

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

HRC-500

HIGH RESOLUTION CAMERA (HRC)

LOG BOOK

Prepared in accordance with DR# SCM10

VOL VIII

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

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* * * Switch Back To MST *

LIFE HISTORY

EVENT		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)			PAGE OF PAGES
NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL	
2268	GAS CK	1/19/98		GAS System D .4 /10/500 PSI	7:30 AM			W.M.	
2269	GAS CK	1/19/98		GAS System D .4 /10/500 PSI	8:30 PM			W.M.	
2270	GAS CK	1/20/98		GAS System D .4 /10/500 PSI	8:00 AM			W.M.	
2271	GAS LINE	2/1/98		DISCONNECT GAS LINE FROM 151M IN BRNTUS. PROCEDURES AFTER 151M INSTALLED IN SHIPPING CONTAINER DISCONNECTS GAS LINE FROM 151M IN 10K CUSTAN ROOMS.	11:55 14:25			GKA	
				RECONNECTS AFTER 151M INSTALLED ON OBA	17:25			GKA	
					18:50			GKA	
2272	GAS LINE	2/1/98	AM	8:40 AM GAS LINE WAS DISCONNECTED AT 8:40 AM/500 PSI 0745					
				DISCONNECTED AT THIS TIME FOR FURTHER SHELL REMOVAL					
				RE-CONNECTED AT 9:15 AM. IN ADDITION					
				FULL TRANSLATION WAS PERFORMED TO ENSURE PROPER CLEARANCES. TRIG. CABLES WERE THEN BAGGED AND PLACED ON TOP OF UNIT FOR PROTECTION & DRIVING.					
				SIM FUNCTIONAL TESTING	09:50			W.M.	
2273	GAS CK	2/1/98		GAS SYSTEM CK BY BALL PERSONNEL 09:50 AM	15:30			W.M.	
				MOTNESS UNM. .4 /10/500 PSI		15:35			
2274	GAS	2/1/98		DISCONNECT N ₂ FOR MOVE FROM OBA 3 TO OBA 4. PRESSURE CHECK = 4/10/500 PSI	8:35 AM			JG W.M.	
2275	GAS	2/2/98		RE CONNECT @ 10:30 .4 /10/500 PSI OIC	10:30				

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2276	NUT HUNT	22 Jan 98	CONDUCTED SEARCH FOR MISSING NUT IN CEA PORL SAO-HRC-F-98-302. SAW AS-RUN COPY OF PROC FOR DETAILS. SORRY'S 6.6; 6.7 NOT RUN YET	1630			
			RESULTS: CEA NUT FOUND FOR → 3 LOOSE NUTS, 2 FOUND FOR HOLLOW STAKED IN BOTH BOOTS				
2277	GAS PURGE	23 Jan 98	GAS LINE DISCONNECTED FROM OBAY → OBAI	19:00	20:30	1:30	SP
2278	"	24 Jan 98	GAS LINE DISCONNECTED FOR MODE OBAI → OBAY	09:15	09:45	30	SC
2279	HRC PRESSURIZER	24 Jan 98	RAN HRC PRE-TRANSPORTATION FUNCTIONAL TEST	19:20			
FUNCTIONAL			PORL SAO-HRC-TP-98-303	20:50			GRK
2280	HRC FAILSAFE	24 Jan 98	RAN HRC FAILSAFE CIRCUITS TEST PORL TSS1	20:53			GMT TIMES
TSS1			SAO-HRC-TP-98-304				
2281	NUT HUNT	24 Jan 98	SORRY'S 6.6; 6.7 OF NUT HUNT FOR PLACEMENT SAO-HRC-F-98-302	21:18			CGR
2282	GAS TANK REPRESSURIZATION	25 Jan 98	① SMALL TANK → FROM: 480PSIG → 1800PSIG (LEAKED) ② MEDIUM TANK #1 FROM: 100PSIG → 1750PSIG ③ MEDIUM TANK #2 FROM: 480PSIG → 1600PSIG.	09:00			RC
2293	GAS SYS 25-TUFF GAS SYSTEM RECHARGED TO 1400 PSI			11:00			KRM
			§ Retained to unit & reinstalled ok	12:00			
				12:10			

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2294	N2	1/26/98	GAS System check @ 1400 psi / 10:44			8'00		
2295	N2	1/27/98	GAS System check @ 1400 psi / 10:45					
2296	N2	1/27/98	Note Regulated the flow rate back to .4			10:50	10:55	W.M.
			GAS System check @ 5:00, moved to OBA 1					
			Re-connected @ 5:30 currently 5:00					
			AT 1350 PSI / .4 Flare / 10 At Regulator			5:30		
2297	N2	1/28/98	GAS System @ .4 / 10 / 1380 PST. Disconnected/B20 @ 8:40 AM for move from OBA 1 to OBA 4.					
2298	N2	1/28/98	Re-connected @ 10:10 AM / 12B Readings					
			@ .4 / 10 / 1380 PST					
2299	N2	1/29/98	GAS system check @ 9:30 AM Pressure = .4 / 10 / 1350			9:30 AM		
2300	N2	1/29/98	Disconnect GAS System for Dism					
			Install/tighten to shipper's container					
2301	N2	1/29/98	Recovered GAS System w/ shipping Container. Reset to .4 / 10 / 1300 psi.			10:30 AM		
2302	N2	1/30/98	Checked GAS system clear to shipped. 4 / 10 / 1300 psi			9:00 AM		
2303	N2	1/31/98	Off Post Shipment Gas Check 1:00 pm 01/10/1300 psi - change in ACTUAL caused an under pressure situation, See Next entry for shipping log.					

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2304	N ₂	1/30/98	To transit check of Gas System OK.	4:15pm			JG
		2/3/98	C Bonstrom A3 GNS Burner @ .35 /10 /1300	9:25pm			
			@ Thee 0/10/1300 - re adjust to .410/1300	6:00			
2305	N ₂	2/3/98	GAS check .4 .35 /10 /1300 repeat test	8:00pm			JG
			To 4/10/1300				
2306	N ₂	2/1/98	GAS check @ 8:00 AM	4/10 / 1300			JP
2307	N ₂	2/1/98	Disconnect N ₂ for TSM express from Shipping Carts			9:30am	JG
2308	N ₂	2/1/98	Re connect N ₂ @ 10:00 AM			10:00am	JG
2309	N ₂	2/2/98	GAS system check @ 11:00 AM .4/10/1200	10:00 AM			JG
2310	Post Transact	2/3/98	POST 1.5M TRANSPORT FUNCT TEST PER TO-HRC-S8-303	11:50A			JG
			SUCCESSFULLY COMPLETED				JG
2311	N ₂	2/3/98	DISCONNECTED N ₂ SUPPLY @ 1AM, RECONNECTED 11:05AM				JG
2312	GNS	3/0/98	DISCONNECTED GNS FOR TURBINE SWING INSTALLATION, TURB RECONNECTION				JP

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2313	T/M TEST	4 Feb 98	RAN T/M VORIFICATION TEST FOR PROCEDURE	0805					5 50
			SAO-HPC-TP - 98-305						
2314	N ₂	4 Feb 98	DISCONNECTED N ₂ FROM HPC FROM 2 PM - 4PM. TESTED	0915					GKA
			NEAR GAS LINE FOR LEAKS - LINE OK. RECONNECTED						
2315	N ₂	5 Feb 98	CHANGED HPC - 0.4 PSI DISCONNECTED N ₂ @ 10:30 AM TO MAKE ISIM TO TESTESCAPE	1630					
			SAO-HPC-TP - 98-306						
2316	HPC TEST	6 Feb 98	RAN 2 ND PART OF THE PROGRAMMING TEST DUE						
			SAO-HPC-TP - 98-306						
2317	GAS PUMP	12 Feb 98	1100 PSI / 10 psi / 4 psi	21:00					JHC
2318	BGSSE 1/F	14 Feb 98	RAN SET DSGS TO TEST VORIFICATION TEST, FOR TEST PRESSURE SAO-HPC-TP-98-307 RDA	1244					GKA
			I sim mated to S/C ~ 5:30 pm PST; S/C power up						
2319	GAS PUMP	16 Feb 98	1020 PSI / 10 psi / 0.45 psi	09:50					JC
2320	HPC TEST	16 Feb 98	START HPC FUNCTIONAL TEST POST ISIM DUE	0605					GKA
			MATING PORT SAO-HPC-TP-98-308 RDA.						
			ABORT TEST: TO FIX SOFTWARE ISSUE IN BUILDING						
			HP COMMANDS						
			RESTARTED 3 CONCURRENT TEST. SORT AS-LINN CUPY	~ 0900					
			# 2 FOR THIS TEST	1340					
				1800					GKA

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			DATE	RUNNING TIME/OTHER (HOURS AND MINUTES)	STAMP OR INITIAL	
2321	GAS LINE	4/22/98 GAS Line ck low PSIG 10 & -38 psig	12:30	12:35	5	-
2322	GAS LINE	4/23/98 Pipe line changed, Removed S.S. line cable quick disconnects @ RT	7:20 AM			10:01
		Angle near detector hangs Gas line				JF
		Flow re-adjusted to 4 tank & gas line				
		Regulator @ 10.				
2323	N2	2/4/98 Disconnected Gas line AT Releator Hanger end. Baled A GSC pipe just passed which was made to our dimensions by TRW.	12:00			11:01
		Re-connected Gas lines! Registered to 4 tank still @ 90 Reg = 10				
2324	N2	3/3/98 Pressure was at 35 low tank at 725 Reg = 10 Adjusted as required	7:30			11:01
2325	N2	3/2/98 Gas system was left unattended by SAD 11:00 AM				11:01
		Detonated from 2/24/98 to 3/3/98 the pressure varied during this time and was recorded by SAD & TRW no 81/loss.				
		2/07 .45 psi @ 3:30 pm, 475 @ 3:45, .375 @ 4:45 pm. slight adjustments were made by Jack Valco line during this period.				
		(OBALL)				

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2326	N ₂ Sys.	2/26	0 12:20 pm P = .425 - Jack Valentine (BORG)					7 50
2327	N ₂	3/1/98	P6:00 AM P = .2 psi - Jack Augusts to .4 See the remainder of the log, pressure fluctuates between .2 and .4 indicate leak. (P = 825/10) on 2/27 P = 825/10 2/28)					
2328	N ₂	3/1/98	P = .3 @ 8:00 am, P = .4 @ 11:00 am					
2329	N ₂	3/2/98	Since the N ₂ system has been unstable during the past week I will run a series of short tests to see if a leak is present. The following is the sequence used to isolate a leak.					
			1) P = .3, disconnects quick a) @ N ₂ system 2) Pressure increased to .7 3) Disconnected @ HRC and reconnected at N ₂ system. Using V3, turned up pressure to 4.6 psi and shut V4. 4) Pressure decayed psi in less than 60 seconds. Checks @ leak. 5) Disconnected @ N ₂ system, opened V4 6) Adjusted pressure to 4.6 and closed					

V4.

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2329	CONT.	3/2/98	7. Pressure Decayed to 105 psi (pressure to relieve RV3, RV4) within 2 minutes. Therefor leak is either at G1 or quick disconnect and associated fittings. 8. Removed quick disconnect, cleaned threads of flux tape and applied Teflon Tape and applied Teflon Epoxy to nut & bolt threads. 9. Reattached quick disconnect and let cure for 1 hour.					
			9. Opened V4, set pressure to 4.6 psi/12.30 pm closed V4. 1/16 pressure decay for 1 hour - assume leak is fixed					
			10. Reset system to 0.4 psi (V4 open) 11. Connected to flow line pressure dropped to .3 psi (let sit 20 minutes) no change.					
			10. Adjusted V3 to bring $P = .4$. 4:00 pm 11. Treated using app values for 2 hours to get $P = .4$ static 12. Connected Test/Car LINE to HAC Pressure dropped to .35. Add static back					

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2329	CONT.	3/1/98	③ System set idle for 30 min, no change in pressure. Adjusted back to .4.					
			④ System stable for two hours 0 - 4. For the duration of this sequence the tank pressure was at 800 /10 psi.			6:30 AM		
			The next check was at 3/3 See entry # 2324					
2329 A	3/3		BAGGING of ANAF					
2329 B		3/4						
2330	N2	3/5/98	MOVE ANAF From BIF TO ATS. Pressure 9:00 AM Varied from .4 to .6 then settled back to .4 psi.					
2331	N2	3/6/98	ONCE completely static read the ATS Pressure at 0.5 psi. We assume this standard stabilize so no adjustment made					

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2331	N ₂	3/6/98	MOVE N ₂ F TO Acoustic Test Facility	1:00 pm			JW
2332	N ₂	3/7/98	Set Up N ₂ System Outscope Acoustic Test Chamber Pressure Rose to 8 psi. Reset Reset Valve (to 0.25) Adjusting Env. to pressure	7:00 am			JW
2333	N ₂	3/7/98	Pressure check. - 45.10/700+ 10:00 AM				
				4/10/7007	10:45 AM		
			Note: It is noticed that every time the Gas Line is moved the pressure is affected. There might be a leak or sensitive component. We will take test after Acoustics.				
2334	N ₂	3/7/98	Random Pressure effects due to El Nino. Be Disconnected Gas system in order to place it back on its. Pressure is at 700+10/.5. Disconnected and adjusted w/ the V3 to +4. Recalibrate job.	2:00 pm			JW
2335	N ₂	3/8/98	N ₂ check motor move to TC2, 0.35/10/700	5:00 AM			JW

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2342	6N ₂	3/9/98	Re-assembled Filter Assy to Block Valve					12 50
2343	6 N ₂	3/9/98	Broke line at coupling location to separate return basket with Threaded epoxy : no tension added on system anywhere.					JJ
2344	6 N ₂	3/9/98	After epoxy cure, 100 ft line was purged. Upon purging noticed leakage over 4 hrs.					JJ
2345	6 N ₂		noticed (we were not drinking so dont ask!): line was damaged by increasing the pressure to 30 psi on the regulator and flowing gas out of the tank pressure went down from 700 ps. to 600 ps.					JJ
2346	6 N ₂		Set Block off line at .4 600 ps will receive two open block runs under stress.					

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2346	Gn1/2	3/9/98		Reconnected to HPC (Black valve open) C 700 psig set pressure to 600/15/.4						13	50
				Pressure rose to .5, turned off							
2347	Gn2	3/10/98		Pressure @ 600/15/.5 + turned off and @ 65psi to 4 using pump valve - will remain to 5100psi/130							
				This way, HPT Duration for + Y second power deployment test occurred → 10'00 AM							
2348	Gn1/2	3/10/98		Gas pressure was 580/13/.42 No adjustment made at this time							
2349	Gn2	3/10/98		Pressure readings were 580/13/.52 minor meter value adjustment unit had notated back 90°, Reset to .4 using pump/T value.		1.40	AM				
2350	Gn2	3/11/98		Gas pressure readings were 580/13/.52 Add to .40 at 10:30AM unit cuts off .44 No New Adj!				5'00 AM			
2351	Gn2	3/11/98		No Adj necessary System cuts off 580/13/.42 at 10:45 PM				10'58			
2352	Gn2	3/12/98		System cut off 7:00 AM 580/13/.45 (Looks good)				7:00	7:15		
2353	Gn2	3/12/98		SLC to be moved to the RIZ position Disconnected							
				AT detector housing using quick disconnects at 8:00 AM							

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2354	GN2	3/12/98		5/c moved to Horiz position at 10: AM & TANK END Disconnected at 10:AM and moved under 5/c to be Re-connected using 5.5 ft GAS line, 8' LINE ATTACHED to tank & purged w/105PSI		10:00					
				Set 2 + 4 PST TANK pressure went to 22 550 PSI. Line then attached to HRC 5'							
				minor Adjustments made to 4 PST		10:30					
2355	GN2	3/12/98		GAS line c1030/141.4 No Adjustments made		1:30		1:40	AM	W.M.	
2356	GN2	3/12/98		GAS line c10 550/141.4 No Adjustments		11:45	PM			W.M.	
2357	GN2	3/13/98		GAS line c10 530/141.4 No Adjustments		7:22	AM			W.M.	
2358	GN2	3/13/98	"	Disconnected w/5/c in HRC position		1:30	PM			W.M.	
2359	GN2	3/13/98		Re-connected w/ Adj		2:45	PM			W.M.	
2360	GN2	3/13/98	"	Adjusted to .4 & 520 PST 14 Reg		5:30	PM			W.M.	
2361	GN2	3/13/98	"	checked on 2:48 520 PST 14 Reg		9:30	PM			W.M.	
2362	GN2	3/14/98	"	" " 48 520 PST 14 Reg 8:00 AM						W.M.	
2363	GN2	3/14/98	"	ok @ .48 /520 PST 14 Reg. 9:30 AM							
				Made a slight Adjustment down to .3 expect							
				A rise over time to .4 will record later							
2364	GN2	3/14/98		UNIT 15 AT 038 expect to rise slightly to .4		4:00	PM			W.M.	
2365	GN2	3/14/98		checks @ .39 no Adjustment made tank @ 520		7:30	PM			W.M.	
		23 MAR 98		T = S NO ADJUSTMENT MADE TANK @ 500		10:45				GRK	

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2366	CAT 1B	23MAY8	TRAIL HRC Portion of CAT-1B TEST Purge valves	0034 Gmt			50
	Testing		SAC-HRC-TP-98-309, Sections 4.1 thru 4.7			0618 Gmt	
		24MAY8	TRAN VOLTAGE DROOP Portion of E-NOUT Duct Purge Section 4.8	22:08 Gmt			
				2322 Gmt			
2367	HRC GN	25MAY8	PRESSURE GAUGES N, SS, TANKN S25	10:05			GVA
2368	CAT 1B	25MAY8	REGAN VOLTAGE DROOP TEST Purge Section 4.8 TO SUPPORT TRW RUN-FOR-THE-Record	0618 Gmt			GVA
2369	OCG	15APR98	PERFORMING HRC TURN ON FROM THIS OCC FOR PRODUCTION HRC (EE-1B) VERSION 1.0 DATA	1635 Gmt			
	Testing			1658 Gmt			
				18 MAR 98,			
2370	GAS SYSTEM	15APR98	TANK N 500 PSI, TEST 10 PSI OUTLET 0.6 PSID				GVA
2371	BNC	16APR98	MAN OBSERVATORY ETIC TEST Purge valve Purge	1637 Gmt			
	Testing		SAC-HRC-TP-98-310 BND				
2372	FINISHED ENCL	17APR98	FINISHED EMC TEST			1998108.003318	JTG
2373	TV Prep	23APR98	Prep site for move to Thermal, install MLT & heater guard on pulse cables			1:30pm	w.m.
			CUT PURGE PANEL 1/2 AND INSTALLED				
			GAS SYSTEM @ .55, TANK @ 500 PSI, REG=15				
			GAS WAS DISCONNECTED FOR ~10 min FROM UAST-B,F				8:pm
2374	GAS LINE PUMP	24APR98	DISASSEMBLE CLOTH AND RE-ASSMABLE SS GAS LINES. PURGE LINES UNTIL ODOR WAS GONE				W.M.

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	GAS Line prep	cont'	24 Apr 98	PURGE GAS LINE ON S/L RIG, NO ODOR present					W.M.
2375	S/C move	25 Apr 98		GAS System Check, .55, 500 PSI Reg = 15					
2376	S/C move	26 Apr 98		BEGAN MOVING S/C TO TV BLDG M4 S/C moved into M4 at 3:30 AM					
				GAS System Check After Covers Removed					
				* .55, 500 PSI, Reg = 15					
2377	LTS Interconnection	27 Apr 98		ASSISTED IN INTERCONNECTION OF LTS TO S/C					
				* CONNECTED NEW GAS LINE FROM LTS TO PORT IN DOME. CONNECTED PULSE CABLES AT SLM, STAMPED OPS IN TRIM LOG FOR PULSE CABLES					
2378	TRANSLATION	28 Apr 98		ROUTE GAS LINE & PULSE CABLES TO PROVIDE SERVICE LOOP FOR TRANSLATION TESTING.					
				GAS SYSTEM CK. .55, 480 PSI, Reg = 15					
2379	GAS System	29 Apr 98		ADJUST GAS SYSTEM TO .40, TANK @ 480 PSI Reg = 15					
				* (NOTE) NEW 12338 BAKED FITTING AT PORT IN DOME WAS PURGED W/ GRADE 6 NITROGEN ON 4-27-98					
				PULSE CABLES WERE RE-ADJUSTED FOR TRANSLATION BY SCOTT TERRIN - RE-INSPECTED & STAMPED OFF IN TRIM LOG.					
2380	MARKING	30 Apr 98		MONITORED ADJUST GAS SYSTEM TO .45 FLOW TANK @ 480 PSI Reg = 15					

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2381	Marking (cont.)	W.M.				
	Mark pulse cable feed thru's on port in dome. Route cables from L13 thru Dome Shroud and out port, NOT connected at this point need TRW QA to verify & stamp off in TRW Log.					
2381	pulse Cables 1 May 98	W.M.				
	connect pulse cables at port (S2 was tight) Verify Gas System Readings @ .45 480 psi IS Regulator.					
2382	PRE-T/V 4 May 98 FUNCTIONAL	1852	1852	1852	00:00:00	
	Test Port Section S.1 of SAON-HRC-TP-98-311					
2383	GAS Check 16 May 98	GAS System CK 400 PSI 15 Reg. Flow = .7 PST	12:00	12:15	00:15	
2384	GAS Check 15 May 98	GAS SYSTEM CK 400 PSI 15 Reg. Flow = .7 PST	7:00	9:15	02:15	
	Adjusted @ 9:00 AM CK @ 9:15 STLC Sigma					
2385	Move Cable 16 May	Removed two connections from a strip chart to free a cable which may have caused an interference when closing the lid. Cable was intertwined with an orange power cord. Replaced the two connections to the strip chart recorder and replaced one tie wrap. Cable was for monitoring Ball's gear box.	3:45	3:47	00:02	

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2386	CLOSE T/V CHAMBER	16/11/98 (Day 136)	CLOSED T/V CHAMBER IN PREPARATION FOR PURGE DOWN							50
2387	Purge down	136	INITIATED CHAMBER PURGE DOWN, STARTED S.2 OF SAU-HRC-TP-98-311	1245	1320	(1323 AROUND)		EKA		
				394 TORR	1352			GKA		
				208 TORR	1413			GKA		
				156 TORR	1426			GKA		
				53 TORR	1450			GKA		
				5.2.2 OF PROCEDURE, COMPLETION CRACK DOOR & PUMPING OF H2C GAS LINE (END OF SECTION S.2.2)	1535					
				GAS PURGE PRESSURE	1.6 X 10 ⁻¹	1618		GKA		
				1.0 X 10 ⁻¹	1656			GKA		
				8.6 X 10 ⁻³	1800			W.M.		
				3.4 X 10 ⁻³	1944			W.M.		
				(CHARTING 4.6 X 10 ⁻⁵)	3.2 X 10 ⁻³	1955		GKA		
				2.4 X 10 ⁻³	2115			W.M.		
2388	TIME SYNC	136	ADJUSTING H2C CLOCK TO TEST CLOSER WITHIN 1 SEC - (H2C WAS N 8010 SEC SLOW)							
2389	Vac	137 (ap)	GAS DOWNSCALE FLOW 1.1 X 10 ⁻³	2154			0125	EKA		
								W.M.		

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2390	cool wall	137	RAN SECTION 5.3 PHASE 2.7 OF HAC PROCEDURE	0249				
	Firn		To turn on in STAND BY	0306				
2391	open door	137	Run section 5.4 Phase 3.1 of HAC Proc to open the vacuum door. Display was not set into the observing mode but was left in init mode while the commands to open the door were sent. Could not observe SSO Mechanisms Status in this mode. However ESD Mechanisms Status indicated Door LS open reads set (Door is open) and Door LS closed reads unact (Door not closed)	0747				
2392	Gas Pressure	137	GAS PRESSURE IS 4.0×10^{-4} (CHARTONE 4.3×10^{-6})	0805				
		138	" 4.15×10^{-6})	14:47	14:49			
		138	RAN motor pump init. and TO MEASURE MOTOR THERMISTORS	3128	3.9 $\times 10^{-4}$			
			DOOR	0827	3.7×10^{-4}			
			CHARTONE	0829	MY			
			PI		30.96			
			MY		30.96			

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2394	P'3.2.5c	1/38	Annealment of transition to cold. TC does not want HRC to reconfigure until step 16 of Phase 3. 2.	0819			PER
2395	Pressure	1/38	Chamber pressure at 3.2×10^{-6} Torr.	0840			ACR
2396	Steps 16	1/38	Performed section 5.5.1 HRC power off. Sent occ. power-down. cmd. TSW TC sent EHREPOF.	1244			AT/ACR
2397				1255			
		1/38	Began Temperature Transition to cold (GAS LINE P 3.7 x 10 ⁻⁴) (CHARTBUL 3.5 x 10 ⁻⁶)	1401			SKA
				1442			SKA
				1501			SKA
2398	Temps	1/39	Red Bus Temp Measurement - sent 0511 out temps - init. cond	0516			ACR/PER
	Temp Meas	1/39	Repeat 5.5.2 Temp Meas	0606			ACR
	Temp Meas	1/39	Repeat 5.5.2 Temp Meas	0702			ACR/PER
	Temp Meas	1/39	Repeat 5.5.2 Temp Meas	0802			ACR/PER
	Temp Meas	1/39	Repeat 5.5.2 Temp Meas	0901			ACR/PER
	Temp Meas	1/39	Repeat 5.5.2 Temp Meas	1002			ACR/PER
	Temp Meas	1/39	Repeat 5.5.2 Temp Meas	1100			ACR/PER
	Temp Meas	1/39	Repeat 5.5.2 Temp Meas	1200			ACR/PER
	Temp Meas	1/39	Repeat 5.5.2 Temp Meas	1300			ACR/PER
	Temp Meas	1/39	Repeat 5.5.2 Temp Meas	1358			ACR/PER

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TEMP MEAS	139	Reheat S.S. 2	Temp. Meas		1803	1508			JHC/RPK
TEMP MEASURE	139	Repeat S.S.2	TEMP MEAS, (using PRI PWR BUS)		1603	1607			JHC/RPK
TEMP MEAS.	139	"	"	"	"	"	1702	1705	
TEMP MEAS	139	"	"	"	"	"	1811	1814	JHC/RPK
TEMP MEAS	139	"	"	"	"	"			JHC/RPK
TEMP MEAS	139	"	"	"	"	"	2110	2114	
TEMP MEAS	139	"	"	"	"	"			JHC/RPK
TEMP MEAS	140	"	"	"	"	"	2303	2310	
TEMP MEAS	140	"	"	"	"	"			JHC/RPK
TEMP MEAS	140	"	"	"	"	"			JHC/RPK
End of Phase 3.2	140	HRC signed off at the end of the cold cycle.			0812				Age/LAK
2400 Temp Meas	140	STC changed to CND BUS B. HEC could not command initia in this configuration. STC modified their procedure to permit the HEC to be configured when connected to CND BUS B.	lowest T-Ting noted as -12.5 °C.	0100					Acre
NMR 300	10	when powered up, temperature T-Ting was at -13.43 °C. STC was requested to permit HEC to be powered up out of sequence so that some heat could be applied to the instrument					1135		

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2401	HREC	140	Procedure 95.6 Phase 3.3 was initiated to power up the HREC using FMT 1					50
			questions on cmd script for turning on shield 1. steps 4 did not appear correctly when turning on shield 1. However subsequent steps appeared ok and shield 1 turned on at step 12 - rate was 45 cts/sec.					ACR
	NMR 30010		HREC now powered on and in op mode.					
2402	TM STATE ?	140	FMT 4 now been sent by STC.				1209	JG
	NMR 30010		CHICK IN FORMAT 4 (NLL MODE), NOTICED THAT CTR BLNK U WAS 48 AND CTR BLK V WAS 9 ON TM (PREVIOUS CMD was INITIATED)				1132	
2403	MORE TM STATE ?	140	THESE NUMBERS SHD HAVE BEEN 48h (69 D) (100) AFTER POWERING UP (ADDED STEP 20 OF 5.6 (PHASE 3.3) SAW ADDITIONAL TM				1300	JG
	NMR 30010		STATE THAT LOOK INCORRECT.					
			SHIELD B IS AT STEP 12 (LIKE SHIELD A), BUT SHIELD B HVPS IS OFF, AND FORCED COARSE POSITION U IS 3 (SHD BE 0). ALL OTHER TM LOOKS OK.					

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2404	SHD 2 HV Stop Debug	140	INVESTIGATED SHD HV STOP-HZ PROBLEM. VARIOUS SERIAL DIGITAL COMMAND CAPABILITY BY TOTALLINK LLD. SYSTEM DOES NOT SEEM TO RESPOND TO POSITIONING SHD HV STOP TO O. SHD HV STOP MOVES WITH CHANGE IN SHD HV STOP. SHD HV STOP BOARDS O IN FORMAT1/HZ=OBS MODE. PROBLEM TILTED TO DATA PROCESSOR CODE DEVELOP IN HZ BUSES WHICH DISPLAYED SHD HV STOP IN TWO PLACES.						
2405	GAS Purge	140	GAS LINE FROM PUMP TO GAS TANK (8'8") WAS DISCONNECTED @ THE PUMP COUPLING DIS-CONNECT. PLUG WAS INSTALLED INTO LINE @ PUMP. SYSTEM REMOVED FROM CHAMBER AREA TO PREPARE FOR RETURN TO SAG.						
2406	THE RCTV	141	WAS SWITCHED TO "B" SIDE TO FACILITATE SOME SIM TESTS. AT THE TIME OF SWITCHOVER, NOTICED SOME CORRUPTION IN TELEMETRY FOR A FRAME OR TWO. AFTER THAT, TM RETURNED TO NORMAL.						
2407	Time Check	141	HAC EESTE COUNT IS 210 SECONDS FACTION THAN 1SATIS COUNTER						

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2408	HRC PURGE	142	POWERED DOWN HRC & PERFORMANCE FAILSAFE TESTING PURGE SECTIONS S.7.1 & S.7.2. HRC WAS POWERED OFF IN ADVANCE OF END OF Φ 3.3 DUE TO HIGH TEMPERATURES	00:55 01:25	GKA
2409	HRC MONITORING	142	SIGNALS MONITORING HRC SSD TURBES PURG SIGNAL S.7.3. SIGNAL OF MONITORING WAS DISPLAYED TO PREVENT OVERHEATING OF PRIMARY REDUNDANT SURVIVAL HRC BUSSES.	23:05	
2410	END OF COOL TRANSITION	144	END OF PHASE 3.4, TRANSITION TO COOL AND START OF PHASE 3.5, TRANSITION TO HOT TURNS ON THIS HRC PUR SECTION S.8.1 OF Φ 3.4	01:33	GKA
2411	HRC TURN ON	144	TURNS PUR SECTION S.8.1 OF Φ 3.4 TURNS PUR SECTION S.8.2 OF Φ 3.5	08:48	GKA
2412	HRC IS HV TURN ON	145	PLACEMENT EXPOSED EGSU HANG UP PROBLEMS NECESSITATING SEVERAL HV TURN OFFS USING OCC. MCP-HV-OFS. AND FORWARDING BY POSITIONERS OF HV TURN-UP. AND ACHIEVED FROM HV OPERATION WITH GOOD PERFORMANCE. AFTER 3600 SEC BACKED TURN WAS INITIATED, POSITIONER EGSU CORRECTIVE AND WENT ON TO HRC'S PUR SECTION S.8.3 DUE TO TIME RESTRICTIONS	09:05	

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2413	HRC-S HV	145	Turnins On HPS-S HV FOR SECTION 5.8.3. NOTE NO TURN-OFF	0358				
			THAT HPS ON CRD DIDN'T WORK DURING FIRST ATTEMPT OF HPS-UP AND ASSISTING SQUADRON AND RESTARTED WITHOUT INCIDENT. ACTUALLY					
	NMR 3091		FUN IN OPERATION WITH NORMAL PERFORMANCE	0626				
2414	HRC-PWR	145	POURS DOWN ICE FOR Ø 36 TRANSITION TO COLD CONDITIONS FOR SECTION 5.9.1	1510				
2415		146	We were waiting for Temp (T-out Det1) to fall to -5 °C to start measurements (as per Page 5.9-1) Temp stopped falling and actually increased. Could be related to star heaters operations (survival heaters had kicked in) => connected per 5.9-1 anyway	0900				ATK
2416		146	Noted finally trust T out Det 1 is < 5.00 °C			1100		
2417		1418	HRC LEGSE TO TSATS CLOCK CHECK - LEGSE + 11 SEC					JHC

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2418	OCC	148	RAN OCC PHASE 4.1 Toggling Run Section	1054			26 50
	Toggling		S-10.2. TURNED ON HIC AGAIN AT END OF SECTION 5-16.2				
2419	TEST 3/d	148	SWITCHED TO FORWARD 1 & PAN PULSED INVERT ON TEST TO CHANGE FROM SCU DISPLAY. SANT OCC. OBSERVE MODE. AND AT START. SANT S DATA /DATA TO TOGGLE OUR TEMP ENABLING. SANT OCC. HRC-S UNPLUGGED TO SDE HRC-S DOTS.	2016	1304		
	TEST						
2420	SIDE B	150	RAN B SIDE PAS HI SAFING TEST. RUN PAS HI TEST SECTION 5.11.1	2104	2159		
2421		150	Noted HRC off. => aux auto shutdown sequence was accidentally sent by TRW Requested power back on.	1340			

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2426	HPC D/NK	154		TURNED OFF HPC & CLEARED Power CONFIG'S						
	OFF/ON			TO TROUBLE-SHOOT TESTS. NO PROBLEMS						
				ENCOUNTERED TURNED HPC ON AGAIN IN						
				NOMINAL STANDBY MODE - NO PROBLEMS		0442				G/A
2427	HPC/TLM	155		LAST TLM UPDATE @ (3) 28 9:105 VCDU 37097						
				TSTC reconfiguring system - must wait						
				until reconfigured before sockets can be						
				reconnected. Data socket connected at		1143				
				TLM NEW @ (3) 58:65 VCDU 7560						
				ONE REASON FOR TLM LOSS IS THAT THE						
				BUT RATE IS CHANGED AS PART OF A TEST -						
				WHEN THIS RATE IS CHANGED AT THE SC TEST						
				SET, A SECOND STATION WHERE THE SUGAR						
				ARE CONNECTED MUST ALSO CHANGE ITS BIT						
				RATE TO MATCH THAT OF THE SC TEST SET.						
				IF THE RATES DIFFER, THE BITS LOST.						
2428	HPC Hot	155		RAN 2 nd ATTUNER OF HPC NOT FUNCTIONAL TEST		0322				
	FUNTIONAL			POLE POSITION S.11.4. RAN SUCCESSFULLY						
				(DOOR LEFT IN CAL POSITION FOR T/BALANCE)		0558	0236			G/A
2429	DRIVER	155		RAN 2 nd ATTUNER OF DRIVER MODE POLE POSITION		0617				
	MODE			S.11.3. RAN SUCCESSFULLY		0702	0045			G/A

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2430	HRC/PWR OFF	155	RAN 5.11.5.1 HRC POWER OFF - HRS. PREP FOR HOT THERMAL BALANCE CASE (5.11.5) P 5.11.23	1602				J.C
2431	HRC PWR	155	- command socket to TCIS was RESTARTED			1608		
			TURNED HRC BACK ON PWR SECTION 5.11.5.7	1926				
2432	MCP Hops on	156	CMD OCC. H-MCP-HV-ON sent after a long wait - CO305 was AA. ID. ENT 4(3)	0204				GKA ACR
			the HRC BUS over of BUS voltage occasionally read erroneously as:					
			127 & 6.66 resp. The true					
			readings are 148 and 32.66 V.					
2433	EGSE S/W	157	RAN HAC-I PULSE INJECT TESTS TO CHUCK	1517				
	Chuck		SAO IMAGE IN BM SC DISPLAY			1522		GM
2434	MCI 1-S	157	RAN SECTION 5.112 FOR WORKS OF MCI-S TURNING	1516				
			CARIB.			0208		GKA
2435	HMI BURSE	158	RAN NON EXCLUSE TESTS, PHASE 4-3 P PWR	2359				
			SECTION 5.13			0216		GKA
2436	Cold Trans	158	EHR C PPLUR + EHR C PWR both off	0454	0460			WUZ
			as the result of sending (TRANS) EHR C PPLUR					
			PWR SECTION 5.14-1					

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2437	161	TURNED ON HRC AFTER SURVIVAL FOR SECTION S.14.3	0136			50
2438	161	RAN 64.4P COLD SECTION FOR SECTION S.15	1337			50A
2439	161	Completed HRC portion of 4.4P - EPS Cold Condition Eclips	1725			5C
2440	161	Completed configuration of HRC FOR COLD CASE FUNCTIONAL TESTS	21:05			
2441	161	Auto shot down initiators by T/RW T/C, due to loss on TLM	2342			5C
162		Buzzed and using OCC power-down, and E1RC power-on	0044			
		OCC. power-up and OCC. HRC - unit up and OCC. shi - on and up and	0052			
2442	163	Sent OCC. door - open, and TO OPEN HRC	2041			50A
2443	164	RAN HRC COLD FUNCTIONAL FOR SECTION S.16.4	0604			
		DURING HRC - BLDN TLM, SECTION S.16.4.2				
		STEP 023, SENT LLD T/H COMMANDS SD 290C				
		@ 180 SOC SD 2910 @ 360 SOC SD 2914 @ 540 SOC				
		SD 2918 @ 720 SOC SD 2908 @ 900 SOC TO POS	0823			50A

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2444	Driver	164		Run Diurnal Test Run Section 5.16.3		0830				
	TEST									GKA
2445	Pass Safe	164		Run Radiation Safe Test Run Section 5.16.7		0907				
	TEST									GKA
2446	Door Position	164		REQUEST the TRW T/c to VERIFY on ISATS page 832 that COBUS is AA. IF IT IS NOT, REQUEST TRW T/c to INITIATE the ATS C-OBC-CMDBUS-SW and SELECT BUS A.		0909				
				1) SEND COMMAND FILE OCC, obs-mode, cmd		2320				
				2) SEND COMMAND FILE OCC, door-open, cmd						
				3) SEND COMMAND FILE OCC, mil-mode, cmd						KD Rm
				4) Inform the TRW T/c that the HRC door is open						WD Rm
				NOTE: Prior to performing section 5.16.5, B-side IEPHIN						
				Radiation Detector Signal Test (I-OBC-S1-SAFE),						
				Restore the HRC door to the cal position						
2447	Door Position	165	To Cal	REQUEST THE TRW T/c TO VERIFY ON ISATS PAGE 832 THAT COBUS IS AA. IF IT IS NOT,		1627				GKA
				REQUEST TRW T/c TO INITIATE THE ATS C-OBC-CMDBUS-SW AND SELECT BUS A.						

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2448	Door to CAL CTRD	165	1) SEND COMMAND FILE OCC. obs-mode.cmd 2) SEND COMMAND FILE OCC. door2cal.cmd 3) SEND COMMAND FILE OCC. n1l-mode.cmd 4) INFORM THER TRW T/C THAT THE HRC IS IN THE CTRD POSITION!	1628	1629			GEM		
				1629	1632			GEM		
				1633	1633			GEM		
				1634				GEM		
2449	Door to regent	166	Fully open HRC door for HRC fd flight centroid test at the regent open of TRW Spacecraft test condig for							
2450	open again	166	REQUEST THE TRW T/C TO VERIFY ON ISATTS PAGE 832 THAT COBUS IS AA. IF IT IS NOT, REQUEST TRW T/C TO INITIATE THE ATS C-OBC_CMD_Bus_Sel and SELECT Bus A.							
			1) Send command file occ. obs-mode.cmd 2) Send command file occ. door-open.cmd 3) Send command file occ.n1l-mode.cmd 4) Inform the TRW T/C THAT THE HRC door is open.							
2451	Door back to cal	166	WHEN THE TRW T/C INDICATES THAT SIGHT TESTING IS COMPLETED, RETURN THE HRC TO THE CAC AGAIN.							
			1) Send command file occ. obs-mode.cmd 2) Send command file occ. door2cal.cmd 3) Send command file occ. n1l-mode.cmd 4) Inform the TRW T/C THAT THE HRC IS IN THE CAL POSITION	0647				MRB		
								MFC		
								MFC		
								MRB		
166	RAN B-SIDE TESTS, SET-SAFE PER SECTION 5.16.5	1550	1630					SIM		

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2452	166	Had to RE-INITIATE RESTABLISH TELEMETRY AND COMMAND SOCKETS						
2453	166	Sent OCC - PGY - 0 cmd result = NO Response						
2453	166	sent OCC - ODS - mode result = NO Response						
2454	166	Send ALL - 0 or OFF result = NO Response						
2455	"	Re - TRY INITBS.CMD result = NO Response						
2456	"	Send OFF.CMD result = NO Response						
2457	Commt	Above 4 actions were taken to determine if there is proper command decoding at TCTS/ISAT All the above items from attempt to restore HEC to A side (PNTM9) instead of B side (Reliable). Further, testing by TMS indicate SIM cannot command either. Suggest that HEC problem: Stat is unknown - use hand ENCODER with all power off (use hand)		225m				
2458	166	Send 5 OFF-CMD → got a response, it all happened → got correct response						
		OCC. power-down - and KVD						

NOTE: STUDS ON THIS PAGE RELATED TO HEC/TU SIDE 1/F TEST
POR SECTION 5.16.6

16:40 23:22

SSM

LIFE HISTORY

EVENT NO.	SUBJECT	DATE	TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.	SUMMARY OF CHRONOLOGICAL EVENTS			RUNNING TIME/OTHER (HOURS AND MINUTES)			PAGE OF PAGES 35	STAMP OR INITIAL
				START	STOP	TOTAL TIME	CUM. TOTAL				
2459	HRC Monitoring Cold Balance	167	TRW TC has placed Axle into Format 1, with command bus COBUS-AA & RCTU-SI (A) Beginning Phase 4.6 . Turn on HRC-S on on HRC S.17.1			22 52					Am
2460	HRC-Son	167	OCC - obs - mode - cmd (note Bus Voltage is 29.80 V)	22 55							Am
2461	Bkls Run	167	Background Run 1998167.234349 (960 sec) (note bus voltage may be different at any time for thermal balance)	22 56	23 02						Am
2462	HV-Down	167	OCC - S-mcp-hv-down - cmd TRW TC has completed lowering bus voltage to 26.6 V (HPE reading 26.3)	23 03	23 18						V
2463	HV-up	167	OCC - mcp-hv-up - cmd	23 18							Am
2464	Bkls	167	Background run 1998167.233160	23 24							Am
2465	HV-off	167	OCC - mcp-hv-off - cmd	23 31	23 46						CJ
	with S-on		OCC - S-mcp-hv-on - cmd								Am
2466	HV-on	168	OCC - S-mcp-hv-up - cmd	23 46	00 04						Am

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NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL	
2467	CAL - 540	168	CAL expressed OCC. expose - cal. and	0010	0011			GMR	
			Start Cal Run 1958/68. 001129 (3400 SEC)	0011					
2468	BKED	168	CAL CLOSURE OCC. STAN CAL. and	0142	0144			GKA	
			RAN 1800 SEC BKED STARING @ SH2900.	0145					
			INCREASING LLD Length 300 SEC TO 9, a, b, c						
			AND BACK TO 8 FOR THIS LAST 300 SEC.						
2469	HRC-I on	168	SWITCHES TO HRC-I FOR SECTION S.17.2 THRU						
			STOP 005 (HV ON @ STOP 0)	0220					
			CONTINUOUS WITH HRC-I TURN ON TO FOUR	1410					
			VOLTAGEST. CORROSIONS BLED, CAL RUNS						
2470	HRC	169	HRC Signed off as configured per Table 5.1 prior to stray light test	1716				GKA	
			PASSING STRAY LIGHT TEST	1202				AGC	
2471	Doorclose	169	ISSUED ALARMS AND DOOR CLOSE due to ACIS BAKEOUT	0451				DC	
			AND A PRESSURE DISE	1505					
2472	CRACK DOOR	169	ISSUED CRACK DOOR AND	1653	1657			DC	
2473	STC Telemetry loss	170	STC LOST TELEMETRY	001115				DC	
2474	STC Telemetry estabilish	170	STC Telemetry restablish	0143				GMR	
2475	HRC STRAY LIGHT/occ	170	STARING OCC. COLITATING SQUAWKING PULL SECTION S.19.1. PS ON PLUS HPC DOOR UNPL	0353					
			TESTING OCC. DOOR OPEN, and. TURNED ON HRC-I HV						

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NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL	
2475 cont'd		170		WITH HVIM-up. and BUT ABDOMEN OUT OF SEQUENCE ACTIVE 2/3 UP TO DO Door OPEN. USERS OCC. IN SEP-HV DOWN. AND TO PUT HAT @ 1/2 VOLTAIC UNILIVE DOOR WAS OPENED. THDN USERS OCC. IN SEP-HV UP. TO REGULATE HV INCREASE. HV-+ HV OFF. MODES TRANSLATION TAB SET FROM LAUNCH WORK TO HAT'S VIBRATION POSITION.	0412	0412		GKA	
NHR 3001				HAT'S HV ON. SUPPLY DID NOT COME ON AT 1ST ATTTEMPT. ABDOMEN SEQUENCED IS SENT AGAIN. SUPPLY CAME ON.	0435	0435		GKA	
				TRAIN 2000 SEC HV-S BROKEN INTERFERING WITH SEQUENCING TO RUN AN ADDITIONAL BLOCK RUN DURING WHICH STAY LIGHT TEST LIGHTS WERE TURNED ON.	0446	0501		GKA	
				FINISHING 1998170.050136					
				LIGHTS ON 050400					
				" OFF 050503					
				" ON 051523					
				" OFF 051622 (1200 SEC RUN)				GKA	

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2475 cont'd	170	SUSPENDED SQUINNED AFTER STOP ONE TO 0536						CM
		AIRWAV FOR CHANGE ONUL TO S/C B SIDE FOR TRANSITION TO HOT 'S' 1 HOUR OF OCC ACT TESTING.		1124				
		SANT OCC. WIL-MODE BUTCAUSE S/C SURROUND TO FLY 4 DURING SWITCH TO B SIDE. DIDN'T TAKE SINCE COBUS = BB. SWITCH TO		0632				SVA
		COBUS = AD 'S' POSSIBLY OCC CHANGES FLY BACK TO 1		0846				CM
		HNC OFF		0920				CM
		SANT OCC COMMANDING FOR 05.0		1133				CM
		LIRE-I BLCG FILE 1998170.125252.7m (500 sec)						
		" CAL " 1998170.131745.7m (300 sec)						
NMR 30811		HPS-HPS DID NOT COME ON AT 1ST ATTEMPT, DID COME ON AT 2ND ATTEMPT						
		HRC'S BIKE FILE 1998170.140739.4m (300 sec)						
		" CAL " 1998170.142323.7m (300 sec)						
		END OF OCC COMMANDING						
2476 TRANS. TO	170	TRANSITION TO HOT PUR SCTION 5.19.2. EQUAL TURB TRANSITION STAGING N 1000						CM
		HOT						

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NO.	SUBJECT	ADJUSTMENTS/REPAIRS/RECEIVED/ENVIRONMENT/ETC.	STAMP OR INITIAL
2477	AUTO SHUT DOWN	170 EXPURGING AUTO SHUT DOWN OF S/C DUE TO LOSS OF CONTROL DURING SWITCH FROM B SIDE TO A SIDE FOR ANOTHER RE-RUN OF SYSTEM TEST	2110 GVA
2478	Recovery	170 Recovery HIC POWER OCC. POWER - down, and EHRC OPEN OCC. POWER - up, and OCC. HIC LINE unique, and SHUNS NOT TURNED ON	2213 2220 GVA
2479	Power down /71	Sent OCC power - down and since FEA Box T was in alert condition (within 5.19.2)	0744 0744 112 AR
2480	Power up /71	Sent OCC power - up and to check temperatures before cold well read in - up TM Det = 24.79 °C	1125 112 AR
2481	Power down /71	Sent OCC power - down, and as requested by Thermal Engineering (5.19.3) Start of Cold Well Warm-up	1131 112 AR

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LIFE HISTORY				PAGE OF PAGES	
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2482	PNK UP Door close	171	HPC ON BR-16FLY FOR TRIP CHURK	1423	
2483		171	Due to a pressure rise, door closed and SV off cmds: OCC, power-up, OCC, hrc-unique, doorclose , OCC, power-down	1506	JC
2484	TRX PRESS	171	TRX CHAMPS PUSH DURING WALK UP OF CDR VNAW N SX 10' S	1512	
			LOW 10' + ACTS AGAIN		
			PRESSING NOW HUNDREDS DOWN AGAIN		
			A/CIS GAUGE 3.8 x 10^-5		
			CHARTER 3.7 x 10^-5		
				1650	
2485	HPC DOOR	171	POSITIONS ON WITH OCC, POWER-UP, AND OPEN	1650	
			SENT CALL DOOR, AND BUT CONVENT SENT OCC, HRC-UNIQUE, AND		
			PREPARE CYCLING OF MOTOR CONTINUES IN NIL MODE.		
			CHANGES TO FHTL IS SENT OCC-OB- mode, AND SENT CHURK, AND CLARKDOOR, AND AGAIN		
			DOOR OPERATION WORKED IN HPC POSITION OFF		
			WITH OCC POSITION -DOWN, AND		
1120 BUS	171		POSITIONS T/H C TO SEND ENRCPP OFF,	1703	CKA
			OFF		CKA
			FOR SECTION S-19.4.1	2150	

LIFE HISTORY

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			START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
2486	S/C OFF	172	S/C POWER OFF				
2487	RESPRESS	172	INITIATE 1750 CHARTERED RESURSS VIA HAWAII DLR	00138	00172		GKA
2488	S/C POWER ON		W/IN CAMPBELLSD AIR (< 2 PM 11/20)				
2489	PURRESS	172	S/C POWER ON @ 18 TORC CONT'D				
			CHARTERED RESURSS 130 TORC	0311	0332		GKA
			167	1800	0600		
			368	1025	0640		
			413	1145			
			964	1200			
			520	1300			
			577	1400			
2490	HAC DONE	172	POWERED UP HAC'S CLEARED DOOR FOR SECTION	763	1735		GKA
			5.12.4.3 ALSO PUT SHUTTERS IN LAUNCH COCK				
			IN ANTICIPATION OF ISIR HANDLING FOR AUS				
			1250AM				
2491	HAC PRESS	172	INITIATED HAC PRESSURIZATION FOR SECTION	1735	1750		
			UNINITIALIZED				
			5.12.4.4				
2492	S/C OFF	172	S/C POWER OFF @ END OF T/V TEST	1750	1950		GKA
			5.12.4.5 CHANGES TO PDT				
			6/2/99				

LIFE HISTORY

EVENT		DATE		SUMMARY OF CHRONOLOGICAL EVENTS		RUNNING TIME/OTHER (HOURS AND MINUTES)			PAGE OF PAGES
NO.	SUBJECT					START	STOP	TOTAL TIME	CUM. TOTAL
2493	N2 Sys	6/21/96		Back filled N2 line w/p chamber Feed them					50
2494	Gas Fill	6/24/96	Tank:	Repressured small tank to ~950 psig / 10 psig - 0.2 Hourly Readings TAKEN, Summary Shown Below					
2495	Gas Monitor	6-22-96		RG1 = 840 / 8.5, WEISS = 0.65 — (RG2 Set full open) 820 / 8.5 " = 0.65 "		10:15 —			
2496	Gas Monitor	6-23-96		RG1 = 750 / 8.5 " = 0.62		" " "			
2497	Gas Monitor	6-24-96		RG1 = 750 / 8.8 " = 0.65 —				13:25	
2497	"	6-25-96		RG1 = 720 / 8.5 " WEISS = 0.65 —				13:00	
2498	"	6-26-96		690 / 8.2 = 0.70				13:00	
2499	Gas Reduct & Rel	6-26-96	RG2	660 / 8.3 = 0.70 Prior to RG2 Trans to B/F operation 650 / 8.1 = 0.55 RECONNECT 100' LINE		14:30		13:30	
2500	Gas Adjust	6-26		ROTATE CCW RG2 flange to turn to new position to lower gas pressure from full flow from C/2 to present				17:15 —	
				This allowed surge of RG2 for ~5 to 6 days					
				RG1 630/640 - 8.5 Weiss 0.55 (RG2 deflled = .65)				18:10	
				2 Add'l 1/4 turn to 1/4 Weiss					

MM

LIFE HISTORY

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2501	Add'l CN2	6-26		R61=640 / 8.7 Weise Sys = 0.49			81:30				
	Adjust response.			" HRC = 0.60							
2502	Line Change	6-27		Post 151M Removal - CN2 line removed, 8' line installed			11:45-				
2503	CN2	6-27		R61=640 / 8.5 gas claim = 0.41 HRC claim = 0.6			13:53-				
2504	CN2	6-27		625/640 - 8.5 " = 0.42 HRC = 0.5 Disconnect for turntable removal			18:00				
2505	CN2	6-27		R61=640 / 8.5 " " = 0.40 " " = 0.50			18:15				
2506	CN2	6-27		R61 640 / 8.5 " " = 0.46 " " = 0.55			19:10				
2507	CN2	6-28		620/640 - 8.5 0.48 0.60			19:15-				
2508	CN2	6-28		640 / 8.7 0.48 0.62			22:30				
2509	CN2	6-29		630 / 8.5 0.48 0.62							
2510	CN2	6-30		630 / 8.5 0.41 0.55			0.930pm				
2511	CN2	7-1		630 / 8.5 0.41 0.55			0.945-				
2512	CN2	7-2		630 / 8.5 0.42 0.52			16:15-				
2513	"	7-3		630 / 8.5 0.45 0.52			16:15-				
2514	"	7-5-98		630 / 8.5 0.45 0.53			08:45-				
2515	"	7-6-98		630 / 8.5 0.45 0.55			11:00				
2516	"	7-7-98		630 / 8.5 0.45 0.55			16:30				
2517	"	7-8-98		630 / 8.5 0.46 0.58							
2518	"	7-9-98		630 / 8.5 0.48 0.58			09:30				
2519	"	7-13-98		630 / 8.5 0.50 0.60 (Discovery set & HRC)			18:00				
2520	"	7-14-98		630 / 8.5 0.50 —			11:00				

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NO.	SUBJECT			START STOP TOTAL TIME CUM. TOTAL
2521	END-TO-END	14 July 98	RAN HV POSITION OF END-TO-END TEST #2 FOR	1100 (GHT)
	TEST #2		SAO-HCC-TP-98-317 RDA.	2342 (GHT)
2522	HCC-S HV	17 July 98	RAN SECTION S.1 OF SAO-HCC-TP-98-318 TO TEST FOR DIRECTOR HV TURN ON PLANE WORN IN STAND	0020 (GHT)
	TURN-ON		ALONG MODE. NO EVIDENCE OF A PROBLEM WAS	0612 (GHT)
	TESTING		FOUND.	JAC/GKA
2523	GN2	7-17	630 / 8.5 6.40	—
2524	GN2	7-18'	630 / 8.5 0.40	—
2525	GN2	7-18	630 / 8.5 0.42	—
2526	HCC-S HV	19 July 98	CONTINUOUS HV TURN ON TESTING FOR SAO-HCC-TP-318 TURN-ON	16:35 —
	TURN-ON		SECTION S.2, #1 TESTING IN "FLIGHT" CONFIG (SIM ON FLOOR BUT CAB WAS TO S/C). AT 2220, DURING A TURN ON ATTICATOR, OSC. S. INC HV UP. AND	2016 (GHT)
	TURN-ON		NAS SURVEYORS POSITIONED IN PLANE HV STORES COMMANDS TO N800 V/PLATE, BUT SUPPLY WAS NOT ON. RAN A HV TEST ON A SIDE WHICH INCREASES WAIT TIME BETWEEN ATTICATORS. NO FAILURES TO TURN ON WAS OBSERVED. HV DOWNING OFF.	GKA
2527	GN2 S.5.	7-20-98	630 / 8.5 — WEIN 0.38 (big) - Diagnostic for QA 0.0 VERIFICATION —	0052 (GHT)
				11:35 Remot.

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				START	STOP	TOTAL TIME	CUM. TOTAL	
2538	CH ₂ Sys	7-20-98	625 / 8:5 - Weiss = 0.2 Disconnected 151m More to Space draft on yellow lever. - Reconnect	13:10				
			625 / 8:5 - 0.0					
2529	CH ₂ Sys	7-21-98	625 / 8:8 ~ 0.25 / 0.28					
2530	CH ₂ Sys	7-21-98	625 / 8:9 ~ 0.35	07:15				
2531	CH ₂	7-21-98	Inserted Weiss Gas - T 154 @ HRC, = 0.50 / 0.48 05g and allowed ~ 25 min Stabilization	10:38				
2532	CH ₂	7-21-98	Reconnected 100' line @ HRC, = 0.25 / 0.9, 0 = 0.28 11:04					
2533	CH ₂ Sys	7-21-98	Disconnected 100' line @ Gas Sys. & installed 'T' Weiss					
			625 / 8:9 Gas Weiss = 0.35, T-Weiss = 0.45 -					
2534	CH ₂ Sys	7-21-98	Remove T-Weiss & reconnect 100' line to Gas Sys. Gas Sys - Weiss disconnected to 0.12 / 0.15	11:09				
2535	CH ₂ Sys	7-21-98	In Black Room on Floor. 625 / 8:9 - 0.38 Weiss -					
2536	"	7-22-98	625 / 8:9 ~ 0.4 Weiss	07:45				
2537	"	8-3-98	625 / 9:0 , 0.32 Weiss, followed by disconnect 100' line on 5th	08:15				
2538	"	8-3-98	Reconnect to Gas Module on Floor 8' Line (151m Removal)	09:10				
2539	"	8-3-98	625 / 9:0 Weiss = 0.23	08:45				
			625 / 9:0 Weiss = 0.23					

With HCl/H₂O will form
conducting salt
basic salt
+ Help E&K ZnO/ZnCl₂

15:15 - 625/9.0 water = 62.5

625/9.0 water = 62.5

16:00 - Start HCl's until -

Depth Depth -

0.8 = 45 625/9.0 water = 62.5

625/9.0 = 62.5

07:10 Reconcile our float 8

* measured P.M. 625/9.0, C density 0.43

0.32 water, 625/9.0
CS:15 dilution (cu S/C) (88)

62.5 water, leg 5/3/95

LIFE HISTORY

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2539	CN2 Sys	8/5/98	625/900, weight = 0.30	Received by			16:00		KCA		
2540	CN2 Sys	8/5/98	625/900 w = 0.25	Replaced by TURTLE SHELL INSTALL.			22:00		KCA		
2541	"	8/6/98	625/900, w = 0.25				09:45		KCA		
2542	CN2 Sys	8/7/98	Disconnect 'S' Re-connect 'S'	Move to m 4			08:30		KCA		
2543	CN2 Sys	8/7/98	Connect gas sys on 1A				10:45		KCA		
2544	151M/T/V	DAUG 98	STATION ISIM T/V TEST. TEAN INSULATION				23:00 (G445)				
			+ CHURKOTKA PUR SECTION S.1 OF SAO-HRC-TP -								
			98-319. ONLY PROBLEM ENCOUNTERED WAS A								
			BROKEN PULSE INJUG CABLE (BROKAK C LENS OF								
			5 FT EXTENSION THAT CONNECTS TO SIMA/GENIC								
			ADAPTER). WILL TEST W/O SI TRIGEUR.				00:44 (S111)				
			(PLATE THIN THIS #4)								
2545	PURDOWND	222	Removals GAS LINE FOR PURDOWDN PUR				0613 (G111)		KCA		
			SECTION S.2								
			PURDOWDN INSTRUCTIONS				0838		KCA		
2546	PHASE 2.0	222	PHASE 2.0 TURNED HIC ON IN PREPARATION FOR				1801				
			COLD WARM FUEL. SUGARON 5.3								
			COLD WARM FUEL STABIN				2022		KCA		
			" " COMPUTATIONS								
2547	PHASE 3.0	223	PHASE 3.0 STARTS PUR SECTION S.4				2158		KCA		
2548	PHASE 4.0	223	PHASE 4.0 HIC TURNED OFF IN ADVANCE OF				0205		KCA		

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2548	PHASE 9.0 CONT'D	223	FORWARD STAIRS OF $\phi 4.0$ (IVE OFF @ 170 ^o) FORWARD STAIRS OF $\phi 4.0$				
2549	Moisture Injury	223	FIRST ATTEMPT @ MOISTURE INJECTION TREATMENT IN VAC SYSTEM SHUTDOWN WHILE CHAMBER PRESSURE RISE FROM 4×10^{-6} TO 27μ - (2.7×10^{-2}) HOUD COOLING UNTIL PRESSURE IS 1250UWS. CHAMBER PRESSURE NOT RECORDED (INTERFERED)	2028	2320	2320	GKA
224			GAS WAS HAVING DRY WITH TURBO PURGE RUNNING (PRESSURE IS 21 μ NOW)	0024			GKA
			$P = 17\mu$	0201	15 μ	0258	GKA
			TURNED OFF SON'S REAR TO PURGE CHAMBER WILL GO TO RETROIE HEI.				GKA
			PURGE STAIRS - MAX PRESSURE 300U (STATION PURGE, OPENED ROUGHING @ 100 μ , STOPPED PURGE @ 300 μ) Took ~ 10 MINUTES			0449	GKA
			(170 μ) 1.7×10^{-1} (130 μ) 1.3×10^{-1}			0520 0528	GKA GKA
			CHAMBER PURGE OPEN AGAIN @ 120 μ , PRESSURE UP TO 140 μ .			0532	
			PRESSURE 1.5×10^{-1} WITH DRYER RUNNING			0551	GKA

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NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL
2549	COV'D	224	PULLS STOPPED @ 140 ft. #3 ONE CARGO (2 HANDS) BROUGHT ON LINE @ 70 ft. CARGO SWINGS @ 50'; CLOSURES AGAIN & ROUGHING PULLS SWINGS CARGO #2 ON LINE @ 35 ft.	0612 $P = 8.6 \times 10^{-3}$ 0629 0638			GIA GIA
2550	TEST POWER	226	CARGO #1 ON LINE WITH #2 REGU BACK ON AGAIN TURNS ON HPC IN PREPARATION FOR COOL UNAV WARM-UP & CARRIER REPOSITION OCC. POWER-UP AND OCC. HVC - UNAV, COOL HPC @ 20°C - INITIATE COOL UNAV WARM-UP PHASE II.	0700 $P = 7 \times 10^{-5}$ 0716 0731 0736			GIA GIA GIA GIA
2551	Temp verify	226	HPC TURNED OFF USING SWING. AND TO AVOID OVERHEATING Power ON TO MEASURE TEMPS; OCC. POWER-UP; OCC. HVC - UNAV; SWING OFF	0116 0118 0300 0800		1159 0800	GIA GIA GIA GIA
2552	"	226	Power ON TO MEASURE TEMPS; OCC. POWER-UP; OCC. HVC - UNAV; SWING OFF	1405		1205	J.C J.C
			OCC. POWER-UP; OCC. HVC - UNAV; SWING OFF	1411			J.C

LIFE HISTORY

LIFE HISTORY				PAGE OF PAGES			
EVENT	DATE	SUMMARY OF CHRONOLOGICAL EVENTS		RUNNING TIME/OTHER (HOURS AND MINUTES)		STAMP OR INITIAL	
		NO.	SUBJECT	START	STOP	TOTAL TIME	CUM. TOTAL
2553	TEMP VERIFY	2.26	POWER ON TO MEASURE TEMPS	1158			
			OCC-Power up; occ hrc-unique; S-V OFF	1602		JC	
2554	CRAVZ	226	TURNING ON HRC FOR FINAL TOTIP CHECK	1743			
	DEER		OPEN DOOR	1745		GVA	
			INITIAL, and	1748			
			CLOSED DOOR and	1757		EKA	
2555	Business	2.26	RELEASE STINGS	1813		BIA	
		227	FINISHED	0047		EIA	
2556	CLOSE DOOR	227	POUNDS UP HRC TO CLOSE DOOR	0047			
			INITIAL, and	0053		EKA	
			DOOR CLOS. and	0054		EKA	
2557	LID DOWN	227	WONDERED LID ON CHAIR-BAR FOR ACCESS TO ISIM	0115		GVA	
			Raised lid again after installation of SI-STL				
			GUARD TUBE TO HOT TOTIP MOISTURE INJECTION	0544		GVA	
			TUBES				
2558	TEMP DOWN	227	PUT TO DOWN INITIATED	0610		GVA	
2559	COLD/WARM	227	TURNED ON HRC IN PREPARATION FOR COOL/WARM	1707			
			FULL PUR SATION 5.3 φ2 OF SAO-HRC-TP -				
			98-319	1712			

LIFE HISTORY

EVENT		DATE	SUMMARY OF CHRONOLOGICAL EVENTS	RUNNING TIME/OTHER (HOURS AND MINUTES)			PAGE OF PAGES
NO.	SUBJECT		TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.	START	STOP	TOTAL TIME	CUM. TOTAL
2555	CONT'D	227	COLD WAVE FIR ASSEMBLY STANDBY	1755			
2560	MANUFACTURED	227	" " IN CORPUSUS, START OF Ø3 END OF Ø23	1851			GKA
2561	TRANS TO COIN	227	HRC POWER CYCLE FULL SECTION 5.5.1 (TURNED OFF DURING TRANSITION FROM Ø3 TO Ø5 (Ø4 DURATION IN 2ND TEST RUN))	2234			GKA
2562	MOISTURE	227	MOISTURE INJECTION INITIATION	2244			GKA
2563	TEMP MEASURE	228	STARTED TURN-ON TO CHECK TEMPERATURES	2320			GKA
2564	CLOSURE	231	CLOSURE DROPPED OUT FOR N 1/2 H.C. BACK ON LINE AGAIN	1502			1C
	DRIVE OUT						
		233	CLOSURE DISCONNECTED IN ORIGINAL TO RE-BOND IT	2043			GKA
2565	Ø5 TO Ø6	238	MOIST GUN INPUT TERMINATIONS END OF PHASE 5	2253	2258		GKA
2566	Ø6 TO Ø7	242	END OF PHASE 6.0. START OF PHASE 7.0 RAN 0413 HRC MECHANISMS TEST PUR SECTION 5.8.1	0430			GKA
2567	HOSES TEST	242	STARTED 5.8.2 HRC-S HUPS TURN-ON TESTING	2343	0452		GKA
2568	Ø7 TO Ø8	242	END OF PHASE 7.0, START OF PHASE 8.0	1308			GKA
2569	Ø8 TO Ø9	243	END OF PHASE 8.0. HRC FUNCT TEST WITH BE RNN IN Ø9 INSTANCES OF Ø8. START OF Ø9	1805	0910		GKA