MCC-H

FLIGHT PLAN

1522 CST

101:00

:03

:15

REV 10

:29

101:30

:35

:45

:49

102:00

DUMP DSE

TMSFN

VERIFY DSE MOTION AT LOS

WASTE WATER DUMP
O_2 FUEL CELL PURGE
EAT PERIOD

POSTSLEEP CHECKLIST

CREW STATUS REPORT
CONSUMABLES UPDATE
FLIGHT PLAN UPDATE
CYCLE H2, O2 FANS
POT H2O HTR - ON
NORMAL LUNAR COMM EXCEPT:
S BD ANT - HI GAIN
CREW MANAGES ANT OPS

NOTES

CSM CONSUMABLES UPDATE

GET: __ __ __:__.__

RCS TOTAL _____%

QUAD A ____% B ____%

C ____% D ____%

H_2 TOTAL _____%

O_2 TOTAL ____ ____%

CREW STATUS REPORT

	CDR	CMP	LMP
SLEEP	____	____	____
PRD	____	____	____

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	101:00 - 102:00	5/9-10	3-77

FLIGHT PLAN

1622 CST

	CMP	CDR	LMP	MCC-H
102:00				
:15	EAT PERIOD	EAT PERIOD	EAT PERIOD	UPDATE TO LM UPDATE T1 & T2 TIMES FOR FRA MAURO PHOTOS
102:30	LiOH CANISTER CHANGE NO. 9-11 INTO A, STOW 9 IN A3			UPDATE TO CSM TEI 34 PAD MAP UPDATE REV 11 CSM DAP PAD COMM ATT & HGA ⇄'s (102:50) UPLINK TO CSM STATE VECTOR &V66 DESIRED ORIENT (LDG SITE)
:35	TARGET OF OPPORTUNITY PHOTOS OF FRA MAURO OUT RT-HAND SIDE WINDOW CM4/EL/80/BW (f2.8,250,INF) T1 ___:___:___ T2 ___:___:___		DON LCG	
:41				
:45				
	MNVR TO COMM ATT BY 102:50 FOR STEERABLE ANTENNA R240, P270, Y 0 HGA: P-35, Y117	DON LCG		
103:00				

MSFN

MAP UPDATE REV 11
LOS : ___:___:___
180° : ___:___:___
AOS : ___:___:___

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	102:00 - 103:00	5/10	3-78

MSC Form 845B (Jan 69)

FLIGHT PLANNING BRANCH

FLIGHT PLAN

1722 CST

	CMP	CDR	LMP	MCC-H
103:00			VERIFY DSE MOTION AT LOS	
:01	P52 - IMU REALIGN OPTION 1 - (PREFERRED)			P52 (LDG SITE ORIENT) N71: __ __,__ __ N05: __ __ __.__ __ N93: X __ __.__ __ __ Y __ __.__ __ __ Z __ __.__ __ __ GET __ __ __:__ __:__ __
:15	DON PGA W/O HELMET & GLOVES			
REV 11				
:27				
103:30	EQUALIZE CM/LM PRESSURE			
:34				
	OPEN & STOW CM HATCH REMOVE & STOW PROBE & DROGUE			
:45	CHECK LATCHES			
:47	REACQUIRE MSFN HGA: P-35, Y117			
MSFN	REPORT DOCKING TUNNEL INDEX ANGLE		VERIFY DOCKING TUNNEL INDEX ANGLE	DUMP DSE
		DON PGA W/O HELMET & GLOVES	OPEN LM HATCH IVT TO LM	UPDATE TO CSM MAP UPDATE REV 12
104:00				MAP UPDATE REV 12 LOS : __ __ __:__ __:__ __ 180° : __ __ __:__ __:__ __ AOS : __ __ __:__ __:__ __

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	103:00 - 104:00	5/10-11	3-79

FLIGHT PLAN

1822 CST

	CMP	CDR	LMP	MCC-H
104:00	CSM POWER TO LM OFF AT LMP'S REQUEST	DON PGA W/O HELMET & GLOVES	TRANSFER TO LM POWER LM FAMILIARIZATION & HOUSEKEEPING (IF NECESSARY)	
:15	CONFIGURE CAMERAS FOR UNDOCKING CM2/DAC/18/CEX-BRKT-MIR (f8,250,7) 6fps, 16 MIN CM4/TV-IN BRKT (f22)		EPS ACTIVATION S-BAND ACTIVATION MISSION TIMER ACTIVATION PRIMARY GLYCOL LOOP ACT	UPDATE TO CSM P22 LDMK TRACKING PAD
		DISCONNECT & STOW LM POWER UMBILICAL	CAUTION/WARNING C/O CB ACTIVATION TB VERIFICATION	
104:30	CM2/EL/80/CEX (f8,250, 50) 10	IVT TO LM TRANSFER HELMET & GLOVES	SEC S-BAND T/R & POWER AMPL CHECK	UPDATE TO LM STEERABLE ANT ⨯'s BY 104:30 (IF REQ'D)
:33	INHIBIT B3&C4 CSM THRUSTERS	ECS ACTIVATION & C/O CONNECT TO LM ECS	S-BAND STEERABLE ANTENNA ACT: P 68, Y 19	
:40	LM CLOCK SYNC: V06N65 T EPHEM: V05N01E 1706E LM VHF CHECKOUT: VHF AM(B)-SIMPLEX VHF RCV ONLY-B DATA VHF AM(B)-OFF VHF AM(A)-SIMPLEX V06N20E (ON CDR'S MARK) MIN DB FOR LM ALIGN VERIFY DSE MOTION AT LOS RECORD LM PCM DATA	PGNCS TURN-ON & SELF TEST	SUIT FAN/H_2O SEP CHECK	UPDATE TO LM STEERABLE ANT ⨯'s (105:49) (IF REQ'D)
:45		LGC/CMC CLOCK SYNC T EPHEM UPDATE E MEMORY DUMP	GLYCOL PUMP CHECK VHF CHECKOUT	
		DOCKED IMU COARSE ALIGN REPORT GIMBAL ANGLES & TIME TO MSFN	IVT TO CSM	
:59		FWD OMNI - LBR SLEW STEERABLE ANT: P 68, Y 19	DON PGA	
105:00				

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	104:00 - 105:00	5/11	3-80

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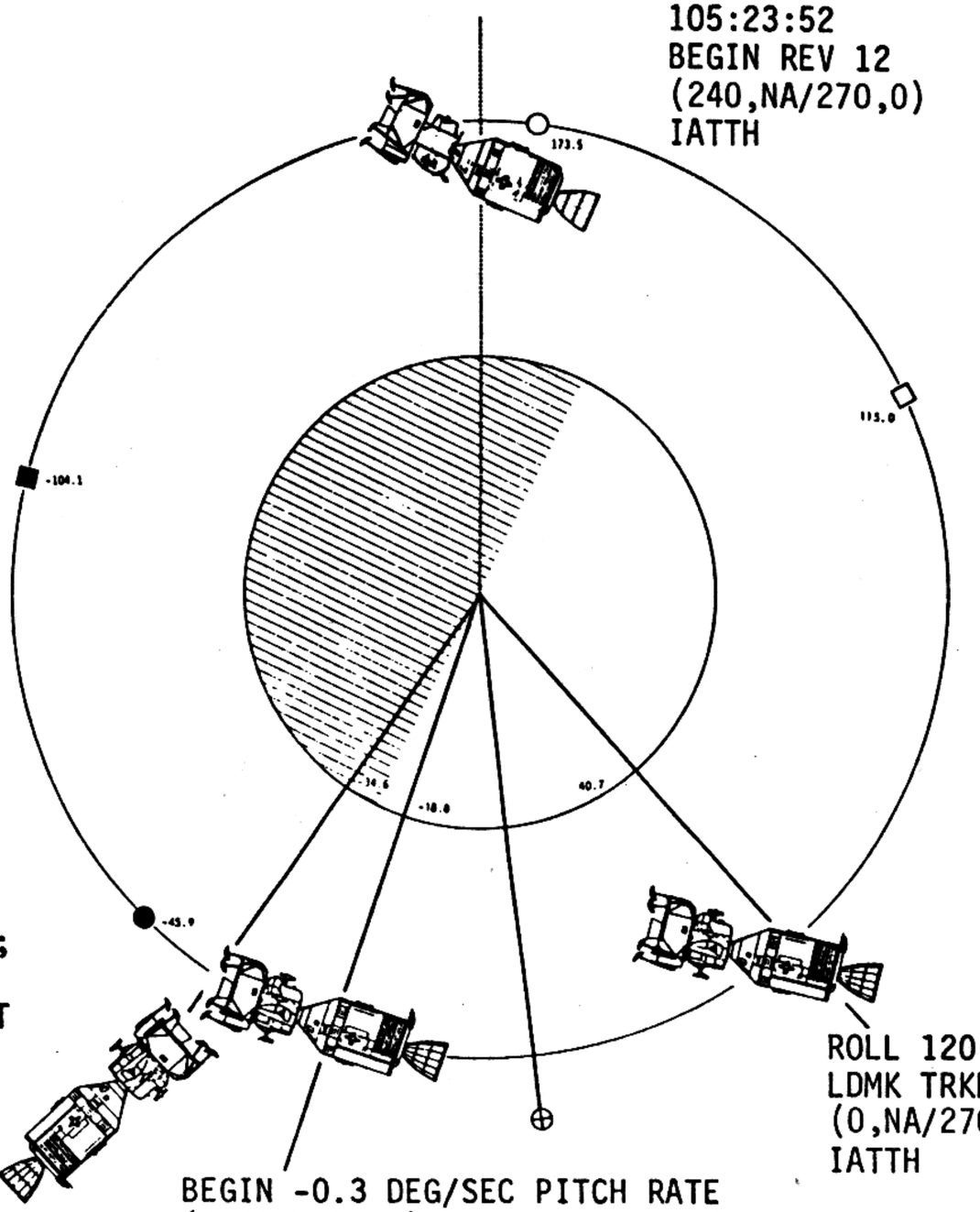
REV 12



LEGEND:

- MSFN AOS, LOS
- S/C SUNRISE, SUNSET
- SUBEARTH POINT

(R,LHP/INP,Y)

IATTH - INERTIAL ATTITUDE HOLD

LATTH - LOCAL ATTITUDE HOLD

REVISION B

FLIGHT PLAN

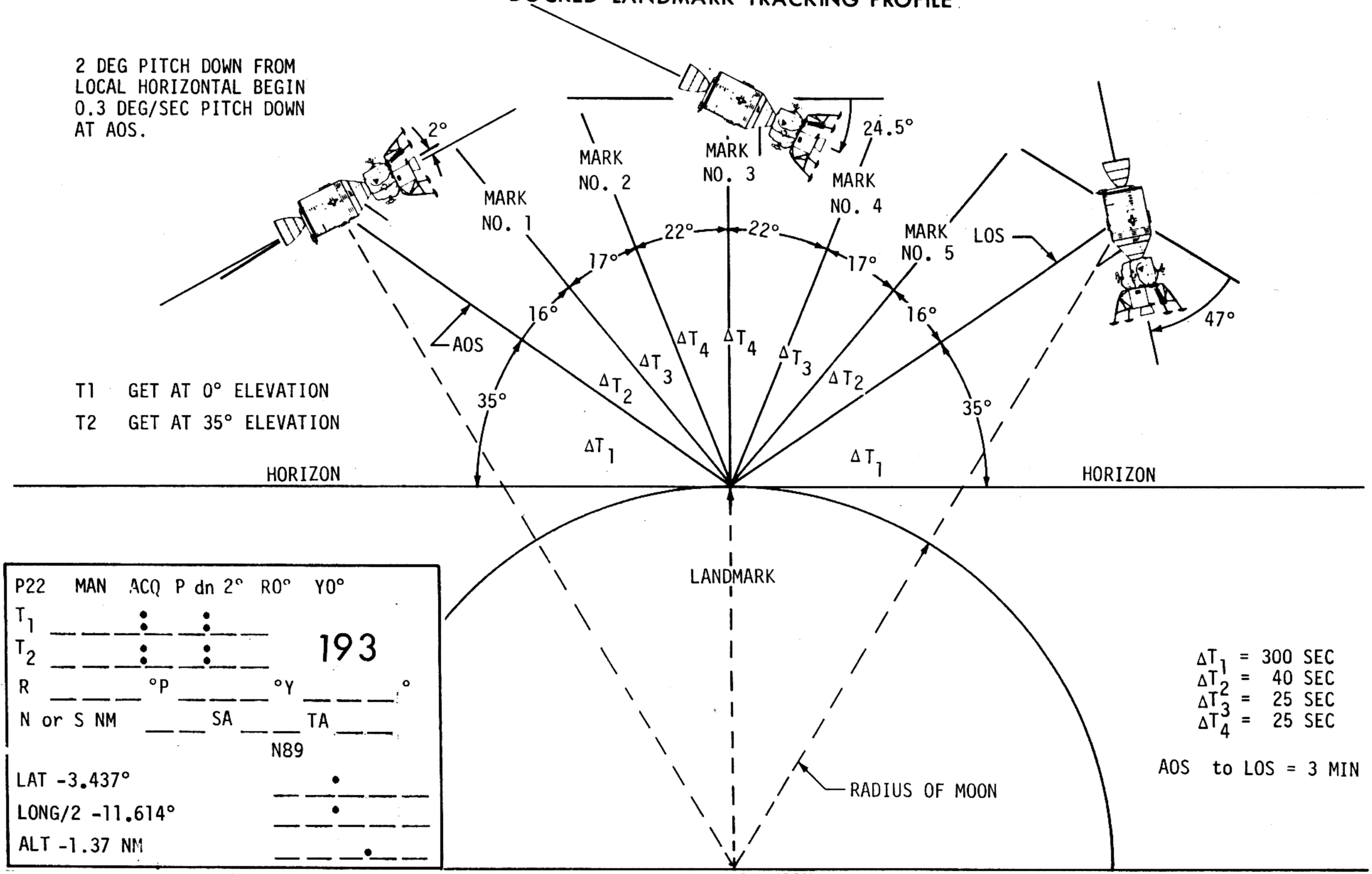
CSM	1922 CST	LM		MCC-H
CMP		CDR	LMP	
	105:00		DON PGA IN CSM	
DON HELMET & GLOVES PGA PRESSURE INTEGRITY CHECK	:15		IVT TO LM TRANSFER HELMET & GLOVES	
	REV 12		CONNECT TO LM ECS & COMM	
INHIBIT ROLL COMMANDS UNTIL LM/CM ΔP>3.5 PSID INSTALL DROGUE & PROBE PRELOAD PROBE COCK LATCHES (12) INSTALL HATCH VENT TUNNEL HATCH INTEGRITY CHECK CONFIGURE PANEL 10 FOR CSM RELAY	:26 105:30 :32	VERIFY DROGUE & PROBE INSTALLATION CLOSE AND SECURE HATCH	ASCENT BATTERY ACTIVATION AND C/O RECORD ED BAT VOLTS AGS ACT & SELF TEST	
	:45			
REACQUIRE MSFN HGA: P-35, Y 117 V06N20E DOFF HELMET & GLOVES	MSFN	DEPLOY LANDING GEAR P00 & DATA FOR UPLINK DOCKED IMU FINE ALIGN V06 N20E ON MARK	STEERABLE ANTENNA: P 68, Y 19 BIOMED SW - LEFT V47-AGS INITIALIZATION	DUMP DSE UPLINK TO CSM CSM STATE VECTOR & V66 UPDATE TO LM DAP DATA GYRO TORQUING ε's
	106:00	MSFN		

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	105:00 - 106:00	5/11-12	3-81

FLIGHT PLANNING BRANCH

DOCKED LANDMARK TRACKING PROFILE

2 DEG PITCH DOWN FROM LOCAL HORIZONTAL BEGIN 0.3 DEG/SEC PITCH DOWN AT AOS.



T1 GET AT 0° ELEVATION

T2 GET AT 35° ELEVATION

P22 MAN ACQ P dn 2° R0° Y0°

T_1 ___ ___ ___:___:___

T_2 ___ ___ ___:___:___ 193

R ___ °P ___ °Y ___ °

N or S NM ___ SA ___ TA ___

N89

LAT -3.437°

LONG/2 -11.614°

ALT -1.37 NM

ΔT_1 = 300 SEC
ΔT_2 = 40 SEC
ΔT_3 = 25 SEC
ΔT_4 = 25 SEC

AOS to LOS = 3 MIN

FIGURE 3-1

FLIGHT PLAN

CSM	2022 CST	LM		MCC-H
CMP		CDR	LMP	
	106:00	DAP SET - GIMBAL & THROTTLE TEST LOAD DAP - 32022	LOAD AGS PAD	UPLINK TO LM LS REFSMMAT LM SV & V66 LGC/CMC CLOCK SYNC PIPA BIAS LGC ABORT CONSTANT E-MEMORY UPDATE (IF REQ'D) UPDATE TO CSM SEP TIME & UNDOCK TIME UPDATE TO LM AGS K FACTOR AGS ABORT CONSTANTS STEERABLE ANT θ's (IF REQ'D) UPDATE TO CSM MAP UPDATE REV 13
SELECT OMNI D ROLL 120° TO TRACKING ATT AT 106:10 R 0 , P270, Y 0			SELECT OMNI-FWD	
	:15	RATE GYRO TEST V06N20 ON MARK	SLEW STEERABLE ANT: P 104, Y 01 FOR AGS CAL PITCH ATT	
V06N20E VERIFY DSE MOTION P22-ORBITAL NAVIGATION ESTABLISH 0.3°/SEC PITCH RATE AT LDMK AOS		RCS PRESSURIZATION	RCS PRESSURIZATION	
TRACK LDG SITE LDMK 193 DO NOT PROCEED ON N89 25 SEC BETWEEN MARKS, 5 MARKS	106:30			
	:32			
STOP AGS CAL PITCH@P158 BY 106:35 HGA: P-47,Y168 V06 N20E MNVR TO AGS CAL ATT BY 106:45 R 8 , P 158, Y 23 HGA: P-41 , Y 139 V06N20E SC CONTROL-SCS MIN/MAX DB, LOW/HIGH RATE(AT CDR'S REQUEST) CMC FREE FOR RCS HOT FIRE VERIFY DSE MOTION AT LOS RECORD LM PCM DATA	:38	V06 N20E ON MARK		MAP UPDATE REV 13 LOS : __ __ __ : __ __ : __ __ 180° : __ __ __ : __ __ : __ __ AOS : __ __ __ : __ __ : __ __
	:45	V06N20E ON MARK		
		RCS CHECKOUT	RCS CHECKOUT	UPDATE TO LM STEERABLE ANT θ's (107:47)
	:57			
			FWD OMNI-LBR SLEW STEERABLE S-BD ANT: P 132, Y 24	
	107:00			

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	106:00 - 107:00	5/12	3-83

FLIGHT PLANNING BRANCH

REVISION A

CSM	2122 CST	LM		MCC-H
CMP		CDR	LMP	
RATE <0.1°/SEC DISABLE THRUSTERS FOR 32 SEC(AT LMP'S REQUEST) ENABLE THRUSTERS & MAINTAIN RATE <0.1°/SEC FOR 6 MIN VERIFY TUNNEL VENT VALVE - OFF	107:00	RR ACT & SELF TEST	AGS ACCELEROMETER & GYRO CALIBRATION	
	:15	DON HELMET & GLOVES	DON HELMET & GLOVES	
		ARS/PGA PRESSURE INTEGRITY CHECK		
RR TRANSPONDER ACT & SELF TEST P30/P41 TO MANEUVER TO UNDOCKING ATT BY 107:40 R 180, P 285, Y 0 HGA: P -76, Y 218 GDC ALIGN TO IMU START CAMERAS TV(GDS) 107:50 - 108:30 GO/NO-GO LOAD DAP-CSM ONLY R1=11102, R2=11111 S/C CONTROL - SCS	REV 13 :24 107:30 :31	CABIN REGULATOR CHECK	CABIN REGULATOR CHECK	
		DPS PRESS & C/O	V47-AGS UPDATE & ALIGN	
	:43 :45	GO/NO-GO PREPARE FOR UNDOCKING P47-THRUST MONITOR	STEERABLE ANT: P 132, Y 24 REACQUIRE MSFN PCM-HI PREPARE FOR UNDOCKING	DUMP DSE GO/NO-GO FOR UNDOCKING
SOFT UNDOCK S/C CONTROL - CMC STATION KEEP @ 40' RE-ENABLE B3&C4 JETS		SOFT UNDOCK 107:54:22 YAW LEFT 60° PITCH UP 90° R 180, P 195, Y 0	STEERABLE ANT: P 71, Y -52	
MSFN	108:00	MSFN		

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	107:00 - 108:00	5/12-13	3-84

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REV 13

CSM BEGINS SXT TRKNG
CSM(0,NA/349,0)
LOSM TO LM, AUTO

107:22:08
BEGIN REV 13
(8,NA/158,23)
IATTH

MNVR TO UNDOCKING ATT
(180,NA/285,0)
IATTH

LM MNVR TO
DOI ATT
LM(0,NA/299,0)
IATTH

107:54:22
UNDOCK
CSM(180,270/285,0)
LM(180,NA/285,300)
IATTH

CSM AND LM MNVR
TO IMU REALIGN ATT
CSM(0,NA/333,0)
LM(347,NA/332,27)
IATTH

LM MNVR TO EYE-
TO-EYE-TO-CSM ATT
LM(180,NA/195,0)
IATTH

CSM ENDS SXT TRKNG
CSM(180,NA/333,0)
IATTH
LM BEGINS RR TRKNG
LM(180,NA/278,0)
LOSM TO CSM,MAN

CSM BEGINS SXT TRKNG
CSM(180,NA/331,0)
LOSM TO LM, AUTO

108:24:22
CSM SEP BURN IGN
CSM(180,NA/285,0)
IATTH
LM MNVR TO MONITOR
CSM AFTER BURN
LM(180,NA/247,0)

LEGEND:

□ □ MSFN AOS, LOS
○ ○ S/C SUNRISE, SUNSET
⊕ SUBEARTH POINT
(R,LHP/INP,Y)
IATTH - INERTIAL ATTITUDE HOLD
LATTH - LOCAL ATTITUDE HOLD

REVISION B

FLIGHT PLAN

CSM		2222 CST	LM		MCC-H
CMP			CDR	LMP	
SEQ CAMERA - OFF		108:00	V83 - SET ORDEAL	BIOMED SW - RIGHT	UPLINK TO LM LM STATE VECTOR (DOI-10) DOI TARGET LOAD PIPA BIAS DESCENT TARGET UPDATE TO LM DOI PAD NO PDI + 12 PAD PDI PAD PDI ABORT <10 MIN PDI ABORT >10 MIN T2 & T3 PADS P22 ACQ TIME 28° EL GYRO TORQUING ∡'s
			LR ACTIVATION & SELF TEST		
		:15	DOFF HELMETS & GLOVES		
P30/P41 CSM SEPARATION TIG: 108:24:22 BT: 15.8 SEC ΔV_T: 2.5 fps +Z THRUSTERS ORBIT: 63.6X55.1			SEPARATION		
P20-RNDZ NAVIGATION MNVR TO TRACK ATT SXT TRACKING & VHF RANGING ROLL TO 0° BY 108:44	MSFN	108:30	P00 & DATA P30-EXT ΔV P40-DPS THRUST (UNTIL MSFN GO) RR & VHF RANGING AND CHECKOUT	V47-AGS UPDATE & ALIGN LOAD AGS EXT ΔV DESIGNATE RR TO CLEAR AOT IF REQ'D	UPDATE TO CSM MAP UPDATE REV 14 UPLINK TO LM CSM STATE VECTOR (DOI-10) UPLINK TO CSM CSM STATE VECTOR (DOI-10) LM STATE VECTOR (DOI-10) PIPA BIAS UPDATE TO LM STEERABLE ANT ∡'s FOR PDI ATTITUDE (IF REQ'D) GO/NO-GO
MAP UPDATE REV 14 LOS : __ __ __ : __ __ : __ __ 180° : __ __ __ : __ __ : __ __ AOS : __ __ __ : __ __ : __ __		:37			
		:45	P52-IMU ALIGN OPT 3 - REFSMMAT (LDG SITE ORIENT) LPD CALIBRATION GO/NO-GO FOR DOI	P52-OBSERVE THRU AOT SLEW STEERABLE ANT: P 12 , Y 0 OMNI FWD-PCM LBR VHF A VOICE, B DATA	
P52-IMU REALIGN OPT3-REFSMMAT (LDG SITE ORIENT)		:55			
VHF A-SIMPLEX/DATA VERIFY DSE MOTION AT LOS		109:00			

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	108:00 - 109:00	5/13	3-85

FLIGHT PLANNING BRANCH

FLIGHT PLAN

CSM	2322 CST	LM		MCC-H
CMP	109:00	CDR	LMP	
GDC ALIGN TO IMU V83-VERIFY ORDEAL		SYSTEMS CHECKS	SYSTEMS CHECKS	
P20-AUTO MNVR TO SXT TRACK ATT		P40-DPS THRUST MNVR TO BURN ATT R 0 , P 299, Y 0	V47-AGS UPDATE & ALIGN	
	:15			TIG: 109:23:00 BT: 28.2 SEC ΔV: 72.1 FPS ULL: 2JETS,7.5 SEC ORBIT: 59.3X8.3
	REV 14			
	:23	DOI		
CONFIRM DOI P76-LOAD TARGET ΔV'S		RR-ON P20-MAN LOCK-ON V63-COMPARE RR & CSM VHF RANGE RR-OFF	VHF A - VOICE/RNG VHF B - OFF	
P20-AUTO MNVR SXT & VHF TRACKING OF LM	:29 109:30	P30-EXT ΔV LOAD PDI+12 ABORT	SET CAMERA LM/DAC/HCEX(4,500,INF)6FPS	
V64-ACQUIRE MSFN	:41	MNVR TO PDI ATT BY 109:38 R 0 , P 109 , Y 0 VERIFY COMM	SLEW STEERABLE ANT P 12 , Y 0 S-BD RANGING-RANGE	DUMP DSE
MAP UPDATE REV 15 LOS : _ _ _:_ _:_ _ 180° : _ _ _:_ _:_ _ AOS : _ _ _:_ _:_ _	:43 :45	DOI POST BURN REPORT COAS TO OVHD WINDOW P63-CHECK TIG	BIOMED SW-LEFT	UPDATE TO CSM MAP UPDATE REV 15
MSFN	MSFN	DON HELMETS & GLOVES		
		RR-ON P20-MODE II LOCK-ON	BATTERY 5&6 - ON SYSTEMS CHECK: DPS, APS, RCS, EPS, CWEA S-BD RANGING-OFF/RESET	
	110:00			

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	109:00 - 110:00	5/13-14	3-86

FLIGHT PLAN

CSM		LM		MCC-H
CMP	2422 CST 110:00	CDR	LMP	
		POO (FOR UPLINK)		UPLINK TO LM LM STATE VECTOR RLS
SEXTANT TRACKING		P63-AUTO MNVR TO PDI ATT	CONFIGURE EGRESS MODE CHECK SYS CONFIGURATION	
		LR-ON	V47-INITIALIZE AGS TARGET AGS FOR ABORT	
POO, TRACK MANUALLY GO/NO-GO	:15	GO/NO-GO FOR PDI FINAL TRIM ULL: 2 JET, 7.5 SEC		
		PDI 110:20:00		UPDATE TO LM ΔRLS
		RR-OFF		
		EVALUATE MANUAL CONTROL PITCH OVER AT P64 P66	START 16mm CAMERA SYSTEMS MONITOR UPDATE AGS ALT @ 6000'	
	:29 110:30	TOUCHDOWN 110:31:19		
CONFIRM STAY/NO-STAY V44-SET LS FLAG		PERFORM LUNAR CONTACT CHECKLIST STAY/NO-STAY AT PDI + 15		
CONFIRM STAY/NO-STAY	:35	DPS VENT P68,P12	UPDATE & ALIGN AGS	STAY/NO-STAY
			STAY/NO-STAY AT PDI +19	STAY/NO-STAY
STOP PITCH: R 0,P79,Y 0 HGA: P-51, Y 13 VHF RANGING-OFF		LR-OFF	STOP 16mm CAMERA ASCENT BATTERIES OFF REPORT DEDA 047,053	
	:45			COPY AGS AZIMUTH
P52-IMU REALIGN OPT 3 - REFSMMAT LDG SITE ORIENT		P57-IMU ALIGN OPT 3 - REFSMMAT A/T 1 - GRAVITY	AGS LUNAR SURFACE GYRO CALIBRATION LOAD AGS ASCENT TARGET	
VERIFY DSE MOTION AT LOS GDC ALIGN TO IMU	:54		BIOMED SW - RIGHT	
			DOFF HELMETS & GLOVES	
	111:00			

MSFN

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	110:00 - 111:00	5/14	3-87

CSM **CMP**

LM **MCC-H**

0122 CST

111:00

CDR INSTALL WINDOW SHADES	LMP TERMINATE AGS GYRO CALIBRATION
P57 - IMU ALIGN OPT 3 - REFSMMAT A/T 2 - TWO CELESTIAL BODIES	P57 - OBSERVE THRU AOT
P57 - IMU ALIGN OPT 3 - REFSMMAT A/T 2 - TWO CELESTIAL BODIES	P57 - OBSERVE THRU AOT
STOW WINDOW SHADES	ALIGN AGS TO PGNCS
CONFIGURE FOR PARTIAL POWER DOWN	
DESCRIBE & PHOTOGRAPH LUNAR SURFACE REPORT FEATURES SEEN DURING DESCENT AND DETERMINE LM LOCATION WITH MSFN REPORT ANGLE OF +Z WRT WEST	
EAT PERIOD	

:15 REV 15 :21

:28

111:30

:40

:45

112:00

MSFN

MSFN

REACQUIRE MSFN
HGA P-51 Y 13

MAP UPDATE REV 16
LOS : __ __ __ : __ __ : __ __
180° : __ __ __ : __ __ : __ __
AOS : __ __ __ : __ __ : __ __

UPLINK TO LM
RLS
CSM STATE VECTOR

STAY/NO-STAY FOR POWER DOWN

UPLINK TO CSM
CSM STATE VECTOR

DUMP DSE

UPDATE TO CSM
P22 - TRACKING PAD
MAP UPDATE REV 16

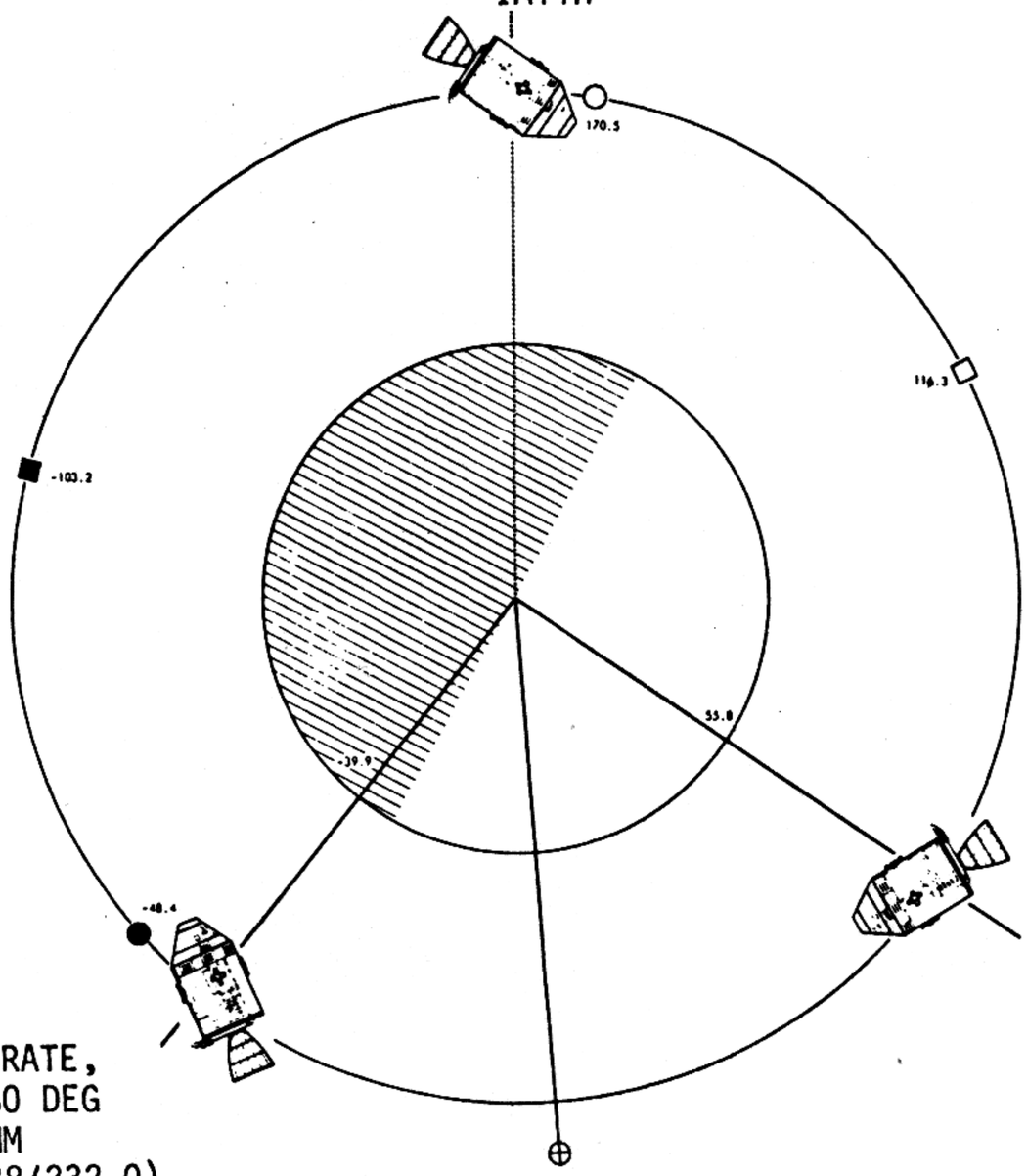
UPDATE TO LM
LM CONSUMABLES

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	111:00 - 112:00	5/14-15	3-88

FLIGHT PLANNING BRANCH

REV 15

111:18:39
BEGIN REV 15
(0,NA/79,0)
IATTH



MNVR TO LDMK
TRKNG ATT
(0,338/328,0)
LATTH

END ORBRATE,
ROLL 180 DEG
FOR COMM
(180,338/232,0)
IATTH

LEGEND:

□ ⊡	MSFN AOS, LOS
○ ◯	S/C SUNRISE, SUNSET
⊕	SUBEARTH POINT

(R,LHP/INP,Y)

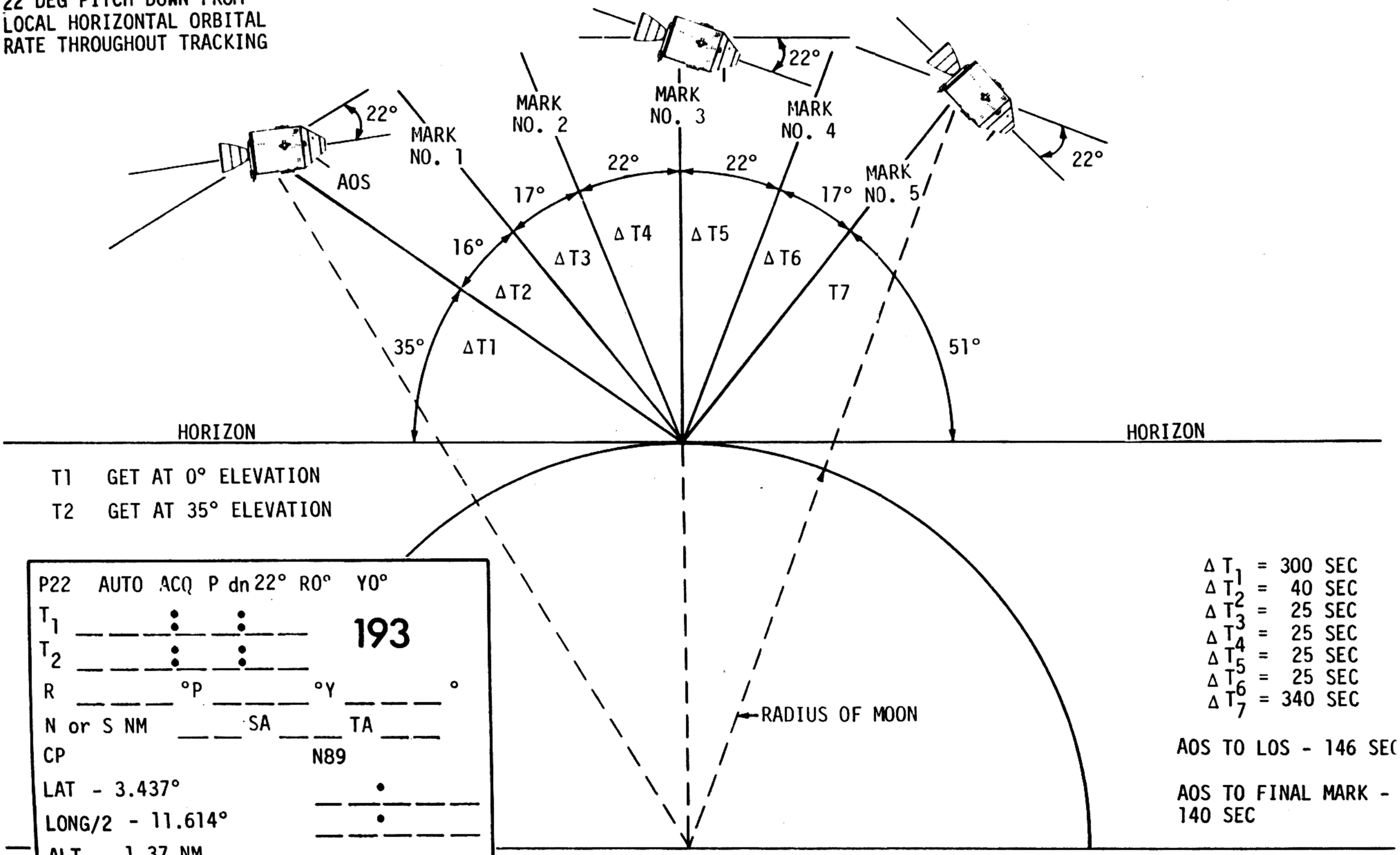
IATTH - INERTIAL ATTITUDE HOLD

LATTH - LOCAL ATTITUDE HOLD

REVISION B

CSM LANDMARK TRACKING PROFILE

22 DEG PITCH DOWN FROM
LOCAL HORIZONTAL ORBITAL
RATE THROUGHOUT TRACKING



T1 GET AT 0° ELEVATION

T2 GET AT 35° ELEVATION

P22 AUTO ACQ P dn 22° R0° Y0°

T_1 ___:___:___

T_2 ___:___:___

193

R ___ °P ___ °Y ___ °

N or S NM ___ SA ___ TA ___

CP N89

LAT - 3.437°

LONG/2 - 11.614°

ALT - 1.37 NM

ΔT_1 = 300 SEC
ΔT_2 = 40 SEC
ΔT_3 = 25 SEC
ΔT_4 = 25 SEC
ΔT_5 = 25 SEC
ΔT_6 = 25 SEC
ΔT_7 = 340 SEC

AOS TO LOS - 146 SEC

AOS TO FINAL MARK - 140 SEC

FIGURE 3-3

FLIGHT PLAN

CSM

CMP

MNVR TO TRACKING
ATTITUDE BY 112:00

R 0, P338/N/A, Y 0

GO ORB RATE
SELECT OMNI D
P22 ORBITAL NAVIGATION
VERIFY DSE MOTION

TRACK LDG SITE LDMK 193
DO NOT PRO ON FINAL N89
25 SEC BETWEEN MARKS
5 MARKS

RR TRANSPONDER - OFF

STOP ORB RATE@P232, MNVR
TO ACQ MSFN, GO INERTIAL
R 180, P232, Y 0
HGA P-23, Y 189

EAT PERIOD

VERIFY DSE MOTION @ LOS

MSFN

0222 CST
112:00

:15

:28
112:30

:34

:45

:52

113:00

MSFN

LM

CDR

EAT PERIOD

RR-ON

P22 - LUNAR SURFACE NAVIGATION

TERMINATE P22 - LUNAR SURFACE NAVIGATION
DESIGNATE THEN PWR DWN RR
E MEMORY DUMP

POWER DOWN IMU
LGC TO STANDBY

CREW STATUS REPORT (DOSIMETER, MEDICATION)

CABIN PREP FOR EVA

STOW ALL LOOSE ITEMS NOT REQUIRED FOR EVA
UNSTOW EVA 1 PREP & POST CARD
REMOVE CB EVA CONFIG & ONE MAN EVA PAGE & INSTALL

STOW LUNAR CHECKLIST

LMP

MCC-H

UPDATE TO LM
DAP LOAD
LIFT OFF TIME FOR
REV 16 THRU 19

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	112:00 - 113:00	5/15	3-90

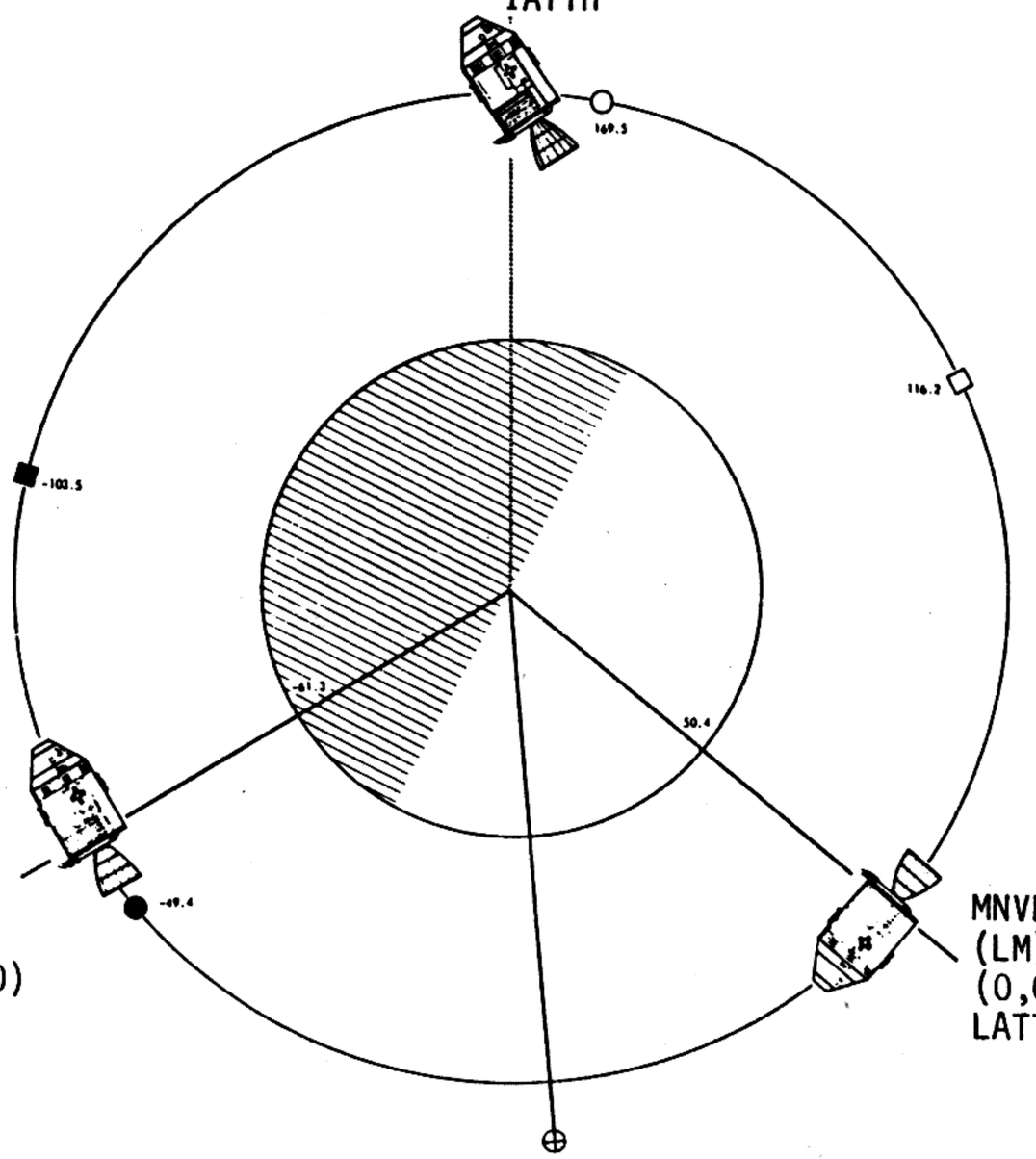
FLIGHT PLAN

CSM			LM		MCC-H
CMP		0322 CST 113:00	CDR	LMP	
			CABIN PREP FOR EVA (CONT)		
EAT PERIOD		:15 REV 16 :20	EQUIPMENT PREP SET DET FOR CABIN DEPRESS UNSTOW LMP'S PLSS FROM LM FLOOR PREPARE SEQ CAMERA DEPLOY EVA ANTENNA UNSTOW & DON LUNAR BOOTS (BOTH) UNSTOW & CHECK BOTH OPS'S		-1:20 -1:10
	M S F N	:27 113:30			-1:00
REACQUIRE MSFN HGA P -23 , Y 189		:38	PLSS DONNING CONFIGURE LMP'S PLSS/OPS FOR DONNING UNSTOW RCU'S LMP DON PLSS/OPS CONFIGURE CDR'S PLSS/OPS FOR DONNING CDR DON PLSS/OPS VERIFY RCU CONTROLS AND CONNECT TO PLSS/PGA		DUMP DSE -:50 UPDATE TO CSM P22 - TRACKING PAD MAP UPDATE REV 17
MAP UPDATE REV 17 LOS : ___:___:___ 180°W: ___:___:___ AOS : ___:___:___	M S F N	:45	PLSS COMM CHECK AUDIO SWITCHES CK, ACTIVATE PLSS COMM SYSTEMS&C/O (TV CB - CLOSE THEN OPEN)		-:40
		114:00	FINAL SYSTEMS PREP		-:30

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	113:00 - 114:00	5/15-16	3-91

REV 16

113:16:56
BEGIN REV 16
(180,NA/232,0)
IATTH



END ORBRATE,
ROLL 180 DEG
FOR COMM
(180,NA/233,0)
IATTH

MNVR TO LDMK
(LM)TRKNG ATT
(0,0/NA,0)
LATTH

LEGEND:

□ □ MSFN AOS, LOS

○ ○ S/C SUNRISE, SUNSET

⊕ SUBEARTH POINT

(R,LHP/INP,Y)

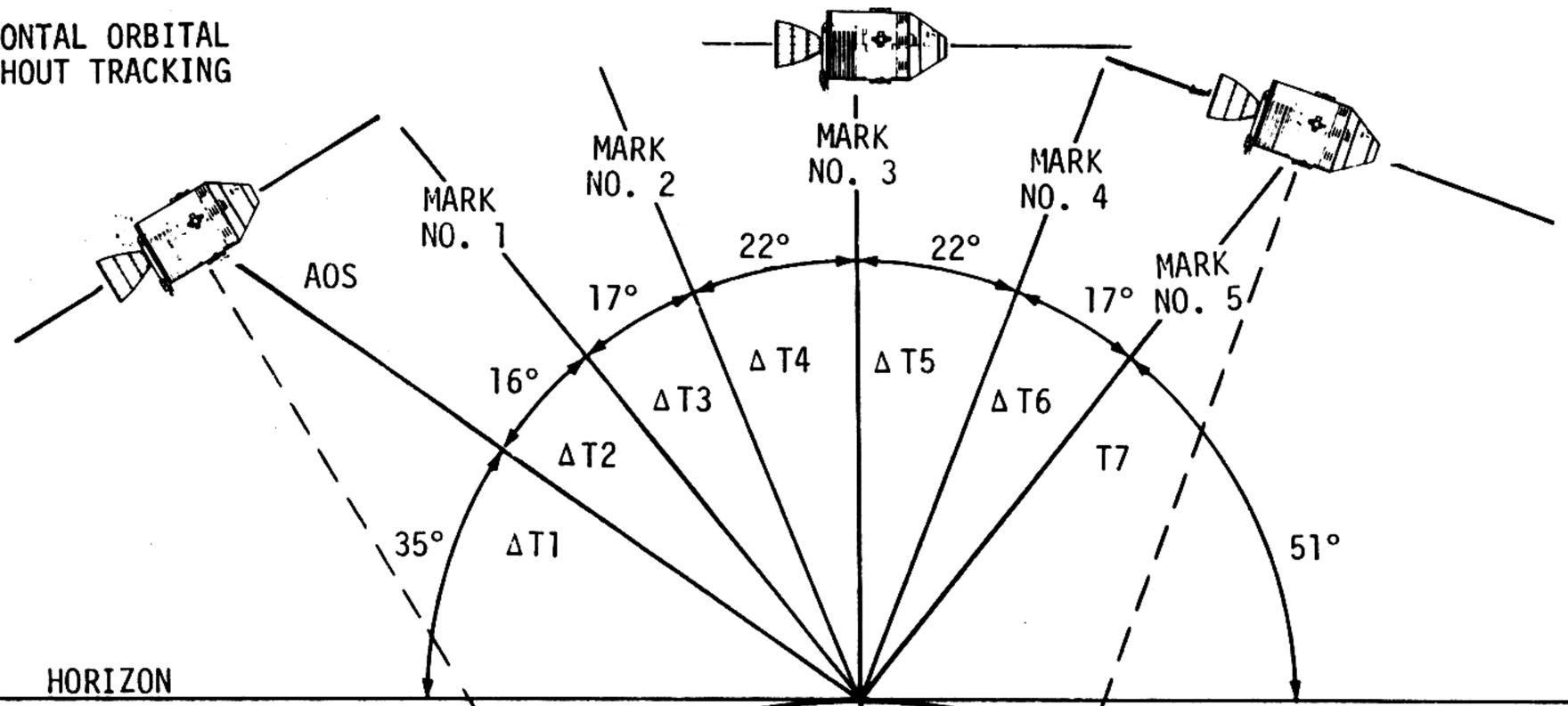
IATTH - INERTIAL ATTITUDE HOLD

LATTH - LOCAL ATTITUDE HOLD

REVISION B

CSM LANDMARK TRACKING PROFILE

LOCAL HORIZONTAL ORBITAL RATE THROUGHOUT TRACKING



T1 GET AT 0° ELEVATION

T2 GET AT 35° ELEVATION

ΔT_1 = 300 SEC
ΔT_2 = 40 SEC
ΔT_3 = 25 SEC
ΔT_4 = 25 SEC
ΔT_5 = 25 SEC
ΔT_6 = 25 SEC
ΔT_7 = 340 SEC

AOS TO LOS - 146 SEC

AOS TO FINAL MARK - 140 SEC

P22 AUTO ACQ P 0° R 0° Y 0°

LM

T_1 ___:___:___

T_2 ___:___:___

R ____ °P ____ °Y ____ °

N or S NM ___ SA ___ TA ___

CP N89

LAT - 2.982° ____.____

LONG/2 - 11.695° ____.____

ALT - 1.28 NM ____.____

REVISION A

FIGURE 3-3

FLIGHT PLAN

CSM			LM		MCC-H
CMP		0422 CST	CDR	LMP	
MNVR TO TRACKING ATTITUDE BY 114:00 R 0, P 0 /N/A, Y 0 GO ORB RATE SELECT OMNI D P22 ORBITAL NAVIGATION VERIFY DSE MOTION		114:00		CONNECT OPS O_2 HOSES DON HELMETS CONNECT PLSS H_2O HOSES LCG PUMP CB-OPEN DON GLOVES	-:30
		:15		VERIFY CB & VALVE CONFIGURATION	-:20
				PRESSURE INTEGRITY CHECK PLSS 02 ON	-:10
TRACK LM DO NOT PRO ON FINAL N89 25 SEC BETWEEN MARKS 5 MARKS	MSFN	:26		CABIN DEPRESS CONFIRM "GO" FOR EVA DEPRESS CABIN TO 3.5 PSIA SET DET & CHRONOMETER FWD DUMP VALVE - OPEN OPEN FWD HATCH	START EVA 0:00
STOP ORB RATE @ P233, MNVR TO ACQ MSFN, GO INERTIAL R 180, P 233, Y 0 HGA P -23, Y 190		114:30 :33	MSFN	FINAL PREP FOR EGRESS PLSS H20 ON, FINAL SYSTEMS CHECK, TURN TV ON, VERIFY CB CONFIGURATION	0:10
		:45		CDR EGRESS MOVE THROUGH HATCH DEPLOY LEC & MESA DESCEND TO SURFACE	ASSIST & MONITOR CDR ACTIVATE 16MM SEQ CAMERA
VERIFY DSE MOTION @ LOS		:50		ENVIRONMENTAL FAM CK BALANCE, CK LM STABILITY	MONITOR & PHOTO CDR WITH 70 MM CAMERA 0:20
				CONT. SAMPLE COLLECTION COLLECT & STOW SAMPLE	PERFORM FINAL LM & EMU CK
		115:00		ETB TRANSFER DEPLOY MESA & ETB	CONFIRM "GO" FOR EVA 0:30

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	114:00 - 115:00	5/16	3-93

CSM		LM		MCC-H
CMP		CDR	LMP	
	0522 CST 115:00	STOW PLSS BATTS & LiOH CAN, & CONT SAMPLE IN ETB TRANSFER ETB TO LM REST TRANSFER ETB TO SURFACE	ASSIST CDR WITH ETB TRANSFER	EVA GO 0:30
	REV 17 :15	LMP AND CONT PHOTOS PHOTOGRAPH LMP EGRESS TAKE CONTINGENCY PHOTOS PHOTOGRAPH COLOR CHART	LMP EGRESS MOVE THROUGH HATCH DESCEND TO SURFACE	0:40
	:19		ENVIRONMENTAL FAM CHECK BALANCE & STABILITY	
	:25	S-BD ERECT. ANT DEPLOYMENT UNSTOW S-BAND ANT CARRY ANT TO DEPLOY SITE ERECT ANTENNA CONNECT ANTENNA CABLE ALIGN ANTENNA	TV DEPLOYMENT DEPLOY TRIPOD & TV CAMR TV PANORAMA, POSITION TV TO VIEW S-BD ERECT./MESA	0:50
	115:30		SWC DEPLOYMENT DEPLOY SWC IN SUN PHOTO SWC & LM/EARTH	1:00
REACQUIRE MSFN HGA P -23, Y 190	:36	FLAG DEPLOY	FLAG DEPLOY	
	:45	PANORAMA & CLOSE-UP PHOTOS UNSTOW ALSCC & PLACE IN SUN TAKE PANORAMA & SURFACE CLOSE-UP PHOTO'S	LM INSPECTION/PHOTO POSITION TV FOR SEQ BAY INSPECT & PHOTO LM PADS/ SURFACE	1:10 DUMP DSE
		ALSEP OFFLOAD OFFLOAD ALSEP PKG #1 POSITION PKG #1 CLEAR OF SEQ BAY REMOVE SIDE SUBPALLET FROM PKG #2	ALSEP OFFLOAD OPEN SEQ BAY DOORS OFFLOAD ALSEP PKG #2 DEPLOY HTC DEPLOY FUEL CASK EXTRACT FUEL ELEMENT FUEL RTG	1:20
	116:00			1:30

MSFN

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	115:00 - 116:00	5/16-17	3-94

FLIGHT PLAN

CSM			LM		MCC H
CMP		0622 CST	CDR	LMP	
		116:00	CLOSE SEQ BAY DOORS CARRY HTC TO MESA PICK UP TONGS	CONNECT PKG #2 TO CARRY BAR	1:30
		:15	ALSEP TRAVERSE CARRY SUBPALLET TO TV ORIENT TV FOR ALSEP CARRY SUBPALLET TO DEPLOYMENT SITE	ALSEP TRAVERSE CARRY ALSEP PKG's TO DEPLOYMENT SITE REST ENROUTE	1:40
MAP UPDATE REV 18 LOS : _ _ _:_ _:_ _ 180° : _ _ _:_ _:_ _ AOS : _ _ _:_ _:_ _	M S F N	:25	ALSEP SYSTEM INTERCONNECT UNSTOW SIDE FROM SUBPALLET CONNECT TO CENTRAL STATION UNSTOW & POSITION PSE STOOL	ALSEP SYSTEM INTERCONNECT POSITION PKGS UNSTOW RTG CABLE AND CONNECT TO CENTRAL STATION	1:50 UPDATE TO CSM MAP UPDATE REV 18
		116:30 :31	SWE DEPLOYMENT DEPLOY SWE, ALIGN&PHOTOGRAPH	PSE DEPLOYMENT UNSTOW PSE & PLACE ON PSE STOOL, DEPLOY THERMAL SKIRT LEVEL & PHOTOGRAPH PSE	2:00
	M S F N		LSM OFFLOAD UNSTOW LSM	LSM DEPLOYMENT CARRY LSM TO DEPLOY SITE DEPLOY LSM, & LEVEL & ALIGN PHOTOGRAPH LSM	2:10
		:45	SUNSHIELD DEPLOYMENT RELEASE PERIMETER, ANT, CABLE, & INNER BOLTS, RAISE SUNSHIELD, & CK. CURTAINS		
VERIFY DSE MOTION @ LOS		:49	ANTENNA INSTALLATION INSTALL ANT MAST INSTALL ANT ON MAST SET AZIMUTH & ELEVATION OFFSETS LEVEL & ALIGN ANTENNA	SIDE DEPLOYMENT CARRY SIDE TO DEPLOY SITE DEPLOY GROUND SCREEN DEPLOY CCIG LEVEL & ALIGN SIDE PHOTOGRAPH SIDE	2:20
		117:00	ALSEP ACTIVATION VERIFY EXPERIMENTS DEPLOYED ACTIVATE ALSEP	ALSEP SITE PHOTOGRAPHY PHOTO DEPLOYMENT SITE	2:30

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	116:00 - 117:00	5/17	3-95

CSM		LM		MCC-H
CMP	0722 CST 117:00	CDR	LMP	
		RETURN TRAVERSE TRAVERSE TO LM COLLECTING SAMPLES REST ENROUTE	RETURN TRAVERSE TRAVERSE TO LM COLLECTING SAMPLES REST ENROUTE RETURN TV TO LM AREA & POSITION TO VIEW MESA/LADDER PHOTOGRAPH ALSEP SITE	2:30 GO/NO GO FOR EVA EXTENSION 2:40
EAT PERIOD	REV 18 :15 :17	SRC #1 PACKING STOW 70 MM CAM IN ETB STOW TOOLS UNSTOW & UNPACK SRC #1 SEAL ORGANIC CONTROL SAMPLE REMOVE LMP SADDLE BAG & FINISH FILLING PACK SAMPLES IN SRC & SEAL	CORE TUBE SAMPLE COLLECTION COLLECT CORE & STOW IN SRC REMOVE CDR SADDLE BAG	2:50
	:24		EVA TERMINATION STOW 70MM CAM IN ETB CLEAN EMU & CHECK CDR INGRESS CHECK EMU & LM SYSTEMS S-BD ANT-LUNAR STAY ASSIST CDR REMOVE ETB FROM LEC & STOW ASSIST CDR REMOVE SRC FROM LEC STOW SRC ON ENG COVER PASS LEC TO CDR	3:00 DUMP DSE 3:10 UPDATE TO CSM MAP UPDATE REV 19 3:20
REACQUIRE MSFN HGA P -23, Y 190	117:30 :35	LEC TRANSFERS STOW 70MM CAM IN ETB, CLOSE ETB & TRANSFER INTO LM REST/CHECK EMU ATTACH LEC TO SRC TRANSFER SRC INTO LM		
MAP UPDATE REV 19 LOS : : : 180°W: : : AOS : : :	:45	EVA TERMINATION PLACE SRC #2 ON +Y PAD CLEAN EMU ASCEND TO PLATFORM STOW LEC & INGRESS		
	118:00	JETTISON EQUIPMENT & CLOSE HATCH REPRESS CABIN		3:30

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	117:00 - 118:00	5/17-18	3-96

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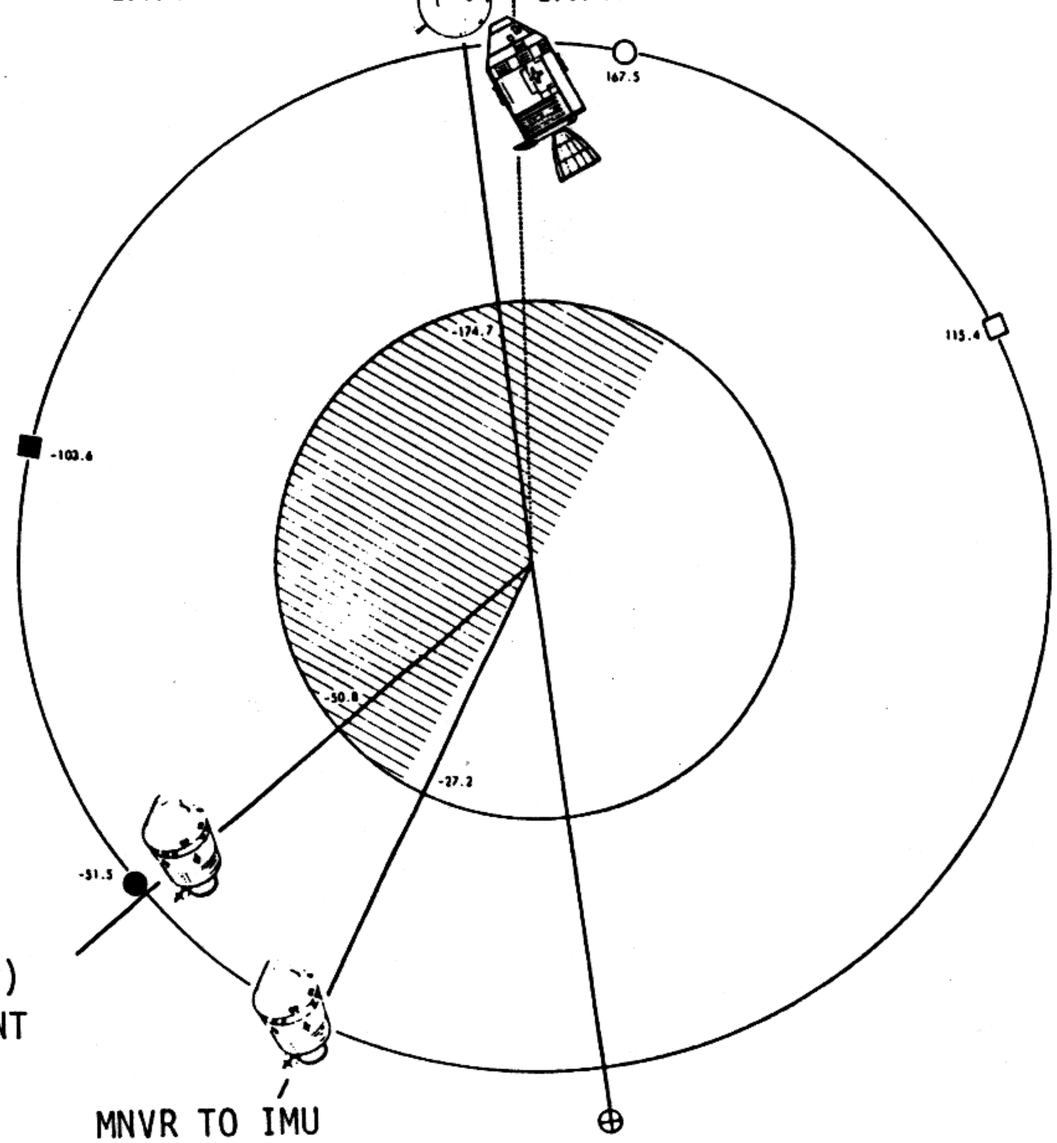
REV 18

MNVR TO PC 1
BURN ATT
(0,NA/0,0)
IATTH

117:13:29
BEGIN REV 18
(180,NA/233,0)
IATTH



AFTER IMU
REALIGN
(49,NA/331,29)
LOPC #1 ORIENT

MNVR TO IMU
REALIGN ATT
(180,NA/233,45)
IATTH

LEGEND:

□ ■	MSFN AOS, LOS
○ ●	S/C SUNRISE, SUNSET
⊕	SUBEARTH POINT

(R,LHP/INP,Y)

IATTH - INERTIAL ATTITUDE HOLD

LATTH - LOCAL ATTITUDE HOLD

REVISION B

FLIGHT PLAN

CSM	0822 CST	LM		MCC-H
CMP		CDR	LMP	
	118:00	POST EVA SYSTEMS CONFIGURATION CONFIGURE VALVES AND CIRCUIT BREAKERS TV-OFF DOFF HELMETS & GLOVES DISCONNECT OPS O2 & PLSS H_2O HOSES & CONNECT LM O2 & H_2O HOSES, LCG PUMP CB-CLOSE SWITCH TO LM COMM SYSTEM, BIO MED-LEFT		3:30 UPDATE TO CSM MNVR PAD (PLANE CHANGE) UPLINK TO CSM CSM STATE VECTOR PLANE CHANGE TGT LOAD DESIRED ORIENT (PLANE CHANGE)
EAT PERIOD	:15	PLSS O2 RECHARGE CONNECT LMP'S PLSS TO LM O_2 SUPPLY & FILL (2 MIN)) CONNECT CDR'S PLSS TO LM O_2 SUPPLY & FILL (2 MIN))		
MNVR TO P52 ATT BY 118:22 R 180, P 233, Y 45 HGA P -22, Y 234	:24	PLSS/OPS DOFFING REMOVE RCU'S, DOFF PLSS/OPS REPLACE CDR'S PLSS BATT & LiOH CARTRIDGE REMOVE OPS & STOW ON ENG COVER STOW PLSS (RECHARGE STATION) REPLACE LMP'S PLSS BATT & LiOH CARTRIDGE REMOVE OPS & STOW PLSS (FLOOR) OPS CHECK (BOTH) STOW LMP OPS ON FLOOR		
P52 - IMU REALIGN OPTION 1 - PREFERRED (PLANE CHANGE ORIENT)	118:30			
GDC ALIGN TO IMU				
VERIFY DSE MOTION @ LOS	:45 :47	POST EVA CABIN CONFIGURATION STOW SRC IN LOWER & CDR OPS IN TOP OPS COMPARTMENT CONFIGURE SEQ CAMERA VERIFY CB CONFIGURATION LCG PUMP CB - OPEN UNSTOW LUNAR SURFACE CHECKLIST STOW EVA1 PREP & POSTCARD		
	119:00	EAT PERIOD	EAT PERIOD	

MSFN

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	118:00 - 119:00	5/18	3-97

CSM PLANE CHANGE #1
BURN TABLE

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TAKEOVER	±10° TAKEOVER	BT + 1 SEC	NO TRIM

TABLE 3-9

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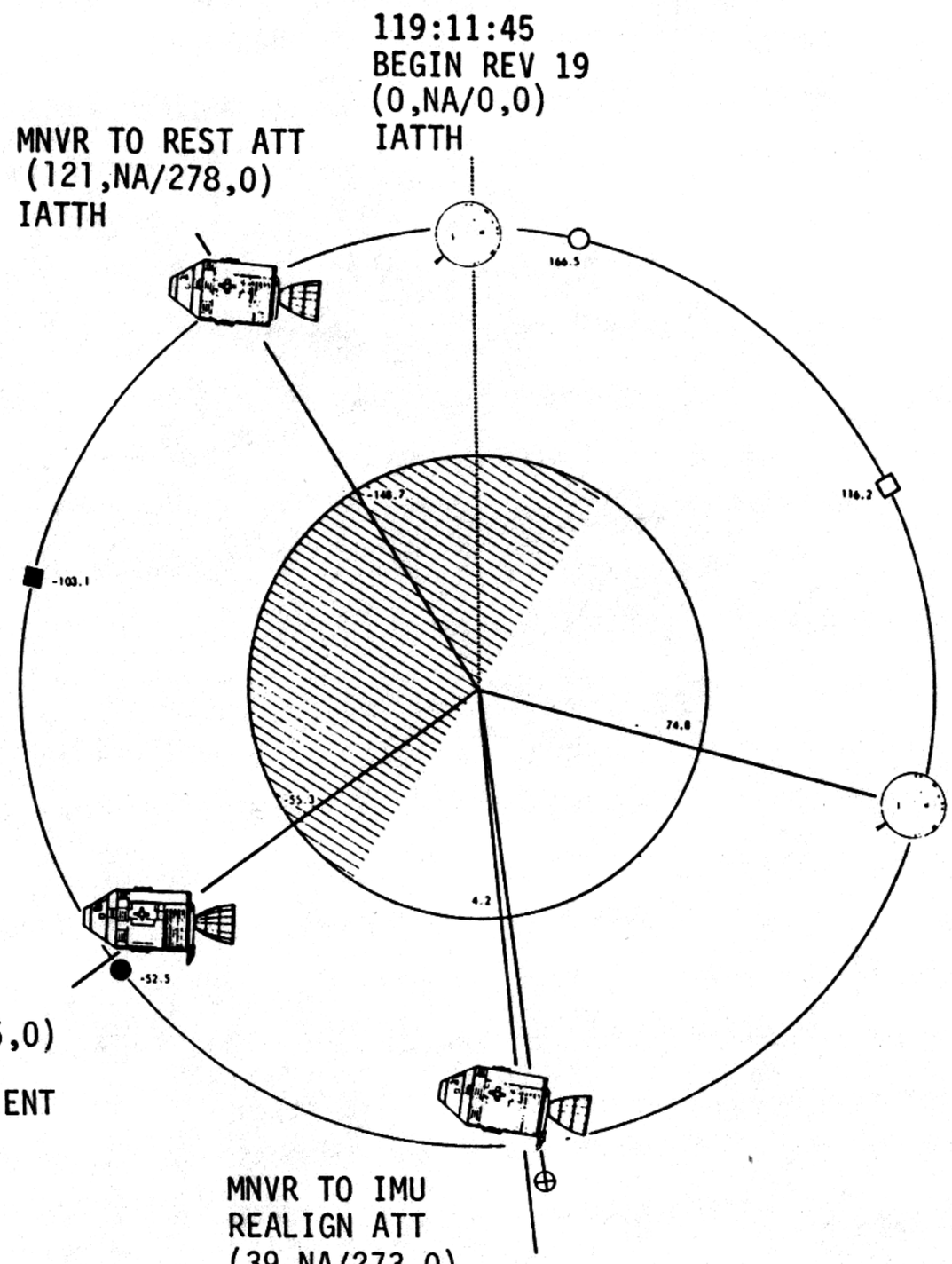
REV 19



119:11:45
BEGIN REV 19
(0,NA/0,0)
IATTH

MNVR TO REST ATT
(121,NA/278,0)
IATTH

119:47:02
PC 1 BURN IGN
(0,NA/0,0)
IATTH

AFTER IMU
REALIGN
(128,NA/265,0)
IATTH
LIFTOFF ORIENT

MNVR TO IMU
REALIGN ATT
(39,NA/273,0)
IATTH

LEGEND:

□ ■	MSFN AOS, LOS
○ ◐	S/C SUNRISE, SUNSET
⊕	SUBEARTH POINT

(R,LHP/INP,Y)

IATTH - INERTIAL ATTITUDE HOLD

LATTH - LOCAL ATTITUDE HOLD

REVISION B

FLIGHT PLAN

CSM

CMP

P30 - EXT ΔV
V49 - MNVR TO BURN
ATTITUDE BY 119:10

R 0 , P 0 , Y 0

HGA P 20 , Y 276

SEXTANT STAR CHECK

P40 - SPS THRUSTING
REACQUIRE MSFN

GDC ALIGN TO IMU

SPS PLANE CHANGE #1
TIG: 119:47:01.9
BT: 19.4 SEC
ΔVR: 372.4 FPS
ULLAGE: 2 JETS, 15 SEC
ORBIT: 61.5 X 55.6

0922 CST

119:00

REV 19

:15

:16

:23

119:30

:33

:45

120:00

MSFN

MSFN

MSFN

LM

CDR

EAT PERIOD

PLSS RECHARGE

LMP

EAT PERIOD

MCC-H

BURN STATUS REPORT

X	X			ΔTIG
X	X			BT
				V_{gx}
		TRIM		
X	X	X		R
X	X	X		P
X	X	X		Y
				V_{gx}
				V_{gy}
				V_{gz}
				ΔV_c *
X	X	X		FUEL *
X	X	X		OX *
X	X	X		UNBAL

*ITEMS TO BE REPORTED TO MSFN

UPDATE TO LM
LIFT OFF TIME FOR
REV 20 THRU 24
(ASSUMES NOM PLANE
CHANGE)

DUMP DSE

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	119:00 - 120:00	5/18-19	3-99

CSM | **LM** | **MCC-H**

CMP | **CDR** | **LMP**

1022 CST

120:00

MNVR TO P52 ATT BY 120:10
R 39, P 273, Y 0
HGA P -30, Y 245

MAP UPDATE REV 20
LOS : __ __ __:__ __:__ __
180°W: __ __ __:__ __:__ __
AOS : __ __ __:__ __:__ __

MSFN

PLSS FEEDWATER COLLECTION (BOTH)

REPORT PLSS FEEDWATER QUANTITIES

CONNECT LM O_2 SUPPLY TO PLSS & FILL (10 MIN)

CONNECT LM H_2O SUPPLY TO PLSS & FILL (3 MIN)

UPLINK TO CSM
DESIRED ORIENT
(LIFT OFF)

UPDATE TO CSM
REV 20 MAP UPDATE

P52 (LIFT-OFF ORIENT)
N71: __ __,__ __
N05: __ __ __.__ __
N93:
X __ __.__ __ __
Y __ __.__ __ __
Z __ __.__ __ __
GET __ __ __:__ __:__ __

:15

:23

:29

120:30

P52 - IMU REALIGN
OPTION 1 - PREFERRED
(LIFT OFF ORIENT)

GDC ALIGN TO IMU

VERIFY DSE MOTION @ LOS

LiOH CANISTER CHANGE NO. 10
12 INTO B, STOW 10 IN A3

O_2 FUEL CELL PURGE

WASTE WATER DUMP

CONNECT LM O_2 SUPPLY TO 2ND PLSS & FILL (10 MIN)

CONNECT LM H_2O SUPPLY TO 2ND PLSS & FILL (3 MIN)

GO/NO-GO FOR
SECOND EVA
EXTENSION

:45

EVA DEBRIEFING

CREW STATUS (RADIATION, MEDICATION)

CONFIGURE SLEEP STATIONS

REST PERIOD
9 HOURS

REST PERIOD
9 HOURS

121:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	120:00 - 121:00	5/19	3-100

FLIGHT PLAN

CSM

CMP

MNVR TO REST ATT BY 121:00
R 121, P 278, Y 0
HGA P -25, Y 261
GO INERTIAL
LOAD DAP (11110) (11111)
V21 N01E, 3255E, 1616E

ONBOARD READOUT	
BAT C	
PYRO BAT A	
PYRO BAT B	
RCS A	
B	
C	
D	

DC IND SEL - MNA OR B

1122 CST

121:00

REV 20

:15

:22

121:30
:32

:45

122:00

M S F N

M S F N

LM

CDR

REST PERIOD
9 HOURS

LMP

REST PERIOD
9 HOURS

MCC-H

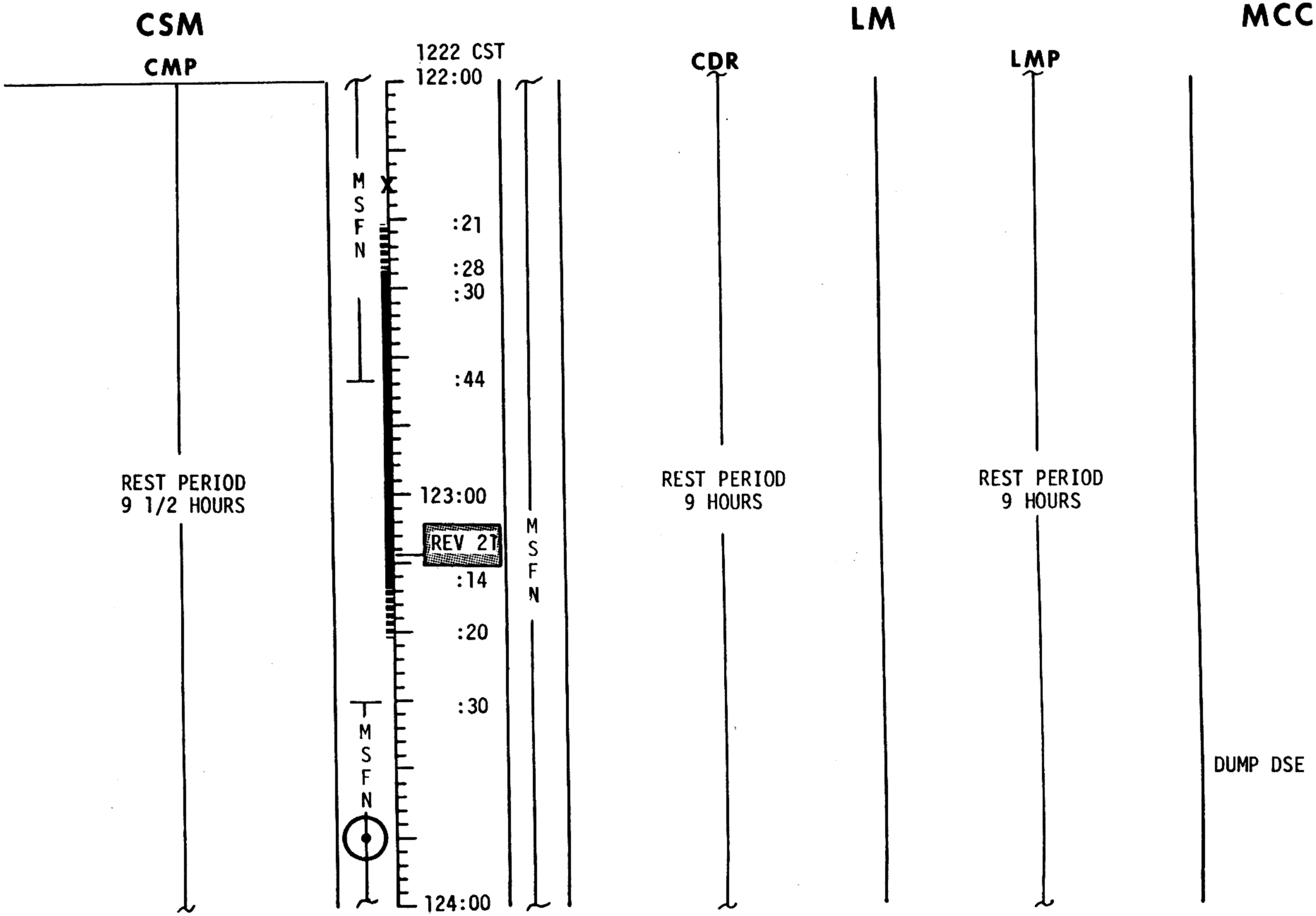
CSM PRESLEEP CHECKLIST
E-MEMORY DUMP
CREW STATUS REPORT
(medication)
ONBOARD READOUTS to MSFN
CYCLE H2, O2, FANS
CHLORINATE WATER
VERIFY:
WASTE MNGT OVBD DRAIN - OFF
WASTE STOW VENT vlv - CLOSED
EMER CABIN PRESS vlv - BOTH
SURGE TK O2 vlv - ON
REPRESS O2 vlv - OFF
LM TUNNEL VENT vlv - OFF
NORMAL LUNAR COMM EXCEPT:
S BD SQUELCH - ENABLE
HI GAIN ANTENNA TRACK - REACQ
HI GAIN ANTENNA BEAM - NARROW
S BD ANT - HI GAIN

DSE DUMP

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	121:00 - 122:00	5/19-20	3-101

MSC Form 1673 (OT) (Rev 69)

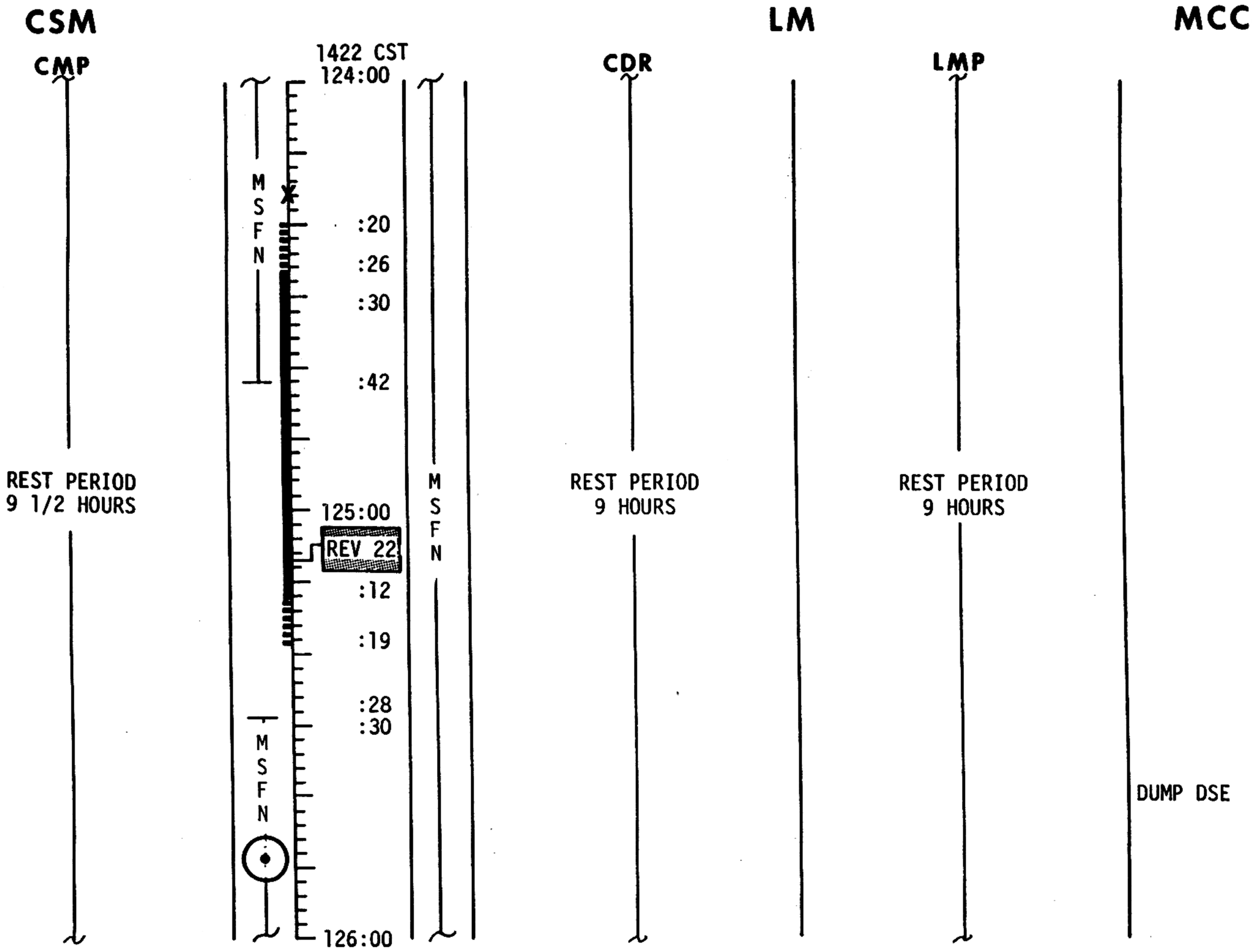
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	122:00 - 124:00	5/20-21	3-102

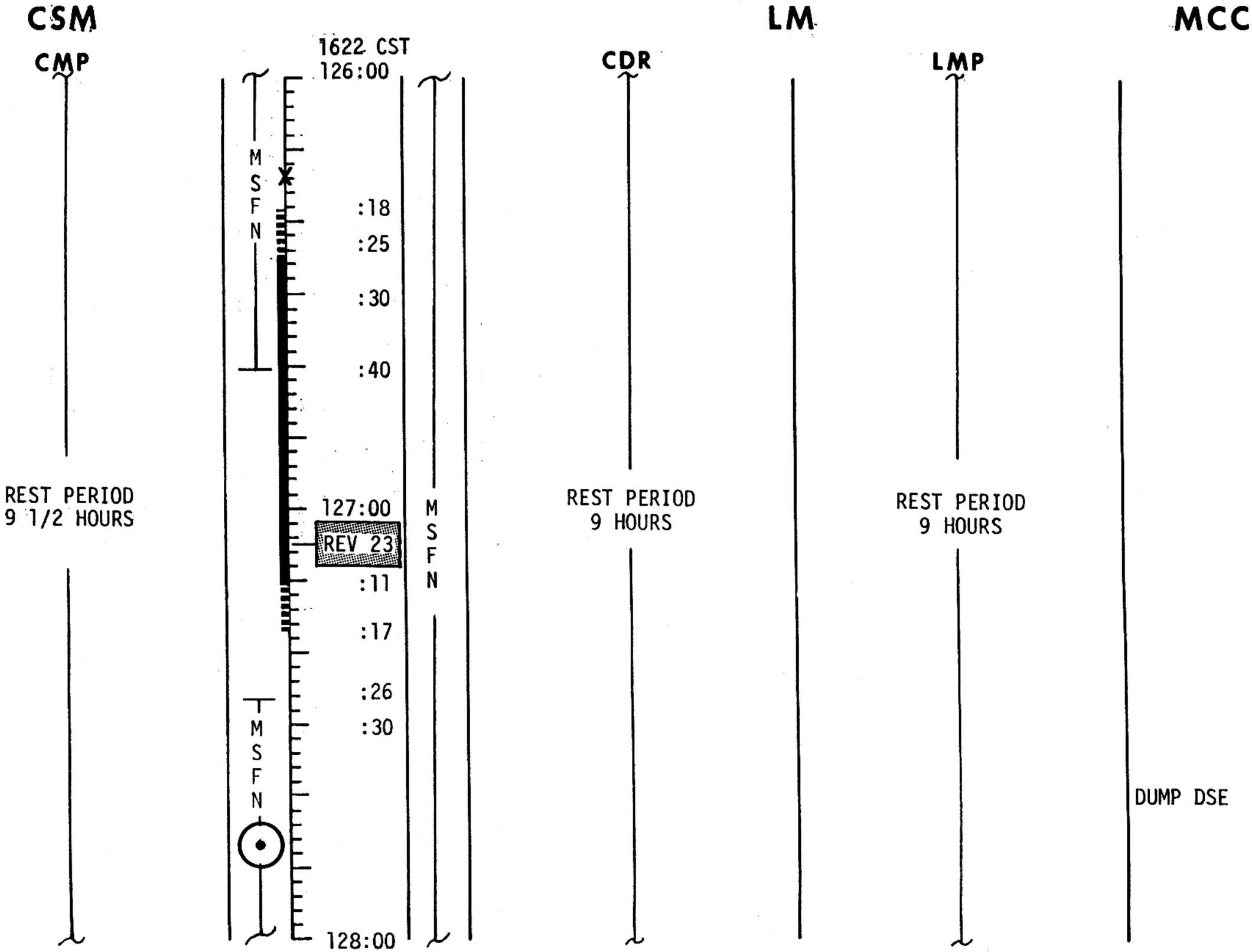
MSC Form (OT)(June 69) FLIGHT NING BRANCH

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	124:00 - 126:00	5/21-22	3-103

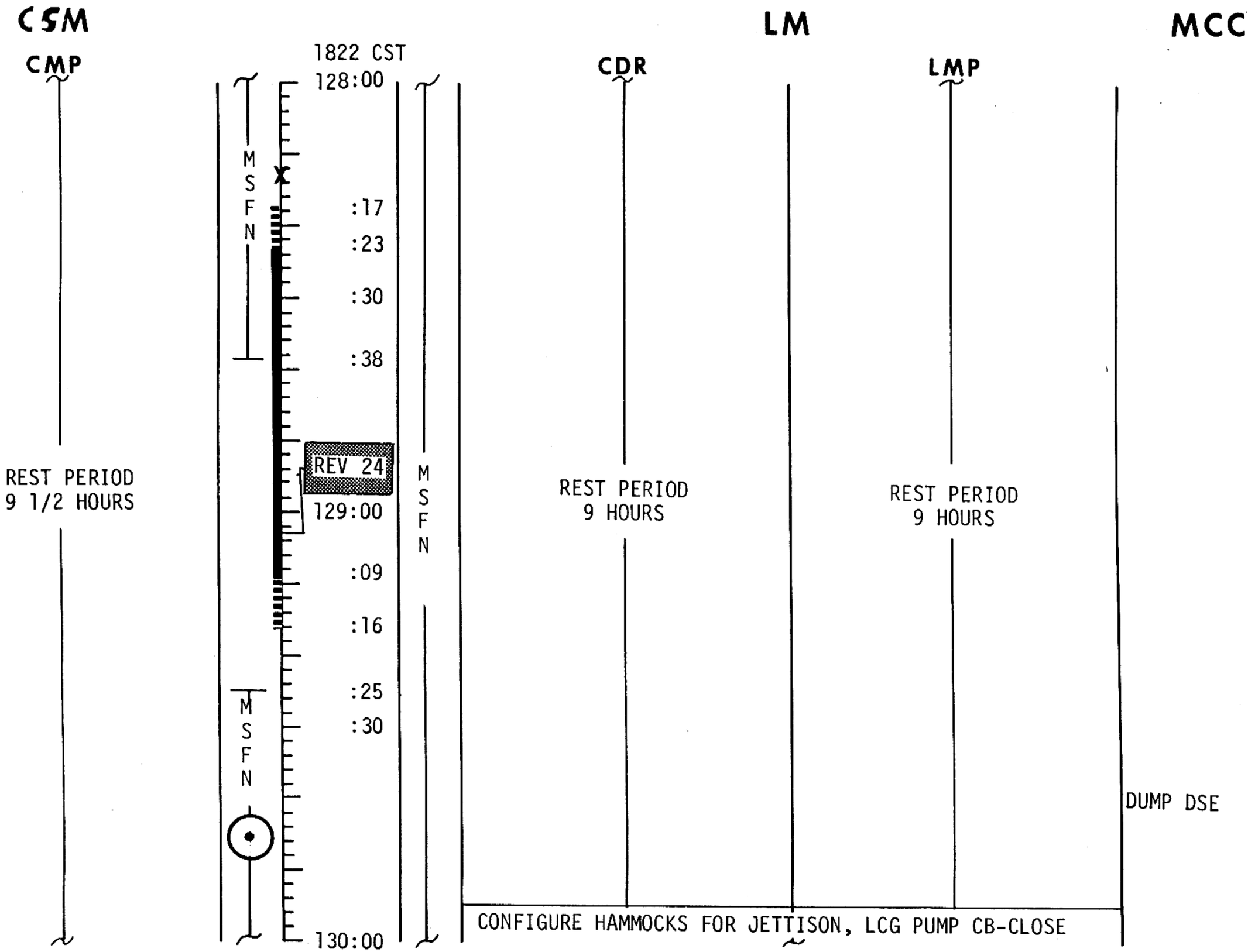
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	126:00 - 128:00	5/22-23	3-104

Form 1674 (June 69) FLIGHT PLAN BRANCH

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 12	FINAL (NOV 14)	OCTOBER 15, 1969	128:00 - 130:00	5/23-24	3-105