



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

APOLLO 17
DECEMBER 6 LAUNCH

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ALL LAUNCH DATES

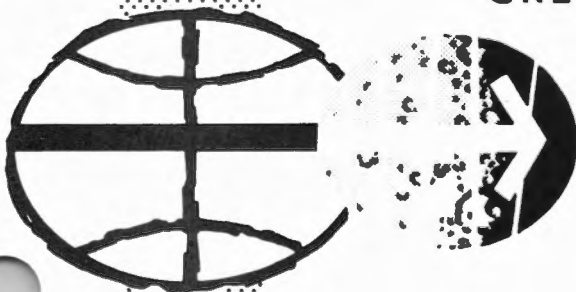
CHANGE B
CSM LAUNCH
CHECKLIST

PREPARED BY

FLIGHT PROCEDURES BRANCH
CREW PROCEDURES DIVISION

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

NOVEMBER 14, 1972



APOLLO 17
CSM LAUNCH CHECKLIST

NOVEMBER 14, 1972

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CSM LAUNCH CHECKLIST

LIST OF EFFECTIVE PAGES

Basic 9/4/72

Change A 10/11/72

Change B 11/14/72

PAGE	DATE	PAGE	DATE
*i	11/14/72	2-13	9/4/72
ii	9/4/72	2-14	9/4/72
iii	9/4/72	2-15	9/4/72
1-1	9/4/72	2-16	10/11/72
1-2	9/4/72	2-17	10/11/72
1-3	9/4/72	2-18	10/11/72
1-4	9/4/72	2-19	9/4/72
1-5	9/4/72	2-20	9/4/72
1-6	9/4/72	2-21	10/11/72
1-7	9/4/72	2-22	10/11/72
1-8	9/4/72	2-23	9/4/72
1-9	9/4/72	2-24	9/4/72
1-10	9/4/72	2-25	9/4/72
1-11	10/11/72	2-26	9/4/72
1-12	10/11/72	*2-26A. . . .	11/14/72
1-13	9/4/72	*2-26B. . . .	11/14/72
1-14	9/4/72	2-27	10/11/72
1-15	9/4/72	2-28	9/4/72
2-1	9/4/72	*2-29	11/14/72
2-2	9/4/72	*2-30	11/14/72
2-3	9/4/72	2-31	9/4/72
2-4	9/4/72	*3-1	11/14/72
2-5	9/4/72	3-2	9/4/72
2-6	9/4/72	3-3	10/11/72
2-7	9/4/72	3-4	9/4/72
2-8	9/4/72	3-5	10/11/72
2-9	9/4/72	3-6	9/4/72
2-10	10/11/72	3-7	10/11/72
2-10A. . . .	9/4/72	4-1	9/4/72
2-10B. . . .	9/4/72	4-2	9/4/72
2-11	10/11/72	4-3	10/11/72
2-12	10/11/72	4-4	10/11/72

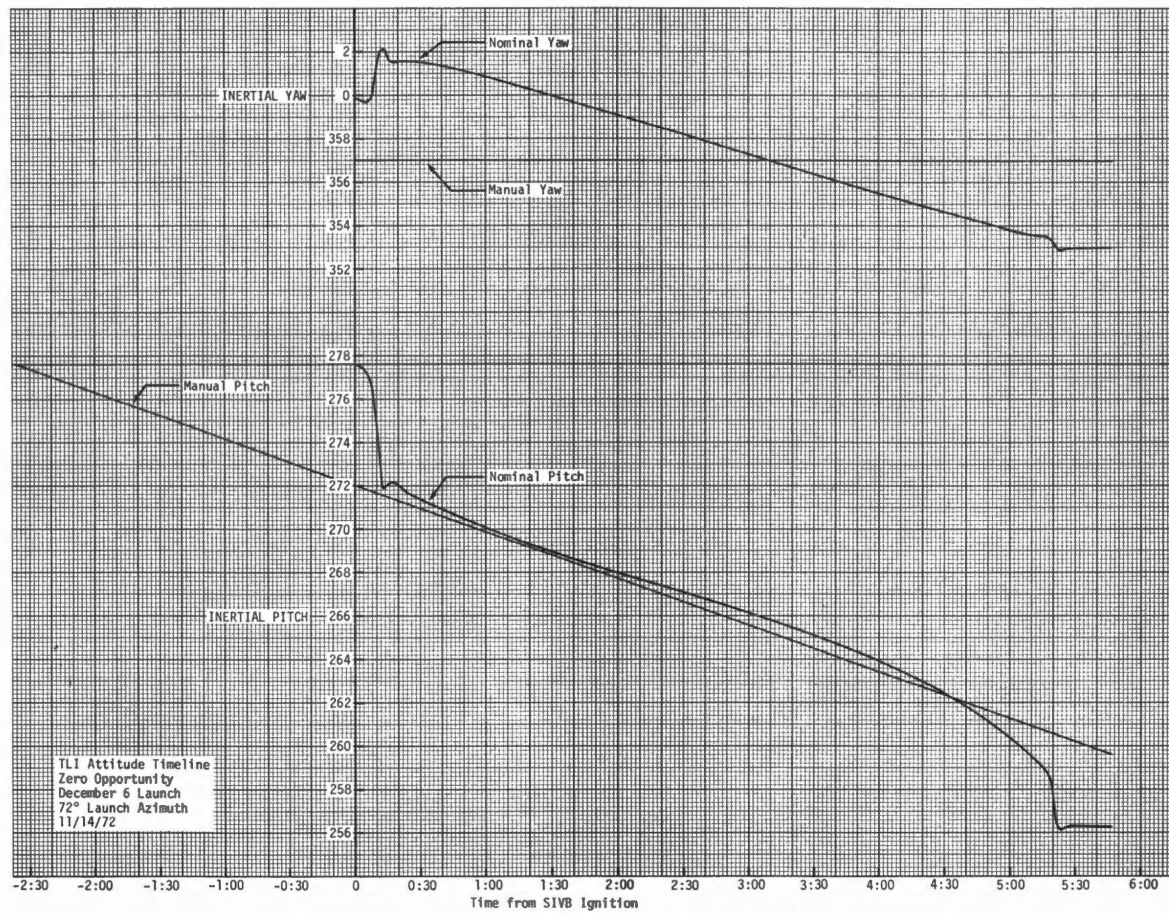
*Current Change

LIST OF EFFECTIVE PAGES (CONT)

PAGE	DATE	PAGE	DATE
4-5 . . .	9/4/72	6-8 . . .	9/4/72
4-6 . . .	9/4/72	6-9 . . .	9/4/72
4-7 . . .	9/4/72	6-10 . . .	9/4/72
*4-8 . . .	11/14/72	7-1 . . .	9/4/72
*4-9 . . .	11/14/72	7-2 . . .	9/4/72
4-10 . . .	9/4/72	7-3 . . .	9/4/72
4-11 . . .	9/4/72	7-4 . . .	9/4/72
4-12 . . .	9/4/72	7-5 . . .	9/4/72
4-13 . . .	9/4/72	7-6 . . .	9/4/72
4-14 . . .	9/4/72	7-7 . . .	9/4/72
4-15 . . .	9/4/72	7-8 . . .	9/4/72
4-16 . . .	9/4/72	8-1 . . .	9/4/72
5-1 . . .	9/4/72	8-2 . . .	9/4/72
5-2 . . .	9/4/72	8-3 . . .	9/4/72
5-3 . . .	9/4/72	8-4 . . .	9/4/72
5-4 . . .	9/4/72	8-5 . . .	9/4/72
5-5 . . .	9/4/72	8-6 . . .	9/4/72
5-6 . . .	9/4/72	8-7 . . .	9/4/72
5-7 . . .	9/4/72	8-8 . . .	9/4/72
5-8 . . .	9/4/72	8-9 . . .	9/4/72
5-9 . . .	9/4/72	8-10 . . .	9/4/72
5-10 . . .	9/4/72	8-11 . . .	9/4/72
5-11 . . .	9/4/72	9-1 . . .	9/4/72
5-12 . . .	9/4/72	*9-2 . . .	11/14/72
6-1 . . .	9/4/72	9-3 . . .	9/4/72
6-2 . . .	9/4/72	9-4 . . .	9/4/72
6-3 . . .	9/4/72	9-5 . . .	9/4/72
6-4 . . .	9/4/72	EMER/1-1 .	(SYS C/L)
6-5 . . .	9/4/72	EMER/1-2 .	(SYS C/L)
6-6 . . .	9/4/72		
6-7 . . .	9/4/72		

*Current Change

DATE 11/14/72



2-26A
L

TL1 ATT TIMELINE
OPP 0

TL1 TRAJECTORY
OPP O NOM & MAN

NOMINAL SIVB TLI 0

DEC 6 LAUNCH			11/15/72		
DET	Θ	Ψ	VI	$\dot{H}$	H
0:00	278	358.8	25609	-3	95
:30	271	1.5	26154	-8	95
1	270	0.8	26761	21	95
1:30	269	0.0	27394	105	96
2	268	359.0	28150	252	96
2:30	267	358.2	28954	479	98
3	266	357.3	29800	793	101
3:30	265	356.4	30692	1203	106
4	264	355.5	31637	1717	113
4:30	262	354.7	32642	2342	123
5	260	353.8	33716	3082	137
5:30	256	352.9	34877	3922	154
5:46	256	353.0	35566	4438	165

MANUAL SIVB TLI 0

DEC 6 LAUNCH			11/15/72		
DET	Θ	Ψ	VI	$\dot{H}$	H
0:00	272.0	357	25609	-3	95
:30	271.0	357	26154	-8	95
1	269.9	357	26761	21	95
1:30	268.8	357	27394	105	96
2	267.7	357	28150	252	96
2:30	266.6	357	28954	479	98
3	265.6	357	29800	793	101
3:30	264.5	357	30692	1203	106
4	263.4	357	31637	1717	113
4:30	262.4	357	32642	2342	123
5	261.2	357	33716	3082	137
5:30	260.2	357	34877	3922	154
5:46	259.6	357	35566	4438	165

2-268

DATE 11/14/72

L
2-29

57:10 : Insure FDAI #1 PITCH = 12°
(-02:50) ORDEAL MODE - OPERATE/SLOW, IU or CMC

*If LV GUID - CMC: *
* MNVR to R2 Ign = _____ (271.5°)*

58:15 DSKY BLANKS

58:20 06 95 TFI, VG, VI (Ave G on) (min-sec,fps,fps)
(-01:40)

SCS TVC SERVO PWR #1 - AC1/MNA
SCS TVC SERVO PWR #2 - OFF (verify)
TAPE RCDR - HBR/RCD/FWD/CMD RESET
EMS MODE - NORMAL
SII SEP 1t - on

58:36
(-01:24)

*If TLI Inhibit req'd: *
* before 59:42 - XLUNAR INJECT - SAFE*
* (recycle to TB5) *
* 59:42-00:12 - LV STAGE - SII/SIVB *
* (recycle to TB5) *
* after 00:12 - LV STAGE - SII/SIVB *
* (permanent inhibit)*

58:38
US LOS
(03:20:58)
59:42

SIVB ULLAGE Begins
OMNI ANT - C

SII SEP 1t - out (TIG - 18 sec)

DATE 11/14/72

DATE

DATE

L
2-30

59:52 SIVB FUEL LEAD
59:55 SIVB ULLAGE discontinues
Insure FDAI #1 PITCH = 6°
*If LV GUID - CMC: *
* FDAI #1 PITCH = 0° *

59:59 LV ENG 1 1t - on

00:00 SIVB IGNITION (____:____:____) GETI
00:02 LV ENG 1 1t - out
00:10 06 95 TFC, VG, VI (min-sec,fps,fps)

MONITOR THRUST & ATTITUDE
MONITOR LV TANK PRESS
*If LV GUID - CMC: *
* Fly PITCH = 0° *
* YAW = ____ (0°) *

$+45^\circ/\text{P,Y}$
 $+10^\circ/\text{sec P,Y}$
 $+20^\circ/\text{sec R}$

01:32 PU SHIFT
ACN AOS V16 N62E OMNI ANT - D
(03:26:31) KEY RLSE before ECO
05:46 SIVB ECO (1t on) (BEGIN TB7)

*If no ECO at TFC = 0 + 1 sec *
* or updated BT + 1 sec *
* or EMS = -150 fps (CMC failed): *
* THC - CCW & NEUTRAL in 1 sec *

Key VERB (freeze display)

Record TFC _____
VG _____
VI _____
 Δ VC _____

05:56 LV ENG 1 1t - out (TB 7 + 10 sec)

KEY RLSE
F 16 95 TFC (Static), VG, VI (min-sec,fps,fps)

08:17 SIVB MNVR TO ORB RT (HDS DN) ($.3^\circ/\text{sec}$)

DATE 11/14/72

L
3-1

NORMAL SC/BOOSTER SEPARATIONS

1 PRE CSM SEPARATION

DIRECT 02 vlv - OPEN until
CAB PRESS = 5.7, then close
cb DOCK PROBE (2) - close (verify)
COAS PWR - on
ALIGN GDC
SIVB MNVR (: :)
SEP (: :)
*If LV GUID - CMC: *
* Mnvr to SEP ATT *
* Do not reload DAP*
Load RCS DAP
R1=11103, R2=01111
V46E
Load N17 (SEP) & N22 (EXTRACTION)
V63E (Monitor SIVB Mnvr) (TB7 + 15 min)
*If error needles not nulled: *
* V60E (SIVB +1.8°db) *
* V16 N20E *
* R22 = 300° - R20 *
* P22 = P20 + 180° *
* Y22 = 360° - Y20 *
* R P Y *
*N20 _____ *
* _____ *
*N22 _____ *
* _____ *
*Load new Docking Attitude *

2 CSM SEPARATION PREP

DOCK PROBE EXTD/REL - RETRACT (verify)
RCS TRNFR - SM (verify)
SM RCS PRPLNT tb (8) - gray (verify)
AUTO RCS SELECT (16) - MNA/MNB
Perform EMS NULL BIAS CHECK, pg G/2-5
Set ΔVC to -100.0
EMS FUNC - ΔV
FDAI SCALE - 5/1
MAN ATT (3) - RATE CMD
LIMIT CYCLE - OFF (verify)
ATT DB - MIN
RATE - LOW

DATE 11/14/72

NORM SC/BOOSTER SEP

NORM SC/BOOSTER SEP

L
3-2

TRANS CONT PWR - on (up) (verify)
ROT CONT PWR NORMAL (2) - AC/DC (verify)
ROT CONT PWR DIRECT (2) - MNA/MNB (verify)
ATT SET θ - $R=0^\circ$, $P=180^\circ$, $Y=0^\circ$

Set up TV

Mount TV in R.H. rendezvous window
S BD AUX TV - TV
TV monitor power sw - ON
Adjust monitor for proper picture
Adjust lens aperture (f22), zoom and focus controls
S BD AUX TV - off (center)

CMC MODE - FREE (verify)
SC CONT - CMC
BMAG MODE (3) - RATE 2 (verify)
cb RCS LOGIC (2) - open
TVC SERVO PWR #1 - AC1/MNA
Set DET - 59:30
FC REAC vlv - LATCH

3 CSM SEPARATION

V49E F 06 22 (EXTRACT ATT)
THC - ARMED
RHC #2 - ARMED
cb SECS LOGIC (2) - closed (verify)
cb SECS ARM (2) - closed (verify)
SECS LOGIC (2) - on (up)(verify)
RCS CMD - ON
TAPE RCDR - HBR/RCD/FWD/CMD RESET
SECS PYRO ARM (2) - ARM

*If LV GUID - CMC: *
* Insure rates nulled and *
* yaw drifting towards 0° *
* Load DAP 11103, 01111 *
* V46E, V60E, V63E *

GDC ALIGN
EMS FUNC - ΔV (verify)
EMS MODE - NORMAL
V62E

59:30 Start DET

DATE 9/4/72

DATE 9/4/72

L
4-7

Record VI _____ (fps)
H DOT _____ (fps)
H PAD _____ (.1nm)
KEY RLSE

Record HA _____ (.1nm)
HP _____ (.1nm)
TFF _____ (min-sec)
PRO

V37E 00E
When CMC ACTY 1t out:

V66E
V45E

Load DAP, V48: R1=11102, R2=01111

V46E

V83E (check θ)

PRO

CSM WT _____

P TRIM _____

Y TRIM _____

LANDING PHASE

US LOS
(00:15:44)

Go to INSERTION CHECKLIST pg L/2-11

L
4-8

LANDING PHASE (30K, DESCENDING)

30K' ELS LOGIC - on (up)
ELS - AUTO

24K' Twr jett (auto)
*TWR JETT (2) - on (up) *
Apex cover jett (auto)
APEX COVER JETT PB - PUSH
(wait 2 sec)

LANDING PHASE

46 sec

Drogues deployed (auto)
DROGUE DPLY PB - PUSH

*If Both Drogues Fail: *
* ELS - MAN *

* STABILIZE CM (DIRECT RCS) *

* 5K' MAIN DPLY PB - PUSH *

* ELS - AUTO *

23.5K' Cabin Pressure increasing
*If not increasing by 17K': *
* CABIN PRESS REL vlv (RH) - DUMP*

CM RCS PRPLNT (2) - OFF

10K' Main parachutes deployed
MAIN DEPLOY PB - PUSH

VHF ANT - RECY
VHF AM A - SIMPLEX
VHF BCN - ON

If No Comm and abort occurred between
* 1:01 & 2:00 min or if land impact *
* expected: *
* Perform CM RCS Dump, pg L/4-9 *

DATE 11/14/72

L
4-9

- CABIN PRESS REL vlv (RH) - DUMP
STRUT LOCKS (4) - UNLOCK
(275) cb FLT & PL BAT BUS A,B,&BAT C (3) - close
cb FLT & PL MNA & B (2) - open
(5) cb BAT RLY BUS (2) - open
cb RAD HTRS OVLD (2) - open
(8) cb SPS P&Y (4) - open

ELS - AUTO (verify)
ELS LOGIC - on (up) (verify)
FLOOD Lts - POST LDG

800' CAB PRESS REL vlv (2) - CLOSE (latch off)
DIRECT O2 vlv - OPEN (CCW)
MN BUS TIE (2) - OFF

Go to POSTLANDING PROCEDURES, pg L/9-2

DATE 11/14/72

CM RCS DUMP

CABIN PRESS REL vlv (2) - CLOSE
CM RCS LOGIC - on (up)
If main or pyro bus lost:
* Use RHC's for burn, *
* not DUMP sw *
CM PRPLNT - DUMP (burn audible)
MONITOR CM RCS 1&2 for He press decrease
If no burn or press decrease:
* Use both RHC's *
* DO NOT FIRE PITCH JETS *
CM PRPLNT - PURGE
*CM RCS He DUMP PB - PUSH *
RHC (2) - 30 secs, NO PITCH

PRE-TLI ABORT
FROM ORBIT

EARTH/POST LANDING

L
9-1

90K' (RRT:) STEAM PRESS - pegged at ~ 90K (00:00) Start Watch
50K' (:) CABIN PRESS REL vlv (2) - BOOST/ENTRY (00:52)
SECS PYRO ARM (2) - ARM (verify)
Check Altimeter

40K' (:) *If CM unstable: * (01:06)
* RCS CMD - OFF *
* 40K' APEX COVER JETT PB-PUSH*
* (wait 2 sec) *
* DROGUE DEPLOY PB - PUSH *

30K' ELS LOGIC - on (up) (01:24)
ELS - AUTO

Start DAC

24K' (:) RCS disable (auto) (01:37)
RCS CMD - OFF

Apex cover jett (auto)
APEX COVER JETT PB - PUSH
(wait 2 sec)
Drogue parachutes deployed (auto)
DROGUE DEPLOY PB - PUSH

*If Both Drogues Fail: *
* ELS - MAN *
* Stabilize CM (DIRECT RCS)*
* 5K' MAIN DPLY PB - PUSH *
* ELS - AUTO *

23.5K' Cabin Pressure increasing
*If not increasing by 17K': *
* CABIN PRESS REL vlv (RH) - DUMP*

CM RCS PRPLNT (2) - OFF

10K' (:) Main chutes deployed (Drogues +46 sec) (02:25)
(Cab Press MAIN DEPLOY PB - PUSH
= 10 psia)

DATE 9/4/72

EARTH/POST LANDING

L
9-2

SURGE TK 02 vlv - OFF (if unsuited)
REPRESS PKG vlv - OFF (if unsuited)

VHF ANT - RECY
VHF AM A - SIMPLEX
VHF BCN - ON
CABIN PRESS REL vlv (RH) - DUMP
Stow DAC

STRUT LOCKS (4) - UNLOCK

If night landing:

- cb FLOAT BAG #3, FLT/PL (1 cb) - close
- PL BCN LT - LOW
- (275) cb FLT & PL BAT BUS A,B,&BAT C (3) - close
- cb FLT & PL MNA & B (2) - open
- (5) cb BAT RLY BUS (2) - open
- cb RAD HTRS OVLD (2) - open (verify)
- (8) cb SPS P&Y (4) - open (verify)

ELS - AUTO (verify)
ELS LOGIC - on (up) (verify)
FLOOD Lts - POST LDG

- 800' CAB PRESS RELF vlv (2) - CLOSE (latch off)
- DIRECT 02 vlv - OPEN (CCW) (if suited)
- MN BUS TIE (2) - OFF

POSTLANDING

STABILIZATION, VENTILATION, COMMUNICATIONS

- 1 Stabilization after landing
- (229) cb MAIN REL PYRO (2) - close
- MAIN RELEASE - on (up)
- SECS PYRO ARM (2) - SAFE
- SECS LOGIC (2) - OFF

If no contact with recovery forces:

- * VHF AM A&B - off (ctr) *
- * VHF AM RCV ONLY - A *

*If B SIMPLEX or A DUPLEX req'd *

- * Turn BCN off during Comm *

EARTH/POST LANDING

NASA — MSC

DATE 11/14/72