JSC-09141

ASTP

FINAL

REVISION A

PCN-1

NOTE: This is a PAGE CHANGE NOTICE to be incorporated into the previous edition. DISCARD ONLY the changed out pages.

LAUNCH CHECKLIST

PREPARED BY
PROCEDURES BRANCH
CREW TRAINING & PROCEDURES DIVISION

National Aeronautics and Space Administration

LYNDON B. JOHNSON SPACE CENTER

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ASTP LAUNCH CHECKLIST

JUNE 20, 1975

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This document is under the configuration control of the Crew Procedures Control Board (CPCB). All proposed changes should be submitted to the ASTP Flight Data Manager, T.W. Holloway, CG5, Bldg 4, Rm 225A, telephone 483-4471.

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CHANGE CONTROL RECORD

APOLLO/SOYUZ TEST PROJECT LAUNCH CHECKLIST

CONTROL NO.	FDF EDITION INCORPORATED		DISAPPROVED OR OTHER DISPOSITION
	TITLE	DATE	
001	REFERENCE	2/5/75	
002	REFERENCE	2/5/75	
003	REFERENCE	2/5/75	
004	REFERENCE	2/5/75	
005	REFERENCE	2/5/75	
006	REFERENCE	2/5/75	
007	REFERENCE	2/5/75	
008	REFERENCE	2/5/75	
009	REFERENCE	2/5/75	
010	REFERENCE	2/5/75	
011	REFERENCE	2/5/75	
012	REFERENCE	2/5/75	
013	REFERENCE	2/5/75	
014	REFERENCE	2/5/75	
015	REFERENCE	2/5/75	
016	REFERENCE	2/5/75	
017	REFERENCE	2/5/75	
018	REFERENCE	2/5/75	
019	REFERENCE	2/5/75	

CHANGE CONTROL RECORD

APOLLO/SOYUZ TEST PROJECT LAUNCH CHECKLIST

CONTROL NO.	FDF EDITION INCORPORATED		DISAPPROVED OR OTHER DISPOSITION
	TITLE	DATE	
020	REFERENCE	2/5/75	
021	REFERENCE	2/5/75	
022	REFERENCE	2/5/75	
023			DISAPPROVED
024			DISAPPROVED
025	REVISION A	3/26/75	
026	REVISION A	3/26/75	
027	REVISION A	3/26/75	
028	REVISION A	3/26/75	
029	REVISION A	3/26/75	
030	REVISION A	3/26/75	
031	FINAL	5/7/75	
032			DISAPPROVED
033	FINAL	5/7/75	
034	FINAL	5/7/75	
035	FINAL	5/7/75	
036	FINAL	5/7/75	
037	FINAL	5/7/75	
038	FINAL	5/7/75	

CHANGE CONTROL RECORD

APOLLO/SOYUZ TEST PROJECT LAUNCH CHECKLIST

CONTROL NO.	FDF EDITION INCORPORATED		DISAPPROVED OR OTHER DISPOSITION
	TITLE	DATE	
039	FINAL	5/7/75	
040	FINAL	5/7/75	
041	FINAL	5/7/75	
042	FINAL	5/7/75	
043	FINAL	5/7/75	
044	FINAL	5/7/75	
045	FINAL	5/7/75	
046	FINAL	5/7/75	
047	FINAL	5/7/75	
048	FINAL	5/7/75	
049	FINAL	5/7/75	
050	REVISION A	6/6/75	
051	REVISION A	6/6/75	
052	REVISION A	6/6/75	
053	REVISION A	6/6/75	
054	REVISION A	6/6/75	
055	REVISION A	6/6/75	
056	REVISION A	6/6/75	
057	REVISION A	6/6/75	

CHANGE CONTROL RECORD

APOLLO/SOYUZ TEST PROJECT LAUNCH CHECKLIST

CONTROL NO.	FDF EDITION INCORPORATED		DISAPPROVED OR OTHER DISPOSITION
	TITLE	DATE	
058	REVISION A	6/6/75	
059	REVISION A	6/6/75	
060	REVISION A	6/6/75	
061	REVISION A	6/6/75	
062	REVISION A	6/6/75	
063	REVISION A	6/6/75	
064	REVISION A	6/6/75	
065	REVISION A	6/6/75	
066	REVISION A	6/6/75	
067	PCN-1	6/20/75	
068	PCN-1	6/20/75	
069	PCN-1	6/20/75	
070	PCN-1	6/20/75	
071	PCN-1	6/20/75	
072	PCN-1	6/20/75	
073	PCN-1	6/20/75	
074	PCN-2 (P+D)	7/8/75	
075	PCN-2 (P+D)	7/8/75	

ASTP LAUNCH CHECKLIST

LIST OF EFFECTIVE PAGES

BASIC 10/8/74
REFERENCE 2/5/75
REVISION A 3/26/75
FINAL 5/7/75
REVISION A 6/6/75
PCN-1 6/20/75
PCN-2 7/8/75

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iii	5/7/75	3-4	5/7/75
1-1	5/7/75	3-5	6/6/75
1-2	5/7/75	3-6	5/7/75
1-3	5/7/75	3-7	6/6/75
1-4	5/7/75	3-8	5/7/75
1-5	5/7/75	*4-1	6/20/75
1-6	6/6/75	4-2	6/6/75
1-7	6/6/75	4-3	6/6/75
1-8	5/7/75	4-4	6/6/75
1-9	5/7/75	*4-5	6/20/75
1-10	5/7/75	*4-6	6/20/75
1-11	6/6/75	4-7	6/6/75
1-12	5/7/75	*4-8	6/20/75
1-13	5/7/75	5-1	5/7/75
1-14	5/7/75	5-2	6/6/75
1-15	6/6/75	5-3	5/7/75
1-16	5/7/75	5-4	5/7/75
1-17	~~5/7/75~~ 7-8-75	5-5	5/7/75
2-1	5/7/75	5-6	5/7/75
2-2	6/6/75	5-7	5/7/75
*2-3	6/20/75	5-8	5/7/75
*2-4	6/20/75	5-9	5/7/75
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2-6	6/6/75	5-11	6/6/75
*2-7	6/20/75	5-12	5/7/75
2-8	5/7/75	*5-13	6/20/75
2-9	~~5/7/75~~ 7-8-75	*5-14	6/20/75
2-10	5/7/75	5-15	5/7/75
*2-11	6/20/75	5-16	5/7/75
2-12	6/6/75	5-17	5/7/75
*2-13	6/20/75	5-18	5/7/75
*2-14	6/20/75	5-19	5/7/75
3-1	5/7/75	5-20	5/7/75
		EMER/4-1	(SYS C/L)
		EMER/4-2	(SYS C/L)

* current change

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LIFTOFF CONFIGURATION

PANEL 1

EMS FUNC - ΔV
EMS MODE - STBY
GTA - off (down)
EMS GTA COVER - Secure
CMC ATT - IMU
FDAI SCALE - 5/5
FDAI SEL - 1/2
FDAI SOURCE - CMC
ATT SET - GDC
MAN ATT ROLL - RATE CMD
MAN ATT PITCH - ACCEL CMD
MAN ATT YAW - RATE CMD
LIM CYCLE - OFF
ATT DBD - MIN
RATE - HIGH
TRANS CONTR PWR - on (up)
RHC PWR NORM (2) - AC/DC
RHC PWR DIR (2) - MNA/MNB
SC CONT - SCS
CMC MODE - FREE
BMAG MODE ROLL - RATE 1
BMAG MODE PITCH - RATE 1
BMAG MODE YAW - RATE 1
SPS THRUST - NORMAL (locked)
ΔV THRUST (2) - OFF (guarded)
SCS TVC PITCH - AUTO
SCS TVC YAW - AUTO
SPS GMBL MOT PITCH (2) - OFF
SPS GMBL MOT YAW (2) - OFF
ATVC GAIN - LO
ELS LOGIC - OFF (guarded)
ELS AUTO - MAN
CM RCS LOGIC - on (up)
CM PRPLNT DUMP - OFF (guarded)
CM PRPLNT PURG - off (down) (guarded)
IMU CAGE - off (down) (guarded)

BACK

COLOR_____

LIFTOFF CONFIGURATION

L
1-2

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EMS ROLL - OFF
.05G sw - OFF
Pc IND sw - Pc
LV/SPS IND sw - SIVB
TVC GMBL DR PITCH - AUTO
TVC GMBL DR YAW - AUTO
EVNT TMR RSET - up (ctr)
EVNT TMR STRT - ctr
EVNT TMR MIN - ctr
EVNT TMR SEC - ctr

PANEL 2

PL VENT vlv - push (lock)
DOCK PROBE EXTD/REL - OFF (guarded)
DOCK PROBE EXTD/REL (2) tb - gray
DOCK PROBE RETR PRIM - OFF
DOCK PROBE RETR SEC - OFF
GUIDE RING (2) - off (ctr) (RETR*)
STRUCT LATCH (2) - off (ctr) (OPEN*) (guarded)
CAPTURE LATCH (2) - off (down)
BACKUP PASSIVE (2) - off (ctr) (RESET*) (guarded)
UP TLM CM - BLOCK
CM RCS PRESS - off (down) (guarded)
SM RCS IND sw - He TK TEMP
SM RCS QUAD He (4) - ctr (OPEN*)
SM RCS QUAD He (4) tb - gray
SM RCS ENG PKG HTRS (4) - OFF
SM RCS PRPLNT (4) - ctr (OPEN*)
SM RCS PRIM PRPLNT (4) tb - gray
SM RCS SEC PRPLNT (4) tb - gray
RCS CMD - ctr (OFF*)
RCS TRNFR - ctr (SM*)
CM RCS PRPLNT (2) - ctr (on,up*)
CM RCS PRPLNT tb (2) - gray
SM RCS SEC FUEL PRESS (4) - ctr (CLOSE*)
EDS AUTO - on (up)
CSM/DM FNL SEP (2) - off (down) (guarded)
CM/SM SEP (2) - off (down) (guarded)
SIVB/DM SEP - off (down) (guarded)

PRPLNT DUMP - AUTO
2 ENG OUT - AUTO
LV RATES - AUTO
TWR JETT (2) - AUTO (guarded)
LV GUID - IU
MAIN REL - off (down) (guarded)
MSN TMR HR, MIN, SEC - ctr
C/W NORM - BOOST
C/W CSM - CSM
C/W PWR - 1
C/W LAMP TEST - ctr
MSN TIMER - START
RCS IND sel - SM D
CAB FANS - OFF
PRESS CRYO IND - SRG
H2 HTRS (2) - AUTO
O2 HTRS (2) - AUTO
H2 FANS (2) - OFF
ECS IND sel - PRIM
RAD FLOW CONT AUTO - AUTO
ECS RAD tb - gray
RAD FLOW CONT PWR - off (ctr)
RAD MAN SEL - RAD 1
RAD PRIM HTR - off (ctr)
RAD SEC HTR - OFF
POT H2O HTR - OFF
SUIT H2O ACCUM AUTO - 1
SUIT H2O ACCUM ON - ctr
S57 - off (ctr)
SEC COOL EVAP - off (ctr) (RSET*)
SEC COOL PUMP - AC2
H2O QTY IND sw - POT
GLY EVAP IN TEMP - MAN
GLY EVAP STM AUTO - MAN
GLY EVAP STM INCR - ctr (vlv partially open)
GLY EVAP H2O FLOW - off (ctr)
CABIN TEMP - MAN
SM RCS PSM PRPLNT (4) - ctr (CLOSE*)
SM RCS PSM PRPLNT (4) tb - bp
SM RCS PSM He - ctr (CLOSE*)
SM RCS PSM He tb - bp
SM RCS PSM MANF ISOL - ctr (OPEN*)
SM RCS PSM MANF ISOL tb - gray

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PANEL 3

VHF ANT - SM LEFT
SPS INJ VLV ind (4) - CLOSE
FC RAD (3) - off (ctr) (NORM*)
FC RAD (3) tb - gray
FC HTRS (3) - on (up)
FC IND sel - 1
SPS QTY TEST - ctr
OXID FLOW VLV INCR - NORM
OXID FLOW VLV PRIM - PRIM
PUG MODE - NORM
FC PURG (3) - OFF
FC 1 MNA - ctr (on,up*)
FC 1 MNA tb - gray
FC 2 MNA - ctr (on,up*)
FC 2 MNA tb - gray
FC 3 MNA - OFF
FC 3 MNA tb - bp
MNA RSET - ctr (RSET*)
SPS He vlv (2) - AUTO
SPS He vlv tb (2) - bp
SPS LINE HTRS - OFF
SPS PRESS IND sw - He
FC REACS (3) - ctr (on,up*)
FC REACS (3) tb - gray
FC 1 MNB - OFF
FC 1 MNB tb - bp
FC 2 MNB - OFF
FC 2 MNB tb - bp
FC 3 MNB - ctr (on,up*)
FC 3 MNB tb - gray
MNB RSET - ctr (RSET*)
DC IND sel - MNA
BAT CHG - OFF
S-BD XPNDR - PRIM
S-BD PWR AMPL PRIM - PRIM
S-BD PWR AMPL HIGH - HIGH
PWR AMPL tb - gray

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S-BD MODE VOICE - VOICE
S-BD MODE PCM - PCM
S-BD MODE RNG - RNG
S-BD AUX TAPE - ctr
S-BD AUX TV - TV
UP TLM DATA - DATA
UP TLM CMD - NORM
S-BD ANT OMNI - C
S-BD ANT - B
VHF AM SQUELCH A tw - noise +1
VHF AM A - off (ctr)
VHF AM B - DUPLEX
VHF AM RCV - off (ctr)
VHF BCN - OFF
VHF RNG - OFF
S-BD SQLCH - ENBL
FC REAC vlv - LATCH
H2 PURG LINE HTR - OFF
VHF AM SQLCH B tw - noise +1
TAPE RCDR PCM - PCM/ANLG
TAPE RCDR RCD - RCD
TAPE RCDR FWD - FWD
TAPE MOTION tb - gray
SCE PWR - NORM
PMP PWR - NORM
PCM BIT RATE - HIGH
AC INV 1 - MNA
AC INV 2 - MNB
AC INV 3 - OFF
   INV 1 AC1 - on (up)
   INV 2 AC1 - OFF
   INV 3 AC1 - OFF
AC1 RSET - ctr (RSET*)
   INV 1 AC2 - OFF
   INV 2 AC2 - on (up)
   INV 3 AC2 - OFF
AC2 RSET - ctr (RSET*)
AC IND sel - BUS 2 ϕC

PANEL 4

SPS GAUGING - OFF
TELCOM GRP 1 - AC1
TELCOM GRP 2 - AC2
GLY PUMPS - 1 AC1
SUIT COMPR 1 - AC1
SUIT COMPR 2 - OFF
cb Panel 4 - all closed

PANEL 5

FC 1 PUMPS - AC1
FC 2 PUMPS - AC2
FC 3 PUMPS - AC2
G/N PWR - AC1
MN BUS TIE (2) - on (up)
BAT CHGR - AC1
NONESS BUS - OFF
INTGL LTS - as desired
FLOOD LTS - BRT
FLOOD DIM - 1
FLOOD FIXED - on (up)
cb Panel 5 - all closed except:
  cb 74 - open
  cb 66 - open
  cb RAD HTRS OVLD (2) - open
  cb SCI EQUIP SEB (2) noness bus - open
  cb SCI EQUIP HATCH noness bus - open
  cb ECS PRESS XDUCR 2 MNA - open
  cb WASTE DUMP HTRS (2) - open
  cb AC UTIL AC2 (3) - open

PANEL 6

MODE - INTERCOM/PTT
PWR - AUDIO/TONE
VHF FM PAD COMM - OFF
S BD - T/R
VHF AM - T/R
tw settings - as req
CM/RMTE/INTERCOM - T/R
AUDIO CONT - NORM
SUIT PWR - on (up)

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PANEL 7

EDS PWR - on (up)
TVC SERVO PWR #1 - AC1/MNA
TVC SERVO PWR #2 - AC2/MNB
FDAI/GPI PWR - BOTH
LOGIC 2/3 PWR - on (up)
ELEC PWR - GDC/ECA
SIG CONDR/DR BIAS 1 - AC1
SIG CONDR/DR BIAS 2 - AC2
BMAG PWR (2) - ON
DIRECT O2 vlv - OPEN (CCW) (>2 in. H20 on SUIT/CAB ΔP ind)
(O2 flow - 0.7-0.9 lb/hr)

PANEL 8

cb Panel 8 - all closed except:
cb CM RCS HTRS (2) - open
cb SPS GAUGING (4) - open
cb FLOAT BAG (3) - open
AUTO RCS SEL A/C ROLL A1 - OFF
AUTO RCS SEL A/C ROLL C1 - OFF
AUTO RCS SEL A/C ROLL A2 - OFF
AUTO RCS SEL A/C ROLL C2 - OFF
AUTO RCS SEL B/D ROLL B1 - MNA
AUTO RCS SEL B/D ROLL D1 - MNB
AUTO RCS SEL B/D ROLL B2 - MNA
AUTO RCS SEL B/D ROLL D2 - MNB
AUTO RCS SEL PITCH A3 - MNB
AUTO RCS SEL PITCH C3 - MNA
AUTO RCS SEL PITCH A4 - MNA
AUTO RCS SEL PITCH C4 - MNB
AUTO RCS SEL YAW B3 - MNA
AUTO RCS SEL YAW D3 - MNB
AUTO RCS SEL YAW B4 - MNB
AUTO RCS SEL YAW D4 - MNA
NUMERICS LTS - as desired
FLOOD LTS - BRT
INTGL LTS - as desired
FLOOD DIM - 1
FLOOD FIXED - on (up)
FLOAT BAG (3) - VENT (locked)
SECS LOGIC (2) - on (up) (locked)
SECS PYRO ARM (2) - on (up) (locked)

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PANEL 9

MODE - INTERCOM/PTT
PWR - AUDIO/TONE
VHF FM PAD COMM - OFF
INTERCOM - T/R
S BD - T/R
VHF AM - T/R
tw settings - as req
AUDIO CONT - NORM
SUIT PWR - on (up)
VHF RNG - NORM

PANEL 10

MODE - INTERCOM/PTT
PWR - AUDIO/TONE
VHF FM PAD COMM - OFF
INTERCOM - T/R
S BD - T/R
VHF AM - T/R
tw settings - as req
SUIT PWR - on (up)
AUDIO CONT - NORM
PHONE/MIC CONNECT - OFF

PANEL 12

DM TUNL VENT vlv - DM/CM ΔP

PANEL 13

FDAI sw (2) - INRTL
EARTH/LUNAR - PWR OFF
ALT SET - 88
LIGHTING - OFF
MODE - HOLD/FAST
SLEW - ctr

PANEL 15

COAS PWR - OFF
UTIL PWR - OFF
PL BCN LT - off (ctr)
DYE MARKER - off (down)(guarded)
PL VENT - OFF

PANEL 16

S1 - off (ctr)
UTIL PWR - OFF
COAS PWR - OFF

PANEL 98

XMIT/ICOM - off (ctr)
POWER - OFF
VOL tw - as req
SPEAKER/HEADSET - HEADSET

PANEL 100

UTIL PWR - OFF
FLOOD DIM - 1
FLOOD FIXED - OFF
G/N OPT PWR - OFF
G/N IMU PWR - on (up)(guarded)
S3 - off (ctr)
NUMERICS LTS - as desired
FLOOD LTS - OFF (full dim or full BRT)
INTGL LTS - as desired

PANEL 101

SYS TEST (LH) - 5
SYS TEST (RH) - B
S6 - off (down)
CM RCS HTRS - OFF
WASTE H20 DUMP - HTR A
URINE DUMP - HTR A

PANEL 122

OPT ZERO - ZERO
OPT TELTRUN - SLAVE TO SXT
OPT COUPLING - DIR
OPT MODE - MAN
OPT SPEED - LO
COND LAMPS - ON
UP TLM - ACPT

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PANEL 163

SCI/UTIL PWR - OFF

PANEL 164

S1 - OFF (verified at panel closeout)

PANEL 165

EPE COOLING vlv - COOL (CW)

PANEL 181

TV STA SEL CM - UP TLM
TV STA SEL CM1 - UP TLM (ctr)
CM/DM CAMR PWR - on (up)
CM 1 TV STA PWR - ON
TV MONITOR PWR - OFF
TV AMPL - BYPASS
CM 2 TV STA PWR - OFF

PANEL 201

AC UTIL PWR - OFF

PANEL 225

cb Panel 225 - all closed except:
  cb ATSF SYSTEM (2) - open
  cb 15 - open

PANEL 226

cb Panel 226 - all closed except:
  cb 45 - open
  cb 43 - open
  cb 44 - open
  cb COAS/TUNL LTG MNB - open

PANEL 227

SCI PWR - OFF

PANEL 229

cb Panel 229 - all closed except:
cb MAIN REL PYRO (2)- open
cb O2 VAC-ION PUMPS (2) - open
cb PRO BUS TIE - open

PANEL 230

cb Panel 230 - all open
UV ABSORB PWR - OFF
UV ABSORB LAMPS - OFF
EXP COVERS ARM - SAFE
EXP COVERS TIE DOWN REL - off (down) (guarded)
X-RAY LV PWR - OFF
X-RAY PURGE - off (ctr)
HI GAIN ANT PITCH POS - 0 deg
HI GAIN ANT YAW POS - 180 deg
UV COVER - ctr (CLOSE*)
UV COVER tb - gray
He GLOW COVER - ctr (CLOSE*)
He GLOW COVER tb - gray
EUV COVER - ctr (CLOSE*)
EUV COVER tb - gray
X-RAY COVER - ctr (CLOSE*)
X-RAY COVER tb - gray
X-RAY HV PWR - off (ctr)
X-RAY HV PWR tb - gray
X-RAY BACKUP PURGE - ctr (guarded)
X-RAY BACKUP PURGE tb - gray
ATSF PWR AMPL - off (ctr)
ATSF XPNDR - off (ctr)
HI GAIN ANT PWR - OFF
HI GAIN ANT SERVO ELECT - PRIM
HI GAIN ANT BEAM - WIDE
HI GAIN ANT TRACK - AUTO
He GLOW ON - OFF
He GLOW He INHIB - off (ctr)
EUV TELESCOPE PWR - OFF
EUV TELESCOPE DET 1 - off (ctr)
OMNI SEL - MAN
TRDC - ON

UP TLM RELAY - UP TLM
PCM RELAY - ON
RELAY MODE CONT TV/DATA - UP TLM
RELAY MODE CONT TV - UP TLM
DATA PCM - UP TLM (ctr)
DATA REAL TIME - UP TLM
DOPPLER RCVR - OFF
ATSF PWR AMPL CONT - UP TLM
HGA SCAN - NORMAL
SQUELCH - OFF

PANEL 250

cb Panel 250 - all closed except:
  cb BAT BUS A TO PYRO BUS - open
  cb BAT BUS B TO PYRO BUS - open
  cb BAT C TO BAT BUS A - open
  cb BAT C TO BAT BUS B - open

PANEL 251

OVBD DRAIN vlv - OFF

PANEL 252

BAT VENT vlv - VENT
WASTE STOW vlv - VENT

PANEL 274

TUNL LTS - OFF
EXT RUN/EVA LTS - OFF
EXT RNDZ LTS - OFF
SM RCS QUAD HTRS (4) - OFF
cb Panel 274 - all closed except:
  cb DM FURNACE (3) - open
  cb UV/DOPPLER - open
  cb He GLOW - open
  cb EUV - open
  cb X-RAY - open
  cb DOCKING SYSTEM A (6) - open
  cb DM POWER (2) - open
  cb DOCKING SYSTEM B (6) - open

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PANEL 275

cb Panel 275 - all closed except:
- cb MNA BAT C - open
- cb MNB BAT C - open
- cb FLT/PL BAT BUS A - open
- cb FLT/PL BAT BUS B - open
- cb FLT/PL BAT C - open

PANEL 276

cb Panel 276 - all closed

PANEL 277

cb CSM/DM FNL SEP (2) - open

PANEL 278

cb Panel 278 - all closed except:
- cb UPRT SYS COMPR (2) - open

PANEL 300

RH SUIT FLOW vlv - FULL FLOW

PANEL 301

LH SUIT FLOW vlv - FULL FLOW

PANEL 302

CTR SUIT FLOW vlv - FULL FLOW

PANEL 303

PRIM CAB TEMP vlv - COLD (CW)
SEC CAB TEMP vlv - MAX COOL (CW)

PANEL 304

DRNK H2O SUPPLY vlv - OFF (CW)

DATE 5/7/75

PANEL 305

FOOD PREP COLD H2O vlv - rel
FOOD PREP HOT H2O vlv - rel

PANEL 306

MSN TMR - START
EVNT TMR RSET - UP (ctr)
EVNT TMR STRT - ctr
EVNT TMR MIN - ctr
EVNT TMR SEC - ctr
MSN TMR HRS - ctr
MSN TMR MIN - ctr
MSN TMR SEC - ctr

PANEL 325

RH CAB PRESS RELF vlv - BOOST/ENTRY
LH CAB PRESS RELF vlv - BOOST/ENTRY
PRIM GLY TO RAD vlv - BYP (pull)

PANEL 326

REPRESS PKG vlv - ON
SM O2 SUP vlv - ON
SURGE TK O2 vlv - ON
GLY RSVR IN vlv - OPEN
GLY RSVR BYP vlv - CLOSE
GLY RSVR OUT vlv - OPEN

PANEL 350

CO2 CSTR DIVERT vlv - ctr

PANEL 351

MAIN REG vlv (2) - OPEN
H2O/GLY TK REG SEL IN - BOTH
H2O/GLY TK RELF SEL OUT - BOTH
EMER CAB PRESS sel - OFF
CAB REPRESS vlv - OFF (CCW)

DATE 6/6/75

PANEL 352

WASTE TK SERV vlv - CLOSE
PRESS RELF vlv - 2
POT TK IN vlv - as req'd at closeout
WASTE TK IN vlv - AUTO

PANEL 375

O2 SRG TK RELF vlv - OPEN (CW)

PANEL 376

PLVC - NORM

PANEL 377

GLY TO RAD SEC vlv - BYP

PANEL 378

PRIM GLY ACCUM vlv - OPEN (CCW)

PANEL 379

PRIM ACCUM FILL vlv - OFF

PANEL 380

DEMAND REG sel - BOTH
SUIT TEST vlv - OFF
SUIT RETURN vlv - CLOSE (push)

PANEL 382

SUIT FLOW RELF - OFF
GLY EVAP IN TEMP vlv - MIN (CCW) (push)
SUIT HT EXCH SEC GLY - FLOW
SEC EVAP H2O CONT - AUTO
PRIM EVAP H2O CONT - AUTO
H2O ACCUM vlv (2) - RMTE

DATE 5/7/75

PANEL 400

TLM PWR - ON
INTRLVR PWR - ON
VTR POWER - ON
HEAD WHEEL DRIVE MOT - ctr (OFF*)
TAPE MODE - ctr (OFF*)
TAPE DRIVE - ctr
TAPE HEAD - NORM
LAMP - STATUS

PANEL 600

EMER O2 - CLOSE

PANEL 601

REPRESS O2 - CLOSE (guarded)

PANEL 602

REPRESS O2 RELF - OPEN (CW)

FWD HATCH

PRESS EQUAL vlv - CLOSE
ACTR HNDL sel - stow/check locked

SIDE HATCH

CAB PRESS DUMP vlv - CLOSE (CW)
GEAR BOX sel - LATCH
ACTR HNDL sel - U (unlatch)
LOCK PIN REL KNOB - LOCK
LOCK PIN ind - flush
GN2 VLV HANDLE - push (outboard)
BPC JETT KNOB - toward BPC JETT

DATE ~~5/17/75~~ 7/8/75

ELECTROPORESIS TECHNOLOGY (MA011)

POWER - OFF
TIME SELECT - ~~60~~ 75
CURRENT SELECT - HI
TEMP SELECT - OFF
MODE SELECT - OFF

ELECTROPHORESIS (MA014)

EXPERIMENT - OFF
SEQUENCE START - off (down)
SEQUENCE RESET - off (down)
FREEZER - ON

MA060 PULSER

POWER - OFF

STRATOSPHERIC AEROSOL MEASUREMENT (SAM) (MA007)

SAM calibration sw - OFF

LIGHT FLASH POWER & LOGIC UNIT (MA106)

POWER - OFF
MODE SELECT - STANDBY
RED CREW/BLUE CREW - off (ctr)
DARK ADAPT LEVEL sw - 1
Verify Tape Cassette installed with Head engaged

BIOSTACK UNIT (MA107)

ON/OFF - OFF

* last momentary position before liftoff.

DATE 5/7/75

BOOST PREPARATION

-25:00 Change X STABLE MEMBER AZIMUTH, if necessary:

```
*V78E                          *
*F 06 29  X SM AZ (.01 deg)*
*V21E                          *
*Load new Azimuth +0__.__   *
*PRO                           *
*ALIGN GDC                     *
```

AUTO RCS A/C ROLL (4) - OFF (verify)
AUTO RCS B/D ROLL B1 & B2 - MNA
AUTO RCS B/D ROLL D1 & D2 - MNB
AUTO RCS PITCH A3 & C4 - MNB
AUTO RCS PITCH C3 & A4 - MNA
AUTO RCS YAW B3 & D4 - MNA
AUTO RCS YAW D3 & B4 - MNB

-15:00 CTE UPDATE VERIFICATION
DC IND sel - BAT C
DC VOLTS ind - 35-37.5 vdc
DC IND sel - MNA
FDAI-1 total att R=90+AZ, P=90, Y=0
FDAI SCALE - 5/5
RATE - HIGH
TRANS CONTR PWR - on(up) (verify)
RHC PWR DIRECT(2) - MNA/MNB
CMC MODE - FREE
BMAG MODE (3) - RATE 1
RHC #2 - ARMED

ASTRO LAUNCH OPERATIONS VOICE CHECK
DP S BD sw - OFF
AC VHF AM sw - OFF

VOICE CHECK WITH MCCH
DP S BD sw - T/R
AC VHF AM sw - T/R
SPS THRUST - NORMAL (locked)
ΔV THRUST (2) - OFF

BOOST PREPARATION

EDS AUTO - on(up)
2 ENG OUT - AUTO
LV RATES - AUTO
RCS CMD - OFF
TVC SERVO PWR #1 - AC1/MNA
TVC SERVO PWR #2 - AC2/MNB

-10:00 FC REAC vlv - LATCH

-04:10 L/V ENGINE lts (8) - on

-04:00 ASTRO LAUNCH OPERATIONS COMM CHECK

DSKY - Verify P02
V75 (Do not ENTR)
TAPE RCD FWD - FWD (tb-gray)

-2:15 PRIM GLY TO RAD - pull (bypass)

-1:15 MN BUS TIE (2) - on (up)
-1:00 PAD COMM (2) - OFF
VHF AM VOL tw - increase to above normal listening level
-00:45 GDC ALIGN pb - PUSH & HOLD
R=90+AZ, P=90, Y=0
FDAI 2 Total att - no motion
GDC ALIGN pb - release

L
2-3

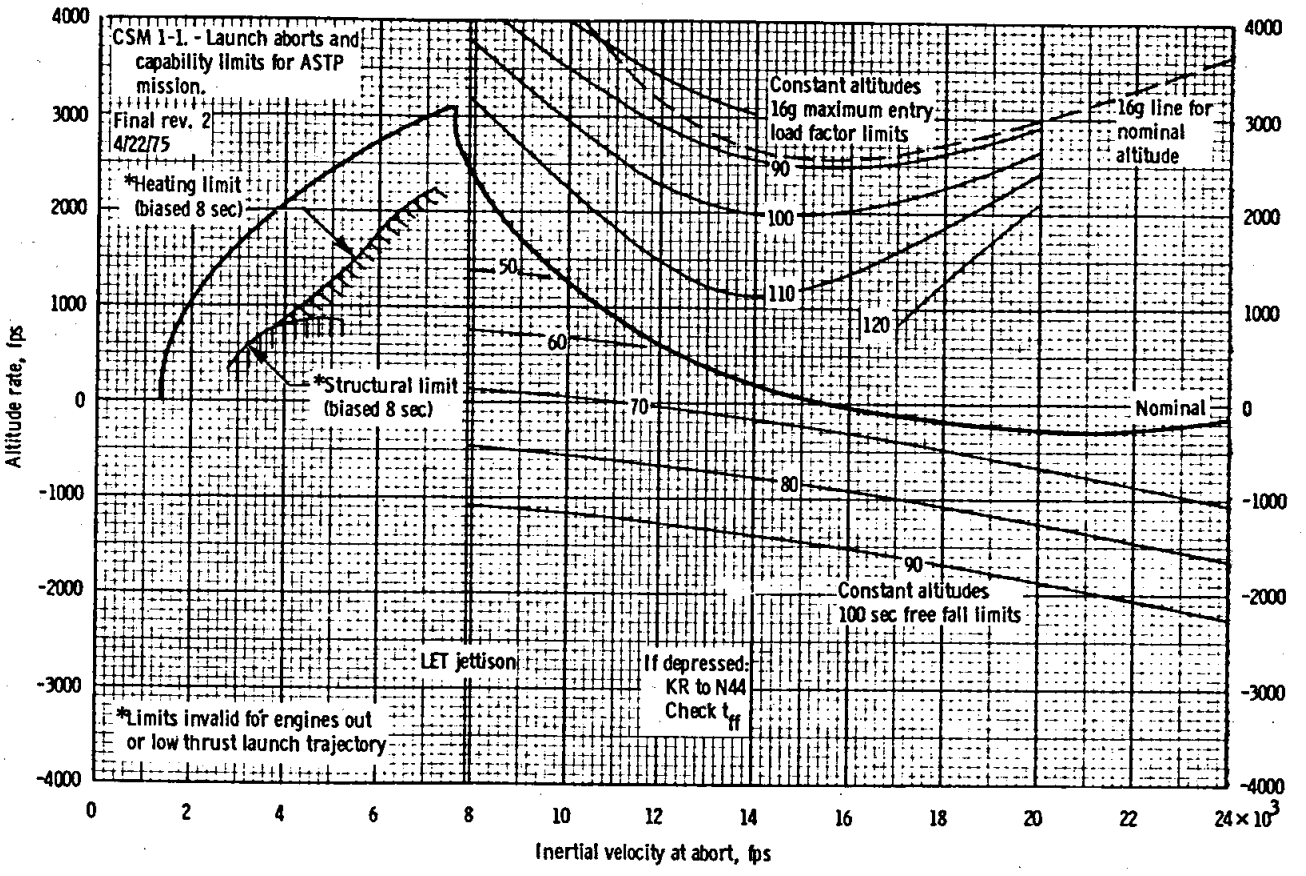
DATE 6/20/75

SATURN BOOST

FINAL O/T 5/13/75

DET	θ	VI	$\dot{H}$	H
0+00	90	1 340	0	.0
0+30	84	1 423	393	.9
1+00	66	1 973	1013	4.3
1+30	46	3 253	1738	11.0
2+00	31	5 571	2592	21.7
2+30	26	7 565	2826	36.0
3+00	29	8 000	2313	48.6
3+30	32	8 530	1942	59.1
4+00	28	9 159	1593	67.8
4+30	25	9 891	1263	74.8
5+00	22	10 730	951	80.3
5+30	18	11 679	664	84.3
6+00	15	12 749	404	86.9
6+30	11	13 955	177	88.3
7+00	8	15 318	-8	88.7
7+30	4	16 865	-141	88.4
8+00	1	18 519	-231	87.4
8+30	357	20 223	-288	86.1
9+00	354	22 184	-261	84.7
9+30	350	24 483	-125	83.7
9+43	350	25 629	-4	83.6

LAUNCH ABORT LIMITS

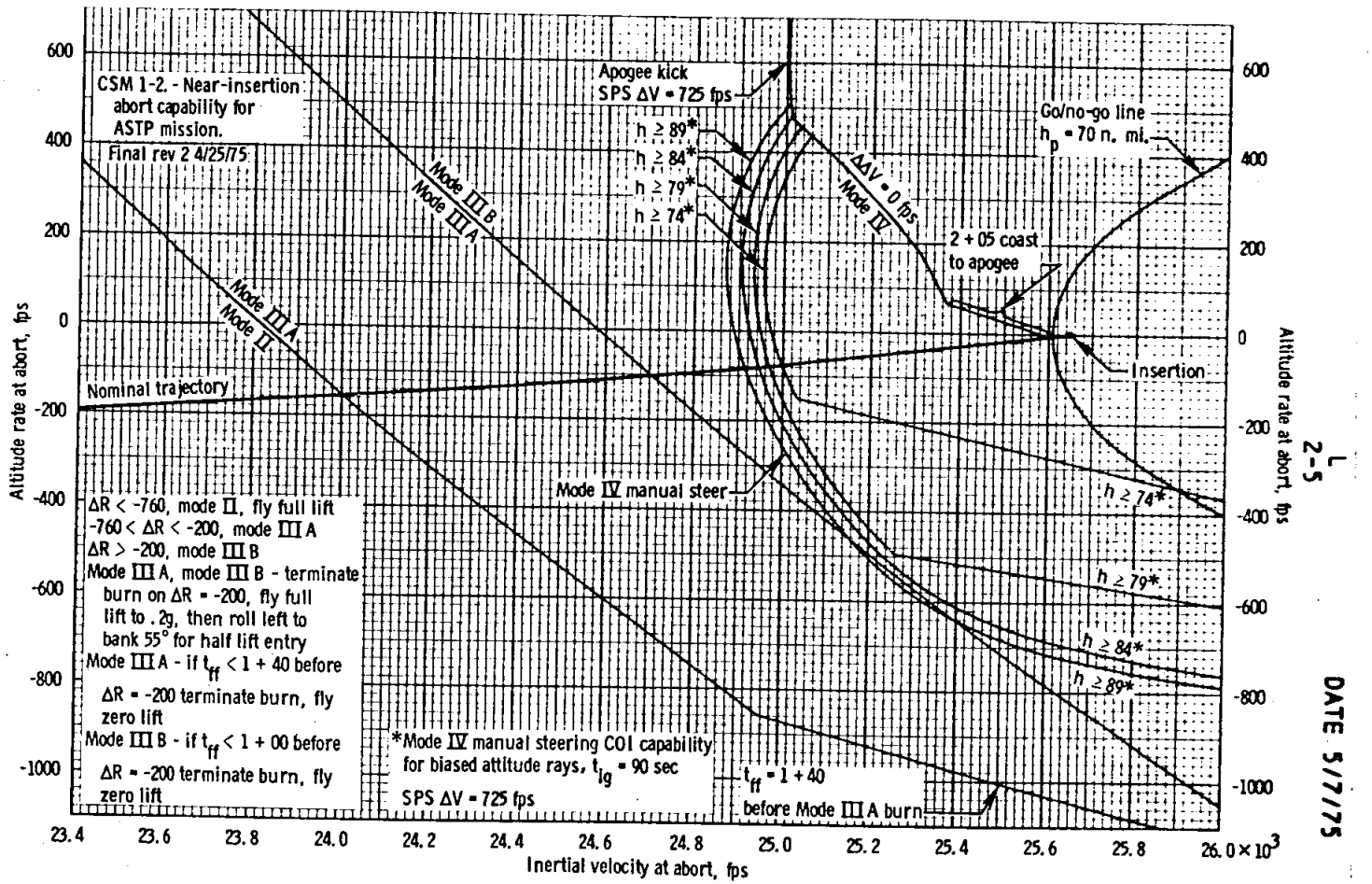


L
2-4

DATE 6/20/75

BACK

COLOR



L
2-5

DATE 5/7/75

NEAR INSERTION
ABORT LIMITS

COLOR_____

L
2-6

DATE 5/7/75

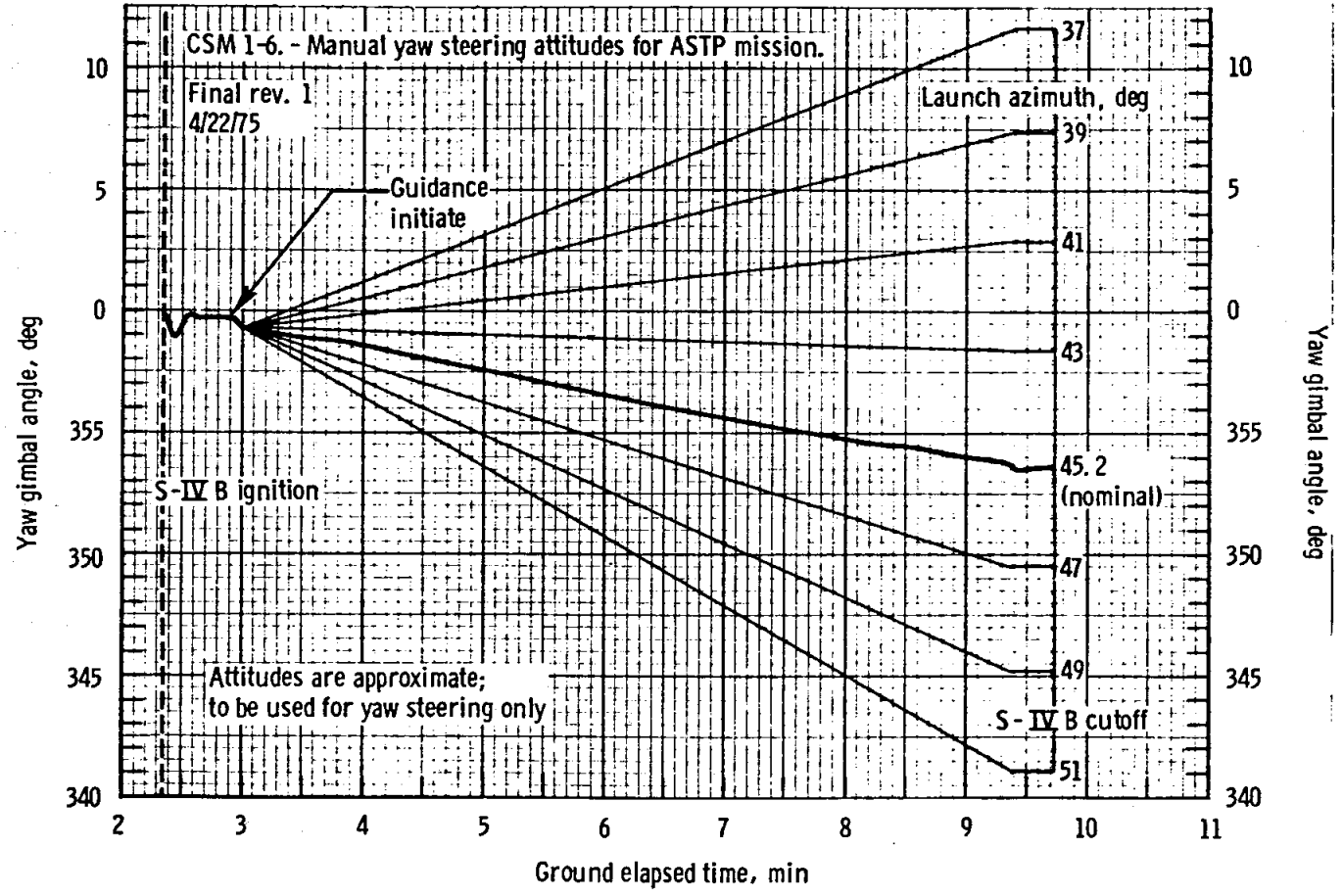
CSM 1-4.- Booster manual steering for ASTP mission.

Final
12/18/74

MANUAL STEERING CREW CHART		
SHUTDOWN ALTITUDE (H,nm)	HP/HA (nm)	INERTIAL VELOCITY (VI, fps)
70	70/90	25 720
72	72/90	25 710
74	74/90	25 700
76	76/90	25 690
78	78/90	25 680
80	80/90	25 670
82	82/90	25 660
84	84/90	25 650
86	86/90	25 640
88	88/90	25 620
90	90/90	25 610
92	90/92	25 600
94	90/94	25 590
96	90/96	25 580
98	90/98	25 570
100	90/100	25 560

NOTE: Assumes inserting at HDOT = 0.
S-IVB acceleration at cutoff ≈ 91 ft/sec^2.
CSM acceleration at SPS cutoff ≈ 26 ft/sec^2.

ALTITUDE VS VI



L
2-7

DATE 6/20/75

YAW STEERING ATTITUDES

BACK

COLOR_____

BOOST

L
2-8

DATE 5/7/75

BOOST

-00:03 Ignition CMD
-00:01 L/V ENGINES lts (8) - out
00:00 LIFTOFF lt - on
*After LIFTOFF verified: *
* If LIFTOFF lt off: - push *
* If NO AUTO ABORT lt on: - push*

00:00

Clock Start (auto) - report
MET Resets & counts up auto
P11 auto

±5deg/sec P&Y
±20deg/sec R

*If no P11: - Key ENTR *
* Start DET & reset MET*

06 62 VI,H DOT, H PAD (fps,fps,.1nm)
If LV GUID lt on: MODE IA
* LV GUID - CMC *

+00:10 Roll & Pitch Program - report
If both LOX TK PRESS >50 psia:
* Abort immediately *

CABIN RELIEVING ~14K(2.3 nm) - report
If no Press decrease ~25K(4.1 nm):
* CAB PRESS RELIEF vlv(RH)-DUMP *

+00:55 Roll complete

+01:01 MODE IB - report
PRPLNT DUMP - RCS CMD

01:01

+01:13 MAX Q
V82E, N62E

±5deg/sec P&Y
±20deg/sec R

+01:40 EDS AUTO - OFF - report
2 ENG OUT - OFF
LV RATES - OFF
If eng out, delay til +2:00 MODE IB

DATE ~~5/7/75~~ 7/8/75

+01:47 MODE IC - report

H=16.5 nm

±5deg/sec P&Y
±20deg/sec R

+02:10 CMC Boost Polynomial stops

+02:10

GO/NO GO for STAGING - report

+02:16 IECO - (lts 5,6,7,8 on)
(LIFTOFF,NO AUTO ABORT lts out)
+02:20 OECO - report (lts on)
+02:21 SIVB STAGING (lts out)
+02:22 SIVB Ign Command (lt on)
+02:26 SIVB 65% (lt out)

±10deg/sec P&Y
±20deg/sec R

MODE IC

+02:51 TWR JETT (2) - on (up) (TFF>1+20)
(OECO + 32 sec, nom & 1 eng out)
(OECO + 34 sec, 2 eng out)
NO TWR JETT, pg L/5-2
Twr Jett - report

TWR JETT

V46E, V46E, N62E
MAN ATT PITCH - RATE CMD
GLY EVAP STEAM PRESS - AUTO
GLY EVAP H2O FLOW - AUTO

MODE II

+02:55 Guidance Initiate - report
+04:00 Report Status
+05:00 Report Status
+06:00 Report Status
+06:15 S BD ANT - A/C
SM RCS SEC FUEL PRESS (4) - OPEN
+07:00 Report Status
GMBL MOT (4) - START - ON (DP Confirm)
Check GPI:
LV/SPS IND - GPI (Momentarily)
PITCH = +0.~~7~~ 0.5 deg, YAW = -~~0.6~~ 0.3 deg

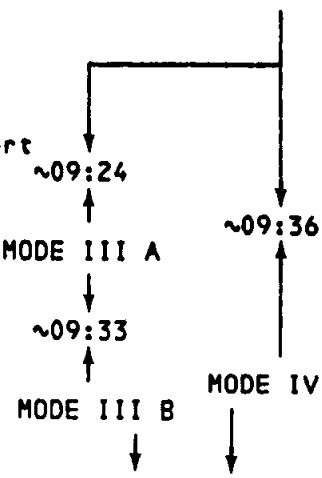
±10deg/sec P&Y
±20deg/sec R

+07:47 PU SHIFT

DATE 5/7/75

+08:00 Report Status
+09:00 GO/NO GO FOR ORBIT - report

+09:36 Mode IV - report
(VI = 24,950)
(H DOT = -86)
(H = 83.7)



+09:43 SECO (lt on) - report

*If LV GUID - CMC:
* THC - CCW
* & neutral in 1 sec*

*If no SECO (at VI):
* THC - CCW
* & neutral in 1 sec*

Log VI _____ (fps)
H DOT _____ (fps)
H PAD _____ (.1nm)

KEY RLSE

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

PRO

V37E 00E

Verify LOX TK PRESS decreasing to ~32 psia
and FUEL TK PRESS decreasing
*If ΔP >36 psid (OXID > FUEL) or *
*If ΔP >26 psid (FUEL > OXID) or *
*If LOX or FUEL TK PRESS >50 psia: *
* EMERGENCY CSM/LV SEP, pg EMER/4-3*

DATE 6/20/75

POST INSERTION CONFIGURATION

GMBL MTRS (4) - OFF (DP confirm)
TVC SERVO PWR (2) - OFF
SECS PYRO ARM (2) - SAFE
SECS LOGIC (2) - OFF
cb SECS ARM (2) - open
cb DIRECT ULLAGE (2) - open
cb ELS/CM-SM SEP (2) - open
cb FLT/PL VENT - open
MN BUS TIE (2) - OFF
EMS - OFF/STBY
FDAI SCALE - 5/1
THC PWR - OFF
RHC PWR NORMAL #1 - OFF
RHC PWR DIRECT (2) - OFF
BMAG MODE (3) - RATE 2
CM RCS LOGIC - OFF
RHC's #1 & #2 - LOCKED
(325) CAB PRESS REL vlv (2) - NORMAL/LATCHED
(326) REPRESS PKG vlv - OFF
SM RCS ENG PKG HTRS (4) - 1
C/W - NORMAL
FC REACS vlv - NORM

BDA TM LOS
(0:11:26) S-BD AUX TV - OFF

NFL VOICE LOS
(0:16:09)

BPC JETT KNOB - 180 deg from BPC JETT
GN2 vlv HNDL - VENT (pull)
HATCH GEAR BOX - LATCH (verify)
ACTR HNDL SEL - LATCH
Verify cabin press >4.7 psia
and O2 flow not pegged hi
(351) EMERG CABIN PRESS vlv - BOTH
(380) SUIT CKT RET vlv - open (pull)

Remove helmets & gloves
Stow helmets in helmet bags (U2)
Stow gloves in accessory bags (inside helmet bags)
Stow comfort gloves in PGA zipper pocket
Stow accessory bags inside helmets
Snap helmet bags to wall

OPTICS DUST COVER JETTISON

Install Optics eyepieces
G/N PWR OPTICS - on (up)
OPT ZERO - OFF, then ZERO (15 sec)
OPT ZERO - OFF
OPT MODE - MAN (verify)
OPT COUPLING CONT - DIRECT (verify)
OPT SPEED CONT - HI
OHC - MAX RIGHT (Obs eject thru SCT)
(SXT 40 deg, SCT 150 deg shaft angle)

POST INSERTION CONFIGURATION

(181) CM 1 TV STA PWR - OFF
TAPE RCDR - LBR/RCD/FWD/CMD RESET
(400) HEAD WHEEL DRIVE MOT - ON (lt on)
TAPE DRIVE - REWIND (after ~4 min, lt out)
(226) cb COAS/TUNL LTG MNB - close
(230) OMNI SEL - UP TLM
(274) SM RCS QUAD HTR A - SEC
SM RCS QUAD HTRS B,C,D (3) - PRIM

Stow Panel 277 cb Actuator in RHEB TSB
STRUT UNLOCK LANYARD (2) - STOW
Unstow Tool E (L2)
Install COAS
Set up ORDEAL

Go to pg L/3-1

DATE 6/20/75

LOSS OF SIVB ATTITUDE CONTROL

If LV GUID lt on: [Guidance Fail]

Perform APS MNVR WITH CMC, pg L/2-14

If Attitude Error >10 deg and increasing:

Observe Rate needle
LV GUID - CMC

If Rate increases by 0.1 to 0.5 deg/sec: [Rate Gyro Null Shift]

YAW axis: LV GUID - IU
When YAW >48 deg (N20),
SIVB returns to offset Yaw
Continue with nominal procedures,
except compute new N22, pg L/3-8

ROLL axis: LV GUID - IU
When ΔROLL >90 deg,
SIVB returns to offset Roll
Continue with nominal procedures,
except compute new N22, pg L/3-8

PITCH axis: Roll ~45 deg until Yaw =±50 deg (N20)
Then, mnvr to 0 deg Roll & 0 deg Yaw
If failure occurred before 0:45:00 PET:
Return LV GUID sw to IU at RLH
(180 deg ORDEAL, N54) (lead ~5 deg)
If failure occurred after 0:45:00 PET:
Return LV GUID sw to IU at SEP Att
(196 deg INRTL, N20) (lead ~5 deg)

NOTE: For auto mnvr to SEP Att; return
LV GUID sw to IU before 0:49:52

Continue with nominal procedures
except compute new N22, pg L/3-8

If Rate is unchanged or decreases: [APS Fail]

Perform RCS MNVR WITH CMC, pg L/2-14

LOSS OF SIVB ATTITUDE CONTROL

APS MNVR WITH CMC [Guidance Fail]

LV GUID - CMC
V45E, V61E
Set SIVB Takeover Flag
V25 N7E, 12E,400E, 1E
SC CONT - CMC/AUTO
If failure occurred before 0:45:00 PET:
P20 (OPTION 5), load N78 (0,+90,0)
load N70 (47)
PRO on F 50 18 (auto mnvr to RLH)
If failure occurred after 0:45:00 PET:
V49 mnvr to RLH SEP Att, pg L/4-1
Change CSM/LV SEP time to 1:30:00 PET, pg L/4-2
Return to nominal procedures and perform all 'If LV GUID - CMC:' backup procedures

RCS MNVR WITH CMC [APS Fail]

LV GUID - CMC
Perform RCS PURGE BURN, pg L/3-3
cb SECS ARM (2) - close
RCS CMD - ON
Damp rates, if req'd
AUTO RCS SEL (16) - MNA/MNB
V21N1E, Load ADDRESS & DATA at bottom
N15E to next word, E to succeeding word
V44E, PRO, N89 (+01500, +00050)
V45E, V61E
SC CONT - CMC/AUTO
If failure occurred before 0:45:00 PET:
P20 (OPTION 5), load N78 (0,+90,0)
load N70 (47)
PRO on F 50 18 (auto mnvr to RLH)
If failure occurred after 0:45:00 PET:
V49 mnvr to RLH SEP Att, pg L/4-1
Change CSM/LV SEP time to 1:30:00 PET, pg L/4-2
Return to nominal procedures and perform all 'If LV GUID - CMC:' backup procedures

ADDRESS	DATA	ADDRESS	DATA
3037	6351	3044	77743
3040	71426	3045	77743
3041	0	3046	157
3042	0	3047	72225
3043	227	3050	72226

SYSTEMS CHECKS

0:21:22 SIVB Mnvr to Retrograde Local Horizontal (RLH)

1 EXTEND DOCKING PROBE

cb DOCK PROBE (2) - close (verify)
MAD AOS DOCK PROBE EXTD/REL - EXTD/REL until
(0:21:39) full probe extension
(DOCK PROBE tb - gray at full extension)
MAD LOS
(0:22:18)

	EXT	RET
FULL EXT	Gray	Gray
FULL RET	BP	BP
PART EXT	BP	Gray

DOCK PROBE EXTD/REL - RETRACT (tb-gray)

2 MAIN REG CHECK

(351) MAIN REG B vlv - close
EMER CABIN PRESS sel - 1
PUSH TO TEST PB - PUSH (O2 FLOW INC)
MAIN REG B vlv - open
MAIN REG A vlv - close
EMER CABIN PRESS sel - 2
PUSH TO TEST PB - PUSH (O2 FLOW INC)
MAIN REG A vlv - open
EMER CABIN PRESS sel - BOTH

3 SEC RAD LEAK CHECK

Monitor SEC ACCUM QUANTITY - no change
(377) SEC GLY To RAD vlv - NORM (CW) for 30 sec,
then BYPASS (CCW)

SUNSET
(0:24:26)

SYSTEMS CHECKS

4 ECS POST INSERTION CONFIG

(Must be performed between +20:00m & +55:00m)
(352) POT TK IN vlv - OPEN (CCW)
(326) GLY RSVR BYPASS vlv - OPEN (CCW)
GLY RSVR OUT vlv - CLOSE (CW)
GLY RSVR IN vlv - CLOSE (CW)
PRIM GLY ACCUM QTY 30-65%
(379) PRIM ACCUM FILL vlv - ON (CCW) until 40-55%
ECS RAD FLOW CONT - PWR
PRIM GLY TO RAD vlv - NORMAL (push)
ECS RAD TEMP PRIM OUT below PRIM IN
After 5 min, if outlet temp > inlet:
* PRIM GLY TO RAD vlv - BYPASS(pull)*
* Recheck in 10 min *
ECS RAD tb - gray
GLY EVAP TEMP IN - AUTO
POT H2O HTR - MNA
cb WASTE H2O/URINE DUMP HTR (2) - close
cb ECS PRESS XDUCR 2 MNA - close

0:35:22 SIVB Mnvr complete

5 P52 (OPTION 3)

Report Gyro Torquing Angles

P52 (OPTION 3)

N71 1ST STAR		X	0	0	0		
N71 2ND STAR		X	0	0	0		
N05 (R1) & ERR		X					
N93	X						
GYRO TORQUING ANGLES	Y						
	Z						
TIME OF GDC ALIGN	HR	+	0	0	0		
	MIN	+	0	0	0		
	SEC	+	0				

If LV GUID - CMC:
* Recall P20 *

6 EMS ΔV TEST & NULL BIAS CHECK

EMS MODE - STBY
EMS FUNC - ΔV SET/VHF RNG
Set ΔV ind to 1586.8 fps
EMS MODE - NORMAL
EMS FUNC - ΔV TEST
SPS THRUST Lt - on/off (10 sec)
ΔV ind stops at -0.1 to -41.5

EMS MODE - STBY
EMS FUNC - ΔV SET/VHF RNG
Set ΔV ind to (-100.0) fps
EMS FUNC - ΔV (wait 5 sec)
EMS MODE - NORMAL (for 1 min 40 sec)
EMS MODE - STBY
If ΔV $\leq$1 fps, do not bias

If ΔV >1 fps but $\leq$10 fps, bias if desired

If ΔV >10 fps, EMS is NO-GO

7 RCS PURGE BURN

RCS TRNFR - SM
RHC PWR NORMAL #1 - OFF (verify), #2 - OFF
RHC PWR DIRECT #1 & #2 - MNA/MNB
RHC's #1 & #2 - ARMED

Simultaneously command + & -, using hard stops:

$\pm$ Roll (3 sec)

$\pm$ Pitch (1 sec)

$\pm$ Yaw (1 sec)

RHC's #1 & #2 - LOCKED
RHC PWR NORMAL #2 - AC/DC
RHC PWR DIRECT #1 & #2 - OFF

DATE 5/7/75

8 SM RCS MONITORING CHECK

SM RCS QUAD He (4) tb - gray
SM RCS PRPLNT (8) tb - gray
SM RCS PSM PRPLNT (4) tb - bp
SM RCS PSM He tb - bp
SM RCS PSM MANF ISOL tb - gray
RCS IND sel - SM A, B, C, D, PSM
  PKG TEMP - 115-175 deg F (PSM - zero)
  He PRESS - 4100-4200 psia (PSM: 4100-4200)
  SEC FUEL PRESS - 178-192 psia (PSM: 130-150)
  Check He TK TEMP
  SM RCS IND sw - PRPLNT QTY
  Check PRPLNT QTY

9 CM RCS MONITORING CHECK

CM RCS PRPLNT tb (2) - gray
RCS IND sel - CM 1,2
  He TEMP - 60-80 deg F
  He PRESS - 4100-4200 psia
  MANF PRESS - 80-105 psia

10 C/W OPERATIONAL CHECK

C/W LAMP TEST - 1 (LH MA & 16 lts)
C/W LAMP TEST - 2 (RH MA & 19 lts)
C/W CSM - CM (CM RCS lt (2) - on)
C/W CSM - CSM (CM RCS lt (2) - out)

11 EPS MONITORING CHECK

Cryogenic Pressure-Quantity Check:
H2 PRESS (2) - 225-260 psia
02 PRESS (2) - 865-935 psia
H2 FANS (2) - OFF (verify)

FC Power Plant Check:
FC HTRS (3) - on (up)
FC REAC tb (3) - gray
FC IND sel - 1,2 & 3
H2 FLOW - 0.03-0.15 lb/hr
02 FLOW - 0.25-1.2 lb/hr
MOD SKIN TEMP - 390-440 deg F
MOD COND EXH TEMP - 150-175 deg F
FC pH HI tb - gray
FC RAD TEMP LOW tb - gray

D-C Voltage-Amperage Check:
MN BUS TIE (2) - OFF (verify)
FC MNA tb - 1 & 2 gray, 3 bp
FC MNB tb - 1 & 2 bp, 3 gray
FC 1, 2 & 3 - check amps
MAIN BUS A, B, (26.5-31 vdc)
BAT BUS A, B, & BAT C (31.5-38 vdc, <3 amp)
PYRO BAT A, B (36.5 - 37.5 vdc)
DC IND sel - MNB
SYS TEST 5B (BAT RLY BUS - 3.4-4.1 vdc)

A-C Volts - 113-117 all phases

(229) cb PYRO BUS TIE - open (verify)
Install cb guard

12 ECS MONITORING CHECK

SUIT COMP ΔP - .3-.4 psid
O2 SURGE TANK PRESS - 865-935 psia
REPRESS O2 >865 psia
PRIM RAD tb - gray
If PRIM RAD tb - 2:
* ECS RAD FLOW AUTO CONT - 1 until*
* tb gray, then AUTO*
ECS RAD TEMP PRIM IN - 60-90 deg F
ECS RAD TEMP PRIM OUT - -12 to +65 deg F
PRIM GLY EVAP TEMP OUT - 38-50.5 deg F
PRIM GLY DISCH PRESS - 40-52 psig
SUIT TEMP - 45-55 deg F
SUIT PRESS/CABIN PRESS - 4.7-5.3 psia
PART PRESS CO2 < 7.6 mm Hg
POT H2O QTY - 10-100%
WASTE H2O QTY - 15-90%

13 SECONDARY GLYCOL LOOP CHECK (EPE COLD PLATE OPER)

ECS IND sw - SEC
GLY DISCH SEC PRESS - 39-51 psig
ACCUM SEC QTY IND - 30-60%
SEC EVAP TEMP OUT - <60 deg F
ECS IND sw - PRIM

14 SPS MONITORING CHECK

SPS PRPLNT TEMP ind - 45-75 deg F
SPS PRESS IND sw - He, N2A & N2B
SPS PRESS ind -
He 3750 psia max
N2A 2900 psia max
N2B 2900 psia max
SPS PRESS IND sw - He
FUEL & OXID PRESS ind - 170 to 195 psia
SPS INJ VLV ind (4) - CLOSE
SPS He vlvs (1&2) - AUTO (tb-bp)

15 UNSTOW & SET UP CAMERAS

DAC CM2/DAC/25/CX01 - MIR (T8,1/250,inf) 6 fps

(B3) DAC
Mag CX01 (on camera)
25 mm lens
Pwr cable
Rt angle mirror
(U2) DAC mount

HRC CM2/HRC/50/CX06 - (f8,1/250,inf)

(B5) HRC
Mag CX06 (on camera)
50 mm lens

TV CM4/TV/zoom - (AVG,SLAVE,LINEAR) (f22,25,15)

If white content of exterior scene <10%:
* Select PEAK *

(A5) TV
Zoom lens
Monitor
Cables (2)
U-mount
Assemble equipment:
U-mount to left camera shoe
Lens arrow pointing to rear
Position U-mount - 325,90,155
Mount in location 606 (pin in hole 1)

TV Monitor - ON
(181) CM2 TV STA PWR - OFF (verify)
Disconnect TV/MVA cable from CM2 TV STA SIG Receptacle and secure with utility strap (R5)
Connect TV CABLE to CM2 TV STA receptacles
CM/DM CAMR PWR - on (up) (verify)
TV AMPL - ON
CM 1 TV STA PWR - ON
CM 2 TV STA PWR - ON
TV STA SEL CM - CM
TV STA SEL CM1 - CM1
Check monitors and adjust camera pointing & lens, if req'd

L
3-8

DATE 5/7/75

Nominal

SEP at 1:14:00 PET

N17(SEP)	(359,196,001)
N22(DOCK)	(001,016,359)

*If error needles not nulled:

V60E (SIVB db = ±1.8 deg)
V16 N20E
R22 = 360 - R20
P22 = 180 + P20
Y22 = 360 - Y20

	R	P	Y
	360	180	360
N20=	-	+	-
=N22			
		(-360)	
		=	

TRANSPOSITION, DOCKING AND EXTRACTION

1 CSM/LV SEPARATION PREP

AUTO RCS SEL (16) - MNA/MNB
COAS PWR - on (up)
Set ΔVC to -100.0
EMS FUNC - ΔV
MAN ATT (3) - RATE CMD (verify)
ATT DB - MIN/HIGH (verify)
THC PWR - on (up)
RHC PWR NORMAL #2 - AC/DC (verify)
RHC PWR DIRECT #2 - MNA/MNB
BMAG MODE (3) - RATE 2 (verify)
RCS TRNFR - SM
SM RCS PRPLNT tb (8) - gray (verify)

*If LV GUID - CMC:
* At 1:15:00:
* V37E 00E
* V49 mnvr to (359,193,001)
* CMC MODE - HOLD
* Load RCS DAP 11103,01111
* Do NOT key V46
* Load N22 (001,013,359)
* CSM/LV SEP at 1:30:00 PET
* Go to pg L/4-2

Load RCS DAP 11103,01111
V46E

Load N17(SEP) & N22(DOCK) (pg L/3-8)

V63E (Monitor SIVB Mnvr)

0:49:52 SIVB Mnvr to SEP Attitude (N17)

0:59:00 FUEL TK Non-Propulsive Vent

0:59:39 SIVB Mnvr complete

*If error needles not nulled:
* Compute new Dockng attitude, pg L/3-8

T, D, & E

SUNRISE
(1:01:30)

2 CSM SEPARATION (1:14:00 PET)

Set DET counting up to SEP
ATT SET tw - R=0,P=180,Y=0
cb RCS LOGIC (2) - open
cb SECS LOGIC (2) - close (verify)
cb SECS ARM (2) - close
SECS LOGIC (2) - on (up)
RHC & THC - ARMED
V49E F 06 22 (DOCKING Attitude)
FC REAC vlv - LATCH
GDC ALIGN (0,180,0)

DET56:00 TVC SERVO PWR #1 - AC1/MNA
HEAD WHEEL DRIVE MOT - ON (lt on)
TAPE MODE - RECORD (lt on)

58:00 TV STA SEL CM1 - CM2
TAPE RCDR - HBR/RCD/FWD/CMD RESET
SECS PYRO ARM (2) - ARM

VAN AOS
(1:12:02)

59:30 EMS MODE - NORMAL
RCS CMD - ON

*If LV GUID - CMC: *
* V46E *

59:58 Thrust +X and hold
00:00 CSM/LV SEP pb - push, hold, and release
LV TANK PRESS - full scale low (SEP ind)
*If No Separation: *
* cb RCS LOGIC (2) - close *
* THC - CCW (4 sec min) *
* DET reset and counting up (auto)*
* LV TK PRESS - full scale low *

00:02 THC - release (ΔV=~0.5 fps)
SM RCS PRPLNT tb (8) - gray (verify)
SM RCS QUAD He tb (4) - gray (verify)

T, D, & E

00:15 SC CONT - CMC/AUTO, V62E
MAN ATT (PITCH) - ACCEL CMD
Pitch up at 2 deg/sec
When GDC Pitch >200 deg
PRO,PRO
MAN ATT (PITCH) - RATE CMD
F 50 18 (completion of mnvr)
ENTR
Thrust +X (~3 sec) (ΔV=0.7 fps)
Load RCS DAP 11102, 01111
SM RCS SEC FUEL PRESS (4) - OPEN
FC REAC vlv - NORM
Start DAC

VAN LOS
(1:17:31)

3 DOCKING

Stabilize & align CSM
At capture:
PROBE EXTD/REL tb A and/or B - bp

*If No Capture: (PROBE EXTD/REL tb (2) remains gray) Perform: Second Docking Attempt (S/2-14)
Third Docking Attempt (S/2-14)
Final Docking Attempt (S/2-15

CMC MODE - FREE
Allow probe to damp S/C motions (~ 10 sec)
Align Pitch & Yaw with THC (<3 deg)
DOCK PROBE RETRACT - PRIM-1

*If no RETRACT, at 20 sec:
* DOCK PROBE RETRACT - SEC-1*

After dock latches have engaged:
PROBE EXTD/REL tb - gray
(A-1,5,9 B-3,7,11)
DOCK PROBE EXTD/REL - OFF
DOCK PROBE RETRACT (2) - OFF
SECS PYRO ARM (2) - SAFE
SECS LOGIC (2) - OFF
EDS PWR - OFF
TVC SERVO PWR #1 - OFF
cb RCS LOGIC (2) - open (verify)
cb DOCK PROBE (2) - open

cb EDS (3) - open
COAS PWR - OFF
EMS - OFF/STBY
LV/SPS IND sw - GPI
THC & RHC - LOCKED
Stop DAC
PCM BIT RATE - LOW
(400) HEAD WHEEL DRIVE MOT - OFF (lts out)
(181) CM1 TV STA PWR - OFF
CM2 TV STA PWR - OFF
(274) TUNNEL LIGHTS - on (up)
EXT LTS - OFF (verify)
COUCHES - AC-90,CP-0,DP-180
(226) cb O2 TK 50W HTRS (2) - open

*If NO SIVB Attitude Control:
* MAN ATT (ROLL) - MIN IMP
* MAN ATT (P&Y) - ACCEL CMD
* SC CONT - SCS
* Damp Roll & Yaw rates with RCS (<0.2)
* Insure ORDEAL Pitch = 180 ± 45 deg
* at 2:34:00 PET

4 CM/DM TUNNEL PRESS/INTEGRITY CHECK

DM TUNNEL VENT vlv - DM/CM ΔP (verify)
CM/DM ΔP ind - 4.0 psid (pegged)
HATCH PRESS EQUAL vlv - OPEN (CCW)
When CM/DM ΔP ind = 0.0 psid:
HATCH PRESS EQUAL vlv - CLOSE (CW)
Monitor CM/DM ΔP ind for 2 min
and verify ΔP stable
HATCH PRESS EQUAL vlv - OPEN (CCW)

1:30:00 Start SCS DRIFT CHECK (RMAG 2)

GDC ALIGN
Reset & start DET

5 REMOVE TUNNEL HATCH (Decal) (pg S/2-1)

6 VERIFY DOCKING LATCHES (Decal) (pg S/2-2)

7 PREP FOR CM/DM UMBILICAL CONNECTION

(6) PWR - OFF
VHF AM - OFF
VHF FM - OFF (verify)
SUIT PWR - OFF
AUDIO CONT - NORM (verify)
(274) cb DOCKING SYSTEM A (6) - open (verify)
cb DM POWER (2) - open (verify)
cb DOCKING SYSTEM B (6) - open (verify)

8 CONNECT DM UMBILICAL (Decal) (pg S/2-3)

9 POST UMBILICAL CONNECTION RECONFIGURATION

(6) PWR - AUDIO
VHF AM - T/R
SUIT PWR - on (up)
(274) cb DM PWR MNA - close
cb CAM/MON - close (verify)

NFL AOS (1:41:03) REPORT: Docking Status, Gyro Torquing Angles & EMS Test Results

1:44:52 FUEL TK Non-Propulsive Vent

NFL LOS (1:47:17)

10 INSTALL TUNNEL HATCH (Decal) (pg S/2-5)

WASTE STOWAGE VENT vlv - VENT (verify)
TUNNEL LIGHTS - OFF

MAD AOS
(1:50:47)

SUNSET
(1:52:05)

MAD LOS
(1:54:18)

2:00:00 END SCS DRIFT CHECK (BMAG 2)

V16 N20E
FDAI SELECT - 1
FDAI SOURCE - ATT SET (verify)
ATT SET - GDC (verify)
Null FDAI 1 err needles with ASCP tw
when nulled, key VERB & stop DET
Log N20 values
Log ASCP tw values
Log DET
FDAI SELECT - 1/2

BMAG 2 GDC/IMU COMPARISON RESULTS

N20	IMU	R	+					
		P	+					
		Y	+					
ASCP tw	GDC	R	X					X
		P	X					X
		Y	X					X
DET (30:00)		ΔT	X	X				

TAN AOS
(2:11:37)

Transmit GDC/IMU COMPARISON RESULTS

TAN LOS
(2:12:15)

2:21:52 SIVB Mnvr to EXTRACT Attitude (359,251,000)

SUNRISE
(2:29:10)

11 DM EXTRACTION (2:34:00 PET)

(274) SM RCS QUAD HTRS (4) - OFF (ctr)

(278) cb SIVB/DM SEP (2) - close (verify)

Set ΔVC to +100.0
EMS FUNC - ΔV
V48E, 11102,01111 (verify)
Load 32250 in R1 of N47
P30 (Load TIG=2:34:00, ΔVX=+3.0 fps)
Set DET counting up to SEP
P41 (Bypass Auto Mnvr)
GDC ALIGN to IMU
*If IMU failed: *
* ALIGN GDC to 359,251,000 *
V60E, V63E
cb SECS ARM (2) - close (verify)
SECS LOGIC (2) - on (up)
RHC & THC - ARMED
TAPE RCDR - HBR/RCD/FWD/CMD RESET
(181) TV STA SEL CM1 - CM1
CM1 TV STA PWR - ON
CM2 TV STA PWR - ON

56:00 TVC SERVO PWR #1 - AC1/MNA
HEAD WHEEL DRIVE MOT - ON (lt on)
TAPE MODE - RECORD (lt on)

58:00 TV STA SEL CM1 - CM2
SECS PYRO ARM (2) - ARM

59:30 EMS MODE - NORMAL
Start DAC

00:00 SIVB/DM SEP - on (up)
CMC MODE - AUTO
00:05 THRUST -X
00:10 THC - release
When clear of SIVB:
Null N85 components (Trim ±0.2)
PRO, 00E

DATE 6/20/75

A/C ROLL (4) - OFF
SECS PYRO ARM (2) - SAFE
SECS LOGIC (2) - OFF
cb SECS ARM (2) - open
TVC SERVO PWR #1 - OFF
EMS - STBY/OFF
THC PWR - OFF
RHC PWR DIRECT (2) - OFF
RHC & THC - LOCKED
Stop DAC
TAPE RCDR - REWIND
S-BD PWR AMPL HIGH - OFF
(400) HEAD WHEEL DRIVE MOT - OFF (lts out)
(181) TV STA SEL CM - UP TLM
TV STA SEL CM1 - UP TLM
CM1 TV STA PWR - OFF
CM2 TV STA PWR - OFF
TV AMPL - BYPASS
(274) SM RCS QUAD HTR A - SEC
SM RCS QUAD HTRS B,C,D - PRIM
(278) cb SIVB/DM SEP (2) - open

VAN AOS
(2:43:21) REPORT: DM Extraction/AEM Status

Go to RENDEZVOUS BOOK (pg 1-3)

PINK

DATE 5/7/75

MODE I

ABORT PROCEDURES

MODE IA ABORT (00:00 to 01:01)

00:00 THC - CCW then NEUTRAL
CM/SM SEP (2) - on (up)

00:14 ELS - AUTO

*ELS LOGIC - on (up) *
*TWR JETT (2) - on (up) *
APEX COVER JETT PB - PUSH

00:16 *DROGUE DEPLOY PB - PUSH*

00:18 *CM RCS He DUMP PB - PUSH*

Monitor altimeter
If <alidade - DEPLOY MAINS
>alidade - NO ACTION

00:28 If <10,000 ft - DEPLOY MAINS

Note: Alidade set for 3800 ft true altitude prior to Launch

Go to LANDING PHASE pg L/5-12

MODE IB ABORT (01:01 to 16.5 nm)

00:00 THC - CCW then NEUTRAL
CM/SM SEP (2)-on (up)

00:11 *CANARD DEPLOY PB - PUSH*

00:14 ELS - AUTO

ELS LOGIC - on (up)
*RCS CMD - ON *

Go to LANDING PHASE pg L/5-12

BACK

COLOR PINK

L
5-2

DATE 6/6/75

MODE I

MODE IC ABORT (16.5 nm to TWR JETT)

00:00 THC - CCW then NEUTRAL
CM/SM SEP (2) - on (up)
*RCS CMD - ON *

00:11 *CANARD DEPLOY PB - PUSH*
*CM RCS PRESS - on (up) *
*RCS TRNFR - CM *
RCS IND - CM (1 or 2)
C/W MODE - CM

S/C PLATFORM GO/NO GO
KEY RLSE to N44, Check HA

HA>32nm & PLAT GO	HA<32nm or PLAT NO GO
TWR JETT sw(2)-on(up)	Cmd +5 deg/sec Pitch rate
MAN PITCH - RATE CMD	
BMAG (3)- ATT1/RATE 2	*If +Pitch rate too hi:*
ENT ATT R=0,P=135,Y=0	* Roll 90 deg *
EMS FUNC - ENTRY	* Damp rate with yaw *
EMS MODE - NORMAL	* Roll to HDS DN *
At .05G lt:	
.05G sw - on (up)	
EMS ROLL - on (up)	
Fly Max Lift	

P (.05G) _____
GET DRO _____

Go to LANDING PHASE pg L/5-12

LET FAILS TO JETTISON

If NO RESPONSE to TWR JETT switches:
cb SECS ARM (2) - close (verify)
cb SECS LOGIC (2) - close (verify)
cb EDS (3) - close (verify)
SECS LOGIC (2) - on (up) (verify)
SECS PYRO ARM (2) - on (up) (verify)
EDS PWR - on (up) (verify)
TWR JETT (2) - on (up)
*If still NO TWR JETT: *
* TWR JETT (2) - AUTO *
* Abort, Mode IC on STDN cue*

If LEGS CUT & NO MOTOR FIRE (pyro audible):
LES MOTOR FIRE PB - PUSH

pink

DATE 5/7/75

MODE II RCS ABORT (TWR JETT to MODE III)

00:00 THC - CCW (4 sec min)
If No BECO: - Reset THC
* Req. RSO shutdown *
* Reset & start DET *

00:03 *CSM/LV SEP - PUSH*
*RCS CMD - ON *

THC - ARMED
00:05 THC - NEUTRAL, Damp rates, then +X
Check SM RCS talkbacks

00:24 THC - +X OFF
BMAG MODE (3) - ATT1/RATE 2
KEY RLSE to N44, Check TFF
If TFF >2 min:
YAW 45 deg (LEFT) out-of-plane
(275) cb MNA&B BAT C (2) - close
CM/SM SEP - on (up)
CM RCS PRESS - on (up)
RCS CMD - ON
RCS TRNFR - CM
CM RCS PRPLNT (2) - on (up)
C&W MODE - CM
Entry ATT - (R=0,P=130,Y=0)(Compl by 1:40)
cb CSM/DM FNL SEP (2) - close (pull lanyard)
CSM/DM FNL SEP (2) - on (up)
EMS FUNC - ENTRY GET 300K _____
EMS MODE - NORMAL P (.05G) _____
GET DRO _____

At .05G lt:
.05G sw - on (up)
EMS ROLL - on (up)
Fly Max Lift
N62E VI, HDOT, H

Go to LANDING PHASE pg L/5-12

MODE II, MODE IIIA

BACK

COLOR PINK

DATE 5/7/75

MODE II, MODE IIIA

MODE IIIA SPS ABORT (-735.0 nm < ΔR < -200.0 nm)
(Burn STDN Pad)

00:00 THC - CCW (4 Sec Min)
If No RECO: - Reset THC
* Req. RSO Shutdown *
* Reset & start DET *

00:03 *CSM/LV SEP - PUSH*
*RCS CMD - ON *

THC - ARMED
00:05 THC - NEUTRAL, Damp rates, then +X
Check SM RCS talkbacks

00:24 THC - +X OFF
N50E ΔR, HP,TFF (.1nm, min-sec)
BMAG MODE (3) - ATT1/RATE2
MNVR to Burn att (R=180,P=355,Y=0)
(Scribe on horiz, SEF, Hds dn)
EMS MODE - NORMAL
RATE - LOW
LV/SPS IND - GPI

ΔV THRUST A - NORMAL
TIG -15 THC - +X (15 sec)
PAD TIG THRUST ON PB - PUSH
Burn to VC (ΔR = -200.0)(R1)
or TFF = 1+40
ΔV THRUST (2) - OFF

TIG _____
EMS ΔV (1999.9)
ΔV _____
CUTOFF _____
BT _____
P(IGN) _____
GET 300K _____
P (.05G) _____
GET DRO _____

RATE - HIGH
If TFF >2 min:
YAW 45 deg (LEFT) out-of-plane
(275) cb MNA&B BAT C(2) - close
CM/SM SEP - on (up)
CM RCS PRESS - on (up)
RCS TRNFR - CM
C&W MODE - CM
Mnvr to entry att (R=0,P=112,Y=0)
(BEF, Hds Dn, Full Lift)
cb CSM/DM FNL SEP (2) - close (pull lanyard)
CSM/DM FNL SEP (2) - on (up)

PINK

L
5-5

DATE 5/7/75

Note TFF
EMS MODE - STBY
EMS FUNC - ENTRY
EMS MODE - NORMAL
At .05G lt:
.05G sw - on (up)
EMS ROLL - on (up)
Roll left 55 deg (LV south)

Go to LANDING PHASE, pg L/5-12

MODE IIIB

BACK

COLOR PINK

L
5-6

DATE 5/7/75

MODE IIIB

MODE IIIB SPS ABORT (ΔR = -200.0 nm to Insertion)
(Burn STDN Pad)

00:00 THC - CCW (4 Sec Min)
If No BECO: - Reset THC
* Req. RSO shutdown *
* Reset & start DET *

00:03 *CSM/LV SEP - PUSH*
*RCS CMD - ON *

THC - ARMED
00:05 THC - NEUTRAL, Damp rates, then +X
Check SM RCS talkbacks

00:24 THC - +X OFF
N50E ΔR,HP,TFF (.1nm,min-sec)
BMAG MODE (3) - ATT1/RATE2
If ΔR>-200.0:
MNVR to retro att (R=180,P=199,Y=0)
(Scribe on horiz, BEF, Hds up)
EMS MODE - NORMAL
RATE - LOW
LV/SPS IND - GPI

ΔV THRUST A - NORMAL
TIG -15 THC - +X (15 sec)
PAD TIG THRUST ON PB - PUSH
Burn to VC (ΔR=-200.0)(R1)
or TFF = 1+00
ΔV THRUST (2) - OFF

TIG _____
(1999.9)
ΔV _____
CUTOFF _____
BT _____
P(IGN) _____
GET 300K _____
P (.05G) _____
GET DRO _____

RATE - HIGH
If TFF >2 min:
YAW 45 deg (LEFT) out-of-plane
(275) cb MNA&B BAT C (2) - close
CM/SM SEP - on (up)
CM RCS PRESS - on (up)
RCS TRNFR - CM
C&W MODE - CM
Mnvr to entry att (R=0,P=112,Y=0)
(BEF, Hds Dn, Full Lift)
cb CSM/DM FNL SEP (2) - close (pull lanyard)
CSM/DM FNL SEP (2) - on (up)

PINK

L
5-7

DATE 5/7/75

Note TFF
EMS MODE - STBY
EMS FUNC - ENTRY
EMS MODE - NORMAL
At .05G lt:
.05G sw - on (up)
EMS ROLL - on (up)
Roll left 55 deg (LV south)

*If TFF C/O before AR=-200.0: *
* At .05G, Roll left 90 deg (LV south)*

Go to LANDING PHASE pg L/5-12

MODE IV P. PROFILE

BACK

COLOR PINK

L
5-8

DATE 5/7/75

MODE IV SPS TO ORBIT (VI = 24,950)
(H DOT = -86)
(Burn CMC PITCH PROFILE) (H = 83.7)

00:00 THC - CCW (4 sec min)
*If No BECO: - Reset THC *
* Req. RSO shutdown *
* Reset & start DET *

00:03 *CSM/LV SEP - PUSH*
*RCS CMD - ON *

THC - ARMED
00:05 THC - NEUTRAL, Damp rates, then +X
Check SM RCS talkbacks

00:24 THC - +X OFF

ALT	VI
70	25 720
74	25 700
78	25 680
82	25 660
86	25 640
90	25 610

Perform CMC PITCH PROFILE or FIXED ATTITUDE BURN:

(-HDOT,Burn ASAP)
CMC PITCH PROFILE (+HDOT,Burn at 90 sec)

BMAG MODE (3) - ATT1/RATE2
Mnvr to Chart Burn Attitude
EMS MODE - NORMAL
RATE - LOW
LV/SPS IND - GPI
ΔV THRUST A - NORMAL
THC - +X (15 sec)
≤01:30 THRUST ON PB - PUSH
SCS TVC (PITCH) - RATE CMD
Fly HDOT to zero (±100 fps), trim YAW with tw, maintain C/O YAW

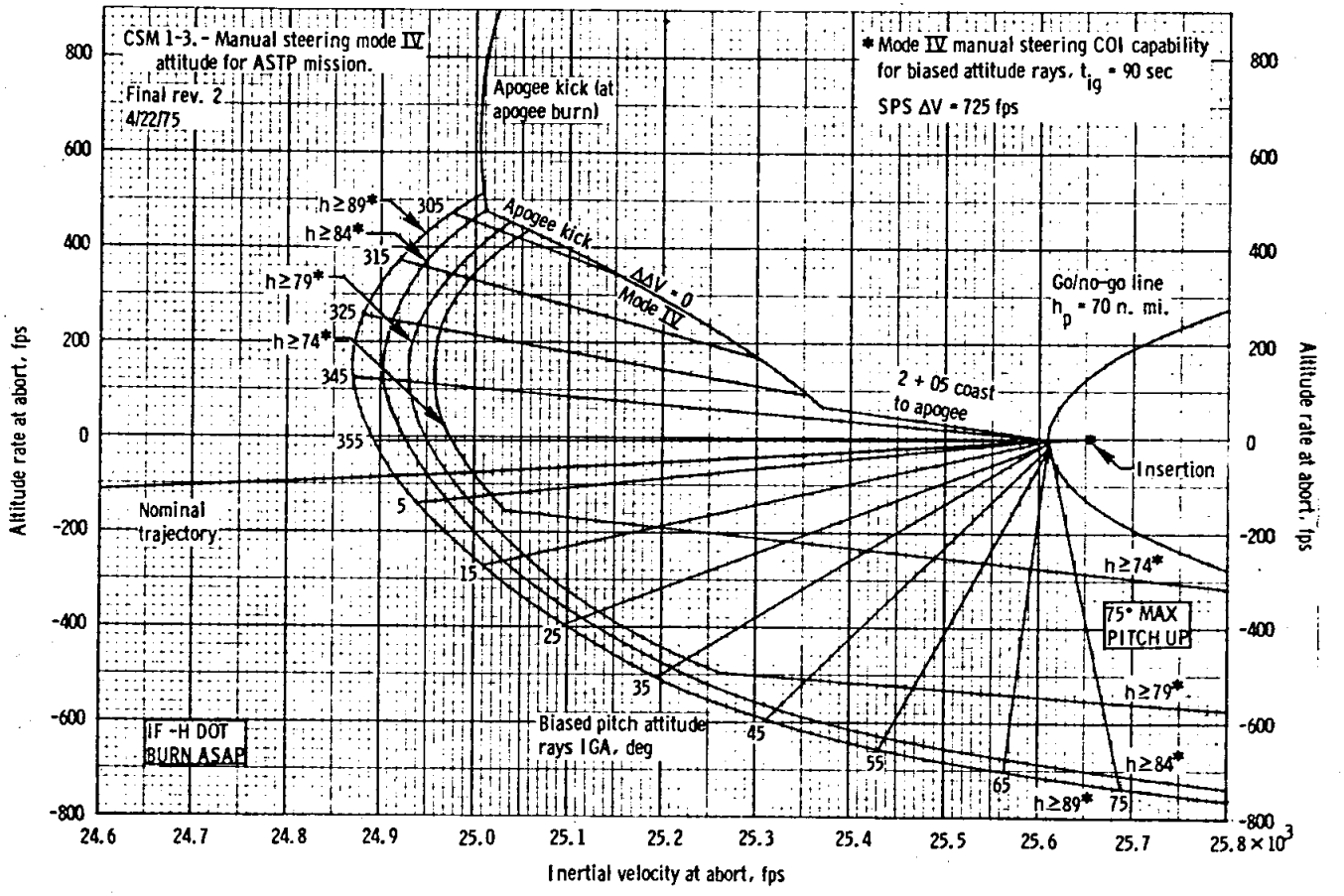
Burn to chart VI, pg L/2-6 or above

*If unable to fly HDOT to </100/: *
* KEY RLSE to N44 *
* (-HDOT) Burn HP >70nm +4 sec *
* (+HDOT) Burn HA >200nm, then Apogee Kick*

ΔV THRUST (2) - OFF
EMS MODE - STBY

Go to 'Log ΔVC', pg L/5-10

MODE IV P. PROFILE



L
5-9

DATE 5/7/75

PINK

MODE IV IGN ATT

BACK

COLOR PINK

L
5-10

DATE 6/20/75

MODE IV, FIXED ATT

or FIXED ATTITUDE BURN (Scribe on horiz, SEF, Hds Dn)

BMAG MODE (3) - ATT1/RATE2
EMS MODE - NORMAL
RATE - LOW
LV SPS IND - GPI
ΔV THRUST A - NORMAL
TIG -15 THC - +X (15 sec)
PAD TIG THRUST ON PB - PUSH
BURN to VC
ΔV THRUST (2) - OFF
EMS MODE - STBY

TIG _____ (1999.9)
ΔV _____
CUTOFF _____
BT _____
P(IGN) _____

*If SPS fail & Mode IV <200 fps: Burn RCS *
If SPS fail & Apogee Kick <400 fps: Burn RCS

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

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

V37E 00E
Load DAP, V48: R1=11102, R2=01111
V46E
SC CONT - CMC/AUTO
Mnvr to (180,250,0) and acquire ATS
(225) cb ATSF SYSTEM (2) - close
(230) XPNDR - PRIM
PWR AMPL - 2
HGA BEAM - WIDE (verify)
HGA TRACK - MAN
HGA PWR - PWR
UP TLM - RELAY
HGA angles: P = -60, Y = +295
When HGA ind >1/3 scale:
HGA BEAM - NARROW
HGA TRACK - REACQ
HGA ind >1/2 scale

Go to POST INSERTION CONFIGURATION, pg L/2-11

PINK

DATE 6/6/75

MODE V, LANDING PHASE

MODE V STACK TO ORBIT

LV GUID - CMC
Key VERB, note VI & HDOT, KR to N44
Record time of Burn Start __:__

DIRECT ULLAGE - PUSH & HOLD to PAD BT
While thrusting, pitch to Burn Att, pg L/5-9
After pitch mnvr, LV GUID - IU, continue ΔV

V37E 00E
Go to POST INSERTION CONFIGURATION, pg L/2-11

MODE V STACK APOGEE KICK

TIG ____
ΔV ____
BT ____
P(IGN) ____

If No Comm: Do SPS Apogee Kick

V37E 00E
V83E
GMBL MTRS (4) - OFF (DP confirm)
TVC SERVO PWR (2) - OFF
SECS PYRO ARM (2) - SAFE
SECS LOGIC (2) - OFF
MN BUS TIE (2) - OFF
FC REACS vlv - NORM
SM RCS ENG PKG HTRS (4) - 1
SM RCS QUAD HTR A - SEC
SM RCS QUAD HTRS B,C,D - PRIM
Set up ΔV Counter

If ground fails to inhibit RLH Mnvr:
* Before +20:00, LV GUID - CMC *
* Keep R3 of N54 at 0 deg with RHC *
* After +23:00, LV GUID - IU *

TIG -2:00 V37E 47E
V83E
EMS MODE - NORMAL
cb DIRECT ULLAGE (2) - close (verify)

PAD TIG DIRECT ULLAGE - PUSH & HOLD to PAD BT
Verify Pitch = _____
PRO,V82E, check HA & HP

V37E 00E
Go to POST INSERTION CONFIGURATION, pg L/2-11

BACK

COLOR PINK

L
5-12

DATE 5/7/75

LANDING PHASE

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)
Drogues deployed (auto)
DROGUE DPLY PB - PUSH

*If Both Drogues Fail: *
* ELS - MAN *
* STABILIZE CM (DIRECT RCS)*
46 sec * 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 (Cab Press=10 psia)
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/5-13 *

CABIN PRESS REL vlv (RH) - DUMP
STRUT LOCKS (4) - UNLOCK
(275) cb FLT & PL BAT BUS A,B,&BAT C (3) - close

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 POST LANDING PROCEDURES, pg L/5-14

CM RCS DUMP: if req'd (land landing)

CABIN PRESS REL vlv (2) - CLOSE
CM RCS PRPLNT (2) - on (up)
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

POST LANDING

BACK

COLOR_____

POST LANDING PROCEDURES

(229) cb MAIN REL PYRO (2) - close
MAIN RELEASE - on (up)
SECS PYRO ARM (2) - SAFE
SECS LOGIC (2) - OFF
(8) cb PL VENT - close
cb FLOAT BAG (3) - close
(278) cb UPRIGHT SYS COMPRESS (2) - close
If Stable II:
FLOAT BAG (3) - FILL till 2 min after upright, then - OFF
VHF AM A/B & BCN - OFF while inverted
If Stable I:
After 10 Min Cooling Period,
FLOAT BAG (3) - FILL 7 min, THEN OFF
(275) cb FLT & PL MNA & B (2) - open
(5) cb BAT RLY BUS (2) - open
(8) cb SPS P&Y (4) - open

POST STABILIZATION AND VENTILATION

PL BCN LT - LO (night landing)
Side Hatch Dump vlv - OPEN (momentarily)
PL VENT vlv - UNLOCK (Pull into detent)
Remove PL VENT Exh. Cover
(15) PL VENT - HIGH or LOW
(Max. of 12 hours operation in HIGH, if selected)

*If fan frozen: *
* PL VENT - LOW *
* cb PL VENT - open *
*To close PLV: *
* cb PL VENT - close *
* PL VENT - OFF *

*If attitude sw failure: *
* PL VENT - LOW *
(376) * PLVC - OPEN *
*To turn off PLV: *
* PL VENT - OFF *

If dye marker req'd:
PL DYE MARKER - ON (by request)

POST LANDING

(275) cb MNA BAT BUS A & BAT C (2) - open
cb MNB BAT BUS B & BAT C (2) - open
cb FLT & PL BAT C - open
(250) cb PYRO A SEQ A - open
cb PYRO B SEQ B - open
Verify BAT BUS A&B voltage > 27.5 vdc
*If < 27.5 vdc: *
* cb FLT & PL BUS BAT C (1) - close *
* cb FLT & PL BUS BAT A&B (2) - open*
* Go to LOW POWER CHECKLIST *
(U3) Unstow and install PLV DISTRIB DUCT (3)
Deploy grappling hook and line, if requested

LOW POWER CHECKLIST (If req'd)

VHF BCN - OFF
VHF AM (3) - RCV
FLOOD LTS - OFF
VHF AM A&B - off (ctr)
VHF AM RCV ONLY - A (verify)
POSTLANDING VENT SYS: minimize use
(Minimum of 5 minutes/hour to scrub
cabin air of CO2)
SURV RADIO - plug into VHF BCN ANT cable
conn P112 behind VHF ant access pnl & turn
radio on in BCN mode

POST LANDING COMMUNICATIONS

(3) VHF ANT RECV (verify)
VHF BCN - ON (verify)
(6,9) VHF AM - T/R (verify)
(3) VHF AM A & B - SIMPLEX (verify)

*If no contact with recovery forces:
(6,9) * VHF AM - REC
* Center couch attempt to contact recovery forces.
* If contact reestablished & left or right couch wish to transmit;
(6,9) * VHF AM - T/R (only long enough to Xmit)
* then VHF AM - REC

*If still no contact with recovery forces:
* Monitor VHF BEACON transmission with
* VHF AM B Rcvr and/or Survival Trncvr (VOICE)

*If VHF Beacon not operating:
* Connect Survival Trncvr cable conn J1
* to bcn ant cable conn P112 behind ant
* access pnl and place radio in BCN mode
* (Use tool E to open panel, tool F for P112

*After 1 hour on the water:
(3) * VHF AM A(B) - OFF
* VHF AM RCV ONLY - A
*On the quarter hour and every quarter hour:
(3) * VHF AM A - SIMPLEX
* VHF RCV ONLY - OFF
(6,9) * VHF AM - REC
* Center couch transmit in blind (5 min)
(3) * VHF AM A - OFF
* VHF AM RCV ONLY - A

HELICOPTER EGRESS & POWER DOWN

GEAR BOX SEL - N
ACTR HNDL SEL - N

Check hatch GN2 pressure gauge
If > mid-white:
GN2 vlv HNDL - VENT (pull)
GN2 vlv HNDL - Neutral (detent)
Check pressure gauge (mid-white)
Repeat press/vent to obtain mid-white

If < mid-white:
Charge hatch counterbalance
GN2 vlv HNDL - PRESS
GN2 vlv HNDL - Neutral (detent)
Check pressure gauge (mid-white)
Repeat press/vent to obtain mid-white

COMMENTS:
CM VHF - BCN (BCN Lt will remain on to aid in maintaining visual/radio acquisition after crew egress)
Swimmer will open hatch

---

(15) PL VENT - OFF
PL BCN LT - LO (verify) (night landing only)
(3) VHF AM A/B - OFF
(6,9,10) VHF AM - OFF
Inform swimmer you are ready for egress by knocking on side hatch window
Egress, inflate LPU when out of hatch

3 CREWMEN UNAIDED EGRESS PROCEDURES

*If no ventilation or CM O2 supply: *
* If Stable I, open side hatch as req'd*
* If Stable II, initiate egress within *
* 2-1/2 hrs *

STABLE I

Disconnect umbilicals
(PGA) Neck dams on
Configure center couch to 0 deg
Armrests stowed

Check hatch GN2 pressure gauge
If > mid-white:
GN2 vlv HNDL - VENT (pull)
GN2 vlv HNDL - Neutral (detent)
Check pressure gauge (mid-white)
Repeat press/vent to obtain mid-white

If < mid-white:
Charge hatch counterbalance
GN2 vlv HNDL - PRESS (push)
GN2 vlv HNDL - Neutral (detent)
Check pressure gauge (mid-white)
Repeat press/vent to obtain mid-white

Remove TV CAMERA, BRACKET
(R4) Unstow rucksacks 1B & 2
Connect lanyards
(yellow to rucksack, green to head strut,
white to crew, in order of egress
printed on lanyards)
(15) PL VENT - OFF
(275) cb FLT/PL BAT C (1) - open (verify)
cb PANEL 250 (all) - open

Open side hatch
GEAR BOX SEL - UNLATCH
ACTR HNDL SEL - UNLATCH
LOCK PIN REL KNOB - UNLOCK
Operate ratchet handle until hatch opens
Verify hatch overcenter lock engaged
ACTR HNDL SEL - N

Remove raft from rucksack 2
Throw life raft overboard and inflate
Transfer to life raft with rucksack 1B

CAUTION: Inflate life vests and egress in order designated on white lanyards.

Last man out disconnect green lanyard from head strut. Attach lanyard to sea anchor attach fitting on CM.

STABLE II

Disconnect umbilicals
(PGA) Neck dams on
Configure center couch to 0 deg
Armrests stowed
(6,9,10) PWR (3) - OFF
SUIT PWR (3) - OFF
Remove TV CAMERA, BRACKET
(F2) Stow on F2
(R4) Unstow rucksacks 1B & 2
Attach yellow lanyards from rucksack 2 to 1B
Reposition umbilicals to clear tunnel area
Review tunnel hatch handle location and hatch unlocking procedure
PRESS EQUAL vlv - OPEN
Pull detent knob on end of handle, then pivot up 90 deg
Rotate crank ~3 turns CCW to fully open valve

NOTE: Tunnel will fill with water

(F1) Remove and stow tunnel hatch on F1
Connect lanyards from rucksack 2 (green to foot strut, white to crewmen in order of egress printed on lanyards

Egress procedure: Face LEB, verify lanyard routing, exit feet first, first man carrying rucksack. When clear of S/C inflate life vest and board raft.

CAUTION: Egress in order designated on white lanyards.

1st man out - Before egress lower rucksack 1B thru tunnel. Carry rucksack 2 out. After egress inflate raft, retrieve rucksack 1B.

2nd - Egress

3rd - Before egress disconnect green lanyard from foot strut. After egress attach green lanyard to sea anchor attach fitting on CM.

PINK

EMERGENCY PROCEDURES

(Flight copies only)

(See CSM SYSTEMS CHECKLIST)

BACK

COLOR PINK

EMER
4-2

(See CSM SYSTEMS CHECKLIST)

EMERGENCY PROCEDURES

NASA-JSC

ASTP

CHECKLIST DISTRIBUTION LIST

5/14/75

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+ Extra distribution on this item.

STD	91
SPEC	___
EXTRA	1
TOTAL	95

ASTP

ALTERNATE LAUNCH DATA

LAUNCH CHECKLIST

2ND, 3RD, 4TH & 5TH OPPORTUNITIES

PREPARED BY
PROCEDURES BRANCH
CREW TRAINING & PROCEDURES DIVISION

National Aeronautics and Space Administration
LYNDON B. JOHNSON SPACE CENTER
Houston, Texas
JUNE 25, 1975

ASTP LAUNCH CHECKLIST

JUNE 25, 1975
ALTERNATE LAUNCH DATA

PREPARED BY: Dennis L. Bentley

DENNIS L. BENTLEY
BOOK MANAGER

APPROVED BY: Dickie K. Warren

DICKIE K. WARREN, CHIEF
FLIGHT PROCEDURES SECTION

It is requested that any organization having comments, questions, or suggestions concerning this document contact Dennis L. Bentley, Flight Procedures Section, CG22, Bldg 4, Rm 211, telephone 483-3048.

This document is under the configuration control of the Crew Procedures Control Board (CPCB). All proposed changes should be submitted to the ASTP Flight Data Manager, T.W. Holloway, CG5, Bldg 4, Rm 225A, telephone 483-4471.

Distribution of this document is controlled by Ted A. Guillory, CG54, Bldg 4, Rm 225B, telephone 483-4271.

Replace pages L/3-8 & L/4-7 for each opportunity

15 UNSTOW & SET UP CAMERAS

DAC CM2/DAC/25/CX01 - MIR (T8,1/250,inf) 6 fps

(B3) DAC
Mag CX01 (on camera)
25 mm lens
Pwr cable
Rt angle mirror
(U2) DAC mount

HRC CM2/HRC/50/CX06 - (f8,1/250,inf)

(B5) HRC
Mag CX06 (on camera)
50 mm lens

TV CM4/TV/zoom - (AVG,SLAVE,LINEAR) (f22,25,15)

If white content of exterior scene <10%:
* Select PEAK *

(A5) TV
Zoom lens
Monitor
Cables (2)
U-mount
Assemble equipment:
U-mount to left camera shoe
Lens arrow pointing to rear
Position U-mount - 325,90,155
Mount in location 606 (pin in hole 1)

TV Monitor - ON
(181) CM2 TV STA PWR - OFF (verify)
Disconnect TV/MVA cable from CM2 TV STA SIG
Receptacle and secure with utility strap (R5)
Connect TV CABLE to CM2 TV STA receptacles
CM/DM CAMR PWR - on (up) (verify)
TV AMPL - ON
CM 1 TV STA PWR - ON
CM 2 TV STA PWR - ON
TV STA SEL CM - CM
TV STA SEL CM1 - CM1
Check monitors and adjust camera pointing
& lens, if req'd

DATE 6/25/75
2nd Opportunity

Nominal

SEP at 1:14:00 PET

N17(SEP)	(359,193,000)
N22(DOCK)	(001,013,000)

*If error needles not nulled:

V60E (SIVB db = ±1.8 deg)
V16 N20E
R22 = 360 - R20
P22 = 180 + P20
Y22 = 360 - Y20

	R	P	Y
	360	180	360
N20=	-	+	-
=N22			
		(-360)	
		=	

DATE 6/6/75

15 UNSTOW & SET UP CAMERAS

DAC CM2/DAC/25/CX01 - MIR (T8,1/250,inf) 6 fps

(B3) DAC
Mag CX01 (on camera)
25 mm lens
Pwr cable
Rt angle mirror

(U2) DAC mount

HRC CM2/HRC/50/CX06 - (f8,1/250,inf)

(B5) HRC
Mag CX06 (on camera)
50 mm lens

TV CM4/TV/zoom - (AVG,SLAVE,LINEAR) (f22,25,15)

If white content of exterior scene <10%:
* Select PEAK *

(A5) TV
Zoom lens
Monitor
Cables (2)
U-mount
Assemble equipment:
U-mount to left camera shoe
Lens arrow pointing to rear
Position U-mount - 325,90,155
Mount in location 606 (pin in hole 1)

TV Monitor - ON
(181) CM2 TV STA PWR - OFF (verify)
Disconnect TV/HVA cable from CM2 TV STA SIG
Receptacle and secure with utility strap (R5)
Connect TV CABLE to CM2 TV STA receptacles
CM/DM CAMR PWR - on (up) (verify)
TV AMPL - ON
CM 1 TV STA PWR - ON
CM 2 TV STA PWR - ON
TV STA SEL CM - CM
TV STA SEL CM1 - CM1
Check monitors and adjust camera pointing
& lens, if req'd

L
3-8

DATE 6/25/75
3rd Opportunity

Nominal

SEP at 1:14:00 PET

N17(SEP)	(359,189,000)
N22(DOCK)	(001,009,000)

*If error needles not nulled:

V60E (SIVB db = ±1.8 deg)
V16 N20E
R22 = 360 - R20
P22 = 180 + P20
Y22 = 360 - Y20

	R	P	Y
	360	180	360
N20=	-	+	-
=N22			
		(-360)	
		=	

15 UNSTOW & SET UP CAMERAS

DAC CM2/DAC/25/CX01 - MIR (T8,1/250,inf) 6 fps

(B3) DAC
Mag CX01 (on camera)
25 mm lens
Pwr cable
Rt angle mirror
(U2) DAC mount

HRC CM2/HRC/50/CX06 - (f8,1/250,inf)

(B5) HRC
Mag CX06 (on camera)
50 mm lens

TV CM4/TV/zoom - (AVG,SLAVE,LINEAR) (f22,25,15)

If white content of exterior scene <10%:
* Select PEAK *

(A5) TV
Zoom lens
Monitor
Cables (2)
U-mount
Assemble equipment:
U-mount to left camera shoe
Lens arrow pointing to rear
Position U-mount - 325,90,155
Mount in location 606 (pin in hole 1)

TV Monitor - ON
(181) CM2 TV STA PWR - OFF (verify)
Disconnect TV/MVA cable from CM2 TV STA SIG
Receptacle and secure with utility strap (R5)
Connect TV CABLE to CM2 TV STA receptacles
CM/DM CAMR PWR - on (up) (verify)
TV AMPL - ON
CM 1 TV STA PWR - ON
CM 2 TV STA PWR - ON
TV STA SEL CM - CM
TV STA SEL CM1 - CM1
Check monitors and adjust camera pointing
& lens, if req'd

DATE 6/25/75
4th Opportunity

Nominal

SEP at 1:14:00 PET

N17(SEP)	(359,186,359)
N22(DOCK)	(001,006,001)

*If error needles not nulled:

V60E (SIVB db = ±1.8 deg)
V16 N20E
R22 = 360 - R20
P22 = 180 + P20
Y22 = 360 - Y20

	R	P	Y
	360	180	360
N20=	-	+	-
=N22			
		(-360)	
		=	

DATE 6/6/75

15 UNSTOW & SET UP CAMERAS

DAC CM2/DAC/25/CX01 - MIR (T8,1/250,inf) 6 fps

(B3) DAC
Mag CX01 (on camera)
25 mm lens
Pwr cable
Rt angle mirror
(U2) DAC mount

HRC CM2/HRC/50/CX06 - (f8,1/250,inf)

(B5) HRC
Mag CX06 (on camera)
50 mm lens

TV CM4/TV/zoom - (AVG,SLAVE,LINEAR) (f22,2.5,15)

If white content of exterior scene <10%:
* Select PEAK *

(A5) TV
Zoom lens
Monitor
Cables (2)
U-mount
Assemble equipment:
U-mount to left camera shoe
Lens arrow pointing to rear
Position U-mount - 325,90,155
Mount in location 606 (pin in hole 1)

TV Monitor - ON
(181) CM2 TV STA PWR - OFF (verify)
Disconnect TV/MVA cable from CM2 TV STA SIG Receptacle and secure with utility strap (R5)
Connect TV CABLE to CM2 TV STA receptacles
CM/DM CAMR PWR - on (up) (verify)
TV AMPL - ON
CM 1 TV STA PWR - ON
CM 2 TV STA PWR - ON
TV STA SEL CM - CM
TV STA SEL CM1 - CM1
Check monitors and adjust camera pointing & lens, if req'd

L
3-8

DATE 6/25/75
5th Opportunity

Nominal

SEP at 1:14:00 PET

N17(SEP)	(359,182,000)
N22(DOCK)	(001,002,000)

*If error needles not nulled:

V60E (SIVB db = ±1.8 deg)
V16 N20E
R22 = 360 - R20
P22 = 180 + P20
Y22 = 360 - Y20

	R	P	Y
	360	180	360
N20=	-	+	-
=N22			
		(-360)	
		=	

SUNRISE
(2:29:10)

11 DM EXTRACTION (2:34:00 PET)

(274) SM RCS QUAD HTRS (4) - OFF (ctr)

(278) cb SIVB/DM SEP (2) - close (verify)

Set ΔVC to +100.0
EMS FUNC - ΔV
V48E, 11102,01111 (verify)
Load 32250 in R1 of N47
P30 (Load TIG=2:34:00, ΔVX=+3.0 fps)
Set DET counting up to SEP
P41 (Bypass Auto Mnvr)
GDC ALIGN to IMU
*If IMU failed: *
* ALIGN GDC to 359,248,000 *
V60E, V63E
cb SECS ARM (2) - close (verify)
SECS LOGIC (2) - on (up)
RHC & THC - ARMED
TAPE RCDR - HBR/RCD/FWD/CMD RESET
(181) TV STA SEL CM1 - CM1
CM1 TV STA PWR - ON
CM2 TV STA PWR - ON

56:00 TVC SERVO PWR #1 - AC1/MNA
HEAD WHEEL DRIVE MOT - ON (lt on)
TAPE MODE - RECORD (lt on)

58:00 TV STA SEL CM1 - CM2
SECS PYRO ARM (2) - ARM

59:30 EMS MODE - NORMAL
Start DAC

00:00 SIVB/DM SEP - on (up)
CMC MODE - AUTO
00:05 THRUST -X
00:10 THC - release
When clear of SIVB:
Null N85 components (Trim ±0.2)
PRO, 00E

A/C ROLL (4) - OFF
SECS PYRO ARM (2) - SAFE
SECS LOGIC (2) - OFF
cb SECS ARM (2) - open
TVC SERVO PWR #1 - OFF
EMS - STBY/OFF
THC PWR - OFF
RHC PWR DIRECT (2) - OFF
RHC & THC - LOCKED
Stop DAC
TAPE RCDR - REWIND
S-BD PWR AMPL HIGH - OFF
(400) HEAD WHEEL DRIVE MOT - OFF (lts out)
(181) TV STA SEL CM - UP TLM
TV STA SEL CM1 - UP TLM
CM1 TV STA PWR - OFF
CM2 TV STA PWR - OFF
TV AMPL - BYPASS
(274) SM RCS QUAD HTR A - SEC
SM RCS QUAD HTRS B,C,D - PRIM
(278) cb SIVB/DM SEP (2) - open

VAN AOS
(2:43:21) REPORT: DM Extraction/AEM Status

Go to RENDEZVOUS BOOK (pg 1-3)

DATE 6/25/75
3rd Opportunity

SUNRISE
(2:29:10)

11 DM EXTRACTION (2:34:00 PET)

(274) SM RCS QUAD HTRS (4) - OFF (ctr)

(278) cb SIVB/DM SEP (2) - close (verify)

Set ΔVC to +100.0
EMS FUNC - ΔV
V48E, 11102,01111 (verify)
Load 32250 in R1 of N47
P30 (Load TIG=2:34:00, ΔVX=+3.0 fps)
Set DET counting up to SEP
P41 (Bypass Auto Mnvr)
GDC ALIGN to IMU
*If IMU failed: *
* ALIGN GDC to 000,244,359 *
V60E, V63E
cb SECS ARM (2) - close (verify)
SECS LOGIC (2) - on (up)
RHC & THC - ARMED
TAPE RCDR - HBR/RCD/FWD/CMD RESET
(181) TV STA SEL CM1 - CM1
CM1 TV STA PWR - ON
CM2 TV STA PWR - ON

56:00 TVC SERVO PWR #1 - AC1/MNA
HEAD WHEEL DRIVE MOT - ON (lt on)
TAPE MODE - RECORD (lt on)

58:00 TV STA SEL CM1 - CM2
SECS PYRO ARM (2) - ARM

59:30 EMS MODE - NORMAL
Start DAC

00:00 SIVB/DM SEP - on (up)
CMC MODE - AUTO
00:05 THRUST -X
00:10 THC - release
When clear of SIVB:
Null N85 components (Trim ±0.2)
PRO, ODE

A/C ROLL (4) - OFF
SECS PYRO ARM (2) - SAFE
SECS LOGIC (2) - OFF
cb SECS ARM (2) - open
TVC SERVO PWR #1 - OFF
EMS - STBY/OFF
THC PWR - OFF
RHC PWR DIRECT (2) - OFF
RHC & THC - LOCKED
Stop DAC
TAPE RCDR - REWIND
S-BD PWR AMPL HIGH - OFF
(400) HEAD WHEEL DRIVE MOT - OFF (lts out)
(181) TV STA SEL CM - UP TLM
TV STA SEL CM1 - UP TLM
CM1 TV STA PWR - OFF
CM2 TV STA PWR - OFF
TV AMPL - BYPASS
(274) SM RCS QUAD HTR A - SEC
SM RCS QUAD HTRS B,C,D - PRIM
(278) cb SIVB/DM SEP (2) - open

VAN AOS
(2:43:21) REPORT: DM Extraction/AEM Status

Go to RENDEZVOUS BOOK (pg 1-3)

SUNRISE
(2:29:10)

11 DM EXTRACTION (2:34:00 PET)

(274) SM RCS QUAD HTRS (4) - OFF (ctr)

(278) cb SIVB/DM SEP (2) - close (verify)

Set ΔVC to +100.0
EMS FUNC - ΔV
V48E, 11102,01111 (verify)
Load 32250 in R1 of N47
P30 (Load TIG=2:34:00, ΔVX=+3.0 fps)
Set DET counting up to SEP
P41 (Bypass Auto Mnvr)
GDC ALIGN to IMU
*If IMU failed: *
* ALIGN GDC to 001,241,359 *
V60E, V63E
cb SECS ARM (2) - close (verify)
SECS LOGIC (2) - on (up)
RHC & THC - ARMED
TAPE RCDR - HBR/RCD/FWD/CMD RESET
(181) TV STA SEL CM1 - CM1
CM1 TV STA PWR - ON
CM2 TV STA PWR - ON

56:00 TVC SERVO PWR #1 - AC1/MNA
HEAD WHEEL DRIVE MOT - ON (lt on)
TAPE MODE - RECORD (lt on)

58:00 TV STA SEL CM1 - CM2
SECS PYRO ARM (2) - ARM

59:30 EMS MODE - NORMAL
Start DAC

00:00 SIVB/DM SEP - on (up)
CMC MODE - AUTO
00:05 THRUST -X
00:10 THC - release
When clear of SIVB:
Null N85 components (Trim ±0.2)
PRO, OOE

A/C ROLL (4) - OFF
SECS PYRO ARM (2) - SAFE
SECS LOGIC (2) - OFF
cb SECS ARM (2) - open
TVC SERVO PWR #1 - OFF
EMS - STBY/OFF
THC PWR - OFF
RHC PWR DIRECT (2) - OFF
RHC & THC - LOCKED
Stop DAC
TAPE RCDR - REWIND
S-BD PWR AMPL HIGH - OFF
(400) HEAD WHEEL DRIVE MOT - OFF (lts out)
(181) TV STA SEL CM - UP TLM
TV STA SEL CM1 - UP TLM
CM1 TV STA PWR - OFF
CM2 TV STA PWR - OFF
TV AMPL - BYPASS
(274) SM RCS QUAD HTR A - SEC
SM RCS QUAD HTRS B,C,D - PRIM
(278) cb SIVB/DM SEP (2) - open

VAN AOS
(2:43:21) REPORT: DM Extraction/AEM Status

Go to RENDEZVOUS BOOK (pg 1-3)

SUNRISE
(2:29:10)

11 DM EXTRACTION (2:34:00 PET)

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Set DET counting up to SEP
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GDC ALIGN to IMU
*If IMU failed: *
* ALIGN GDC to 000,237,359 *
V60E, V63E
cb SECS ARM (2) - close (verify)
SECS LOGIC (2) - on (up)
RHC & THC - ARMED
TAPE RCDR - HBR/RCD/FWD/CMD RESET
(181) TV STA SEL CM1 - CM1
CM1 TV STA PWR - ON
CM2 TV STA PWR - ON

56:00 TVC SERVO PWR #1 - AC1/MNA
HEAD WHEEL DRIVE MOT - ON (lt on)
TAPE MODE - RECORD (lt on)

58:00 TV STA SEL CM1 - CM2
SECS PYRO ARM (2) - ARM

59:30 EMS MODE - NORMAL
Start DAC

00:00 SIVB/DM SEP - on (up)
CMC MODE - AUTO
00:05 THRUST -X
00:10 THC - release
When clear of SIVB:
Null N85 components (Trim ±0.2)
PRO, 00E

DATE 6/20/75

A/C ROLL (4) - OFF
SECS PYRO ARM (2) - SAFE
SECS LOGIC (2) - OFF
cb SECS ARM (2) - open
TVC SERVO PWR #1 - OFF
EMS - STBY/OFF
THC PWR - OFF
RHC PWR DIRECT (2) - OFF
RHC & THC - LOCKED
Stop DAC
TAPE RCDR - REWIND
S-BD PWR AMPL HIGH - OFF
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VAN AOS
(2:43:21) REPORT: DM Extraction/AEM Status

Go to RENDEZVOUS BOOK (pg 1-3)

ASTP

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