP IN /sci ON BOTH MACHINES		1323			CMA
			pwrupI.cmd	1324	1330			
655	HRC-I	23APR97	STARTED FILE i0970423b FOR IDOISL					
	LOW DOIS		TEST					
	HV OFF							

LIFE HISTORY

EVENT NO.	EVENT SUBJECT	DATE	SUMMARY OF CHRONOLOGICAL EVENTS (TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.)	RUNNING TIME/OTHER (HOURS AND MINUTES) START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
656	RIPPLE	23APR97	SET UP TO MEASURE RIPPLE AS HV ON IMAGOR	*				
	TEST		IS INCREASED. LOOKING @ FAST & SLOW					
			SIGNALS ON MCP AMP BD TEST POINTS J1-11 &					
			J1-13 RESPECTIVELY. WITH PULSES BEING					
			INJECTED, PEAK OF SLOW SIGNAL OCCURS AT					
			ZERO CROSSING OF FAST SIGNAL. STARTED					
			DATA FILE \09704235					
			Sd CMDS NOMINAL HV/PLATE — SLOW SIG 90 KHz P-P					
			N/A — HV OFF — 10 mV					
			(HV ON) — 0 V — 20 mV					
			0b19,0a08 — 100 V — 50 mV					
			[HV OFF, VALUES SENT IN 0b & 0a WERE DECIMAL					
			VALUES, SHOULD HAVE BEEN HEX. RESTART TEST)					
			HV OFF — 15mV					
			0 V — 20mV					
			0b13,0a08 — 100 V — 40 mV					
			0b18,0a0d — 200 V — 50 mV					
			0b1d,0a12 — 300 V — 60 mV					
			0b22,0a17 — 400 V — 100 mV					SKA

* ENTRIES ON PGS 15 — 20 TRANSCRIBED FROM CLEAN ROOM NOTES. SEE CMD LOGS FOR EXACT TIMES OF CMDS & DATA FILES FOR DATA ACCUM. TIMES

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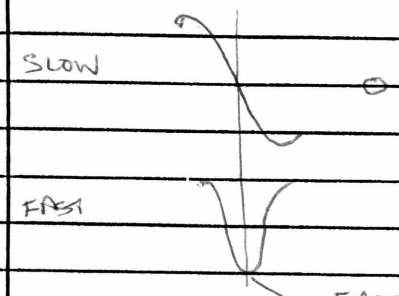
EVENT NO.	EVENT SUBJECT	DATE	SUMMARY OF CHRONOLOGICAL EVENTS (TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.)	RUNNING TIME/OTHER (HOURS AND MINUTES) START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
656	CONT'D		0b27, 0a1c 500 V 100 mV ΣU RIPPLE = 200 mV	, ΣV RIPPLE =		400 mV		
			0b2c, 0a21 600 V 120 mV					
			0b31, 0a26 700 V 140 mV					
			0b36, 0a2b 800 V 160 mV					
			0b3b, 0a30 900 V 180 mV					
			[PULSOR TURNED OFF]					
			0b40, 0a35 1000 V 200 mV					
			0b45, 0a3a 1100 V 240 mV					
			0b4a, 0a3f 1200 V 260 mV					
			0b4f, 0a44 1300 V 320 mV					
			0b54, 0a49 1400 V 350 mV FAST RIPPLE = 180 mV					
			0b58, 0a4d 1480 V 400 mV FAST = 200 mV,	ΣU = 360 mV,		ΣV = 950 mV		
			CURRENT LIMIT ENABLED					
			SLOW TO FAST PHASING OF RIPPLE					
								
			SLOW					
			FAST					
			FAST IS LOW @ SLOW ZERO CROSSING					SKA

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EVENT NO.	EVENT SUBJECT	DATE	SUMMARY OF CHRONOLOGICAL EVENTS (TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.)	RUNNING TIME/OTHER (HOURS AND MINUTES) START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
657	HRGI	23APR97	TERMINATED PROCESSING DATA FILE & STARTED					
	LOW DOTS		A NEW ONE, i0970423d, & STARTED					
	W/HV ON		IDOTSL ON PULSOR					
			ABORTED TEST BECAUSE RESET ALL MAY NOT HAVE					
			BEEN DONE. STARTED A NEW DATA FILE,					
			i0970423e & RESET PULSOR.					
			HV TRIPPED OFF DURING TEST. TEST					
			TERMINATED WITH ONLY PARTIAL DOT PATTERN.					
658	HRGI	23APR97	STARTED NEW DATA FILE i0970423f AND					
	HV ON		TURNED ON HV @ 0 AND RAMPED UP TO					
			OPERATING VOLTAGE USING CMDS:					
			hvINI0000.cmd					
			" 0500. "					
			" 1000. "					
			" 1200. "					
			" 1300. "					
			" 1400. "					
			" 1480. "					
			ENABLED CURR. LIMIT w/ s2OC01					
								GKA

LIFE HISTORY

EVENT NO.	EVENT SUBJECT	DATE	SUMMARY OF CHRONOLOGICAL EVENTS (TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.)	RUNNING TIME/OTHER (HOURS AND MINUTES) START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
659	DOOR	23APR97	SENT FILE CALOPEN.CMD. STARTED A					
	SOURCE		NEW DATA FILE \0970423g AND DID A					
			1000 SEC ACCUMULATION. SENT CALCLOSE.CMD					
			AND ALLHVOFF.CMD					
660	PWR DOWN	23APR97	SENT PWRDOWN.CMD					
661	HRC-S ON	23APR97	ENABLED LVPS OUTPUT, SWITCHED BUS SWITCH					
	SIDE B		TO B & SENT INITBS.CMD. PULSOR TURNED					
			ON. [STILL IN PCFG0]					
662	HRC-S	23APR97	STARTED DATA FILE s0970423h AND					
	LOW DOTS		PULSOR FILE sdots1. ΣU NOISE = 120 mV					
	W/HV OFF		& ΣV NOISE = 140 mV					
663	HRC-S	23APR97	REPEATED RIPPLE ~~TEST~~ OF STEP 656 EXCEPT					
	RIPPLE		NOW TURNING ON HRC-S HV USING B SIDE					
	TEST		ELECTRONICS.					
			sd CMOS NOMINAL SLOW SIG.					
			HV/PLATE RIPPLE					
			— OFF 15mV					
			— 0V 20 mV					
			03130208 100V 200 mV					SKA

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EVENT NO.	EVENT SUBJECT	DATE	SUMMARY OF CHRONOLOGICAL EVENTS (TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.)	RUNNING TIME/OTHER (HOURS AND MINUTES) START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
663	CONT'D	23APR97	0318,020d 700V 260 mV					
			031d,0212 300V 320 mV					
			[STARTED DATA FILE s0970423i.]					
			0322,0217 400V 380 mV					
			0327,021C 500V 420 mV					
			032c,0221 600V 480 mV					
			0331,0226 700V 540 mV					
			0336,0225 800V 600 mV					
			0335,0230 900V 640 mV TE RATIE = ~25					
			[FOUND THAT T/H CMD IN INITBS WAS sd2914.					
			LOOKED AT INITAS & FOUND IT SHOULD HAVE					
			BEEN sd2928. CMD WAS SENT] TE RATIE → 0					
			0340,0235 1000V 700 mV					
			0345,023a 1100V 760 mV					
			034a,023f 1200V 800 mV					
			034f,0244 1300V 860 mV					
			0354,0249 1400V 960 mV					
			0359,024e 1500V 1000 mV					
			035e,0253 1600V 1100 mV					
			0362,0257 1680V 1150 mV ΣV RIPPLE = 105mV, ΣV = 195 mV					
			sd0401 CURRENT LIMIT ENABLE.					EKA

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EVENT NO.	EVENT SUBJECT	DATE	SUMMARY OF CHRONOLOGICAL EVENTS (TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.)	RUNNING TIME/OTHER (HOURS AND MINUTES) START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
664	NRL-S	23APR97	STARTED NEW DATA FILE S0970423j AND					
	LOW DOTS		RAN SDOTSL ON PULSER. NOTED ONE					
	W/HV ON		DOT MISSING IN FIRST SEGMENT. RAN TEST					
			UNTIL PAST THAT LOCATION ON 2ND SEG.					
			DOT APPEARED ON SEG. 2. TERMINATED					
			DATA FILE & PULSER.					
665	SLOW/FAST	23APR97	PHASING OF RIPPLE IN FAST & SLOW SIGNALS					
	PHASING		WAS THE SAME AS FOR NRL-I. RIPPLE ON					
			FAST SIGNAL SHOWS SOME DISTORTION					
666	NRL-S	23APR97	SENT CALOPEN.CMD. STARTED DATA FILE					
	DOORSOURCE		S0970423k FOR 1000 SEC. TEST ABORTED					
			@ ~ 200 SEC DUE TO LARGE NUMBER OF					
			SATURATED OUTPUTS FROM ADC'S ON U-AXIS.					
			PULSE HGTS NOT SATURATED ~ 30-40.					
667	PWR OFF	23APR97	SENT ALLHVOFF, CALCLOSE & PWRDOWN					SKA
668	VARIABLE	24APR97	CONNECTED BNC PULSER TO NRL-S PULSE					
	PULSE HGT		INJECT CONNECTORS USING SPECIAL CABLES					
	TEST HVOFF		WITH CAP'S INSTALLED IN THEM. USED TRIGGER					
			HZ. USED THE WAVE GENERATOR TO SWEEP					
			PULSE AMPLITUDE OVER RANGE 255 TO 16.					
			TURNED ON NRL-S USING BUS B AND					

↑ FOR SETTINGS ON PULSER & WAVE GENERATOR, SEE ATTACHED SHEET.

FREQ 10 multiply

AMPL 4V

WAVEFORM TRIANGLE

OFFSET +0V

Swept

MODE = REF

NORM = 10

TR = .1

TF = 200

RANGE = 10

AMPL = 2.6

ATTN 2 OUT
5 IN
10 OUT
10 IN

POL +

REFRANGE EXT

FREQ 175 HZ

Pulsed

USED INITBS BUS B

TO POWER UP

SET LL → 2904

PHA RANGE 255 → 16

LIFE HISTORY

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668	CONT'D	24APR97	INITBS. SET T/H TO sd2904 TO GET					
			LOW PULSE HGTS. STARTED DATA FILE					
			s0970424a AND RAMPED PULSE HGTS					
			FROM LOW TO HIGH TO LOW.					
669	PWRDOWN	24APR97	SENT PWRDOWN					
670	PRESSURE	24APR97	PRESSURE @ CLUSTOR 1.3×10^{-6}		0855			SKA
			1.3×10^{-6}	1258				SKA
671	PWR UP	24APR97	ENABLED LVPS OUTPUT & SET BUS SWITCH					
	SPEC/B		TO B. SENT ~~TATISB.CMD~~ INITBS.CMD					
			& SD2928 . PULSER OFF		1313			SKA
672	NRC-S		STATION DATA FILE s9704245 & SENT					
	HV ON		hvSP0000.cmd . HV ON WITH CURRENT					
			LIMIT DISABLED.		1315			
			hvSP0500					
			hvSP1000					
			hvSP1300					
			hvSP1500					
			hvSP1600					
			hvSP1680					
			SENT sd0401 CURR. LIMIT ENABLE					
			SEE SATURATION ADC OUTPUT ON U AXIS CENTOR					

LIFE HISTORY

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			ADC. SUM U & SUM V SIGNALS SHOW SUMU					
			PULSE SUBSTANTIALLY HIGHER THAN SUM V.					
			U ~ 5V, V ~ 2V					
673	VARIABLE	24APR97	STARTED DATA FILE S0970424c & RAN					
	PULSE HGT		PULSE HGT UP & DOWN AS IN STUP 668.					
	TUBE-HV ON		NO EVIDENCE OF LARGE NUMBER OF U-AXIS					
			SATURATING ADC OUTPUT. THOSE THAT ARE		1355			GKA
			SATURATING ARE BKGD EVENTS (DIFFERENT					
			COARSE POSITIONS) AND NOT PULSE INJECT					
			EVENTS					
674	FIXED HGT	24APR97	ADJUSTED PULSER TO PULSE HT ~ 40 AND RAN					
	TEST		USING SAME CABLING SETUP. STARTED DATA					
			FILE S0970424d. 100 SEC ACCUM.					
			ADJUSTED PH TO ~100 FILE S0970424e					
			" " " ~170 FILE S0970424f		1413			GKA
675	SLOW RATE	24APR97	ADJUSTED PH TO ~40 & CUT RATE TO BE					
	TEST		COMPARABLE TO BKGD RATE. NO CHANGE IN					
			PERFORMANCE. PULSES OK, BKGD NOT OK.		1434			GKA
			CALOPEN.CMD START FILE S0970424g FOR					
			200 SEC. 2V SIGNALS 8-10V, 2V ~3/4 V					
			CALCLOSE.CMD		1445			GKA

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EVENT NO.	EVENT SUBJECT	DATE	SUMMARY OF CHRONOLOGICAL EVENTS (TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.)	RUNNING TIME/OTHER (HOURS AND MINUTES) START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
676	HV OFF	24APR97	ALL HV OFF		1495			GKA
677	Powerdown	24APR97	POWERDOWN / BUS SWITCH OFF / DISABLE OUTPUT		1447			EJ
			FOR SN001 MEGAL FIT CHECK					
678	PWR UP	24APR97	ENABLE +28 VPS OUTPUT, SWITCH TO BUS B	1627				
	SPUC1B		& SEND INITBS. CMD. SEND sd2928					
679	HRC-3	24APR97	hvSP0000 STARTING FILE S0970424h					
	HV ON		hvSP0500					
			hvSP1000					
			hvSP1300					
			hvSP1500					
			hvSP1600					
			hvSP1680					
			sd0401					
			STILL SEE SAT U ADC UNITS					
			SEND sd251C TO CHANGE GRID BIAS					
			(WAS sd2555) SUM U ? GRID BAL OK		1637			GKA
			SUM V)					
680	HV OFF	24APR97	ALL HV OFF		1711			GKA
681	DISABLE	24 APR97	ADJUST PULSER TO FIXED PULSE HGT &					
	PULSE HGT		COLLECT DATA FOR 200 SEC					
	TEST							

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681	CONT'D		PN FILE NAME U: A B C ✓: A B C					
			75 S0970424f 775 1100 555 785 1160 570	(2.21)				
			175 S0970424j 925 1312 670 935 1385 680	(5.20)				
			200 k 1075 1530 780 1085 1615 790	(6.05)				
			220 l 1173 1668 849 1187 1758 864	(6.60)	1730			
			240 m 1290 1830 932 1302 1930 947	(7.23)				
			255 n 1353 1923 978 1364 2025 994	(7.60)				
		»	255 o 1824 2592 1320 1842 2732 1340	(4.11 ÷ 3 No OUT)				
			(LAST RUN – PULSE NOT HIGH ENOUGH TO DISTORT					
			ΣU & ΣV BUT NOT SATURATE THEM)					
682	PWR DOWN/	29APR97	PWRDOWN, BUS SWITCH TO OFF, BUS SWITCH TO A,					
	PWR UP		INITAS, h/p39, h/p75 NRC-S NOW ON SIDE A		1759			GM
683	DISCRETE	29APR97	ROPDAT STOP 681 FOR NRC-S ON SIDE A					
	PULSE		PN					
	HI TOST		7580 S0970424q 750 1055 545 753 1110 547					
			175 r 930 1305 675 936 1376 677					
			200 s 1085 1522 790 1086 1601 788					
			220 t 1184 1660 863 1184 1746 859					
			240 U 1292 1810 940 1293 1905 938					
			255 ✓ 1345 1886 980 1345 1986 977					
		»	255 S0970424p 1835 2570 1335 1836 2710 1332					

U: A B C ✓: A B C

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684	PWR OFF	24APR97	PWRDOWN		1833			GKA
685	Vac CK	25APR97	1.3×10^{-6}		0708			W.M.
686	PWR UP	25APR97	ENABLE +28 PS OUTPUT, SWITCH TO BUS A,					
	HRC-I		SEND pwrupI.cmd TO POWER UP HRC-I					
			ON THE A SIDE					
			SENT hvIM_up.cmd & calopen.cmd	0840	0847			GKA
687	TRIGGER	25APR97	STARTING DATA FILE N09704250					
	SIG'S &		MEASURE SLOW & FAST TRIGGER SIGNALS (J1-13, J1-11)					
	SUM SIG'S		PEAK SIGNAL RIPPLE (P-P)					
	(HRC-I)		FAST 0.5-2V (MOST 1-1½V) 200 mV					
			SLOW 0.8-4V (") 400 mV					
			SUM U 2-6V .95V					
			SUM V 2-6V .25V					
			COUNT RATE: 30-32 CPS					
688	SWITCH TO	25APR97	SENT calclos.cmd	0905				
	HRC-S		spect.cmd	0906				
			STARTING DATA FILE S09704256					
			SENT hvSP_up.cmd		0915			
			calopen.cmd	0915				

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689	TRIGGER	25APR97	MEASURE SLOW, FAST & SUM SIGNALS					
	SIG's &		PEAK SIGNAL RIPPLE (P-P)					
	SUM SIG's		FAST 1-4V (MOST 1½ V) 0.6V					
			SLOW 1-3V (") 1.1V					
			SUM U 2-6V .13V					
			SUM V 2-6V .24V					
			COUNT RATE 10-20 CPS					
			SUNT calclos.cmd	0958				EKA
690	NRC-5	25APR97	CONTINUOUS RUNNING DATA FILE FOR 10 MIN					
	BKGD		TO OBTAIN BKGD DATA					
691	PWR OFF	25APR97	SUNT all hvoff.cmd & pwrdown.cmd		1010			EKA
692	PWR UP	25APR97	POWER UP WITH INITAI	1120				
693	CAL SOURCE		MOVE TO CAL OPEN POSITION W/ SECONDARY SWITCH					
	LIMIT SW.		DISABLED USING FOLLOWING CMD SEQUENCE					
	TEST		sd 6500 sd 5100					
			7200 sd 5201					
			5400 sd 5300 (DISABLES 2ND SW)					
			5401 sd 6801					
			4901 sd ~~6601~~ 6b01					
			4a01					
			sd 5000					EKA

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693	CONT'D		MOTOR STOPPED ON PRIMARY SWITCH. VERIFIED					
			PRIMARY SWITCH @ BYTE 73, BIT 3 = 1. PROXIMANT					
			SWITCH ALSO TRIPPED (BYTE 73, BIT 4 = 1) AND					
			TRAV INDICATION IS CLOSED @ MAX IN S/S					
			MECHANISMS DISPLAY (PRI. BUS CMD 153)					
			sd 6800 (PRI BUS CMD 151)					
			sd 7000					
			MOVE TO CAL CLOSED POSITION WITH SECONDARY					
			SWITCH DISABLED					
			sd 6500 sd 5100 (DISAB. SWITCH)					
			sd 7200 sd 5200					
			5400 sd 5300					
			5401 sd 6801					
			4901 sd 6a01					
			4a01					
			sd 5001					
			VERIFIED PRIMARY & SECONDARY SWITCH					
			OPERATION BYTE 73 BITS 0 & 1 = 1. TRAV					
			INDICATION IN S/SC1 MECHANISMS DISPLAY IS					
			"OPEN" @ HOME.					
			sd 6800					GKA

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			sd 7000		1155			SKA
694	PURGE S	25APR97	PRESSURE 1.4×10^{-6}	1411				
			PURGE N2 C W/ SN2		1503			SKA
695	DOOR	25APR97	BRING UP DOOR SWITCHES W/O ENABLING DOOR	1507				
	SWITCH		MOTOR USING THE FOLLOWING COMMANDS					
			sd 6F00 → sd 4a00					
			7100 → 5001					
			5400 → 5101					ALL SWITCHES
			5401 → 5201					ENABLED
			sd 4908 → sd 5301					
			SOL/SOL MOTORS DISP					
			BYTE 66 1110 0010					
			↑ DOOR MOTOR SELECTED					
			BYTE 72 0001 1111					
			↑ ALL SWITCHES ENABLED					
			BYTE 73 1100 0111					
			↑ PRIMARY CLOSED					
			↑ SOL. CLOSED					
			TPV STATUS SHOWS CLOSED, BUT READING ISN'T					
			CORRECT BECAUSE MECHANICAL INSPECTION SHOWS THAT PRI					
			SWITCH HAS NOT BEEN ACTUATED (SEE NEXT STEP)					SKA

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696	DOOR SWITCH		MANUALLY ACTUATE PRIMARY DOOR OPEN SWITCH					EJ
			BYTE 73 BIT 3 CHANGES FROM 0 TO 1 "CORRECT"					
			TRW DOOR OPEN FLAG CHANGES FROM NOT TO OPEN "CORRECT"					
			MANUALLY ACTUATE REDUNDANT DOOR OPEN SWITCH					
			BYTE 73 BITS 4 & 5 CHANGE FROM 0 TO 1 "CORRECT"					
			MANUALLY ACTUATE PRIMARY DOOR CLOSED SWITCH					
			BYTE 73 BIT 0 CHANGES FROM 1 TO 0 INDICATING					
			1 SWITCH IS WIRED BACKWARDS NO & NC TERMINAL					
			2 DOOR IS ACTUATING REDUNDANT SWITCH FIRST					
			WE NEED TO INTERCHANGE WIRES ON PINS 33 & 34					
			ON CONNECTOR CEXPM1					
697	WIRE CHANGE		POWER DOWN & INTERCHANGE PINS 33, 34	7:45 PM				
698			POWER UP INITAI	8:08 PM				
699			~~POWER DOWN~~ CRACK DOOR	809				
700			POWER DOWN, BAGGED HRC & PURGED W/ N_2	8:10				
701			POWER UP INITBS	8:12				
702			CRACK DOOR WENT WRONG WAY	8:14				
703			SEND SD6800 MOTOR DRIVE OFF	8:15				
704			SEND SD7000 DESELECT ALL MOTORS	8:15 PM				EJ
705	PWR DOWN	25APR97	PWR DOWN		2020			GKA

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706	PWR UP	25APR97	LOWABUNS +28V SUPPLY, SET SWITCH TO BUS A					
			& SENT INITAL	2021				GKA
707	DOOR OPEN	25APR97	SENT dooropen.cmd	2022				
	SWITCH TEST		BYTE 73 xxxx xxxx					
			1111 0000					
			PRI CLOSE					
			ROD CLOSE					
			DAVIONS					
			TMW INDICATION DOESN'T SHOW OPEN					
			BECAUSE DOOR STOPPED ON REDUNDANT SWITCH.					
708	DOOR	25APR97	ADJUSTED PRI DOOR CLOSE SWITCH TO MAKE					
	CLOSE		IT TRIP FIRST.					
	SWITCH		SENT doorclos.cmd	2040				
			ABORTED TO RECHECK CABLE NOT YET	2043				
			SECURED AFTER WIRING CHANGE.					
			SENT doorclosing AGAIN	2043				
			BYTE 73 1100 0110					
			ROD CLOSE					
			DAVIONS					
			STILL STOPPED ON ROD SWITCH - NEEDS FURTHER					
			ADJUSTMENT		2045			BKN

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709	PWR DOWN	25APR97	PWR OFF		2048			GKA
710	WIRING	26APR97	REMOVED CONN CEXP1Y2 & FOUND PINS 1 & 2	0720				
	CHANGE		INTERCHANGED. SWAPPED WIRES & REASSEMBLED					
			CONNECTOR.					
711	SWITCH ADJ	26APR97	ADJUSTED DOOR OPEN SWITCHES					
712	DOOR TEST	26APR97	BAGGED HRC & PURGED WITH GN_2 FOR 20	0930				
			MINUTES		0950			
			PWR UP ON B SIDE USING 'init bs.cmd'	0952				
			SENT crakdoor.cmd. DOOR MOVES IN	0953				
			CAPLOCK DIRECTION					
			SENT dooropen.cmd	0957				
			BYTE 73 1111 0000					
			↑ PRI OPEN					
			↑ SEC. OPEN					
			↑ DUTYCT					
			DOOR STOPPED ON REDUNDANT SWITCH AGAIN					
713	ADJUST	26APR97	ADJUSTED DOOR CLOSE SWITCHES					
	SWITCH							
714	DOOR	26APR97	SENT doorclos.cmd BYTE 73 1100 0110	1018				
	TEST		↑ SEC					
			STOPPED ON REDUNDANT SWITCH AGAIN.					GKA

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715	PWR DWN	26APR97	PWR OFF		1026			GKA
716	PWR UP	26APR97	PWR UP ON A SIDE, initial, end	1103				GKA
717	DOOR TEST	26APR97	OPEN DOOR W/ REDUNDANT SWITCH DISABLED,	1104				
	W/O RED.		USING FOLLOWING CMDS:					
	SWITCHES		sd 6500 sd 5000					
			7100 sd 5100					
			5400 5201					
			5401 5300					
			4900 6801					
			sd 4a00 6B01					
			DIDN'T WORK, SO USE FILE dooropen.cmd					
			AND SEND sd 5300 ~~WHEN~~ WHEN DOOR					
			IS MOVING.					
			BYTE 73 1101 1000 TRN					
			DR INDICATION					
			SUC IS OK!					
			sd 6800, sd 7000		1123			
			CLOSE DOOR WITH door cls ; SEND					
			sd 5001 WHILE MOVING (FILE HAS sd 5000					
			; sd 5101 - ONLY SUC SWITCH ENABLED!					
			DUE TO SWITCH MISWIRING PROBABLY)					

sdr-2 70

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717	CONT'D	26APR97	BYTE 73 1100 0110 – STOPPED ON SECONDARY					
			sd6800, sd7000		1138			GKA
			SEND crakdoor.cmd					
			SEND doorclos.cmd ; SEND sd5001 ;					
			sd5100 WHILE MOVING					
			BYTE 73 1100 0011					
			↑ PRITHAM !					
			T.M.W INDICATION IS CLOSED		1145			GKA
718	SWITCH TO	26APR97	SWITCH TO SPECTROSCOPY ON A SIDE WITH					
	SPECT		spect.cmd		1153			
719	PULSE	26APR97	TURNING ON SPECT. INPUT PULSE ; SET LEVEL					
	INJECT		@ 6.16 ON PULSER. SEND CMD sd7100					
			TO SET RANGE SWITCH @ PMD = 209. PULSES					
			ARE NOW DIVIDED BETWEEN RANGE 2 & 3.					
			START FILE S09704276a. FOR 100 SEC					
			PULSE AMPLITUDE ~~Σ V = 8 V~~ 8.3 ~~Σ 0 SAME~~					
			Σ V = 8.5 V, Σ U = 8.3 V					
720	PWR OFF	26APR97	RAN pwrdown.cmd		1303			GKA
721	CLEANUP	26APR97	REMOVED ALL TEST CABLING FROM NRE, LEAVING	1438				
	ACTIVITIES		CONN. SAVER CABLES ATTACHED. COMPLETED					
			RE-ASSY & MATING OF CONNECTORS (EXPM1					

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721	CONT'D	26APR97	AND CEXPM2. HARDWARE NOT STAKED.					
			RE-INSTALLED CABLE CLAMP HOLDING CABLE					
			TO REWORKED CONNECTORS. HARDWARE NOT					
			STAKED.					
			INSTALLED FOA ACROSS PANEL WITH ONLY					
			FOUR SCREWS. INSTALLED +Y & -Y BIPODS.		1532			GAA
722	PREP FOR	26APR97	BAGGED HRC & ROTATED IT TO +X DOWN	1615				
	TRANSPORT		POSITION & PLACED IT IN A SECOND					
	TO EMC		BAG ON MSFC PROVIDED TRANSPORT CART.					
			GN_2 PRESSURE LINE DISCONNECTED FOR APPROX					
			1 HR DURING HRC ROTATION. BAGGING NOT					
			YET COMPLETED. WORK ACCOMPLISHED PER					
			MSFC PROCEDURE		1924			GMD
		27APR97	COMPLETED BAGGING OF HRC & PLACED HRC	0854				
			INSIDE COVER OF HRMA SHIPPING CONTAINER					
			FOR STORAGE UNTIL MONDAY.		1145			BKA
723	TRANSPORT	28APR97	TRANSPORTED HRC FROM 2K CLEAN ROOM IN	1205				
			BLDG 4718 TO EMC FACILITY IN BLDG 4708.					
724	TEST	28APR97	REMOVED HRC FROM OUTER BAG & TRANSPORT					
	SET-UP		CART & SET-UP ON COPPER-TOPPED TABLE IN					
			EMC FACILITY. SEE MSFC PROC.					

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725	CONT'D	28APR97	TRANSPORTING EGSE TO EMC FACILITY & CABLED					
			UP TO CONNECTOR SAVERS ON HRC.		1910			GKA
726	LONG FORM FUNC.	29APR97	VERIFIED EQUIPMENT CONNECTIONS TO HRC & BEGAN					
			LONG FORM FUNCTIONAL TEST, CONF #1, TP-HRC-338					
			NO DOOR COMMANDS OR HIGH VOLTAGE TURN ON.		0740			JS
727		29APR97	GAS CART PRESSURE: 1350 psi @ 0.75 psi delivery		07:45			jhc
728		29APR97	Copied initas & initai from sci to eng directories		07:50			jhc
			(per GKA Request)					
729	PWR SUPP TRIP	29APR97	SYSTEM PWR SUPPLY TRIPPED OUT DURING					
			SDOPSC TEST IN LFFT. CANNOT BRING					
			BACK ON LINE. SWITCHED TO FACILITY					
			PWR W/ EMC BREAKOUT BOX FOR					
			REMAINDER OF LFF		1015			JS
730	LFF		STOPPED LFF WITH "B" SIDE SPECTROSCOPY					
			AND "A" SIDE MOTORS REMAINING TO BEGIN					
			EMC TEST, WILL RESUME LFF AT					
			END OF DAY OR FIRST THING TOMORROW		1330			JS
731	EMC side A		START EMC TEST CONDUCTED EMISSIONS		1330			JS
			Baseline conditions of the battery powered					EGR
			pulser - set to mid pulse height - pha 36 to 40					

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731	EMC Cont'd Side A PWR	4-29-97	VCRS = 7 VCRS = 72 Range = 1					
			TER = 138, 139 VER = 138, 139					
			shld 1 rate = 104 - 131					
	Imager		File = i0970429d ce 01 tests					
	Para 6.2...		HV on at 100 V/MCP step 8 up, 19 low					
			HV mon up = 123 low = 117					
			shld 1 HV on at step 12 shld 1 anlg = 80					
732	EMC	4-29-97	pcfg0, sw 5 to red pos, init b, spect b	16:00				
	CE 01 B side PWR spectra copy only no pulser		shld 2 at HV step 4					
			spect HVPS at step 8 upper step 19 lower					
			HV mon upper = 123 HV mon low = 118					
			shld 2 rates 98 - 140					
			No pulser on TER & VER = 0, 0					
733	Inrush current para 6.7.3	4-29-97	Close S5 and S2 - S1 is off	16:58				
			V = 22 Vin - close S1 to pri side A					
			1.5A peak PRI & RED sides					
			V = 35 Vin using S1 as the					
			inrush actuating switch causes					
			a better transient response picture.					
734	DC TRANSIENTS 6.7.2	4-30-97	RESUME EMC @ PARA 6.7.2 DC TRANSIENTS.	0800				
735	GAS CART	4-30-97	GAS CART PRESSURE ≈ 1300 PSI @ 0.75 PSI DELIVERY	1009				

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736	CS06 para 6.5.1	4-30	File = i0970430a EMC Test CS06 Transient susceptibility ±35 V on 35Vin line (70V peak) side A tests	13:15				aggr
737	CS06 para 6.5.1	4-30	File = i0970430b Transient suseptibility on side B. (R should have been S. Pulses are + and - 35 Volts on the 35 Vin line.	14:00				aggr
738	CS02 para 6.4.1 side A	4-30	Radio Freq. test 28V.in A side. File = i0970430c 50kHz - 400 MHz No extraneous events observed.	14:59				aggr
739	CS02 para 6.4.1 side B	4-30	Same as Event 738 except for side B File = s0970430d no valid events observed shield 2 had 200 cv for an instant. Most of the time cv rate for shld 2 was 99 - 130	15:30				aggr
740	Remove Panel from HREC	4-30	Panel removed to observe trigger noise during repeat of 738 Radio Freq susceptibility Observed Fast, Slow, sumH, sumV signals on the scope. Synched on the 100kHz HVPS signal on sumV. Slow trig did not indicate any significant interference. Observed low level Frequencies	16:30				aggr

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741	CS01	4-30	Low audio freq sweep – cond susceptibility side A & then side B	17:00				agp
742	CS01	4-30	side A 30 Hz thru 50 kHz observed					
			SLOW trig = 62 mV p-p (these are 100 kHz NUPS levels observed)					
			FAST trig = 40 mV p-p					
			SUM A = 60 mV p-p					
			SUM VA = 194 mV p-p		17:49			agp
743	~~CS06~~ para 6.7	4-30	~~Transient Susceptibility + and – 35V transient on a 35 V_{in} line – pri pwr.~~	18:07				
			File = i097043g side A at 22 V_{in}					
			s097043h side B at 22 V_{in}					
			no File side A at 28 V_{in}					
			side B at 28 V_{in}					
			no File side A at 35 V_{in}					
			side B at 35 V_{in}		1907			agp
			no problem noted from transients – no extraneous events observed.					
744	para 6.7.1	5-1-91	under voltage test 22.4 V start V_{in}	8:15				agp
			Turns off at 14.9 V_{in} pri pwr. – to 0 V					
			At 22V system does not restart – Must start system in normal Fashion – spf, pcfsg, etc					

There was no input current.

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745	para 6.7.1	5-1	Start side B 22Vdc - trips off at 14.3V then down to 0V - Was able to restart using initb, spectb - hvsp0000, hvsp0100, sd0401, s2hvon, s2hv04		9:07			
			pwr off allhv off, spf.		9:11			
746	RE02 para 6.3.1	5-1	Narrow band radiated emissions -28Vin					
			Issued the crakdoor command	9:20				AGR
747	crakdoor	5-1	Start 1200psi pressure @ 0.8 psi delta	9:25				JC/AGR
			above atmospheric pressure. Open door	10:05				AGR
	para 6.3.1 EMC test	5-1	start RE02 - Image Hv at 100V/MCP	10:12				AGR
			shld 1 on at step 12. no out of spec emissions observed					
			on the A side - Volts = 28.13					
			Configure for testing RE02 on the B or redundant side with spect HV on at 100V/mcp					
			and shld 2 at step 4. - no out of spec					
			emissions observed. Volts = 28.13 Vin					
748	RS03 para 6.6.1	5-1	Radiated Susceptibility - file = S0970501a	11:04				AGR
			Side B 3hour test. shld 2 rate 89-138					
			Pri Bus Current = 1.50 = 1.40 amps					
			Pri Bus Voltage = 2.16 = 27.66V					
			no spurious events observed					

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748	cont'd	5-1	RS03 para 6.6.1 side A 28Vin	13:18				cgR
			Test ran backwards in freq. Start at					
			18GHz → down.					
			file = i09705016 imager pulser running					
			U,V = 1795, 2083 position of the pulse					
			prn = 31 — 41 CRS-U = 7 CRS-V = 72					
			U A, B, C V A, B, C					
			540, 1050, 750 510, 1050, 750					
			shld i rate = 107 — 144					
			no extraneous events observed.		14:51			cgR
749	EMC TEST DONE	5-1	EMC TEST COMPLETE EXCEPT FOR THE		15:05			cgR
			SPARK TEST. The UUT passes EMC					
			up to this point.					
750	CLOSE DOOR	5-1	CLOSE THE DOOR and remove the					
			GN2 purge bottle for refill.					JC
			gas pressure is 600 psi and the					
			differential pressure is 0.7 psi		15:09			cgR
751	LEFT CONTINUE	5-1	COMPLETION OF THE LEFT RESUMED	15:38				
			POWER ON					
	C-3.1.		Motor Functions SIDE A					

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751	CONT'D	5-1	PYLSB Byte 23 bit 3 is 1					
			PYLSA 0 is 1					
			PLYSBS, etc OK					
752	para C-1.3 LIFT	5-1	Spectroscopy SIDE B					
			Issue lots of sd cmds prior to sending	16:56				agr
			the SDATSL Batch command.					
			Note: EBII was sent prior to the initb					
			command. There was a residual pulse being					
			issued at 1,1 using the S2 trigger.					
			should issue an INIT prior to the SDATSL cmd					
			RANGE=1, 2, 3 still Fails the LEFT test.					
753	Refill GN2 bottle	5-1	Reinstalled GN2 bottle	16:56				JC
			pressure = 850 needle valve set for					
			a 0.75 psi delivery					
			was off the air for 50 minutes					
754	End LEFT	5-1	Power down		17:31			
755	GN2	5-1	pressure = 850 0.4 psi delivery		17:32			
756	GN2	5-2	press = 820	7:35				AGR

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757	PWR up	5-2	Power up HRC in side A to open the vac door for EMC tests - Purge of the HRC started - crack door	8:05				agr
758	DOOR OPEN	5-2	SENT COMMAND TO OPEN THE DOOR "DOOROPEN.CMD"	8:45				
759	EMC spark test park 6.8	5-2	File = i0970502a i HV ON at 100 V/MCP shld 1 on at step 12 PWR on A side Pri Bus Current = 150, 149 Pri Bus Volts = 216 PWR OFF	9:00	9:28			agr
			Pwr up on B side File = S0970502b 3 HV on at 100 V/MCP shld 2 HV at step 4 close door - PWR off	9:29	9:48			
760	GN_2 Gas	5-2	pressure 770 psi Δpres = 0.7 psi	9:35				
761	EMC		COMPLETED EMC TEST - SUCCESSFULLY.	~~9:50~~	9:50			
762	POWER ISOLATION	5-8	PERFORMED TP-HKC-300 - POWER ISOLATION	9:55				
763	Retest spect chg inj	5-2	Retest of the spectroscopy charge inject pulser test after EMC spark test side B - file = S0970502c (before S0970429A)	11:00				agr
764	Retest image chg inj	5-2	Retest of the imager (after) charge inject pulser (S0970501c) test after EMC spark test. Side A File = i0970502d (missing ch 50 i0970429B)	11:45				agr

(after) (before i0970429c)

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765	Power down	5-2	Power down the HRC and disconnect power cable From wall plug.	12:00	12:01			agr
766	HRC Pumpdown	5-2-97	CONNECTED PUMP CART TO HRC IN THE EMC FACILITY. (At 8:00pm) V10 on Pump Cart has MALFUNCTIONED AGAIN SO POWER TO the CART WAS CYCLED TO CORRECT problem. (Indicator light shows V10 OPEN but other gauges show it is still closed). SYSTEM WAS STARTED AGAIN AND ALL APPEARS NOMINAL	20:00	~~20:00~~ 8:00pm			
			Pressure P = 2.5×10^{-3} torr	2018				
767	"	5-2-97	P = 1.4×10^{-3}	2027				
768	"	5-3-97	P = 9.2×10^{-5}	0750				
769	"	5-3-97	P = 7×10^{-5}	1310				
770	"	5-3-97	P = 5.4×10^{-5}	2100				
771	"	5-4-97	P = 4.1×10^{-5}	1008				
772	"	5-4-97	P = 3.5×10^{-5}	1900				
773	"	5-5-97	P = 2.9×10^{-5}	0710				

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774	IARC-pumpdown	5-5-97	P= 2.2 x10^{-5}	09:13				JH
775	Trouble Shoot	5-5-97	Performed Tests to determine why system is taking so long to pump down. Also, pressure is cycling between 2.3 x10^{-5} AND 3.0x10^{-5} every 2 minutes (approx)	0952				JH
776	"	"	Closed Block Valve: Cold Cath. gauge pressure dropped to 9.7x10^{-7} in less than 2 minutes checked all other connections for leaks (TIGHTENED clamps)	0955				JH
777	"	"	P=3.0x10^{-5} / 2.3 x10^{-5} - Still Cycling	1340				JH
778	"	"	P= 3.3 x10^{-5} / 2.5 x10^{-5} still cycling	1535				JH
779	PUMPDOWN	5/5/97	P = 3.5 x 10^{-5} / 2.5 x10^{-5} CYCLING - TURNED OFF ARC POWER	17.05				JHC
780	ARC PUMPDOWN	5/6/97	P = 1.8 x 10^{-5} VERY STEADY - 5 MINUTES - NO CHANGE	06:55				JHC
		5/6/97	P= 1.7 x10^{-5} Applied heat tape to table surface VARIAC SET TO 50	11:00				JHC
		5/6/97	TURNED ON 28V power	11:11				JHC

LIFE HISTORY

EVENT NO.	EVENT SUBJECT	DATE	SUMMARY OF CHRONOLOGICAL EVENTS (TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.)	RUNNING TIME/OTHER (HOURS AND MINUTES) START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
		5/6/97	P = 1.9×10^{-5}	12:50				DC
	PUMPDOWN	5/6/97	P = 2.0×10^{-5} EXCURSIONS UP TO 2.5×10^{-6}	14:40				JEL
		5/6/97	P = $2.1 \times 10^{-5} \rightarrow 2.5 \times 10^{-5}$	15:15				JC
		5/6/97	P = 2.1×10^{-5} - STEADY	15:56				JP
		5/6/97	P = 2.1×10^{-5} - steady HTR strip off/pwr off	17:00				JC
781	HRC PUMPDOWN	5/7/97	P = 1.4×10^{-5} - STEADY	07:00				JEL
			HTR STRIP ON @ 60 / INST POWER ON	07:15				
			CLOSE BLOCK VALVE @ 7:19 @ 2 MIN 7.4×10^{-7} @ 5 MIN 4.8×10^{-7} OPEN VALVE WENT TO 4.0×10^{-5} WITHIN 30 SEC BACK TO 2.3×10^{-5} WITHIN 1 MIN					
782	"	5/7/97	WRAPPED SYSTEM with Yellow cover					
			from PUMPCART in order Heat	0820				JP
			up quicker. P = 1.5×10^{-5}					
			(ALSO CLOSED ROOM VENT OFF)					
	" "	5/7/97	P = 1.6×10^{-5}	9:20				JS
		5/7/97	P = 1.8×10^{-5}	10:45				DC
		5/7/97	P = $2.3 \times 10^{-5} - 2.4 \times 10^{-5}$	13:15				JES
783		5/7/97	REDUCED HEATER STRIP POWER TO 40 P @ 2.5×10^{-5}	14:15				JEL
			LEFT EVERYTHING ELSE THE SAME					
		5/7/97	P = 2.4×10^{-5} SHUT OFF HEATERS UNWRAPPED HRC FOR	17:00				JES
			NIGHT, TURNED OFF POWER.					
784		5/8/97	P = 1.1×10^{-5}	06:45				JEL

LIFE HISTORY

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785	MOVE HRC	5/8/97	START MOVE OF HRC FROM EMC					
			FACILITY to XRCF. LAST Pressure	1321				
			reading is $P = 1.1 \times 10^{-5}$					
786	"	5/8/97	TURNED OFF VACUUM AT BLOCK VALVE DISCONNECTED	1340				
			VACUUM CART.					
787	"	5/8/97	TRANSferred HRC to XRCF 10/C CLEAN ROOM	1600				
			RECONNECTED VACUUM CART - 10 torr Switchover					
			ACTIVATED Automatically AT 43 Sec from					
			START UP - BLOCK VALVE STILL CLOSED.					
788	"	5/8/97	OPENED BLOCK VALVE IN Preparation for	1760				
			backfill. Prior to opening, CC gauge is					
			$P = 6.7 \times 10^{-5}$. VALVE WAS opened very slowly					
			due to pressure CREEPING UP AS high					
			AS 1×10^{-4}.					
789	"	5/6/97	VALVE fully OPEN OPEN	1705				
			$P = 5.5 \times 10^{-5}$. BEGIN Repress.					
790	"	5/8/97	N_2 Pressure STABILIZED AT 15.2 PSI	17:14				
791	"	5/8/97	PORTABLE N_2 SYSTEM CONNECTED P: .7	17:31				

TANK Pressure 700 PSI

LIFE HISTORY

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792	N_2 Press.	5/9/97	N_2 Pressure on Portable System at .7 psi Tank Pressure > 600 psi	0850				JP
793	Packed Sys	5/9/97	Installed HRC into Shipping Container Disconnected Gas System @ 1515.	1545				JP
794	Packing	5/11/97	N_2 Pressure Holding at 0.7 psi Tank Pressure 600 psi	0830				JP
795	Packing	5/11/97	Cover on Shipping Container.	0930				JP

DATE 5/11/97 TIME 0830
SHIPPER Roberts Express
CONSIGNEE J. POLIZOTTI
ORDER # — INSTRUMENT # 842698
CARRIER — SIGNATURE
Telatemp Corp., P.O. Box 5160
Fullerton, CA 92635-0160, (714) 879-2901

PULL TAB COMPLETELY OUT TO START UNIT

PULL TAB

telatemp Transit Thermometer

LIFE HISTORY

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796	ARRIVAL	12MAY97	TRUCK ARRIVED @ 1815 MASS AVE. PARKED @	1305				
	@SAO		LOADING DOCK ; REMOVED HRC SHIPPING					
			CONTAINER PUR P-HRC-340. ALSO REMOVED					
			ASSOCIATED HRC SUPPORT EQUIPMENT.					
			EXTERNAL 2g SHOCK INDICATOR ON CONTAINER					
			WAS TRIPPED PRIOR TO REMOVAL FROM TRUCK					
			BUT 5 ; 10 g INDICATORS WERE NOT.	1320				SKA
797	UNPACKING	12MAY97	UNPACKED HRC FROM SHIPPING CONTAINER ;					
			INSTALLED IT ON TRANSPORT CART DOUBLE					
			BAGGED ; CONNECTED TO PORTABLE N_2					
			SYSTEM. MOVED HRC TO HRC LAB.		1602			SKA
798	GAS FLOW	13 May 97	N_2 Supply @ 500 PSI Flow Rate = 0.7	935 AM				WM
			END OF VOL III					