FLIGHT DIR MISSION LOG	DAY	REV	PG 245

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
124/39	LM Vertain CMC - 60
124/40	Columbia PS-2
	FIDO Doppler Residuals - small -
124/41	Try LBR in LM -
	3.8 Signal Strength -
	MCC-124/49 Commence Tracking P20 -
124/48	Tellory - Lakin Repress Valve - Closed
	Al - OK - it's closed - Think he
	closed it -
	Tellory/Was open - ✓
	Torquing ✓ sounded real good -

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 246

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	0000 Star angle diff.
	-0006
	.06
	.13
124/54	lochan —
	CSM V52 is GO — No NBD updates —
124/57	it have P162
	Time - y - 16 ✓
124/59	CSM soln for LM
	Your ly — 1.0
	HBR ✓
125/00	HBR or LM —
	AGS agree closely in pointing
	CSM cannot read Eagle —
	CSM L / LM F —
	VHF ranging not working —
125/02	Take SX Marks — don't re-initialize

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 247

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	Loading TPI time now
	VHF ranging back —
	FIDO — plane change in same direction
	~ 3 fps total —
	FIDO
✓	51.5 fps our estimate —
TELCOM	Verify — VHF B Xmtr off —
	Take ✓
	✓ Aft omni — GO for CSI —
LOS	
	Problem on Ranging —

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 248

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	Briefing -
	L Mant Forward.
	MSFN relay -
	Burn Report
	Status -
	All GO -
	Both AELD CB's - ✓
	No -
	That was just a circle
	CB's are OK -
125/53	CSM -
	GNC - Good on prop ellants -
	EECOM - Good on LBR
	CSM / CSI - on Time -
	no plane change -
125/58	Eagle -
	laser going ? -
	Burn Report -
	CSI on time 125 19 34.70
	51.5 - .2
	+ .7
	- .1

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 249

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	AGS +.4
	+.9
	+.3
	No plane change —
	CSM had 2.3, 2.9 LOI for plane
	change & did not burn —
	HGA for Columbia —
126/01 ~~212~~	Rcvm Verify switched LiOH connectors
	Erratic indications on ppCO2
	switched — still erratic
	Then settled out —
	GM Low has no rqmt — we are already
	~~HCC~~
	asking him.
	Site problem at MAD for CSM —
126/05	Columbia still cannot read him —
	FAO) Don't know whether CASER
	came from —
126/08	Go To Reacq, should acquire on HGA

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 250

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
126/09	Columbia –
	HO Angles –
126/10	Comparing Solutions –
	#2 8.1
	$PPCO_2$ – 114
	Pulled CB – on $ppCO_2$ –
	A1 Water Separators not working too well
	lot of water through suit –
	Showing good sep speed –
	Burn Comparison –
	19.
	LCG's on? –
	level scum can see level?
	CDH looked good –

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 251

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	MCC Acrum question –
	CNTL – Good – on RCS 1% less –
	Comm problem was at MAD –
	Water Right online between red/green –
	TPI – 3 minutes late Δh 15.2
	Vx 23 –12
126/25	Water Stay – Sep good –
	A – Not too much trouble –
	Trouble w only one suit –
126/24	CSM/HGA NBW HBR
	GUID – CONTROL – TELCOM –
	127/02/03 126/57/FIDO
	rebunch –
	.6 fps out of plane –

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 252

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	CSM Soln for TPI
126/33	127/02/34.50 TPI Tig time
	Canisters are OK —
	Stay on cabin —
	FIDO
	127/03 TIG 14.9 Δh —
	V_x 22.8
	V_y 1.5
	V_z −11.5
	Did they ever go to Egress on secondary
	canister?
126/51	Stay in Cabin Mode —
	No real concern over that CO_2 —
	Al Roger —
	Final 127/03/31 TIG TPI Time —
	Pipa bias X .117 cm/sec²
	Nonstate

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 253

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
126/55	Logic, sampyco at your convenience
126/57 –	All solns look good –
	LM 127 03 30.82
	Soln: +22.7
	+ 1.7
	– 10.6
	LM OUTOFPLANE – INAGS –
	TPI burning –
	All good at SPS –
	.6914 ± 3000' ± .03
	on Track –
	4 miles dn because of being off
	at PDI –

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 254

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	SHIFT SUMMARY —
	(1) DIRECTO2 FROM FLOWRATE
	(SEE CHANGES)
	(2) LM — ERRATIC CO_2
	— POSSIBLE CHANNELING OF
	CO_2 CANNISTERS DUE TO WATER
	— DIDHE GO TO EGRESS WHICH
	ON SE C CANNISTER?
	GMCOW — HO NEED TO BRING
	CANNISTER BACK THE
	DOESNOT THINK —
	— PUDDY IS GETTING LIST OF QUESTIONS
	TO ASK & UNDERSTAND MORE
	ABOUT THAT —

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 255

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
127/52	AOS
	R1 61102
	Post Dock
	in checklist
	Quadrant plane - B-Dr Ctrl Active
	01111
127/52	AM OK you got me -
	STD keeping -
	58 % RCS -
	45 %
	Getting ready to dock -
	Caged the platform in LM -
	ICPdn - Switched to other -

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 256

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	Shift change items
—T/W — ✓	1. Close CO_2 PP Xducer & perform some CO_2 Canister ~~Ch~~ Switching
—OK — ✓	2. CSM Pad on Dir O_2 For Xfer
	3. Cabin closeout open items —
✓	4. Final Sep Mnvr P30/41 P47
	5. Config Items to avoid master alarms at TEI — Cryo Stir, etc.
✓	6. Pickup Questions post TEI
✓	7. Plat Cage — effect on ~~HGA~~ Steerable for Final Sep — PGNCS Test —
	① RCS A ~~&B~~ readout *
	② CO_2 PP C/B - close select sec Cart
	③ Steerable ANT update
✓	④ 13~~3:05~~ — Dump H_2O to 10%
	⑤ ~~13~~ ~~3:05~~ Cryo stir 134+00

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 256 257

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	5785 #LM WT.
120/04	B3-C4 disabled –
	Bumping up cabin ✓
120/05	O2 flow adjust ✓
	New LM weight ✓
	6MR1
120/11	61102 in R.
	01111 R2 use B-Roll
	5785 #
120/15	Leak Check –
	Press Equal Valve –
120/20	CSM Hatch open? no – wait a minute –
120/20/41	CSM – Coming fine – Bruth you in record –

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 258

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
120/30	Cntl like an AGS/TO PNGS align –
	.6914 ± .03 3000'
	23.461
	SepMVR 131:52:00
	Zero AGS errors @ Jett att before ✓
	AGS attheld
	p 165 y 68
120/43	GNC – Jett att.
	Tweak – Direct O_2 Valve –
	.482 #/HR indicated –
120/50	Guid Cntl Switch TO PNGS then AGS –
	To zero AGS attheld –
	MCC – Guid Cntl Switch Cycle –
	FIDO 62.6 x 56.4

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 259

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	Mode
	AGS ~~Att hold~~ switch needs to be put
	TO Att Hold
129/02	LOS call - Good day -

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

P52 - State Vectors

FLIGHT PLAN UPDATE (CSM)

TIME	ITEM
	LM WILL USE P22 TO
	DETERMINE ITS LANDING SITE.
	TRACK LANDMARK 130 PRIME
	USING P22. THIS WILL
	PROPERLY POSITION RR
	TRANSPONDER.
	AT T1 (GET = 122:16:05)
	RR TRANSPONDER - OPERATE.
	T2 TIME IS 122:21:11
	TARGET - 6 MILES NORTH OF
	TRACK
	~~COMMENT: YOU ARE TO~~
	~~USE THE OPTICS IN MANUAL~~
	~~MODE TO LOOK FOR THE TWO~~
	~~MARKS ARE NECESSARY UNLESS~~
	~~M IS SEEN.~~
	130 LAT +01.243
	LONG/2 +11.844
	ALT -001.46 NM
	IF REQ

MSC Form 1190 (Apr 65)

FLIGHT DIR MISSION LOG	DAY	REV	PG 260

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
129+15	White Team on Shift —
	Rev 27
	73 Amp Power up — we have
	Single O_2 & H_2 Cryo Tank
	Capability all the way
129+24	Asked Span to give me
	a rundown on all problems
	related to TEI Burn,
	particularly the SPS/RCS
	type problems —
	Verify
	RCS Quad B
	Pitch Gimbal motor
	Ovb'd Pc —
	SPS GN_2 B-Low
	Quad A is above 30 sw
	point by +38#, Quad D
	is 60#, C +55, B +44
	Above switchover point.
	CSM orbit was 57 x 62
	at CDH — ~~pretty close~~
	looks like that science
	didn't work out —

MSC FORM 1441 (APR 66)

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV 21	PG 261

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
129:50	LM AOS HBR —
	Note: From now on All of them.
	RCS A-
	Poo Accept — S.V. load to CSM — uplink complete V66 CSM SV to LM Slots —
	Final recommendation on early LM jett within 10 mins —
	130+30 Jettison will be moved up & crew will use
*	— Write up what happened here — & decision process*
	— see other side —
130+04	Direct O2 Closed
130+02	GO Logic Arm

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	Note:
	When the crew came over the hill they had closed out the LM & were in CSM Pri Loop Flow was terminated at 129:30 — I did not like staying docked since bus A&B were tied together & when the G&N went down it might have caused other power problems. Now we cannot maneuver to a proper jettison attitude since the ACS would control in its deadband — ∴ we will jettison the LM then perform a H2O Dump 131:05 — 10%
	separate jettison attitude.

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 262

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
130+06	GO FOR PYRO ARM
	WILL GIVE CREW A MANEUVER
	ABOUT 3 MIN FR
	335°
	— ENABLE B3 & C4 —
	— 00003
	— 00003
	00000
	EMS —
130:10	DEPARTING FROM
	THE CSM —
	ADVISED CSM NOT TO
	STATION KEEP —
130+30	NOW WE ARE COMING
	UP WITH A SEP BURN
	~~of~~ TO MAKE SURE
	THAT WE ARE AHEAD
	OF THE LM —
130+21	— UPLINKING THE LOAD
	FOR MNVR TO CSM
	THE COMPUTER IS HIS —
130+23	NOW IN P-41
	130:30:00 ΔV_x - 2 fps
	RETROGRADE
	R0, P230, Y0 —

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 263 -

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	Crew going to
	R 1.1, P 5.2.6 & Y 13.8,
	with Hi Gain Angles
	P-79, Y+10.
130+44	Now discussing the
	TEI Opportunities —
	in order to go at
	29 we would have
	≈ 1/2 of rev 28
	≈ 3/4 of rev 29 then
	update at end of 29:
	will be 20 miles ahead
	& 1 mile below the
	LM at TEI.
	LM PGNCS still
	operating 1 1/4 hours
	after cooling
	termination
	Control — found out that
	the CSM RR xponder
	was on thru evaluation
	of the LM RR data —
131+00	LOS

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING			
	132:54	X	+0.25	.178
		Z	+0.30	.286
		Y	+0.15	.131
	133:40	X	+.125	update
		Y	+.125	
		Z	+0.4	
	Pipa Temp OSH 140°			
	** ICDO Fail 132:54			
	2+19 ΔT			
	132+25 Spec			
	137+30			

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

MISSION NOTES

SPEC A/H - ~~296~~ 340
28 volts @ 137:15
22.6 volts @ 137:57 per LM-4 - loss of ATT

CELL TESTS - ~~340~~ 296
28 volts @ 135:25
22.6 volts @ 136:07 per LM-4 - loss of ATT

FEC/TSG 378

FLIGHT PLAN UPDATE

TIME	ITEM
	CK LIST CHANGE
	SUR-61
B/C B	Before VHF A: XMTR - UA/CE/RC
	Place Update Link SW - Voice B/U

MSC Form 1190 (Apr 65)

LM. — DO NOT WANT RDZ RDR for ASSENT.

FLIGHT PLAN UPDATE

TIME	ITEM
	checklist change
	SUR-61
	TIG-17:
	Delete:
	CB (11) AC Bus A: RNDZ RDR
	— Close
	wait 30 sec
	PGNS: RNDZ RDR — Close
	SUR-62 PNL 11
	OPEN Following CB's
	AC Bus A: RNDZ RDR
	PGNS: RNDZ RDR
	UPDATA Link — Vone B/U.
	NOTE for ASCENT CKLISTS
pending CB results	If Eng Arm CB Does not close, then do NOT place Eng Arm to OFF at 50 fps. MUST STOP Eng VIA STOP PB at 0 FPS
	Do not use PNL 1 tape meter in PGNS. I.E. do not put mode sel sw in PGNS

MSC Form 1190 (Apr 65)

To vent DPS lines prior to Ascent.

FLIGHT PLAN UPDATE

TIME	ITEM
~~123:53~~	SUR-59
	Add (after EPS: INV 1 - Close)
	PROP: DES He REG/VENT - Close
Both CB	Add (after STAB/CONT: AELD - Close)
	PRORUL: DISP/ENG OVRD/LOGIC - Close
~~124:03~~	SUR-60
	Add (after Launch Guidance System Rec. from MSFN)
	DES PROPULSION FUEL VENT: OPEN
	" " OXID VENT: OPEN
	Verify both talkbacks - gray

MSC Form 1190 (Apr 65)

LM WAKE UP 121+~~30~~ 45

LGC selftest

FLIGHT PLAN UPDATE

TIME	P57 w/ all speed ITEM (LM) - Vectors
	USE P22 TO TRACK CSM.
	DATA WILL BE USED TO DETERMINE
	LANDING SITE.
122:15:00	CALL P22 (POSSIBLE PROGRAM
	ALARM 526 RANGE > 400NM)
	USE P22 AS DESCRIBED ON
	PAGE PGNS-20 OF G&N
	DICTIONARY. (TAKE OPTION 1 IN
	NOUN 06)
	USE THE NO UPDATE MODE
	RR WILL LOCK ON AT 25° ELEV
	ABOVE HORIZON
	IF 503 ALARM OCCURS (DESIGNATE
	FAIL) - KEY A PROCEED AND
	ALLOW RR TO SEARCH FOR CSM.
	PLACE THE RANGE/ALTITUDE
	MONITOR SW. IN ALT/ALT RATE
	TO PREVENT TAPE METER FROM
	DRIVING INTO STOPS.
	P-57 should be accomplished
	prior to calling P-22

MSC Form 1190 (Apr 65)

ITEM NO.	VEHICLE CSM	VEHICLE LM	DESCRIPTION	ACTION IN PROGRESS	ACTION ASSIGNED	STATUS	ESTIMATED COMPLETION TIME
1	X		PRIMARY AND SECONDARY ISOLATION VLVS ON QUAD B INDICATED BARBERPOLE AT PYRO FIRE FOR SEPARATION.	SAME TYPE OF OCCURRENCE EXISTED ON APOLLO 9	NR FERGUSON	OPEN	
2	X		CONDENSER EXIT TEMPERATURE ON FUEL CELL 2 SUDDENLY DROPS ABOUT 1° TO 2° F EVERY 5 MINUTES.	SIMILAR CONDITION OCCURRED ON FUEL CELL 2 OR 3 ON APOLLO 7 AND UP. INDICATIONS ARE THAT THE PECULIARITY WHICH CAUSES THE DISTURBANCES IS DIRECTLY ASSOCIATED WITH THE COOLING FLUID STREAM.	P&W NR FERGUSON	OPEN	
3	X		ECS O_2 FLOW TRANSDUCER READS .2 - .3 LBS/HR DURING THE CABIN O_2 ENRICHMENT PURGE. THE READING SHOULD BE PEGGED HIGH ($\approx$.981 LBS/HR) DURING THIS CONDITION.	SINCE TRANSDUCER APPEARS TO HAVE SHIFTED LOW, ALTERNATE MEASUREMENTS HAVE BEEN IDENTIFIED TO PROVIDE SIMILAR INTELLIGENCE RELATIVE TO FLOWRATE MEASUREMENT AS FOLLOWS: 1. O_2 MANIFOLD PRESSURE - CF0036P 2. CABIN PRESSURE - CF0001P 3. O_2 FLOW RESTRICTOR DIFFERENTIAL 4. CALCULATIONS ON CRYOGENIC O_2 USAGE	NR HURT	OPEN	
4	X		UNEXPLAINED O_2 FLOW MASTER ALARM OCCURRED AT 55:00 GET, WITH THE CLOSING OF THE DIRECT O_2 VALVE, AND FOLLOWED AN EXPECTED ALARM.	MASTER ALARMS HAVE OCCURRED ON ON CM-107. AS A RESULT OF DIRECT O_2 VALVE OPERATION DURING KSC ALTITUDE CHAMBER TESTING (ASHUR).	NR HURT	OPEN	
5	X		SPS GN2 PRESSURE INDICATED APPROX. 300 PSI LOWER THAN EXPECTED DURING LOI_1 BURN.	BURN DATA ARE BEING ANALYZED	FERGUSON NR	OPEN	
6		X	MISSION TIMER STOPPED AT 907:34:47 AND WHEN CREW RESET TIMER IT READ 902:34:47. CIRCUIT BREAKER WAS RECYCLED AND TIMER WENT TO ALL NINES. WOULD NOT START COUNTING.	ACTION IN PROGRESS REVIEWING FAILURE HISTORY FOR THIS CONDITION	KINGSLEY GAEC	OPEN	

ITEM NO.	VEHICLE CSM	VEHICLE LM	DESCRIPTION	[illegible]	ASSIGNED TO	STATUS	[illegible] TIME
7		X	Post PDI burn DPS fuel interface pressure underwent rapid pressure rise to off scale reading. Fuel line froze during SHe venting trapping fuel between pre-valve and SHe heat exchanger causing pressure rise.	Analysis of fluid and thermodynamic environmental continuing to rationalize cause. WSTF LTA-5D test data being reviewed.	R. B. Ferguson	Open	
8		X	During descent, the steerable antenna was not able to lock-up properly on the MSFN. Re-acquisition was tried several times prior to PDI without success. After the yaw maneuver, proper acquisition was obtained.	The loss of tracking lock was most likely due to the antenna tracking on a reflected signal from the Lunar Surface and high carrier suppression on the uplink (Up Mode No. 2). Investigation of this problem is continuing.	Kyle Kingsley GAC	Open	
9	X		Primary glycol mixing valve did not control mixed temperature to $45^{\circ} \pm 3^{\circ}$ F.	Command Module Pilot requested to verify valve position; cycled valve. The problem cleared and has not recurred.	HURT NR	Open	
10		X	The crew reported that the knob on the ascent engine arm circuit breaker was broken.	The crew was instructed to leave the circuit breaker open until it is required. Failure history of these breakers indicates that the breaker can be closed without problem.	Kingsley	Open	
11		X	At approximately 126 hours the CO_2 partial pressure read high causing the crew to select the secondary L_iOH canister. The readings remained erratic. The primary canister was again selected. The readings remained erratic and caused the caution and warning to be activated.	The CO_2 sensor was deactivated. Investigation is continuing.	HURT	Open	

ITEM NO.	CSM	LM						TIME
12		X	Subsequent to erratic CO_2 sensor readings at approximately 126 hours the crew reported water in one suit.	Investigation is continuing.	HURT	Open		

FLIGHT DIR MISSION LOG	DAY	REV 29	PG 364

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
131+48	CSM AOS — HBR
	waste H2O Dump
	complete —
	A-11 Voice check GO
LM — *	Prediction on PPA
	Temps — up ≈ 5° since
	last pass —
	(Give simple problem)
	looks like the crew
	is eating —
132+16	Reading the Crew News
	Read up prelim
	TEI 30 pad —
	All GO at Hos 133+30
	will
	TEI 30
	135+23+41
	3201.1 ΔVx
*	2 jet 16" 681.8 x
	village — -265.0 z
	36,691 wt ΔVT 3283.6
	ΔTB 2:28
	ΔVc 3262.8
	GET OSC 195:04:52

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
133+54	LM - At AOS
	boost PIPA's &
	Servo Loop Going
	unstable! —

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV 30	PG 265

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
133+50	AOS CSM Rev prior to TEI —
	Post burn } S.V.
	Pre burn } S.V.
	Return AV update (TEI Target)
	Fuel Cell purge complete
133+55	29 mi Ahead & 2 mi below the LM @ TEI
133+56	Advised crew ~~to~~ what S.V. we would set in CSM & LM slots
	Also deleted V66 at 134:30
134+00	Computer is his — Bank A start, Dual Bank —
134+02	Uplinked TEI 30, TEI 31 Pad
	~~136+09~~
	CP's Recycled

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	Trying to torque
	LM platform —
134+59	Could not torque
	platform —
	More RCS usage
	— ~~.0935~~ /min —
	.039

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 266

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	No 135+44+00
*	Burn 135+34+08 *
	Verify that crew stirred cryo's *
134+34	+ .166
	+ .212
	P-52 − .019
	Torque 00001 star L diff
	L's
134+38	GO For TEI —
	DAP 10101
	01111 *
	using BD Roll for
	TEI —
	36,691 DAP wt
134+49	— Advised crew of
	the AOS times w/w/o
	Burn —
134+51	P-30 load — OK
	Attitudes loaded
	for burn —
134+57	LOS CSM —

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 267

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
135+17	CD's Recycled Checkpoint tape —
135+34+06 → GWM/HSK AOS — ON time —	
135+35	HI GAIN
	Open up the LRL Doors
	Trim Vx .1
	Y .9
	Z .1
	ΔVc -17.8
	Wfu — Wox —
*	Gimbals off — Beautiful Burn
	V83 + 00070
	-00078
135+37	Set up Clock for entry/ GW2 Tank did not leak
	Pc ≈ 100 for burn, At end of burn was ≈ 96

MSC FORM 1441 (APR 66)

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 268

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
135+41	Burn Playback - good
	~~Sur~~
	Some tailoff at
	the end of burn
	- was going about
	106-7 psi then dropped
	to 98-102 for last
	10-15" of burn.
	- Burn 3" Longer -
	Also the Fu & Ox
	had about 1 psi delta
	at start and about
	18 psi at the end.
135+52	PTC Refsmat in
	~~Did~~ Crew cycled the
	Oxidizer flow valve
	Left it in increase,
	went 6-7% low -
	then cycled it to
	decrease - ended
	≈.2% -
	400K - EI Time is
	195+04+11

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 269

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
136+00	Crew taking pictures
	will torque at their
	convenience
	CSM weight — 26,370
136+12	Switched CP's — lost
	all L.S. output —
	Both systems are
	down — No — The B2
	system is still on
	line —
	Updated DAP load (wt)
136+30	Post burn playback
	indicated some Hi
	rate transients at
	start — interesting
	~~at~~ to look at Gimbal
	trim & motions —
	Queried crew — they
	confirmed roll then
	pitch excursions —

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	SHIFT SUMMARY
	1. We have single cryo
	Tank return capability
	H_2 & O_2
	2. All Quads are about 40#
	above secondary limits —
	for switchover
	3. Jettisoned LM 1 rev early
	TEI was on time & looked
	good
	4. Some anamolies in PC
	& Fu/Ox ΔP during burn
	may be tied to P.U.
	usage during burn —
	may be interesting
	to look into — Also
	start had some
	transients —
	5. E.I Time is 195+04+11

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 270

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	LM - Loss - 135+57 - ~~26.2~~ 22.6 V
136+50	entry γ_{ei} - 5.51 } Based on
	V_{ei} - 36194 } ~~[illegible]~~ TEI CONFIRM
	EI - 195+04+45
136+54	O_2 Tank #1 heaters OFF before Sleep
	Waste Water dump @ 150 hrs
136+54	Lost LGC - 7 hr 13 min w/o cooling
	p 270° vice 090°
136+56	Maneuvering to PTC
136+57	CDR 11017
	CMP 10019
	LMP 09020
	No Medication
136+57	Disable Quads C + D for PTC
136+59	Cryo heater/fan cycle
137+00	CDR 3 hrs, LMP 4 hrs sleep last night
Entry	BAT C - 37.0 V
Pyro	BAT A - 37.0 RCS - 55, 65, 64, 62 %
Pyro	BAT B 37.0

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DYNAMICS CHANGE OF SHIFT

SHEET ___ OF ___

MISSION _____ DATE 7/22/69 GET 137 : 30 : 00

PHASE _____ REV TEC GMT ___ : ___ : ___

CURRENT

h_a _____ nm V_i 4982.6 ft/sec

h_p _____ nm GET_{pc} ___ : ___ : ___ h_{pc} _____ nm

Orbit Period _____ min h_{earth} 198928 nm

h_{moon} 5962.3 nm

MANEUVERS

☐ Predicted
☑ Actual
Mvr TEI
GET 135 : 23 : 42
GMT ___ : ___ : ___
Rev 30/31 Over ____
ΔV 3283 . 5
Thruster SPS
Δt_B 2 M: 27.9 sec

PREBURN	POSTBURN
h_a ~~67~~ 64	X nm
h_p 54	X nm

NOTE: CURRENT ENTRY CONDITIONS
γ -5.51
V 36194
T 195:04:45

VERY PRELIMINARY

☐ Predicted
☐ Actual
Mvr _____
GET ___ : ___ : ___
GMT ___ : ___ : ___
Rev ____ Over ____
ΔV ☐☐☐☐☐ . ☐
Thruster _____
Δt_B _____ M: ____ sec

PREBURN	POSTBURN
h_a _____	_____ nm
h_p _____	_____ nm

NOTE:

☐ Predicted
☐ Actual
Mvr _____
GET ___ : ___ : ___
GMT ___ : ___ : ___
Rev ____ Over ____
ΔV ☐☐☐☐☐ . ☐
Thruster _____
Δt_B _____ M: ____ sec

PREBURN	POSTBURN
h_a _____	_____ nm
h_p _____	_____ nm

NOTE:

Prepared by GREENE

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

EECOM Consummables
Update to Flight Director
for 137 GET

Cryos
Present Totals
H_2 26.3 (-1.8)
O_2 348.2 (+16.4)

Single Tank Lifetime (GET)

	50 amp	73 amp
O_2		223+45
H_2		200+20

Waste H_2O Tank 85% @ 158 GET
Next Dump @ ≈150 GET

Battery a-h remaining

Batt A 32.9 a-h
" B 32.8 a-h
" C 38.6 a-h
104.3 Total a-h

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 271

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
137+06	Star/angles 00002
	tony +.469 136+53 tongued
	−.217 to PTC Refsmatt
	+.383
	ESAP Position
137+19	9:30 position, 50-60'
	No Dust, Some Kapton + LM
	parts for great distances -
	ESAP deployment - Ascent comments
137+22	A-11 LiOH question - next change?
	~~PTC~~ S/C Not yet damped down, extending
	quiet time 5 min
	B-4 -7 pockets, 1 empty, 6 Rem
	on other side B-7 7 pockets
	6 chlorine, 7 buffers
137+33	1 Chlorine, 2 buffers ~~left~~ are left
	if used now will have none
	for tomorrow - Surgeon
	will check into this

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	8 7714
	8914
	# 2-57

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 272

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	4 in A-1 B-4, B-7
137+42	Comm drop out
	- Other Ampules found in A-1
137+47	Looks like S/C is damped out - can roll up at any time
137+54	AGS Warning, expect LM to go - 23.7V
137+54	Started PTC
137+55	23.2 v - Lost LM data - DRIFTED OUT OF ANTENNA LOCK
138+02	PTC Looks good So FAR
139+00	Status - all 3 look like they're about asleep - 25% HBR data - Comm O.K. GNC good - PTC Stabilized EECOM good -

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 273

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	the batch is ~~[illegible]~~ by 142
	1050 EDT - yesterday
140:00	TRACKING Plan -
	Problem - not enough stations to cover CSM, ESAP and Track
	Stations available HSK, HSKX CRO, GWM, cannot get ESAP + CSM ~~[illegible]~~ both on ~~[illegible]~~ 85' site
	Solution command -
	(1) Keep 85' station on CSM to be sure of maintaining command capability for omni's - (marginal on 30' site)
	(2) Keep tracking CSM with 3 sites
	(3) Give ESAP 85' data only and take one of the 3 tracking sites for command if this is necessary on basis that 5 hrs of super batch is almost as good as 6 hrs and interruption may not wipe out data anyway.

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 274

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
140:00	Status - GNC - O.K.
	PTC still good, Temps OK
	EECOM - Ops Normal
	Surgeon - declared crew asleep @ 139 hrs
	~~LOW BIT~~ LBR DATA
141+00	Status - GNC - OK - Same ARC
	on PTC essentially -
	EECOM - all LBR now 30' site
	Commanding from 85' site
	Surgeon - No data
141+49	ESAP NEEDS COMMAND CAPABILITY
	Will Mow CRO over to Cover it -
142+00	GNC - OPS NORMAL
	EECOM - OPS NORMAL
142+26	HBR DATA - OPS NORMAL
	CREW OK - CDR may be Stirring some
	But is still asleep -
142+51	LOST DATA - GROUND PROBLEM ?
	CP DOWN - OPERATOR ERROR
	cannot get data back for 10 min -
	until s/c rolls back around
142+59	Data Back

MSC FORM 1441 (APR 66)

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 275

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
143+00 -	LBR Status OPS Normal - EECOM + GNC
	Crew Still asleep -
	5@ 150:30
	7fps @ 172:00
	No MCC Vacuum perigee 66.7 NM
	Fido Recommends waiting for MCC
	+ RETRO
143+07	MSI Exit - 148:07:23 GET
143+07	Do Dump @ 150 Hours
144+00	Status check - Systems Ops Normal
	Crew asleep - PTC OK
144+08	MCC_5 .27° 3σ Y_{EI}
	MCC_6 .15° 3σ Y_{EI}
	Wx FORECAST - GOOD FOR LANDING
	TWO TROPICAL STORMS - No problem
145+00	Status - GNC - RCS about same
	- 1 to 2% - PTC within 10°
	EECOM - Balancing Cryo O_2
	63% HBR, Ops NORMAL
	Tracking still going well
	Crew still sleeping soundly

MSC FORM 1441 (APR 66)

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DYNAMICS CHANGE OF SHIFT

SHEET 1 OF 1

MISSION Apollo 11 DATE 7-22-69 GET 145:00:00

PHASE Transearth REV _____ GMT/ __ : __ : __

CURRENT

h_a _____ nm V_i 4339 ft/sec

h_p _____ nm GET_{pc} __ : __ : __ h_{pc} _____ nm

Orbit Period _____ min h_{earth} 202679 nm

h_{moon} 25857 nm

MANEUVERS

☐ Predicted
☐ Actual
Mvr _____
GET __ : __ : __
GMT __ : __ : __
Rev ___ Over ___
ΔV ☐☐☐☐☐.☐
Thruster _____
Δt_B ___ M: ___ sec

PREBURN	POSTBURN
h_a ___	___ nm
h_p ___	___ nm

NOTE:
(1) EXIT MOON'S SPHERE OF INFLUENCE @ 148:07:23 GET
(2) VACUUM PERIGEE W/O ANY MCC ≈ + 66.7 nm

☐ Predicted
☐ Actual
Mvr _____
GET __ : __ : __
GMT __ : __ : __
Rev ___ Over ___
ΔV ☐☐☐☐☐.☐
Thruster _____
Δt_B ___ M: ___ sec

PREBURN	POSTBURN
h_a ___	___ nm
h_p ___	___ nm

NOTE:

☐ Predicted
☐ Actual
Mvr _____
GET __ : __ : __
GMT __ : __ : __
Rev ___ Over ___
ΔV ☐☐☐☐☐.☐
Thruster _____
Δt_B ___ M: ___ sec

PREBURN	POSTBURN
h_a ___	___ nm
h_p ___	___ nm

NOTE:

Prepared by Pavelka

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

EECOM Consummables
Update to Flight Director
for 145 GET

Cryos
Present Totals
H_2 24.9 (-1.7)
O_2 332 (+16.9)

Single Tank Lifetime (GET)

	50 amp	73 amp
O_2		228
H_2		205

Waste H_2O Tank 85% @ 154 GET
Next Dump @ 148 GET

Battery a-h remaining

Batt A 32.6 a-h
" B 32.2 a-h
" C 38.6 a-h
Total a-h

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FC/Flight Director

APOLLO 11 MISSION

Sixth Report

(120 to 144 hours)

All lunar module systems were checked satisfactorily prior to ascent. The ascent stage lifted off from the lunar surface at 124:22:00. The ascent engine was fired for 440 seconds, producing a velocity of 6070 ft/sec. The lunar module orbit was 45 by 9 n. mi.

Rendezvous maneuvers were performed without incident. The table attached summarizes those maneuvers.

At 126 hours, the indicated carbon dioxide partial pressure in the lunar module was erratic. During the same time period, the lunar module crew reported water in one suit.

The two vehicles were docked at 128 hours 4 minutes. After 2-1/2 hours, the ascent stage was jettisoned, and a separation maneuver was made with the service module reaction control system.

Transearth injection was performed at 135:23:42 with nominal results. The gaseous nitrogen pressure in bank B remained constant, with no indication of a leak. If no midcourse corrections are made, the spacecraft will enter the earth's atmosphere at 195:04:45.

Vehicle systems are operating normally. The crew are in a sleep period, and passive thermal control is being used.

Donald D. Arabian
Evaluation Manager

NOTE: The engine firing duration for powered descent was stated as 712.6 seconds in the fifth report. This number was in error. The actual duration was 758 seconds.

COMMAND AND SERVICE MODULE PROBLEM LIST

CSM-1

TIME: CSM/S-IVB separation

DESCRIPTION: Primary and secondary propellant isolation valves on service module reaction control quad B showed "barberpole" indication at pyrotechnic firing for separation

IN PROGRESS: The same condition occurred on Apollo 9.

ASSIGNED TO: Ferguson, NR

CSM-2

TIME: 6 hours

DESCRIPTION: Condenser exit temperature on fuel cell 2 suddenly drops about 1° to 2° F every 5 minutes

IN PROGRESS: Similar condition occurred on fuel cell 2 during Apollo 10. Indications are that the peculiarity which causes the disturbances is directly associated with the cooling fluid stream. A further review of data from all previous missions indicates that similar behavior has been exhibited by either fuel cell 2 or fuel cell 3 on every mission, starting with Apollo 7.

ASSIGNED TO: P&W, NR, Ferguson

CSM-3

TIME: 2 hours

DESCRIPTION: Indicated oxygen flow rate was 0.2 to 0.3 lb/hr during cabin oxygen enrichment purge; should have been 0.98 lb/hr

IN PROGRESS: Transducer calibration shifted low. Measurements of oxygen manifold pressure, cabin pressure, and oxygen flow restrictor differential pressure and calculations of cryogenic oxygen usage can be used to provide comparable information. Emergency procedures which depend upon the operation of the oxygen flow reading have been modified where necessary.

ASSIGNED TO: Hurt, NR

CSM-4

TIME: 55 hours

DESCRIPTION: Master alarm was noted when direct oxygen valve was closed after initial lunar module pressurization

IN PROGRESS: Similar condition noted during altitude chamber tests of this spacecraft at KSC

ASSIGNED TO: Hurt, NR

CSM-5

TIME: Lunar orbit insertion

DESCRIPTION: Service propulsion gaseous nitrogen pressure in bank B decayed from 2250 to 1950 psia during lunar orbit insertion firing; pressure remained constant after cutoff, indicating leak downstream of regulator

IN PROGRESS: Data are being analyzed.

Only one side of the redundant system was affected, and the pressure drop was not detrimental to service propulsion system performance.

Both banks were used for the transearth injection maneuver, with no indication of a leak.

ASSIGNED TO: Ferguson, NR

CSM-6

TIME: 105 to 105-1/2 hours

DESCRIPTION: Primary glycol mixing valve did not control mixed temperature to 45° ±3° F

IN PROGRESS: Command Module Pilot requested to verify valve position; cycled valve. The problem cleared and has not recurred.

ASSIGNED TO: Hurt, NR

LUNAR MODULE PROBLEM LIST

LM-1

TIME: (?)

DESCRIPTION: Crew reported that mission timer stopped with a reading of 907:34:47; timer was reset and read 902:34:47. The circuit breaker was recycled, and the timer showed all nines. It was reinitialized at 114 hours 30 minutes by holding the circuit breaker closed for 30 seconds, then slewing the counter to the correct time.

IN PROGRESS: The history is being reviewed for this kind of failure.

ASSIGNED TO: Kingsley, GAC

LM-2

TIME: Propellant venting

DESCRIPTION: During propellant venting after landing, the fuel interface pressure increased rapidly to an off-scale reading. The fuel line froze during venting of the supercritical helium, trapping fuel between the pre-valve and the helium heat exchanger and causing the pressure rise.

IN PROGRESS: Procedure being established to prevent reoccurrence on future missions.

ASSIGNED TO: Ferguson, GAC, Smith

LM-3

TIME: Descent

DESCRIPTION: During descent, the steerable antenna did not lock-on to the ground station. Reacquisition was unsuccessfully tried several times prior to powered descent. Proper acquisition was obtained after the yaw maneuver.

The loss of lock was probably caused by the antenna tracking a signal reflected from the lunar surface and by high carrier suppression on the uplink (multipath).

IN PROGRESS: Analysis of the data is continuing.

ASSIGNED TO: Kingsley, GAC, Kyle

LM-4

TIME: 112 hours

DESCRIPTION: The crew reported that the knob on the ascent engine arm circuit breaker was broken.

IN PROGRESS: *The circuit breaker was closed without difficulty when it was required prior to ascent.*

ASSIGNED TO: Kingsley, GAC

LM-5

TIME: 126 hours

DESCRIPTION: Carbon dioxide partial pressure read high. Crew selected secondary lithium hydroxide canister, and readings were still erratic. The primary canister was again selected, and the caution and warning alarm was activated. The carbon dioxide sensor was then deactivated to stop the alarms.

IN PROGRESS: The data are being analyzed.

ASSIGNED TO: Hurt, GAC

LM-6

TIME: 126 hours

DESCRIPTION: After the carbon dioxide partial pressure readings became erratic, the crew reported water in one of the two suits.

IN PROGRESS: The data are being analyzed.

ASSIGNED TO: Hurt, GAC

MANEUVER SUMMARY

Maneuver	Ignition time, hr:min:sec	Firing time, sec	Velocity change, ft/sec
Ascent	124:22:00	439.9	6070.1
Coelliptic sequence initiation	125:19:35	47.0	51.5
Constant differential height	126:17:46	18.1	19.9
Terminal phase initiation	127:03:31	22.8	25.3
Terminal phase finalize (braking)	127:45:54	28.4	31.4
Final separation	130:30:00	7.1	2.2
Transearth injection	135:23:42	150	3279

APOLLO 11 SEQUENCE OF EVENTS

Range zero - 13:32:00 G.m.t., July 16, 1969

Lift-off	00:00:00.6
S-IC inboard engine cutoff	00:02:15.2
S-IC outboard engine cutoff	00:02:41.6
S-IC/S-II separation	00:02:42.4
S-II engine ignition (command)	00:02:43.0
Interstage jettison	00:03:12.3
Launch escape tower jettison	00:03:17.9
S-II engine cutoff	00:09:08.0
S-IVB engine ignition (command)	00:09:12.0
S-IVB engine cutoff	00:11:39.0
Orbital insertion	00:11:48.8
Translunar injection maneuver	02:44:16
S-IVB/command module separation	03:17:00
First docking	03:29:00
Spacecraft ejection	04:17:13
Separation maneuver	04:40:01
First midcourse correction	26:44:58
Lunar orbit insertion	75:49:50
Lunar orbit circularization	80:11:36
Undocking	100:13:38
Separation maneuver	100:39:50
Descent orbit insertion	101:36:14
Primary descent initiation	102:33:04
Lunar landing	102:45:45
Lunar crew egress	109:07:00
Lunar crew ingress	111:39:00
Lift-off	124:22:00
Coelliptic sequence initiation	125:19:35
Constant differential height maneuver	126:17:46
Terminal phase initiation maneuver	127:03:31
Docking	128:03:00
Lunar module jettison	130:09:00
Separation maneuver	130:30:00
Transearth injection maneuver	135:23:42

FLIGHT DIR MISSION LOG	DAY	REV	PG 276

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
145+06	ESAP – temps still rising – leveled experime
145+20	Green team on #6
	Crew sleeping – all
	Systems normal
	FIDO – tracking data good
	Solid solution
	MCC 5 5 fps
	6 7 fps
	SPS min impulse ?
	Guidance – nominal
	G&C
	RCS 14# down
	from flight plan
	roll angle 10 deg
	no problems now
	high currents at TEI
	probably because of
	mistrim – pitch angle
	G&C looking at TEI data
	from ox inlet pressure
	& gimbal trims

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION L

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 2757

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	Econ - Systems good
	water dump & f.c.
	purge when they wake
	bal cyro in O_2 at
	this time
	Surgeon - Crew sleeping
	soundly.
	FAO - TV at 155+30
	Network - set up for
	TV
	Experiments
	1) data from PSE now
PSE	2) Still having temp
	problem
LR^3	1) deployed - no joy on
	laser reflection yet.
146+18	question crew on
	1) water in suit loop
	2) docking problem.

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 279

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
148+08	~~Guys~~ Guys in Trench
	doing good job. so far
	- Neil.
148+22	moving news up
	Purge complete all Three
	Charging Bat A
	Query Dow Jones Industrials
148+52	Nav & TGT load going
	up.
	his computer - loads
	in & Verified.
148+43	Dow Jones info
148+45	Docking Anomaly
~~[illegible]~~	Queried the Crew
other page	
148+50	MCC 5 pad up
	readback correct

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
147+01	Crew apparently obtaining two dump - affected PTC
147+30	decided to do MCC 5 - We are out of corridor and FIDO is satisfied we have good solution.
147+47	A-11 good morning. 8 8 8.5 CDR CMP LMP
	Sent up flight Plan update & Consumables update A-11 roger
148+00	loose sensor on LMP Sternal lead A-11 roger
~~148+04~~	
148+07+24	leaving sphere of influence of moon

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
Mike	1. docked in cmc auto
	2. not sure of contact
	3. Got two barber poles
	Soft docked
	4. Very stable
	5. went to free cmc
	6. fired pri 2 bottle
	7. gyration between two vehi
	during retract
	8. CSM yaw 15 deg excursion
	9. went to auto & damped
	10. 6 or 8 seconds it damped
	heard docking latches fire
	11. all Twelve engaged
	1. Acqs min db att hold
	2. at contact thrusted + X
Neil	3. opened db to max manually
	4. Slewed to stable &
	Got hard docking.

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT PLAN UPDATE

TIME	ITEM
148:00	REMINDER - CO_2 FILTER CHANGE
	H_2 PURGE LINE HTR ON 20 MIN
	BEFORE O_2 & H_2 PURGE. &
	INITIATE BATT A CHARGE
	AT 148:00 INSTEAD OF 151:00
150:00	WASTE WATER DUMP TO [redacted] 10/90
150:30	MCC 5 (RCS)

MSC Form 1190 (Apr 65)

QUESTIONS AFTER TEI

(1)

MISSION NOTES

Information requests

CO_2 PARTIAL PRESSURE ~~TROUBLE SHOOTING~~

QUESTIONS:

1) WAS H_2O NOTED IN BOTH SUITS OR ONLY IN THE CDR?

2) AT WHAT TIME WAS THE PROBLEM FIRST NOTED?

3) WAS THIS ACCOMPANIED WITH THE ERRATIC CO_2 PP PRESSURE READINGS?

4) AT WHAT TIME WAS H_2O SEP #2 SELECTED? ALSO SEC CO_2 CANNISTER? WHAT was sequence

5) WAS THERE ANY CHANGE IN SUIT LOOP CONFIGURATION SUBSEQUENT TO CHANGING FROM EGRESS MODE TO CABIN MODE AFTER INSERTION? In particular did they have diverter valve ~~[illegible]~~ in egress anytime → while in secondary

~~6) HAS THERE BEEN ANY CHANGE IN SUIT H_2O LEVEL SINCE THE PROBLEM WAS FIRST NOTED?~~

SEE NEXT PAGE

EC/TSG 378

FLIGHT DIR MISSION LOG	DAY	REV	PG 280

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
149+00	Query crew on LM
	Suit loop problem.
	Question:
	(1) CDR suit only
	(2) After insertion, with
	helmets off - 20
	min after noticing, he
	called us
	(3) Water problem prior to PCO_2
	problem.
	(4) See CO_2 consider first
	went to sep to secondary
	15 to 20 min water
	stopped coming out
	(5) No change in suit
	loop configuration - Buzz
149+24	Buzz EKG
	Sternals Tight
	data still noisy

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 281

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
149+44	Buzz any change in
	biomed connector - take
	off and put back on
	pitch -90 to get
	yaw 270 high gain antenna
150+10	high gain acq
150+29	Mcc 5 complete
	ΔVc ≠ .2
150+36	TEI conclusions G&C
	.3 to .4 deg G&N
	Amded & actual gimbal
G&C	position - are due
	to throat erosion -
	Clutch currents substantiate
	this

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 282

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
158+43	A-11 PTC attitude
	call when thruster
	activity subsides.
	P -45 after
	Y 270 handover
	to CDS
151+01	Steve Bales says
	Neil flew 1100 ft downrange
	further than the automatic
	system. based on
	MPAD preliminary data
151+20	C&C go for rollup
	on PTC
151+24	roll high rate
	on PTC
	C&C - had roll error
	& it went the other
	way
	A-11 V16N20 on DSKY
	may be possibility

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	— 151 + 40 —
	Had Capcom
	ask questions 1, 3, 4
	that should do it?

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

QUESTIONS FOR CREW DURING TRANS EARTH COAST

1. SUBJECT: Location of "Tranquility Base 1"

   - We think we have it located on LAM-2 1:100,000 at J.5; 7.8. It is possible that the crater you flew over was "West Crater" at J.5; 8.0. This conclusion is based on geology analys[illegible] navigation computations.
   - Did you observe any thing (Landmarks) during descent, lunar stay, or ascent which would confirm or disprove this conclusion? (i.e. - Could you see "Cat's Paw" during ascent? - If we are right you should have been just south of it.)

ok?

2. Was dust cover removed from LR^3? (No observatories have confirmed a return signal yet.)

no

3. Buzz reported seeing a laser upon AOS of earth first rev after ascent.
   1. Was it red or green?
   2. Could he determine approximate location of source on earth?

ok

4. Give description of samples gathered during documented sample [illegible] any information you can recall - significant surface features [illegible] they were taken, size of rocks, types, etc.

5. Were any samples (in SRC's) obviously vitreous or glassy? Are there any vesicular rocks in samples? What was ratio of rocks to fine or loose material?

CATEGORY 2 - ONLY IF CREW SOLICITS QUESTIONS

1. What was the size of the white phenocrysts you observed?
2. Was there any dust or surface debris on the mirrors of LR^3 or surface of PSEP?
3. Was any layering observed in rocks or walls of craters?
4. Can you estimate how steep crater walls were? (Slope) - Particularly the crater they described as having a "very soft rim".

FLIGHT DIR MISSION LOG	DAY	REV	PG 283

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
151+45	C&C V 16 N 20
	affects PTC
	V 40 N20 enters
	CDU zero
	Start PTC over
151+54	Lost Comm with S/C
	he probably didn't
	copy our Transmission
	in / blind about S-band
	high gain.
152+30	C&C rates he should
	have seen cannot
	be answered.
152+43	AOS - dropped out in
	20 secs!!
152+46	AOS again.
	high gain.
	Still waiting for thruster firings to
	cease - Holding attitude

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

EECOM Consummables
Update to Flight Director
for 154 GET

Cryos
Present Totals
H_2 23.5 (-1.5)
O_2 316.5 (+17.2)

Single Tank Lifetime (GET)

	50 amp	73 amp
O_2		234
H_2		211

Waste H_2O Tank 85% @ 181+08 GET
Next Dump @ _____ GET

Battery a-h remaining

Batt A 39.3 a-h
" B 31.4 a-h
" C 38.6 a-h
109.3 Total a-h

SM RCS AV - 178 fps DAP, 123 fps SCS
Qd A -37 B +25
C -11 D -7

MSC FORM 1441 (APR 66)
-19 lbs Relative to A-10

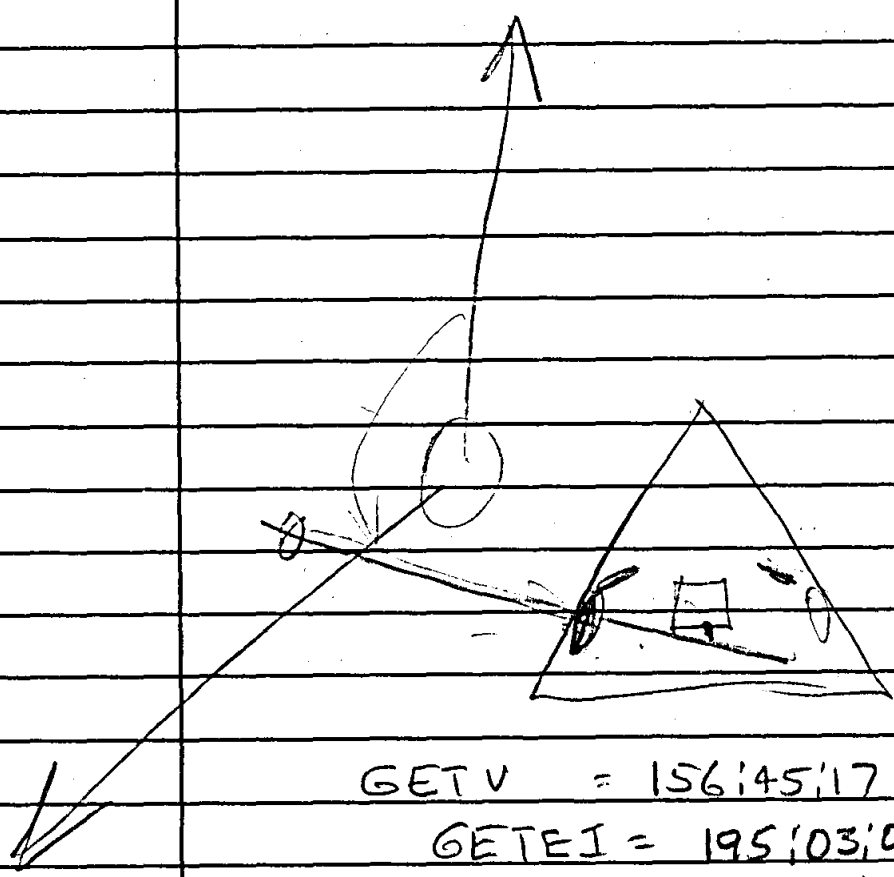
FLIGHT DIRECTOR'S MISSION LOG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	EECOM { Need to go to Reacq. for PTC
	If Pos Roll, P = +30, Y = 270
	If Neg Roll, P = -40, Y = 90
	Hi-gain vice OMNI B }
	Question for span:
153:20	How long can we stay in this
	attitude? Rate ≈ .03°/sec
153:33	Ans: ~ 2½ hrs
	Ready to start PTC, Pos direction
	Started PTC, got rates in all
	3 axes but only roll thrusters fired
	(up to .2°/sec in pitch and yaw)
153:40	P+Y rates now down to .01°/sec
153:53	- Strange screatching noise on A/G
153:56	loop. Goldstone says it was on the
154:00	downlink. Ascencion confirms
	Sounds like the crew playing the
	tape recorder.
154:22	LOS - Should have acquired
	on Hi Gain in Reacq. but NO JOY
154:23	Inhibited uplink & got AOS momentarily
	EECOM says Hi Gain is not as
	sensitive as those on previous S/C, an
154:41	~~Got~~ AOS Crew had not gone
	to Reacq Mode

MSC FORM 1441 (APR 66)

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING



GETV	= 156:45:17	156:59:17
GETEI	= 195:03:08	195:03:03
γ_{EI}	= -6.46	-6.57
V_{EI}	= 36194	36194

MCC 6 ≈ .1 fps
MCC 7 ≈ .5 fps

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 285

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
154:46	Terminate Batt A Charge
154:53	DSC now running
155:24	Stop PTC for TV pass
155:36	TV received -
155:56	End of TV
156:15	O_2 tk 1 htr to "Auto"
156:22	Ready to initiate PTC
156:30	Started PTC roll
157:54	FIDO wants a H_2O dump
	if we have to stop PTC
	LMP is exercising — His
	heartrate woke the surgeon up
	170 bpm
158:30	Received ASPaN Report on Procedure
	to prevent back contamination from
	the waste dump line. A meeting is
	scheduled at 0900 tomorrow to try
	to resolve this question.

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

Flight

SPAN MISSION EVALUATION ACTION REQUEST

(PLEASE USE BLACK BALLPOINT PEN)

TIME (T-MINUS/GET)	REQUEST ORGANIZATION	RESPONSE ORGANIZATION	CONTROL NUMBER
Approx 154:00	Recovery/FOD	Bldg. 45/ECS	C-95 Revision A

ACTION REQD BY (TIME):

REQUEST:

APPROVAL

TEAM LDR

CON SR REP

ME MANAGER

TIME :

SPAN MGR

TIME :

REQUESTOR

RESPONSE:

This response is submitted per verbal request from the Recovery Team onboard the Hornet. Recovery requested procedures to minimize purge time and change postlanding procedures which should be added to the crew checklist, Page E, 6-2.

Position the following valves as soon as possible after main chute deployment and no later than immediately after landing.

Panel 326 Surge Tank - Off

Panel 326 Oxygen Repress Package - Off

Panel 7 Direct O_2 - Open

After recovery of the CM, the direct O_2 valve must be closed and the surge tank and oxygen repress package valves must be opened prior to taking the water system samples.

CONCURRENCE

FOD REP Roach 155:08

SPAN Kud TIME 156:31

TEAM LDR RHJ

CON SR REP KED 155:40

SCJ 155:47

RESPONSOR

~~ME MANAGER~~ FOD

TIME 158:09

CONTRACTOR SPAN REP

SPAN MANAGER Kw Lubicki

TIME 158:10

MSC Form 1214B (Apr 69) (CT)

USE BLACK BALLPOINT PEN

SPAN / MISSION EVALUATION ACTION REQUEST

USE BLACK BALLPOINT PEN

TIME (T- MINUS / GET)	REQUEST ORGANIZATION	RESPONSE ORGANIZATION	CONTROL NUMBER
~~[illegible]~~ ~14:[illegible]	Recovery / FOD	Bldg 45 / ECS	C 95

ACTION REQD BY (TIME):

REQUESTER

SUBJECT: Procedures To Minimize Backcontamination After Touchdown - See Response Below

For Record Only Please Excuse Change in Format

APPROVAL

TEAM LDR [signature] TIME 151:27

CON SR REP [signature] TIME 151:29

ME MANAGER TJG TIME 151:30

SPAN MGR [signature] TIME 151:41

RESPONSE:

This Response is Submitted Per Verbal Request From The Recovery Team Onboard The Hornet. Recovery Requested Procedures To Minimize Purge Flow Through The Urine Dump Nozzle Until Bacteria Filters Can be Installed Onboard The Hornet. These Procedures Are As Follows and Should Be Added To The Postlanding Crew Checklist, Pg. E, 6-2. Position Following Values Immediately After Touchdown:

Panel 326 Surge Tank - OFF

Panel 326 Oxygen Repress Package - OFF

Discussion: The Above Procedure And The Present Entry Crew Checklist Procedures Accomplish The Subject Requirement And Provide Oxygen For Subsequent Postflight Water Samples. Initial Inputs Have been made To Rod Bass / Hornet and Hall Granger / Recovery x 2661

CONCURRENCE

FOD REP (Recovery) TIME :

SPAN MGR TIME :

TEAM LDR TIME :

CON SR REP TIME :

RESPONDER J.E. Whalen TIME 150:53

LOG MANAGER: TIME :

~~ME MANAGER~~ FOD REP MF Brooks TIME 151:48

CONTRACTOR SPAN REP TIME :

SPAN MANAGER R W Dubicki TIME 158:10

MSC Form 1214B (Jun 69) (OT)

7/22/69

At approximately 6:00 P.M. CDT 7/22/69 A MEETING WAS HELD IN THE RECOVERY ROOM WITH DRS BERRY & HAWKINS, Gen. Humphrey, Hal Granger, Don Hughes & myself concerning some procedures to minimize the purge flow through the urine dump nozzle. With the existing procedures the O_2 will cause the contaminated particles to flow out of the dump nozzle on landing. The bleed will probably take 1 to 3 hours based on the existing procedures. John Aaron & Don Hughes have discussed the problem and the attached procedural changes to the checklist are recommended. A meeting is scheduled at approximately 0900 7/23/69 to discuss & resolve the issue. John Aaron also expressed

some concern over the water in the evaporator and this would cause repositioning of the Back Pressure valve. We also recommend the switches be actuated Positively.

After the above is resolved we need to advise the Recovery Force.

Robert

15 Feb 08

EECOM

E C-282

C-1

SECTION 6. EARTH/POST LANDING

06186 Stay watch

RRT (06:[illegible]) STEAM PRESS - pegged at 90[illegible] (0:00)

50K' (07:[illegible]) CABIN PRESS REL vlv (2) - BOOST/ENTRY(00:56)

SECS PYRO ARM (2) - ARM

Check Altimeter

07106

40K' ([illegible]) * CM UNSTABLE (01:[illegible]) *

*RCS CMD - OFF *

* 40K' APEX COVER JETT PB-PUSH *

DROGUE DEPLOY PB - PUSH (2 sec

*after apex cover jett) *

30K' ELS LOGIC - on (up)

ELS - AUTO

24K' (08:[illegible]) RCS disable (auto) (01:[illegible])

RCS CMD - OFF

Apex cover jett (auto)

APEX COVER JETT PB - PUSH

(WAIT 2 SECS)

Drogue parachutes deployed (auto)

DROGUE DEPLOY PB - PUSH

If Both Drogues Fail:

*ELS - MAN *

*Stabilize CM *

5K' MAIN DPLY PB - PUSH

*ELS - AUTO *

23.5K' Cabin Pressure increasing (Drogues + 50s)

*If not increasing by 17K':

CABIN PRESS REL vlv (RH) - DUMP

07

10K' (09:[illegible]) Main parachutes deployed (02:31)

MAIN DEPLOY PB - PUSH (within 1 sec)

VHF ANT - RECY

VHF AM A - SIMPLEX

VHF BCN - ON

DIRECT O2 - ON (if suited)

Basic Date April 15, 1969

Changed June 27, 1969

CSM 107 & Subs

6. EARTH/POST LDG

CABIN PRESS REL vlv (2) - CLOSE
CM RCS LOGIC - on (up)
CM PRPLNT - DUMP (burn audible)
Monitor CM RCS 1&2 for He press decrease
*NO BURN or PRESS DECREASE *
* USE BOTH RHC's *
*DO NOT FIRE PITCH JETS *
CM PRPLNT-PURGE (to zero He press)
*CM RCS He DUMP PB - PUSH *
*RHC (2) - 30 secs *
* NO PITCH *
STRUT LOCKS (4) - UNLOCK
If night landing:
(8) cb FLOAT BAG #3, FLT/PL (1 cb)-close
PL BCN LT - HIGH

(275) cb FLT & PL BAT BUS A,B,&BAT C (3)-close
cb FLT & PL MNA & B (2) - open
(5) cb RAD HTR OVLD (2) - open (verify)
(8) cb SPS P&T (4) - open (verify)
(5) cb BAT RELAY BUS (2) - open

3K' CABIN PRESS REL vlv (RH) - DUMP (after purge completed)
ELS-AUTO (verify)
ELS LOGIC-ON (verify)
FLOOD Lts - POST LDG
CM RCS PRPLNT (2) - OFF

800' CAB PRESS RELF vlv - CLOSE (latch off)
MN BUS TIE (2) - OFF

POSTLANDING
STABILIZATION, VENTILATION, COMMUNICATIONS

1 Stabilization after landing

(229) cb MAIN REL PYRO (2) - close

MAIN RELEASE - on (up)
SECS PYRO ARM (2) - SAFE
SECS LOGIC (2) - OFF
~~DIRECT-O2 - OFF (verify)~~
SURGE TANK - OFF
REQUSS PKG - OFF
DIRECT O2 - OPEN

No contact with recovery forces
*VHF AM A&B - off (ctr) *
*VHF AM RCV ONLY - A *

(8) cb PL VENT - close
cb FLOAT BAG (3) - close
(278) cb UPRIGHT SYS COMPRESS (2) - close
If Stable II:
FLOAT BAG(3)-FILL till 2 min after upright, then - OFF
VHF AM A/B & BCN - OFF while inverted
If Stable I:
After 10 Min Cooling Period,
FLOAT BAG (3) - FILL 7 min, then OFF

2 Post Stabilization And Ventilation
(15) PL BCN LT - BCN LT LOW
PL VENT vlv - UNLOCK (Pull)
Remove PL VENT Exh Cover
(15) PL VENT - HIGH or LOW
PL DYE MARKER - ON (swimmer comm)
Release footstraps and restraints
(275) cb MNA BAT BUS A & BAT C (2) - open
cb MNB BAT BUS B & BAT C (2) - open
cb FLT & PL BAT C - open
(250) cb PYRO A SEQ A - open
cb PYRO B SEQ B - open
*EACH HR - CHECK DC VOLTS $\geq$ 27.5 V *
*If Not: *
(275) * cb FLT & PL-BAT BUS A&B (2) -open*
* cb FLT & PL BAT C (1) - close *
* GO TO LOW POWER CHECKLIST *
Unstow and install PLV DISTRIB DUCT
Deploy grappling hook and line if req.

EGRESS PROCEDURES

CMP	PL VENT - OFF (15)
LMP	cb Pnl 250 (all) - open

STABLE I

ALL Disconnect umbilicals
Neck dam on (if suited)
CMP Center couch - 270° position

FLIGHT DIR MISSION LOG	DAY	REV	PG 266

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	OMNI to B
159:51	Crew Rad Report +.03 Millirads
	since last night - No medication
	On Board Readout
	Entry Pad Read Up
160:42	Crew Asleep
160:50	Urine Nozz Temp = 54°
53	= 63°
161/19	BLACK TEAM HERE - #7
	Asked SPAN TO SEE IF ANYONE WAS
	WRITING UP 2 ITEMS
	(1) LM H_2O IN SUIT, CO_2 ETC
	(2) DOCKING ANOMALY
161/39	FC/M&S SWITCH

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 287

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	RETRO -
	(1) LAST TIME TO MOVE IP, CAN MOVE
	40° λ at NEXT 4-5 HOURS - NOT
	MUCH CONTROL
	(2) γ_{EI} = -6.56 6.51
	V_{EI} = 36,194
	NO MCC until -6.61, -6.31
	(3) 4.8 fps MCC 5
	(4) ENTRY PAD ONBOARD, WILL PREPARE
	ONE FOR EI-24 HRS.
	FIDO -
	(1) TRACKING NICE
	(2)
	GUID
	(1) UPDATE CLOCK, 8 CENTISECONDS.
	-.08 SEC
	GNC -
	(1) PTC STABLE -
	(2) SM RCS 30# FROM FLT PLAN.
	(3)
	EECOM -
	(1) AUTO ON ALL TANKS
	O_2 TANK #2 HTR ELEMENT
	(1 OF 2 FAILED)

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 288

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	(2) WASTE DUMP AT 170 HRS
	(3) 70% HBR ON OMNIS –
	CAPCOM –
	SURGEON –
	(1) SLEEPING SOUNDLY
	(2) ALL ABLEE & AT 160/42 –
	FAO –
	(1) WATER DUMP MAY MESS UP PTC TOMORROW
	NET
	RCY –
	(1) WX GOOD – RECON FLIGHT –
	PTC
	CHECK POINTS –
	URINE DUMP LMP –
	NOTHING –
	PTC

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

APOLLO 10

July 21, 1969

GET: 148:00

MSFN COMMUNICATIONS

Communication system performance is nominal.

ELECTRONIC SYSTEMS

All systems are nominal.

THERMAL

Status unchanged.

GUIDANCE AND CONTROL

All systems are normal.

CREW SYSTEMS

CSM-ECS - No change in status

LM-ECS - When the LM TM was reacquired, one hour and thirty-eight minutes after lift off, GET 126:00 hours, TM data indicated that the secondary CO_2 cartridge had been selected. Subsequently, the crew reported that, during LOS, the onboard CO_2 reading became erratic and that the secondary CO_2 cartridge was selected. The onboard CO_2 reading continued to fluctuate but thought to be steady at AOS. TM data, however, indicated erratic operation (0.1 to 2.0 mm Hg). The crew was then requested to reselect the primary CO_2 cartridge for ground evaluation. TM data indicated very erratic operation (3.5 to 0.2 to 8.1 mm Hg) and the caution and warning system was actuated. Readings of the type observed, indicate a CO_2 sensor malfunction; therefore, the CO_2 sensor circuit breaker was pulled and the primary CO_2 cartridge was kept on line. Subsequently, the crew reported that the water separators were apparently not working properly, since water was present in the one suit. The secondary water separator, therefore, had been selected. TM data, prior to LOS and after AOS, indicated proper separator operation.

All of the liquid systems, that interface with the suit loop, exhibited the expected pressures which indicates no leakage.

It is known that free water in the CO_2 sensor optical section will cause erratic operation. Prior to EVA, the ECS was deactivated. This stops the water separator and the collected condensate (72 ml max) will then dump into a drain tank. This drain tank vent is connected to vehicle plumbing upstream of the CO_2 sensor. The tank is filled with honeycomb material which should retain the collected condensate. However, this system is a possible path for condensate to enter the CO_2 sensor.

CREW SYSTEMS (Continued)

Detail studies are underway to explore the above two problems.

Complete data evaluation and crew debriefing are needed before positive explanations can be submitted.

After EVA and prior to lunar ascent, the data indicated that both crewmen had stopped suit gas flow for extended periods of time. This mode would not allow for evaporation of body sweat which would then be stored in the PGA. This stored sweat could be the reported water in the suit.

Crew Provisions - No known crew provision problems.

PROPULSION AND POWER

SPS - All parameters are nominal.

CSM RCS - All parameters are still nominal. Propellant status is the same as reported at GET 146:00.

Fuel Cells - Performance is nominal.

Load Sharing: 2.2 amps
Skin temp: 396° to 413°F
Tce: 156° to 157°F

Cryo - Performance is nominal.

O_2 Tk 1	O_2 Tk 2	H_2 Tk 1	H_2 Tk 2
163 lbs	164 lbs	12.3 lbs	12.6 lbs

Total O_2 = 327 lbs Total H_2 = 24.9 lbs

H_2 heaters "Auto"
O_2 heaters No. 1 "Off", No. 2 "Auto"
All fans "Off"

Battery Status -

CM Batteries	AH Out	AH Remaining
Batt A	7.69	32.31
Batt B	8.50	31.50
Batt C	1.47	38.53
		102.34 Total AH remaining

Comments

All batteries are nominal. Battery A charge scheduled for GET 151:00, may be started earlier at Flight Controller's request.

Joe W. Cooper
Scott H. Simpkinson

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

EECOM Consummables
Update to Flight Director
for 162 GET

Cryos
Present Totals
H_2 22.3 (-1.4#)
O_2 306# (+19.5#)

Single Tank Lifetime (GET)

	50 amp	73 amp
O_2		238
H_2		215

Waste H_2O Tank 85% @ 183 GET
Next Dump @ 170 GET
to 39% 0'8D
(Last Dump)

Battery a-h remaining

Batt A 39.8 a-h
" B 30.7 a-h
" C 38.6 a-h
Total a-h

Batt B Charge @ 1/72 + 20

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT PLAN UPDATE	
TIME	ITEM
	MCC 6 NOT REQ
	MAINTAIN PTC
170:00	WASTE WATER DUMP
	TO 39%
171:05	DO P52 EVEN THOUGH
	MCC NOT REQ

MSC Form 1190 (Apr 65)

FLIGHT DIR MISSION LOG	DAY	REV	PG 289

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	11.01 N
	172 W
	PTC (Pointing South by the way)
	CHECKPOINT
	MCC-6 - looks like don't bother
	MCC-7 now looking like 2.3 fps
166/16/32	CHECKPOINT
	Liebergot - I have never heard so
	much about Comm loops - Somebody
	heard them -
167/14	Retro 1.3 fps @ MCC-7 now
167/18	Checkpoint -
168	FAO FCT Plan Update
	NOTE - WATER DUMP MAY BUST PTC

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DYNAMICS CHANGE OF SHIFT

SHEET 1 OF 1

MISSION _____ DATE 7/23/69 GET 170 : 00 : 00

PHASE _____ REV _____ GMT __ : __ : __

CURRENT

h_a _____ nm V_i 5274 ft/sec

h_p _____ nm GET_{pc} __ : __ : __ h_{pc} _____ nm

Orbit Period _____ min h_{earth} 116923 nm

h_{moon} 90502 nm

MANEUVERS

☐ Predicted
☐ Actual
Mvr _____
GET __ : __ : __
GMT __ : __ : __
Rev ____ Over ____
ΔV ☐☐☐☐☐ . ☐
Thruster _____
Δt_B ____ M: ____ sec

PREBURN	POSTBURN
h_a _____	_____ nm
h_p _____	_____ nm

NOTE: No MCC6 PLANNED

☐ Predicted
☐ Actual
Mvr _____
GET __ : __ : __
GMT __ : __ : __
Rev ____ Over ____
ΔV ☐☐☐☐☐ . ☐
Thruster _____
Δt_B ____ M: ____ sec

PREBURN	POSTBURN
h_a _____	_____ nm
h_p _____	_____ nm

NOTE:

☐ Predicted
☐ Actual
Mvr _____
GET __ : __ : __
GMT __ : __ : __
Rev ____ Over ____
ΔV ☐☐☐☐☐ . ☐
Thruster _____
Δt_B ____ M: ____ sec

PREBURN	POSTBURN
h_a _____	_____ nm
h_p _____	_____ nm

NOTE:

Prepared by GREENE

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

EECOM Consummables
Update to Flight Director
for 170 GET

Cryos
Present Totals
H_2 21.2# (−0.9#)
O_2 295 (+24)

Single Tank Lifetime (GET)

	50 amp	73 amp
O_2		244
H_2		220

Waste H_2O Tank 85% @ 183+37 GET
Next Dump @ 170 GET
to 39% onboard

Battery a-h remaining

Batt A 39.2 a-h
" B 30.4 a-h
" C 38.6 a-h
108.2 Total a-h

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 290

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
168/19	Checkpoint
169/14	Do Water Dump at GN Call To minimize PTL disturbance -
	ECS Changes for B.C. are designed To shutoff the low bleed flow past the bladders and out through the urine line.
	there is a meeting This morning on That subject - Whether to do it stall - how & when to do it - 3 switches.
169/20	EASAP Subject - Agreed upon procedure
	See Sbpan report ± attached procedure

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 291

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
170+07	Green Team on - last time. #7
	MCC # 6 no need
128+39	MCC # 7 no correction
	Retro says
170+49	Voice Subcomm &
	Surgeon says they are
	all awake
170+55	Guid has state vector
	Head standing by.
171+00	Called Crew
	A-11 up at least
	Crew Status report ???
	Sending up pads etc.
	MCC # 6 cancelled
	Bat B Charge
	Waste water dump
	on our mark & 40 %
	P-52
	A+51 C+63
	B+62 D+59

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 292

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	entry pad - readback correct.
171+08	his computer - load in & verified.
	CDR CMP LMP 8.5 7 8.0
171+18	water dump to 45% at 171+30
★	told EECOM we better not have to dump in morning after this calculated percent - He better be right -
EECOM	Bat charge started O_2 purge complete
★	P-52 collapsed deadband when he activates jets

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 293

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
172+08	Elem wants to set up
	for hi-gain operation
	P +40
	Y 270
	go to reacq mode
172+17	asked crew to
	go to reacq mode
	on hi-gain
173+35	Reading news up
173+41	EVA visors - location?
	Crew supposed to let us know
173+52	A-12 flight planning
	set of Spaghetti & meatballs
A-11	for al Bean.
173+59	A-11 Slightly colder
	in here last nite -
	warm prior to this ???

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 294

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
174+01	A-11 wont need CM KCS
	heaters
	A-11 platform alignments
	PTC & careful both
	get equal star ~~angles~~
	angled differences.
	everything on, he gets
	consistently .01
	Visibility thru Telescope
	very poor - requires dark
	adaptation, disadvantage
	in keeping platform up.
174+24	Cabin Temp appeared
	to do this on A-10
	Moment of condensation in
	Cabin ????
	A-11 - more moisture in
	tunnel without LM
	more in Tunnel than
	any other Trip, no
	moisture anywhere in SLC.

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FAO

FLIGHT PLAN UPDATE

TIME	ITEM
177:30	TV attitude for optimum
	view of Earth in window
	#1 (L. side) and Moon in
	window # 5 (R. side)
	simultaneously.
	R 12.0
	P 270.0
	Y 0.0
	Hi-gain antenna angles
	P +14
	Y 263
	REMINDER: When
	coming out of
	PTC follow the
	checklist because the
	deadband has collapsed

MSC Form 1190 (Apr 65)

FLIGHT PLAN UPDATE

TIME	ITEM
	ENTRY PHOTOGRAPHY
	IF FRESH MAGAZINE OF
	COLOR INTERIOR FILM
	IS TO BE USED EXPOSURE
	SETTINGS ARE
	f11, 1/250, 6 fps, FOCUS 7'
	FOR FIREBALL
	f2.0, 1/60, 6 fps, FOCUS ~~50'~~ ∞
	WHEN SHUTES OPEN
	IF PART OF MAGAZINE
	HAS BEEN USED FOR
	INTERIOR SHOTS USE
	f16, 1/500 6 fps FOCUS 7'
	FOR FIREBALL
	f2.8, 1/60, 6 fps FOCUS 50'
	WHEN SHUTES OPEN
	Would like to know
	mag. no.

MSC Form 1190 (Apr 65)

FLIGHT DIR MISSION LOG	DAY	REV	PG 295

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
174+51	70 mm 300 exposures in LM
A-11	1000 exposures CSM both
	cameras worked fine
175+08	Read up entry checklist
	Change
	Surge Tank O_2 off
	repress O_2 off
	Direct O_2 open flow
	A-11 Roger / Lem Change
176+28	radio ck okay.
176+44	Mel Brooks has
	input to have crew
	look for laser. Should
	be okay on NIB as
	before.
177+08	TV attitude update

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

APOLLO 11

July 23, 1969

GET: 166:00

MSFN COMMUNICATIONS

performance of the MSFN/CSM communication system is nominal. Command switching between omni antennas B and D continues.

ELECTRONIC SYSTEMS

Performance of all systems continues to be normal.

GUIDANCE AND CONTROL

No change.

CREW SYSTEMS

No change in status.

THERMAL

All temperatures are within allowable limits.

PROPULSION AND POWER

SPS - All parameters nominal.

RCS - All parameters nominal.

Fuel Cells- System performance normal.
Load sharing: 2.4 amps
Skin Temps : 397°F - 413°F
Tce : 156°F - 158°F

Cryo - System performance nominal.
System configuration unchanged.

O_2 Tank 1	O_2 Tank 2	H_2 Tank 1	H_2 Tank 2
150 lbs.	148 lbs.	11.1 lbs.	11.0 lbs.

Total O_2 - 298 lbs. Total H_2 - 22.1 lbs.

Batteries - CM Batteries
Batt A: AH_o 0.75; AH Remaining 39.25.
Batt B: AH_o 9.76; AH Remaining 30.24.
Batt C: AH_o 1.47; AH Remaining 38.53.
Total AH Remaining: 108.02.

All batteries are nominal.

R W Malley
165:55
DB
166-03

ALSEP

Temperatures continue to rise with no change from the predicted rate of 1°/hr. Highest internal temp is now 174°F with an average internal temp of about 165°. So far there has been no deleterious effects observed on any systems.

Critical component is expected to be the transmitters. Bendix has juse completed a failure test at Ann Arbor where the transmitter failed at 186°F. Previous experience indicates that this failure mode may correct itself as the temperature decays.

The PSE instrument temperature went off scale High during the night. It is estimated to be about 155°F. The frequency of leveling operations required has decreased to once every 3 to 4 hours. Quality of data looks good to Dr. Latham the PI.

FLIGHT DIR MISSION LOG	DAY	REV	PG 296

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
177+20	lost IM circuit from GDS
	PAGES 297-300
	NOT USED
	&
	THROWN AWAY

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

EECOM Consummables
Update to Flight Director
for 174+00 GET

Cryos
Present Totals
H_2 19.6 (-1.0)
O_2 271 (+13)

Single Tank Lifetime (GET)

	50 amp	73 amp
O_2	—	244
H_2	—	224

Waste H_2O Tank 85% @ — GET
Next Dump @ ~~Now~~ N/A GET
NO MORE DUMPS
QTY AT EI — 49.2 lbs
NO MORE FUEL CELL PURGES

Battery a-h remaining

Batt A 38.8 a-h
" B 37.2 a-h
" C 38.6 a-h
114.6 Total a-h

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG
KRANZ —	7/23/69	—	301

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
178+30	White team on — Final shift —
	Went thru the backroom — All consumables nominal, or better with plenty of margins
178+42	Crew started PTC +.3°/sec 30° db
	Omni B
	Stow HGA — } ***
178+57	— Lost RRate on CMP ZPN TRACE — He was showing a bit ago
	Check electrodes on lower rib cage —
	Will try & get wx report
	We lost him — on data will

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 307

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	update to
	−6.43 γ_{EI} / was varied
	±.2 over last 24 hours
	is now settling down
	to ~6.4 to 6.5, the
	desired is 6.52 it
	appears
	+86,425 altitude —
	+195+03+07 400K
179+15	West Data — crew
	did not select OMNI B —
	they picked up on B —
	Got Data — ~~crew also~~
	CMP also asked to
	Try & Put some paste
	on the sensors to
	see if we could get
	some Blowed data (RR)
	Waiting for wx report
	over McDonald observatory
	— should be available
	at 179+30 — will
	try Laser again —

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

MISSION NOTES

179 HR RCS STATUS

FLT PLAN	175	154	171	155	655
ACTUAL	144	181	169	151	643
% Δ	-10.7	+8.8	-0.7	-1.3	
lb Δ	-33	+27	-2	-4	-12

17 lb gain on Flight Plan today since MCC 6 was budgeted but not performed.

DAP ΔV AVAILABLE 173 FPS
SCS " " 120 "

FLIGHT DIR MISSION LOG	DAY	REV	PG 303

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
179+35	Requested a Playback of the Descent data — will use the Real Time vice Playback Data from the ~~Hi Speed~~ ~~Ba~~ Wide Band Recorders. Note — we should get some Playback Format for CRO so that we don't have to perform b

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 304

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	The Real Time systems.
	The Playback buffers
	are available — but
	there are no Displays.
	Roll 357 — Earth
	normal to window #1 —
180+00	Beginning to look bad
	out in recovery area
	— 10/200, TS. Tops 50K
	scattered rain, visby
	.5-1 mi — 5/7' seas
	ENE with 18-24K
	winds —
‖	Final word @ 0830 LOCA
‖	sending A/C into
‖	area — will have
‖	word from CTF 130
	about 0930L —
	Getting satellite
	Rx shortly — ~~the~~
	would have to move.
	About 200-300 miles
	down range —

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

P-65 upcat 1

FLIGHT DIR MISSION LOG	DAY	REV	PG 305

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	Advised SPAN to get together with recovery to GO over Landing Constraints — structure etc —
180+08	Crew gave us train whistle — & sounds of a locomotive accelerating downhill
	Options to avoid wx at present time. w/uprange about 80 miles — wont help. ≈150 miles to
180+17	Advised CC to find status of crew pre sleep checklist
	Nom Tgt 1285 GNCS P64/67 12-1800 nm equally difficult 1800-2500 extreme wx Avoidance only EMS cannot always S range >1600

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT

USE BLACK BALLPOINT PEN

SPAN / MISSION EVALUATION ACTION REQUEST

USE BLACK BALLPOINT PEN

TIME (T-MINUS/GET)	REQUEST ORGANIZATION	RESPONSE ORGANIZATION	CONTROL NUMBER
179:06	Bldg. 45/EBD	SPAN/FOD	C-98-14

ACTION REQD BY (TIME): Entry Preps

REQUESTER R. H. Hester

SUBJECT: Ref: SPAN CHIT - C -98

APPROVAL

According to the crew's comments at GET 177:56, the present stowage of LEVVA's is in the hatch bag. This stowage is not consistent with recommendations made by C-98.

It is still recommended that C-98 be implemented for entry. If, however, the LEVVA's are to be stowed in the hatch bag, they must be lashed down rather than using the existing hold downs. The Hold downs on the hatch bags are for '0' g stowage only and probably will not support entry and impact loads.

TEAM LDR [signature] TIME 179:26

CON SR REP [signature] TIME 179:27

ME MANAGER [signature] TIME 179:27

SPAN MGR [signature] TIME 179:91

RESPONSE:

CONCURRENCE

PASSED TO (REED) 181:30

FOD REP [signature] TIME :

SPAN MGR [signature] TIME 181:57

TEAM LDR TIME :

CON SR REP TIME :

RESPONDER TIME :

LOG MANAGER: TIME :

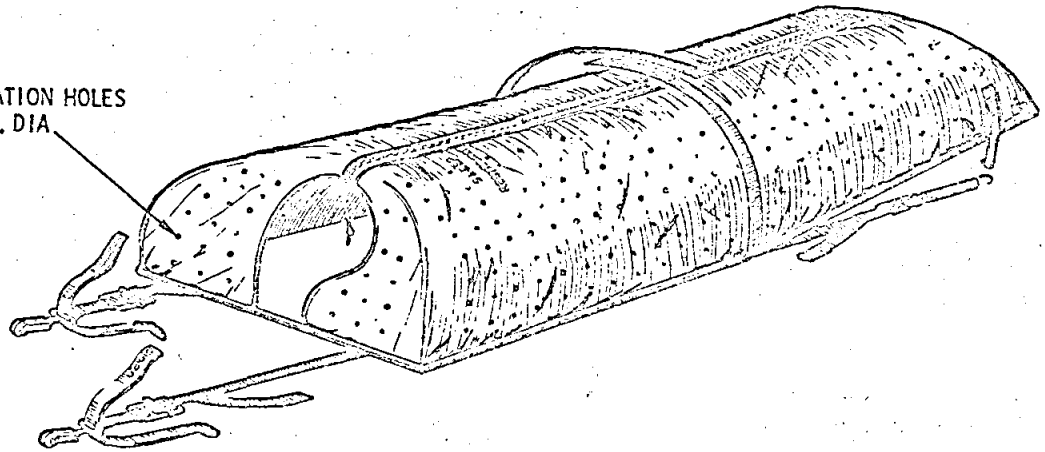
E MANAGER TIME :

CONTRACTOR SPAN REP TIME :

SPAN MANAGER TIME :

MSC Form 1214B (Jun 69) (OT)

SLEEPING RESTRAINT CONFIGURATION

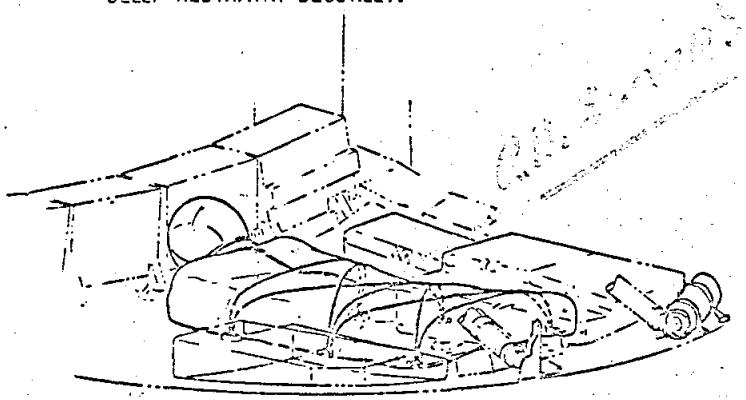


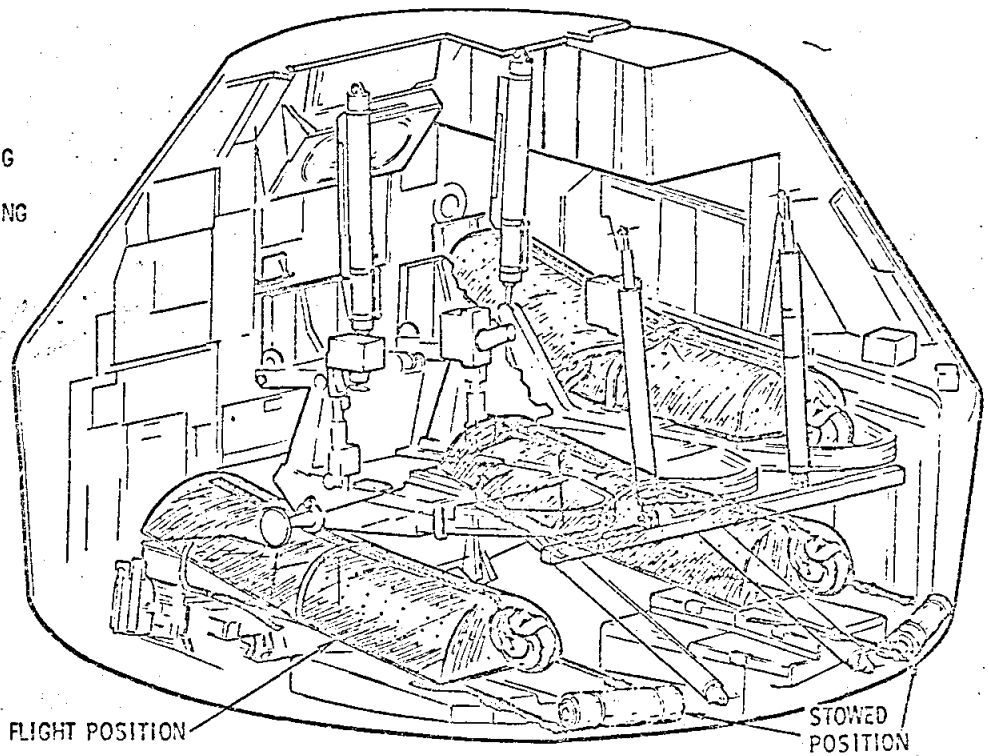
FEATURES

IN CWG, ASTRO SLEEPS IN BAG
IN PGA, ASTRO SLEEPS ON BAG
AND USES STRAPS FOR RESTRAINT

UNSUITED ENTRY STOWAGE

1. PLACE ONE HELMET EACH IN FOOD STOWAGE B1 & L3
2. PLACE ONE PGA WITH HELMET ATTACHED, FULL LENGTH INTO SLEEP RESTRAINT
3. PLACE 2ND PGA (NO HELMET) ON TOP OF 1ST WITH NECK-RING AT FOOT END OF SLEEP RESTRAINT
4. PLACE 3RD PGA (NO HELMET) ON TOP OF 2ND WITH NECK-RING AT HEAD END AND ZIP UP SLEEP RESTRAINT
5. COLLAPSE PGA STOWAGE BAG TO AFT BULKHEAD & LASH SLEEP RESTRAINT SECURELY.

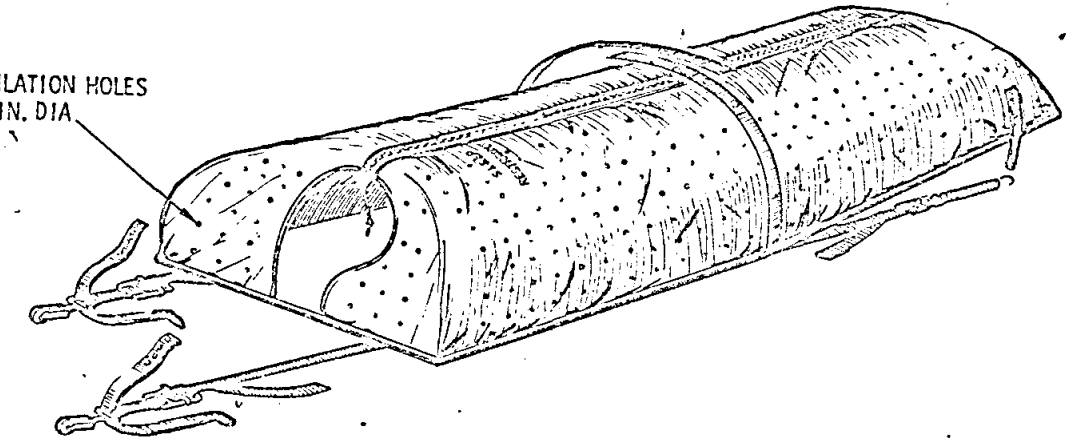




REF-V36-601012
MAR 69

CS-2331B

SLEEPING RESTRAINT CONFIGURATION



FEATURES

IN CWG, ASTRO SLEEPS IN BAG
IN PGA, ASTRO SLEEPS ON BAG
AND USES STRAPS FOR RESTRAINT

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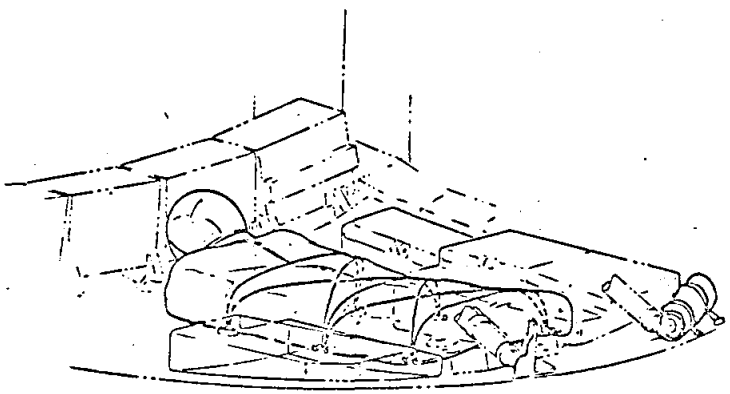
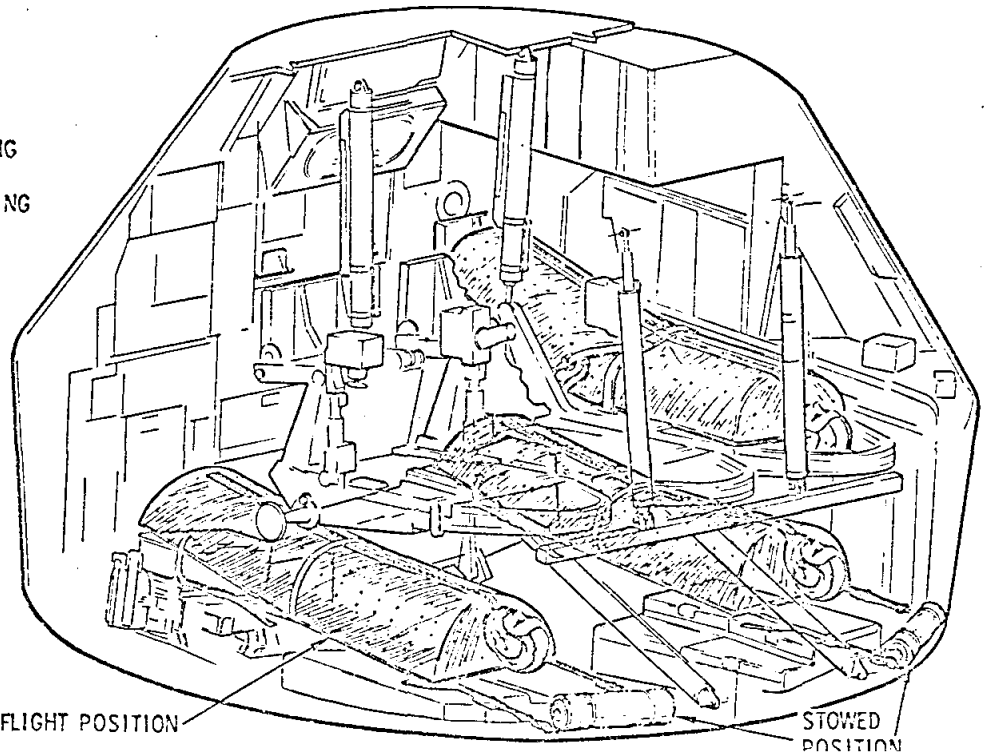
5. COLLAPSE PGA STOWAGE BAG TO AFT BULKHEAD & LASH SLEEP RESTRAINT SECURELY.





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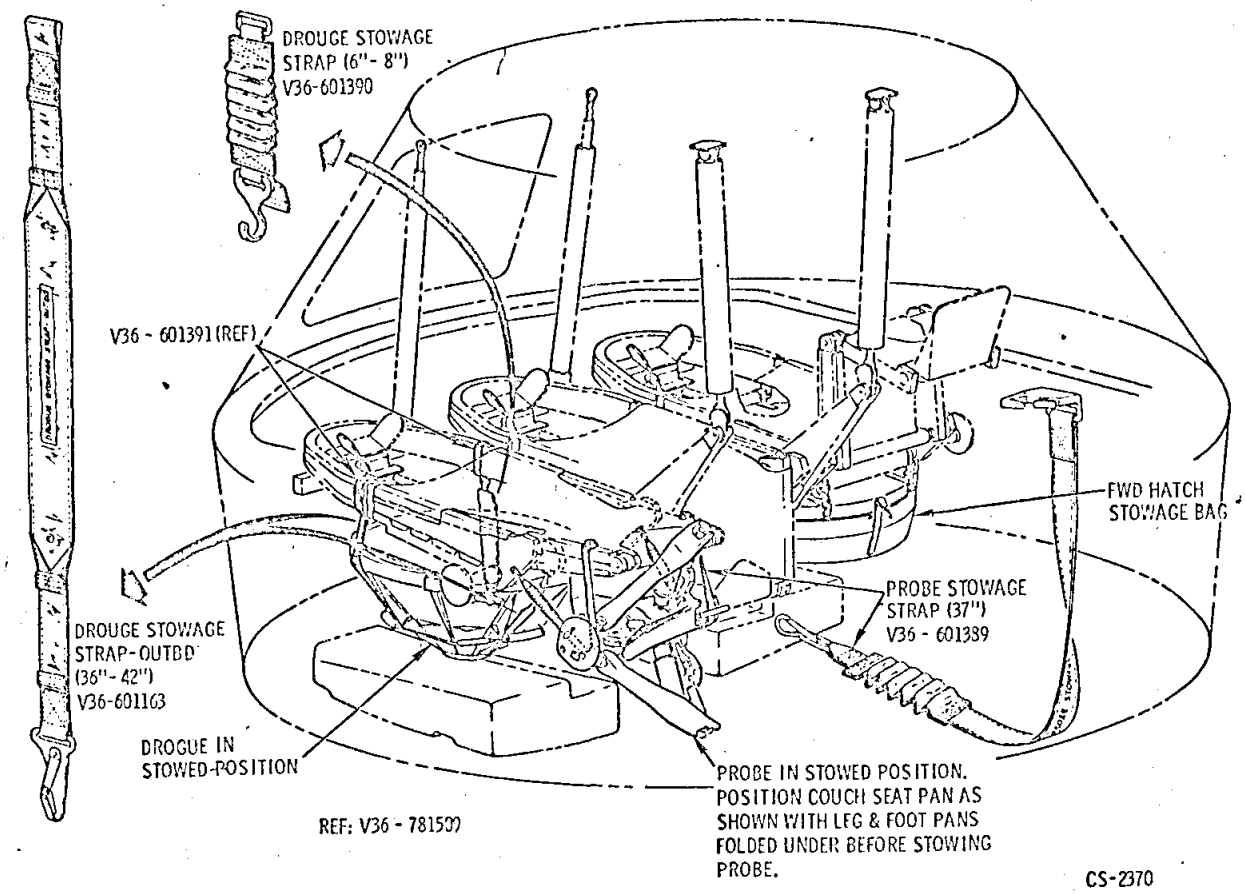


Figure 2.12-14. Probe and Drogue Stowage Straps

Utility Straps (Figure 2.12-15). The utility straps are named for their versatility. They are used for holding looped straps and cables in stowage lockers or compartments and for restraining other equipment to the structure during the mission.

The utility straps are 12.5 inches long with two studs and two sockets positioned so as to form two loops when snapped. One loop will wrap around a piece of equipment and the other loop around structure or will attach to structure by the snap.

FLIGHT DIR MISSION LOG	DAY	REV	PG 307

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
181+36	— Review of the stowage Checklist & Locations of all non nominal location — Get FAO Copy —
	Identified Hatch bag 1 Helmet & 2 LEVA'S in Hatch Bag — we are concerned over hatch Restraints (0 G")
	— Crew said they would Try it & see how it goes — most of the Rest of the stowage seemed good. Original FAD started when we thought we had 2 Helmets & 2 LEVA'S in
	* 10# misc Gear from Lm Brought back & stowed in A-8.

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 308

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
181+58	Crew status report
	See page 306
182+09	10H Change Complete
•	Note on Recovery
	G&N — 1500 nm Range
	4G — 1100 nm Range
	EMS — 1600 nm Range
•	Capcom & Retro going over Techniques for use of P-65 for entry up control & verifying checklist data is adequate —
	Also Harpold & Llewellyn are getting together with MIT People & going over P-65
	Also are running some EMS Profiles on the MPAD Simulators.

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING			
EVENT	GET	RET	LOCAL	ALTITUDE
EI-30 Hor ck	194:33:07		11:05:08	5320 SE
EI-17 Hor ck	194:46:07	CRO/CNB/HSK	11:18:08	2660
SM/CM SEPARATION	194:48:07		11:20:08	2261
	194:59:50	Red		
ENTRY	195:03:07	0	11:35:08	h = 400K, V = 36,194, γ = -6.47
BEGIN BLACKOUT	195:03:25	0:18 sec 195:03:18	11:35:26	
.05g	195:03:35	0:28	11:35:36	57
END BLACKOUT	195:06:56	3:49	11:38:57	41
DROGUE chutes	195:12:04	8:57	11:44:05	23.3K
MAIN chutes	195:12:52	9:45	11:44:53	10.5K
LANDING	195:17:49	14:42	11:49:50	
MAX G	6.12 g			

MSC FORM 1441 (APR 66)

FLIGHT DIR MISSION LOG	DAY	REV	PG 309

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
184+26	Retro advises the
	s/m will skip out, the
	hp@ sep will be 59.2
	— however I understand
	the same prediction
	was made on A-10
	& it reentered.
185+30	Reviewed checklists —
	no further updates —
185+50	Went over entry events
	and site coverage —
	see prev page —
	Charlie Duke is
	Flying the Entry
	Profile on the Hybrid
186+35	MCC, throughout the
	shift has come from
	.6 fps to .3 fps —
	the landing dispersion
	Ellipse will not change
	significantly due to
	the P-65 up control
	Cross rng ± 4.19 n.m
	Up/Dn rng ± 4.61 n.m

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 310

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	Did a bit of Research — if we had gotten weather report 24 hours earlier we could have performed a mcc of about 35-40 fps — by the time we got wx report it would have cost ≈ 200 fps.
	Span sez that they have reviewed P-65 program notes & found no discrepancies that should be passed on to crew —
	Ken Mattingly is still bounced in the Hybrid for Entry runs with Harpold —
188+00	Runs looked good — Harpold is writing up his & Ken's comments on the runs —
	They now have a good wx picture taken @ 0100 z

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING

EECOM Consummables
Update to Flight Director
for 188 GET

Cryos
Present Totals
H_2 18.19 (-.76)
O_2 257.7 (+17.6)

Single Tank Lifetime (GET)

	50 amp	73 amp
O_2		250
H_2		230

Waste H_2O Tank 85% @ 192+30 GET
Next Dump @ — GET

Battery a-h remaining

Batt A 38.4 a-h
" B 39.5 a-h
" C 38.6 a-h
116.5 Total a-h

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG
KRANZ	7/24/69	178+30 - 188:30	3K

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	Shift Summary
	1. PTC Initiated & stable
	2. MCC 7 will probably
	not be performed —
	it is ≈ .1 fps. / Not perfor
	3. Weather at 1285 Target
	line turned bad —
	Selected 1500 range
	line — This will require
	P-65 upcontrol, the
	landing dispersions
	will not change signif-
	icantly, Weather is
	2Ø, H1Ø, 080/18 10mi
	Visibility 6' waves.
	Recovery ships will be
	on station. Cliff &
	Chris were advised —
	We reviewed P-65 with
	MIT & SPAN, also
	C. Duke & Mattingly made
	some runs in the Hybrid
	simulator using Pad
	data — Looks OK.
	4. Only Open item is to
	Get final stowage
	position of the

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 312

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
	1 Helmet and 2 LEVVA's
	that are presently
	stowed in the Hatch
	Bag under the couch.
	We advised the crew
	to stow them in the
	sleep station Bag
	- They said they would
	evaluate it tonite.
	This equipment weighs
	about 15-16# & SPAN
	is concerned that
	the Hatch bag itself
	will not hold during
	Reentry since it is
	designed for "0" G only
	Two options —
	preferred: stow in sleep bag
	• stow in Hatch bag
	& lash on with
	Beta cord —
	see drawings.

MSC FORM 1441 (APR 66)

:

:50

191:00
(EI -4
HRS)

:10

:20

191:30

:40

:50

M
S
F
N

ACTIVATE VHF

V66 - TRANS CSM STATE VECTOR TO LM SLOT

ENTRY PAD

MNVR TO P=0, R=0, Y=0

IMU REALIGN - P52
OPTION 1 - PREFERRED

CABIN COLD SOAK(CREW OPTION)

ECS CKS

EPS CHECK

SPS CHECK

CM RCS MON CK

SM RCS MON CK

C & W SYS CK

CMC SELF TEST

DSKY COND LT TEST

P52 (ENTRY REFSMMAT)

N71: __ __,__ __

N05: __ __ __.__ __

N93:

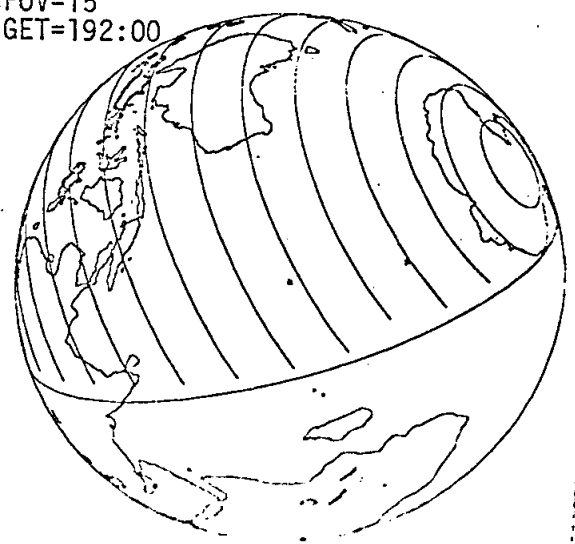
X __ __.__ __ __

Y __ __.__ __ __

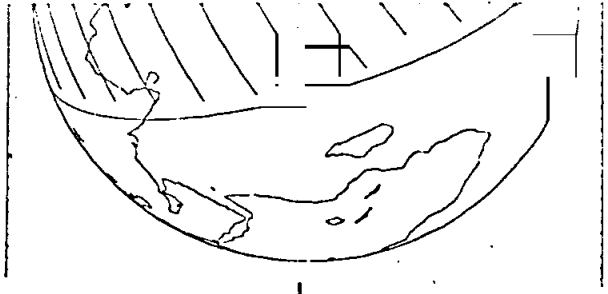
Z __ __.__ __ __

GET __ __ __:__ __:__ __

FOV=15°
GET=192:00



DSKY CORD LT TEST



192:00
(EI -3
HRS)

:10

:20

192:30

:40

:50

193:00

MSFN

P23-NO COMM (3 SETS)
TEI + 57:00 (192:30)
MENKAR (07) EFH.00120
CAPELLA (13) ENH00110
CAPELLA (13) ENH00110

GO/NO GO

GO/NO GO FOR PYRO ARM SEQUENCE

CHECK VHF COMM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 11	FINAL	JULY 1, 1969	192:00 - 193:00	9/TEC	3-13

MSC Form 28 (Nov 68)

(EI -2 HRS)	MSFN	LOGIC SEQUENCE CHECK
:10		MNVR TO ENTRY ATTITUDE
:20		COAS STAR CHECK
193:30		SXT STAR CHECK
:40		IMU REALIGN - P52 (OPTION 3 - REFSMMAT)
:50		GDC ALIGN TO IMU EMS ENTRY CHECK PRIMARY WATER EVAP ACTIVATION SECONDARY WATER EVAP ACTIVATION (if NO cold soak) CM RCS PREHEAT
194:00		

P52 (ENTRY REFSMMAT)

N71: __ __,__ __

N05: __ __ __.__ __

N93:

X __ __.__ __ __

Y __ __.__ __ __

Z __ __.__ __ __.

GET __ __ __:__ __:__ __

	(EI -1 HR)	MSFN	FINAL STOWAGE
	:10		TERM CM RCS PREHEAT PYRO BATTERY CHECK FINAL GDC DRIFT CK
UPDATE ENTRY PAD RCVY PAD GO FOR PYRO ARM	:20		GO FOR PYRO ARM CM RCS ACTIVATION RECORD ENTRY PAD AND RECOVERY DATA
UPLINK CSM STATE VECTOR			V66 - TRANS CSM STATE VECTOR TO LM SLOT EMS INITIALIZATION RSI ALIGN TO GDC
	194:30 (EI -30)		CM RCS CK ENTRY BATTS - ON
	:40		SEPARATION CHECKLIST
	:50		MNVR TO CM/SM SEP ATT P61 ENTRY PREP P62 - ENTRY ATTITUDE CM/SM SEP
	195:00		MNVR TO ENTRY ATT

195:00

:10

:20

195:30

:40

:50

196:00

MNVR TO ENTRY AT [redacted]

P63 - ENTRY INITIATE

EI - GET = 195:03:07

P64 - ENTRY POST .05G

TRAJECTORY EVENT	TIME FROM ENTRY INTERFACE MIN:SEC
400,000 FEET (GET 195:03:07)	00:00
ENTER S-BAND BLACKOUT	01:18
0.05G	00:28
PEAK G (6.6)	01:23
ENTER P65	01:56
SUBCIRCULAR VELOCITY	02:16
EXIT P65 @	03:20
EXIT S-BAND BLACKOUT	03:49
DROGUE DEPLOYMENT	08:57
MAIN DEPLOYMENT	09:45
SPLASHDOWN	14:42

γ = -6.47°, L/D = 0.295, V = 36,194, & R = 1500

FLIGHT DIR MISSION LOG	DAY	REV	PG 3130

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
188+30	— Start of maroon shift Brought up the DSE — we now have 2 machines meeting crew sleep to 190 GET —
	Retro — Upcontrol squared away
	Fido — No MCC7
	Guido — 3 loads — Platform O.K.
	GNC — CM RCS — >4.5 3.9 limit
	EECOM — O_2 flow changes (— E-6-1)
	F.S. — Sensors OK except rep
189+28	— Crew called — asked about MCC7
	~~Need to confirm 2 Evap valves open at proper time~~ — Disregard — EECOM
190+20	Told A-11 about uplinks @ 190+40
190+00	FCT Wx 6' seas 080/18 — 200/10
190+32	— 5.5, 7, 5.5 — Crew Status Report — Sleep — CDR, CMP, LMP
	Consumables status to Crew —

MSC FORM 1441 (APR 66)

LANDING AREA INFORMATION SUMMARY

GMT MESSAGE SENT 1330

Area	EOM (APOLLO 11)	

Weather

General Condition		
Cloud Ba/Cov	2000 ft./ SCTD	ft./
Visibility	10 N.M.	N.M.
Wind Dir/Speed	080°/18 kt.	°/ kt.
Wv. Ht.	6 ft.	ft.
Altimeter/ h	29.92 / +1	/
GMTLC	24 / 1650	
Sunrise GMT	1700	
Sunset GMT	0545	
Remarks		

Closest Recovery Forces

	Ship	A/C	Ship	A/C
Call Sign	HORNET	SWIM 1, 2 RECOVERY - 1		
Type	CVS	HELO SH 3		
ETE to T.P.	AT T.P.	10 MIN OR LESS		
Remarks		SWIMMERS ON BOARD		

Other Recovery Support

	Ship	A/C	Ship	A/C
Call Sign		HAWAII RESCUE 1, 2		
Type		HC-130		
ETE to T.P.		40 MIN.		
Remarks		PARARESCUE ON BOARD		

FLIGHT DIR MISSION LOG	DAY	REV	PG 314

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
190+41	Hornet 11Z Wx .7 coverage - .3/15
	~~080/130~~ 080°/20K 3'-6' seas
	Showers
190+45	-uplinking SV, Refsmatt, Entry Tgt Load
190+48	Visor assemblies - under Rt Hand
	Couch - A-11
	Wx to Crew
190+50	Uplink completed -
	Hornet 12Z Wx - 15 ① / ① 10 3'-6' Seas'
	060/16K No Shower activities
191+27	No VHF @ 29K
191+44	- PTC - Stopped
191+50	- Event times read up - page 6-1 in
	checklist, Entry Pad
	New backup "constant g" procedure
192+06	No VHF @ 25K
192+07	P-52 begun - Option 1 - forgiving now

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 315

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
192+10	Hornet 13Z 150/Ø 10 060/18K
	3'-6' Seas
192+21	P-52 - entered again - probably to
	use 3RD Star - apparently OK
192+37	- MIT Confirms our PAD -
192+45	1400 Z obs 15 Ø/Ø 10 070/16K
	3-6 seas 5/10 total sky cover
192+51	No VHF @ 20K
193+06	Logic Sequence Ck OK
193+07	VHF Simplex A - in T/R mode
	@ 17500 NM
193+08	SCS att hold - for MCC-H evaluation
	Mercury released early - why ??
	VHF left is heat
193+16	- Recovery info - @ 16,330 NM
	(No VHF)

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 316

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
193+26	EMS entry check + pri Water activation
	taking pictures - will go to entry
	attitude shortly
193+26	No VHF @ 15K
193+30	Secondary loop up + operating OK
	going to entry attitude
193+34	In entry attitude - omni ~~attitude~~
	C won't hold lock
193+37	EECOM apparently didn't know difference
	between horiz check + entry attitude
193+40	No lock with S/C ★
	for some time apparently
	Need new State Vector ★
193+47	Data back -
193+49	Did P-52, sext star check
	going to 298° - omni C should be OK -
	No VHF @ 11,600 NM

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 317

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
193+52	– S/C in 30 min horiz check attitude
193+59	No CM RCS preheat Req'd
194+02	H_2 tank #2 cycle fans
194+06	First Report of VHF – @ 9160 NM
	No estimate of quality
194+10	State Vector to S/C –
194+11	100% VHF @ 8300 NM
194+11	VHF – check OK – 8000 NM
194+16	RCS Press – OK
	06.3 vice 0.6.4
	V – 6.48 vice 6.49
	R – 14033
	RET – V circ – 0214 vice 2:13
194+26	194:33 298° Attitude check every
	+57 new ΔH
	RCS thruster check – Ring 2 O.K.
	Ring 1 OK

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 318

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
194+29	CM RCS barely audible — Some anyway
	Horizon check passes
	F-11 1/250 — entry fireball
194+34	Batts on line —
194+35	F-16 - 1/250 - Shooting ~~Sun~~ Sun -
194+37	Sun going down on schedule
	Tgt - 14°7'N 171°31'W
194+42	F/C #2 OFF
	Stand to Lo power -
	Pri Rad Bypass
194+47	yaw to Sep
	Pri Evap O.K.
	CMC - looks Good. —
	Sep attitude —
194+49	Pyro Arm

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 319

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
194+49	SM Sep -
	bus voltage holding
	194+55 - hand over
	S-band to high
	- Back to entry attitude
194+53	SM going by high & right -
	spinning + thrusters firing -
	tape recorder - still B/P
	15828 - @ 400K
194+59	Moon still in View
195+02	Went to CMD Reset -
	No Joy on DSE
	Black out on schedule
	Rescue 1 - has Visual
	- Hornet - Visual
195+10	airboss Contact
~~Ec~~ 195+11	Sband @1642 - HR-2

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

FLIGHT DIR MISSION LOG	DAY	REV	PG 320

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
195+11	Hornet Radar 120
	S/C – 169.15 13,30'
	Sonic boom
	~~A~~ 3500' down – OK.
	VHF beacon – HR-2
	2500'
	Retro 1min with 1min long
195+17	1500' –
	Hornet Visual
195+18	Splash down
195+19	Stable II –
	Dye out
	13 nm from Hornet –
195+23	3 floatation bags visible –
195+24	– Still in stable II
195+25	stable I

MSC FORM 1441 (APR 66)

FLIGHT DIRECTOR'S MISSION LOG

CSM CONSUMABLES UPDATE PAD

CONSUMABLES UPDATE	
GET:	189+00
RCS TOT	-1%
A	-11%
B	+10%
C	-1%
D	-1%
H_2 TOT	-.76#
O_2 TOT	+17.6#

-8#

CONSUMABLES UPDATE	
GET:	
RCS TOT	
A	
B	
C	
D	
H_2 TOT	
O_2 TOT	

CONSUMABLES UPDATE	
GET:	
RCS TOT	
A	
B	
C	
D	
H_2 TOT	
O_2 TOT	

CONSUMABLES UPDATE	
GET:	
RCS TOT	
A	
B	
C	
D	
H_2 TOT	
O_2 TOT	

TIME PREPARED ____:___:___

INITIALS _____

MSC Form 1052b OT (May 69)

FLIGHT DIR MISSION LOG	DAY	REV	PG 32

SITE/ACQ/LOS	FLIGHT EVENTS/HISTORY/BRIEFING
195+27	Swimmers in Water
	Hornet ETA - 1725 Z
	Checklist accomplished -