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FINAL

GT-4

FLIGHT PLAN

PREPARED BY

FLIGHT CREW SUPPORT DIVISION SPACECRAFT OPERATIONS BRANCH

MAY 19, 1965

FINAL

FOR IN-HOUSE USE ONLY

GT-4 Flight Plan, Final

Prepared by:

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Approved by:

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Warren J. North Chief, Flight Crew Support Division

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INTRODUCTION

Enclosed is the final edition of the GT-4 Flight Plan. This edition supersedes the Preliminary edition dated April 26, 1965. Due to the time constraints this edition has not received complete formal review and sign-off. Any corrections resulting from this process will be issued as correction pages in Revision 1.

No addition or changes will be made to this Flight Plan, except those required for flight crew safety or resulting from the premission training.

This Flight Plan is consistent with and provides the capability to meet the Mission objectives as outlined in the GT-4 Mission Directive, dated April 5, 1965.

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All comments and/or questions should be forwarded to J. B. Jones, Flight Crew Support Division, Spacecraft Operations Branch, Flight Planning Section, extension 4271.

SECTION I DETAILED FLIGHT PLAN

TIME	COMP		CNTL								
HR:MIN	COWIT		MODE	COM	MAND PILO	г		PILOT			
0:00:00	ASC	FREE		CNV- <u>Report</u> Lif A <u>- Report</u> Clo (Event Tim	t-off ck Start er)						
0:00:10	ASC	FREE		A - <u>Report</u> Rol	l Program	initiated					
0:00:20	ASC	FREE		A - <u>Report</u> Rol	1 Program	complete					
0:00:23	ASC	FREE		A - <u>Report</u> Pit	ch initiat	ted					
0:00:50	ASC	FREE		CNV- <u>Give</u> 50 se change to Mode II A - Confirm re delayed la Release "F	c time had delayed la ported cha unch Mode	ck for aunch ange to II	A - Releas Unclip	e "D" Ri Keying	ing Switch		
0:01:00	ASC	FREE		<u>NOTE</u> "D" Ring stowed after insertion. Cmd Pilot will use the Keying Switch on the Attitude Controller. A - <u>Report</u> Cabin Pressure holdin at psid							
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE	
GT - 4	Fi	n a l		May 19, 1965	CNV	0:00:00	0:06:55	6 : 55	Launch	1	

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TIME	COMP		CNTL							
HR:MIN			MODE	COMN	AAND PILOT			PILOT		
0:01:40	ASC	FREE		CNV- <u>Report</u> cha Mode II (7	unge to la 'OK feet)	unch				
				A - Confirm re launch Mod	eported ch le II	ange to				
0:01:45	ASC	FREE			D	CS UPDATE F	RECEIVED A - Reset I	CS ligh	t	
0:02:15	ASC	FREE		A- Report Stag	ge II GO					
0 : 02 : 25	ASC	FREE			D	CS UPDATE F	RECEIVED			
							A - Reset I	CS ligh	t	
0:02:36	ASC	FREE				STACI	ING			
					E: E:	<u>NOT</u> ngine I Lig ngine II Ii	ghts - Flick ght - Out	aer		
				A - Report sta Check "g" FDI SCALE	aging stat level RANGE - H	us I				
0:02:48	ASC	FREE				GUIDANCE IN	NITIATE			
MISSION	E	DITION	L	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GТ-4	Fi	nal		May 19, 1965	CNV		0:06:55	6 : 55		
	L				BDA	0:03:52	0.10.35	6:43	Launch	2

TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	FLAI	MODE	COMM	IAND PILO	г		PILOT		
0:04:35	ASC ASC	FREE		CNV - <u>Report</u> GO/NG A - <u>Report</u> GO/NG CNV- <u>Report</u> V/V _R A - <u>Confirm</u> rep launch Mode	/NO GO) GO = .8 orted cha III	nge to	A - <u>Report</u> error s	FDI pit	ch and ya	W
0:05:36	ASC	FREE	DIR	A - <u>Report</u> SECO Maneuver Co FDI SCALE R	Ch at ntroller ANGE - LC	ange to la 21,000 fec <u>SEC</u> - UNSTOW	unch Mode II et/second <u>CO</u> A - ATTITUI A - OAMS PO	DE CONTR DWER - M	ROL - DIRE MANEUVER &	СТ АТТ
0 :05: 56	ASC	FREE	DIR	A - Initiate fw	d thrust	<u>SECO +</u>	20 SEC			
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT 4	Fina	al		May 19, 1965	CNV BDA	0:03:52	0:06:55 0:10:35	6:55 6:43	Launch	3

MSC FORM 1008 (REV AUG 64)

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NASA MANNED SPACECRAFT CENTER

TIME	COMP		CNTL	ACTION								
HR:MIN		PLAI	MODE	COM	MAND PILO	r l		PILOT				
	ASC 1	FREE	RATE CMD	A - Apply a 12 velocity (1 a. Do not c during f after S/ b. Aft firi 9 & 10 u A - Roll left 9 attitude af OAMS firing FDM - ATT CNV- <u>Report</u> GO/N velocity to insertion (of 10 ft/se	sec fwd s O ft/sec) <u>IOTES</u> control S/ irst two C separat ased 00° to 0° ter compl ter compl 00° to 0° ter compl 0° to 0°	eparation (C attitude (2) sec ion. ers, Nos. roll etion of ed for completion ation)	A - SEP SP(ATTITU) (Two s	CFT - PUS DE CONTRO ec delay	SH DL - RATE from SEP	CMD S/C)		
MISSION		DITION		DATE	STATION	405	1.05	TOTAL	BEV	DACE		
										FAUC		
					CNV		0.06.55	6.55		1		

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TIME	COMP		CNTL		ACTION								
HR:MIN	COMP	FLAI	MODE	COM	MAND F	PILOT	PILOT						
0:06:14 ASC FREE			RATE CMD	A - Control S/ roll O ya <u>NOTE</u> 1. O pit nullir 2. O rol obtain Record and IVI A V re Apply requ velocity o on ground <u>Give</u> voice completion	C attit aw, -0 cch is c ag the p ll and p hed on t l report eadout. nired in correct: computa e mark : n of OA	tude to O ^O pitch. obtained by pitch FDI. yaw is the 8 ball. t to ground nsertion ion based ation. for start MS thrust	A - When a O', O' (Vga).	ttitudes , copy I	are at (VI readou) ⁰ , 1t			
	ASC	FREE	RATE CMD	A - JETT FAIR REPORT FAI BOOST INSI RETROROCKI OAMS POWEI Maneuver (INSERTION CHECKLIST A - JETT FAIRING - PUSH REPORT FAIRING JETTISON BOOST INSERT - SAFE RETROROCKET SQUIB (4) - SAFE OAMS POWER - ATT Maneuver Controller - STOW								
MISSION	ε	DITION		DATE	STATI	ON AOS	LOS	TOTAL	REV	PAGE			
GT-4	Fi	nal		May 19,1965	CNV BDA	0:03:52	0:06:55 0:10:35	6:55 6:43	1	5			

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TIME	COMP		CNTL								
HR:MIN	COMP		MODE	COMN	AND PILO	PILOT					
	PRE LN	REE	RATE CMD	A - Stow "D" F "D" Ring S COMPUTER - SEQ LIGHTS GREEN/AMBE H ₂ O Htr C/ Arm Restra Release an harness an Life Vest Storage ve	ring afety Pir PRE LN TEST - H B - CLOSH ints - ST d stow be d survial - STOW ents - Clo	a - Install RED & COW elts, lanyard osed	A - Stow "H "D" Rir Arm Res QTY - C C - RN T/M - C HF ANT ANT SEI Voltmet Ammeter Indivic Main Ba	D" Ring ng Safet straints DFF IY - CMD MD - EXT/O L - ADPT ter - BT ter - BT dually p attery t	y Pin - I - Stow FF lace each o test	[nstal]	
MISSION	EDI	TION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE	
			T	N 30 30(F			0.06.77	6.55		1	

TIME	COMP		CNTL	ACTION								
HR:MIN		FLAI	MODE	COMM	IAND PIL	.ot		PILOT				
	PRE LN	FREE	RATE CMD				5 s	<u>NOTE</u> econds 1	maximum			
							Check ea reading Place ba Complete Voltmete Ammeter OAMS HTR	ch amp a tteries Electr r - C - 1C C/B -	and volt to "OFF" ical Chec Closed	ς		
				A - <u>Report</u> che	ecklist	complete	A - Right Sec 0 ₂ Bottle Shutoff- SHUT Release and stow belts and harness & survival lanyard Life Vest - STOW Storage box vents - CLOSED Drogue Pins (R&L) - INSTALL Bio-Med Rcd No. 1 - OFF ES SENSOR - ON (MSC-1 Experiment)					
					Even to co when coun	<u>NOT</u> t Timer will ount up unti it will be t down to ev	L be allowed to continue L approximately 90:00 stopped and used to rents.					
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE		
GT-4	Fin	al		May 19, 1965 .	CNV BDA	0:03:52	0:06:55	6:55 6:43	1	7		

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FLIGHT PLAN

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TIME	COMP	DI AT	CNTL			ACT	PILOT				
HR:MIN	COMP	PLAI	MODE	COMN	AND PILO	r [PILOT			
	PRE LN	CAGE SEF SEF	PUL	A - Align Plat FDR - PLAT FDM - ATT ATTITUDE C Hold Pitch horizon re yaw and ro PLATFORM - Hold roll the horizo When the " O, O, O PLATFORM - A - Null FDI's align plat	form ONTROL - to O us ference a ll FDI's CAGE (SH attitude n 8" ball n SEF for 15 m form	PUISE ing nd null F) to O ^O usin reaches nin to	EDA - Updat infor a. <u>Wi</u> 1. 2. 3. 4. 5. 6. 7. b. <u>W/</u> 1. 2. 3. A - Copy up	e 2-1 r mation i th OAMS V of i transl Duration GMTRC ET 400 ETRB ET 10K Bank A O OAMS GMTRC Bank A ETRB Dank A	eentry as follow <u>Retro</u> 2-1 OAMS ation on of bur K K ngle (if <u>Retro</u> ngle (if formation	s: n req) req)	
MISSION	E	DITION		DATE	STATION	AOS	LOS TOTAL REV PAGE				
				May 19, 1965	CNV		0:06:55 6:55 8				
GT-4	i Fi	na⊥		1900 x 20 x 20 y	BDA	0.03.52	0.10.35	6.43	ו		

TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	FLAI	MODE	COM	MAND PILO	r T		PILOT		
0:12	PRE LN	SEF	PUL	Cmd Pilot a	aligning p	latform A	A - Unstow f 1. Blood 2. Hasse backs 3. 16mm and 1 4. Urine 5. Y cor	the foll d pressue elblad co camera, lens e nozzle mection	owing ite re bulb amera and magazine utility	ms: film s, cord
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final	L	May 19, 1965					1	9

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TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	PLAI	MODE	COM	MAND PILO	F		PILOT		
00:15	PRE LN	SEF	PUL D1 R	THRUSTER ANI A - Verify the Direct Cont follows: FDI SCALE F FDM - RATE ATTITUDE CO PLATFORM - Cmd a 1°/se ± Yaw ± Pitch ± Roll	<u>O CONTROL</u> operation trol mode RANGE – LO DNTROL – I ORB RATE ac rate in	<u>MODE CHECK</u> n of the as) DIRECT n each axis	A - NO. 2 A CYI - <u>Repor</u> ing: 1. C 2. A 3. F A - Copy up	UD10 - 1 MT of 1 pogee a Perigee 1 odate in	JHF bice the ift-off Ltitude Altitude formation	follow
MISSION	Ε	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT - 4		Final		May 19, 1965	CYI 2 of 2	0:14:46	0:21:48	7:02]	10

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TIME	COMP		CNTL			ACT	CTION BIL OT					
HR:MIN	COMP	PLAI	MODE	COMA	AAND PILO	Г		PILOT				
	PRE LN	SEF	PUL	ATTITUDE C(PLATFORM - Continue w ment	ONTROL - SEF ith Platf	PUL orm align-	<u>COMMUNICATION SYSTEMS CHECK</u> - CYI-Participate in communication check and advise on the results <u>NOTE</u>					
							Both tr recepti HF shou	<u>NOTE</u> ansmiss on for U ld be ch	ion and JHF NO. 2 necked	ćc		
							A – UHF – N (Check UHF – N HF T/R NO. 2 A	0.2 operatio 0.1 - RNTY UDIO - H	n)			
							HF T/R (Check QTY - C	- OFF operatio N/OFF (on) 15 sec)			
0: 20	PRE LN	SEF	PUL	A — When Platfo PLATFORM — ATTITUDE CO HOR SCAN	orm is ali ORB RATE NTROL	gned						
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE		
GT - 4		Final		May 19, 1965	CYI 2 of 2	0:14:46	0:21:48 7:02 1 11					

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TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP		MODE	COMN	AAND PILO	r		PILOT		
0:22	PRE	ORB RATE	HOR	 KNO-Report the reentry quarequired: a. <u>OAMS Ret</u> a. <u>OAMS Ret</u> a. <u>OV</u> of trans 2. Durat 3. GMTRO 4. ET 40 5. ETRB 6. ET 10 7. Bank b. <u>W/O OAMS</u> 1. GMTRO 2. Bank 3. ETRB 	following antities, 2 2-1 Retro alation cion of bu cion of bu cook MK Angle (if <u>5 Retro</u> Angle (i	g 2-1 if ro urn ' req) f req)				
					······································		-			
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT -4	F	final		May 19, 1965	KNO* l of 2	0: 21:41	0:28:57	7 : 16	1	1 2

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1040	COMP		CNTL			ACT	ION			
IR:MIN	COMP	FLAI	MODE	COMN	IAND PILO	Г		PILOT		
	PRE	OR B RATE	HOR SCAN	A - Copy the ab <u>NO</u> The above r from MCC vi	ove infor <u>TE</u> eport is a KNO*.	mation				
MISSION	E	DITION	L	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	F	 Final		May 19, 1965	KINO*	0.21.41	0.28.57	7.16	1	17

TIME	COMP		CNTL			ACT	ION			
HR:MIN	LOWL	PLAI	MODE	COM	AAND PILO	r		PILOT		
AFTER CYI LOS	PRE LN	ORB RATE	HOR SCAN	A - Empty launc	h day uri	ne bag	A - Empty 1 Pressur follows Verify Manual Suit F1 Disconn Pressur	aunch d e check facepla 0 ₂ High .ow - OF ect 0 ₂ ize sui	ay urine suit as te - Clos Rate - P F Outlet Ho t to 8.5	ba g ed ull se psia
				a - 0 ₂ HIGH RAT	E RECOCK	- Pull				
				A - Pressure ch (Same proce	eck suit dure as p	ilot,	Monitor Verify Depress Suit Fl Connect	r pressu suit in surize s .ow - ON ; 0 ₂ Out	re decay tegrity uit let Hose	
				suits must separately.	be checke)	d				
							A - Stow launch urine bags Unstow sextant and photoeven indicator if time allows prior to CRO AOS			
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final	l I	May 19, 1965			LOS TOTAL REV PA			

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TIME		AT CNTL			ACT	ION			
HR:MIN		^' MODE	COMM	AND PILO	г		PILOT		
HR:MIN	COMP PL	AT MODE	СОММ	AND PILO	ACTION REQU	IRED BY TAN	PILOT		
MISSION	EDITI	ION	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fina	al	May 19, 1965	TAN*	00:30:29	00:38:46	8:17	1	15

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TIME	COMP		CNTL				ACT	ION			
HR:MIN	COMP	FLAI	MODE	COMM	IAND	PILO	Г		PILOT		
00:35	PRE LN	ORB RATE	HOR SCAN					A - RAD - 1	FLOW		
MISSION	E	DITION		DATE	STA	ΓΙΟΝ	AOS	1 105	TOTAL	REV	PAGE
GT-4	t	Fina	L	May 19, 1965						1	16

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FLIGHT PLAN

TIME	COMP		CNTL				ACT	ION				
HR:MIN			MODE	COMN	IAND F	PILOT			PILOT			
0:50	PRE LN	ORB RATE	HOR SCAN	A - Give GO/NO	GO fo	or 6	9–1	CRO-Give G Transm 1. 2-1 2. 6-4	D/NO GO it via I Preretr T _R upda	for 6-4 DCS: ro Cmd Los hte (if GO	ıd)	
								Report the following reentry information for 2-1:				
								a. <u>With OAMS Retro</u>				
								 a. <u>With OAMS Retro</u> 1. <u>∆</u>V of 2-1 OAMS translation 				
								2. 1	Duratior	n of burn		
								3.	GMTRC			
								4. l	ЕТ 400К			
								5. ETRB				
								6. 1	ET 10K			
								7. Bank Angle (if req)				
MISSION	E	DITION		DATE	STATI	ON	AOS	LOS TOTAL REV PAGE				
GT-4		Fina	1	May 19, 1965	CRO 1 of	2	00:49:46	00:57:55	8:09	1	17	

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FLIGHT PLAN

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TIME	COM		CNTL			ACT	ION			
HR:MIN	COMP	PLAI	MODE	COMN	IAND PILO	Г		PILOT		
	PRE	ORB RATE	HOR SCAN				b. W/O 1. (2. 1 3. 1 A - Copy th CRO-Give Go A - SECONDA EVAP - QTY - (CRO-Give S, A - Check (OAMS Re GMTRC Bank Ang CTRB ne above o on Rad ARY PUMP NORMAL ON/OFF (/C a GMT GMT cloc	etro gle (if re informat A - OFF 10 sec) time bac	∍q) tion
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final		May 19, 1965	CRO 2 of 2	00:49:46	00:57:55	8:09	1	18

TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	FLAI	MODE	COM	MAND PILO	r]		PILOT		
01:00 to 01:25	PRE LN	ORB RATE	HOR SCAN	Apol A - Booster - S Observation	llo l Star Apol: ns	lo	Apo A - Booste: Observa	llo l r - Stan ations	r Apollo	
		8								
MISSION	E	DITION		DATE	STATION	405		TOTAL	DEV	Taxes
GT-4	† ⁻	Final		May 19, 1965	*CTN	01:10:16	01:17:22	7:06	1	19

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TIME	0.00	DIAT	CNTL			ACT	ION			
HR:MIN	COMP	PLAI	MODE	COMM	AAND PILC	т		PILOT		
01:25	PRE LN	ORB RATE	HOR			7	A - Unstow Sextan measure	and pre t for Bc ements i	pare the oster - S ſ require	d.
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
MISSION							-			I LAVE

TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	PLAI	MODE	COMN	AND PILO	r 🔤		PILOT		
01:28	CTCH UP	ORB RATE	HOR	A - Event Timer FDR - PLAT FIM - ATT ATTITUDE CO COMPUTER - Start COMP Control S/C O ^O Roll O ^O Yaw O ^O Pitch Hold these MCC Record stat Check Report IVI	r - STOP ONTROL - 1 CTCH UP - Push (C attitude attitude rt and st readings Cali	PULSE Give Mark) es to: s until op of bration of	<u>E</u> acceleromet	ers		
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE

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TIME	COMP		CNTL			AC	FION			
HR:MIN	COMP	FLAI	MODE	COMM	IAND PILO	r		PILOT		
					N) ACTION RE	QUIRED BY T	EX		
					N	O ACTION RE	QUIRED BY T	EX		
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	F	inal		May 19, 1965	TEX	01:30:34	01:36:59	6:25	1	22

TIME	6040	DIAT	CNTL			ACT	ION			
HR:MIN	COMP	PLAI	MODE	COMM	IAND PILO	Г		PILOT		
01:38	CTCH UP	ORB RATE	HOR SCAN	CNV - Cmd D/T Cmd Tape Cmd Tape Cmd D/T	T/M - ON e Plybk - e Plybk - T/M - OF	ON OFF F				
			PUL HOR SCAN	A - ATTITUDE C Control Report I ATTITUDE COMPUTER	CONTROL - S/C to O VI readi CONTROL R-PRELN/C	PULSE °, 0°, 0° ngs – HOR SCAN TCHUP				
				CNV - Transmit update b flight p l. 6-4 P 2. Maneu Trans	the fol pased on a plan: reretro (ver Load plation No	lowing a nominal Cmd Load for o.l				
				Report t entry in reentry:	he follo formation	wing re- n for 6-1				
				a. <u>With</u>	OAMS Reta	ro				
				1. 4 t	V of 6-4 ranslatio	OAMS on				
				2. Du	ration of	burn				
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final		May 19, 1965	CNV BDA	01:34:29 01:37:50	01:40:44 01:44:31	<u>6:15</u> 6:41	2	23

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TIME	COMP	01.47	CNTL		<u></u>					
HR:MN	LOWP	PLAI	MODE	COM	AAND PILO	г		PILOT		
	PRE LN	ORB RATE	HOR SCAM	3. GMTRC 4. ET 40 5. ETRC 6. ET 10 7. Bank b. <u>W/O OAMS</u> 1. GMTRC 2. Bank 3. ETRB	DOK Angle (if <u>S Retro</u> Angle (if	req) req)	A - Copy th	ne 6-4 r	eentry	
MISSION	F	DITION		MCC-Give GO/NO No. 1 Update Tran 1. <u>A</u> V 2. GMT o Update Acq Star Sextan	GO on Translation M of transla Angles fo t measure	anslation No. 1: ation pr Booster- ements	A - Copy up	odate in	formation	
MISSION	E	DITION	l	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Fina	1	May 19, 1965	MCC	01:34:29	01:40:44	6:15	2	24
	1				D DA	01:57:50	101:44:31	6:41	-	1 - 7

MSC FORM 1008 (REV AUG 64)

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TIME	COMP	DI AT	CNTL	ACTION								
HR:MIN	COMP	FLAI	MODE	COMM	AAND PILO	r f		PILOT				
01:45 to 02:10	CTCE UP	ORB RATE	AS REQ	A - Control S/C booster Acq	Boo wit for attitude Angles	D-9 EXPERIM ster - Star h the Sexta · details s to	ENT Apol r Measuremer ant (See Sec A - Take st measure er is n	lo 2 its etion II ar to b ments un no longe	nooster se until the er visible	xtant boost-		
MISSION	E	DITION)	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE		
GT-4	F	inal		May 19, 1965					2	25		

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I CRAIC	COMP	DIAT	CNTL	ACTION						
HR:MIN			MODE	COM	MAND PILO	T		PILOT		
01:49	CTCH UP	ORB RATE	HOR SCAN	CYI-Give S/C I for Trans Crew needs 3 minutes A - Give mark Timer coun at time of A - Event Time	Event Tim lation No <u>NOTE</u> s approxin to set E to start nting down f Transla er - DWN	er setting . 1 mately vent Timer Event n to 00:00 tion No. 1				
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE

TIME	COMP		CNTL	ACTION						
HR;MIN			MODE	COMN	IAND PILO	Γ		PILOT		
2nd Apogee minus 10 min (2:09)	CTCH UP	ORB RATE	DIR	A - ATTITUDE C Control S/C O Roll 180° Yaw O° Pita ATTITUDE C	ONTROL - C attitud L Ch ONTROL -	DIRECT e to: PULSE	A - Check th paramete via the Nominal	ne Catc ers in MDU: values	h-up mode the compu are:	e iter
		BEF		PLATFORM - Null FDI's	- BEF to align	platform	<u>Address</u> 25 26 27	<u>Messa</u> 0007 0000 0000	ge Quar 0 7 ft, 0 0 ft, 0 0 ft,	ntity Sec fwd Sec dn Sec lt
Fransla- C tion C ninus l ninute (2:18)	CTCH JP	ORB RATE	DIR RATE CMD	A - PLATFORM - SCANNER - (ATTITUDE C Maneuver C OAMS POWER Control S/(O ^O Rol 180 ^O Yaw O ^O Pit FDM - RATE	ORB RATE DFF DNTROL - ontroller - MANUVR C attitud L	RATE CMD - Unstow & ATT e to:				
							A - START C	0 M P - P	ush	
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Fina	1.	May 19, 1965					2	07

MSC FORM 1008 (REV AUG 64)

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COMMAND PILOT

ACTION

PILOT

FLIGHT PLAN .

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TIME

HR:MIN

CNTL

MODE

COMP PLAT

TIME	COMP		CNTL			ACT	ION			
HR:MIN	CUMP	FLAI	MODE	COMM	IAND P	ILOT		PILOT		
After Trans. No. 1 (2:20 to 2:30)	PRE LN	ORB RATE	DIR			Perform Ni Orientation Section II	ght Apollo Y n Check (Se for details	(aw ee 3)		
2:30	PRE LN	ORB RATE	A S REQ	A - Power Down	S/C		A - After A Check, Booster then Pr ACME BI AC POWH ES SENS	apollo Y control r Acquis wr S/C d (AS PWR ER - ACM SOR - OF	aw Orient S/C to ition Ang own excep - PRI E F	ation les, t:
(02:30 to 03:00)	OFF	OFF	AS REQ				A - Perfor Apollo (Booste	n D-9 Ex 3 er - Sta	periment r measure	- ments)
MISSION	E	DITION		DATE	STATIC	N AOS	LOS	TOTAL	REV	PAGE
GT -4	·	Final		May 19, 1965					2	29

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TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	FLAI	MODE	COMN	IAND PILO	r I		PILOT		
GYM AOS (3:02)	OFF	OFF	DIR	GYM-Update D-9 acquisitic A - Copy updat) Experime on time an ce	ent 1d angles	A - Medic (See	al data Section	pass type II for de	l tails)
3:05 to 3:35	OFF	OFF	AS REQ				A - Perfo vatio After compl	rm Boost ns observa etely po	er - Star tions, wer down -	obser- S/C
CNV AOS (03:08)	OFF	OFF	A S REQ	D/T TAPE PLY	Υ ΒΚ					
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final	1	May 19, 1965	GYM	03:01:37	03:08:01	6:24	2	30

MSC FORM 1008 (REV AUG 64)

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TIME	COND	DI AT	CNTL				ACT	TION			
HR:MIN	COMP	PLAI	MODE	СОММ	AND	PILOT			PILOT		
CRO AOS (03:58)	OFF	OFF	DIR	A - Medical dat (See Section	a pas II f	ss ty `or d	pe l etails)	A — Prepare Tasks W,	for D-6 /O platf	5 Tracking `orm	5
MISSION	E	DITION		DATE	STAT	ION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final		May 19, 1965	CRC)	03:58:07	04:06:41	8:34	3	31

TIME CNTL ACTION COMP PLAT MODE HR;MIN COMMAND PILOT PILOT DIR A - Control S/C attitudes to with-HAW AOS OFF OFF in $\pm 30^{\circ}$ of heads-up attitude (04:24)HAW - Update S/C with information for D-6 Tracking Tasks over U. S. A - Copy update information HAW - CMD D/T tape Plybk A - Power down S/C as required after tape Plybk NOTE The above procedure will be used for all the following tape Plybks EDITION MISSION DATE STATION AOS LOS TOTAL REV PAGE 04:24:08 04:30:43 6:35 32 3 HAW GT-4 Final May 19, 1965

FLIGHT PLAN

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TIME	CO.40	DI AT	CNTL			ACT	ION			
HR:MIN	CUMP	FLAI	MODE	COMM	AND PILO	r		PILOT		
Pass over U.S. (4:35 to 4:50)	OFF	OFF	AS REQ	A - Perform D-6 (see Sectio) Trackin n II for	g Tasks details)				
ANT AOS	OFF	OFF	AS REQ	ANT - Transmit <u>NOT</u> Check of SI ference wi	R/T CMDS <u>S</u> PADATS in th R/T CM	to S/C ter- IDS				
Pass over Africa (05:15 to 05:20)	OFF	OFF	AS REQ	A - Perform D-(Tasks (See Section	6 Trackir on II for	g • details)				
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAG
GT-4		Final		May 19, 1965					3-4	33

TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	FLAI	MODE	COM	MAND PILO	ſ		PILOT		
After D-6 (5:20 to 6:05)	OFF	OFF	DIR	A — Eat period			A - Eat per	riod		
					_					
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
the second			and the second se					-		

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TIME	CONO	-	CNTL				ACT	ION			
HR:MIN	COMP	PLAI	MODE	CO	MMAND	PILO			PILOT		
HR:MIN CSQ AOS (05:50)	OFF	OFF	DIR	<u>D/T TAPE</u> USQ-Update S/ for D.6 Mexico & A - Copy upd	PLYBK C with Tracki South ate int	PILOI info ng t Amer	ormation asks over ica ition	A - Prepare synopt: <u>NOTE</u> : D-6 Tra will be	PILOT e Hassal ic weath lf weat lcking, e taken	blad for her photog her prohi S-6 Photo by the Cm	graphy bits graphs d Pilot
MISSION	E	EDITION		DATE May 10 106	STA1		AOS	LOS	TOTAL	REV	PAGE

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TIME	COMP		CNTL			ACT	ION			
HR:MIN			MODE	COMM	IAND PILO	r		PILOT		
Pass over Mexico and South America (06:10 to 06:35)	OFF	OFF	AS REQ	A - Perform D-6 (See Section If weather tasks perfor weather pho	o Trackin on II for <u>)TE</u> prohibit orm synop otography	g tasks details) s tracking tic				
After tracking task (06:40)	OFF	OFF	DI R	A - Check S/C	for GO/N	0 GO	A - Stow ment	trackin	g task eq	uip-
CSQ AOS (7:23)	OFF	OFF	DI R	A - GO/NO GO CSQ - GO/NO GO If GO t for 18- If requ Cmd load required ing)	for 18-1 O FOR 18- ransmit T l ired, tra d (notify d compute	l R update msmit 6-4 S/C of r switch-				
MISSION	Ε	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fir	nal		May 19, 1965			Ι		4-5	36

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TIME	COMP	DIAT	CNTL			ACT	ION			
HR:MIN	COMP	FLAI	MODE	COMM	AND PILO	r		PILOT		
07:30 to 11:30	OFF	OFF	DIR	A - Sleep peri	od					
HAW AOS (07:34)	OFF	OFF	DI R	D/T Tape Plybk	c					
GYM AOS (07:44)	OFF	OFF	DIR				GYM - Upo two	late Sta 5 D- 8 p	rt time o basses	ſ
							А — Сору	update		
MISSION	E	DITION		DATE	STATION	AOS	LOS	ΤΟΤΑΙ	REV	PAGE
GT-4	F	rinal		May 19, 1965					5-8	37

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TIME	C0140	-	CNTL			ACT	ION			
HR:MIN	COMP	PLAT	MODE	COMMA	ND PILO	Т		PILOT		
Prior to S. A. Anomaly (7:45)	OFF	OFF	DIR	Sleeping			A - SPT - N BOOM - (MSC - ES SENS Experim MSC-2&3 three p South A	MAG ⁺ – ON EXT 2&3 EXPI OR – ON ent) <u>NOTES</u> will ba asses th merican	ERIMENTS) (MSC-1 e left on arough th Anomaly.	for
MISSION	E	DITION	l	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Fina	1	May 19, 1965			1		5-6	38

TIME	COMP	DIAT	CNTL			ACT	ION			
HR:MIN	COMP	FLAI	MODE	COMN	AND PILO	r		PILOT		
HAW AOS (09:07)	OFF	OFF	DIR	A — Sleeping			<u>Delayed</u> A - AC PW COMPU	<u>Time Ta</u> R - IGS TER PWR	pe Plybk - ON	
HAW AOS (09:07)	OFF	OFF	DIR	A - Sleeping			HAW - Tra pre A - COMPU COMPU COMPU AC PW	nsmit v retro a: TER - RI TER PRE TER PWR R - OFF	ia DCS 18- nd update NTY LN - OFF (or ACME)	-1
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fi	nal		May 19, 1965					6	39

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TIME	COMP		CNTL			ACT	ION		· · · · · · · · · · · · · · · · · · ·	
HR:MIN	COMP	PLAI	MODE	COMN	IAND PILO	r		PILOT		
At start of S.A. Anomaly (9:30 to 10:10)	OFF	OFF	DIR	A — Sleeping			A - Contro MSC 2 D-8 EX (Radia After (MSC-1	ol S/C & 3 EXF (PERIMEN ation me D-8; ES L Experi	SEF for PERIMENT T asurement SENSOR - ment)	.s) OFF
10:10 to 10:50	OFF	OFF	DIR	A – Sleeping			A - Eat Pe	eriod		
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	F	inal		May 19, 1965					7	40

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TIME	COMO		CNTL				ACT	ION			
HR:MIN	COMP	FLAI	MODE	СОММ	AND	PILO	Г		PILOT		
HAW AOS (10:41)	OFF	OFF	DIR	A - Sleeping				A - Mediaa (See Se	al data action 1	pass type I for de	e l tails)
MISSION	E	DITION		DATE	STAT	TION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fj	na l		May 19, 1965	H	AW	10:40:55	10:48:10	7:15	7	41

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TIME	COMP		ĊNTL				ACT	ION			
HR:MIN	COMP	PLAI	MODE	COMM	IAND	PILO	Г		PILOT		
RKV AOS (11:02)	OFF	OFF	DIR	A - Sleeping				<u>R/T T</u> RKV - Repor for G Upda EXPEI measure A - Copy u	/M Plybk rt CLA & 9-3 thru te start RIMENT S urements	PLA upda 13-2 time of tar to Ho with sex	tes D-9 rizon tant)
MISSION	E	DITION	L	DATE	STAT	TION	AOS		ΤΟΤΑΙ	REV	PAGE
GT-4]	Final		May 19, 1965	R	ΚV	11:02:00	11:07:00	5:00	<u></u>	4.1

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TIME	COMP	OI AT	CNTL							
HR:MIN	R:MIN COMP PLAT MODE COMMAND PILOT PILOT									
Start of S.A. Anomaly 11:15	OFF	OFF	DIR				A — D-8 El (Radia	(PERIMEN ation me	IT easurement	.s)
11:30	OFF	OFF	DIR	A - Sleep peri	lod ends		A - Brief of Mi:	CMD Pil ssion ar	ot on sta nd S/C	itus
11:45	OFF	OFF	DIR				A – SPT-M BIOME BIOME	AG-OFF (D RCD NC D RCD NC	MSC-2&3)). 1- ON). 2 - OFF	Y
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAG
GT-4		Fina	1	May 19, 1965					8	43

TIME	COMP	DIAT	CNTL			ACT	ION	~~~~		
HR:MIN	COMP	FLAI	MODE	COMM	IAND PILOT	Γ		PILOT		
12:00 to 16:00	OFF	OFF	DIR				A - Sleep	period		
12:00 to 12:45	OFF	OFF	DIR	A - Eat period	l		A - Sleepi	ng		
HAW AOS (12:16)	OFF	OFF	DI R	<u>R/T Tape Plybł</u>	<u>×</u>		A - Sleepi	ng		
MISSION	E	DITION]	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	ł	final		May 19, 1965					8	44

MSC FORM 1008 (REV AUG 64)

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TIME	COMP		CNTL		ACTION						
HR:MM	COMI	I LAI	MODE	COMN	IAND PILO	r l		PILOT			
D-9 Minus 15 min (12:50)	OFF	OFF	DIR	A - Prepare f EXPERIMEN measureme	or D-9 T (Star t nts with	o Horizon sextant.)	A - Sleepi	ng			
SUNRISE Minus 10 min (13:05 to 13:45)	OFF	OFF	DIR	A - Perform D Run l (See Sect	-9 EXPERI jon II fo	MENT - or details)	A – Sleepi	ng			
RKV AOS (14:12)	OFF	OFF	DI R	<u>R/T Tape P</u>	lybk		A - Sleepi	ng			
(14:50) to (15:00)	OFF	AS REQ		A - ORBIT nav RUN 1 (See Sect	igation c ion II fo	heck - r details)	A - Sleepi	ng			
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE	
GT-4		FINAL		May 19, 1965					9	Z ₄ ⁽)	

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TIME	COMP		CNTL	ACTION							
HR;MIN	COMP	PLAI	MODE	COM	MAND PILO			PILOT			
RKV AOS (15:46)	OFF	OFF	DIR	<u>R/T Tape Ply</u> A - Medical CSQ - Update tion f tasks A - Copy upd	<u>bk</u> data pass S/C with or D-6 tra ate	type 2 informa- cking	A — Sleepin	ĥ			
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE	
CT-4	F	inal		May 19, 1965	RKV				- 10	46	

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TIME	COMP		CNTL			ACT	ION			
HR:MIN	CUMP	FLAI	MODE	COMN	AND PILOT			PILOT		
16:00	OFF	OFF	DIR	A - Brief Pilo mission an Prepare th S-6 photog	t on stat d S/C. e Hasselb raphy.	us of lad for	A - Sleep for D- out PL	period 6 track ATFORM.	ends - Pr ing task	ep are with-
16:20 to 16:45	OFF	OFF	AS REQ	A - Perform D- (See Secti	б trackin on II for	g task details)	A - Perfor	m D-6 t	racking t	asks
16:45 to 17:00	OFF	OFF	AS REQ	A - S-6 Experi (Synoptic phy)	ment weather p	hotogra-				
NIGHT PASS (17:05 to 17:45)	OFF	OFF	AS REQ				A - Perfor (Celes	n D-1 H stial bo	Experiment dy photog	; raphy)
MISSION	E	DITION		DATE	STATION	AOS	LOS	ΤΟΤΑΙ		

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TIME	COMO		CNTL			ACT	ION			
HR:MIN	COMP	PLAI	MODE	COMM	AND PILO	ſ		PILOT		
SUNSET to SUNRISE (17:05 to 17:45)	OFF	OFF	AS REQ	A - Perform D- (Celestial (See Secti	l Experi Trackin on II fo	ment g Task) r details)	A - Perfor (Celes	m D-1 E tial Tr	xperiment acking Ta	sk)
RKV AOS (17:20)	OFF	OFF	AS REQ	RKV - Update I A - Copy updat)-6 track æ	ing tasks				
CYI AOS (17:43)	OFF	OFF	AS REQ	R/T Tape F	olybk					
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fin	al		May 19, 1965					11-12	48

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TIME	COMO		CNTL			ACI	TION			
HR:MIN	COMP	FLAI	MODE	COMM	AAND PILC	T		PILOT		
17:55 to 18:25	OFF	OFF	AS REQ	A - Perform D-((See Section	6 trackin on II foi	ng tasks details)	A - Perform	D-6 tra	acking ta	sks
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fj	nal		May 19, 1965					12	49

TIME	COMP		CNTL			ACT	ION			
HR:MIN			MODE	COM	AAND PILO	Γ		PILOT		
Tracking Tasks minus 1 HR	OFF	AS REQ	AS REQ	A - Warm up an forD-6 tra	d align p cking tas	latform k				
(18 20)										
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
0.00.4		Final		May 10 1065						60

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TIME	COMP		CNTL			АСТ	ION	<u> </u>		
HR:MIN	COMP	FLAI	MODE	COMN	AAND PILO	г		PILOT		
HR:MIN RKV AOS (18:54)	OFF	O₽F	MODE A 3 REQ	COMN HKV - Report I for area	AAND PILO PLA and C is 14-2 t	IA updates hru 19-4		PILOT		
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fin	al		May 19, 1965					12-13	52

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TIME	COMP		CNTL			ACT	TION		<u></u>	
HR:MIN	CUMP	FLAI	MODE	COMN	AND PILO	T		PILOT		
ANT AOS (19:05)	OFF	AS REQ	AS REQ	<u>D/T Tape</u> ANT-Update S/C for D-6 tr A - Copy update	<u>Dump</u> with inf acking ta e informa	ormation ask tion				
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final		May 19, 1965	CYI	19:16:03	19:22:43	б : 40	13	53

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TIME	COMO	CNTL				ACI	CTION				
HR:MIN		FLAI	MODE	COMN	AND PILO	Г		PILOT			
19:23 to 19:45	PRE LN	ORB RATE	PUL	A - Perform D (See Sect: Prepare fo sunset che	-6 tracki ion II fo or Horizo eck.	ng tasks r details) n Scanner	A - Perfor	m D−6 t:	racking t	asks	
5 MIN PRIOR to SUNSET (19:52)	OFF	OFF	PUL	A - Perform Ho Sunset tes Power down	orizon Sc st 1 S/C	anner	A - Stow I ment Power Bio-Me Bio-Me Exerci	0-6 trac down S/(d RCD NG d RCD NG se (M-3	king task C O. 2 - ON O. 1 - OF Experime	equip F nt)	
20:30 to 24:30	OFF	OFF	DIR	A - Sleep per:	iod						
GTI AOS (20:37)	OFF	OFF	DIR				<u>R/T</u> Ta	pe Plybl	<u>x</u>		
21:00 to 21:10	OFF	OFF	AS REQ	A - Sleeping			A - Orbit RUN 2 (See	Naviga Section	tion chec II for d	k etails	
MISSION	E	DITION		DATE	STATION	AOS	LOS TOTAL REV PAG				
GT-4	F	inal		May 19, 1965					13-14	54	

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TRAFE	COM	OL AT	CNTL	ACTION						
HR:MN		PLAI	MODE	COMN	IAND PIL	от		PILOT		
CRO AOS (21:25)	OFF	OFF	DI R	A - Sleeping			A - Medical	data pa	ss type 1	1
							CRO - Update tion f invest	e S/C wi for Apol tigation	th inform 'o Landma	na- irk
							A - Copy u	pdate		
CNV AOS (22:10)	OFF	OFF	DI R				<u>D/T Ta</u> A - Prepare investi _f	<u>ape Plyt</u> for Apo gation R	9 <u>k</u> 110 Landn UN 1	nark
22:35 to 22:40	OFF	OFF	PUL				A - Apollo I (RUN 1)	Jandmark	investi∉	gation
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final	1	May 19, 1965	CRO	21:24:18	21:32:58	8:40	17,	55

	CNTL	ACTION					
HR:MIN	MODE	COMMAND	PILOT		PILOT		
23:00 OFF OF to 23:45	F DIR	A - Sleeping		A - Eating	period		
CNV AOS OFF OF	FF OFF	A - Sleeping		<u>D/T_Ta</u> CNV - Uida Experin A - Copy uj Prepare	pe Plybk te start nent odate e for S-	. time of .6 Experim	S-5
Pass OFF OF over Africa (24:00 to 24:20)	FF AS REQ	A - Sleeping		A - S-5 Ex Terrai Section	periment n photog n II for	(Synopti graphy)(Se details)	с :е
MISSION EDIT	rion	DATE STA	TION AOS	LOS	TOTAL	REV	PAGE

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TIME	COMP		CNTL	ACTION						
HR:MIN	COMP	FLAI	MODE	COMN	AND PILO	F		PILOT		
24:30	OFF	OFF	DIR	A - Sleep perio Check S/C fo	d ends or GO/NO (A QQ	- Brief Cm mission BIO-MED BIO-MED M-3 Expe	nd Pilot and S/C RCD NO. RCD NO. eriment	on statu 1 - ON 2 - OFF (Exercise	as of
25:00 to 29:00	OFF	OFF	DIR				A — Sleep pe	eriod		
										•
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final	-	May 19, 1965					16	57

TIME	COMP		CNTL	ACTION							
HR:MIN	COMP	FLAI	MODE	COMM	IAND PILO	Г	PILOT				
GYM AOS (25:11)	OFF	OFF	DIR	A - Medical dat GYM-Update time follows: 1. SUNSET 2. NIGHT 3. SUNRISE 4. DAY	ca pass t for HF 7 - GMT - GMT - GMT - GMT	ype 2 'ests as	A - Sleepin _é	7			
25:15 to 26:00	OFF	OFF	DI R	A - Eat period			A - Sleep	ing			
CNV AOS (25:17)	OFF	OFF	DIR	<u>R/T Tape P1</u> A - GO/NO GO fo CNV - GO/NO GO If GO, up Update 18 Cmd load <u>NOTE</u> : No ired comp	<u>R/T Tape Plybk</u> A - GO/NO GO for 21-4 CNV - GO/NO GO for 21-4 If GO, up T _R for 21-4 Update 18-1 preretro Cmd load if required <u>NOTE</u> : Notify crew of requ- ired computer switching						
MISSION	ε	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE	
GT - 4	F	inal		May 19, 1965	GYM	25:10:26	25:17:08	6 : 42	16	58	

MSC FORM 1008 (REV AUG 64)

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TIME			CNTL			ACT	ION			
HR:MIN	CUMP	PLAI	MODE	COMI	MAND PILOT			PILOT		
SUNSET minus 2:30 (25:58)	OFF	OFF	HOR SCAN	A - HF Testat s (See Section	unset II or de	tails)	A - Sleeping	·		
12 min prior to CTN AOS (26:16)	OFF	OFF	HOR SCAN	A - HF Test at n (See Section	ight II for de	tails)	A - Sleeping			
SUNRISE minus 2:30 (26:38)	OFF	OFF	HOR SCAN	A - HF Test at s (See Section	unrise II for de	tails)	A - Sleeping			
CNV AOS (26:51)	OFT	OFF	HOR SCAN	<u>D/T Tape</u> A - AC PWR - IGS COMPUTER POW CNV - Transmit v	<u>Plybk</u> ER - ON ia DCS 21-	4 pre-retro	A - Sleeping			
				and load						
				A - COMPUTER - R COMPUTER - P COMPUTER PWR AC POWER - O	NTY RE LN - OFF FF					
MISSION	<u></u>	EDITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final		May 19, 1965					17	59



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TIME	COMP		CNTL		ACTION						
HR:MIN	COMP	FLAI	MODE	COMN	AND PILO	Г		PILOT			
GYM AOS (28:19)	OFF	OFF	DIR	A - Medical da	ata pass	type l	A - Sleepi	ng			
TEX:AOS (28:21)	OFF	OFF	DIR	A - <u>R/T Tape P</u> TEX - Update D & informa landmark RUN 3	<u>lybk</u> -9 Experi ation for investig	ment time Apollo ation	A – Sleepin	g			
28:30 to 28:35	OFF	OFF	PUL	A - Apollo landı RUN 2	mark inve	stigation					
MISSION	E	DITION	L	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE	
GT-4	F	ʻinal		May 19, 1965	GYM	28:18:30	28:24:49	6:19	18	61	

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PILOT A - Sleeping period ends M-3 permit (Exercise) nt iga-	PILOT	
as A - Sleeping period ends M-3 permit (Exercise) nt iga-	eeping period endr	HR:MIN
		29:00 OF

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TIME	COMP	OL AT	CNTL	ACTION						
HR:MIN	COMP	FLAI	MODE	COMM	IAND PILOT			PILOT		
10 Min prior to Sunrise (29:25 to 30:05)	OFF	OFF	AS REQ	A - Control at Experiment	titudes 1 RUN 2	°or D-9	A - Perform Run 2 measure	D-9 Ex (Star t ment wi	periment o horizon th sextan	- t)
TEX AOS (29:55)	OFF	OFF	AS REQ	<u>D/T Tape</u>	<u>Plyb</u> k					
30:05 to 30:10	OFF	OFF	PUL	A - Perform Apo investigati	ollo landr ion - RUN	nark in 3	A - Perform investi	Apollo gation -	landmark - RUN 3	
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	F	inal		May 19, 1965					19	63

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FLIGHT PLAN

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TIME	COMP		CNTL		ACTION						
HR:MIN	COMP	PLAI	MODE	Сомм	AND PILOT			PILOT			
30:10 to 30:55	OFF	OFF	DI R	A – Eat period Check S/C fo	r G0/N0 G0)	A – Eat period				
30 : 45	OFF	OFF	DI R	D / m D	1.1		A - Bio-Med RC Bio-Med RC	D NO. 2 D NO. 1	– ON – OFF		
CSQ AOS (31:06)	OFF	OFF	DI R	<u>D/T Tape P1</u> A - Give GO/NO GO	<u>y bk</u>						
				CSQ - Give GO/NO If GO, upd Update 21- required	GO ate T _R for 4 pre-retr	r 33-1 ro and load if					
31:10 to 35:00	OF∵	OFF	DI R	A - Sleep period			A - Prepare for	S-6 Exp	eriment		
31:20 to 31:30	OFF	OFF	A.S REQ	A - Sleeping			A - Perform S-6 (Synoptic w (See Sectio	Experim eather pi n II for	ent hotography details))	
MISSION			I	DATE	STATION	405	1 105	τοται	BEV	PAGE	
GT-4	F	inal		May 19, 1965					20	64	

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TIME	COMP		CNTL				AC	TION		<u></u>	
HR:MIN	COMP	FLAI	MODE	COMN	AND	PILO	Г		PILOT		
GYM AOS (31:27)	OFF	OFF	DIR	A - Sleeping				GYM-Update	start o	f D-8 exp	eriment
								А — Сору ц	pdate		
31:35 to 31:45	OFF	OFF	AS REQ	A - Sleeping				A - Perfor check (See S	m Orbit - RUN 3 ection	Navigati II for de	on tails)
MISSION	Ē	DITION		DATE	STAT	TION	AOS	LOS	TOTAL	REV	PAGE
GT -4		Final	-	May 19, 1965	GY	СM	31: 26:16	31:31:43	5 : 27	20	65
TIME	COM0		CNTL			ACT	ION				
---	----------	--------	------	--------------	-----------	-----	---	--	--	--------------	
HR:MIN	COMP	PLAI	MODE	COMM	IAND PILO	г		PILOT			
Prior to pass thr S. A. Anomaly (31:40)	OFF 1	OFF	DIR	A - Sleeping			A - MSC 2 & SPT-MAC be left thru th Anomaly	& 3 Expe G = ON (t on for ne South 7)	riment MSC 2 & 3 three pa America	will sses	
At start of S.A. Anomaly (31:45)	OFF	OFF	DIR	A — Sleeping			A - Perfor (Radia	n D-8 Ex tion mea	periment surement)		
MISSION	E	DITION	l	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE	
GT-4		Final		May 19, 1965					21	66	

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TIME	coup	01.47	CNTL			ACT	10 N			
HR:MIN	CUMP	PLAI	MODE	COMM	AND PILOT			PILOT		
HAW AOS (32:50)	OFF	OFF	DIR	A - Sleeping			<u>R/T Tape P</u> A - Power up c HAW - Update 3	<u>lyb</u> k omputer 3-1 pre-	retro & lo	ad
							A - COMPUTER - COMPUTER - Power down	RNTY PRE LN S/C		
							HAW - Update s Experime	tart tim nt	e of D-8	
							A - Copy updat Prepare fo	e r S-6 Ex	periment	
33:00 to 33:10	OFF	OFF	AS REQ	A — Sleeping			A - Perform S- (Synoptic graphy) (S	6 Experi weather ee Secti	ment photo- on II for	
RKV AOS (33:11)	OFF	OFF	DI R	A – Sleeping			A - Medical da	ta pass	type l	
33:15 to 33:50	OFF	OFF ·	AS REQ	A - Sleeping			A - ES SENSOR Control S/	– ON (MS ′C BEF	C -l Exper)
MISSION		DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	1	Final		May 19, 1965					21	67

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FLIGHT PLAN

TIME	COMP		CNTL			ACT	ION			
HR;MIN	COMP	r LAI	MODE	COMN	AAND PILO	Г		PILOT		
Start of S.A. Anomaly (33:20)	OFF	OFF	DIR	A — Sleeping			A - Perform (Radiat	1 D-8 Ex ion mea	periment surement)	
33:50	OFF	OFF	DI R	A - Sleeping			A – ES SEN	SOR - 01	FF (MSC-1	Exp)
HAW AOS (34:23)	OFF	OFF	DI R	A - Sleeping			<u>D/T T</u>	ape Ply	<u>bk</u>	
MISSION GT-4	E	DITION		DATE May 19, 1965	STATION	AOS	LOS	TOTAL	REV 22	PAGE

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TIME		_	CNTL			AC	TION			
HR:MIN	COMP	PLAT	MODE	COMN	AND PILOT	•		PILOT		
34:30 to 34:40	OFF	OFF	AS REQ	A – Sleeping			A - Perform S- (Snyoptic w graphy)	6 Experin eather pl	ment hoto-	
34:40 to 35:25	OFF	OFF	DI R	A - Sleeping			A - Eat Period			
MISSION		EDITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	F	inal		May 19, 1965					22	69

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TIME	COMP		CNTL			ACT	ION	<u> </u>		
HR;MN	COMP	FLAI	MODE	COMM	AND PILO	r		PILOT		
35:00	OFF	OFF	DIR	A - Sleep per	iod ends		A - Brief of th	Cmd Pilc e mission	t on the and S/C	status
35:25	OFF	OFF	DIR				A - SPT - Exper Bio-M	MAG - OF iments) ed RCD NC	F - (MSC)	2 & 3
35:30 to 39:30	OFF	OFF	DIR				A - Sleep	period		
CSQ AOS (35:48)	OFF	OFF	DIR	CSQ - Report for Are A - Copy upda	PLA & CLA as 25-3 t te	u Updates Shru 29-2	A - Sleep	ing		
36:00 to 36:45	OFF	OFF	DIR	A - Eat perio	d		A - Sleep	ing		
RKV AOS (36:19)	OFF	OFF	DIR	D/T Tape	Plybk_		A - Sleer	ing		
MISSION	E	DITION	I	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fi	nal		May 19, 1965					23	70

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TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	(LA)	MODE	COMM	IAND PILO	г]		PILOT		
36:55 to 37:05	OFF	OFF	AS REQ	A - Orbit Navi RUN 4 (See Secti	igation cl ion II fo:	heck r details)	A - Sleep	ing		
RKV AOS (37:54)	OFF	OFF	DIR	A - Medical da Prepare th S-6 Experi	ata pass ne Hassell iment.	type 2 blad for	A - Sleep	ing		
ASC AOS (38:11)	OFF	OFF	DIR	<u>D/T Tape H</u> ASC - Update S tion for	Plybk S/C with r D-6 tra	informa- cking task	A - Sleep	ing		
				A - Copy updat	се					
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fin	al		May 19, 1965					23	71

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TIME	COMP		CNTL		· · · · · · · · · · · · · · · · · · ·	ACT	TION			
HR:MIN	COMP	FLAI	MODE	COMI	MAND PILOT			PILOT		
40:00 to 40:25	OFF	OFF	AS REQ	A - Perform D-6 '	Tracking T	asks	A - Perform D- (See Secti Stow D-6 E	6 Tracki on II fo quipment	ng Tasks pr details))
40:35 to 41:20	OFF	OFF	DIR	A — Eat period			A – Eat period			
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	I	rinal		May 19, 1965					2Ġ	73

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TIME	0040		CNTL			ACT	ION			
HR:MIN	COMP	PLAI	MODE	COMM	AAND PILOT			PILOT		
RKV AOS (41:00)	OFF	OFF	DI R				A - Medical dat	a pass t	уре 1	
CYI AOS (41:24)	OFF	ባም	DI R	D/T Ta	pe Plybk					
MISSION		EDITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
	'							TOTAL		
G""-4	F'i	nal		May 19, 1905					240	(4

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TIME			CNTL			ACT	10N			
HR: MIN	COMP	PLAI	MODE	СОММ	AND PILOT			PILOT		
41:30	OFF	OFT	DI R				A - Bio-Med RC	D NO. 1	OFF	
41:40 to 45:40	OFF	OFF	DI R	A - Sleep Period			A - Prepare the for S-5 & 6	e Hassel 6 Experi	blad camer ments	a
ANT AOS (42:46)	OFF	OFF	DI R	A - Sleeping			<u>D/Т Тар</u>	e Plybk		
43:00 to 43:10	OFF	OFŦ	A S REQ	A - Sleeping			A - Perform S- (Synoptic (See Secti	6 Experi weather on II fo	ment photograph r details)	y)
MISSION		EDITION	1	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final		May 19, 1965					27/28	75

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TIME	COMP		CNTL			AC	TION						
HR:MIN	COMP	PLAI	MODE	COMN	AND PILO	Т		PILOT					
Pass over Arabian Penin- sula (43:10 to 43:15)	OFF	OFF'	DI R	A – Sleeping			A - Perform S (Synoptic of Arabian (See Sectio	-5 Exper terrain n penins on II for	iment photograp ula) r details)	hy			
CRO AOS (43:33)	OFF	OFF	DI R	A – Sleeping			CRO - Report I areas 30 A - Copy upda	PLA & CL D-1 thru te	A Updates 1 34-4	for			
44 : 15	OFF	OFF	DI R	A - Sleeping			A - Prepare for S-6 Experiment						
ANT AOS (44:18)	OFF	OFF	DI R	A - Sleeping			<u>D/T Ta</u> ANT - Update S transla transla perigee	a <u>pe Plyb</u> S/C with tion 2A a tion 2B a	$\frac{\Delta}{\Delta} V$ and Grat 3C Apoles Apoles the next	4T for zee & t			
44:25 to 44:35	OFF	OFF	A S REQ	A - Sleeping			A - Perform S (Synoptic (See Sect	-6 Experi weather ion 11 fe	lment photograph pr details	1y)			
45:00 to 45:45	OFF	OFF	DI R	A - Sleeping			A - Eat Period	ł					
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE			
GT-4		Final		May 19, 1965					28/29	76			

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TIME			CNTL			ACT	10 N		<u></u>	<u> </u>
HR: MIN	COMP	PLAT	MODE	СОММ	AND PILOT		······································	PILOT		
CRO AOS (45:05)	OFT	OFF	DI R				CRO - Update S/ D-6 track A - Copy update Prepare for	/C with : king tasl	inf ormatio r ks acking task	1 for
							A - Eat period		douting own	
45 : 40	OFF	OFF	DIR	A - Sleep Period (ends					
CNV AOS (45:50)	OFF	OFF	DIR		A - Medical data pass type l <u>D/T Tape Plybk</u>					
GBI AOS (45:51)	OFF	OFF	AS REQ	<u>D/T Tape Plybk</u>						
45:55 to 46:20	OFF	OFF	AS REQ	A - Perform D-6 t	racking ta	asks	A - Perform D-(6 tracki	ng tasks	
MISSION	 			DATE	STATION	105		TOTAL	0514	DAGE
MISSION	<u> </u>]	DATE	STATION	A03	1 105	TOTAL	REV	PAGE
GT-4		Fina	1	May 19, 1965					29	77

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TIME	COMP		CNTL		ACTION COMMAND PILOT PILOT							
HR:MIN	COMP	PLAI	MODE		COMM	PILOT						
l HR prior to trans. 2A (45:48)	OFF	AS RFQ	AS REQ	A -	Power up an for transla tasks. ES SENSOR - Experin	d align p tions and ON (MSC-	platform d tracking -l					
30th APOGEE (46:48)	CTCH UP	ORB RATE	RATE CMD	A -	Perform tra (See Sectio	nslation n II for	2A details)					
Moonset minus 5 min (46:53)	PRE LN	ORB RATE	DIR	A -	Perform Hor moon check for details	izon Scar (See Sect)	mer tion 1I					
15 min after Trans. 2A (47:03)	CTCH UP	ORB RATE	DIR	A –	- Perform Translational System Check No. 1 (See Section II for details)							
MISSION	E	DITION		DATE STATION AOS			AOS	ι Γ ι	.0\$	TOTAL	REV	PAGE
GT-4		Final		May 19, 1965							30	78

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TIME	COMP	DIAT	CNTL		<u></u>	ACT	ION			
HR:MIN	COMP	FLAI	MODE	COM	MAND PILO	r		PILOT		
5 min after Trans. System Check No.1 (47:08)	СТСН UP	ORB RAT	DIR	A - Perform T Systems C (See Sect	ranslatio Heck No. ion 11 fc	nal 2 m details)				
5 min after Trans. System Check No. 2 (47:13)	CTCH UP	ORB RAT	DIR E	A - Perform T Systems ((See Sect	°ranslatic Check No. .ion 11 fc	nal 3 or details)				
47:13 to 47:23	OFF	ORB RATE	PUL	A - Align Plat for Transl	form BEF ation No.	2B				
MISSION	E	DITION		DATE	STATION	A05	105	TOTAL	PEV	BACE
GT4		Final		May 19, 1965					30	79

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FLIGHT PLAN

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TIME	COMP		CNTL	ACTION COMMAND PILOT PILOT								
HR:MIN	COMP	-	MODE	COMN	AAND PILO	т		PILOT				
TEX AOS (47:20)	OFF	ORB RATE	DIR	<pre>GYM - Update the following: 1. GMT of translation No. 2B 2. ▲V of translation No. 2B 3. Tracking task pass over Africa A - Copy update information</pre>								
CNV AOS (47:24)	PRE LN	ORB RATE	DIR	A - Perform Hor Thruster Pl Section II CNV - Give S/C for COUNT Translati	ybk izon Sca lume chec for deta event tin down to lon No. 2	nner k (See ils) me setting 00:00 at B						
				NV - Give mark to start event timer count down								
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE		
GT-4	Fii	nal		May 19, 1965	TEX	47:29:10	47:26:53	6:43	30	80		

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TIME	COMP	DIAT	CNTL	NTL ACTION						
HR:MIN		FLAI	MODE	COMM	IAND PILO	r		PILOT		
31st PERIGEE (47:33)	CTCH UP	ORB RATE	RATE CMD	A - Perform t: (See Sect details)	ranslatio ion II fo	n No.2B Pr				
Pass Over Africa (47:40 to 48:00)	PRE LN	ORB RATE	AS REQ	A – Perform D (See Secti	-6 tracki on II for	ng tasks details)	A - Perfor (See S	m D-6 t ection	racking t II for de	asks tails)
After track- ing task (48:00 to 48:15)	PRE LN	ORB RATE	DIR	A - Perform h Track Che for detai	orizon sc ck (see S ls)	anner ection II				
MISSION		DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final	-	May 19, 1965					31	81

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TIME	C 0140		CNTL			ACT	TION			
HR:MIN	COMP	PLAI	MODE	COMM	AND PILOT			PILOT		
48:15 to 51:45	OFF	OFF	DI R	A - Check S/C sys	tems for (GO/NO GO	A - Sleep perio	bd		
48:15 to 48:50	OFF	OFF	- D IR	A - Eat period Prepare Hasse for S-5 & S-6	lblad cam Experiment	era nt	A - Sleeping			
Pass over U.S. (48:50 to 49:00)	OFF	OFF	A S REQ	A - Perform S-5 E Synoptic terr (See Section	Experiment ain photo II for de	graphy) tails)				
CNV AOS (48:57)	OFF	OFF	AS REQ	D/T TAPE PL A - Give GO/NO GC CNV - Give GO/NO If GO, upda If required load for 33	$\frac{\text{YBK}}{\text{for } 36-4}$ GO for 36- ite T _R for l update p: 3-1.	-4 36-4 re-retro Cind				
49:15 to 49:25	OFF	OFF	AS REQ	A - Perform S-6 E (Synoptic wea (See Section	Experiment ther phot II for de	ography) tails)				•
MISSION	 ,	EDITION	.	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	F	inal		5-19-65					31	82

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FLIGHT PLAN

TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	FLAI	MODE	COMN	IAND PILO	r i		PILOT		
After SCANNER Check (48:15 to '48:20)	PRE LN	ORB RATE	DIR	A - Perform Al thruster : (See Sect:	TTITUDE failure c ion II fo	heck. r details)				
After thruster check (48:15)	OFF	OFF	DIR	A – PWR DOWN S	s/c.		A - PWR DC ES SEN Experi BIO-ME <u>NOTE</u> : will b durati until	WN S/C SOR - O ment) D RCD N Both B e left on of t egress.	FF (MSC-1 O. 1 - ON io-Med red on for the he mission	corder: ∋ 1 and
MISSION	Ē	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final		5-19-65					31	83

TIME	COMP		CNTL										
HR;MIN	COMI	FLAI	MODE	COMN	COMMAND PILOT PILOT								
50:20 to 50:30	OFF	OFF	DIR As Req.	A - Medical da CRO - Update tion for tasks & Apollo A - Copy updat A - Perform o check - Ru II for deta	ata pass S/C with D-6 tra start tin 4 experin te arbit navi an 5 (See ils)	type 2 informa- cking me D-9 ment. igation Section	A - Sleepir	ng					
MISSION				DATE	STATION	405		TOTAL	Dev.				
NIJJION	E			UATE	STATION	AU5	LUS	TOTAL	REV	PAGE			
GT-4	I	final		5-19-65	GRO	49:47:0 2	49:54:45	7:43	32	84			

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TIME			CNTL			A	CTION			
HR:MIN	COMP	PLAT	MODE	COI	MAND PILO	г	1	PILOT		
CNV AOS (50:31)	ОFF	OFF	DI R	<u>R/T Tape P</u> CNV - Update pr 36-4 (Not computer	lybk e-retro Cmd ify crew of switching	l load for required	A - Sleepin	g		
CRO AOS (51:20)	OFF	OFF	DI R	<u>D/T Tape P</u> CRO - Report PL areas 35- A - Copy update	<u>lybk</u> A & CLA Upd 4 thru 39-3	lates for 3.	A - Sleeping	ž		
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	I	Final		5-19-65	CRO	51:20:28	51:28:20	7:52	33	85

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FLIGHT PLAN

TIME	COMP		CNTL								
HR:MIN	COMP	FLAI	MODE	COMN	AND PILO	F		PILOT			
51:45	OFF	OFF	DIR	A - Brief Pil the missi	ot on sta on and Sy	tus of ′C	A - Sleep Prepar	period G e for t	ends racking t	asks	
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE	
GT-4		Final		5-19-65					33	86	

TIME		0.0-	CNTL			ACT	10N		1	<u></u>
HR:MIN	COMP	PLAT	MODE	COMM	AND PILOT	-		PILOT		
Pass over U.S. (52:00 to 52:20)	OFF	OFF	AS REQ	A - Perform D-6 Section II fo	tracking t or details	tasks (See s)	A - Perform D (See D-6 f Stow track Prepare ment	-6 track for deta king equ for D-9	ing tasks ils) ipment Apollo 4 e	experi-
52 : 30	OFF	OFF	DIR				A - M-3 Exper (exercise)	iment)		
SUNSET (52:35 to 53:05)	OFF	OFF	AS	A - Control S/C - for Apollo 3	to inertia measureme	al attitudes ents	A - Perform Ap Star - Sta	oollo 4 ar sextan	nt measurer	nents
CSQ AOS (53:11)	OFF	OFF	DIR	<u>D/T Tape P</u> A - Medical data	<u>lybk</u> pass type	÷ 1				
MISSION	ε	DITION	L	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final		5-19-65					33/34	87

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TIME			CNTL								
HR: MIN	COMP	PLAI	MODE	COMN	AND PILOT			PILOT			
HAW AOS (53:21)	OFF	OFF	DI R				GYM - Update S tion for & start	5/C with r D-6 tra time of	informa- oking tasl D-9	¢s	
Pass over Mexico and S.A. (53:35 to 53:55)	OFF	OFF	DI R	A - Perform D-6	t r acking r	rasks	A Perform D Stow D-6	-6 tracki tracking	ng tasks, equipment	then:	
53:55 to 54:30	OFF	OFF	DIR	A - Eat period			A - Eat perio	Ì			
54:15	OFF	OFF	DI R				A – Check S/C Stow trac Prepare f RUN 3	for GO/N king task or D-9 ex	10 GO c equipmen cperiment	t	
MISSION		DITION	A	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE	
GT-4		Final		5-19-65	G YM	53:31:01	53:37:57	6 : 50	34/35	88	

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FLIGHT PLAN

TIME	CO140	01 AT	CNTL							
HR:MIN	COMP	PLAI	MODE	COMM	AND PILC	τ		PILOT		
10 MIN PRIOR to SUNRISE (54:35 to 55:15)	OFF	OFF	DIR	A - Sleeping			A - D-9 ex (Star ment	perimen to Hori with se	t - RUN 3 zon measu xtant)	re-
54:30 to 58:30 CSQ AOS (54:44)	OFF	OFF	DIR	A - Sleep per: A - Sleeping	iod		<u>D/T 1</u> A - GO/NO	ape Ply GO for	bk 48-1	
							CSQ - GO/N If C 48 If r retr (Not comp	10 GO fo 10, Upda required to Cmd 1 tify S/C puter sw	r 48-1 te T _R for , update .oad for 3 of requi ritching)	pre- 6-4 red
MISSION	E	DITION	L	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	F:	inal		May 19, 1965						89

TIME	COMP	01 AT	CNTL			ACT	ION			
HR;MIN	COMP	PLAI	MODE	COMM	IAND PILO	r		PILOT		
Prior to S.A. Anomaly (55:15)	OFF	OFF	DIR	A - Sleeping			A - SPT-M EXPEF MSC-2 3 pass Atlant	AG-ON AIMENT NOTE & 3 will es thro ic Anon	(MSC-28) be left o ugh the So aly	x3 n for outh
55:15 to 55:25	OFF	OFF	As Req.	A - Sleeping			A - Perfor check Section	m orbit - RUN h II for	navigatio 6 (See details)	n
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	3619
GT-4	F	inal		5-19-65						

MSC FORM 1008 (REV AUG 64)

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TIME	COMP		CNTL			ACT	CTION						
HR:MIN	COMP	FLAI	MODE	COMM	IAND PILO	Г		PILOT					
HAW AOS (56:28)	OFF	OFF	DIR	A - Sleeping			<u>R/T</u> A - Medica Prepa	<u>Fape Ply</u> al data re for S	<u>bk</u> pass type -6 Experi	e 1 ment			
							HAW - Tran Pre- <u>NOTE</u> requ	smit 48 retro Cm : Notif ired com	d load y S/C of puter swi	tching			
56:35 to 56:45	OFF	OFF	AS REQ				A - Perfor (Synop graphy detail	m S-6 Ex tic weat) (See S s)	periment ther photo Section II	o- I for			
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE			
GT-4	Final			5-19-65	HAW	56:27:53	56:33:08	6:15	36	9]			

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TIME	COMP		CNTL	ACTION						
HR:MIN	COMP	FLAI	MODE	COMM	IAND PILO	r i i		PILOT		
57: 15 to 58:00	OFF	OFF	DI R	A - Sleeping			A - Eat per Prepare D/T T	iod for S-(6 Experime	ent
(58:01)	OFF	OFF	AS				A - Perform	S-6 Exp	periment	
to 58:20			REQ				(Synopt graphy) details	ic weat (See Se)	her photo ection II	for
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fi	nal		5-19-65					37	-92

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TIME			CNTL		<u></u>	ACT	ION			
HR:MIN	COMP	PLAI	MODE	COMM	IAND PILOT			PILOT		
58 : 30	OFF	OFF	DIR	A - Sleep period	ends		A - Brief CMD P status of t	ilot on he S/C ਬ	the nd Missior	I
58 : 55	OFF	OFF	DI R				A - SPT - MAG - Experiment)	OFF (MS	SC - 2 & 3	
59:00 to 63:00	OFF	OFF	DI R				A - Sleep Perio	d		
59:00 to 59:45	OFF	OFF	DI R	A - Eat period			A - Sleeping			
CSQ AOS (59:26)	OFF	OFF	DI R	CSQ - Report CLA 40-3 thru 4 A - Copy update	& PLA Upd 44-2	ate for	A - Sleeping			
MISSION	<u> </u>	EDITION	L	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Fina	1	5-19-65					38	93

TIME	COMP		CNTL		ACTION							
HR:MIN	COMP		MODE	COMM	IAND PILO	Г		PILOT				
RKV AOS (59:51)	OFF	OFF	AS REQ	<u>D/T Tap</u> A - Medical da	e Plybk ta pass t	ype 2	A - Sleeping					
RKV AOS (61:31)	OFF	OFF	DIR	D/T Tap	e Plybk		A - Sleepir	ıg				
62:05 to 62:15	OFF	OFF	AS REQ	A - Perform of check - RU II for detai	rbit navi JN 7 (See ls)	gation Section	A - Sleeping					
63:00	OFF	OFF	DIR	A - Brief Pilot the S/C an	on the s d Missic	tatus of on	A - Sleep period ends Prepare for tracking tasks					
RKV AOS (63:05)	OFF	OFF	DIR	D/T Tap RKV - Update S tion for tasks A - Copy updat	D/T Tape Plybk RKV - Update S/C with informa- tion for D-6 tracking tasks A - Copy update information							
MISSION	E	DITION		DATE	DATE STATION AOS			TOTAL	REV	PAGE		
GT-4	F	Inal		5-19-65						94		

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FLIGHT PLAN

TIME	c040	01.47	CNTL			ACT	ION			
HR:MIN	COMP	PLAI	MODE	COMM	AND PILO	г		PILOT		
l0 min after SUNRISE (63:40 to 64:05)	OFF	OFF	AS REQ	A - Perform 'l	D-6 track	ing tasks	A – Perfor	m. D6	tracking	tasks
SUNSET to SUNRISE (64:15 to 64:55)	OFF	OFF	AS REQ	A - Perform D (Celestia (See Sect	-1 EXPER] l trackir ion II fo	IMENT ng task) or details)				
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Fina	1	5-19-65					41	95

TIME	CO115	-	CNTL			ACT	ION			
HR:MIN	COMP	PLAI	MODE	COM	MAND PILOT			PILOT		
RKV AOS (64:38)	OFF	OFF	AS REQ	<u>D/T Ta</u> RKV - Update S/C D-6 tracki	MAND PILOT pe Plybk with info ng tasks	rmation for		PILOT		
MISSION		EDITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final		5-19-65					41	96

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FLIGHT PLAN

TIME	COMP		CNTL	NTL ACTION							
HR:MIN	COMP	PLAI	MODE	COMN	AAND PILOT	r		PILOT			
10 min after SUNRISE (65:10 to 65:45)	OFF	OFF	AS REQ	A - Perform t Section]	tracking f II for de	tasks (see tails)	A - Perfo Secti Stow ment	rm trach on II fo tracking	king tasks or details g task e qu	s (see 5) lip-	
MISSION	E	DITION)	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE	
GT-4	Fi	nal		5-19-65					42	98	

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TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	I LAI	MODE	COMN	IAND PILO	r		PILOT		
65:45 to 66:30	OFF	OFF	DIR	A - Eat period	1		A - Eat pe	riod		
66:30 to 70:15	OFF	OFF	DIR	A - Sleep peri	iod					
CYI AOS (66:33)	OFF	OFF	DIR	A - Sleeping			CYI <mark>- R</mark> epo for	pe play rt PLA areas ¹ 4	<u>back</u> and CLA uj 5-1 thru ¹	odates +9-4
66:40 to 67:00	OFF	OFF	AS REQ	A - Sleeping			A - Perfor (Synop graphy	m S-6 E tic wea)	xperiment ther photo)-
CRO AOS (67:09)	OFF	OFF	DIR	A - Sleeping			CRO - Upda 10 e A - Copy u Prepar experi	te star xperime pdate e for M ment	t time of nt SC-10	MSC -
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fi	nal		May 19, 1965					41/42/43 44	99

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FLIGHT PLAN

TIME	COMP	DIAT	CNTL	ACTION						
HR:MIN	COMP	PLAI	MODE	COMM	AND PILO	Г		PILOT		
5 MIN	OFF	OFF	HOR				A - Perfor	m MSC	-10 expe	iment
PRIOR			CAN				(Earth	-limb p	hotograpł	ny)
ТО							•	•	0.	
SUNRISE										
ТО										
SUNSET										
67:47										
to										
68:32)										
GTI AOS	OFF	OFF	DIR				D/T Tape	playbac	k:	
(67:53)							1			1
GBT AOS	OFF	OFF	DIR				D/T Tape	playbac	k	
(69:25)										
l hr	OFF	AS	AS				A - Power	up and	align pla	tform
prior to		REQ	REQ				BEF	-	•••	
Trans										
3A										
(69:25)										
MISSION	E	DITION	l	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fi	nal		5-19-65	СҮІ	69:39:57	69:46:30	6:33	45	100

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FLIGHT PLAN

TIME	COMP		CNTL	ACTION							
HR;MIN	COMP	FLAI	MODE	COM	MAND	PILO	Г		PILOT		
69:30 to 70:15	OFF	OFF	DIR	A - Sleeping	MAND	PILO	Ţ	A - Eat pe	PILOT		
MISSION	E	DITION		DATE	STA	TION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fi	nal		5-19-65	C	YI				45	101
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TIME	COMP	DI AT	CNTL			ACI	TION			
HR:MIN	COMP	FLAI	MODE	COMN	IAND PILO	ſ		PILOT		
CYI AOS (69:40)	OFF	AS REQ	AS REQ	A - Sleeping			CYI - Updat follo 1. GM 2. V 3. 1 A - Start C update	es tran ws: T of tr ' of tra ' to tra MT stop	slation 3 anslation nslation nslation watch an	A as d copy
							ES SENS	OR - ON		
70:15	OFF	AS REQ	AS REQ	A - Sleep peri	od ends		A - Brief C of the	MD Pilo S/C and	t on the mission.	status
45th APOGEE (70:26)	CTCH UP	ORB RATE	RATE CMD	A - Perform Tr: (See Section	anslation on II for	3A details)				
70:30 to 72:00	OFF	ORB RATE	HOR SCAN				A - Eat per	iod as	time allo	₩S
MISSION	Ε	DITION	1	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	F	`inal		5-19-65					46	102

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TIME			CNTL			ACT	ON			
HR:MIN	COMP	FLAI	MODE	COMI	MAND PILO	r		PILOT		
GYM AOS (70:53)	OFF	OR B RATE	HOR SCAN	GYM - Update follows 1. A T to 2. A V of Give ma timer o 00:00 a tion. A - Start Even	Franslatic translat f translat rk to sta ounting d t time of t Timer c	on 3B as tion tion rt event own to transla- ounting				
TEX AOS (70:55)	OFF	ORB RATE	HOR SCAN	down at ma	rk.		A — Medica	al data -	pass type	1
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	F	'inal		5-19-65	GYM	70:52:16	70:58:18	6:02	46	103

TIME	CON0		CNTL			ACI	TION			
HR:MIN	COMP	PLAT	MODE	COMN	AAND PILO	r		PILOT		
CNV AOS (70:59)	OFF	AS REQ	A3 REQ	<u>D/T Tap</u> CNV - Update S/C for D-6 tr Africa A - Copy update	<u>e Plybk</u> with info acking tas informat:	ormation sks over ion		PILOI		
MISSION GT-4	E	DITION 'inal		DATE 5-19-65	STATION	AOS	LOS	TOTAL	REV	PAGE 104

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TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	FLAI	MODE	COMN	IAND PILO	r		PILOT		
73:57 to 74:03	OFF	OFF	PUL	A - Apollo lan tion RUN 4	dm ark i n 1	vestiga-	A - Sleepin	g		
CNV AOS (74:05)	OFF	OFF	DIR	D/T Tape CNV - Update p for 51-4 <u>NOTE</u> : required switchin	Plybk ore-retro Notify cr d comput	o cmd load rew of er	A - Sleepin	g		
CRO AOS (74:55)	OFF	OFF	DIR	CRO - Report t updates through A - Copy updat	the PLA for Runn 54-3 e	& CLA 3 50-4	A - Sleepin	g		
75:28 to 75:38	OFF	OFF	AS REQ	A - Perform o check RUN for details)	rbit navi 9 (Se e Se	gation ection II				
GTI AOS (75:41)	OFF	OFF	DIR	D/T Tape	Plybk		A - Sleepir	ıg		
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT -4	Fi	nal		5-19-65					48	105

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TIME			CNTL	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		ACT	TION			
HR:MIN	COMP	PLAI	MODE	Сомм	AND PILOT			PILOT		
l5 min prior to Trans. 4B (71:00)	OFF	AS REQ	AS REQ	A - Prepare for 1	franslatio	m 3B	A — Prepare for over Africa	D-6 trac	eking tasks	5
BDA AOS (71:02)	OFF	AS REQ	AS REQ	<u>D/T Tape P</u>	<u>lybk</u>					
46th Perigee (71:10)	CTCH UP	ORB RATE	RATE CMD	A - Perform Tran (See Section	nslation 3 n Il for d	B etails)				
Pass over Africa (71:15 to 71:35)	PRE LN	ORB RATE	A S REQ	A - Perform D-6 t Africa (See S details)	tracking t Section II	asks over for	A - Pertorm D-6 Africa (See	- trackir - Sectior	ng tasks ov n II for de	ver etails)
After Tracking Tasks (71:35) to (71:50)	OFF	OFF	AS REQ			Apollo yaw or check in day for details)	ientation (See Section 11			
MISSION		DITION	L	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final	-	5-19-65	-				46/42	10Ğ

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TIME	COMP		CNTL			ACT	ION			
HR:MIN	CUMP	PLAI	MODE	COMM	IAND PILO	r		PILOT		
71:50	OFF	OFF	DIR	A - Power dow Check S/C	n S/C for GO/	NO GO	A - Power ES SEN experi Stow t	down S ISOR - ment) racking	/C OFF (MS equipme	SC-1 nt
72:00 to 76:00	OFF	OFF	DIR				A - Sleep p	beriod		
72:00 to 72:45	OFF	OFF	DIR	A - Eat period			A - Sleepin	ng		
GYM AOS (72:25)	OFF	OFF	DIR	A - Medical da	ita pass f	ype 2	A - Sleepir	ng		
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fir	nal		5-19-65						107

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TIME	COMP	DI AT	CNTL		ACTION COMMAND PILOT PILOT						
HR:MIN	COMP	PLAI	MODE	COMM	IAND PILO	r		PILOT			
CNV AOS (72:32)	OFF	OFF	DIR	D/T Tape A - GO/NO GO	Plybk for 51-4	4	A - Sleepir	g			
				If GO, 1 51-4 If requi pre-ret: <u>NOTE:</u> N required switchin	GO for 5 update T red, upd ro Cmd I Notify cr l comput g	R ^{for} ate 48-1 oad ew of er					
72:55 to 73:05	OFF	off	AS REQ	A - Perform o check - RU II for detai	rbit navi IN 8 (See ls	gation Section	A - Sleepir	ıg			
CRO AOS	OFF	OFF	DIR	CRO - Update tion for investig	S/C with Apollo 1 ation RU	informa- andmark 'N 4	A - Sleepir	ng			
				A - Copy updat	e						
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE	
GT-4	F	inal		5-19-65					108		

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TIME	COMP	DIAT	CNTL			ACT	ION			
HR:MN	CUMP	FLAI	MODE	COMA	MAND PILO	r		PILOT		
76:00	OFF	OFF	DIR	A - Brief Pil the Missi	lot on sta lon and Sy	tus of ′C	A - Sleep	period	ends	
76:30	OFF	OFF	DIR				A - M-3 E (exer	XPERIMEN cise)	VT	
MISSION	ε	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT -L	H	Fina	1	5-19-65					49	109

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TIME			CNTL			ACT	ION			
HR: MIN	COMP	PLAT	MODE	COMN	AAND PILOT			PILOT		
HR:MIN TEX AOS (77:08)	OFF	OFF	MODE DI R	<u>D/T Tape</u> A - Medical data	<u>Plybk</u> pass type	1	TEX - Update st experimen (Star-to- with sext A - Copy update	PILOT art time t - RUN Horizon ant) informa	tion	ıts
MISSION		EDITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final		5-19-65					49	110

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TIME	0040	DI AT	CNTL			ACT	ION			
HR: MIN	COMP	FLAI	MODE	COMM	AND PILOT			PILOT		
20 min prior to SUNSET (77:20 to 7 8: 00)	OFF	OFF	AS REQ	A - Control Attit Experiments	udes for	D-9	A - Perform D-9 (Star-to-Ho with sextar	experim prizon me t)	nent - RUN easurements	4
After D-9 (78:00 to 78:45)	OFF	OFF	DIR	A - Eat period			A - Eat period			
CSQ AOS (78:18)	OFF	OFF	DI R	A - GO/NO GO for CSQ - GO/NO GO for If go, upda If required load for 51 <u>NOTE</u> : Notif computer sw	63-1 or 63-1 ate T _R for 1,update p L-4 Yy S/C of yitching	63-1 re-retro cmd required				
HAW AOS (78:29)	OFF	OFF	DŢR				<u>D/T Tape Ply</u> HAW - Update S/ Apollo la RUN 5 A - Copy updat Prepare fo RUN 5	<u>rbk</u> ⁄C with i undmark i e r Apollo	nformation nvestigati landmark	n for ion
MISSION		EDITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	1	Final		5-19-65					40	111

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TIME	COMP		CNTL			ACT	TION			
HR;MIN		FLAI	MODE	COMM	IAND PILO	Г		PILOT		
78:45 to 78:55	OFF	OFF	DIR				A - SPT - (MSC - Perfor check II for	MAG - OI 2 & 3) m orbit RUN 10 (details	N navigatio (See Sections)	on I on
78:45 to 82:45	OFF	OFF	DIR	A - Sleep peri	od					
78:55 to 79:00	OFF	OFF	DIR	A - Sleeping			A - Perfor invest	n Apollo igation) landmark - RUN 5	
80:00 to 80:30	OFT	OFF	AS REQ	A - Sleeping			A - S-6 ex weathe	periment r photog	t (Synopti graphy)	.c
MISSION	E	DITION	L	DATE	STATION	AOS	1.05	TOTAL	REV	PAGE
	<u> </u>									
GT-4	Fii Fii	nal		May 19, 1965				ļ	50	112

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TIME.	COMP		CNTL			ACI	ION			
IR:MIN			MODE	COMM	IAND PIL	от		PILOT		
HAW AOS (80:01)	OFF	OFF	DI R				<u>D/T Ta</u> HAW - Upda cmd <u>NOTE</u> requ	pe Plybl te the (load : Notif	53-1 pre-r y S/C of	etro tchin
HAW AOS (81:35)	OFF	OFF	DIR	A - Sleeping			D A - Medica	<u>/T Tape</u> l data p	<u>Plybk</u> bass type	1
82:00 to 82:45	OFF	OFF	DIR	A - Sleeping			A – Eat pe	riod		
82: 30	OFF	OFF	DI R	A - Sleeping			A – SPT-MA	G_OFF (1	1SC 2 & 3)	
MISSION	F	DITION		DATE	STATION	405	1.05	TOTAL	DEV	BACT
GT-/		Fina	 	5-19-65						113

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TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	FLAI	MODE	COMN	AND PILO	г		PILOT		
82:45	OFF	OFF	DJ R	A - Sleep perio	od ends		A - Brief C status S/C.	MD Pilot of the N	on the fission ar	ıd
CSQ AOS	OFF	OFF	DIR	CSQ - Report PI for areas A - Copy update	A & CLA 3 55-3 th e	updates ru 59-2				
83:00 to 87:00	OFF	OFF	DI R				A - Sleep pe	eriod		
RKV AOS (83:30)	OFF	OFF	DI R	<u>D/T Tape</u>	Plybk		A – Sleeping	. ,		
MISSION GT-4	E	DITION inal		DATE 5-19-65	STATION	AOS	LOS	TOTAL	REV (3	PAGE

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TIME	COND	DIAT	CNTL			ACT	ION			
HR:MIN	COMP	PLAI	MODE	COMM	AND PILO	r		PILOT		
84:00 to 84:45	OFF	OFF	DIR	A - Eat period	1		A - Sleepin	g		
RKV AOS (85:04)	OFF	OFI	OFF	<u>D/T Tape :</u>	<u>Plybk</u>					
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	F	Final		5-19-65					54	115

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TIME	COMP	01 AT	CNTL			ACT	ION			
HR:MIN	COMP	PLAI	MODE	COMN	AAND PILO	Г		PILOT		
HR:MIN RKV AOS (86:37)	OFF	OFF	MODE DI R	<u>D/T Tape</u> A - Medical da RKV - Update i D-6 trac A - Copy updat	MAND PILO Plybk ta pass t nformatic king task e informa	ype 2 on for s t.ion		PILOT		
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4		Final		5-19-65					ι,	116

TIME	C0140		CNTL				ACI	LION			
HR:MIN	CUMP	FLAI	MODE		COMN	IAND PILO	Г		PILOT		
87:00	OFF	OFF	DIR	A –	Brief Pilot the mission	on the s and the	status of S/C	A - Sleep pe Prepare tasks	eriod en for D-	ids 6 tracking	7 5
lO Min after Sunrise (87:15 to 87:40)	OFF	OFF	AS REQ	A –	Perform D-6 (See Sectio	5 trackin n II for	g tasks details)	A - Perform (See Sec	D-6 tr. tion II	acking ta: for deta	sks ils)
Sunset to Sunrise (87:55 to 88:35)	OFF	OFF	AS REQ	A —	Perform D-1 (Celestial (See Sectio	Experime Tracking n II for	ent Task) details)				
MISSION	E	DITION	1		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT -4		Fina	1		5-19-65					56	117

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TIME	COMP		CNTL				ACT	ION			
HR:MIN	COMP	FLAI	MODE	COMM	AND	PILO	T		PILOT		
RKV AOS (88:12)	OFF	OFF	AS REQ	<u>D/T Tape</u> RKV-Update S/C for D-6 trac A - Copy update	Plyb with king	info tas	ormation ks Jion				
MISSION	E	DITION	1	DATE	STAT	TION	AOS	LOS	TOTAL	REV	PAGE
GT-4	F	'inal		5-19-65	RI	۲V	88:12:00	88:18:00	6:00	56	118

FLIGHT PLAN

TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	FLAI	MODE	COMN	AAND PILO			PILOT		
l0 Min after Sunrise (88:40 to 89:20)	OFF	OFF	AS REQ	A - Perform Tra (See Section	acking Ta on II for	sks details)	A - Perfor (See S	m Track: Section 1	ing Tasks II for de	tails)
89:25 to 90:05	OFF	OFF	DIR	A - Eat period Power up fo for Trackin	or align og Tasks	platform	A - Eat pe	riod		
ANT AOS (89:54)	OFF	OFF	OFF	<u>D/T Tape Plybk</u> ANT - Update S, for D-6 ⁻ A - Copy update	7C with i tracking e	nformation tasks				
MISSION	E	DITION	l	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fina	al		5-19-65					57	119

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TIME	COMB		CNTL			ACT	ION			
HR;MIN		FLAI	MODE	COMN	AND PILOT			PILOT		
CYI AOS (90:05)	OFF	AS REQ	AS REQ	CYI - Report H for Area A - Copy updat	PLA and CI as 60-2 th ce	A update ru 64-4				
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAG
							1	1		1

MSC FORM 1008 (REV AUG 64)

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FLIGHT PLAN

TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMI	I LAI	MODE	COMM	AAND PILO	Г		PILOT		
Sunrise + 10 Min (90:15 to 90:45)	PRE LN	ORB RATE	AS REQ	A - Perform D (See Sect	-6 Tracki ion II fc	ng Tasks pr details)	A - Perfor (See S	m D-6 T Wection	racking T II for de	asls tails)
After Tracking Task (90:45)	OFF	OFF	DIR	A - Power down	n S/C		A - Power Stow t	down S/G racking	C equipmen	t
91:00 to 94:00	OFF	OFF	DIR	A - Sleep peri	Lod					
ANT AOS (91:27)	OFF	OFF	DIR	A – Sleeping			<u>D/T Tape P</u>	<u>lybk</u>		
MISSION		DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT4	Fir	nal		May 19, 1965						121

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TIME	COMP	DIAT	CNTL			ACT	ION			
HR:MIN		FLAI	MODE	COMMAN	D PILO	Г		PILOT		
CRO AOS (92:12)	OFF	OFF	DIR	A - Sleeping			A - Medical pass ty	l data ype l		
CBI AOS (92:57)	OFF	OFF	DIR	A - Sleeping			<u>R/T Tape I</u>	Plybk	۶	
CRO AOS (93:46)	OFF	OFF	DIR	A - Sleeping			<u>R/T Tape I</u>	olybk		
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MISSION	E	DITION		DATE S	TATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fi	nal		May 19, 1965						122

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TIME	COMP	DIAT	CNTL			ACT	TION			
HR:MN	COMP	PLAI	MODE	COMM	AND PILO	r		PILOT		
93:30 to 94:45 94:00	OFF OFF	OFF	DIR	A - Sleeping A - Sleep peric	od ends		A - End of Checkou	Mission t	Systems	
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAG
GT-4	Fi	nal		May 19, 1965	1		1		60/61	

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TIME	COMP	DI AT	CNTL			ACT	ION			
HR:MIN	COMP		MODE	COMMA	ND PILOT	•		PILOT		
CYI AOS (94:45)	OFF	OFF	DIR	<u>R/T Tape Plybk</u>	-		A - Medical	. data p	ass type	2
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAG
GT-4	Fi	nal		May 19, 1965					61	124

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FLIGHT PLAN

TIME	COMP	DIAT	CNTL			AC1	FION			
HR:MIN		FLAI	MODE	CO	MMAND PILO	r		PILOT		
CRO AOS	OFF	OFF	OFF	A - Medical d	lata pass t	ype 2				
(95:19)										
9 5:4 5	OFF	OFF	DIR	A - Life vest Survival	s - Instal lanyard -	l install	A - M-3 E Life Survi Insta plugs Check	xperiment vest - in val lanya ll Bio-Ma . communia	t (Exercinstall ard - ins ed jumper cations	se) tall
				A - If pilot' are opera Bio-Med j Check com	s communic ational, in jumper plug munication	ations stall s				
MISSION	ε	DITION	l	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fi	nal		May 19, 1965					61	125

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TIME	COMP		CNTL			ACT	ION	·		
HR:MIN	COMP		MODE	COMI	MAND PILO	r		PILOT		
gym aos (95:56)	OFF	OFF	OFF	GYM-Notify S/0	C of AOS		A - MDU PW AC Pow ACME B ATT IN ATT IN	R - ON er - IGS IAS Powe D - WITH D LT C/E	r - PRI FDI 3 - Closed	1
	CTCH UP	CAGE	DIR	A - Computer : Computer - Platform - Scanners - Rate Gyros OAMS Power FDM - RATT ATTITUDE (Control S, O Roi 180° Yav O Pit	Pwr - ON - CTCH-UP - CAGE (H - PRI s (3) - PI r - ATT E CONTROL - /C attitud ll w tch	EF) RI DIRECT les to:				
			HOR SCAN	<u>N(</u> 1. Verify operat: 2. Verify A - ATTITUDE (<u>OTE</u> control r ion rate gyro CONTROL -	node o operation HOR SCAN				
MISSION	Ε	DITION	l	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	F	inal		May 19, 1965					61	126

TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	PLAI	MODE	COMM	AND PILO	Г		PILOT		
MCC AOS (96:03)	CTCH UP	CAGE (HEF	HOR SCAN				MCC - Tran 1. 6 2. 6 3. 6 L Cmd Cmd Cmd Repo upda	smit the 3-1 T _P u 3-1 Prer 3-1 OAMS oad T/M - D/ Tape Ply Tape Ply rt the 6 te	e followi pdate etro Cmd Retro Ma /T /Dk - SET /Dk - RES 53-1 prer	ng: Load aneuver ET etro
	CTCH UP	CAGE (BEF)	HOR SCAN	MCC - Notify e conditio landing A - Copy Updat	rew of th ns in Atl area e	e weather antic	А - Сору б	3-1 Reen	try updat	сe
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fi	nal		May 19, 1965			1	1	62	127

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TIME	COMP	DI AT	CNTL		ACTION COMMAND PILOT PILOT								
HR:MIN	COMP	PLAI	MODE	COMM	IAND PILO	г		PILOT					
15 to 30 Min after Cage	CTCH UP	CAGE BEF ORB RATE	HOR SCAN PUL HOR SCAN	A - When "8" ba ATTITUDE CC Control S/C O Roll 180° Yaw O Pitc Hold attitu cages, then PLATFORM - FDR - PLAT FDM - ATT Null FDI's align plath PLATFORM - ATTITUDE CC	all begin DNTROL - C attitud t the until t BEF for 15 m form, the ORB RATE DNTROL -	s to cage: PUISE e to: "8" ball inutes to n: HOR SCAN							
CRO AOS minus 17 min (96:35)	CTCH UP	ORB RATE	HOR SCAN	A - Stow all ed Stowage ver Drogue pins Connect sho lap belt Verify Left Open	PRERETRO CHECKLIST - Stow all equipment Stowage vents - Open Drogue pins - Out & Stow Connect shoulder harness and lap belt Verify Left Secondary 0 ₂ - Open Open Drogue 2 Connect Lap belt					pt M and			
MISSION	E	DITION		DATE STATION AOS LOS TOTAL REV						PAGE			
GT-4	Fi	nal		May 19, 1965 62 1						128			

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TIME	COND	DIAT	CNTL			AC	LION			
HR:MIN	LOMP	PLAI	MODE	COMN	AND PILO	Т		PILOT		
	CTCH UP	ORB RATE	HOR SCAN RATE CMD DIR RATE CMD DIR HOR SCAN	$\begin{array}{llllllllllllllllllllllllllllllllllll$	- BRIGHT TEST - A t C/B - C Closed IND - WIT ARM SAFE - OFF NTROL - H - ACME tion - DIRECT tion - DIRECT tion - DIRECT tion - OFF - ACME tion - DIRECT tion - OFF - ATT Dressure DNTROL - H - STBY Simer to 2 - Closed	MBER/RED Closed CH FDI's RATE CMD HOR SCAN 36:00	A - Monitor RCS plu	horizo me effe	n to dete ct on vis	rmine ibilit
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT -4	F:	inal		May 19, 1965	t				62	120

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TIME	0000		CNTL			ACT	ION			
HR:MIN	COMP	PLAI	MODE	COMI	MAND PILO	т		PILOT		
	CTCH UP	ORB RATE	HOR				A - Verify Closed CTR LIG SUIT FA Both CC HF T/R KEYING NO. 2 A C-RNTY T/M - F Electri MAIN BA Ammeter Voltmet Verify Right S SHUTOFF ES Sens Verify Facepla	Overhea HT - WH N-NO. 1 DOLANT L - RNTY - CONT AUDIO - - CONT AUDIO - - CONT R/T & AC Cal Che ATTERIFS - 1C Car - C Right C ATT IND GECONDAR F - OPEN Sor - ON Spt. Ma Boom - ate - Cl	d C/B's (T and 2 OOPS - ON INTER - P HF Q (4) - TE /B's (all - WITH F Y O ₂ BOTT g OFF OFF osed	all) - TT ST/OFF) - DI LE
MISSION	E	DITION	I	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GТ - 4	Final May 19.			May 19, 1965					62	130

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TIME			CNTL			ACT	ION			
HR:MIN	CUMP	PLAI	MODE	COMN	IAND PILO	г		PILOT		
CRO AOS (96:53)	стсн UP	OR B RATE	HOR SCAN	A - <u>Report</u> Prer complete CRO-Backup MCC : required Give S/C a (etro Chec reentry u GMT time	klist pdate if hack	A - Check a	ccuracy	of the G	M T
T36							clock			
R (96:55:43)	CTCH UP	ORB RATE	HOR SCAN	CRO-At T _B -36 min to start Evo counting do	nutes, gi ent Timer wn	ve mark	A - Check T	R (addr	ess 02)	
				A - At CRO mark Event Timer	– DWN					
			DIR	ATTITUDE CON FDM - RATE FDI SCALE R Maneuver Con OAMS Power Control S/C O Roll 180° Yaw O° Pitch	NTROL - D ANGE - LC ntroller - MANUVR attitude h	IRECT - Unstow & ATT s to:	A - Maneuve	er thrus	ter 9 C/B	- 0pe
MISSION	E	DITION	l	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT - 4	F	inal		May 19, 1965	CRO 1 of 2	96:52:24	96:59:39	7:15	62	131

TIME	COMP		CNTL				ACT	ION	•		
HR:MIN	COMP	FLAI	MODE		COMN	IAND PILO	Г		PILOT		
During CRO Pass	СТСН UР	ORB RATE	DTR	A -	Blip Thrust Blip Thrust	ter No. 1 ter No. 9	0	A - Maner Close Maner Open	ıver Thru ed ıver Thru	ster 9 C/ ster 10 C	в - /в -
					1 ,			A - Mane Close	uver Thru ed	ster 10 C	/в -
					NO	<u>re</u>					
					Verification thrusters	on of Aft	firing				
				CRO-	Check opera thrusters	ation of	Aft firing				
				A -	OAMS Power ATTITUDE C	- ATT ONTROL -	HOR SCAN				
MISSION	E	DITION			DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	Fir	nal		May	19, 1965					62	132

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TIME	coup		CNTL			····	ACI	TION				
HR:MIN	COMP	FLAT	MODE		COMN	AAND PILO	r internet			PILOT		
T _R -22 (97:09)	CTCH UP	BEF	HOR SCAN PUL	A —	FDR - PLAT FDM - ATT PLATFORM - ATTITUDE CON Null FDI's	BEF NTROL - P to align	ULSE platform	A – Ve OA 25 26 27	erify g AMS tra ominal 5:91100 6:00000 7:00000	round u nslatio values) (110 ft) (0 ft/) (0 ft/	pdated AV nal. are: /sec Aft) sec Lt-Rt sec Up Dw	for) n)
MISSION	EC	DITION			DATE	STATION	AOS	L	_0S	TOTAL	REV	PAGE
GT-4	Fina	1		May	19, 1965			†`				133

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TIME	COMP		CNTL		ACTION COMMAND PILOT PILOT							
HR:MIN	COMP	FLAI	MODE	COMM	AND PILO	r T		PILOT				
T _R -13 97:18:43)	CTCH UP	ORB RATE	PUL RATE CMD	A- START COMP PLATFORM - ATTITUDE C Maneuver C OAMS Power	- Push ORB RATE ONTROL - ontroller - MANUVR	RATE CMD - Unstow & ATT						
				Hold S/C a O Rol 180° Yaw O Pit FDM - RATE	ttitudes 1 ch	at:						
					TRANSLATI	ON NO. 4						
т _R -12	CTCH	ORB RATE	RATE CMD	A - When Event Translate AFT IVI to	Timer re FWD to dr 00000.	ads 12:00 ive FWD-	11AW - Mark	start o	f transla	tion		
				 Aft fir & 10 us Approximation Approximation A - Give voice end of thr Report IVI 	<u>NOTE</u> ing thrus ed mately 13 st requir mark at ust readings	ters No. 9 8 seconds ed start and	A - Time tr Monitor	anslati	on burn			
MISSION	E	DITION	Ľ	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE		
GT-4	Fi	inal		May 19, 1965					62	134		

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TIME	COMP		CNTL			ACT	ION			·····
HR:MIN	COMP	FLAI	MODE	COMB	AAND PILO	г		PILOT		
	CTCH UP	ORB RATE	RATE CMD	A - OAMS Power Maneuver Co FDR - PLAT FDM - ATT	- ATT ntroller	- Stow				
	RNTY	BEF	PUL	ATTITUDE CC COMPUTER - PLATFORM - Null FDI's	NTROL - I RNTY BEF to align	ULSE platform				
						·				
									•	
MISSION	€	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT -4	Fin	al		May 19, 1965	HAW	97:17:37	97:24:21	6:44	62	135

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TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	FLAI	MODE	COMN	IAND PILO	Г		PILOT		
Ͳ _R -5 (97:26:43)	RNTY	BEF	PUL		<u>7</u>	Γ _R -5 (MIN) (CHECKLIST Sequence Event T: A - When see start GI Verify S ON MAIN BA Verify H ON	e Lights imer rea quence I 4T stop Computer SQUIB BA FTERIES RCS PROF	a - AMBER ads 5:00 m lights go watch c - RNTY ATTERIES (- ON PELLANT A	nin amber 3) - & B -
MISSION	E	OR B RATE	RATE CMD	A - PLATFORM - FDR - PLAT FDM - RATE FDI SCALE R ATTITUDE CC Verify RATE ROLL RATE G OAMS POWER OAMS PROPEI RCS CONTROL	ANT SEL - RNTY Prop Gage - RCS B Verify QTY READ - OFF RATE ALE RANGE - HI DE CONTROL - RATE CMD RATE GYROS (3) - PRI ATE GYROS (3) - PRI ATE GYRO - OFF ROPELLANT - OFF NTROL POWER A & B - ACMB					
	E			UNIC	STATION	AU3	105	TUTAL	REV	PAGE
GT - 4	F'in	aL		May 19, 1965						136

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TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	FLAI	MODE	COM	MAND PILO	r		PILOT		
	RNTY CMD	ORB RATE	RATE CMD	A - Control S/C hold retros control mod all axes) RETRO PWR -	attitude uttitude (le operati • ARM	e to and Check on in				
							A - IND RETH SECTION OFF FDR - PI FDM - AT FDI SCAI HF T/R - NO. 2 AU	IO ATT - #1 & #2 .AT T JE RANGE - OFF JDIO - R	Push PWR & CN C - HI	TL —
MISSION	E	EDITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT4	Fin			May 10 1065	1					120
		····		(17, 17) ·	1					137


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FLIGHT PLAN

TIME	COMP		CNTL	ACTION						
HR:MIN	COMI	FLAI	MODE	COMN	COMMAND PILOT			PILOT		
	RNTY	FREE	RATE CMD				A - T _B + 1 MAN FIR	sec E RETRO	- Push	
T _R +30 (97:32)	RNTY	FREE	RATE CMD	A - <u>Report</u> to (1. No. of n 2. IVI read 3. Estimate retrofin 4. Auto or GYM-Record repo information MCC	GYM retros fi lings ed attitu re manual r orted ret n and for	red de during etrofire rofire ward to	A – PLATFOR	M — FRE	Ξ	
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL.	REV	PAGE
GT-4	F	inal		May 19, 1965	GYM	97:29:12	97 :3 5:25	6:13		139

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FLIGHT PLAN

TIME	COMP		CNTL		ACTION					
HR:MIN	COMP	FLAI	MODE	COMN	AAND PILO	r		PILOT		
HR:MIN T _R +45 sec (97:32:28)	RNTY	FREE	RATE CMD	A - RETRO JETT JETT RETRO Report Ret A - RETRO FWR RETRO JETT RETROROCKE FDR - COMH FDM - ATT ATTITUDE C SCANNER - ROLL RATE Tighten an harness Check Hato	AAND PILO RET P - ARM P - Push ro Jett POST - SAFE -	r <u>PRO JETT LI</u> <u>- RETROJET</u> (4) - SAFE RATE CMD (RNTY) RI estraint • Neutral	<u>GHT - AMBER</u> A - ES SENS <u>T CHECKLIST</u> <u>A - CABIN H</u> ECS 0 FDR - 2	PILOT SOR - OF SOR - OF IEATER COMP	ም ም (lf req - OPF)
							FTM - 1 Tighter harness Check 1	RATE n and lo s Hatch Pa	ock restra wls - Neu	int tral
MISSION	E	DITION	1	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
ст'- 4	Fi	nal		May 19, 1965					Reent ry	6.1

TIME	COMP	DI AT	CNTL	A			ION			
HR:MN	LOWL	PLAI	MODE	COMM	AND PILO	r l		PILOT		
	RNTY	FREE	RC RNTY	A - <u>Report</u> chec GYM-Check Post Checklist c	eklist co retro Jet complete	mplete t	Suit fans the crew b warm at wh will be se valve will	NOTE to rema becomes ich tim elected be clo	in ON unt uncomfort e O_ hatc and Recir sed.	il able h cu
				A - Set Event T Event Timer	limer to r - STBY	3 minutes				
T _R + 3 Min (97:34:43	RNTY	FREE	RC RNTY				A - Monitor When it Give ti	GMT st reads me hack	op watch 8 minutes to Cmd P:	ilot
							GYM-Be prep Timer s	ared to tart	backup E	vent
				A - Start Even up on mark	t Timer c from Pil	ounting ot	Event 1 timing. Event 1	<u>NOTE</u> 'imer se Times 'imer re	t for reen in column adings (mi	ntry ns are in:sec
MISSION	E	DITION	l 	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GТ 4	Fi	inal		May 19, 1965						141

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TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	FLAI	MODE	COMM	IAND PILO	Г		PILOT		
T _R +3 (97:34:43	RNTY	FREE	RC RNTY	A - Control S/C 180 ⁰ Yaw 180 ⁰ Roll Horizon a	attitudo	e to: window	GYM-Give the paramte: 1. ∆T f: 2. ∆T f: 3. ∆T f: 4. ∆T f: 5. Bank 6. ∆T f: A - Copy abe Blood P	e follow rs: rom T c rom T c rom T c rom T c Angles rom T c t ove reen ressure	ving reen of 400K of 1 ft/so of drogue of main to RB ntry param (if poss	try ec ² neters ible)
T _R +5:19 MISSION	RNTY	FREE	RC RNTY	A - Control S/C bank angle and yaw rat	attitud and damp tes STATION	400K F e to O ^O pitch	A - Visuall determi ionizat visibil	y monito ne effec ion layo ity	or horizo st of er on hor	n to izon
GT-4	-	ling		May 10, 1065	STATION	AUS	LUS	TUTAL	REV	PAGE
	I '	THOT		PICLY 17, 170)						142

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TIME	COMP		CNTL			ACT	ION			
HR:MIN	COMP	FLAI	MODE	COMA	AAND PILO	r		PILOT		
T _R +7:52	RNTY	FREE	RC RNTY	A - Null roll out downra range erro Damp pitch	needle to unge and o ors a and yaw	GUIDANCE IN o take cross- rates	<u>ITIATE</u>			
т _R +7 : 59	RNTY	FREE	RC RNTY			BEGIN BLA	CKOUT			
T _R +12:30	RNTY	FREE	RC RNTY	A - LANDING -	ARM	<u>100k fr</u>	<u>ET</u>			
T _R +14:18	RNTY	FREE	RC RNTY	A - DROGUE - 1 A - <u>Report</u> via 1. Drogue 2. Status (close 3. Estimat	Push voice: deploymen of reents or open 1 ced MISS (<u>50K FR</u> nt ry Loop) listance	ET A - Mark] and de	coint of	chute de ; on voice	ploy tape
MISSION	<u> </u>	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE
GT-4	-	Final		May 19, 1965						143

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TIME	COMP	DIAT	CNTL		ACTION						
HR:MIN	COMP	FLAI	MODE	COMM	IAND PILO			PILOT			
	RNTY	FREE		A - "D" Ring - ' Arm Restrai Harness - L RCS Propell Blip thrust pressure	Uncover nts - Uns ocked ant A & H er to rel	<u>35K CH</u> stow 3 - OFF ieve	ECKLIST A - "D" Ring Arm Rest Harness INLET SN (26K) CABIN VE Cabin Ai (Closed)	g - Uncc raints - Locke IORKEL - IORKEL - IORKEL - NT - DW .r Recir	over - Unstow ed - DWN (Ope N (Open) rc Valve -	n) DWN	
T_+15:59	RNTY	FREE				10.6K	FEET				
K				 A - PARA - PUSH LDG AFT - P (Do not pu Main Chute A - <u>Report</u> main Blood Press	<u>10.6K</u> LDG AFT - PUSH (Do not push LDG ATT until Main Chute has dereefed) - <u>Report</u> main chute deployment Blood Pressure (if possible)			int of m main ch gle poir etape p essure	main chute nute deree nt release recorder (if possi	f ble)	
MISSION		DITION	1	DATE	STATION	AOS	LOS	TOTAL	REV	PAGE	
GT-4	Fin	al		May 19, 1 965	! !					144	

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TIME CNTL ACTION COMP PLAT HR:MIN MODE COMMAND PILOT PILOT RNTY FREE POSTMAIN CHECKLIST A - "D" Ring - Cover and safety A - "D" Ring - Cover and safety ATT IND LDG C/B - Open RESC BEACON - W/O LT Call Recovery Forces ACME BIAS FWR - OFF RCS HTRS - OFF SCAN HTR C/B - OPEN Manual O₂ High Rate - Pull (If not previously accomplished)Restraint Harness - Tighten and lock OFF COMPUTER - OFF OFF PLATFORM - OFF RATE GYROS (3) - OFF AC POWER - OFF (Just prior to landing Water Seal - DWN (Closed) INLET SNORKEL - UP (Closed) T_R+18:39 LANDENG MISSION EDITION DATE STATION AOS LOS TOTAL REV PAGE GT-4 May 19, 1965 Final 145

FLIGHT PLAN

MSC FORM 1008 (REV AUG 64)

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TIME	COMP		CNTL		ACTION						
HR:MIN	COMP	FLAI	MODE	COMN	AND PILO	r[PILOT			
				A - PARA JETT - LANDING - SA Helmet - Off Arm Restrain Lap Belt - H Shoulder Fi Drogue Morta Install Hatch Pawls	Push AFE f & Stow nts - Sto Release & ttings - H ar Pins (- Unlock	POSTLANDING W Stow Stow 2) -	A - Helmet - Arm Rest Lap Belt Shoulder Drogue M Install Hatch Pa HF ANT - HF T/R - Call Rec NO. 2 AU required times	- Off & graints ; - Rele Fittin fortar P wls - U PST LN - RNTY sovery DIO - H) Recor	Stow - Stow ase & Sto gs - Stow ins (2) - nlock D/OFF F-DF (as d ON and	₩ OFF	
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE	
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TIME	COMP		CNTL			ACT	TION						
HR:MIN	COMP	FLAI	MODE	COMM	IAND PILO	r in the second s		PILOT					
				A - All switche open except AUDIO & UHH UHF Relay (TONE VOX C/ HF T/R C/B HF WHIP ANY No. 1 AUDIO Elood press until recov	es OFF an F T/R C/B C/B - Clos B - Closed C C/B - C O Mode Sw Sure every	d C/B's - Closed sed ed losed itch - UHF y 15 min.	A - All sw open e Bio-Me TAPE H RESC J W/O L BIO-M Squib ON Main HF T/J INLET Cive a Blood until	Artiches (except: d RCDS ACD PWR (BEACON C BEACON C Battery Battery Sattery Switch SNORKEL a long c pressur recover	OFF and C/ L & 2 - ON C/B - Close ONTROL Swi - Closed No. 3 Swi Switches - - RNTY - DWN (Op ount on HH e every 15 y	'B's sed tch - tch - tch - on pen)			
MISSION	E	DITION		DATE	STATION	AOS	LOS	TOTAL	REV	PAGE			
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SECTION II DETAILED ACTIVITIES

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COMMAND PILOT	PILOT	REMARKS
LIFT-OFF SWITC 1. Drogue Pins 2. Stowage Box 3. Stowage Ver 4. Splash Curt 5. Ditch Handl 6. Hatch Handl 7. "D" Ring - 8. Arm Restrai 9. Shoulder Re 10. Left SECONDARY O_BOTTLE SHUTOFF Handle - OPEN 11. ABORT Handle - NORMAL 12. GUIDANCE Switch - OFF 13. AUX RECP Switch - OFF 14. Left Utility Light - STOWED 15. All left C/B's - Closed 16. BOOST-INSERT Switch - ARM 17. RETRO PWR Switch - SAFE 18. RETRO JETT Switch - SAFE 19. LANDING Switch - SAFE 19. LANDING Switch - SAFE 20. RETRO ROCKET SQUIBS Switches (4) - ARM 21. SEQ LIGHTS TEST Switch - OFF 22. SEQ LIGHTS Switch - BRIGHT 23. ATT IND Switch - WITH FDI 24. MANEUVER CONTROLLER - Stowed 25. EMERG DROGUE Switch - Guarded 26. Altimeter - Set 27. IVI - Zero 28. Flight Director REF Switch - COMP 29. Flight Director MODE Switch - RATE	H POSITIONS = STOWED tes - SECURE ts - OPEN sains - SECURE .e - LOCKED .e - SECURED UNSTOW .nts - UP estraints - LOCKED	15. Except T _R -5 C/B - OPEN H ₂ O HTRS C/B - OPEN
Prepared by Flight Crew Su Checked by Spacecraft On	upport Division erations Branch	Gemini Operations Handbook

MSC Form 520 (Rev Oct 64)

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COMMAND PILOT	PILOT	REMARKS
COMMAND PILOT 30. FDI SCALE RANGE Switch 31. EVENT TIMER - STBY and 32. Left Mirror - STOWED 43. CABIN AIR RECIRC Hand	PILOT n - LO d Zeroed 33. All overhead C/B's - Closed 34. AC T/M Switch - ON 35. DC-DC CONV Switch - PRI 36. Center Light - WHT 37. ACME BIAS PWR - PRI 38. ROLL JETS Switch - YAW 39. MANEUVER DRIVERS Switch - PRI 40. ATTITUDE DRIVERS Switch - PRI 41. ACME LOGIC Switches (3) - PRI 42. Swizzle Stick - STOWED 44. INLET SNORKEL Handle - UP (Closed) 46. WATER SEAL Handle - UP (Closed) 46. WATER SEAL Handle - UP (Open) 47. O ₂ HIGH RATE RECOCK Handle - UP 48. SUIT FAN Switch - NO. 1 49. PRIMARY PUMP A Switch - ON 50. PRIMARY PUMP B Switch - OFF 51. RAD Switch - BY-PASS 52. EVAP Heat Switch - OFF 53. EVAP Switch - MAX FLOW 54. SECONDARY PUMP A Switch - OFF 53. EVAP Switch - MAX FLOW 54. SECONDARY PUMP B Switch - OFF 55. SECONDARY PUMP B Switch - OFF 56. All Light Dimmers - Open as required 57. CABIN FAN Switch - OFF	REMARK:
Prepared by F	58. Sequential Telelights - LOCKED 59. QTY Switch - READ 60. ECS 0 ₂ HEATER Switch - AUTO 61. FC 0 ₂ HEATER Switch - OFF 62. FC H ₂ HEATER Switch - OFF 63. OAMS ² REG Switch - Guarded 64. PROP Indicator Switch - RCS B light Crew Support Division	demini Operations Handboc
Checked by [3] Approved by	pacecrait Operations Branch . Date 5-19-65	S/C Rev Section Pg

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COMMAND PILOT	PILOT	REMARK
 78. NO. 1 AUDIO Switch - UHF 79. RADAR Switch - OFF 80. Sequential Telelight Switches - LOCKED 81. PLATFORM Mode Switch - FREE 82. SCANNER Switch - PRI 83. RATE GYROS Switches (3) - PRI 84. COMPUTER Mode Switch - ASC 86. ATTITUDE CONTROL Mode Switch - RATE CMD 87. OAMS CONTROL POWER Switch - OF 88. OAMS PROPELLANT Switch - ON 89. RCS A & B Control POWER Switches - OFF 90. PROPELLANT RCS A & B Switches - 91. REPRESS Knob - CLOSED 92. MANUAL O2 HIGH RATE Handle - Down (Closed) 	<pre>65. UHF T/R Switch - NO. 1 66. HF T/R Switch - OFF 67. KEYING Switch - OFF 67. KEYING Switch - OFF 69. RESC BEACON CONTROL Switch - OFF 70. C-ADAPT BEACON CONTROL Switch - CMD 71. C-RNTY BEACON CONTROL Switch - CONT 72. T/M CALIB Switch - OFF 73. T/M CONTROL STBY T/M Switch - R/T & ACQ 74. T/M CONTROL TM Switch - CMD 75. TAPE PLYEK Switch - CMD 76. ANT SEL Switch - RNTY 77. HF ANT Switch - OFF (Retracted) 8 ON</pre>	
Checked by Spacecraft Approved by Date	Operations Branch 5-19-65	$\begin{bmatrix} 3/C & \text{Rev} \\ \text{Section} & \text{Pe 3} \end{bmatrix}$

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MSC Form 520 (Rev Oct 64)

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COMMAND PILOT		PILOT		REMARKS
93. Blood Pressure Cuff Plug Removed	 94. Right Mirr 95. 1A, 1B, 1C Released (96. SECTION #1 97. SECTION #1 98. SECTION #2 99. SECTION #2 100. SECTION #1 00. SECTION #1 01. XOVER Switt 103. MIU - 52:C 106. FDI SCALE 107. Flight Dir 109. All right 100. ATT IND Switt 100. ATT IND Switt 110. ATT IND SWITH 110. ATN BATTE 111. AC POWER S 112. BIO-MED RC 113. BIO-MED RC 114. RCS HTRS S 115. BUS TIE Switt 116. MAIN BATTE 117. SQUIB BATT 118. SPT-MAG Switt 120. BOOM Switt 121. AUX RECP S 122. Right Util 	For - STOWED 2, 2A, 2B, 2C Switches - ON) . PWR Switch - ON . CNTL Switch - ON 2 PWR Switch - ON 2 CNTL Switch - ON 2 CNTL Switch - ON 2 CNTL Switch - IC Selector Switch - IC Selector Switch - C witch - ON 00000 RANGE Switch - LO rector MODE Switch - ATT C/B's - Closed witch - IGS DR 1 Switch - CONT Switch - OFF thes 1 & 2 - OFF RIES Switches (3) - ON FRIES Switch - OFF Switch - OFF	109. Except RA OAMS HTRE	ADAR PWR C/B - Open 5 C/B - OPEN
Prepared by Checked by Approved by Spac	ecraft Operations Branch bate 5-19-65			Gemini Operations Handbook S/C Rev Section Pg 4

SPACECRAFT OPERATIONS PROCEDURES

MSC Form 520 (Rev Oct 64)

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COMMAND PILOT	PILOT	REMARKS
130. Hatches 131. Hatch Par 132. Clip PTT 133. SUIT TEM 134. CABIN TEM 135. SUIT FLOU 136. Harness	123. Right SECONDARY O2 BOTTLE SHUTOFF Handle - OPEN 124. Drinking Nozzle - Stowed 125. CNDSATE VALVE Switch - NORM 126. H20 TANK VALVE Switch - NORM 127. Waste Valve - OFF 128. Urine Dump Switch - OFF 129. Blood Pressure Cuff Plug - Removed - LOCKED wls (2) - Neutral Buttons (2) to "D" Rings P CONTROL - As required MP CONTROL - Full Warm M - As required secure and locked	
Checked by Spacecraft Ope Approved by Date 5-1	rations Branch	3/C Rev

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POWER DOWN CHECKLIST

CMD PILOT

- 1. AUX RECP OFF
- 2. Left Cabin LT OFF
- 3. ATT IND OFF
- 4. Event timer STOP
- 5. PLATFORM OFF
- 6. COMPUTER PWR OFF
- 7. SCANNER OFF
- 8. OAMS POWER ATT
- 9. RATE GYROS (3) OFF
- 10. No. 1 Audio INT (UHF if required for communications; RCD if voice recorder is required)

PILOT

- 1. ACME BIAS POWER OFF
- 2. ATT IND LT C/B OFF
- 3. HF T/R OFF
- 4. C ADAPT CMD
- 5. C RNTY CMD
- 6. T/M CMD
- 7. Right Cabin LT OFF
- 8. ATT IND OFF
- 9. AC POWER OFF
- 10. AUX RECP OFF
- 11. No. 2 Audio INT
 (UHF if required for communications; RCD if voice
 recorder is required)

COMMUNICATIONS PROCEDURES

1. Negative reporting will be used in most air-ground transmissions to eliminate unnecessary contacts. UHF will be the normal mode for station communications.

2. Unless initially contacted by the crew, the ground stations will not attempt voice contact until after $T_{\rm e}^{\rm M}$ lock-on and inspection of the data.

3. The general voice communications procedure for station passes will consist of the following:

- a. Ground Station Report T/M lock-on and status of T/M readouts.
- b. Ground Station request pilot's report on:
 - (1) T/M values not reliably received on the ground.
 - (2) T/M values near unacceptable limits or changing at excessive rates.
 - (3) Other values or conditions specifically requested by MCC.
- c. Crew gives status report (GO/NO GO).

NOTE: A GO report will be given if all S/C readouts are nominal and there are no known problem areas affecting the continuation of the mission.

d. Ground Station - Advise crew of current or impending problems, of known errors in cockpit gage readings, of other information specifically requested by the pilot such as T/M values monitored only on the ground.

4. If ground stations do not establish contact at first attempts, the Cap Com will transmit in the blind within two minutes of T/M contact or at point of closest approach and report appropriate information under a, and d of item 3 before again attempting to establish voice contact.

5. Each station should insure their air/ground transmissions do not interfere with the onboard activities of the crew except where required by an emergency condition of the S/C.

6. T/M, Tape Dump, and C-Band Beacon Procedures

In general, all control of the T/M, Tape Dump and C-Band Beacons will be by Real-Time Commands (RTC). The onboard switches will be in the Crd position for the entire flight except for launch, when the TM will be in "R/T & ACQ" and both C-Band Switches in "CONT" and, after the Pre-Retro Checklist when the T/M will be in "R/T & ACQ" and the C-Rnty Beacon will be in "CONT". <u>Tape Dump</u>: The D/T Tape will be dumped approximately once per revolution at the best ground station available for that purpose. Due to the S/C attitude constraint of $\pm 30^{\circ}$ in Pitch and roll, the tape dumps will be scheduled where they do not conflict with other mission activities.

7. T/M Calibrations.

T/M calibration commands will be sent once per day. Additional checks will be scheduled as required. The S/C will be notified prior to a calibration command being sent.

8. The flight crew will report completion of each checklist to the appropriate ground station. The checklist will not be read by the flight crew or the ground station over air/ground during the conduct of the checklist.

9. The ground will not contact the pilot during passes over stations with only voice relay capability (i.e., KNO*) except during critical periods of the mission or when scheduled by the Flight Plan.

10. During communications the spacecraft will be referred to by name (i.e., Faith 7) and the ground will be referred to by station name (i.e., Hawaii). The individual crew members will be referred to as follows:

- a. Left Seat Command Pilot (CMD)
- b. Right Seat Pilot (Pilot)

DELAYED TIME TAPE PLAYBACKS

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<u>Station</u>	<u>Revolution</u>	Mission Time (Hr:Min)	⊿ T Over Sta (Min:Sec)	⊿ T From Last Plybk (Hr:Min)
CNV	2	01:38	05:15	01:38
CNV	3	03:08	06:40	01:30
HAW	3	04:24	06:35	01:16
CSQ	4	05:50	06:17	02:26
HAW	5	07:34	04=00	01:44
HAW	6	09 :07	05:56	01:33
RKV	7	1::02	03:46	01:55
HAW	8	.2:16	04:47	01:14
RXV	9	14:12	06:34	01:56
RKV	10	15:46	07:28	0L:38
CYI	12	17:43	05:53	01:57
ANT	13	19:05	06:24	01:22
GTI	14	20:37	06:18	01:32
CNV	15	22:10	06:02	01:33
CNV	16	23:43	06:39	01:33
CNV	17	25:17	06:17	01:34
CNV	18	26:51	06:36	01:34
TEX	18	28:21	06:40	01:20
TEX	19	29:55	06:34	01:34
CSQ	20	31:06	05:16	01:20
HAW	21	32:50	06:01	01:44
HAW	22	34:23	06:56	01:33
RKV	23	36:19	07:02	01:56

Station	Revolution	Mission Time (Hr:Min)	J T Over Sta (Min:Sec)	▲ T From Last Plybk (Hr:Min)
ASC	24	38:11	07:49	01:52
RKV	25	39:28	07:35	01:17
CYI	26	41:24	06:17	01:56
ANT	27	42:46	06:09	01:22
ANT	27	44:20	06:42	01:34
GBI	29	45:51	06:43	01:31
CNV	31	47:24	06:36	01:33
CNV	32	48:57	06:26	01:33
CNV	33	50:31	06:45	01:34
CRO	33	51:20	07:52	00:49
CSQ	34	53:11	06:52	01:51
CSQ	35	54:44	06:15	01:33
HAW	36	56:28	06:15	01:44
HAW	37	58:01	06:42	01:33
RKV	38	59:57	05:55	01:56
RKV	39	61:31	05 :2 7	01:34
RKV	40	6 3: 05	07:02	01:34
RKV	41	64:38	07:49	01:33
CYI	43	66:33	06:02	01:55
GTI	45	67:53	06:48	01:20
GBI	45	69 : 25	06:50	01:32
CNV	46	70:58	06:44	01:33

<u>Station</u>	Revolution	Mission Time (Hr:Min)	A T Over Sta (Min:Sec)	⊿T From Last Plybk (Hr:Min)
CNV	47	72:32	06:24	01:34
CNV	43	74:05	0ć:42	01:33
GTI	49	75:41	06:41	01:36
TEX	49	77:08	05:54	01:27
HAW	50	78:29	04:23	01:21
HAW	51	30:01	06:15	01:32
HAW	52	81:34	06:25	01:33
RKV	53	<u>इ</u> .२ : 30	05:18	01:56
RKV	54	85:04	05:01	01:34
RKV	55	86:37	06:47	01:33
RK V	56	88:10	07:30	01:33
ANT	58	<u>୫</u> ୨ : 54	06:25	01:44
ANT	59	91:27	06:24	01:33
GBI	60	92:57	06:39	01:30
CRO	60	93 : 46	06:46	00:49
MCC	62	96:03	06:17	02:17

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1. GO/NO GO CHECKS

GO/NO GO

At the following points in the mission, GO/NO GO checks will be accomplished by both the ground and the flight crew to verify the capability of the spacecraft to proceed to the next GO/NO GO area. The GO/NO GO will be accomplished approximately one orbit prior to the appropriate $\rm T_{\rm p}$ time.

FOR AREA	STATION	REVOLUTION	NOMINAL AOS TIME
6-4	CRO	1	0:50
18-1	CSQ	5	7:23
21-4	CNV/BDA	End of 16	25:17
33-1	csq	20	31:06
46-4	CNV/BDA	End of 31	48:57
48-1	CSQ	35	54:44
51 - 4	CNV/BDA	End of 46	72:32
63-1	cisq	50	78:18

No more than one orbit prior to each of the above GO/NO GO stations, the flight crew will accomplish the following, to check the status of the S/C, and report the results to the GO/NO GO station.

1. Battery Test each (4) Main Battery - Report anomalies

2. Read-out and record, current and voltage of each Main Battery from the stack ammeter and voltmeter. Report readings to the GO/NO GO station.

3. Verify systems required for GO/NO GO's are operational.

If a clear GO exists, the ground will update the T_R time to the next GO/NO GO area (Example - at 18-1 GO/NO GO Check Update to 21-4)

2. PLA's and CLA's

The flight crew will be updated by voice with the retro sequence data for each planned landing area (PLA) and the contingency landing area (CLA). This updating will be accomplished in blocks, with one ground station relaying the information for a block. This information will not be updated unless it would result in an unacceptable landing point or reentry is imminent.

3. REENTRY COMPUTER UPDATING

Computer: The S/C computer will be conditioned with the preretro command load for only the GO/NO GO areas. These areas will occur approximately twice each day. The ground will be prepared to update for

4. UPDATE FORMAT

The following information will be relayed to the S/C for each PLA, (including GO/NO GO AREAS) and CLA. The following sequence of information will be observed:

- (1) Area number
- (2) OAMS Retro V (ft/sec)
- (3) Duration of OAMS Retro Burn (min + sec) (GO/NO GO AREAS ONLY)
- (4) GMT of retrofire (GMTRC) (Day:hr:min:sec)
- (5) Elapse time from retrofire to Reverse Bank Angle (ETRB) (min:sec) (not reported for CLA's)
- (6) Elapse time from retrofire to lOK ft (ETLOK) (GO/NO GO AREAS ONLY) (min:sec)
- (7) Bank Angle (only if different from the nominal angles)

For the GO/NO GO areas (computer updated) the following "without OAMS retro" information will be relayed in addition to the above information. This information will be relayed during the GO/NO GO Check.

- (1) GMT of retrofire (GMTRC) (Day:hr:min:sec)
- (2) Elapse time from retrofire to Reverse Bank Angle (ETRB) (min:sec)
- (3) Bank Angle (only if different from the nominal angles) (DEG)

Revolution	Station	Nominal AOS Time	Action Remarks
1	CRO	0:50	GO/NO GO For 6-4
1/2	CNV	1:34	Pre-Retro For 6-4 Update
5	CSQ	7:23	GO/NO GO For 18-1
6	HAW	9:08	Pre-Retro For 18-1 Update
7	RKV	11:02	PLA & CLA Areas 9-3 Update Thru 13-2
12	RKV	18:54	PLA & CLA Areas 14-2 Update thru 19-4

SUMMARY TABLE

Revolution	Station	Nominal AOS Time	<u>Action</u>	Remarks
16/17	CNV	25:17	GO/NO GO	For 21-4
17/18	CNV	26:51	Pre-Retro Update	For 21-L
13	CRO	27:41	PLA & CLA Update	Areas 20-4 thru 24-3
20	CSQ	31:06	GO/NO GO	For 33-1
21	HAW	32:50	PRE RETRO Update	For 33-1
23	CSQ	35:48	PĹA & CLA Update	Areas 25-3 thru 29-2
28	CRO	43:33	PLA & CLA Update	Areas 30-1 3404
31/32	CNV	48:57	GO/NO GO	36-4
32/33	CNV	50:31	PRE-RETRO Update	For 36-4
33	CRO	51:20	PLA & CLA Update	Areas 35-4 thru 39-3
35	∂SQ	54:44	GO/NO GO Update	For 48-1
36	HAW	56:28	PRE-RETRO Update	For 48-1
38	CSQ	59:26	PLA & CLA Update	Areas 40-3 thru 44-2
43	CYI	66:33	PLA & CLA Update	Areas 45-1 Thru 49-4
46/47	CNV	72:32	GO/NO GO	For 51-4
47/48	CNV	74:05	PRE-RETRO Update	For 51-4
48	CRO	74:55	PLA & CLA Update	Areas 50-4 Thru 54-3
50	CSQ	78:18	GO/NO GO	For 63-1
51	HAW	80:01	PRE-RETRO Update	For 63-1

Revolution	<u>Station</u>	<u>Nominal AOS Time</u>	<u>Action</u>	Remarks
53	CSQ	82:59	PL A & CLA Update	Areas 55-3 thru 59-2
58	CYI	90:04	PLA & CLA Update	Areas 60-2 thru 64-4
61/62	CNV	96:03	PRE-RETRO Update	For 63-1

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NOTE: The above update stations will be modified real-time, if required.

The following is spacecraft No. 4 OAMS Propellant loading.

	* <u>LOADED</u>	** <u>USABLE</u>
Fuel Oxidizer	164.0 245.9	155.4
TOTAL	409.9#	322.1#

NOTES: *(1) Full Tanks

**(2) Based on a nominal flight plan. The usable oxidizer can vary greatly depending upon how much attitude control versus translation is done in the actual mission.

The following estimated propellant usage does not represent a minimum amount that the mission could be flown on, but rather provides the crew with guidelines in propellant usage to insure completion of the flight plan. These limits will not exceed the spec lifetime of either the translational or attitude control thrusters.

OAMS Propellant Usage Summary

*l.	Translations		190.8 #
*2.	Operational Check		19.0 #
*3.	Experiments		62.5 #
4.	Gage Accuracy Contingency		25.0 #
5.	Retro preparation (2)		6.0 #
6.	Control for D/T T/M playback		6.0 #
*7.	Miscellaneous		12.8
		TOTAL	322.1 #

* The following charts show the breakdown of propellant usage within the groups listed above.

Translational OAMS Propellant Usage						
Translation	Thruster	∆ V <u>ft/sec</u>	Sec of <u>Thrust</u>	ATT <u>Prop</u>	Trans. <u>Prop</u>	
Insertion	AFT	10	12	1.3	8.6	
NO. 1	FWD	7	12	0.7	6.8	
NO. 2A	LEFT	12	30	1.2	10.5	
NO. 2B	AFT	27	34	3.5	23.2	
System Check 1	RIGHT	5	13	0.6	4.6	
System Check 2	UP .	5	13	0.6	4.6	

System Check 3	DWN	5	13	0.6	4.6
NO. 3A	FWD	4	7	0.4	3.9
NO. 3B	FWD	6	10	0.6	5.8
NO. 4	AFT	110	138	14.3	94.6
TOTALS		191		23.6 #	167.2 #
ATTITUDE Translat	23.6 ion <u>167.2</u> 190.8	# # #			
Experiments OAMS]	Propellant	Requirement	ts		
1. D-6 Tracking	Task(1.0 #	# / Task)		30 . 0 #	
2. D-1 Celestial	D-1 Celestial Tracking Task (1#/Run)				
3. D-9 Sextant M	D-9 Sextant Measurements				
4. MSC-2 & 3 Pro and tri-axis	MSC-2 & 3 Proton, Electron Spectrometer and tri-axis flux-gate magnetometer				
5. MSC-10 Two co	Two color earth-limb pnotography			1.0#	
6. S-5 Synoptic	. S-5 Synoptic terrain photography				
7. S-6 Synoptic	weather ph	notography		7.0#	
				62.5#	
Operational Check	<u>s Propella</u>	ant Requireme	<u>ents</u>		
1. Apollo yaw or	ientation	checks (2)		5.0#	
2. Apollo landma	Apollo landmark investigation			2.5#	
3. One attitude	One attitude thruster failure check			1.0#	
4. Horizon Scann	Horizon Scanner Track check			2.1#	
5. Orbit Navigat	Orbit Navigation check			2.5#	
6. HF Tests				0 . 4#	
7. Horizon Scann	er Sun, Mo	oon, & Thrust	ter Check	5 .5#	
				19.0#	

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Miscellaneous Propellant Requirements

1.	ATTITUDE	Control	thru	02:30	2.0#
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- 2. PLATFORM ALIGNMENTS (02:30 to 95:00) 4.5# (Includes Attitude orientation propellant)
- 3. General purpose photography & observations ______6.3#



GT-4 OAMS PROPELLANT CURVE

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SPACECRAFT-4 ELECTRICAL POWER

CONFIGURATION

Spacecraft-4 has the following electrical configuration:

BATTERIES	UNITS	AMP-HRS/UNIT	TOTAL AMP-HRS
Adapter	6	400	2400
MAIN	4	45	185
SQUIB	3	15	45

GT-4 ELECTRICAL LOAD SUMMARY

Electrical Load Analysis indicates that approximately 2115 of the 2400 ampere-hours available will be used from the adapter batteries if an Atlantic landing is accomplished. An additional 101 ampere-hours, making a total of 2216 will be used if a Pacific landing is made. The summary includes adapter battery usage beginning 2 hours prior to lift-off and continuing to T_R -5, with the exception of 10 minutes from lift-off to completion of insertion checklist, during which time the entire electrical load will be furnished by the Main Batteries. The power down configuration shows the continuous load throughout the mission. All other loads shown in the summary are additional to the power down load. The table following the GT-4 electrical load analysis indicates switch and circuit breaker positions for the normal power down configuration. See the power down checklist, page 6, for equipment to be turned off during the power down phases of the mission.

GT-4 ELECTRICAL LOAD ANALYSIS

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5. 6.

	Amperes		Ampere-Hours
Power Down Configuration	17.06		1695.22
Prelaunch	32.26		64.54
Insertion to 0.45	28.29		16.52
0:45 to 2:30	23.60		41,40
HOR SCAN Track Check	23.39		3.90
Attitude Thruster Check	23.39		1.95
Apollo Yaw Orientation Check	23.39		5.85
HF DF Tests (4)	2.63 (XMI	:т) 🚶	1.50
	1.50 (RCV	/R) ∫	,
Translations 2A and 2B and	16.29 (PLA	LT)	30.30
Translational Systems Checks ∫	6.31 (COM	IP)	5.90
Translations 3A and 3B	16.29 (PLA	T)	29.50
	6.31 (COM	(P)	2.10
Experiment D-1	1.31		2.40
Experiment D-9	0.12		0.18
Experiment ES-Sensor	0.08		1.00
Experiment MSC-2 and MSC-3	0.17	-)	3.00
Experiment D-6 (4 runs)	16.29 (PLA		52.95
Experiment D-6 (4 runs)	6.95 (COM	P, RETICLE)	14.50
Experiment D-6 (13 runs)	3.07 (ACM	E,RETICLE)	20.10
Voice Tape (15 tapes)	0.08		1.20
QTY Switch (I time per orbit for I minute)	0.07		0.70
R/T TM (Over DCS stations)	0.75		19.50
D/T TM (Once per orbit)	0.75		3.75
Adapter C-Band	1.09		10,80
UHF T/R (XMTR 1/2 time over station (RCVR 1/2 time over station	s) 1.00		32.00
Preretro	32.27		49.00
Urine Dump Heaters (6-61 minute	0-1-1		
dumps per day)	2.08		5.41
Total for Atlantic Landing $(T5 =$	97.32)	`	2,115.17
Power Down additional load if	17.06	~ 7	
Pacific landing is made	T1.00		101.00
Total for Pacific Landing $(T_R - 5 =$	103.26)	>	2,2216,17

NORMAL POWER DOWN

Position

Switch or C/B ELECT TIMER C/B SUIT FAN PRIMARY PUMP A CRY QTY C/B PRI 0, HTR C/B Primary 0, HEATERS RCS HTRS C/B's RCS HTRS Switch OAMS HTRS C/B H_O HTRS C/B DCS FWR C/B ACQ BEACONS C/B UHF RELAY C/B AUDIO & UHF T/R C/B's COAX CNTL C/B TONE VOX C/B UHF WHIP ANTENNAS C/B ANT CNTL C/B AUDIO MODE SWITCH DC-DC CONV C/B DC-DC CONVERTER TAPE RCDR FWR and CNTL C/B's BIO MED RCDR BIO MED INST C/B CABIN LIGHTS C/B CABIN LIGHTS

Closed NO. 1 ON Closed Closed AUTO Closed As Required Closed INT (Switch to UHF for T/R) Closed PRI Closed NO. 1 (or NO. 2) Closed Closed As Required (Center light remains on the entire mission)

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SPACECRAFT 4 OXYGEN LOADING

1. Primary Cryrogenic Oxygen

a.	Loaded	52.0	pounds
b.	U sa ble	46.0	pounds

* <u>NOTE</u> - 50 pounds is available but the pressure is not adequate while using the last 4 pounds.

2. Secondary Gaseous Bottles (2)

a.	Loaded	6.85 pounds/bottle
b.	Usable	6.50 pounds/bottle

Figure III shows how the cryrogenic oxygen will be used during the GT-4 Mission.



• 1 2




Time - Hours from Lift-Off

5.

FLIGHT PLAN PRIORITY SEQUENCE

In the event that real-time modifications are required to the the Flight Plan, the following priority sequence will be applied. This priority will be applied to both the deletions of items, realocation of consumables and the rescheduling of items.

In using the enclosed priority sequence, other considerations $\underline{\text{MUST}}$ be taken into account such as:

- 1. The real-time circumstances requiring a change.
- 2. The cost in consumables for performing an item being considered for change or deletion.
- 3. The time required to perform an item being considered for change or deletion.
- 4. The difficulty involved in performing an item being considered for change or deletion.

In all cases the operational requirements of the mission will have priority over all Flight Plan activities.

Priority Sequence (In descending order)

- 1. Translations (including OAMS Retro)
- 2. Sleep periods
- 3. Medical Data Passes (may be rescheduled, but not deleted)
- 4. Translation Systems Test (All)
- 5. Apollo yaw orientation checks
 - a. Day b. Night
- 6. Apollo landmark investigation
- 7. Horizon Scanner Tests
 - a. Sunset
 - b. Thruster Plume
 - c. Moonset
 - d. Track Test

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- 8. HF Transmission Reception Checks
 - a. Night
 - b. Day
 - c. Sunrise
 - d. Sunset
- 9. Attitude thruster failure check

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10. Orbit Navigation Checks

Experiments

- 11. D-9 (Apollo portion)
- 12. D-9
- 13. D-6
- 14. D-1
- 15. D-8
- 16. MSC 2 and MSC 3
- 17. MSC 1
- 18. MSC 10
- 19. S-5
- 20. S-6
- 21. M-3
- 22. M-4

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MEDICAL DATA PASS PROCEDURES

Purpose

1. To provide the necessary medical monitoring of the flight crews during the mission to insure crew safety.

2. To provide data required by the M-3 Experiment

3. To further evaluate the operation of the medical monitoring equipment.

Procedure

1. Medical Data Pass Type 1 - One of these checks per 24 hours on the Command Pilot and one or more per 24 hours on the Pilot will be performed over designated ground stations. Surgeon 1 will contact the crew member involved to exchange necessary information. Each type 1 medical data pass will consist of the following:

- a. Oral temperature measurement
- *b. Blood pressure measurement

*c. Exercise - Crewman pulls on exerciser for 30 pulls (approximately one pull per second)

- *d. Blood pressure measurement
- e. Food and water evaluation

*M-3 Experiment requirements

2. Medical Data Pass Type 2 - Two of these checks per 24 hours will be scheduled for the Command Pilot over designated ground stations. Sufficient type 2 checks will be scheduled for the Pilot to complete three medical data passes per 24 hours. Surgeon 1 will contact the crew member involved to exchange necessary information. Each type 2 check will consist of:

- a. Oral temperature measurement
- b. Blood pressure measurement
- c. Food and water evaluation

NOTES:

1. The oral temperature probe must remain in the mouth for three minutes without talking. They will be started prior to station AOS and the ground will notify the spacecraft as soon as a valid reading is obtained. The ground should not request information from the crewman who is taking an oral temperature prior to obtaining a valid reading. Normally, the other crewman will be sleeping during this period.

2. Biomedical tape recorders will be used alternately as designated during the orbit phase of the mission. Both recorders will be on for launch through insertion and retrofire through landing. Alternate designation of recorder usage was determined such that a time history phonocardiogram of the sleeping crewman will be recorded.

3. Each crew member will estimate the amount of food and water consumed since his last medical data pass and relay this information to the ground.

TVDE	ELAPSI (HR	ED TIME :MIN)	CTRATE ON	DET	24-HOUR
	CMD PILOT PILOT		STATION	RE V	NO.
1 1 2 1 2	3:58 15:46 25:10	3:02 10:41 21:25	GYM CRO HAW RKV CRO GYM	2 3 7 10 14 16	1
1 2 1 1 2	28:19 37:54 49:47	33:11 41:00 45:50	GYM RKV RKV RKV CNV CRO	18 20 24 26 30 32	2
1 2 1 1 2	53:11 59:57 72:25	56:28 65:00 70:55	CSQ HAW RKV CYI TEX GYM	34 36 38 4 2 45 46	3
1 1 2 1 2 2	77:08 86:37 95:19	81:35 92:12 94:44	TEX HAW RKV CRO CRO CRO CRO	49 52 55 59 61 61	4

MEDICAL DATA PASSES

EAT - SLEEP PERIODS

TASK	ELAPSE (HR:	D TIME MIN)	STATT ON	ਸ਼ਾਸ	24-HCUR
	CMD PILOT	PILOT	SINITON		NO.
	7:30 - 11:30 20:30 - 24:30	12:00 - 16:00		5 - 8 8 - 11 14 - 16	l
	31:00 - 35:00 41:40 - 45:40	25:00 - 29:00 35:30 - 39:30		16 - 19 20 - 23 23 - 25 27 - 29	2
PERIODS	54:30 - 58:30 66:30 - 70:15	48:15 - 51:45 59:00 - 63:00		31 - 33 35 - 37 38 - 40 42 - 45	3
SLEEP	78:45 - 82:45 91:15 - 94:15	72:00 - 76:00 83:00 - 87:00		46 - 49 50 - 53 53 - 56 58 - 60	4
EAT PERIODS	5:20 - 12:00 - 12:45 18:30 -	6:05 10:10 - 10:55 19:15		4 7 8,9 12	1
	25:15 - 26:00 30:10 - 36:00 - 36:45 40:45 -	- 23:00 - 23:45- 30:55 34:40 - 35:25 41:30 45:00 - 45:45		16, 17 20 22, 23 23, 24 26 30	2
	48:15 - 48:50 53:55 - 59:00 - 59:45 65:45 -	54:30 57:15 - 58:00 66:30 70:30 - 72:00		31 35 37 38 42,43 45,46	3
	72:00 - 72:45 78:00 - 84:00 - 84:45 89:25 -	78:45 82:00 - 82:45 90:05		46,47 50 53 54 57,58	4

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HUMIDITY SENSOR

Purpose:

To determine the relative humidity at various locations within the S/C.

Spacecraft Configuration

No S/C systems requiremtns

NOTE: Checks should be made with all configurations of the faceplates and RECIRC Valve.

Time of Checks

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One series of checks approximately every 4 hours plus 1 hour after a change in the faceplate/RECIRC Valve configuration.

Procedure (A Operation of Sensor)

1. Remove sensor from stowage pouch.

2. Hold sensor in left hand with meter facing operator. Do not depress switch buttons.

3. Operate the bellows with the right hand for four or five complete cycles. Bellows vent valve should not be covered by fingers when activating bellows.

4. Depress the front (one closest to meter) switch button and read the meter. This is the dry bulb air temperature.

5. Hold the front switch button depressed, and depress the back switch button.

6. Operate the bellows until the meter reading stabilizes at minimum value. This is the wet bulb temperature.

7. With the dry bulb temperature and the difference between dry and wet bulb temperatures, read the percent relative humidity from the humidity chart. Record the wet and dry bulb readings and the GMT in the Flight Book.

8. When replacing sensor in stowage pouch, place the top (side containing switch buttons) of the sensor toward the hard fiberglass board to prevent switch actuation during stowage.

NOTE: Sensor should be allowed approximately 15 minutes to come to tempperature equilibrium in the cabin prior to use to avoid erroneous data, particularly after stowage in a different temperature environment.

- A. Readings are to be taken at the following locations in the cockpit for each check.
 - a. Near the helmet
 - b. Near the hand-controller
 - c. In the footwell and behind instrument panel
- B. Water Filling
- 1. Insert water injection gun in valve on bottom of sensor.
- 2. Squeeze trigger to inject a small amount of water into reservoir.
- 3. The small felt pad next to valve will absorb any overflow and when damp indicates sufficient water has been injected.
- 4. Water reservoir should be filled each day prior to use and after each exposure to reduced pressure.
- NOTE: When indicated wet bulb temperature approaches the dry bulb reading, the reservoir should be filled and the reading repeated, to ensure the small wet bulb temperature depression is caused by high relative humidity and not lack of water to wet bulb.

Purpose

- 1. To achieve a five (5) day lifetime capability.
- 2. To evaluate the operation of the forward firing thrusters.

Spacecraft Systems Configuration

- 1. PLATFORM ORB RATE
- 2. ATTITUDE CONTROL HOR SCAN
- 3. RATE GYROS (3) ON
- 4. COMPUTER CATCH-UP
- 5. Station up-dated catch-up mode by DCS. The nominal values are:
 - $V_{\rm X} = 00070$ $V_{\rm X} = 00000$ $V_{\rm X} = 00000$
- 6. Event Timer counting down to 00:00 at time of translation.

NOTE:

- 1. Station gives Event Timer setting for the crew to set Event Timer. (Allow 3 mins for crew to set Event Timer.)
- 2. After the crew has set the Event Timer the station gives a mark to start the Event Timer counting down to 00:00 at the time of the translation.

Time of Translation - Second Apogee

Procedures

- 1. Fifteen minutes prior to translation, align PLATFORM REF
- 2. Five minutes prior to translation check ground updated catch-up mode.

Nominal values are:

25:00070	(7ft/sec	fwd)
26:00000	(Oft/sec	dwn)
27:00000	(Oft/sec	rt)

- 36
 - 3. One minute prior to translation:
 - a. Start COMP PUSH
 - b. PLATFORM ORB RATE
 - c. SCANNERS OFF
 - d. ATTITUDE CONTROL RATE CMD
 - e. MANEUVER CONTROLLER UNSTOW
 - f. OAMS POWER MANEUVER & ATT
 - g. Control spacecraft ATTITUDE to:

0° ROLL

180° PITCH

h. FDM - RATE

4. At ground updated time of translation translate AFT to drive the FWD-AFT IVI's to zero. (Event Timer reads 00:00)

NOTE

- a. FWD firing thrusters No.'s 11 and 12 used
- b. Approximately 12 seconds of thrust required
- 5. After the translation is completed:
 - a. OAMS POWER ATT
 - b. MANEUVER CONTROLLER STOW
 - c. ATTITUDE CONTROL DIRECT

6. Proceed to the Apollo Yaw orientation check if conditions are nominal.

Propellant Requirements

- 1. ATTITUDE CONTROL for translation 0.7
- 2. Translation <u>6.8</u> 7.5 #

TRANSLATION NO. 2A AND 2B

Purpose

1. To achieve a three (3) day lifetime capability.

2. To evaluate the operation of the left firing thruster.

3. To evaluate the application of a three (3) axis ΔV with the AFT firing thrusters.

Spacecraft Systems Configuration - Power Down

Time of Translations

1. 2A - 30th apogee

2. 3 - The following perigee

Proce

- 1. TRANSLATION 2A
 - a. One hour prior to translation warm up and align PLATFORM SEF
 - b. Unstow and prepare 16mm camera for photography
 - c. Ten minutes prior to translation:
 - (1) PLATFORM ORB RATE
 - (2) SCANNER OFF
 - (3) ATTITUDE CONTROL DIRECT
 - (4) Control Spacecraft attitude to and hold:
 - 0° Roll
 - -64° Yaw

0° Pitch

<u>Note</u>:

YAW angle is -64° to align the left firing thruster with the velocity vector of the spacecraft.

- d. Five (5) minutes prior to translation:
 - (1) COMPUTER PWR ON
 - (2) COMPUTER CTCH UP
 - (3) Update computer via MDU with ground updated V.

Nominal values are:

25:00120 (l2ft/sec fwd) 26:00000 (Oft/sec up-down) 27:00000 (Oft/sec lt-rt)

- (4) RATE GYROS (3) PRI
- e. One minute prior to translation
 - (1) Start COMP PUSH
 - (2) ATTITUDE CONTROL RATE CMD
 - (3) Maneuver controller UNSTOW
 - (4) OAMS PWR Maneuver and ATT
 - (5) Control spacecraft attitude to:
 - 0° Roll -64° Yaw 0° Pitch
 - (6) FDR RATE

f. At ground updated time of translation, translate right to drive IVI's to zero. Photograph thruster plume with the lomm camera if the translation is at night.

NOTE:

- 1. Prior to the translation and at -64° yaw, the IVI's will nominally read:
 - 11 ft/sec RIGHT
 - 5 ft/sec FWD
 - 0 ft/sec up-down
- 2. Left firing thruster No. 13 used
- 3. Approximately 30 seconds of thrust required.

- (1) ATTITUDE CONTROL DIRECT
- (2) RATE GYROS (3) OFF
- (3) COMPUTER PWR OFF
- (4) OAMS PWR ATT
- (5) Proceed to Translational Systems Check No. 1, 2 & 3

2. TRANSLATION 2B

- a. Fifteen (15) minutes prior to translation align platform BEF
- b. Five (5) minutes prior to translation:
 - (1) COMPUTER PWR ON
 - (2) COMPUTER CTCH UP
 - (3) Update computer via MDU with ground updated 🖉 V

Nominal values are:

25:90260 (26ft/sec AFT) OAMS decay 26:90050 (5ft/sec UP) Constant valve 27:90050 (5ft/sec LEFT) Constant valve

- (4) FDR COMP
- (5) FDM ATT
- (6) PLATFORM ORB RATE
- (7) SCANNER OFF

(8) Null FDI's to align spacecraft along the resulant velocity vector.

NOTES:

- a. Nominal resulant ▲V is 27ft/sec
- b. Nominal attitudes are:

10.9° Pitch -169.4° Yaw

c. FDI's will have a "fly-away" bias

- c. One minute prior to translation:
 - (1) START COMP PUSH
 - (2) ATTITUDE CONTROL RATE CMD
 - (3) Maneuver Controller UNSTOW
 - (4) OAMS PWR Maneuver & ATT
 - (5) Control spacecraft attitudes to null FDI's

d. At ground updated time of translation translate FWD to drive IVI's to zero.

NOTES:

- 1. AFT firing thrusters No.'s 9 and 10 used
- 2. Approximately 34 seconds of thrust
- e. After the translation is completed:
 - (1) ATTITUDE CONTROL DIRECT
 - (2) OAMS PWR ATT
 - (3) Maneuver Controller STOW
 - (4) Proceed to tracking task if conditions are nominal

TOTAL

26.7 #

Propellant Requirements

1. Translation No. 2A

a.	Attitude	Control	for	translation	1.2	
b.	Translati	ion		TOTAL	<u> 10.5</u> 11.7	#

2. Translation No. 2B

a. ATTITUDE CONTROL for Translation 3.5
 b. Translation <u>23.2</u>

Purpose

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1. TRANSLATIONAL SYSTEM CHECK NO. 1

a. To evaluate the operation of the right firing thruster

b. To determine the visual characteristics of the right firing thruster's plume.

2. TRANSLATIONAL SYSTEM CHECK NO. 2

a. To evaluate the operation of the up firing thruster

b. To determine the visual characteristics of the up firing thruster's plume.

3. TRANSLATIONAL SYSTEM CHECK NO. 3

a. To evaluate the operation of the down firing thruster

b. To determine the visual characteristics of the down firing thruster's plume

Spacecraft Systems Configuration

1. PLATFORM - ORB RATE

2. RATE GYROS - PRI

3. FDM - RATE

4. 16mm camera unstowed and prepared for photography thruster plumes

5. Other Systems - AS REQ

Time of Translations

No. 1 - Fifteen minutes after translation No. 2A. (If this period is at night)

No. 2 - Five (5) minutes after No. 1

No. 3 - Five (5) minutes after No. 2

<u>NOTE</u>: These translations will be scheduled during the night phase of the 30th revolution in between the apogee and perigee translations, if possible.

Procedure

- 1. Five (5) minutes prior to Translational System Check No. 1
 - a. COMPUTER PWR ON
 - b. COMPUTER CTCH UP
 - c. Update computer via MDU as follows:

25:00000 (Oft/sec FWD-AFT) 26:00000 (Oft/sec UP-DWN) CONSTANT VALUES 27:00050 (5ft/sec LEFT)

- d. ATTITUDE CONTROL DIRECT
- e. Control spacecraft ATTITUDES to:

 0°_{0} Roll -26 Yaw 0° Pitch

<u>NOTE</u>: YAW angle is -26° to align the right firing thruster perpendicular to the velocity vector of the spacecraft.

2. One minute prior to No. 1

- a. Start COMP PUSH
- b. Maneuver CONTROLLER UNSTOW
- c. OAMS PWR Maneuver & ATT

d. Control spacecraft Attitude to:

0[°] Roll -26[°] Yaw 0[°] Pitch

3. At time of No. 1

- a. Translate left to drive IVI's to zero
- b. Photograph thruster plume using the lomm camera

NOTES:

a. Prior to burn, and at -26° Yaw attitude IVI's read approximately as follows:

4/ft/sec LEFT 2/ft/sec FWD 0/ft/sec UP-DWN

- b. Right firing thruster No. 14 used
- c. Approximately 12 seconds of thrust required.
- 4. After Translational System Check No. 1
 - a. Control spacecraft to attitudes for Translational Systems Check No. 2
 - 0⁰ Roll 0⁰ Yaw 26⁰ Pitch

NOTE: Pitch angle is 26° to align the up firing thruster perpendicular to the velocity vector of the spacecraft.

b. Update computer via:

25:00000 (Oft/sec FWD-AFT) 26:00050 (5ft/sec DWN) CONSTANT VALUES 27:00000 (Oft/sec LEFT - RT)

5. One minute prior to No. 2

a. START COMP - PUSH

b. Control spacecraft ATTITUDE to:

0⁰ Roll 0⁰ Yaw 26⁰ Pitch

6. At time of No. 2

a. Translate down to drive IVI's to zero

b. Photograph the thruster plume using the 16mm camera

NOTE:

a. Prior to translation and at 26° Pitch, IVI's read approximately as follows:

4ft/sec DWN 2ft/sec FWD Oft/sec LEFT-RT

- b. Up firing thruster No. 16 used
- c. Approximately 12 seconds of thrust required
- 7. After Translational System Check No. 2
 - a. Control spacecraft to ATTITUDES for Translational Systems Check No. 3
 0° Roll
 0° Yaw
 -26° Pitch

NOTE:

Pitch angle is -26° to align the DWN firing thruster perpendicular to the velocity vector of the spacecraft

b. Update computer via MDU as follows:

25:00000 (Oft/sec FWD-AFT) 26:90050 (5ft/sec UP) CONSTANT VALUES 27:00000 (Oft/sec LEFT - RT)

- 8. One minute prior to No. 3
 - a. START COMP PUSH
 - b. Control spacecraft ATTITUDE to:
 - 0° Roll 0° Yaw -26° Pitch
- 9. At time of No. 3
 - a. Translate up to drive IVI's to zero
 - b. Photograph thruster plume using 16mm camera

NOTE:

a. Prior to translation and at -26° Pitch, IVI's read approximately as follows:

4ft/sec UP 2ft/sec FWD Oft/sec LEFT - RT

- b. DWN firing thruster No. 15 used
- c. Approximately 12 seconds of thrust required
- 10. After Translational System Check No. 3
 - a. COMPUTER PWR OFF
 - b. OAMS PWR ATT
 - c. Proceed to translation 23

Propellant Requirements

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e. "

1. Translational Systems Check No. 1					
	a.	ATTitude Control for Trans	ation	0.6	
	b.	Translation		4.6	
		St	IB-TOTAL	5.2 #	
2.	Tra	anslational Systems Check No.	2		
	a.	ATTitude Control for Transl	ation	0.6	
	b.	Translation		4.6	
		SU	IB-TOTAL	5.2 #	
3.	Tra	nslational Systems Check No.	3		
	a.	ATTitude Control for Transl	ation	0.6	
	b.	Translation		4.6	
		SU	B-TOTAL	5.2 #	

Purpose

- 1. To achieve a two (2) day lifetime capability
- 2. To evaluate the operation of FWD firing thrusters

Spacecraft Systems Configuration - Powered Down

Time of Translations

- 1. 4A 45th apogee
- 2. 4B The following perigee

Procedure

- 1. TRANSLATION 3 A
 - a. One hour prior to translation warm up and align PLATFORM BEF
 - b. Unstow and prepare 16mm camera for thruster plume photography
 - c. Five minutes prior to translation
 - (1) PLATFORM ORB RATE
 - (2) SCANNER OFF
 - (3) COMPUTER PWR ON
 - (4) COMPUTER CTCH UP
 - (5) RATE GYROS (3) PRI (or SEC)
 - (6) Update computer via MDU with ground update AV

Nominal values are:

25:00040 (4ft/sec FWD) 26:00000 (0ft/sec UP-DWN) 27:00000 (0ft/sec LEFT - RT)

- d. One minute prior to translation:
 - (1) START COMP PUSH
 - (2) ATTITUDE CONTROL RATE CMD

- (3) Maneuver Controller UNSTOW
- (4) OAMS PWR Maneuver and ATT
- (5) Control spacecraft Attitudes to:
 - 0° Roll 130° Yaw 0° Pitch
- (5) FDR RATE

e. At ground updated time of translation translate AFT to drive the FWD-AFT IVI's to zero. (Event Timer reads 00:00) Photography plume with l6mm camera if translation is at night.

NOTE:

- 1. FWD firing thrusters No.'s 11 and 12 used
- 2. Approximately seven (7) seconds of thrust required
- f. After the translation is complete:
 - (1) ATTITUDE CONTROL DIRECT
 - (2) RATE GYROS (3) OFF
 - (3) COMPUTER PWR OFF
 - (4) CAMS PWR ATT
- 2. TRANSLATION NO. 3B
 - a. Fifteen minutes prior to translation align PLATFORM SEF
 - b. Five minutes prior to translation:
 - (1) PLATFORM ORB RATE
 - (2) SCANNER OFF
 - (3) COMPUTER PWR ON
 - (4) COMPUTER CTCH UP
 - (5) Update computer via MDJ with ground updated AV

Nominal values are:

25:90060 (6ft/sec AFT) 26:00000 (0ft/sec UP-DWN) 27:00000 (0ft/sec LEFT-RT)

- (6) RATE GYROS (3) PRI (or SEC)
- c. One minute prior to translation:
 - (1) START COMP PUSH
 - (2) ATTITUDE CONTROL RATE CMD
 - (3) Maneuver Controller UNSTOW
 - (4) OAMS PWR MANEUVER And ATT
 - (>) Control spacecraft ATTITUDES to:
 - 0° Roll 0° Yaw 0° Pitch
 - (o) FDR RATE

d. At ground updated time of translation translate AFT to drive the FWD-AFT IVI's to zero. (Event Timer reads 00:00) Photograph thruster plume with the l6mm camera.

- NOTE:
- 1. FWD firing thrusters No.'s 11 and 12 used
- 2. Approximately 10 seconds of thrust required
- e. After the translation is completed:
 - (1) OAMS PWR -ATT
 - (2) Maneuver Controller STOW
 - () ATTITUDE CONTROL DIRECT
 - (4) Proceed to tracking task

Propellant Requirements

- 1. Translation 3A
 - a. Attitude Control for translation 0.4
 - b. Translation <u>3.9</u> TOTAL <u>4.3</u> #
- 2. Translation 3B

a.	Attitude Control for translation	0.6
b.	Translation	5.8
	TOTAL	6.4 #

TRANSLATION NO. -

Purpose

1. To utilize the remaining OAMS Propellant as a retrograde translation

2. To evaluate the operation of the AFT firing thrusters after 4 days in a space environment

Spacecraft Systems Configuration

- 1. Preretro Checklist complete
- 2. All systems powered up
- 3. Event Timer counting down to 00:00 at time of retrofire

Time of Translation

Twelve (12) minutes prior to retrofire

Procedures

- 1. Ten minutes prior to translation:
 - a. Align PLATFORM BEF
 - b. Check ground DCS updated V in catch up mode

<u>NOTE</u>:

Nominal values will be:

```
25:91100
26:00000
27:00000
```

- 2. One minute prior to translation:
 - a. START COMP PUSH
 - b. PLATFORM ORB RATE
 - c. ATTITUDE CONTROL RATE CMD
 - d. Maneuver Controller UNSTOW
 - e. OAMS PWR Maneuver and ATT
 - f. Control spacecraft ATTITUDE to: 0° Roll 180°Yaw 0° Pitch

g. FDM - RATE

3. When Event Timer reads 12:00 translate FWD to drive the FWD-AFT IVI to zero. Give mark at start and stop of translation

NOTE:

a. AFT firing thrusters No.'s 9 and 10 used

b. Approximately 116 seconds of thrust required

4. After the translation is completed:

a. Report IVI readings

b. OAMS PWR - ATT

- c. Maneuver Controller STOW
- d. Align PLATFORM BEF in preparation for retrofire.

Propellant Requirements

1.	ATTITUDE	CONTROL	for	Translations	14.3

2. Translation <u>94.6</u> TOTAL 108.9

<u>NOTE</u>: The above propellant estimates are based on a AV of 110 ft/sec to allow a contingency. The nominal value is 93 ft/sec.

APOLLO YAW ORIENTATION CHECK

Purpose

To determine the crew's ability to visually orient the spacecraft to reentry attitude from arbitrary rates and a ttitudes.

NOTE: The Apollo high altitude abort requires the crew to visually damp rates and orient the spacecraft to reentry attitude in 45 to 60 seconds. As presently conceived, the Apollo could be launched at night; therefore, the check will be performed in darkness as well as in the daylight.

Spacecraft Systems Configuration Prior to Check

- 1. AC POWER IGS
- 2. COMPUTER PRE LN
- 3. PLATFORM ORB RATE
- 4. RATE GYROS (3) PRI
- 5. Left ATT IND OFF
- 6. Right ATT IND WITH FDI
- 7. ACME BIAS PWR PRI
- 8. SCANNER PRI

Time of Check

- 1. Night Check 2:20
- 2. Day check 71:35

Procedures

- 1. ATTITUDE CONTROL DIRECT
- 2. Control S/C attitudes to:

0° Roll 0° Pitch (No Yaw requirement)

3. Pilot establish 3°/sec rate simultaneously in all exes. Monitor SCANNER IGNORE Light for illumination.

4. After 30 seconds drift, Cmd Pilot assumes control and controls the S/C using visual cues to retrofire attitude.

5. Mark start and end times on the voice tape recorder.

6. Proceed to the next operation

Propellant Requirements

1.	Establish	rates	0.	5
ì.	Estaciisn	rates	υ.	- 7

2. Damp Rates 1.0

3.	Control	. to	retro			
	attituc	le		1	0	
			SUB-TOTAL	2	• 5	#
TOTA	L (two	ched	cks			
	pe	erfoi	rmed)	5	. 0	#

APOLLO LANDMARK INVESTIGATION

Purpose

1. To evaluate the selected Apollo landmarks for suitability as orbit navigation references.

2. To evaluate the Apollo onboard information used for landmark identification.

Spacecraft Systems Configuration

- 1. AC POWER ACME
- 2. ACME BIAS PWR PRI
- 3. Hasselblad camera and photoevent indicator prepared for photography
- 4. Reticle installed and ON
- 5. Appropriate Apollo maps unstowed and prepared for use
- 6. ATTITUDE CONTROL PULSE

Time of Check

- 1. RUN 1
 - a. REV 15 b. TIME - 22:40
- 2. RUN 2

a. REV - 19 b. TIME - 28:30

3. RUN 3

a. REV - 33 b. TIME - 30:05

4. RUN 4

a. REV - 47 b. TIME - 74:00

5. RUN 5

a. REV - 51 b. TIME - 79:00

Procedures

- 1. No. 2 (or No. 1) AUDIO RCD
- 2. Mark time and record run to be accomplished
- 3. Control S/C Attitude to acquire Landmark.
- 4. Evaluate usefulness of Apollo maps for acquisition aids
- 5. Obtain 2 to 3 photographs of landmarks with the Hasselblad camera
- 6. No. 2 (or No. 1) AUDIO UHF
- 7. Power-down S/C or proceed to the next operation

Landmarks to Be Investigated

1.	RUN 1 -	124 - Junction of Blue Nile and White Nile
2.	RUN 2 -	49 & 50 - (49) (Point Jiguera, Puerto Rico) (50) (Point Aguilla, Puerto Rico)
3.	RUN 3 -	33 -(El Dorado Airport, Bogota, Columbia)
4.	RUN 4 -	301 - (Point Loma Lighthouse, San Diego, Calif.)
5.	RUN 5 -	46 & 48 - (46) (Lake Titicaca) (48) (Lake De Poopo, Boliva)

Propellant Requirements

0.5 #/Run X 5 Runs = 2.5 #

<u>Real-time Updating</u> (Use D-6 Format)

NAME SEQ. NO.	TIME	ACQUIS YAW F	SITION PITCH	EQUIP MODE	SHUTTER SPEED	APERTURE
Apollo l	15:43:36	16	- 16	_WILL _	<u>NOT BE</u>	<u>USE</u> D_

The Names will be as follows:

RUN	1	-	Apollo	1
RUN	2	-	Apollo	2
Run	3	-	Apollo	3
Run	4		Apollo	4
Run	5		Apollo	5

Purpose

To obtain data on the operation on the HF Reception/Transmission under varying atmospheric conditions.

Spacecraft Systems Configuration

- 1. HF RNTY
- 2. HF ANT EXT/OFF
- 3. SCANNER PRI (or SEC)
- 4. ATTITUDE CONTROL HOR SCAN
- (No YAW ATTITUDE Requirement)

Normal Time and Conditions of Test

- 1. DAYLIGHT 12 min prior to ASC on the 18th revolution (26:58)
- 2. NIGHT 12 min prior to CTN on the 17th revolution (26:16)
- 3. SUNSET 17 revolution (25:58)
- 4. SUNRISE -17 revolution (26:38)

Procedure

1. Day and Night

A. <u>12</u> min prior to station (CTN or ASC) AOS. The crew transmits on HF two long counts preceded and followed by the spacecraft identification. (Maximum time duration $\underline{1}$ min)

B. On the following schedule the range stations transmit on HF one long count preceeded and followed by the station identification. (Maximum duration 30 sec). The crew will monitor the HF and record the stations received along with comments on the signal strength.

<u>Station AOS</u> <u>Min:Sec</u>	Station
11:00	CNV
10:30	BDA
10:00	CYI
9:30	KNO
9:00	TAN
8:30	CRO
8:00	CSQ

	Time From				
	Station AOS <u>Min:Sec</u>	<u>Station</u>			
	7:30 7:00 6:30 6:00 5:30	RKV CTN HAW GYM TEX			
C.	At Station AOS minus 5 min: No. 1 (or 2) AUDIO - HF - DF Record GMT of start and stop in Flight	Book			
D.	At Station AOS: No. 1 (or 2) AUDIO - HF Use HF for station pass communications				
E.	At Station LOS: No. 1 (or 2) AUDIO - HF - DF Record GMT of start and stop in Flight	Book			
F.	At Station LOS plus 5 min: No. 1 (or 2) AUDIO - UHF				
Sunrise and Sunset					
a.	At sunrise (sunset) minus 2 min 30 sec No. 1 (or 2) AUDIO - HF Transmit spacecraft identification and	a short count			
b.	No. 1 (or 2) AUDIO - HF - DF Record GMT in Flight Book				
c.	At sunrise plus 2 min 30 sec No. 1 (or 2) AUDIO - HF Transmit spacecraft identification and Record GMT in Flight Book No. 1 (or 2) AUDIO - UHF	a short count			

 $\underline{\rm NOTES}$: l. For each of the above tests, all ground stations will record the HF signal strengths and the HF Air/Ground voice.

2. The times of the above tests will be updated real-time to both the spacecraft and the range.

Propellant Requirements

1.	Establish	Attitudes	for HOR SCAN	0.15
2.	HOR SCAN	for 1 hr 2	0 min	0.25
			TOTAL	0.40

2.

Purpose

To determine the crew's ability to control spacecraft attitudes with one attitude thruster failed.

Spacecraft Systems Configuration

- 1. PLATFORM ORB RATE
- 2. RATE GYROS (3) PRI (or SEC)
- 3. COMPUTER PRE LN
- 4. ATTITUDE CONTROL DIRECT

Procedures

- 1. Control spacecraft ATTITUDE to:
 - 0⁰ ROLL 0⁰ YAW 0⁰ PITCH
- 2. Attitude thruster No. 8 C/B OPEN
- 3. ROLL JETS PITCH
- 4. Establish a $3^{\circ}/\text{sec}$ YAW left RATE

NOTE: ROLL will have to be controlled during the YAW maneuver.

- 5. Attitude thruster 8 C/B CLOSED (during 180° YAW)
- 6. Attitude thruster 4 C/B OPEN (during 180° YAW)
- 7. Damp YAW rates at 180° YAW

NOTE: ROLL will have to be controlled during YAW rate damping

- 8. Attitude thruster 4 C/B CLOSED
- 9. ROLL JETS YAW

10. Proceed to the next operation

<u>Time of Check</u> Time: 48:10 to 48:15 Rev: 31

Propellant Requirements

- 1. Control S/C to 0° , 0° , 0° 0.2
- 2. Establish rates 0.4
- 3. Damp rates

0.4

Total 1.0#

Purpose

To determine the spacecraft attitude limits for operation of the horizon scanners.

Spacecraft Systems Configuration

- 1. SCANNERS PRI
- 2. PLATFORM ORB RATE (and aligned)
- 3. RATE GYROS PRI
- 4. FDM RATE
- 5. LEFT ATT IND WITH FDI
- 6. COMPUTER PRE LN

Procedures

- 1. Pitch axis
 - a. ATTITUDE CONTROL PULSE
 - b. Control spacecraft attitude to:
 - 0⁰ Roll 0⁰ Yaw 0⁰ Pitch
 - c. Damp rates in all axes
 - d. Establish a $\frac{1}{2}^{\circ}$ /sec pitch up rate (5 pulses)
 - e. Observe scanner ignore light illuminate (at approximately 20° pitch)
 - f. Establish a $\frac{10}{2}$ /sec pitch down rate (10 pulses)
 - g. Observe scanner ignore light extinquish (at approximately 16° pitch)
 - h. Observe scanner ignore light illuminate (at approximately -20° pitch)

i. Establish a $\frac{1}{2}^{\circ}$ /sec pitch up rate (10 pulses)

- j. Observe the scanner ignore light extinguish (at approximately -16° pitch)
- 2. Roll Axis
 - a. Control spacecraft attitude to

0⁰ Roll 0⁰ Yaw 0⁰ Pitch

```
b. Damp rates
```

c. Establish a $\frac{10}{2}$ /sec roll right rate (5 pulses)

```
d. Observe the scanner ignore light illuminate (at approximately 20° roll)
```

e. Establish a $\frac{10}{2}$ /sec roll left rate (10 pulses)

- f. Observe the scanner ignore light extinguish (at approximately 16°)
- g. Observe the scanner ignore light illuminate (at approximately -20°)
- h. Establish a $\frac{10}{2}$ /sec roll right rate (10 pulses)
- i. Observe the scanner ignore light extinguish (at approximately -16°)

3. + Roll - With Pitching

a. Control spacecraft attitude to:

b. Damp rates

c. Establish a $\frac{1}{2}^{\circ}$ /sec pitch up rate (5 pulses)

d. Observe the scanner ignore light illuminate (at approximately 15° pitch)

e. Establish a $\frac{1}{2}$ /sec pitch down rate (10 pulses)

f. Observe the scanner ignore light extinguish (at approximately ll^{0} pitch)

g. Observe the scanner ignore light illuminate (at approximately-15 $^{\rm o}$ pitch)

h. Establish a $\frac{10}{2}$ /sec pitch up rate (10 pulses)

i. Observe the scanner ignore light illuminate (at approximately -ll° pitch)

4. - Roll - With Pitching

a. Control spacecraft attitude to:

-10° Roll 0° Yaw 0° Pitch

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```
b. Damp rates
```

c. Establish a $\frac{1}{5}^{\circ}$ /sec pitch up rate (5 pulses)

d. Observe the scanner ignore light illuminate (at approximately 15° pitch)

e. Establish a $\frac{1}{2}^{\circ}$ /sec pitch down rate (10 pulses)

f. Observe the scanner ignore light extinguish (at approximately ll° pitch)

g. Observe the scanner ignore light illuminate (at approximately -15° pitch)

h. Establish a $\frac{1}{2}^{\circ}$ /sec pitch up rate (10 pulses)

i. Observe the scanner ignore light illuminate (at approximately -ll^O pitch)

5. + Pitch - With Rolling

a. Control spacecraft attitude to:

0° Roll

0° Yaw

10⁰ Pitch

b. Damp rates

c. Establish a $\frac{1}{2}^{\circ}$ /sec roll right rate (5 pulses)

d. Observe the scanner ignore light illuminate (at approximately ${\rm 15}^{\rm 0}$ roll)

e. Establish a $\frac{1}{2}^{\circ}$ /sec roll left rate (10 pulses)

f. Observe the scanner ignore light extinguish (at approximately ${\rm ll}^{\rm O}$ roll)

g. Observe the scanner ignore light illuminate (at approximately $-{\rm 15}^{\circ}$ roll)

h. Establish a $\frac{10}{2}$ /sec roll right rate(10 pulses)

i. Observe the scanner ignore light illuminate (at approximately -ll° roll)

6. - Pitch - With Rolling

a. Control spacecraft attitude to:

0° Roll 0°Yaw -10° Pitch b. Damp rates c. Establish a $\frac{1}{2}$ /sec roll right rate (5 pulses) d. Observe the scanner ignore light illuminate (at approximately 15[°] roll) e. Establish a $\frac{1}{2}^{\circ}$ /sec roll left rate (10 pulses) f. Observe the scanner ignore light extinguish (at approximately 11° roll) g. Observe the scanner ignore light illuminate (at approximately -15° roll) h. Establish a $\frac{1}{2}^{\circ}$ /sec roll right rate (10 pulses) i. Observe the scanner light extinguish (at approximately -ll⁰ roll) Time of Check Time: 48:00 to 48:15 Rev: 31 Propellant Requirements 1. Control S/C to ATTITUDES to - 0.20# Initiate check 2. Establish $\frac{1}{2}^{\circ}$ /sec rate four times 0.15# Perform six times $(6 \times 0.35) =$ 2.1#
HORIZON SCANNER SUN, MOON, AND THRUSTER CHECKS

Purpose

To determine the effect of the sun, moon and OAMS Maneuver thruster plumes on the Horizon Scanner Operation.

Spacecraft Systems Configuration for each Test

- 1. SCANNER PRI (Only)
- 2. PLATFORM ORB RATE (and aligned)
- 3. ATTITUDE CONTROL PULSE

NOTE: (1) It is desirable that all tests be conducted over a ground station with real-time T/M capability.

Procedure

- A. Sunset Test
 - 1. 5 minutes prior to S/C sunset:
 - a. Computer ON/PRE LN
 - b. Align S/C to:

0⁰ Pitch 0⁰ Roll Yaw aligned with the sun All Rates zero

- 2. Establish a 2⁰/sec Yaw right Rate
- 3. Allow S/C Attitude to increase for 180° in Yaw (Maintain $\rm C^{O}$ Pitch and O° Roll)
- 4. Establish a 2°/sec Yaw left Rate
- 5. Allow S/C Attitude to decrease to initial Yaw angle. (Maintain 0° Pitch and 0° Roll)
- 6. Repeat steps 2 thru 5 until sunset plus 3 minutes.
- 7. Computer Pwr OFF
- B. Moonset (Moonrise)

Repeat above procedure except:

- 1. Using the moon to provide the initial orientation.
- 2. Stop check following the last complete cycle after moonset.

- C. Thruster Plume Check
 - 1. Control 3/C Attitude to:

-10° Pitch -10° Roll 90° Yaw

- 2. Computer ON/PRE LN
- 3. Maneuver Controller UNSTOW
- 4. OAMS POWER Maneuver and ATT
- 5. ATTITUDE CONTROL RATE CMD
- 6. Translate AFT for 1 SEC
- 7. Monitor and comment on the illumination of the Scanner Ignore Light.
- Maintain S/C attitude until the Scanner Ignore Light extinguishes (if req).
- 9. Computer Pwr OFF

Time of Tests

. .

- A. Sunset On the 13th Revolution (20:00)
- 3. Moonset On the 30th Revolution (26:53)
- C. Thruster Plume Over CNV in the 30/31 Revolution (47:24)

Propellant Requirements

- 1. SUN Check 2.0#
- 2. Moon Check 2.0#
- 3. Thruster Check 1.5# TOTAL 5.5#

HORIZON SCANNER STABILITY CHECK

Purpose

To obtain information of the causes for Horizon Scanner Loss of Track Signals.

Procedure

If a Scanner Ignore Light occurs without an apparent cause (such as S/C attitude) the flight crew will check and note the following conditions which may have caused the Scanner Ignore Signal.

- 1. Sun position with respect to the S/C.
- 2. Moon position with respect to the S/C.
- 3. Electrical switching in the cockpit at the time of the Ignore.
- 4. Thruster firings.
- 5. Other abnormal conditions
- 6. Time of occurrence.

Following three (3) unexplained ignore signals, the flight crew will:

- 1. Reacquire Scanner Track (No Ignore Light).
- 2. Switch to ACME Rate CMD.
- 3. Fire a short simultaneous attitude burst in 3 axes.
- 4. Note any Scanner Ignore Light.
- 5. Note time and results of tests.

NOTE: These tests will be performed on a non-interference basis with other inflight items.

ORBIT NAVIGATION CHECK

Purpose

To investigate the crew's ability to determine orbital ground track by observing known ground targets.

Spacecraft Systems Configuration

- 1. ACME BIAS PWR PRI
- 2. AC POWER ACME
- 3. EVENT TIMER STBY/Set at 00:00 (or GMT Clock stopwatch set at zero)

Procedure

- 1. Control spacececraft to acquire area of interest
- 2. Track the area of interest until the ground track is determined
- 3. At nadiar: Start EVENT TIMER counting up (or GMT Clock stopwatch)
- 4. Set orbital map overlay (1st orbit) based on observations
- 5. Determine and copy longitude and GMT of the ascending node
- 6. No. 2 (or No. 1) AUDIO RCD
- 7. Record EVENT TIMER Reading (or GMT Stopwatch) and task accomplished on voice recorder.
- 8. No. 2 (or No. 1) AUDIO UHF
- 9. EVENT TIMER STOP

10. Proceed to the next operation

Checks to be Accomplished - 10

Time of Check

Orbit Navigation Check

RUN	Time (hr:min) From <u>To</u>	Rev	<u>Area of Interest</u>
l.	14:50 15:00	9	East Coast of Arabian peninsula
2.	21:00 21:10	14	West coast of the Arabian peninsula

RUN	Time (h <u>From</u>	r:min) <u>To</u>	Rev	<u>Area of Interest</u>
3.	31:35	31:45	20	West coast of South America
4.	36:55	37:05	24	East coast of Arabian peninsula
5.	50 : 20	50:30	32	West coast of U.C.
ċ.	55 : 15	55:25	35	West coast of South America
7.	62:05	62:15	40	West coast of Arabian peninsula
3.	72:55	73:05	47	West coast of Africa
9.	75:28	75:38	48	West coast of U.S.
10.	78:45	78:55	50	West coast of South America

<u>NOTE</u>: If the coast lines called out are obscured by weather, the coast line weather will be used as a reference.

Propellant Requirements

0.25 #/run = 2.5 #

66

EXPERIMENT MSC-1

ELECTROSTATIC CHARGE

Purpose

To detect and measure charge that accumulates on the surface of the Gemini spacecraft and to examine the charge buildup phenomen during the thrusting and equipment separation.

Spacecraft Systems Configuration

During periods of no thrusting, OAMS thruster usage and equipment adapter separation.

Procedures

- 1. Verify EXP PWR C/B ON
- 2. ES SENSOR ON
- 3. Mark "on" time and identify experiment on the onboard voice recorder
- 4. ES SENSOR OFF
- 5. Mark "off" time and identify experiment on the onboard voice recorder

Periods of Operation

1. Ten minutes prior to and until ten minutes after extensive OAMS thruster usage.

2. Five periods of three hours each which may include the extensive OAMS usage periods.

3. Twenty minutes prior to equipment adapter separation and until separation of retro adapter.

Times Experiment is ON

TI	ME	
FROM	TO	REV
00:08 07:45 33:15 46:00 69:40 96:35	2:30 10:10 33:50 48:15 71:50 Postretro	1-2 5-7 22 30-31 45-47 62

Propellant Requirements - None directly

EXPERIMENTS MSC-2 & MSC-3

PROTON ELECTRON SPECTROMETER AND TRI-AXIS

FLUX-GATE MAGNETOMETER

Purpose

1. Proton Electron Spectrometer - To measure the radiation environment immediately exterior to the Gemini spacecraft.

2. Tri-Axis Flux-Gate Magnetomer - To monitor the direction and amplitude of the earth's magnetic field with respect to the Gemini spacecraft.

NOTE: These two experiments are treated as one because both experiments are controlled by the same cockpit switches.

Spacecraft Systems Configuration

Not critical

Procedures

- 1. At first activation of experiment
 - a. Verify EXP CNTL C/B Closed
 - b. Verify EXP FWR C/B Closed
 - c. SPT MAG ON (activates both experiments)
 - d. BOOM EXT
 - e. BOOM OFF (30 seconds required for boom to extend)
- 2. When the experiment is activated at other times

a. 3PT-MAG - ON (activates both experiments)

b. Mark "on" time and identify experiment on the onboard voice recorder

- 3. When the experiment is deactivated
 - a. SPT-MAG OFF (deactivates both experiments)

b. Mark "off" time and identify experiment on the onboard voice recorder NOTES:

1. These experiments will be turned on and left on continually once each day for three orbits that pass through the South Atlantic Anomaly.

2. The **sp**acecraft will be oriented BEF and SEF for one pass respectively through the South Atlantic Anomaly. No attitude control will be required for the remaining passes.

Periods of Operation

During twelve (12) passes through the South Atlantic Anomaly. (An area bounded approximately by 15°S and 55°S latitude and 30°E and 60°W longitude)

Time of Experiment

NO	TI	ਸਾਸ਼ਤ	
	FROM	TO	
1	7 : 45	11:45	5-8
2	31:40	35 : 25	21 - 2 3
3	55 : 15	58:55	3 5 - 38
4	78:45	82:30	50 - 52

Propellant Requirements

1.	Establish due east or due we st attitudes	0.25
2.	Hold attitudes for pass through the South Atlantic	
	Anomaly	0.25

•

	0.25
Subtotal	0.50

Two passes $(2 \times 0.50) = 1.0 \#$

EXPERIMENT MSC-10

TWO-COLOR EARTH LIMB PHOTOGRAPHY

Purpose

To obtain simultaneous pictures of the earth's limb in the red end and blue end of the spectrum in order to obtain data on the use of the earth's limb for navigational observations in Apollo.

Spacecraft Systems Configuration

- 1. ATTITUDE CONTROL PULSE
- 2. Photo-event indicator and Hassalblad camera prepared for photography.
- 3. MIT film magazine mounted on the Hassalblad camera
- 4. Exposure speeds and lens stops SET
- 5. AUX RECP ON

Procedures

1. Prior to sunrise, visually orient the spacecraft to:

0° Yaw 0° Roll -5° Pitch

2. ATTITUDE CONTROL - HOR SCAN

3. Through day pass take series of nine groups of photographs (three photographs per group) (Each group approximately 5 minutes apart).

NOTE - Start when the earth's limb first becomes visible.

4. Mark each photograph on the onboard voice recorder

Flight Control Requirements

Update start time

Time of Experiment

Time - 67:47 to 68:32 Rev - 43/44

Propellant Requirements

1.	Control	S/C to	exp A	TTITUDES	0.25
0	C	ירד דדר לירדונדו	<u></u>		 0.75

2. Control ATTITUDES for dayside pass 0.75

Total 1.00#

EXPERIMENT M-3

IN-FLIGHT EXERCISER

Purpose

To monitor cardiovascular status and to assess man's general capacity for performing physical work under space flight conditions.

Spacecraft Systems Configuration

- 1. Exerciser unstowed.
- 2. Blood pressure bulb UNSTOWED
- 3. Other systems not critical

Procedures

- 1. Medical data pass type 1 over station
 - *a. Oral temperature measurement
 - b. Give blood pressure measurement
 - c. Station report completion of blood pressure.

d. Perform exercise by pulling bungee cord at the rate of one pull/sec for 30 pulls.

- e. Give blood pressure.
- f. Station report completion of blood pressure.
 - NOTE Medical requirement only (See Bio-med section)

2. Exercise other than over a ground site.

a. Perform exercise by pulling bungee cord at the rate of one pull/sec for 30 seconds.

b. Mark start of exercise on the onboard voice recorder.

Periods of Exercise

1. One medical data pass type 1 pass/day by the cmd pilot and one medical data pass type 1 or more/day by the pilot.

2. Exercise other than over a ground station - enough to accomplish four exercises/day by the pilot.

Time of Experiment

Command	Command Pilot		t
Time	Rev	Time	Rev
*3:58	3	*3:02 *10:71 *21:25	2 14
*23:19	18	24:30 29:00 *33:11 *41:00 *45:50	10 19 21 26 29
*53:11	34	52:30 *56:23 *65:00 *70:55	33 36 42 45
*77:03	49	<pre>%0:30 *81:35 *92:12 95:45</pre>	79 52 59 61

* Medical data pass type 1 (See Medical data pass procedures)

EXPERIMENT M-4

Purpose

To serve as a sensitive indicator of myocardial (heart muscle) deterioration when compared with simultaneous ECG (electrocardiogram).

Procedure

The astronauts will operate the bio-medical recorders as required. The bio-medical recorders will be switched on and off such that a phono-cardiograph will always be obtained from the sleeping crewman.

Bio-Med Tape Recorders Schedule

Bio-Med RCD No. 1			<u>Bio-Med</u>	RC.	<u>D No. 2</u>
FROM		TO	FROM		TO
00:00:00 11:45:00 24:30:00 35:25:00 48:15:00	- - -	00:06:14 20:00:00 30:45:00 42:30:00 egress)0:00:00 20:00:00 30:45:00	- - -	11:45:00 24:30:00 egress

NOTE:

1. Cmd pilot's phonocardiograph is on Bio-Med RCD No. 2; Pilot's phonocardiograph is on Bio-Med RCD No. 1.

2. The bio-medical recorder schedule allows for 115 hours of bio-med recorded coverage with the maximum amount of coverage with dual recorders.

Propellant Requirements - None

EXPERIMENT S-5

SYNOPTIC TERRAIN PHOTOGRAPHY

Purpose

To improve and extend the techniques of synoptic geologic and topographic aerial photography.

Conditions

Between 9:00 a.m. and 3:00 p.m. local time

Procedures

- 1. UNSTOW:
 - a. Hasselblad camera
 - b. Photo event indicator
 - c. Ring sight
 - d. UV filter
 - e. Film back
- 2. Verify Aux Recp OFF
- 3. Prepare the Hasselblad camera and accessories for photography
- 4. AUX RECP ON

5. Mark time and record experiment to be accomplished on the onboard voice recorder.

6. ATTITUDE CONTROL - PULSE

7. Control spacecraft attitudes as required to obtain photographs of selected terrain.

8. Mark each photograph on the voice recorder

NOTES

1. Control roll as required to keep the spacecraft window in the shade

2. If weather permits, the pass over the southwestern U.S. will be used to obtain strip photographs (one photograph every 5 seconds)

3. If weather does not permit strip photography over the U.S., they will be attempted over Africa and northern Mexico in that order.

Areas to be Photographed

- 1. Southwestern U.S.
- 2. East Africa

4

سر ب م 3. Northern Mexico

Time of Experiment

		TIME		
RUN	AREA	FROM	TO	REV
l	Africa	24:00	24:20	16
2	Africa	43:10	43:15	28
3	US	48 : 50	49:00	31

.

Propellant Requirements

RUN	NO.	l		0.3
RUN	NO.	2		0.3
RUN	NO.	3		0.5
Tare	gets	of	opportunity	_3.9
				<u> </u>

EXPERIMENT S-6

SYNOPTIC WEATHER PHOTOGRAPHY

Purpose

To obtain selective, high quality, color cloud photographs to study the fine structure of the earth's weather system.

Conditions

Between 9:00 a.m. and 3:00 p.m. local time

Procedures

- 1. UNSTOW:
 - a. Hasselblad camera
 - b. Photo event indicator
 - c. Ring sight
 - d. UV filter
 - e. Film back
- 2. Verify AUX RECP OFF
- 3. Prepare the Hasselblad camera and accessories for photography
- 4. AUX RECP ON
- 5. Mark time and record experiment to be accomplished
- 6. ATTITUDE CONTROL PULSE

7. Control spacecraft altitudes as required to obtain photographs of selected weather.

- 8. Mark each photograph on the onboard voice recorder.
 - NOTE: Control roll as required to keep the spacecraft window in the shade.

Type Weather Formations to be Photographed

- 1. Squall line clouds
- 2. Thunderstorm activity not associated with squall lines

- 3. Frontal clouds and views of fronts
- 4. Jet stream cirrus clouds
- 5. Typical morning stratus over the Gulf States
- 6. Coastal cloudiness
- 7. Tropical and extra-tropical cyclones

8. Intertropical convergence zone and the various perturbations along this zone.

- 9. Cellular patterns in subtropical phenomenon
- 10. Wave clouds induced by islands and mountain ranges
- 11. Broad banding of clouds in the trade winds or other regions

Time of Experiment

RUI	N	TIME (h:	REV	
		FROM	TO	
lı		16:45	17:00	11
2		31:20	31:30	20
3		33:00	33 : 10	21
4		34:30	34 : 40	22
5		38:30	38 : 50	25
6		43 : 00	43:10	28
7		44:25	44:35	29
8		49 : 15	49:25	32
9		56 : 35	56 : 45	36
10		58 : 10	58:20	37
11		66:40	67:00	43
12		80:00	80 : 30	51

Propellant Requirements

0.3#/RU	N =		3.6#
Targets	of	opportunity	<u>3.4#</u>
,			7 .0#

EXPERIMENT D-1

PHOTOGRAPHIC DEFINITION OF OBJECTS IN SPACE

Purpose

To investigate the ability of man to acquire, track, and photograph natural celestial bodies.

Spacecraft Systems Configuration

1. Reticle mounted in left window

2. Zeiss Contarex camera associated equipment and photo event indicator mounted in right window

NOTES:

- a. The removeable filter will only be used with the 8433 film (IR).
- b. The Questar 1400mm lens will be used for all of D-1 photography.
- 3. Proper film back installed
- 4. Camera speed SET
- 5. Camera focused

Procedures

- 1. Five minutes prior to tracking task
 - a. RATE GYROS PRI
 - b. ACME BIAS FWR PRI
 - c. AC POWER ACME
 - d. ATTITUDE CONTROL DIRECT
 - e. Mark time and identify experiment to be done on voice recorder
 - f. Record film back used on the voice recorder
 - g. Record camera settings used on the voice recorder
 - h. Record frame count on film back used on the voice recorder

2

2. Cmd pilot visually controls spacecraft to acquire celestial body

3. ATTITUDE CONTROL - PULSE

4. Pilot controls spacecraft to track celestial body and takes one photograph per minute for five photographs

- 5. After tracking task:
 - a. RATE GYROS OFF
 - b. ACME BLAS FWR OFF
 - c. AC POWER OFF
 - d. Record comments on tracking on voice recorder
 - e. Record frame count on film back used on the voice recorder

Celestial Bodies to be Tracked

- 1. Moon (if avilable) 3 runs of 5 photographs per run
 - <u>NOTE</u> If the moon is not available three other celestial bodies will be used.

NOTES:

- a. A different film back will be used for each run
- b. If time permits, all three moon runs can be done during one night pass. The film back would have to be changed between each run.

2. Other celestial bodies (planets, constellations, etc.) - 3 runs of five photographs per run.

NOTE: A different celestial body will be used for each run

Time of Experiment

Diag	Ţ		
PASS	FROM	TO	REV
l	17:05	17:45	11/12
2	64:15	64 : 55	41
3	87 : 55	88 : 35	56/57

NOTE - Two runs will be accomplished each pass

Propellant Requirements

2.0#/RUN = 6.0#

TRACKING TASK

EXPERIMENT D-6

VISUAL DEFINITION OF TERRESTRIAL FEATURES

Purpose

To investigate man's ability to acquire, track, and photograph terrestial objects.

Spacecraft Systems Configuration

1. Reticle mounted in left window.

2. Zeiss Contarex camera, associated equipment and photo event indicator prepared for photography.

NOTES:

- a. The removeable filter will be used for all photographs of terrestrial objects.
- b. The Questar 1400mm lens will be used for 15 of the terrestrial tracking tasks and the 200mm Nikkor f/4 lens will be used for the other 15.
- 3. Proper film back installed
- 4. Camera speed and aperture SET
- 5. Camera focused

6. PLATFORM - ORB RATE (for tracking tasks where the instrument acq. mode is used).

7. ATTITUDE CONTROL - PUISE

Procedures

- 1. Five minutes prior to tracking task
 - a. RATE GYROS PRI
 - b. COMPUTER PRE LN (If PLATFORM is used)
 - c. ACME BIAS FWR PRI
 - d. AC POWER ACME (already IGS if platform is used)

e. Mark time and identify experiment to be accomplished on the voice recorder.

- f. Record film back used on voice recorder
- g. Record frame count on film back used on voice recorder

2. Acquisition Modes

a. Visual Mode - Cmd Pilot acquires object using the reticle and visual cues.

b. Instrument Mode - Cmd Pilot acquires objects using instruments. (Controls spacecraft to ground relayed attitudes at a ground relayed time).

3. Tracking Modes

a. Visual Mode - After Cmd Pilot acquires target using the Visual Acquisition Mode described above, he will continue to track the object using the reticle. The Pilot will operate the camera equipment and give verbal directions to the Cmd Pilot while sighting through the telescope or periscope.

b. Telescope Mode - After the Cmd Pilot acquires the object using the visual or Instrument Mode, the Pilot will track the object using the telescope.

c. Periscope Mode - After the Cmd Pilot acquires the object using the Visual or Instrument Mode, the Pilot acquires the object using the telescope and then tracks the object using the periscope.

4. At acquisition of object:

- a. No. 2 Audio RCD
- b. Record comments on tracking task
- c. Mark photographs taken
- 5. At loss of acquisition record on voice recorder:
 - a. Frame count on film back used
 - b. Comments on object tracked
- 6. After tracking tasks, proceed to next operation.

Time of Experiment

RUN	TIME	REV	REMARKS
l	4:35 to	3	W/O PLAT
2	5:15 to	4	W/O PLAT
3	6:10 to	24	W/O PLAT
4	16:20 to	11	W/O PLAT
5	17:55 to 18:25	12	W/O PLAT
6	19:23 to 19:45	13-14	WITH PLAT
7	40:00 to 40:25	26	W/O PLAT
8	45:55 to 46:20	30	W/O PLAT
9	47:40 to 48:00	31	WITH PLAT
10	52:00 to 52:20	33	W/O PLAT
11	53:35 to 53:55	34	W/O PLAT
12	63:40 to 64:05	41 41	W/O PLAT
13	65:10 to 65:45	42	W/O PLAT
14	71:15 to 71:35	46-47	WITH PLAT
15	87:15 to 87:40	56	W/O PLAT
16	88:40 to 89:20	57	W/O PLAT
17	90:15 to 90:45	58	WITH PLAT

NOTE - A run may consist of more than one tracking task

Propellant Requirements

1.0# tracking task (30) = 30.0#

Flight Control Procedure

The crew will be updated for tracking tasks (including D-1) in the following manner:

NAME	A	CQUISITI	CN	EQUIP	SHUTTER	
SEQ NO.	TIME	YAW	PITCH	MODE	SPEED	APERIORE
*MOON	18 : 32: 11	- 05	+80	02	30	
**03015	23:10:32	10	- 35	07	1000	5.6

NOTES:

- * 1. Example for D-1
- **2. Example for tracking tasks (D-6)
 - 3. All terrestrial objects will be assigned a Seq. No. such as listed.
 - 4. Aperature does not apply to D-1.
 - 5. This information is all that is required for the crew to perform D-1 and D-6 experiments.

EXPERIMENT D-8

RADIATION EXPERIMENT

Purpose

1. To accurately measure the radiation level and the total radiation flux inside the spacecraft.

2. To measure the intensity and distribution of radiation level inside the spacecraft, particularly in the vicinity of the crew.

Spacecraft Systems Configuration

Not critical

Procedures

The following inflight events will be performed by the Pilot during four passes through the South Atlantic Anomaly. (An area bounded approximately by 15° S and 55° S latitude and 30° E and 60° W longitude.)

1. Remove portable sensor head from type V dosimeter mount.

NOTE: There are two sensors; one is portable located in Pilot's hatch and the other is fixed (Cmd Plts hatch). Both sensors are active the entire mission.

2. Place the portable sensor head in the following positions for one (1) minute/position. Record the time at the start of each position and note the position on the onboard voice recorder.

- a. Over chest (cover sensor head with gloves)
- b. Between legs
- c. Under left armpit
- d. In front of the cabin window

e. In front of instrument panel, midway from the floor to the top of the cabin

f. On the floor near the feet

3. Replace sensor in mount.

44 1:

-12 --

NO.	TIME	REV
1	9 : 40	ĩ
2	11:15	8
3	31 : 45	21
4	33:20	22

Propellant Requirements - None

D-9 EXPERIMENT (SEXTANT MEASUREMENTS)

Purpose

To determine the accuracy of a sextant for use in orbit navigation

Spacecraft Systems Configuration - Powered down

Procedures

- 1. UNSTOW:
 - a. SEXTANT
 - b. Photo event indicator
- 2. Attach photo event indicator to sextant
- 3. Verify AUX RECP OFF
- 4. Attach photo event indicator to the AUX RECP
- 5. AUX RECP ON

6. AC POWER - ACME (IGS if PLATFORM or computer is required for other purposes)

- 7. ACME BIAS FWR PRI (or SEC)
- 8. OAMS PWR ATT
- 9. ATTITUDE CONTROL PULSE or DIRECT as required
- 10. Check sextant stop watch at zero
- 11. Check proper filter setting for first measurement
- 12. Set approximate angle in the sextant for the first measurement
- 13. Event timer or GMT clock-stopwatch: set to 00:00
- 14. Event timer STBY

NOTE:

The event timer will be used if the CMD PILOT is performing the run and the GMT clock stopwatch will be used if the PILOT is performing the run.

14. At ground relay time for start of run: Event Timer - DWN or GMT clock stopwatch - START

15. Mark start of run (1, 2, etc.) on VOICE RECORDER

16. Take star to horizon measurements using filters and stars described in Table I.

17. Three (3) measurements will be taken in each 5 minute period.

NOTES:

- a. Each measurement will be marked with the photo event indicator.
- b. The value of each measurement will be recorded in the Flight Bock.
- c. The last measurement in each five (5) minutes period will be marked on the onboard voice recorder and recorded in the PILOT'S Flight Book.
- d. In addition, manual timing will be used as noted in Tables I & II. Manual timing consists of the following:
 - (1) At time of measurement start sextant stopwatch
 - (2) On the next even minute of the GMT clock stop the sextant stopwatch
 - (3) Record GMT and the sextant stopwatch readings along with the measurement on the VOICE RECORDER and copy in the Flight Book.

Times of Experiment

RUN	FROM	TO	REV
l	13:05	13:45	9
2	29:25	30:05	19
3	54:35	55:15	35
4	77:20	78:00	50

Propellant Requirements

2.0 # / RUN = 8.0 #

D-9 EXPERIMENT DATA FOR RUNS 1, 2, and 3						
Event Timer* Reading	Run 1	Filter Run 2	Run 3	Star	Yaw	🛕 Yaw
00:00 05:00 10:00 15:00 20:00 **25:00 30:00 32:00 **37:00 42:00	G G C B Yaw I B N.D Comp.	C G G C/B B Maneuve B N.D Leted	G G C B B R N.D	Antares " Nunki Altair " Deneb Canopus Canopus	191° 191° 205° 205° 270° 105° 105°	169° L 0° L 27° R 0° 63° R 160° L 0°
 * Or GMT Clock Stopwatch ** Manual Timing Start sextant stopwatch when last measurement is taken. Stop sextant stopwatch on the next even minute of GMT clock. Record GMT & sextant stopwatch reading on voice recorder and flight book. 						
_		D-9	EXPERI	MENT - RUN 4		
Event Timer* Reading		Filter Settin	g	Star	Yaw	∆ Yaw
00:00 05:00 10:00 15:00 20:00 **25:00		B B G G G		Alioth Spica Rigil Kent Antares Shaula Nunki	260° 328° 25° 340° 349°	100° L 68° R 57° R 45° L 20° R 11° L

30:00 Completed * Or GMT clock stopwatch ** Manual Timing for last shot in this group: See above.

TABLE I

EXPERIMENT D-9





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APOLLO D-9 EXPERIMENT

In addition to the D-9 experiment requirement already discussed, Apollo has the requirement to perform the following:

a. Apollo 1 - GLV-2nd stage to star observations during the first night pass.

NOTE- The GLV-2nd stage has a set of Agena lights on it.

b. Apollo 2 - GLV-2nd stage to star sextant measurements during the second day pass.

c. Apollo 3 - GLV-2nd stage to star sextant measurements during the third day pass.

d. Apollo 4 - Star - star sextant during a night phase of the mission.

Procedures

1. Apollo 1

a. Control spacecraft attitudes to acquire GLV-2nd stage flashing lights.

b. Comment on the voice recorder on the brightness of the flashing lights as compared to know stars.

2. Apollo 2 and 3

a. Unstow the sextant and photo event indicator.

b. Verify Aux Recep - OFF

c. Prepare sextant and photo event indicator for measurements.

d. ATTITUDE CONTROL - DIRECT

e. Control spacecraft attitudes to acquire the GLV-2nd stage.

f. Take GLV-2nd stage to star (using know stars) and record measurements and the star used on the voice recorder and Flight Book. Mark each measurement with the photo event indicator.

3. Apollo 4

a. Unstow the sextant, photo event indicator and the reticle.

b. Mount reticle

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- c. Verify AUX RECP OFF
- d. Prepare the sextant and photo event indicator for measurements.
- e. AUX RECP ON
- f. ATTITUDE CONTROL DIRECT

g. Control spacecraft attitudes to acquire Antares and Kaus Australis.

- h. Reticle pwr ON
- i. Cmd Pilot control S/C attitudes to an inertial reference (-4°) .

j. Pilot obtain 30 star to star sextant measurements. Record values on the onboard voice recorder.

<u>NOTE</u> - The sextant should be kept in the same position with respect to the window during the measurements.

k. Both crewmen comment on the magnitude of stars visible.

1. After 30 measurements are obtained, stow equipment and power down spacecraft.

Time of Experiment

PURPOSE	TI	REV	
	From	TO	
Apollo l	01:00	01:25	1
Apollo 2	01:45	02 : 10	2
Apollo 3	02:30	03:00	2
Apollo 4	52 : 35	53 : 05	34/35

Propellant Requirements

l.	Apollo	1	1.0
2.	Apollo	2	1.0
3.	Apollo	3	1.0
4 .	Apollo	4	1.5
			4.5#

SECTION III SUMMARY FLIGHT PLAN



1

NICHT CONDITIONS AND CONTRACTORS

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SUMMARY FLIGHT PLAN

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NIGHT INNUMBER AND A STREET

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NIGHT RELIGIONARIAN

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