

Jack R.



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

APOLLO 17

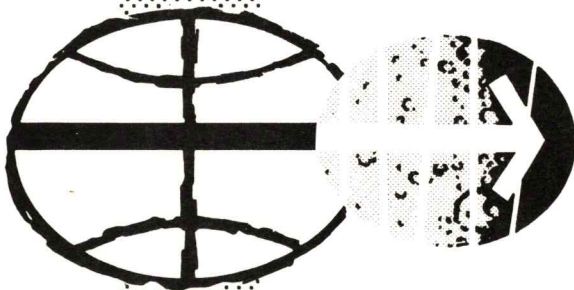
DECEMBER 6 LAUNCH

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CHANGE C LM TIMELINE

PREPARED BY

FLIGHT PROCEDURES BRANCH
CREW PROCEDURES DIVISION



MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

NOVEMBER 3, 1972

APOLLO 17
LM TIMELINE BOOK

NOVEMBER 3, 1972

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It is requested that any organization having comments, questions, or suggestions concerning this document contact C. O. Lewis, Flight Procedures Branch, CG42, Building 4, room 255, telephone 483-3291.

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ACKNOWLEDGEMENT

<u>AREA</u>	<u>NAME/BRANCH</u>	<u>LOCATION</u>
Rendezvous (Sec. 2, 4)	S. Grega Flight Procedures CG4	Ext 5348 Bldg 4, Rm 252
Post Docking (Sec. 3)	G. Doerre Spacecraft Systems CG2	Ext 4371 Bldg 4, Rm 250

It is requested that any organization having comments in the above areas contact the responsible individuals.

LM TIMELINE BOOK

LIST OF EFFECTIVE PAGES

Basic 9/8/72
Change A 9/27/72
Change B 10/18/72
Change C 11/3/72

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*Current Change

110:15

PREP FOR UNDOCKING

USE ACTIVATION & C.O.

C/L TO 10 MIN BEFORE UNDOCK

CHECK ATT (0, 180/284, 060)

V48 22012

LM WT _____ (36,744)

PRO, V34

V06N20 COPY LM AND CSM ANGLES AND TIME

P47

UNDOCK & SEPARATION _____ : _____ : _____ (110:28)

V77E

P00, V60 TRIM TO .1 FPS

YAW LT 60°

PITCH UP 90°

*SEQUENCE CAMERA - ON (1 MIN) *

FDAI (0, 280/013, 0)

*VHF ANT - FWD (✓ LS VHF ANT DPLY) *

*SEQUENCE CAMERA - OFF *

HELMETS & GLOVES - OFF (OPT) *

*SUIT GAS DIVERTER - EGRESS *

*CABIN GAS RETURN - EGRESS *

LANDING RADAR CHECKOUT

CB(11) PGNS: LDG RDR - CLOSE

CK TEMP (60° - 95°)

X-PNTRS - HI MULT

MODE SEL - LR

TM SW - H/H

LDG ANT - AUTO

RDR TEST - LDG

POWER SIGNAL LIGHT OUT

TEST MON - ALT/VEL XMTR (2.1 - 5.0), AGC

X-PNTRS PEGGED UP, LEFT

TM - H (8000 ± 100), H (-480 ± 2)

V63 N12 OPT 2, PRO

N66 8286 ± 10, ANT POS 1 (00001), PRO

N67 V_x (-00495 ± 2), V_y (+01862 ± 2),V_z (+01331 ± 2)

V34, RDR TEST OFF (ALT - 0, POWER SIGNAL

LIGHT ON, X-PNTRS - CENTERED)

CB(11) PGNS: LDG RDR - OPEN

UNDOCK TO DPS THROTTLE CHECK

110:35

AOS

TTO

+41

*CAMERA SETTINGS FOR CABIN PHOTOS *

*LM/DAC/10/CEX (T/1.8, 1/60, 2ft) *

* 6 FPS, .125 MAG 0, (2 MIN) *

*LM/DC/60/CEX (f5.6, 1/30, FOCUS) *

* 5 FR, MAG A *

*S-BD ANT - FWD, VERIFY COMM *

*✓S-BD P _____ (9) *

* Y _____ (-37) *

*S-BD ANT - SLEW (>3.0) *

*TRACK MODE - AUTO *

*VHF B XMTR - OFF *

*BIOMED - LEFT, PCM - HI *

*UPLINK SQUELCH - OFF *

VOICE N20 ANGLES AND TIME TO MSFN

DPS THROTTLE CHECK

*CB(16) STAB/CONT: ENG ARM - CLOSE *

THROT CONT - MAN/CDR

TTCA (BOTH) - THROTTLE (MIN)

*VERIFY MSFN CONTACT *

ENG STOP - PUSH

ENG ARM - DES (DES REG LT - ON)

TTCA MIN (6.6% - 13.4%)

THEN SOFT STOP (46.2% - 59.2%)

THEN MAX (93.6% - 100+%)

THEN MIN

ADJUST FRICTION

MAN THROT - LMP

*REPEAT TEST FOR LMP TTCA *

ENG ARM - OFF

*CYCLE CWEA (DES REG LT - OFF) *

ENG STOP - RESET

THROT CONT - AUTO/CDR

TTCA (BOTH) - JETS

DATE 10/18/72

PAGE 1-1

UNDOCK TO DPS
THROTTLE CHECK

110:35

110:45

DPS PRESS TO MSFN UPDATE

DPS PRESS & C.O.

PRPLNT TEMP/PRESS MON - DES 1 & 2

FUEL 50°-75°F 50-130 PSI

OXID 50°-75°F 30-80 PSI

HELIUM MON: SUPCRIT PRESS 1070-1570

: AMB PRESS 1495-1750

DES He REG 1 tb - GRAY, REG 2 tb - bp

MASTER ARM - ON

DES PRPLNT ISOL VLV - FIRE

He PRESS/DES START - FIRE

MASTER ARM - OFF

PRPLNT TEMP/PRESS MON: DES 1 & 2

FUEL & OXID 50°-90°F 200-250 PSI

HELIUM MON: AMB PRESS 200-1110

: SUPCRIT PRESS 1070-1570

AGS ACTIVATION

*AGS STATUS - STBY (MASTER ALARM, *

* & AGS WARNING LT - ON) *

*CB(16) STAB/CONT: AEA - CLOSE *

* (AGS WARNING LT - OFF) *

CB(11) AC BUS B: AGS - CLOSE

*RECORD TIME : :

*AGS STATUS - OPERATE (MASTER ALARM, *

* & AGS WARNING LT - ON) *

*02/H2O QTY MON - C/W RESET *

*ATT MON (LMP) - AGS *

*412R+1 SELF TEST SATISFACTORY *

*000 +888888 (OPR ERR LT - ON) *

*123 -45679 (DO NOT ENTR) *

*V16 N65E *

*SET AGS TIME USING 110 HR BIAS *

* 377 _____ (+00450) *

22012

110:50

*616+0

*224 _____ (+60457) *

*225 _____ (+29364) *

*226 _____ (+60366) *

*305 _____ (+00642) *

*662 _____ (-33007) *

*673 _____ (-54456) *

*574R DESCENT STAGE (+ NOT STAGED) *

*604R LUNAR SURFACE FLAG *

* (+ NOT ON LUNAR SURFACE) *

*612R STAGING COUNTER (+0 NOM) *

*232R +00600 *

*233R +00250 *

*464R +00500 *

*465R +00195 *

*623R +00000 *

*514R -60000 *

*515R -44223 *

*516R +00000 *

MSFN UPDATE

*COPY AGS K FACTOR _____:_____:_____ *

V47E

V25E LOAD AGS K FACTOR UPDATE

*414+1 *

*400+3 (AFTER 50 16) *

V83, SET ORDEAL

*317R, 440R *

110:45

110:55

110:50

110:55

AGS CHECK TO COAS CAL

AGS CONT CHECK

MODE CONT (AGS) - ATT HOLD
GUID CONT - AGS
MNVR TO FDAI (0, 315/330, 0)

*CAMERA SETTINGS FOR REV 12 TCA *
*LM3/DAC/10/CEX (T/2.8, 1/250, ∞) *
* 1 FPS, .05 MAG 0, (5 MIN) *
*LM/DC/60/CEX (f5.6, 1/125, 74 ft) *
* 5 FR, MAG A *

*SEQUENCE CAMERA - ON (110:56) *

REV 12 LS TCA ____:____:____ (111:01)

*SEQUENCE CAMERA - OFF *

RENDEZVOUS RADAR CHECKOUT

GUID CONT - PGNS
CB(11) AC BUS A: RNDZ RDR - CLOSE

CB(11) PGNS: RNDZ RDR - CLOSE
*VHF A XMTR - VOICE/RNG *

✓ TEMP (10° - 75°)

RT/ERR MON - RR

RR SLEW, MANUAL LOCK-ON, RR LGC

TM - RNG/RNG RT

V63, PRO, NO TRACK LIGHT OUT, PRO, N78

COMPARE N78, VHF, TM
V34

*VHF A XMTR - VOICE *

V41N72E (+00000, +28300)

CB(11) PGNS: RNDZ RDR - OPEN

CB(11) AC BUS A: RNDZ RDR - OPEN

V44, RR - SLEW

RT/ERR MON - LDG RDR/CMPTTR

TM - H/H

22012

111:05

MSFN UPDATE

*COPY CSM CIRC P76 *
*COPY PADS FOR *
* NO PDI + 12 ABORT *
* PDI *
* PDI EARLY ABORT *
* PDI LATE ABORT *
* T2 ABORT *
* T3 TIG *
* SHe PRESSURE *
*SET DET TO COUNT DN TO DOI-2 *

IMU FINE ALIGN

V76
P52 OPT 3
CB(11) AC BUS B: AOT LAMP - CLOSE
AOT - DETENT F/0.0°
PGNS MODE CONT - AUTO
1ST STAR PROCYON (216)
PRO
2ND STAR ALDEBARAN (211)
N05 ANGLE DIFF _____
PRO
N93 TORQUING ANG
X _____
Y _____
Z _____
PRO, RCD GET ____:____:____
N25, (ENTR FOR NO COAS CAL)

COAS CALIBRATION

PRO, ENTR
N70, ENTR 011 (ALDBN), PRO
N87, (+00000, +00000) PRO, PRO
P00

BIAS AZ _____
EL _____

DETENT CL
CB AOT LAMP - OPEN

DATE 10/18/72

PAGE 1-3

AGS CHECK
TO COAS CAL

111:05

111:20

	R	Ṙ
MAX Δ	27 NM	7 FPS
N78		
VHF		
TM		

MSFN UPLINK TO DOI-2

111:20

22012 111:45

MSFN UPLINK, UPDATE

*UPDATA LINK - DATA
*UPLINK CSM/LM S.V., E-MEMORY
* DESCENT TARGETING
*UPDATA LINK - OFF
COPY AND LOAD GYRO DRIFT COMP, PIPA BIAS
* (REF P2 DATA CARD BOOK)

V47

*414+1 400+3

V83, SET ORDEAL

*317R, 440R

MNVR TO AGS CAL ATT

V49, +02250 OGA ROLL 24 }
+06750 IGA PITCH 77 } FDAI
+02250 MGA YAW 339 }

*VHF ANT - AFT
*VHF B XMTR - DATA
*VHF ✓ WITH CSM

AGS CALIBRATION

*READ AND RECORD INITIAL CAL. NOS.
PGNS MODE CONT - ATT HOLD
*VERIFY 25 MIN SINCE TURN-ON
V60, V76, V16N20E
RATES < 0.075°/SEC
*400+6 (647R > 00034)
*400R

MONITOR ICDU LIMITS

{ OGA +00000 / +04500
IGA +04500 / +09000 } LIMITS
{ MGA +00000 / +04500 }

BEFORE LIMITS ARE EXCEEDED, 400+0.
IF TIME IS LESS THAN 5 MINUTES
REPEAT AGS CALIBRATION

*CHECK ECS, RCS, EPS, APS
*CYCLE CWEA CB

*400R+0
*READ AND RECORD CAL VALUES

	INIT	CAL	Δ LIM
540			± .039
541			± .039
542			± .039
544			±2.00
545			±2.00
546			±2.00

GO/NO GO FOR DOI-2

CONFIGURE COMM FOR LOS

*MATCH INDICATED ANGLES
*TRACK MODE - SLEW
*S-BD ANT - FWD
*SET P (-33)
* Y (+54)
*PCM - LO
*UPLINK SQUELCH - ENABLE
*COMM CHK WITH CSM

DOI-2 PREP

P30 LOAD PAD
SET DET, PRO
P41
N18 R,P,Y BYPASS MNVR
N85
MNVR TO N85 -VGX,0,0 (0,085,0)
V77E
N40E ✓DET, VG
*410+5, 373+TIG
*450-VGX, 451+0, 452+VGZ
*310R ✓DET, 370R ✓VG
*500R

CSM CIRC : : (111:55)

DOI-2 : : (112:01) [5 MIN MAX SLIP]
T=0 NULL VG'S TO .2FPS
V82E ✓HP (7.2)

111:45

112:05

112:05

P76 (UPDATE CSM S.V.) PRO
V82 ✓CSM HA/HP (70.3/54.3)
*PCM - HI
V47
*414+1
V83
*317R, 440R
*PCM - LO
*373 _____ (+01696)
*410+0

P63 IGNITION ALGORITHM TEST

P63
*RESET DET TO COUNT DN TO PDI
PGNS MODE CONT - AUTO
N18 R, P, Y (0, 108, XXX) PRO
YAW TO 290°
P00
V48, 22112, 00011, PRO, V34
*CAMERA SETTING (PDI)
*LM3/DAC/10/CEX-WDG (T/2.8, 1/500, ∞)
* 12 FPS, .75 MAG 0, (6 MIN)
*CAMERA SETTING (EARTH RISE)
*LM/DC/60/CEX (f16, 1/250, 74 ft)
* 5 FR, MAG A

COAS TO OVERHEAD WINDOW
VERIFY LOOSE GEAR STOWED
RESTRAINTS ATTACHED
VERIFY FDAI'S INERTIAL

PRE-PDI ECS CHECKOUT

HELMETS AND GLOVES ON
*CABIN REPRESS - CLOSE
*SUIT GAS DIVERter - EGRESS
*CABIN GAS RETURN - EGRESS
*PRESS REGS A&B - EGRESS

PRE-PDI SWITCH SETTING CHECK

*VHF ANT - FWD
CB(11)EPS: INV 1 - CLOSE
*SELECT INV 1

112:15

CB(11) STAB/CONT: AELD - CLOSE
CB(11) STAB/CONT: ABORT STAGE - CLOSE
RESET ENG STOP PB
SET WINDOW BARS

-35

*CB(16) STAB/CONT: AELD - CLOSE
*CB(16) STAB/CONT: ABORT STAGE - CLOSE
*CYCLE CWEA CB
*BATS 5 & 6 NORM FEED - ON
*RECORD GET _____:_____:_____

THROT CONT - AUTO
CDR TTCA - THROTTLE - MIN
*LMP TTCA - THROTTLE SOFT STOP
RATE SCALE - 25°/SEC
ATT/TRANSL - 4 JET
CHECK DPS, APS, RCS, ECS, EPS, RECORD APS DATA
CHECK SWITCH GUARDS
PRPLNT QTY MON - DES 1
✓DPS CONFIG CARD

✓ PDI RULES

AUDIO MODE (BOTH - VOX)
*S-BD ANT - FWD, VERIFY COMM
*S-BD P _____(-33)
* Y _____(+54)
*S-BD ANT - SLEW (>3.0)
*TRACK MODE - AUTO
*S-BD P _____(-24)
* Y _____(-3)
*VHF B XMTR - OFF
*BIOMED - LEFT, PCM - HI
*UPLINK SQUELCH - OFF
DOI-2 BURN REPORT
*CHECK ED BATTS AND REPORT
*VOICE ASC BATT ON TIME TO MSFN

MSFN UPLINK, UPDATE

*UPDATE LINK - DATA
*UPLINK LM S.V., RLS
*UPDATE LINK - VOICE BU
*COPY, LOAD AGS RLS (231)_____

22112

AOS
112
+35

112:15

AGS INITIALIZE
TO PDI

AGS INITIALIZE TO PDI

22112

GO-AROUND

AGS INITIALIZE

V47

*414+1

V83

*317R, 440R

*240 + (231 RLS PAD)

*254+01944

*262-00143

*400+3

*400+1

MODE SEL - AGS

POWERED DESCENT INITIATION

V25 N69E (IF NO UPLINK)

P63

PGNS MODE CONT - AUTO

AGS MODE CONT - AUTO

*RESET DET

N18, R, P, Y (0, 108, 290)

VERIFY FDAI

CB(11) PGNS: LDG RDR - CLOSE

✓ALT XMTR

PRO - FINAL TRIM

ENTR, ✓DET

GO/NO-GO FOR PDI

COMM CHECK WITH CSM

RESET WATCH

MASTER ARM - ON

MODE SEL - PGNS

*471R

ENG ARM - DES

ULLAGE

PRO

PDI : : (112:49:38)

(NO IGN) - START PB - PUSH

DES ENG CMD OVRD - ON

MASTER ARM - OFF

SECURE SYSTEMS

ENG ARM - OFF

MASTER ARM - OFF

P00

LR - OFF

ASC BATTS - OFF

PRLPNT QTY MON - OFF

AUDIO - PTT

ECS - CABIN MODE

HELMETS & GLOVES - OFF (OPTIONAL)

AGS - ATT HOLD

ALIGN IMU

P52 (SAME STARS)

400+3

MSFN UPDATE

COPY PADS FOR:

NO PDI + 12

PDI

PDI EARLY ABORT

PDI LATE ABORT

T2 ABORT

T3 TIG

AGS ABORT CONSTANTS

224,225,226,305,662,673

AGS T2 UPDATE - 254

AGS 373 UPDATE

MSFN UPLINK

DESCENT TARGETING, ABORT CONSTANTS,

V47

LM & CSM S.V.

CONFIGURE COMM FOR LOS

PICK UP WITH P63 IGNITION ALGORITHM TEST, P.5

-2:00 MASTER ARM-ON
MODE SEL-PGNS
471R

- :30 ENG ARM-DES
- :07.5 ULLAGE
- :05 PRO

+ :00 **PDI**

+ :02 (NO IGN) ---
START PB-PUSH
+ :05 DES ENG OVRD-ON
MASTER ARM-OFF
+ :26 THROTTLE UP
√T/W > 1.6
367R

+2 V21 N69E (DN RNG)

+4 √ ED BATTS
YAW TO 340°
V57E TO PERMIT

+5 V24 N69E (DN RNG,
X-RNG)
LR DATA

30K, YAW = 0

N68

EVAL MAN CONT

+8 V23 N69E (ALT)

223+00130 (E @ 13K)
360-0XXX0E

TFI	θ	ΔHMAX	(-HMAX) -HDOT	H	DPS	SBD
0:00	108		67.0	56500	95	-33/54
0:30	108		66.0	54500	95	
1:00	98		69.0	52400	95	-23/55
1:30	93		69.0	50300	92	
2:00	89		68.0	48300	87	-8/55
2:30	85		65.0	46300	82	
3:00	82		63.0	44400	76	3/53
3:30	79		62.0	42500	71	
4:00	77		63.0	40600	66	11/51
4:30	76		66.0	38800	61	
5:00	75	+19800	70.0	36200	55	-19/14
5:30	73	+19800	76.0	34000	50	
6:00	72	+19800	85.0	31100	45	-17/13
6:30	72	+19800	(516.0) 103.0	30800	39	
7:00	67	+19800	(480.0) 106.0	26900	34	-27/-3
7:30	63	+16000	(450.0) 107.0	23900	30	
8:00	57	+11200	(402.0) 133.0	19500	27	-20/-9
SEQ CAMERA - ON			(348.0)			
8:30	56	+8400	143.0	15000	24	
9:00	56	+8000	(288.0) 154.0	10700	21	-19/10

P64

P64 + 15 SEC:
NO THROTTLE DN
- ABORT

MODE CONT (PGNS)-ATT HOLD

P66

X-PNTR - LO MULT

BINGO FUEL
DES QTY LT+1+31

TOUCHDOWN

ENG STOP - PUSH
ENG ARM - OFF
PRO
DES ENG CMD OVRD - OFF
MODE CONT (PGNS)-ATT HLD
MODE CONT (AGS)-AUTO
413+1
RECYCLE PARKER VALVES
THROTTLE/JETS - JETS

H	(-HMAX) -HDOT	DPS	VH (362)
7000	(225.0) 169.0	18	258
6000	(206.0) 152.0	18	240
5000	(184.0) 132.0	17	223
4000	(161.0) 110.0	16	200
3000	(134.0) 88.0	15	173
2000	(103.0) 63.0	14	138
1000	(63.0) 35.0	12	85
500	(35.0) 17.0	11	43
400	(28.0) 14.0	11	31
300	(20.0) 9.0	10	16
200	(12.0) 5.0	9	-5

ABORT STAGE - PUSH
ENG ARM - ASC
ENG STOP - RESET
ENG START - PUSH
V22 N46 E,E
MODE CONT (BOTH) - AUTO

TD+3 THRU
T2 ABORT

TD +3 THRU T2 ABORT

N76 5515.7 V HORZ
19.5 V VERT
CROSS RNG (<8.1)
N74 TFI, YAW, PITCH

PAGE 1-8

*RECYCLE PARKER VALVES
PRPLNT TEMP PRESS MON - ASC, THEN DES
ASC He MON - CYCLE

*02/H2O QTY MON - ASC 1, 2, THEN DES 2, 1 *
*SEQUENCE CAMERA - OFF *
CB(11) PGNS: LDG RDR - OPEN

17:16 T1 STAY/NO STAY

NO STAY

V22 N46 E,E
MODE CONT (BOTH) - AUTO
ABORT STAGE - PUSH
ENG ARM - ASC
ENG STOP - RESET
ENG START - PUSH

STAY

*414+2
*400+4
*400+1 (DO NOT ENTR)

P68
ENG STOP - RESET
PRO
P12
MODE CONT (PGNS) - AUTO
N33 T-2 (113:14:23)

22:45 T2 STAY/NO STAY AND GO/NO-GO FOR
NO STAY DPS VENT

-2:00 ASC He SEL - BOTH
MASTER ARM - ON
ASC He PRESS - FIRE
ASC He REGS 1, 2 - OPEN
*A ASC FEED 2-OPEN (UNLESS CDR) *
*A MAIN SOV -CLOSE (BUSS LOSS) *
*B ASC FEED 2-OPEN (UNLESS LMP) *
*B MAIN SOV -CLOSE (BUSS LOSS) *
*CRSFD - CLOSED *
*BAT 1,3 - OFF *
*BAT 2,4 - OFF *
*CB(16) EPS:ASC ECA CONT-CLOSE *
*DES BAT - DEADFACE *
*SELECT ASC H2O TANK *
*DES 02 - CLOSE *
*ASC 1 02 - OPEN *
*DES H2O - CLOSE *
*ASC H2O - OPEN *
*400+1, 367R *
- :10 ABORT STAGE - PUSH (AT T=0 FOR AGS)
ENG ARM - ASC
- :05 PRO
:00 *DET - RESET, RELEASE *
T2 : : (113:14:23)
+ :01 ENG START - PUSH

STAY

*TAPE RECORDER - OFF *
AUDIO MODE - ICS/PTT
POO

DATE 11/3/72

FDAI AND OVERHEAD WINDOW ANGLES FOR MANUAL DESCENT ABORT

DPS/APS

1:00	260/0	4:30	0/LV	8:00	0/LV
2:24	SD(FDAI)	4:44	300/36	8:14	300/36
2:36	SD(OHW)	6:26	270/5	10:16	270/15
		7:32	250/0	14:30	250/0
		8:19	SD	14:43	SD
1:30	0/0	5:00	0/LV	8:30	0/LV
1:44	300/0	5:14	300/36	8:44	300/36
2:30	260/0	6:58	270/5	11:12	270/15
3:20	SD	8:20	250/0	15:18	250/0
		9:03	SD	15:31	SD
2:00	0/LV	5:30	0/LV	9:00	0/LV
2:14	300/36	5:44	300/36	9:14	300/36
3:00	300/0	7:34	270/10	12:10	270/16
3:18	260/0	9:04	250/0	16:04	250/0
4:16	SD	9:46	SD	16:18	SD
2:30	0/LV	6:00	0/LV	9:30	0/LV
2:44	300/36	6:14	300/36	9:44	300/36
3:46	300/0	8:04	270/11	12:56	270/16
4:02	260/0	9:50	250/0	16:44	250/0
5:12	SD	10:39	SD	16:58	SD
3:00	0/LV	6:30	0/LV	10:00	0/LV
3:14	300/36	6:44	300/36	10:14	300/36
4:34	270/0	8:34	270/11	13:16	270/16
5:10	250/0	11:04	250/0	17:32	SD
5:57	SD(FDAI)	11:47	SD		
6:06	SD(OHW)				
3:30	0/LV	7:00	0/LV	10:30	0/LV
3:44	300/36	7:14	300/36	10:44	300/36
5:24	270/0	9:06	270/14	13:48	270/16
5:54	250/0	12:26	250/0	18:05	SD
6:50	SD(FDAI)	12:53	SD		
7:02	SD(OHW)				
4:00	0/LV	7:30	0/LV	11:00	0/LV *
4:14	300/36	7:44	300/36	11:20	308/39
5:56	270/0	9:38	270/14	12:00	305/38
6:38	250/0	13:38	250/0	12:30	302/36
7:34	SD(FDAI)	13:53	SD		CONT MANUAL
7:40	SD(OHW)				ASCENT ANGLES

ALL PITCH RATES
5°/SEC* ESTABLISH POSITIVE
HDOT, THEN ABORT
STAGE

APS

1:00	260/0	4:30	0/LV	8:00	0/LV
2:18	SD/(FDAI)	5:10	300/36	8:40	300/36
2:36	SD(OHW)	6:22	270/10	12:06	270/14
		8:26	250/0	14:26	250/0
		8:51	SD	15:05	SD
1:30	0/LV	5:00	0/LV	8:30	0/LV
2:10	260/0	5:40	300/36	9:10	300/36
3:32	SD(FDAI)	7:08	270/10	13:00	270/14
3:52	SD(OHW)	9:20	250/0	15:02	250/0
		9:46	SD	15:50	SD
2:00	0/LV	5:30	0/LV	9:00	0/LV
2:40	300/0	6:10	300/36	9:40	300/36
3:10	260/0	7:54	270/12	13:54	270/14
4:24	SD(FDAI)	10:14	250/0	15:34	250/0
4:34	SD(OHW)	10:42	SD	16:31	SD
2:30	0/LV	6:00	0/LV	9:30	0/LV
3:10	300/0	6:40	300/36	10:10	300/36
4:00	250/0	8:44	270/14	14:30	270/14
5:18	SD	11:08	250/0	16:12	250/0
		11:37	SD	17:07	SD
3:00	0/LV	6:30	0/LV	10:00	0/LV
3:40	300/36	7:10	300/36	10:40	300/36
4:22	270/0	9:34	270/14	14:30	270/14
5:28	250/0	12:02	250/0	17:00	250/0
6:09	SD	12:33	SD	17:37	SD
3:30	0/LV	7:00	0/LV	10:30	0/LV
4:10	300/36	7:40	300/36	11:10	300/36
5:00	270/5	10:24	270/14	14:48	270/14
6:30	250/0	12:56	250/0	17:50	250/0
7:02	SD	13:28	SD	18:09	SD
4:00	0/LV	7:30	0/LV	11:00	0/LV *
4:40	300/36	8:10	300/36	11:20	308/39
5:40	270/5	11:12	270/14	12:00	305/38
7:28	250/0	13:48	250/0	12:30	302/36
7:56	SD	14:19	SD		CONT MANUAL
					ASCENT ANGLES

MANUAL ABORT

ASCENT MONITOR

ASCENT

TIG-2 MASTER ARM - ON
 AUDIO MODE (BOTH) - VOX
 400+1E GUID STEERING
 RESET WATCH
 367R (604+0 FOR AGS)
 START CAMERA
 - :10 ABORT STAGE - PUSH (AT T=0 FOR AGS)
 ENG ARM - ASC
 - :05 PRO
 + :00 **ASC** (188:03:15)
 + :01 ENG START-PUSH (IF AUTO IGN)
 AGS MODE CONT - AUTO
 CHECK S-BD ANT
 +1:00 YAW RT 30°, 623+1
 N76E (VTGT, HDOT, XRG)
 V16 N77E (Tgo, VGY, VI)
 +4:00 STOP CAMERA
 500R
 500 FPS MAIN SOV (2) - OPEN+
 ASC FEED 2 (2) - CLOSE+
 200 FPS ENG ARM-OFF(IF IGN WAS AUTO)
 0 FPS ABORT STAGE-RESET
 ENG STOP - PUSH
 410+5
 PRO, NULL X < 2 FPS
 PRO
 STOP DET, RESET WATCH
 COPY GET
 ENG STOP - RESET
 POO
 ✓MCC FOR TWEAK

FOR NO VOICE (TRIM <2 FPS)
 PGNS,AGS DIFFER <10 FPS,
 TRIM ACTIVE SYSTEM
 PGNS,AGS DIFFER >10 FPS,
 TRIM SYSTEM THAT AGREES
 WITH RR
 (10° IN OHW) (0° YAW)

V82

TFI	θ	OHW (0°YAW)	VGX	H DOT	H	SBD
0:00			1070.0	0.0	0	
0:10			890.0	52.0	300	
0:30	308	40	4820.0	88.0	1600	
1:00	305	38	4650.0	123.0	5000	141/-52
1:30	302	36	4470.0	149.0	9100	
2:00	299	34	4250.0	168.0	13900	145/-47
2:30	296	32	4000.0	181.0	19200	
3:00	293	30	3720.0	188.0	24700	148/-42
3:30	289	27	3400.0	188.0	30400	
4:00	286	25	3060.0	183.0	36000	152/-37
4:30	282	22	2680.0	173.0	41300	
5:00	278	20	2270.0	157.0	46300	156/-31
5:30	274	17	1840.0	136.0	50700	
6:00	269	14	1370.0	111.0	54400	160/-24
6:30	265	11	870.0	83.0	57300	
7:00	260	8	330.0	52.0	59300	164/-20
7:18	257	6	0.0	32.0	60100	166/-15

NO AUTO IGNITION

WITHIN 30 SEC:

1. GUID CONT - AGS
2. ACA HOT FIRE
3. AGS MODE CONT - AUTO

STILL NO IGNITION:

1. ABORT STAGE - RESET
2. ENG ARM - OFF

MANUAL ASCENT (WILL NOMINALLY
 BE TARGETED 11.5 MIN LATE)
 CONFIGURATION NOMINAL EXCEPT:
 MODE CONT - ATT HOLD
 PROFILE NOMINAL EXCEPT:
 7-STEP FOR DIRECT MODE

TFI	FDAI	OHW
0:00	0	
0:15	305	38
2:00	295	31
3:00	290	28
4:00	285	24
5:00	275	18
6:00	265	11
7:00	260	8

PITCH RATES
 5°/SEC

MSFN WILL CALL PITCH AND
 ROLL BIAS COMMANDS FROM
 GROUND TRACKING.

6+30 - MAIN SOV(2) - OPEN+
 ASC FEED 2 (2) - CLOSE+

SHUTDOWN

ENGINE ARM OFF
 STANDBY TO RESET ABORT STAGE
 Pb AND DEPRESS ENGINE STOP
 Pb ON CALL FROM MSFN

TIME	RANGE	RDOT
L0+5	148	1667
L0+6	160	825
L0+7	164	-157
INS	163	-471
1+00	158	-468
2+00	154	-464
3+00	149	-460
4+00	144	-455
5+00	140	-450
6+00	135	-444
7+00	131	-437
8+00	127	-431
9+00	123	-423
10+00	118	-416

INSERTION 188:10:32

V82
V76
AGS MODE CONT-ATT HOLD
RR MODE-LGC
RATE/ERR MON(2)-RNDZ RDR
SHFT/TRUN +5
RATE SCALE 5°/SEC
RNG/ALT MON-RNG/RNG RT
CB(11) PGNS RR-CLOSED
*VHF ANT-FWD
*400+2 Z-AXIS STEER
*410+4 TPI EXEC
*373+0537.5 TIG TPI
*616+00005 ULLAGE
*623+0
*COPY AGS DATA
AUDIO MODE(2)-ICS/PTT
✓INV 2, CB INV 1-OPEN
CB(11) & (16) ED: LOGIC PWR-OPEN
CB(11) ECS CABIN FANI-CLOSE
+1 GO/NO-GO FOR TWEAK

P47 FDAI (0,257,30)
*404+0, 405+0, 406+0
*MONITOR 470, 471, 472

+3 TWEAK 188:13:32

ΔV'S

12102

INSERTION THRU TPI

P47 FDAI (0,242,0) OR 10° OHW

*404+0, 405+0, 406+0 *

*MONITOR 470, 471, 472 *

42 LM BAILOUT @ L.O.+12:10

TIG 188:15:32

ΔVX 39.4

*EXT LTG-TRACK

P20, AUTO MNVR

V80, MAX N49(2.00,12.0)

P34 TGT TPI

[*VERIFY PGNS WITH MSFN *

[*V47, 414+1, 400+3 *

[*400+2 Z-AXIS STEER *

*417+1 (✓417+0) *

*411+1 START AUTO(19,18) *

*310R SET DET *

*303R θ TPI *

V82

V83 SET ORDEAL (35NM)

*317R, 440R, 277R

V48, 12012

LM WT

35 CSM BAILOUT GET P76 PAD

30 CHART R/RDOT

27

M=15, V32

24

*COMPARE CMC, AGS, VHF/RR *

*POLAR PLOT @ 90 NM *

21

18

*CHECK RCS, EPS, ECS *

MISSION APOLLO 17, OCTOBER 25, 1972

15

*514+0

*515+4 YAW STEER VEC

*516+0

RDOT }R

12

RDOT }R

10 CHART R/RDOT/θ

9

RDOT }R

8 PRO-FINAL COMP

*411+0 STOP AUTO

6

*COMPARE CMC, AGS

CHECK TIG OF CSM

*/DET & APS BURN CARD

P42 N86

PERFORM YAW/ROLL MANEUVER

*MATCH INDICATED ANGLES

*TRACK MODE-SLEW

*S-BD ANT-AFT

SET P (+132)

Y (-2)

*BIOMED-OFF, PCM-HI

*UPLINK SQUELCH-ENABLE

*404+0, 405+0, 406+0

*623+1

*400+1 GUID STEER

5

*410+5

*500R

ATT CONT-
MODE CONT

1:00 AGS MODE CONT-AUTO

:30 ABORT STAGE PB-PUSH

:10 MANUAL ULLAGE

:05 PRO

:00 TPI 188:57:32

ABORT STAGE PB-RESET

NO IGNITION

ENG ARM-ASC

MANUAL START

MANUAL STOP 3 SEC

ENG ARM-OFF

NULL RESIDUALS

INSERTION
THRU TPI

TPI THRU
DOCKING

TPI THRU DOCKING

MISSION APOLLO 17, SEPTEMBER 1, 1972

PAGE 2-2

0 TPI 188:57:32
V76, AGS MODE CONT-ATT HOLD
P35 TGT MCC 1 ATT CONT-PULSE
MAX N49(0.80,5.0) MODE CONT-AUTO
V67 (+02000,+00020,+00005)
*400+0 *
*623+0 *
*417+1 (✓621+0) *
*411+1 START AUTO(13,12) *
2 *410+4 TPI EXEC *
*373+TPI TIME +15 MIN *
*307+028.00 *
4 RDOT *
6 RDOT *
8 RDOT *
9 CHART 0 *
10 RDOT *
12 PRO FINAL COMP RDOT *
13 CHART R/RDOT/0
*411+0 STOP AUTO *
370R TOTAL VEL MCC1
371R ΔV TPF
*404+0, 405+0, 406+0 *
P41, V77
14 *410+5 ATT CONT-
*502R MODE CONT
:05 *472R/502R *A/H
15 MCC1
NULL RESIDUALS

V76
P35 TGT MCC 2 ATT CONT-PULSE
V93 MODE CONT-AUTO
*VERIFY PGNS (PCM-HI) *
*V47, 414+1, 400+3 *
*411+1 START AUTO *
*EXT LTG-OFF *
17 *410+4 TPI EXEC *
*373+TPI TIME +30 MIN *
*307+013.00 *
19 RDOT *
21 RDOT *
23 RDOT *
24 CHART 0 *
25 RDOT *
27 PRO-FINAL COMP RDOT *
28 CHART R/RDOT/0
*411+0 STOP AUTO *
370R TOTAL VEL MCC2
371R ΔV TPF
*404+0, 405+0, 406+0 *
P41, V77
29 *410+5 ATT CONT-
*502R MODE CONT
:05 *472R/502R *A/H
30 MCC2
NULL RESIDUALS

P00
V48, 11002 11002
P47, V63
*404+0, 405+0, 406+0 *
S-BD ANT-AFT, VERIFY COMM
*/S-BD P (+132) *
Y (-2) *
*S-BD ANT-SLEW (>3.0) *
*TRACK MODE-AUTO *
*BIOMED-LEFT, PCM-HI *
*UPLINK SQUELCH-OFF *
TPI BURN REPORT
40 INITIATE BRAKING
30 FPS - 6000 FT DES ATTACHED
20 FPS - 3000 FT 5 FPS - 1000 FT
10 FPS - 1500 FT 3 FPS - 500 FT
5 FPS - 600 FT 1 FPS - 100 FT
*SETUP CAMERA FOR *
* DOCKING: *
*LM3/DAC/10/CEX-ULC *
* (T8,1/250,6) 1FPS *
* .25 MAG(0), (4MIN) *
V34, P00
V76 ATT CONT-PULSE
MANEUVER/PICTURES OF SIMBAY,RCS
55 INITIATE DOCKING
COAS TO OVHD WINDOW
*EXT LTG-DOCK *
SHFT/TRUN ±50 *
V41N72 (+000,+320)
CB RR(2)-OPEN, V44
FDAI (180,282,300)
V77 ATT CONT-
65 CONTACT MODE CONT
CONFIRM CAPTURE FROM CSM
MODE CONT (BOTH)-OFF

DATE 9/8/72

190:05CONFIGURE S-BAND

- 1 Verify FWD Dump VLV - AUTO
CB(11): ECS CABIN FAN 1 - OPEN
TAPE RECORDER - OFF
CSM Maneuvers To JETT ATT, Proceed With
"PREP FOR TRANSFER" Until Maneuver Completed
- 2 Verify: Jettison Attitude (049,XXX/139,075)
CSM in Narrow Deadband, Attitude Hold
- 3 S-BAND: PM,SEC,PRIM,VOICE,PCM,RANGE,RIGHT,HI
S-BD ANT - AFT, Verify COMM
TRACK MODE - SLEW
S-BD P _____ (+203)
Y _____ (+ 61)
S-BD ANT - SLEW "(Peak Until >3.9)"
(DO NOT PLACE TRACK MODE - AUTO)

190:16PREP FOR TRANSFER

- 1 Window Shades (3) - Close
Install Crash Bars
Verify Tunnel Pressurized From CSM
OVHD Dump VLV - OPEN
- 2 Doff Helmets and Gloves
- 3 Install Purse (ISA Bottom Pkt)
Remove & Stow In Purse:
CWG Adapter W/Cap (2, Fwd LHSSC)
Lt/Wt Headsets (2, LHSSC)
Purge Vlv (1, Aft LHSSC)
Waist Tethers (2, Fwd RHSSC)
Neck Ring Dust Covers (2, AFT RHSSC)
Monocular (1, RHSSC)

- 4 Remove 16mm Mag From Camr & Place
In ISA Top pkt (bag)
Disconnect Lower ISA Hooks
Stow LHSSC Collection Bag Aft of Engine
Cover
- 5 When Tunnel/LM Pressures Equal,
OVHD DUMP VLV - AUTO
Verify PRESS REGS A&B - EGRESS
Place LEVA Bags On Floor, Right Side-Fwd
- 6 Open Hatch
Receive Probe From CMP, And Stow On Left
Hand Side Using Outboard (Double)
Restraint Cable
Receive Drogue From CMP and Stow Over
Probe Using Inboard (Single) Restraint
Cables Through Drogue Handles
- 7 Receive Vacuum Cleaner Assembly From CMP
Transfer LEVA Bags (2), Helmets, & IV Gloves
w/Liner to CMP
- 8 Vacuum PGA's
- 9 CB(11) AC BUS A: TAPE RCDR - Open
COMM: CDR AUDIO - Open
CB(16) COMM: DISP - Open
: S.E. AUDIO - Open
Disconnect DSEA & Place In Purse
CB(11) COMM: CDR AUDIO - Close
CB(16) COMM: DISP - Close
: S.E. AUDIO - Close

AOS
191
+36

- 10 Receive Decontamination Bags & Jett Bag
From CSM
Transfer Purse To CSM
- 11 Unstow, Vacuum/Wet Wipe as required and
Transfer to CSM:
(*Decontamination Bag Provided)
70MM Magazines (4, 3 & 2 in Bags, RHSSC)
(3 and 3 in Bags, Bot
Boot Compt)
APK (1, LHMS - AFT SRC's)
Flag Kit (LHMS - AFT SRC's)
OPS (W/Highest Source Pressure), Perform
Checkout per Decal
*SEP DSEA (Upper Boot Compt)
Neutron Flux (+Z27)
Core Stems (+Z27)
Flight Data File (Place In Jett Bag
and Transfer to CMP)
- *Collection Bags (1, LHSSC) (1, RHSSC) - A1
*Collection Bag (1, Recharge Station) - PGA Bag
*BSLSS Rock Bag (+Z27) - A7
*ISA - A2
Collection Bag (Box AFT Eng Cover) - A9
- 12 Unstow SRC's (2), Vacuum and Transfer to CSM
Receive B5 & B6 from CSM and Stow in SRC Rack
- 13 Receive Purse (empty) from CSM
- 14 Receive CSM Jet Bag & stow Behind LMP Restraint
Cables
- 15 Stow used Fecal & Urine Bags in Purse
- 16 Transfer Vacuum Cleaner (Leave Bag in LM)
& Purse to CSM
- 17 Transfer unused food to CSM

192:00

MSFN UPLINK/UPDATE

- 1 UPDATA LINK - DATA
MSFN Uplinks LM State Vector, P30
EXT ΔV Load & P99 Erasable Loads (3)
- 2 Copy LM DAP Wt & DEORBIT Burn Pad
- 3 V48, 12021, PRO
N47 _____ LM WT (From MSFN)
PRO
- 4 V47E, 414+1
- 5 400+3

192:13

TARGET PGNS

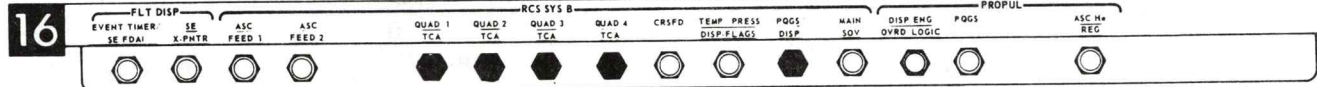
- 1 P30 Target Impact Burn
N45
PRO, P00

CONFIGURE AGS

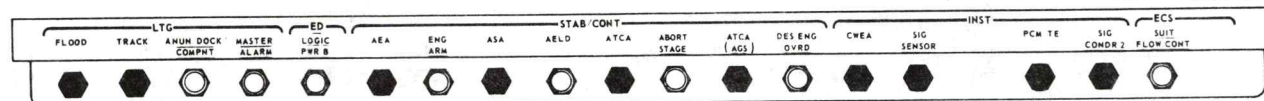
- 1 404+0
405+0
406+0
470R
- 2 MCC-H GO/NO-GO For LM Closeout
- 3 Verify All Items in LM TO CM TRANSFER
LIST (Pg 3-6) Have been Transferred or
Will Be Transferred "ON CREW."

POST DOCKING

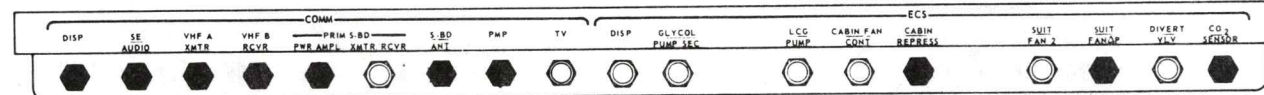
5 - CLOSED



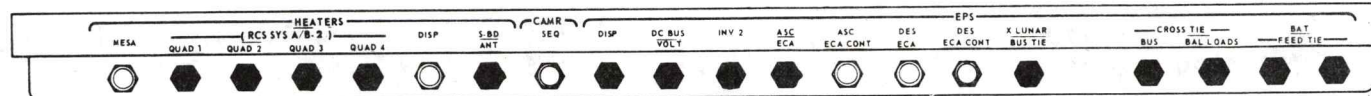
10 - CLOSED



10 - CLOSED



14 - CLOSED



TRANSFER LIST

PAGE 3-6

DATE 11/3/72



193:10

SR IVT TO CSM

193

+10

1 EXTERIOR LTG - TRACK
 BAT 5&6 BACK UP FEED-ON; tb(2) - Gray
 FLOOD LT - OFF
 Verify OVHD Dump VLV-AUTO
 Transfer To CSM

LM TO CM TRANSFER LIST

<u>LM</u>	<u>ITEM</u>	<u>CSM</u>
Floor	LEVA Bag (2) & Contents:	Temp Stwg
	LEVA	
	EV Gloves w/Wrist mirrors	
	Helmets (2)	HSB
	IV Gloves w/Liner (2 Pr)	HSB
	Purse & Contents (1st XFR):	
	CWG Adptr w/cap (2)	TSB's
	Lt/Wt Headsets (2)	A8
	EMU Maint Kit (2)	A8
	Purge vlv (1)	L/H TSB
	Waist Tethers (2)	L/H TSB
	LCG Plugs (2)	L/H TSB
	PGA Pocket Contents	L/H TSB
	PGA Elect Conn Covers	PGA Bag
	Neck Ring Dust Covers	PGA Bag
	Monocular (1)	U4
	DSEA	Temp A7
RHSSC	70mm Mag (4) in Bag	R13
RHSSC	70mm Mag (3) in Bag	R13
RHSSC	70mm Mag (2) in Bag	A8
Boot Compt	70mm Mag (3) in Bag	R13
Boot Compt	70mm Mag (3) in Bag	A8
LHMS	APK (1)	Temp A7
LHMS	Flag Kit	Temp A7

Floor
 Boot Compt
 +Z27
 +Z27
 Data File
 LHSSC/RHSSC
 Rechr Stat
 +Z27

OPS
 SEP DSEA
 Neutron Flux
 Core Stems
 Flt Data File in Jett Bag
 Collection Bag (2)
 Collection Bag (1)
 BSLSS/ROCK Bag
 ISA & Contents:

Lens Brush (1)
 16mm Mag(3) in Bag
 Cosmic Ray
 Collection Bags (2)

AFT Eng
 SRC Rack
 Temp Stwg

Collection Bag
 SRC (2)
 Vacuum Cleaner
 Purse & Contents (2nd XFR):
 Used Urine Bags
 Used Fecal Bags

Unused Food
 Suit (2) & Ancillary Eqpt:

Bio Instrumentation (2)
 UCTA (2)
 FCS (2)
 LCG (2)
 Sunglasses in Pouch (2)
 Watch/Watchband (2)
 Pen (2)

Pen-Felt Tip (2)
 Pencil (2)
 Pocket, C/L & Scissor (2)
 Pocket, Data (2)
 Penlight (2)
 Earplug (2 Pr)
 Dosimeter - Personal (2)
 Passive (6)

Comm Carrier (2)
 Scissor (1)

A7
 A7
 Wire Tray
 Wire Tray
 On A1
 A1
 PGA Bag
 A7
 A2

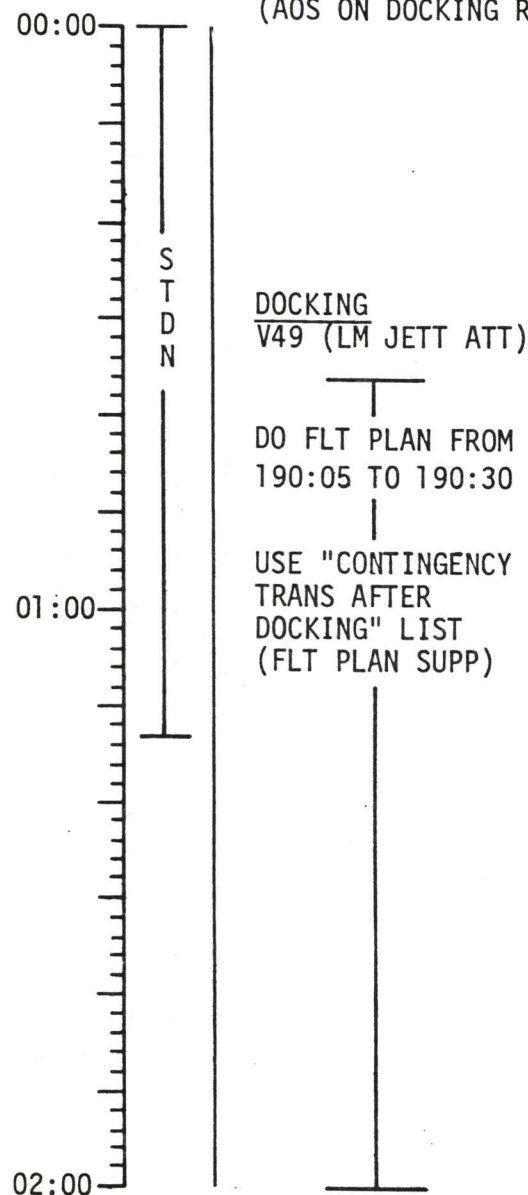
A9
 B5/B6
 RH TSB

Fecal Bag
 Fecal Bag
 B1

CONTINGENCY POST DOCKING XFER

FLIGHT PLAN**CSM**

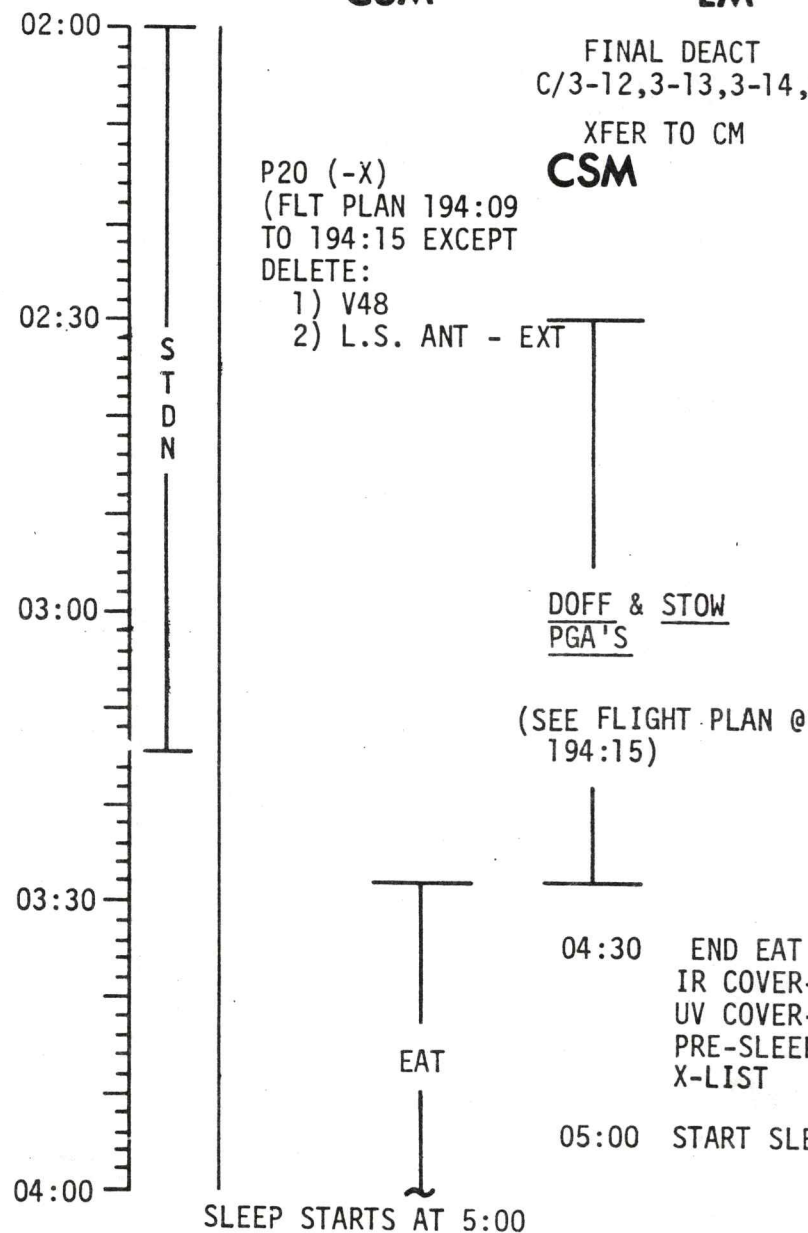
(AOS ON DOCKING REV)

LMDOCKED DEACT
C/3-9,3-10,3-11CONT POST
DOCKING
XFER
(LM TIMELINE)**CSM****LM**FINAL DEACT
C/3-12,3-13,3-14,3-15

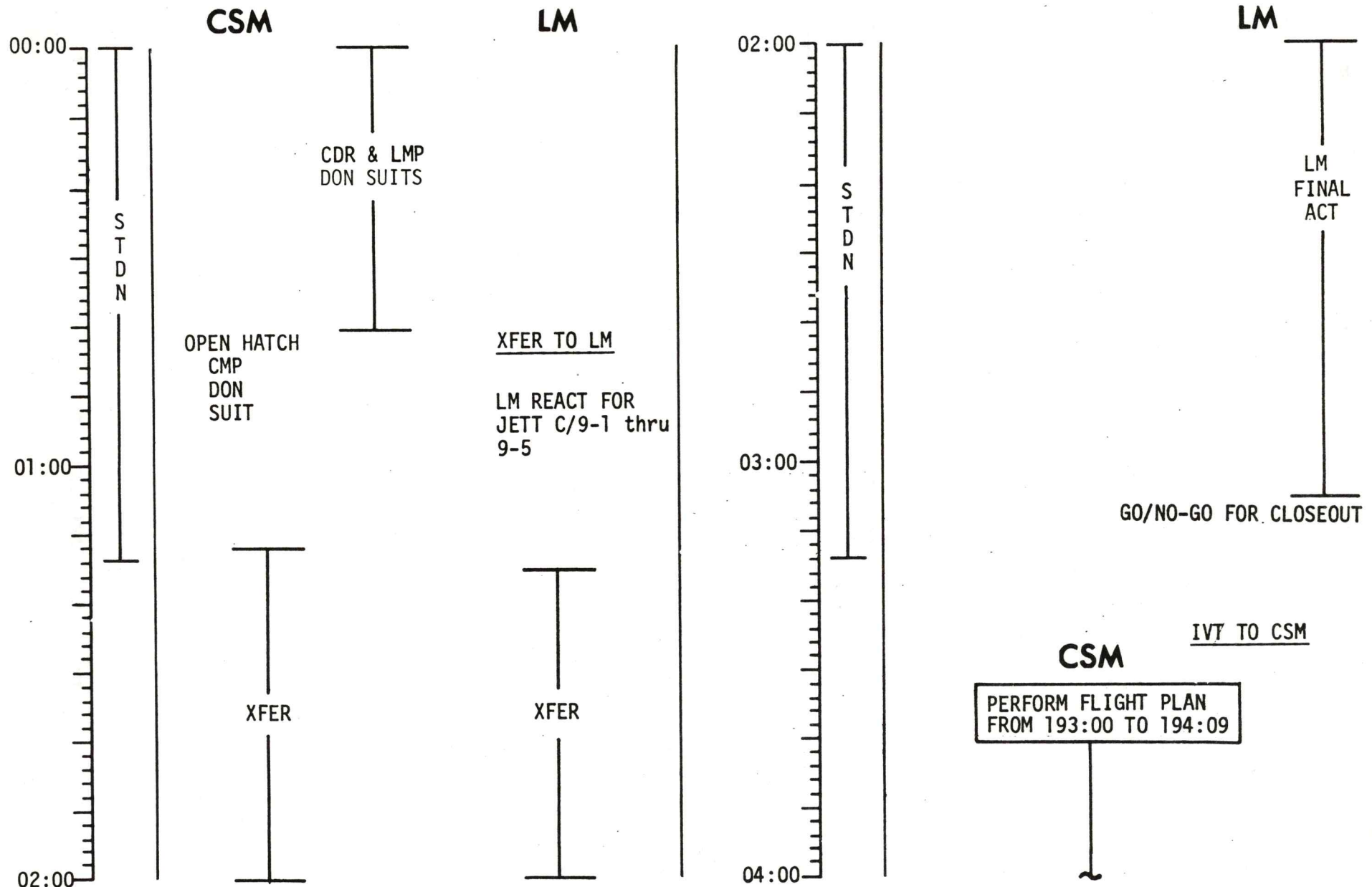
XFER TO CM

CSMP20 (-X)
(FLT PLAN 194:09
TO 194:15 EXCEPT
DELETE:

- 1) V48
- 2) L.S. ANT - EXT

CONT POST
DOCKING TIMELINE

CONTINGENCY LM JETT
FLIGHT PLAN



CONTINGENCY LM JETT
FLIGHT PLAN

DATE 11/3/72

PAGE 3-9

CSM

04:00

04:30

05:00

06:00

S
T
D
N

LM JETT
CSM SEP

INHIBIT ALL JETS EXCEPT:
A1 & C2 OR D1 & B2,A3,C4,B3,D4
V48 (11101)
(_1111)

P20 (-X SIM ATT)
N78 (+090.00)
(+052.25)
(+000.00)
N79 (+002.50)

AFTER IN ATTITUDE:
IR COVER - OPEN
UV COVER - OPEN

DOFF SUITS

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CONTINGENCY POST DOCKING XFER

CONFIGURE S-BAND

- 1 Verify FWD Dump VLV - AUTO
CB(11): ECS CABIN FAN 1 - OPEN
TAPE RECORDER - OFF
CSM Maneuvers To JETT ATT, Proceed With
"PREP FOR TRANSFER" Until Maneuver Completed
- 2 Verify: Jettison Attitude (049,XXX/139,075)
CSM in Narrow Deadband, Attitude Hold
- 3 S-BAND: PM,SEC,PRIM,VOICE,PCM,RANGE,RIGHT,LO
S-BD ANT - AFT, Verify COMM
- 4 Perform DOCKED DEACTIVATION (STAGED)
LM CONTINGENCY C/L Pg 3-9, 3-10 & 3-11

PREP FOR TRANSFER

- 1 Verify Tunnel Pressurized From CSM
OVHD Dump VLV - OPEN
- 2 Doff Helmets and Gloves
- 3 Install Purse (ISA Bottom Pkt)
Remove & Stow In Purse:
CWG Adapter W/Cap (2, Fwd LHSSC)
Lt/Wt Headsets (2, LHSSC)
Purge Vlv (1, Aft LHSSC)
Waist Tethers (2, Fwd RHSSC)
Neck Ring Dust Covers (2, AFT RHSSC)
Monocular (1, RHSSC)

- 4 Remove 16mm Mag from Camr & place
In ISA Top pkt (bag)
Disconnect Lower ISA Hooks
Stow LHSSC Collection Bag Aft of Engine
Cover
- 5 When Tunnel/LM Pressures Equal,
OVHD DUMP VLV - AUTO
Verify PRESS REGS A&B - EGRESS
Place LEVA Bags On Floor, Right Side-Fwd
- 6 Open Hatch
Receive Probe From CMP, And Stow On Left
Hand Side Using Outboard (Double)
Restraint Cable
Receive Drogue From CMP and Stow Over
Probe Using Inboard (Single) Restraint
Cables Through Drogue Handles
- 7 Receive Vacuum Cleaner Assembly From CMP
Transfer LEVA Bags (2), Helmets, & IV Gloves
w/Liner to CMP
- 8 Vacuum PGA's
- 9 Receive Decontamination Bags
Transfer Purse to CSM

CONT
XFER

DATE 11/3/72

PAGE 3-11

- 10 Unstow, Vacuum/Wet Wipe as required and
Transfer to CSM:
(*Decontamination Bag Provided)
70MM Magazines (4, 3 & 2 in Bags, RHSSC)
 (3 and 3 in Bags, Bot
 Boot Compt)
*SEP DSEA (Upper Boot Compt)
Neutron Flux (+Z27)
Core Stems (+Z27)
*Collection Bags (1, LHSSC) (1, RHSSC) - A1
*Collection Bag (1, Recharge Station) - PGA Bag
*BSLSS Rock Bag (+Z27) - A7
*ISA - A2
Collection Bag (Box AFT Eng Cover) - A9
- 11 Unstow SRC's (2), Vacuum and Transfer to CSM
Receive B5 & B6 from CSM and Stow in SRC Rack
- 12 Receive CSM Jet Bag & stow behind LMP Restraint Cables
- 13 Transfer Vacuum Cleaner (Leave Bag in LM)

LM CLOSEOUT

- 1 MCC-H GO/NO-GO FOR LM CLOSEOUT
- 2 Perform FINAL DEACTIVATION Pg 3-12,3-13,3-14 & 3-15
(LM CONTINGENCY C/L)
- 14 Both Disconnect LM Hoses & Stow
Verify OVHD DUMP vlv - AUTO
TRANSFER TO CSM

RENDEZVOUS TIMELINES
 RELATIVE MOTION TRAJECTORIES
 INERTIAL PLOTS
 AND
 ABORT CHARTS

PDI SUMMARY DATA

8/30/72 Final

PAGE 4-2

PAGE	ABORT TIME PDI+	INS			BOOST TIME INS+	HAM TIME INS+	CSI		CDH			TPI TIME PDI+	AIM		
		TIME PDI+	N76	HA/HINS			TIME INS+	ΔVX	TIME INS+	ΔVX	ΔVZ		TIME PDI+	ΔVX	ΔVZ
A-1	NO 1+12 NO 1+12Δ	NA NA	NA NA	NA NA	NA NA	NA NA	1+07+00* 1+07+00*	58.4 49.4	2+09+35* 2+09+15*	-126.1 -118.2	8.4 13.1	2+47+26 2+47+25	12+00 12+00	106.5 93.0	-50.0 -50.0
A-2	1+00	2+05	5656.2	132.6/53784.	NA	NA	0+55+00	57.2	1+57+08	-115.2	-42.4	2+47+30	NA	NA	NA
	2+00	4+00	5651.9	131.8/58323.	↓	↓	↓	55.5	1+57+03	-113.0	-38.2	↓	↓	↓	↓
	3+00	5+43	5646.3	128.3/60018.	↓	↓	↓	54.7	1+56+54	-108.5	-31.4	↓	↓	↓	↓
	4+00	7+18	5639.5	122.9/60023.	↓	↓	↓	54.4	1+56+39	-101.6	-22.5	↓	↓	↓	↓
	5+00	8+49	5630.0	115.3/60030.	↓	↓	↓	54.4	1+56+18	-92.1	-11.3	↓	↓	↓	↓
	6+00	10+13	5617.5	105.5/60039.	↓	↓	↓	54.5	1+55+51	-79.8	1.5	↓	↓	↓	↓
	7+00	12+35	5596.3	91.9/64950.	↓	↓	↓	53.1	1+55+14	-61.8	17.7	↓	↓	↓	↓
A-3	8+00	14+27	5571.5	76.4/71046.	↓	↓	↓	51.5	1+54+31	-41.4	32.6	↓	↓	↓	↓
	9+00	16+06	5546.3	59.3/74249.	↓	↓	↓	50.7	1+53+45	-18.2	45.2	↓	↓	↓	↓
A-4	10+00	17+18	5564.0	71.7/72715.	50+00	1+50+00	2+40+00	38.9	3+39+14	-32.3	-59.4	4+46+26	NA	NA	NA
	11+00	18+21	5559.6	65.7/67727.	↓	↓	↓	41.8	3+39+01	-26.1	-43.6	↓	↓	↓	↓
	12+00	19+24	5555.9	59.9/62049.	↓	↓	↓	44.5	3+38+49	-19.8	-29.3	↓	↓	↓	↓
	13+00	20+27	5547.3	52.7/60251.	↓	↓	↓	46.4	3+38+32	-11.5	-12.3	↓	↓	↓	↓
	14+00	21+27	5539.8	47.2/60250.	↓	↓	↓	47.2	3+38+19	-4.8	.1	↓	↓	↓	↓
	15+00	22+26	5532.2	41.8/60248.	↓	↓	↓	47.9	3+38+05	2.2	11.8	↓	↓	↓	↓
	16+00	23+26	5524.6	36.3/60246.	↓	↓	↓	48.2	3+37+51	9.3	22.1	↓	↓	↓	↓
A-5	T2-1	7+22Ω	5515.7	30.0/60154.	50+00	3+50+00	4+40+00	42.9	5+37+23	22.9	55.1	6+45+14	NA	NA	NA
A-6	NO 2+12 NO 2+12Δ	NA NA	NA NA	NA NA	1+12+00* 1+12+00*	2+12+00* 2+12+00*	3+12+00* 3+12+00*	47.4 38.6	4+15+07* 4+14+40*	-141.9 -130.0	29.0 37.6	4+51+40 4+51+39	12+00 12+00	122.5 110.0	-50.0 -50.0
	1+00	2+07	5676.9	149.7/54128.	1+00+00	2+00+00	3+00+00	47.3	4+02+55	-136.4	-18.8	4+51+49	NA	NA	NA
A-7	2+00	4+02	5672.6	149.1/59080.	↓	↓	↓	45.1	4+02+51	-134.8	-15.8	↓	↓	↓	↓
	3+00	5+44	5669.5	147.1/60019.	↓	↓	↓	44.6	4+02+45	-131.8	-8.7	↓	↓	↓	↓
	4+00	7+20	5666.3	144.5/60024.	↓	↓	↓	44.2	4+02+37	-128.2	.5	↓	↓	↓	↓
	5+00	8+50	5661.7	140.7/60031.	↓	↓	↓	43.8	4+02+26	-123.4	11.7	↓	↓	↓	↓
	6+00	10+15	5655.9	136.0/60040.	↓	↓	↓	43.5	4+02+13	-117.2	25.2	↓	↓	↓	↓
A-8	7+00	12+41	5665.0	146.4/65188.	NA	NA	0+55+00	50.4	1+57+38	-127.8	-57.1	2+52+54	NA	NA	NA
	8+00	14+33	5641.5	130.9/71212.	↓	↓	↓	49.9	1+56+57	-109.7	-32.3	↓	↓	↓	↓
	9+00	16+11	5617.9	113.9/74326.	↓	↓	↓	50.0	1+56+12	-89.3	-8.6	↓	↓	↓	↓
	10+00	17+20	5602.3	100.8/72751.	↓	↓	↓	50.9	1+55+37	-72.9	7.4	↓	↓	↓	↓
A-9	11+00	18+23	5590.1	88.7/67752.	↓	↓	↓	52.3	1+55+05	-57.5	20.2	↓	↓	↓	↓
	12+00	19+25	5578.4	76.7/62072.	↓	↓	↓	53.8	1+54+33	-41.9	31.1	↓	↓	↓	↓
	13+00	20+28	5560.6	62.5/60253.	↓	↓	↓	54.3	1+53+54	-22.9	42.0	↓	↓	↓	↓
A-10	14+00	21+27	5545.8	51.6/60250.	↓	↓	↓	54.2	1+53+25	-8.0	48.4	↓	↓	↓	↓
	15+00	22+26	5530.8	40.8/60247.	↓	↓	↓	54.0	1+52+56	7.3	53.6	↓	↓	↓	↓
A-4	T2-2	7+22Ω	5515.7	30.0/60154	50+00	1+50+00	2+40+00	48.4	3+37+34	17.8	32.9	4+51+43	NA	NA	NA

Ω INDICATES TIME IS REFERENCED TO LIFT-OFF.

* INDICATES TIME IS REFERENCED TO PDI.

Δ ASSUMES NO DOI-2

DATE 9/8/72

RANGE AND RANGE RATE AT INS AND 10 MINUTES PRIOR TO SUBSEQUENT BURNS

8/30/72 Final

PAGE	ABORT	INS		BOOST		HAM		CSI		CDH	
	TIME PDI+	RANGE	RANGE RATE	RANGE	RANGE RATE	RANGE	RANGE RATE	RANGE	RANGE RATE	RANGE	RANGE RATE
A-1	NO 1+12	NA	NA	NA	NA	NA	NA	177.3	-592.2	97.7	-167.9
	NO 1+12 Δ	NA	NA	NA	NA	NA	NA	151.6	-536.6	97.2	-172.5
A-2	01+00	133.5	570.0	NA	NA	NA	NA	163.7	-495.8	106.5	-125.8
	02+00	130.6	555.2	↓	↓	↓	↓	158.8	-485.4	101.8	-126.1
	03+00	117.5	526.6					144.1	-460.1	100.2	-131.8
	04+00	96.1	472.7					121.9	-417.4	99.9	-144.9
	05+00	69.4	331.8					91.7	-346.6	99.4	-138.8
	06+00	53.2	-86.6					55.6	-208.5	98.0	-150.2
	07+00	78.7	-454.3					30.8	203.1	94.1	-159.3
A-3	08+00	144.9	-497.4	↓	↓	↓	↓	74.9	215.5	92.3	-163.1
	09+00	219.9	-473.2					135.3	72.1	90.2	-170.1
A-4	10+00	283.7	-452.9	216.8	152.4	188.7	-390.4	37.3	47.2	97.5	-67.3
	11+00	339.9	-481.8	261.2	91.3	214.3	-405.6	69.7	28.9	98.6	-79.1
	12+00	397.3	-474.7	314.2	49.3	241.6	-420.7	96.0	-0.4	99.6	-93.8
	13+00	462.1	-459.9	374.5	-2.8	271.6	-430.2	126.2	-37.5	99.9	-105.7
	14+00	511.9	-445.3	420.8	-45.6	294.2	-433.3	149.3	-69.2	98.1	-116.7
	15+00	561.4	-430.6	466.5	-88.9	287.1	-426.7	172.1	-103.0	96.3	-126.2
	16+00	610.5	-415.7	511.7	-132.7	339.7	-432.6	194.5	-138.8	94.1	-133.9
	17+00	659.3	-400.7	556.5	-177.3	362.5	-429.2	216.3	-177.0	92.3	-142.2
A-5	T2-1	1024.9	-334.7	934.1	-187.4	373.0	-394.8	244.9	-200.9	88.3	-174.6
A-6	NO 2+12	NA	NA	398.8	-815.2	174.9	562.0	208.2	-693.5	99.9	-192.0
	NO 2+12 Δ	NA	NA	345.9	-742.6	149.1	500.3	169.1	-613.2	98.9	200.0
A-7	01+00	381.6	666.8	385.8	-738.2	143.5	516.3	209.7	-635.0	107.4	-160.7
	02+00	379.2	652.6	380.7	-728.7	144.8	506.5	206.4	-627.7	103.8	-146.4
	03+00	365.7	643.2	365.2	-717.7	138.3	504.6	196.5	-615.3	101.7	-166.5
	04+00	341.8	634.0	340.7	-699.7	127.6	505.6	182.6	-596.5	100.3	-174.0
	05+00	307.5	622.8	306.6	-673.9	112.1	506.1	163.9	-568.0	99.2	-183.9
	06+00	262.8	608.2	263.1	-638.0	92.9	500.8	141.2	-527.2	98.8	-184.6
A-8	07+00	208.1	599.4	NA	NA	NA	NA	224.3	-591.1	101.6	-125.6
	08+00	135.1	530.3	↓	↓	↓	↓	155.3	-480.1	97.9	-131.0
	09+00	68.8	337.1					88.6	-337.2	95.4	-138.2
	10+00	53.8	-246.9					41.5	-105.0	94.6	-144.2
A-9	11+00	92.5	-482.8	↓	↓	↓	↓	36.0	278.7	94.6	-157.2
	12+00	145.4	-512.8					72.8	227.6	95.3	-163.7
	13+00	209.0	-502.4					122.7	108.1	92.9	-170.5
A-10	14+00	259.0	-484.8	↓	↓	↓	↓	161.7	15.0	92.2	-174.9
	15+00	309.2	-465.0					200.3	-78.7	89.7	-175.3
A-4	T2-2	677.7	-396.9	573.6	-188.3	374.1	-428.6	227.5	-187.1	96.6	-149.3

A ASSUMES NO DOI-2

INSERTION THRU BOOST

MISSION APOLLO 17, OCTOBER 6, 1972

60 INSERTION

SS V82 22112

AGS MODE CONT-ATT HOLD

SHFT/TRUN +5

RATE SCALE 5°/SEC

RNG/ALT MON-RNG/RNG RT

*VHF ANT-FWD

*EXT LTG-TRACK

*SEQUENCE CAMERA-OFF

*400+2

*616+00005 ULLAGE

*623+0

*RATE/ERR MON-RNDZ RDR

AUDIO MODE(2)-ICS/PTT

/INV 2, CB INV 1-OPEN

CB(11) & (16) ED: LOGIC PWR-OPEN

CB PGNS LDG RDR-OPEN

CB RR(2)-CLOSE

+3 TWEAK

ΔVX

V48, 1 (2) 1002

1(2)1002

V41N72 (+000, +283)

CB RR(2)-OPEN, V44

RATE/ERR MON-LDG RDR/CMPTR

P52 OPT 3

CB AOT LAMP-CLOSE

AOT DETENT F/O°

V76

1st STAR

2nd STAR

N05 ANG DIFF

PRO

N93 TORQUING ANG

X

Y

Z

PRO N25(R1=14) GET

40 PRO N25(R1=15)

PRO TO PICAPAIR

DETENT CL

CB AOT LAMP-OPEN

V34

P00

*VERIFY PGNS WITH MSFN *

*V47, 414+1, 400+3 *

*400+2 *

V48, 1 (2) 2022

1(2)2022

*MATCH INDICATED ANGLES *

*TRACK MODE-SLEW *

*S-BD ANT-AFT *

SET P

Y

*BIOMED-OFF, PCM-HI *

*UPLINK SQUELCH-ENABLE *

30

20

20

18

*CHECK RCS, EPS, ECS *

10

*VERIFY PGNS (PCM-HI) *

*V47, 414+1, 400+3 *

*400+2 *

SR

*EXT LTG-OFF *

ΔVX = +10.0 (HORZ)

P30

N33 TIG BOOST (INS + ΔT)

*373 + TIG BOOST *

IF STAGING @ BOOST

V48, 12022, PRO, V34

P41, V77

*404+0, 405+0, 406+0 *

*400+1 GUID STEER ATT CONT-

*410+5 LOAD ΔV MODE CONT

*500R

:05

*500R

*A/H

STAGE AT BOOST IGNITION

0 BOOST

BOOST THRU HAM

MISSION APOLLO 17, SEPTEMBER 1, 1972

60 BOOST

P00
V82
V76

ATT CONT-
PULSE
MODE CONT-
AUTO

*400+2 Z-AXIS STEER *
*416+1 1/2 PERIOD *
*410+1 TGT CSI *
*373+ TIG CSI *
*275+ TIG TPI *
*605+00777 COT *
*310R SET DET (-50 MIN) *
*402R ΔH *

50

AOS

S-BD ANT-FWD, VERIFY COMM
*√S-BD P *
Y *
*S-BD ANT-SLEW (>3.0) *
*TRACK MODE-AUTO *
*BIOMED-LEFT, PCM-HI *
*UPLINK SQUELCH-OFF *

40

40

V48, 12012 12012
(IF R <400) *
CB RR(2)-CLOSE
RATE/ERR MON-RNDZ RDR
RR MODE-LGC
P20, AUTO MNVR RR-AUTO
V80, MAX N49(2.00,12.0) TRACK

P32, TGT CSI
N11 TIG CSI (INS + ΔT)
N37 TIG TPI (PDI + ΔT)
[*VERIFY PGNS WITH MSFN *]
[*V47, 414+1, 400+3 *]
[*400+2 Z-AXIS STEER *]
*417+1 (√417+0) *
411+1 START AUTO(19,19) []

V83 SET ORDEAL
*317R, 440R, 277R *
*COMPARE VHF/RR *

36

33

RDOT 3R

30

RDOT 3R

27

RDOT 3R

M=10, V32

24

RDOT 3R

21

RDOT 3R

18

*CHECK RCS, EPS, ECS RDOT 3R *

15

V90 RDOT 3R

12

RDOT 3R

*402R *

10 PRO-FINAL COMP
411+0 STOP AUTO []
*USE HAM CHART *
*COMPARE CMC HAM *

V83, SET ORDEAL
*317R, 440R, 277R *

P30
N33 TIG HAM (INS + ΔT)
*373+ TIG HAM *

P41, V77, N86
*400+1 GUID STEER ATT CONT-
*410+5 LOAD ΔV MODE CONT
*370R TOT ΔV *
*500R *

5

:05 *500R *A/H
O HAM

P00
V82

BOOST THRU HAM

INS/HAM THRU CSI

MISSION APOLLO 17, OCTOBER 6, 1972

PAGE 4-6

TIME	RANGE	RDOT
INS	288	-477
1+00	283	-473
2+00	278	-468
3+00	274	-462
4+00	269	-456
5+00	265	-449
6+00	260	-442
7+00	256	-434
8+00	252	-426
9+00	248	-418
10+00	243	-408

12102

NOM COELLIPTIC/ONE REV ABORTS

INSERTION

V82

AGS MODE CONT-ATT HOLD

RR MODE-LGC

SHFT/TRUN +5

RATE SCALE 5°/SEC

RNG/ALT MON-RNG/RNG RT

*VHF ANT-FWD

*SEQUENCE CAMERA-OFF

*616+00005 ULLAGE

*605+00777 COT

*RATE/ERR MON-RNDZ RDR

AUDIO MODE(2)-ICS/PTT

✓INV 2, CB INV 1-OPEN

CB(11) & (16) ED: LOGIC PWR-OPEN

CB(11) ECS CABIN FANT-CLOSE

CB RR(2)-CLOSE

+3 TWEAK

AVX

*VHF A: XMTR-VOICE/RNG

*400+2 Z-AXIS STEER

*507+0 Z-AXIS TRACT

*623+0

*410+1 TGT CSI

*373+ TIG CSI

*275+ TIG TPI

*416+1 1/2 PERIOD

*310R SET DET

*COPY AGS DATA(450R)

ATT CONT-
PULSE
MODE CONT-
AUTO

V48, 11002

V41N72 (+000, +283)

CB RR(2)-OPEN, V44

RATE/ERR MON-LDG RDR/CMPTR

P52 OPT 3

CB AOT LAMP-CLOSE

AOT DETENT F/0°

V76

1st STAR ALDEBARAN (11)

2nd STAR PROCYON (16)

RR-AUTO
TRACK

417+1
}R

RDOT }R

RDOT }R

N05 ANG DIFF

PRO

N93 TORQUING ANG

X

Y

Z

PRO N25(R1=14) GET

PRO N25(R1=15)

PRO TO PICAPAIR

DETENT CL

CB AOT LAMP-OPEN

V34

36 *EXT LTG-TRACK

RDOT }R

V48, 12012

CB RR(2)-CLOSE

RATE/ERR MON-RNDZ RDR

P20, AUTO MNVR

V80, MAX N49(2.00,12.0)

P32, TGT CSI

*VERIFY PGNS WITH MSFN

*V47, 414+1, 400+3

*400+2

*417+1 (417+0,621+0)

45 *411+1 START AUTO(19,19)*

V83 SET ORDEAL (35NM)

*317R, 440R, 277R

RDOT }R

30 CHART RDOT

RDOT }R

27

RDOT }R

24

RDOT }R

M=10, V32

21

RDOT }R

20 CHART RDOT

*COMPARE CMC,AGS,VHF/RR *

18

RDOT }R

*CHECK RCS, EPS, ECS *

15

RDOT }R

V90 OBTAIN CMC LM YDOT

12

RDOT }R

10 CHART R/RDOT

*

PRO-FINAL COMP

N81 LOAD CMC LM YDOT(IF>5fps)

9

RDOT }R

N13 CDH TIG TO CSM

*MATCH INDICATED ANGLES *

*TRACK MODE-SLEW *

*S-BD ANT-AFT *

SET P (-16) *

Y (-28) *

*BIOMED-OFF, PCM-HI *

*UPLINK SQUELCH-ENABLE *

*411+0 STOP AUTO *

*COPY AGS DATA *

CB(11) ECS CABIN FANT-OPEN

V83 SET ORDEAL

*317R, 440R, 277R *

P41, V77, N86

5

*410+5

*370R

TOT ΔV

*ΔV's TO CSM

ATT CONT-
MODE CONT

:05 *500R/502R

*A/H

:00 CSI

NULL RESIDUALS

DATE 10/18/72

CSI THRU CDH

MISSION APOLLO 17, OCTOBER 6, 1972

58 CSI
 V76
 P33 TGT CDH
 MAX N49(0.80,5.0)
 V67 (+02000,+00020,+00005)
 ATT CONT-PULSE
 MODE CONT-AUTO
 *417+1 (✓621+0) *
 *410+2 TGT CDH *
 *373R TM CDH *
 *310R SET DET *
 *COPY AGS DATA *
 55 *411+1 START AUTO(19,19)*
 V82
 V83 SET ORDEAL (45NM)
 *317R, 440R, 277R *
 54
 SR
 51 M=7, V32 RDOT \$R
 48 V90, LOAD CDH-30 RDOT \$R
 *COMPARE CMC,AGS,VHF/RR *
 45 RDOT \$R
 M=15, V32
 42 RDOT \$R

39 V34, P30 (PC ONLY) RDOT \$R
 38 *411+0 STOP AUTO *
 V90 LOAD CDH-30
 OBTAIN CMC LM YDOT
 36 CHART RDOT RDOT \$R
 P41, V77
 *373+ TIG PC *
 35 *410+5 LOAD ΔV ATT CONT-
 *263R MODE CONT
 *501R *
 :05 *270R/501R *A/H
 30 PLANE CHANGE
 V76
 P33 TGT CDH ATT CONT-PULSE
 V93 MODE CONT-AUTO
 *VERIFY PGNS WITH MSFN *
 *V47, 414+1, 400+3 *
 *400+2 Z-AXIS STEER *
 *410+2 TGT CDH *
 *373+ TIG CDH IF PC *
 *451+0 YDOT *
 *COPY AGS DATA *
 28 *411+1 START AUTO *
 27
 AOS
 S-BD ANT-FWD,VERIFY COMM
 */S-BD P (-16) *
 Y (-28) *
 *S-BD ANT-SLEW (>3.0) *
 *TRACK MODE-AUTO *
 *BIOMED-LEFT, PCM-HI *
 *UPLINK SQUELCH-OFF *
 CSI BURN REPORT
 TIG,ΔV'S, RESIDUALS

24 RDOT \$R
 23 CHART RDOT
 21 RDOT \$R
 M=7, V32
 *COMPARE CMC,AGS,VHF/RR *
 18 RDOT \$R
 *CHECK RCS, EPS, ECS *
 15 RDOT \$R
 V90 OBTAIN CMC LM YDOT
 12 RDOT \$R
 10 CHART RDOT *
 PRO-FINAL COMP
 N81 LOAD CMC LM YDOT
 9 RDOT \$R
 *411+0 STOP AUTO *
 *VERIFY PGNS (PCM-HI) *
 *V47, 414+1, 400+3 *
 *400+2 Z-AXIS STEER *
 *COPY AGS DATA *
 V83, SET ORDEAL
 *317R, 440R, 277R *
 P41, V77, N86
 (LARGE ΔV USE APS OR DPS)
 5 *410+5 ATT CONT-
 *370R TOT ΔV MODE CONT
 *500R *
 *502R *
 :05 *500R/502R *A/H
 :00 CDH
 NULL RESIDUALS

CSI THRU CDH

CDH THRU TPI

53	CDH	
	V76	
	P34 TGT TPI	ATT CONT-PULSE
	MAX N49(0.80,5.0)	MODE CONT-AUTO
	V93	
	*417+1 (✓621+0)	*
	*SET DET	*
	V82	
	*410+3 TPI SRCH	*
	*310+TIME TO TPI	*
	*303R @ TPI	*
	*410+4 (When 303=26.6)	*
43	*411+1 START AUTO(19,19)*	
	*POLAR PLOT @ 75 NM	*
		310R
42		R
39	M=7, V32	RDOT R
	*COMPARE TPI TIME	*
36		RDOT R
33		RDOT R
30		RDOT R
27		RDOT R
	*MONITOR 303R @ TPI AND *	
	*RETARGET IF REQ	*
	*COPY AGS DATA	*
24		RDOT R
	M=15, V32	
	*COMPARE CMC, AGS, VHF/RR *	
	*VOICE LM TPI TIME	*
	* TO CSM	*
21		RDOT R
18		RDOT R
	*CHECK RCS, EPS, ECS	*

```

15                                RDOT 8R
12                                RDOT 8R

*VERIFY PGNS (PCM-HI) *
*411+0 STOP AUTO *
*V47, 414+1, 400+3 *
*400+2 Z-AXIS STEER *

10 PRO-FINAL COMP
TIG TO CSM
*SET DET
9 CHART 0

*411+0 STOP AUTO
*410+3
*310+TIME TO TPI
*303R 0 TPI
*410+4 (WHEN 303=26.6)
*310R ✓ WITH DET
*COPY AGS DATA

5 CHART R/RDOT/0

*MATCH INDICATED ANGLES *
*TRACK MODE-SLEW *
*S-BD ANT-AFT *
SET P
Y
*BIOMED-OFF, PCM-HI
*UPLINK SQUELCH-ENABLE

P41, V77, N86
*404+0, 405+0, 406+0
4 *410+5 LOAD ΔV & TIG
*507+1 THR Z-AXIS ATT CONT-
*502R MODE CONT

:05 *472R/502R *A/H
:00 TPI
NULL RESIDUALS

```


TPI THRU DOCKING

MISSION APOLLO 17, OCTOBER 6, 1972

CB(11) ECS CABIN FANI-CLOSE

P00

V48, 11002

11002

P47, V63

*404+0, 405+0, 406+0 *

S-BD ANT-FWD, VERIFY COMM

*S-BD P _____ *

Y _____ *

*S-BD ANT-SLEW (>3.0) *

*TRACK MODE-AUTO *

*BIOMED-LEFT, PCM-HI *

*UPLINK SQUELCH-OFF *

TPI BURN REPORT

40 INITIATE BRAKING

30 FPS - 6000 FT	DES ATTACHED
20 FPS - 3000 FT	5 FPS - 1000 FT
10 FPS - 1500 FT	3 FPS - 500 FT
5 FPS - 600 FT	1 FPS - 100 FT

*SETUP CAMERA FOR *

* DOCKING: *

*LM3/DAC/10/CEX-ULC *

* (T8, 1/250, 6) 1 FPS *

* .25 MAG(0), (4MIN) *

V34, P00

V76

ATT CONT-PULSE

MANEUVER/PICTURES OF SIMBAY

50 INITIATE DOCKING

COAS TO OVHD WINDOW

*EXT LTG-DOCK *

SHFT/TRUN +50 *

V41N72 (+000, +320)

CB RR(2)-OPEN, V44

FDAI (180, 294, 300)

V77

ATT CONT-
MODE CONT

60 CONTACT

CONFIRM CAPTURE FROM CSM

MODE CONT (BOTH)-OFF

POST DOCKING PROCEDURES

AOS

SR

0 TPI
V76
*507+0 Z-AXIS TRACT *
P35 TGT MCC 1 ATT CONT-PULSE
MAX N49(0.80, 5.0) MODE CONT-AUTO
V93

*417+1 (✓621+0) *
*411+1 START AUTO(13, 12) *

2
*410+4 TPI EXEC *
*373+TPI TIME +15 MIN *
*307+028.00 *

4 RDOT }R

6 RDOT }R

8 RDOT }R

9 CHART θ *

10 RDOT }R

12 PRO FINAL COMP RDOT }R

13 CHART R/RDOT/ θ

*411+0 STOP AUTO *

370R TOTAL VEL MCC1
371R ΔV TPF

*404+0, 405+0, 406+0 *
P41, V77

14 *410+5
*502R ATT CONT-
MODE CONT

05 *472R/502R *A/H
15 MCC1
NULL RESIDUALS

V76
P35 TGT MCC 2 ATT CONT-PULSE
V93 MODE CONT-AUTO

*VERIFY PGNS (PCM-HI) *
*V47, 414+1, 400+3 *
*400+2 Z-AXIS STEER *
*411+1 START AUTO *

17
*EXT LTG-OFF *
*410+4 TPI EXEC *
*373+TPI TIME +30 MIN *
*307+013.00 *

19 RDOT }R

21 RDOT }R

23 RDOT }R

24 CHART θ *

25 RDOT }R

27 PRO-FINAL COMP RDOT }R

28 CHART R/RDOT/ θ

*411+0 STOP AUTO *

370R TOTAL VEL MCC2
371R ΔV TPF

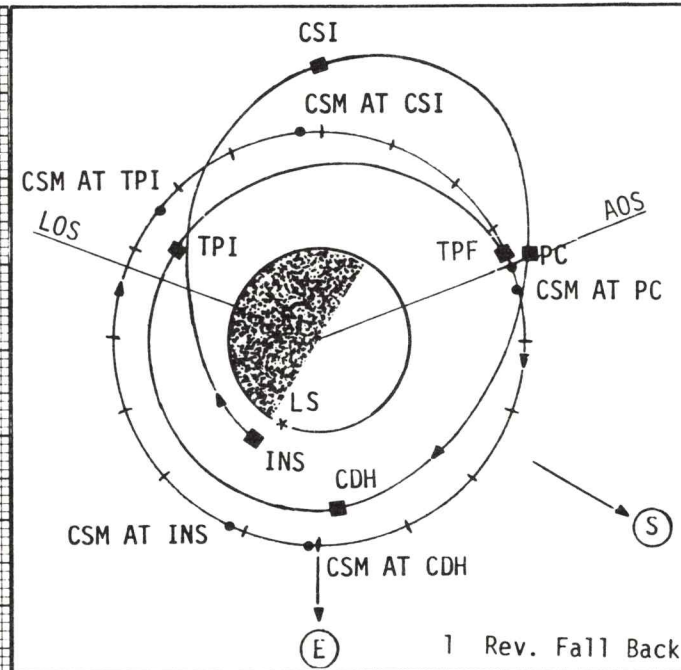
*404+0, 405+0, 406+0 *
P41, V77

29 *410+5
*502R ATT CONT-
MODE CONT

05 *472R/502R *A/H
30 MCC2
NULL RESIDUALS

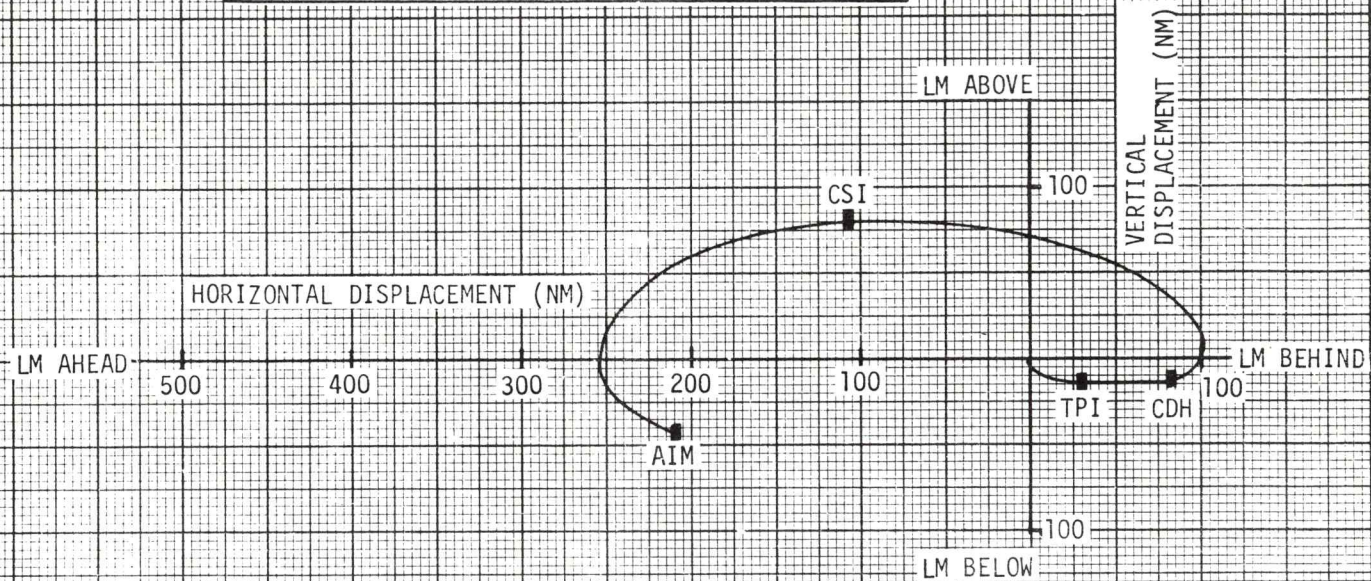
TPI THRU
DOCKING

EVENT	GET TIG
INS	
CSI	
PC	
CDH	
TPI	



APOLLO 16/17 MISSIONS
INERTIAL AND RELATIVE PLOTS

NO DOI 1 AT PDI 1+12
NO PDI 1+12



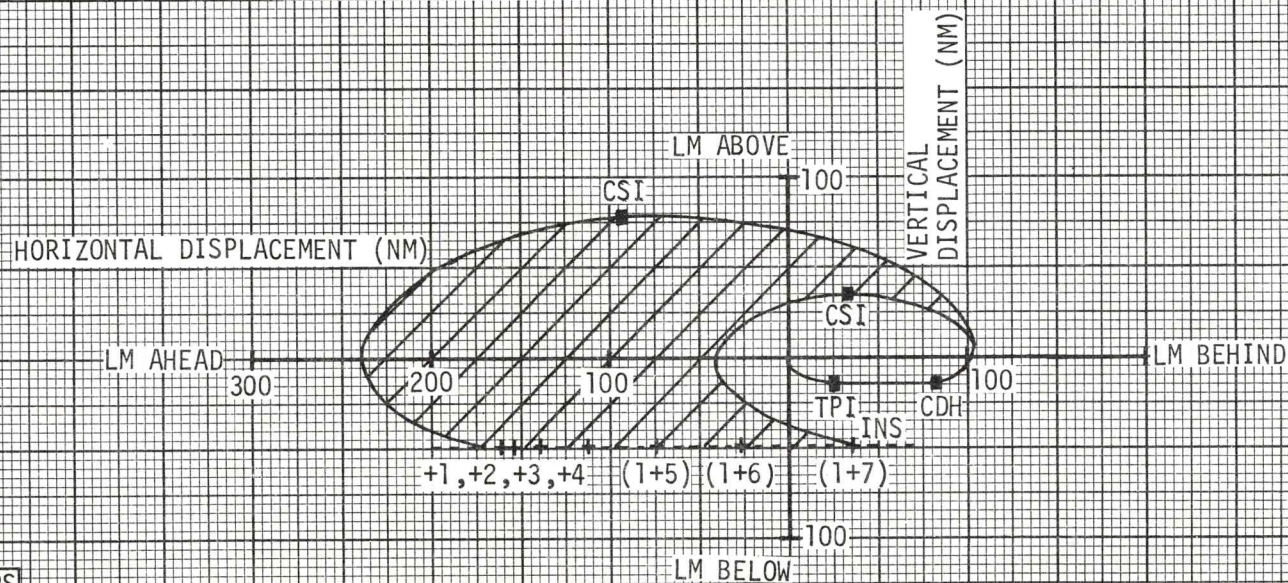
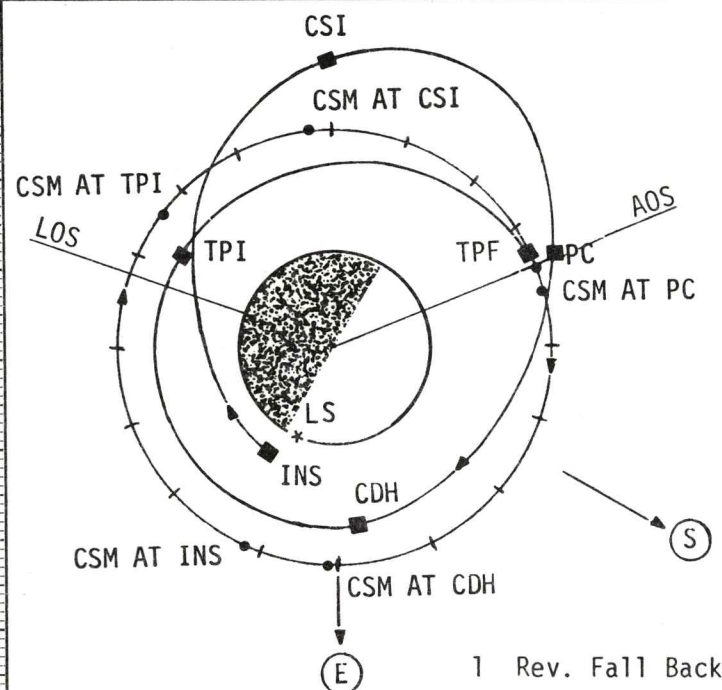
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SEPTEMBER 1, 1972

PAGE A-1

EVENT	GET TIG
INS	
CSI	
PC	
CDH	
TPI	

APOLLO 16/17 MISSIONS INERTIAL AND RELATIVE PLOTS

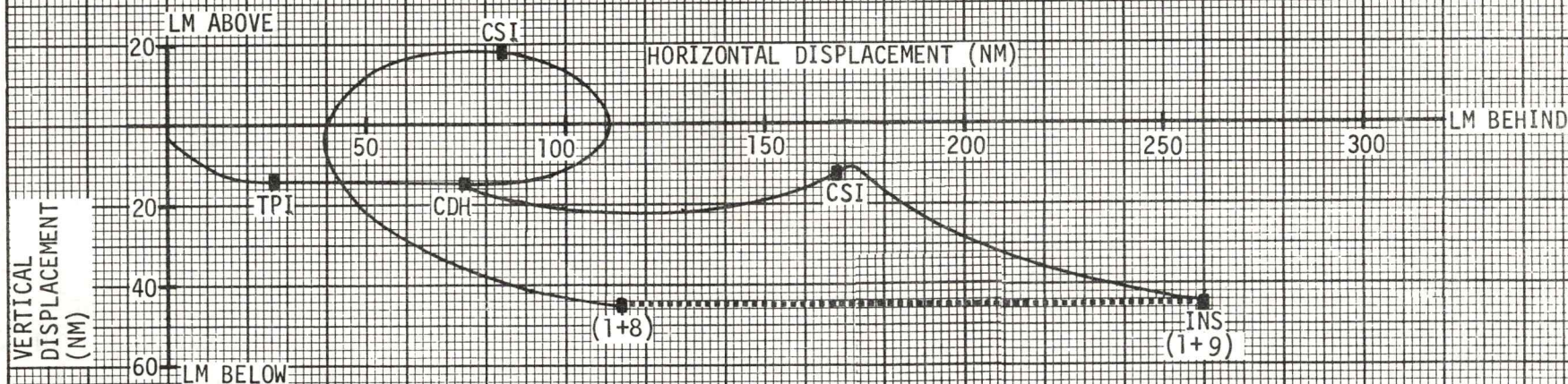
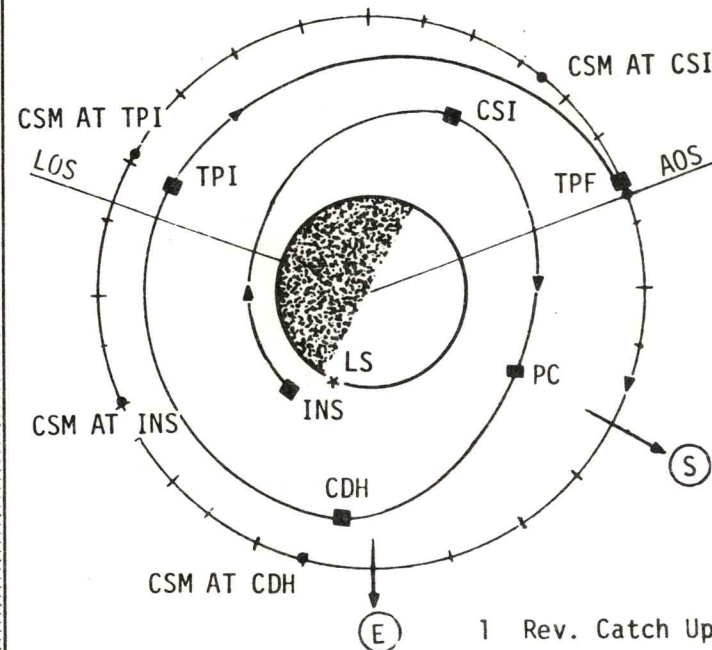
1. $1 \leq \text{PDI} \leq 7$



EVENT	GET TIG
INS	
CSI	
PC	
CDH	
TPI	

APOLLO 16/17 MISSIONS
INERTIAL AND RELATIVE PLOTS

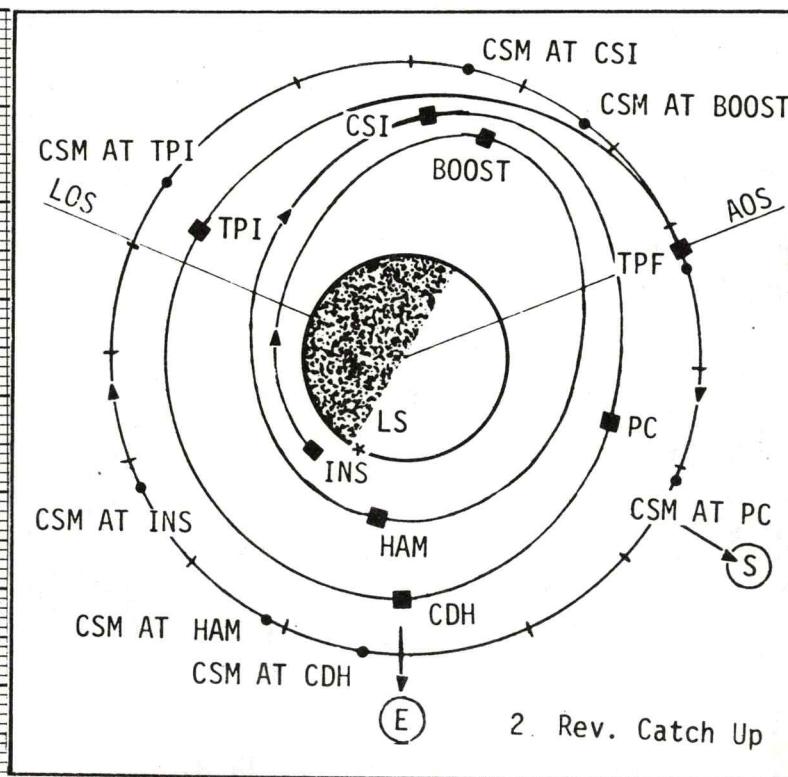
$8 \leq \text{PDI } 1 \leq 9$



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SEPTEMBER 1, 1972

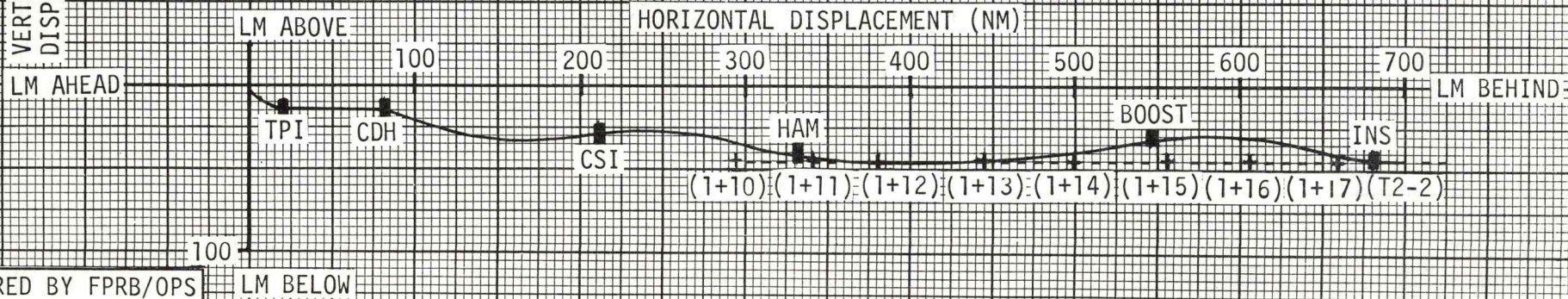
PAGE A-3

EVENT	GET TIG
INS	
BOOST	
HAM	
CSI	
PC	
CDH	
TPI	



APOLLO 16/17 MISSIONS
INERTIAL AND RELATIVE PLOTS
1. $10 < \text{PDI } 1 \leq 17$
2. T2-2

VERTICAL
DISPLACEMENT (NM)



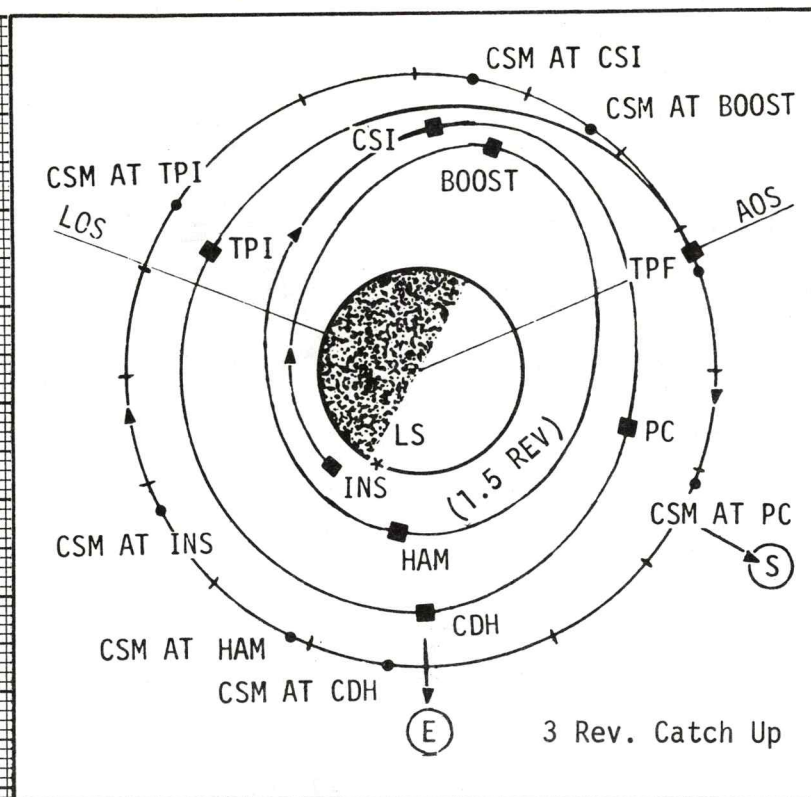
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SEPTEMBER 27, 1972

PAGE A-4

PAGE 4-13

DATE 9/27/72

EVENT	GET TIG
INS	
BOOST	
HAM	
CSI	
PC	
CDH	
TPI	



APOLLO 16/17 MISSIONS
INERTIAL AND RELATIVE PLOTS

T2-1

PROCEDURES:

BOOST BURN PERFORMED

P00

V82

V76

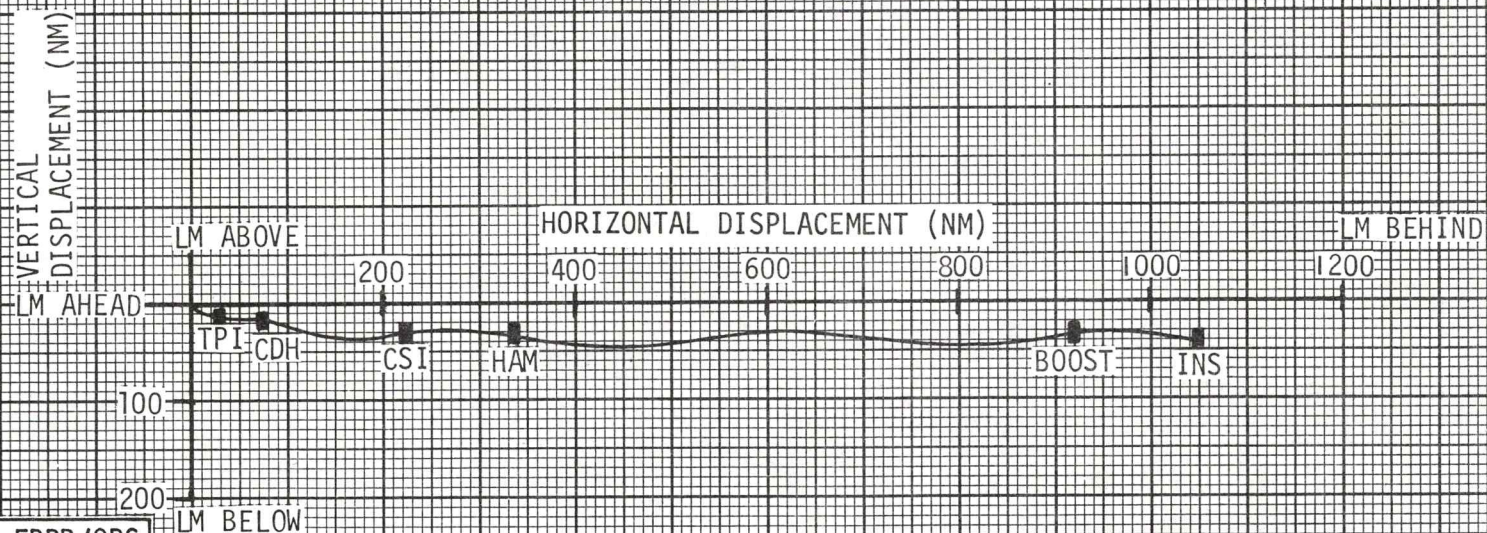
1 REV COASTING FLIGHT

60 MIN PRIOR TO HAM

DO PROCEDURES FOR
BOOST THRU HAM.

ON PAGE 4-5

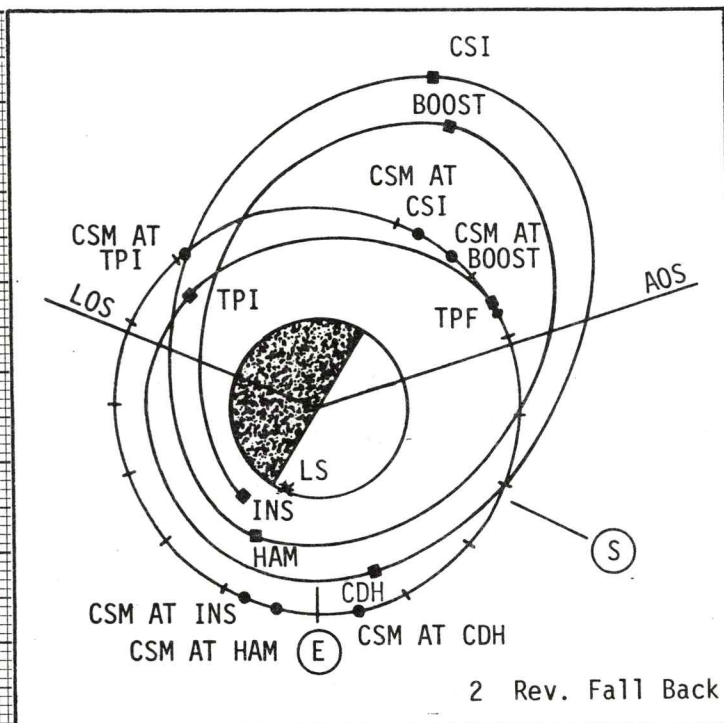
BURN GROUND HAM



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OCTOBER 25, 1972

PAGE A-5

EVENT	GET TIG
INS	
BOOST	
HAM	
CSI	
PC	
CDH	
TPI	



APOLLO 16/17 MISSIONS INERTIAL AND RELATIVE PLOTS

NO DOI 2 AT PDI 2+12
NO PDI 2+12

HORIZONTAL DISPLACEMENT (NM)

LM HEAD

600

500

400

300

200

100

100

100

LM BEHIND

TPI

CDH

AIM

HAM

BOOST

CSI

LM ABOVE

100

VERTICAL
DISPLACEMENT (NM)

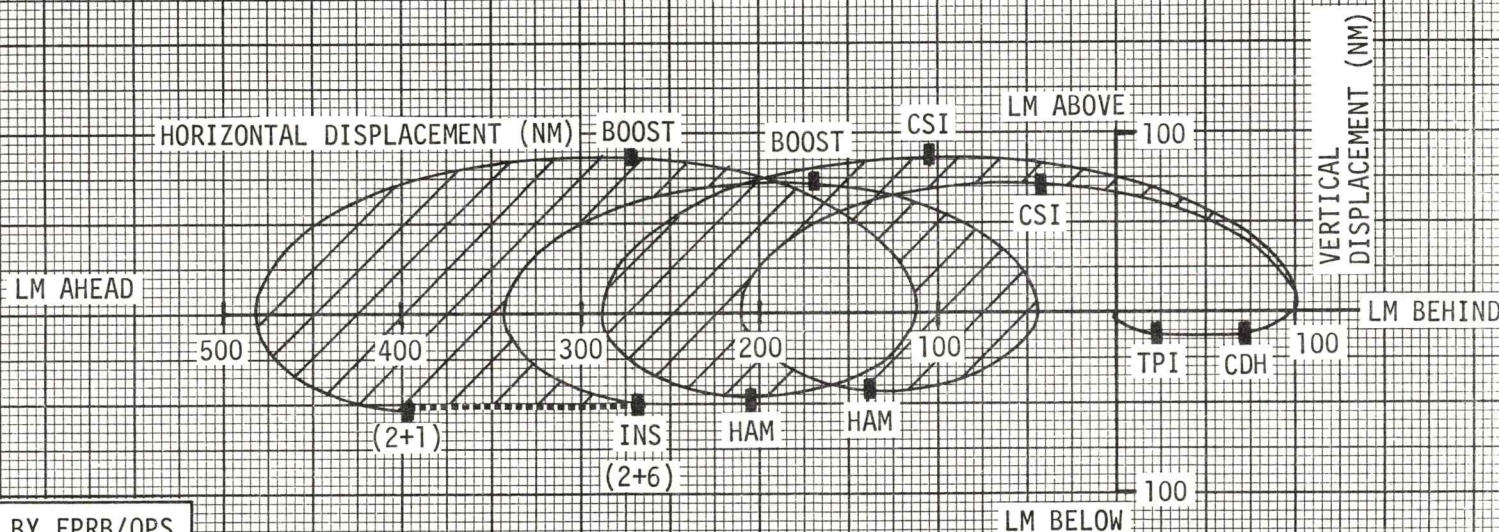
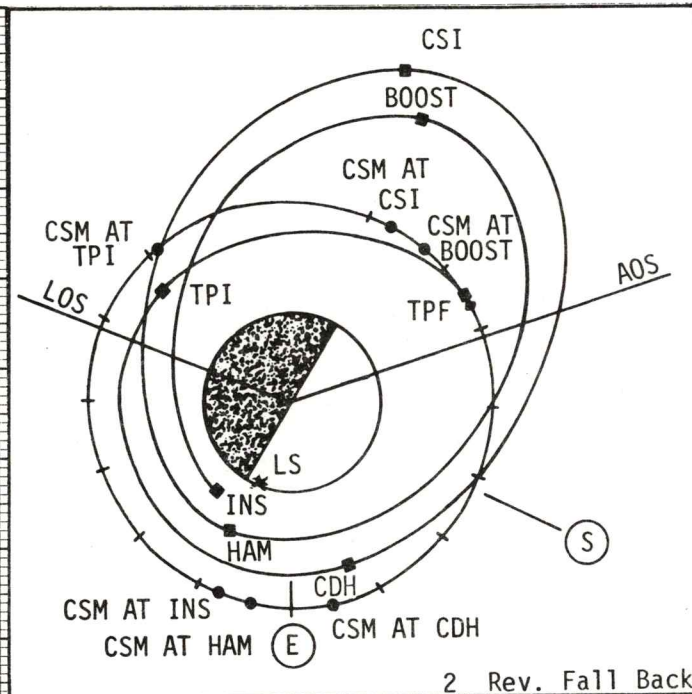
100

LM BELOW

EVENT	GET TIG
INS	
BOOST	
HAM	
CSI	
PC	
CDH	
TPI	

APOLLO 16/17 MISSIONS INERTIAL AND RELATIVE PLOTS

1. $1 \leq \text{PDI} \leq 6$



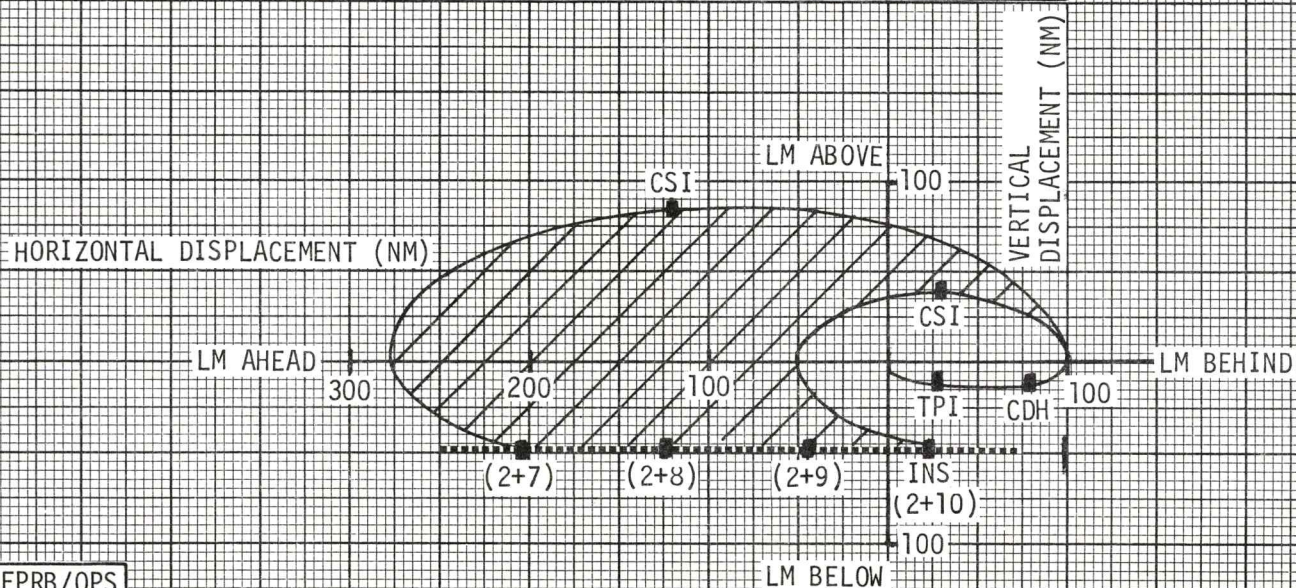
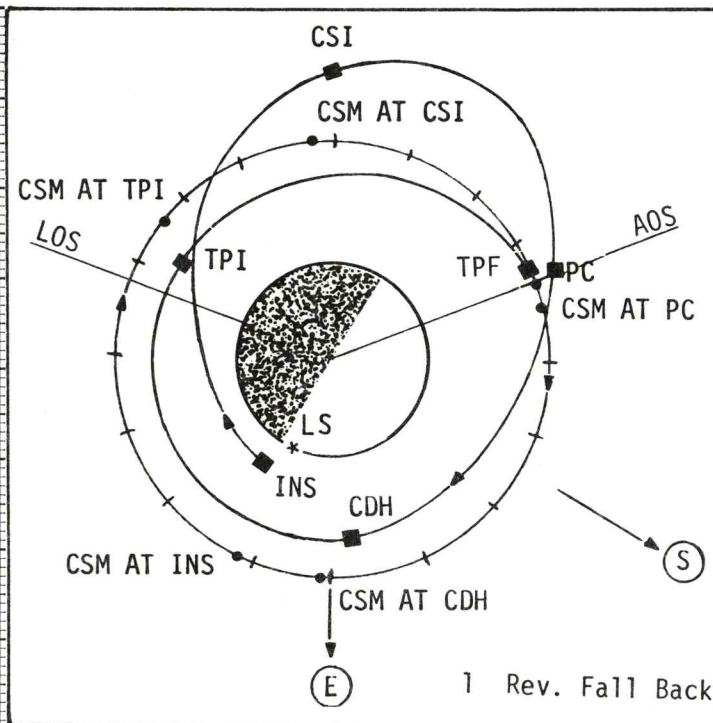
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SEPTEMBER 1, 1972

PAGE A-7

EVENT	GET TIG
INS	
CSI	
PC	
CDH	
TPI	

APOLLO 16/17 MISSIONS INERTIAL AND RELATIVE PLOTS

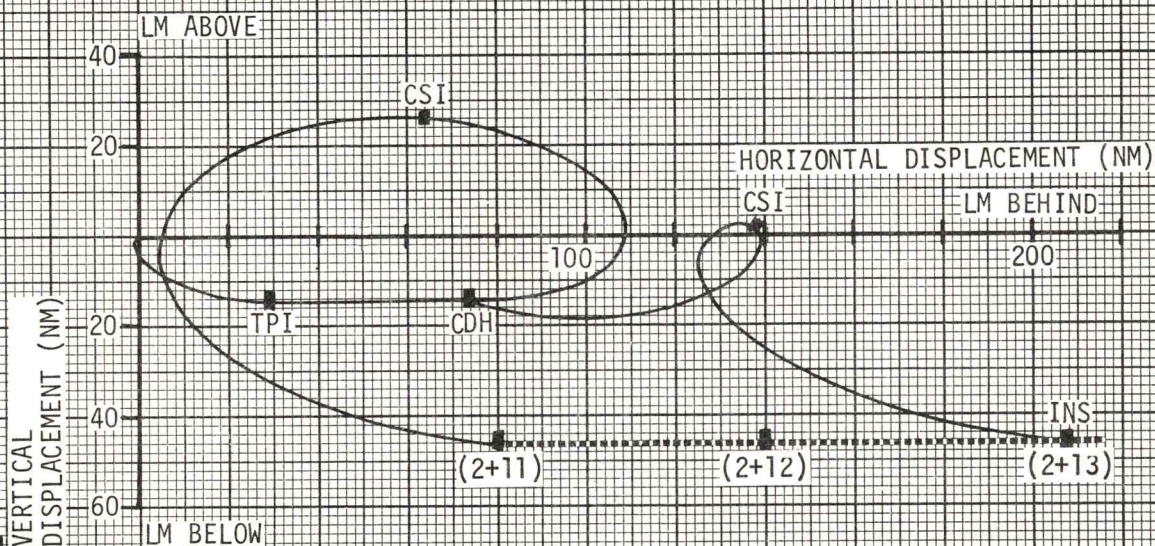
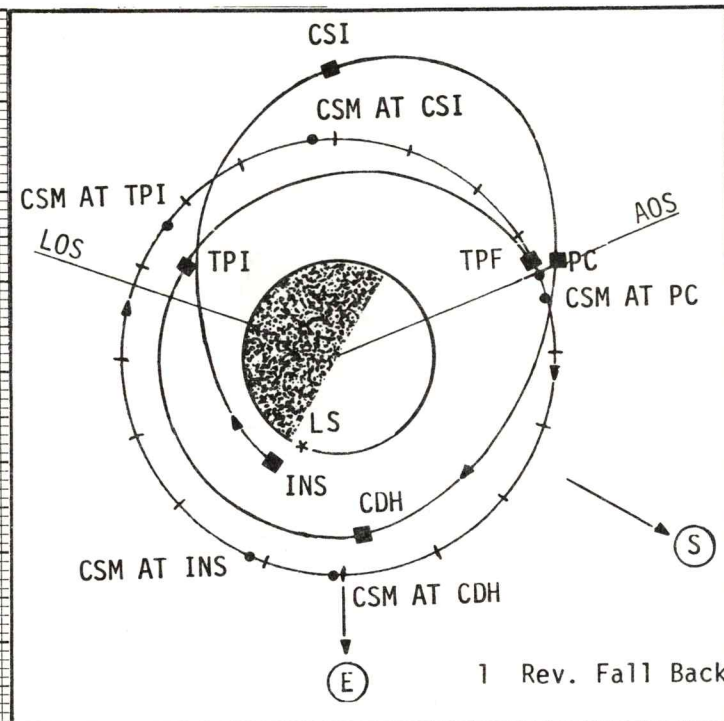
$$7 \leq \text{PDI } 2 \leq 10$$



EVENT	GET TIG
INS	
CSI	
PC	
CDH	
TPI	

APOLLO 16/17 MISSIONS
INERTIAL AND RELATIVE PLOTS

$$11 \leq \text{PDI} \leq 13$$



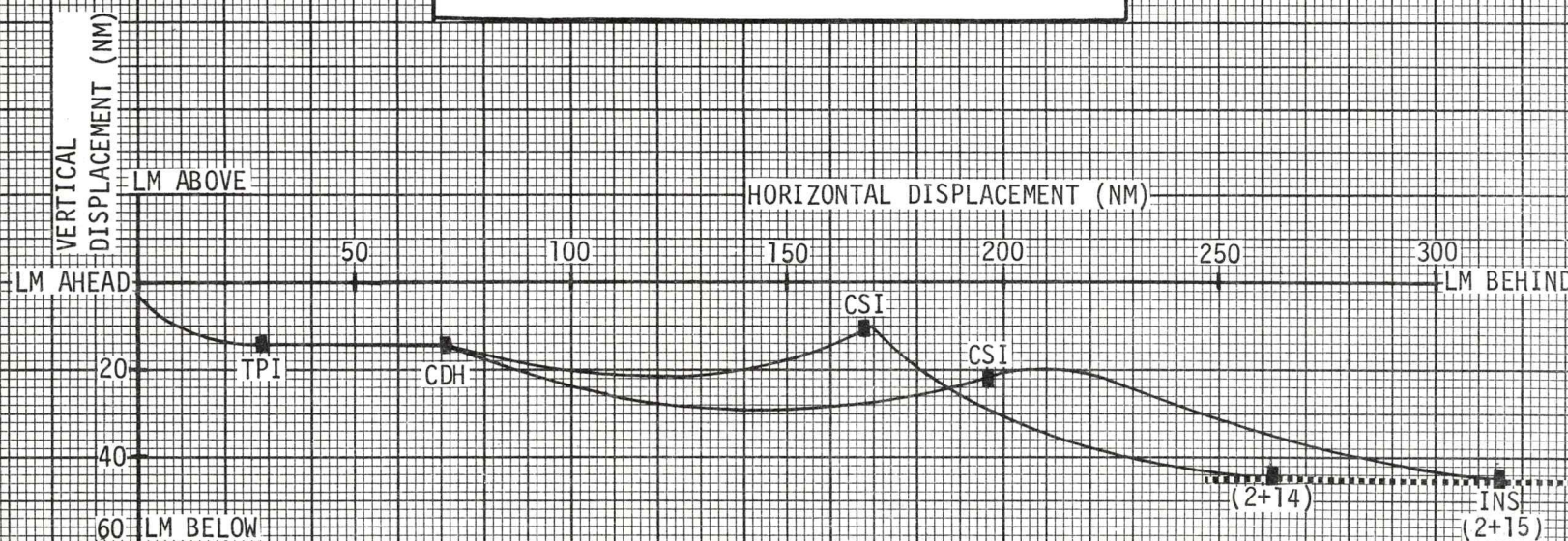
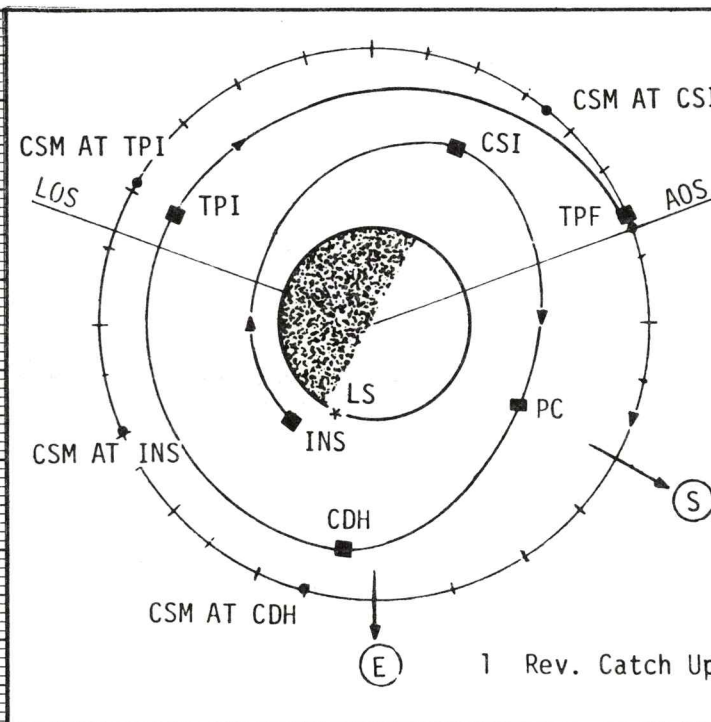
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DECEMBER 25, 1971

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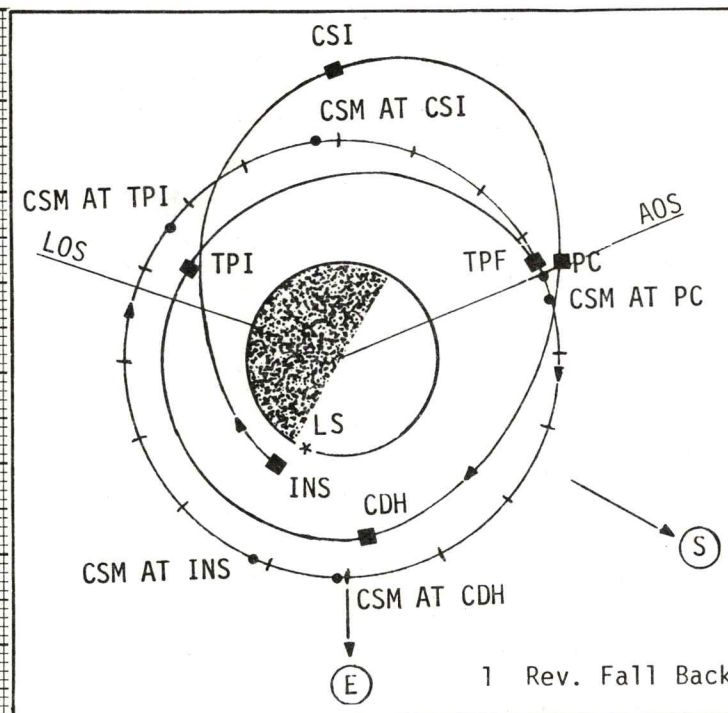
EVENT	GET TIG
INS	
CSI	
PC	
CDH	
TPI	

APOLLO 16/17 MISSIONS
INERTIAL AND RELATIVE PLOTS

$14 \leq \text{PDI} \leq 15$

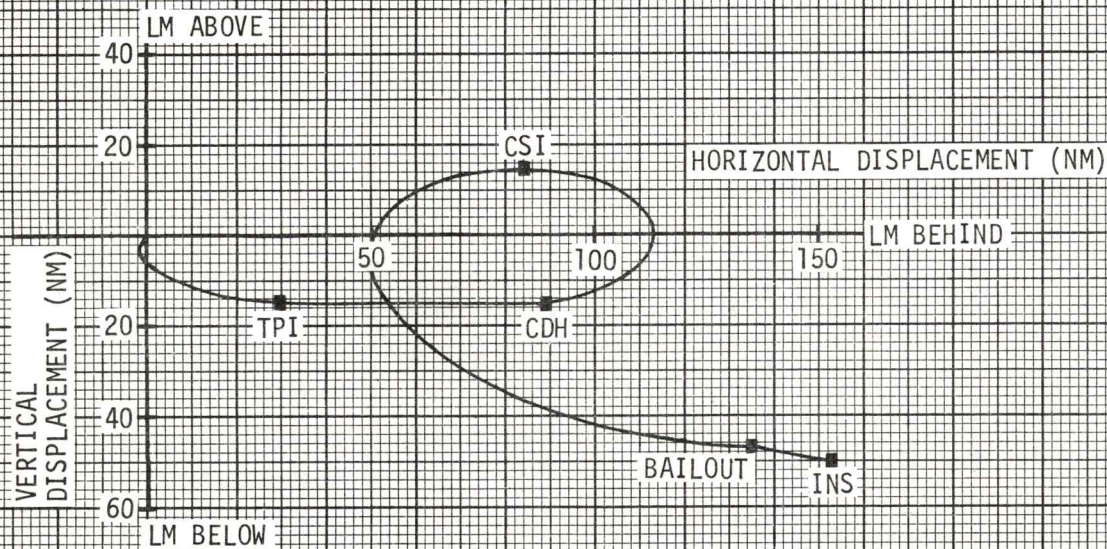


EVENT	GET TIG
INS	
BAILOUT	
CSI	
PC	
CDH	
TPI	



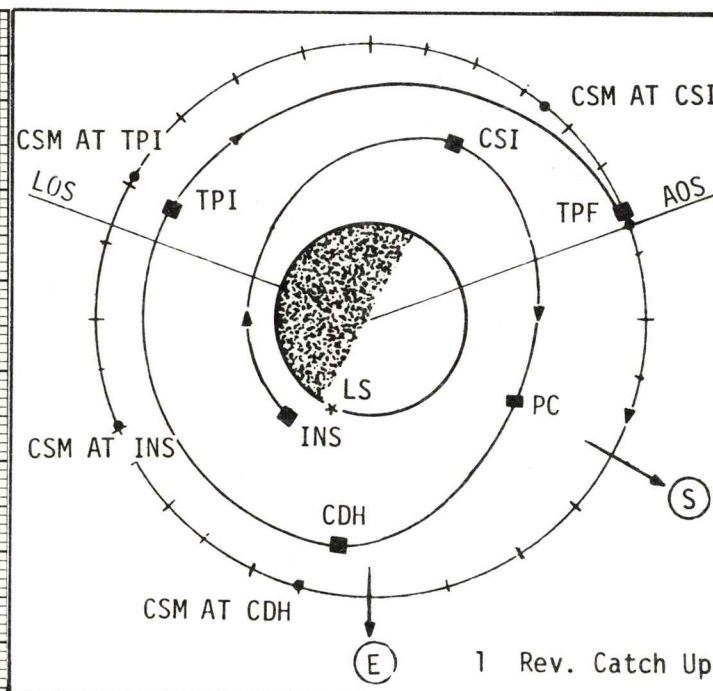
APOLLO 16/17 MISSIONS
INERTIAL AND RELATIVE PLOTS

BAILOUT



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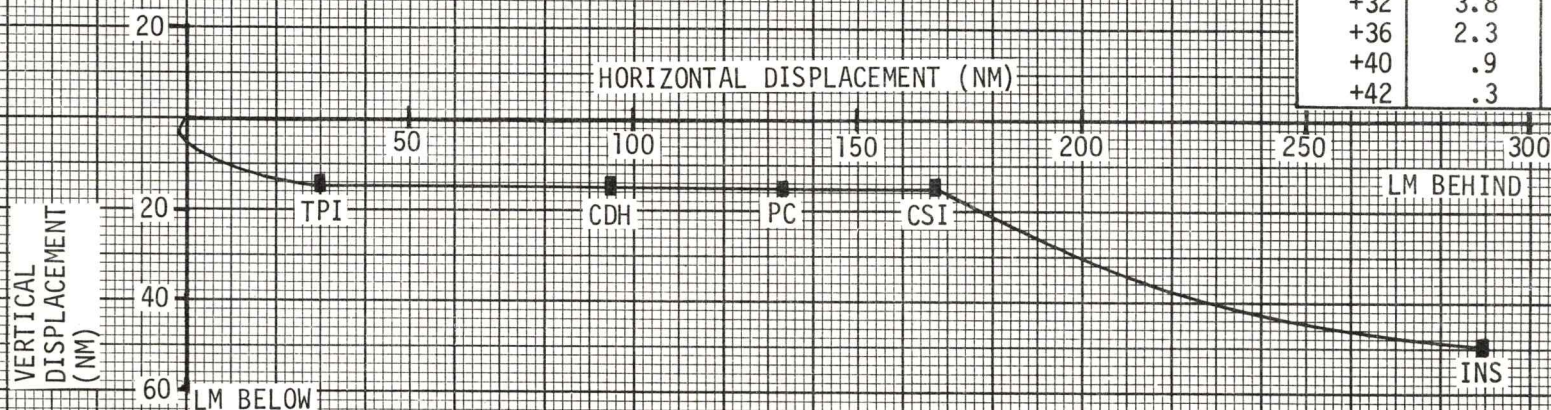
EVENT	GET TIG
INS	
CSI	
PC	
CDH	
TPI	

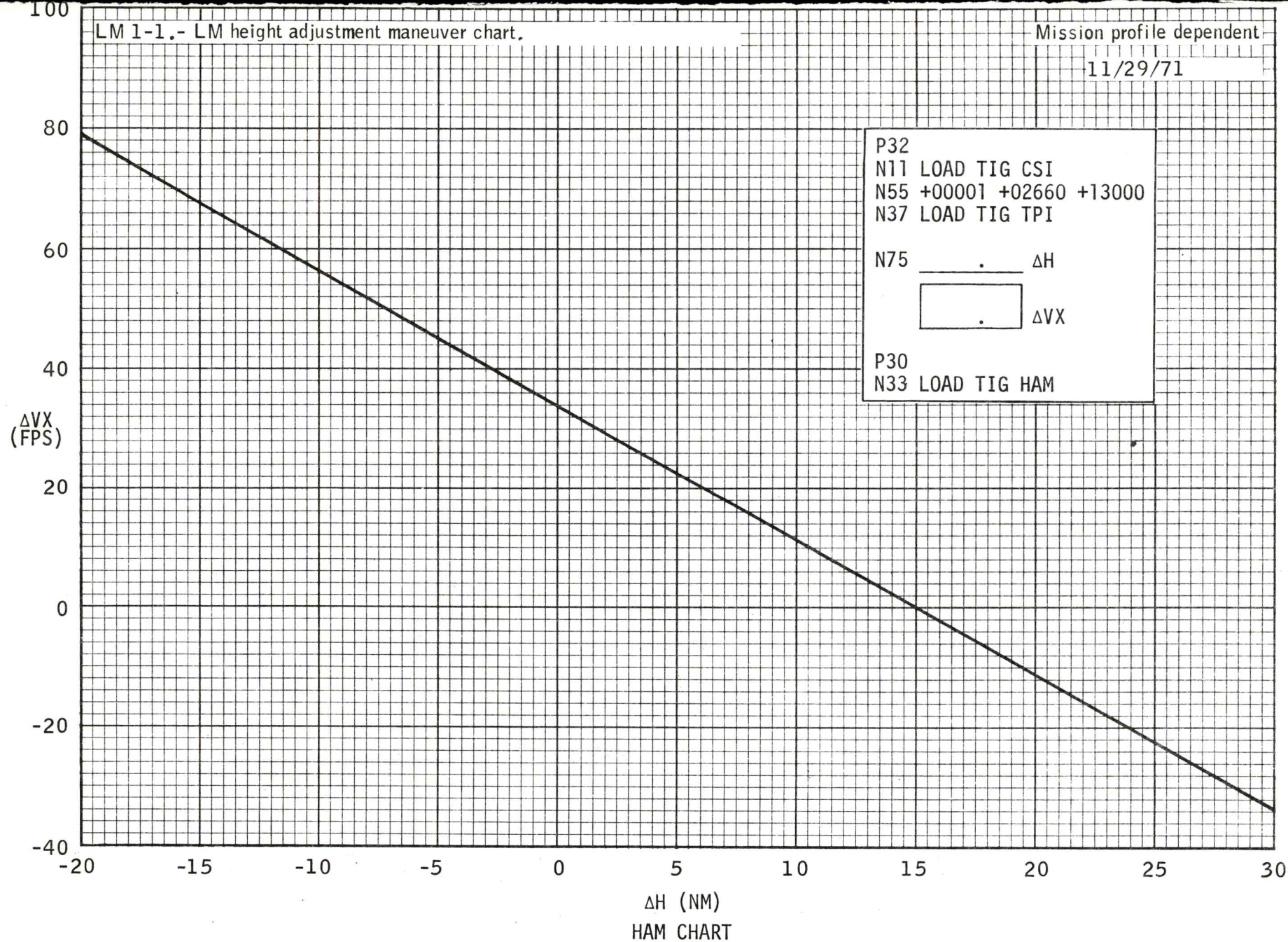


APOLLO 16/17 MISSIONS INERTIAL AND RELATIVE PLOTS

NOMINAL COELLIPTIC RNDZ

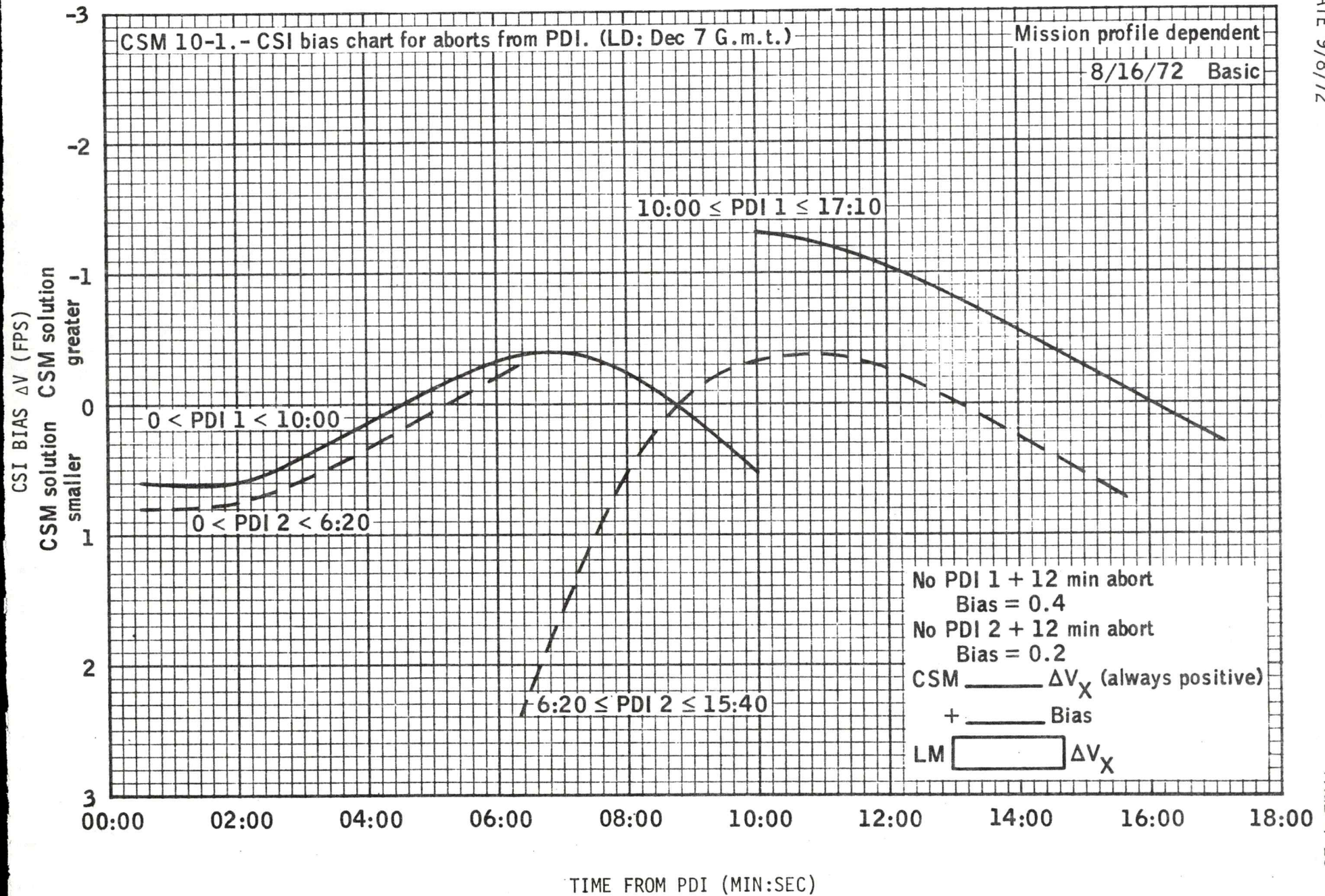
ΔT	RANGE	RDOT
INS	285.6	-456.6
-48	281.1	-452.3
-44	263.6	-429.7
-40	247.3	-399.1
-36	232.2	-362.0
-32	218.7	-320.2
-28	206.9	-275.8
-24	196.9	-230.9
-20	188.7	-188.0
-16	182.0	-149.3
-12	176.8	-116.8
-8	172.7	-92.0
-4	169.4	-76.0
CSI	166.6	-69.4
CDH	95.7	-122.2
TPI	33.5	-110.2
+4	27.8	-129.3
+8	22.9	-120.4
+12	18.4	-108.8
+16	14.3	-95.2
+20	10.9	-80.4
+24	8.0	-65.7
+28	5.6	-52.5
+32	3.8	-42.0
+36	2.3	-35.3
+40	.9	-32.4
+42	.3	-31.9





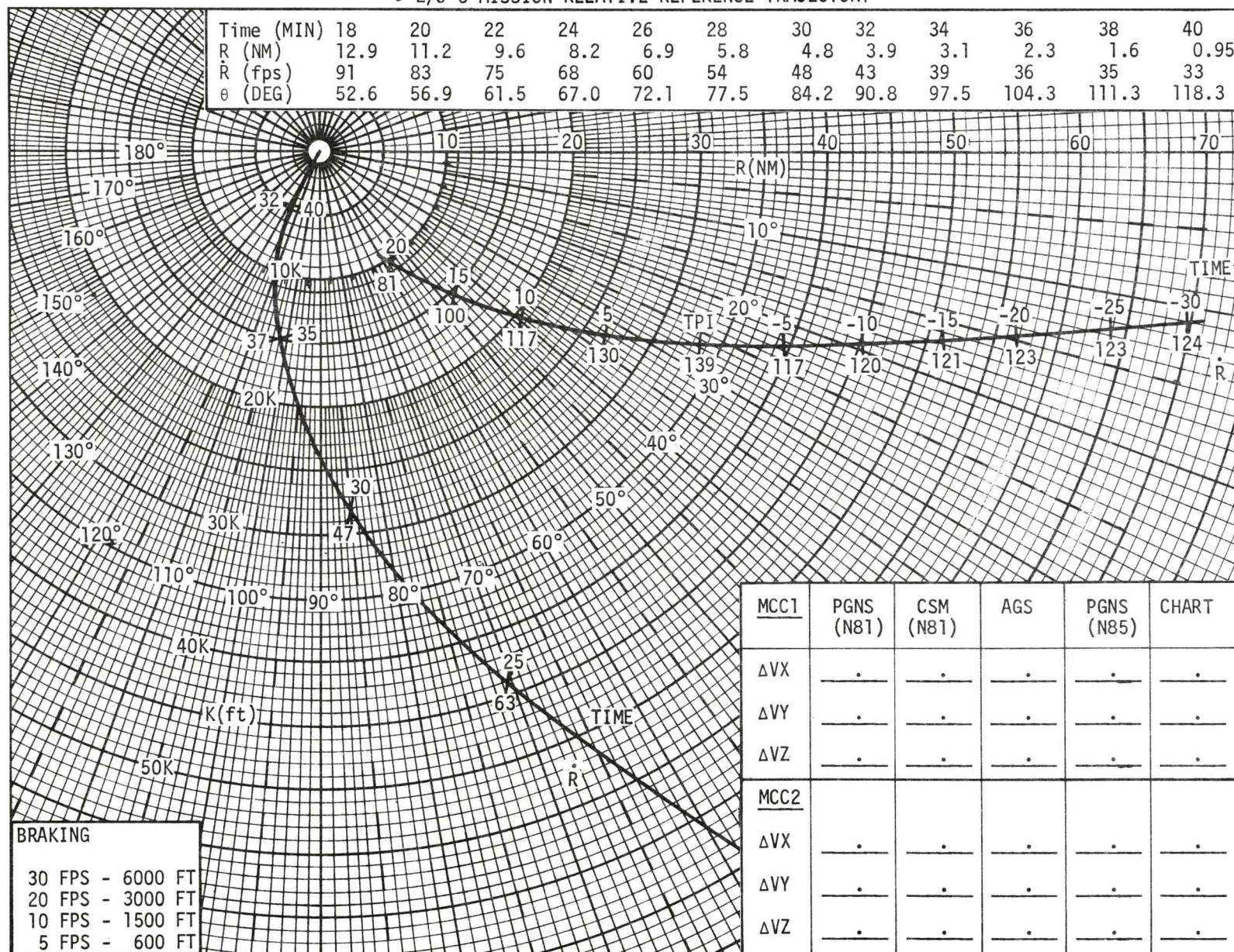
CSI BIAS CHART

DATE 9/8/72



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J-2/J-3 MISSION RELATIVE REFERENCE TRAJECTORY



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 MISSION APOLLO 16, DECEMBER 25, 1971

