

# Deorbit Prep

**Mission Operations Directorate  
Operations Division**

**Generic, Rev P  
April 16, 2007**

**NOTE**

For STS-117 and subsequent flights

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas



**Verify this is the correct version for the pending operation (training, simulation or flight).**  
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DEORBIT PREP

GENERIC, REV P (Apr 15, 2007)

## PCN-1 (July 18, 2007) Sheet 1 of 1

List of Implemented Change Requests (482s):

D/O-841A (R)           MULTI-1788  
D/O-842                MULTI-1793B  
D/O-846                MULTI-1795  
D/O-847  
D/O-848  
D/O-849  
D/O-851

R – Remainder

**NOTE**

For STS-118 and subsequent flights

Incorporate the following:

1. Replace iii thru vi
2. Replace 1-17 and 1-18 with A1-17 thru B1-18 (4 pages)  
Replace 1-31 and 1-32
3. Replace 2-17 and 2-18
4. Replace (OV103) A3-9 and (OV103) A3-10, (OV103) A3-29 thru (OV103) A3-32,  
(OV104) B3-9 and (OV104) B3-10, (OV104) B3-31 and (OV104) B3-32,  
(OV105) C3-9 and (OV105) C3-10, (OV105) C3-19 and (OV105) C3-20,  
(OV105) C3-29 thru (OV105) C3-32
5. Replace 5-7 and 5-8
6. Replace 6-3 and 6-4
7. Replace 7-3 and 7-4
8. Replace section 8 (6 pages)

Prepared by:

  
Publication Manager

Approved by:

  
Manager, Shuttle Procedures Management

Accepted by:

  
PDF Manager

Encl: 42 pages

**File this PCN immediately behind the front cover as a permanent record**



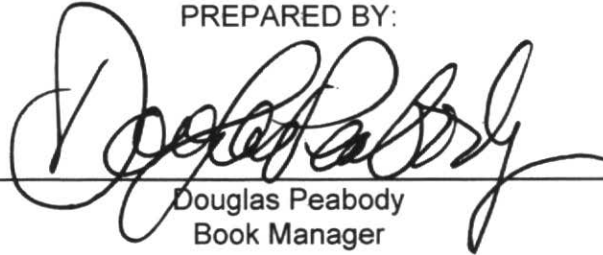
MISSION OPERATIONS DIRECTORATE

**DEORBIT PREP**

GENERIC, REVISION P

April 16, 2007

PREPARED BY:



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Douglas Peabody  
Book Manager

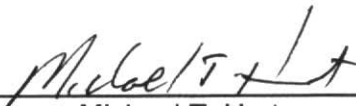
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Incorporates the following:	
482#:	D/O-835A D/O-837A D/O-840 D/O-841 D/O-843 D/O-844 D/O-845

AREAS OF TECHNICAL RESPONSIBILITY

Book Manager	DO3/D. Peabody	281-483-9582
Alternate Book Manager	DO3/A. Blaylock	281-244-1184

DEORBIT PREP

**LIST OF EFFECTIVE PAGES**

GENERIC 09/16/87  
 REV P 04/16/07  
 PCN-1 07/18/07

Sign Off .....	*	ALL/GEN P	1-30 .....	†	ALL/GEN P
ii.....	*	ALL/GEN P	1-31 .....		ALL/GEN P,1
iii.....	*	ALL/GEN P,1	1-32 .....		ALL/GEN P,1
iv.....	*	ALL/GEN P,1	2-1 .....		ALL/GEN P
v .....	*	ALL/GEN P,1	2-2 .....		ALL/GEN P
vi.....	*	ALL/GEN P	2-3.....		ALL/GEN P
vii.....		ALL/GEN P	2-4.....		ALL/GEN P
viii.....		ALL/GEN P	2-5.....		ALL/GEN P
1-1 .....		ALL/GEN P	2-6.....		ALL/GEN P
1-2.....		ALL/GEN P	2-7.....		ALL/GEN P
1-3.....		ALL/GEN P	2-8.....		ALL/GEN P
1-4.....		ALL/GEN P	2-9.....		ALL/GEN P
1-5.....		ALL/GEN P	2-10.....		ALL/GEN P
1-6.....		ALL/GEN P	2-11.....		ALL/GEN P
1-7.....		ALL/GEN P	2-12.....		ALL/GEN P
1-8.....		ALL/GEN P	2-13.....		ALL/GEN P
1-9.....		ALL/GEN P	2-14.....		ALL/GEN P
1-10.....		ALL/GEN P	2-15.....	†	ALL/GEN P
1-11.....		ALL/GEN P	2-16.....	†	ALL/GEN P
1-12.....		ALL/GEN P	2-17.....		ALL/GEN P
1-13.....		ALL/GEN P	2-18.....		ALL/GEN P,1
1-14.....		ALL/GEN P	3-1.....		ALL/GEN P
TEMP 1-11.....		117/GEN P	3-2.....		ALL/GEN P
TEMP 1-12.....		117/GEN P	(OV103) A3-3.....		3/GEN P
TEMP 1-13.....		117/GEN P	(OV103) A3-4.....		3/GEN P
TEMP 1-14.....		ALL/GEN P	(OV103) A3-5.....		3/GEN P
1-15.....		ALL/GEN P	(OV103) A3-6.....		3/GEN P
1-16.....		ALL/GEN P	(OV103) A3-7.....		3/GEN P
1-17.....		deleted	(OV103) A3-8.....		ALL/GEN P
1-18.....		deleted	(OV103) A3-9.....	‡	3/GEN P
A1-17.....		OI-30/GEN P,1	(OV103) A3-10.....	‡	3/GEN P,1
A1-18.....		ALL/GEN P,1	(OV103) A3-11.....	‡	3/GEN P
B1-17.....		OI-32/GEN P,1	(OV103) A3-12.....	‡	3/GEN P
B1-18.....		ALL/GEN P,1	(OV103) A3-13.....		3/GEN P
1-19.....		ALL/GEN P	(OV103) A3-14.....		ALL/GEN P
1-20.....		ALL/GEN P	(OV103) A3-15.....		3/GEN P
1-21.....		ALL/GEN P	(OV103) A3-16.....		3/GEN P
1-22.....		ALL/GEN P	(OV103) A3-17.....		3/GEN P
1-23.....		ALL/GEN P	(OV103) A3-18.....		3/GEN P
1-24.....		ALL/GEN P	(OV103) A3-19.....		3/GEN P
1-25.....		ALL/GEN P	(OV103) A3-20.....		3/GEN P
1-26.....		ALL/GEN P	(OV103) A3-21.....		ALL/GEN P
1-27.....		ALL/GEN P	(OV103) A3-22.....		3/GEN P
1-28.....		ALL/GEN P	(OV103) A3-23.....		3/GEN P
1-29.....	†	ALL/GEN P	(OV103) A3-24.....		3/GEN P

\* – Omit from flight book

† – Extra copies of appropriate pages flown in back of MS2's book only

‡ – Extra copies of appropriate pages flown in back of book

(OV103) A3-25.....	3/GEN P	(OV105) C3-17.....	5/GEN P
(OV103) A3-26.....	3/GEN P	(OV105) C3-18.....	5/GEN P
(OV103) A3-27.....	3/GEN P	(OV105) C3-19.....	5/GEN P,1
(OV103) A3-28.....	3/GEN P	(OV105) C3-20.....	5/GEN P
(OV103) A3-29.....‡	3/GEN P,1	(OV105) C3-21.....	ALL/GEN P
(OV103) A3-30.....‡	3/GEN P	(OV105) C3-22.....	5/GEN P
(OV103) A3-31.....‡	3/GEN P,1	(OV105) C3-23.....	5/GEN P
(OV103) A3-32.....‡	3/GEN P	(OV105) C3-24.....	5/GEN P
(OV104) B3-3.....	4/GEN P	(OV105) C3-25.....	5/GEN P
(OV104) B3-4.....	4/GEN P	(OV105) C3-26.....	5/GEN P
(OV104) B3-5.....	4/GEN P	(OV105) C3-27.....	5/GEN P
(OV104) B3-6.....	4/GEN P	(OV105) C3-28.....	5/GEN P
(OV104) B3-7.....	4/GEN P	(OV105) C3-29..... ‡	5/GEN P,1
(OV104) B3-8.....	ALL/GEN P	(OV105) C3-30..... ‡	5/GEN P
(OV104) B3-9.....‡	4/GEN P	(OV105) C3-31..... ‡	5/GEN P,1
(OV104) B3-10.....‡	4/GEN P,1	(OV105) C3-32..... ‡	5/GEN P
(OV104) B3-11.....‡	4/GEN P	4-1.....	ALL/GEN P
(OV104) B3-12.....‡	4/GEN P	4-2.....	ALL/GEN P
(OV104) B3-13.....	4/GEN P	5-1.....	ALL/GEN P
(OV104) B3-14.....	ALL/GEN P	5-2.....	ALL/GEN P
(OV104) B3-15.....	4/GEN P	5-3.....	ALL/GEN P
(OV104) B3-16.....	4/GEN P	5-4.....	ALL/GEN P
(OV104) B3-17.....	4/GEN P	5-5.....	ALL/GEN P
(OV104) B3-18.....	4/GEN P	5-6.....	ALL/GEN P
(OV104) B3-19.....	4/GEN P	5-7.....	ALL/GEN P,1
(OV104) B3-20.....	4/GEN P	5-8.....	ALL/GEN P
(OV104) B3-21.....	ALL/GEN P	5-9.....	ALL/GEN P
(OV104) B3-22.....	4/GEN P	5-10.....	ALL/GEN P
(OV104) B3-23.....	4/GEN P	6-1.....	ALL/GEN P
(OV104) B3-24.....	4/GEN P	6-2.....	ALL/GEN P
(OV104) B3-25.....	4/GEN P	6-3.....	ALL/GEN P,1
(OV104) B3-26.....	4/GEN P	6-4.....	ALL/GEN P
(OV104) B3-27.....	4/GEN P	7-1.....	ALL/GEN P
(OV104) B3-28.....	4/GEN P	7-2.....	ALL/GEN P
(OV104) B3-29.....‡	4/GEN P	7-3.....	ALL/GEN P,1
(OV104) B3-30.....‡	4/GEN P	7-4.....	ALL/GEN P
(OV104) B3-31.....‡	4/GEN P,1	8-1.....	* ALL/GEN P
(OV104) B3-32.....‡	4/GEN P	CC 8-2.....	* ALL/GEN P,1
(OV105) C3-3.....	5/GEN P	CC 8-3.....	* ALL/GEN P,1
(OV105) C3-4.....	5/GEN P	CC 8-4.....	* ALL/GEN P
(OV105) C3-5.....	5/GEN P	CC 8-5.....	* ALL/GEN P,1
(OV105) C3-6.....	5/GEN P	8-6.....	* ALL/GEN P
(OV105) C3-7.....	5/GEN P		
(OV105) C3-8.....	ALL/GEN P		
(OV105) C3-9.....‡	5/GEN P		
(OV105) C3-10.....‡	5/GEN P,1		
(OV105) C3-11.....‡	5/GEN P		
(OV105) C3-12.....‡	5/GEN P		
(OV105) C3-13.....	5/GEN P		
(OV105) C3-14.....	ALL/GEN P		
(OV105) C3-15.....	5/GEN P		
(OV105) C3-16.....	5/GEN P		

‡ – Extra copies of appropriate pages flown in back of book

\* – Omit from flight book



## DEORBIT CUE CARDS

<u>Title</u>	<u>Ref. Page</u>	<u>Card No.</u>	
MS MIDDECK ACTIVITIES (Front) .....	CC 8-2	D/O-1a/E/E	
(Back).....	CC 8-3	D/O-1b/E/C	
MS MIDDECK BACKOUT ACTIVITIES (Front).....	CC 8-4	D/O-2a/E/C	
(Back).....	CC 8-5	D/O-2b/E/D	

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<u>CONTENTS</u>	<u>PAGE</u>
NOMINAL DEORBIT PREP PROCEDURES .....	1-1
DEORBIT PREP BACKOUT PROCEDURES .....	2-1
ENTRY SWITCH LIST/VERIFICATION.....	3-1
BFS DEORBIT PREP NOTES.....	4-1
CONTINGENCY DELTAS TO NOMINAL DEORBIT PREP .....	5-1
PLBD CONTINGENCY EVA TIMELINE .....	6-1
HARDWARE CONTINGENCY EVA TIMELINE.....	7-1
CUE CARD CONFIGURATION .....	8-1

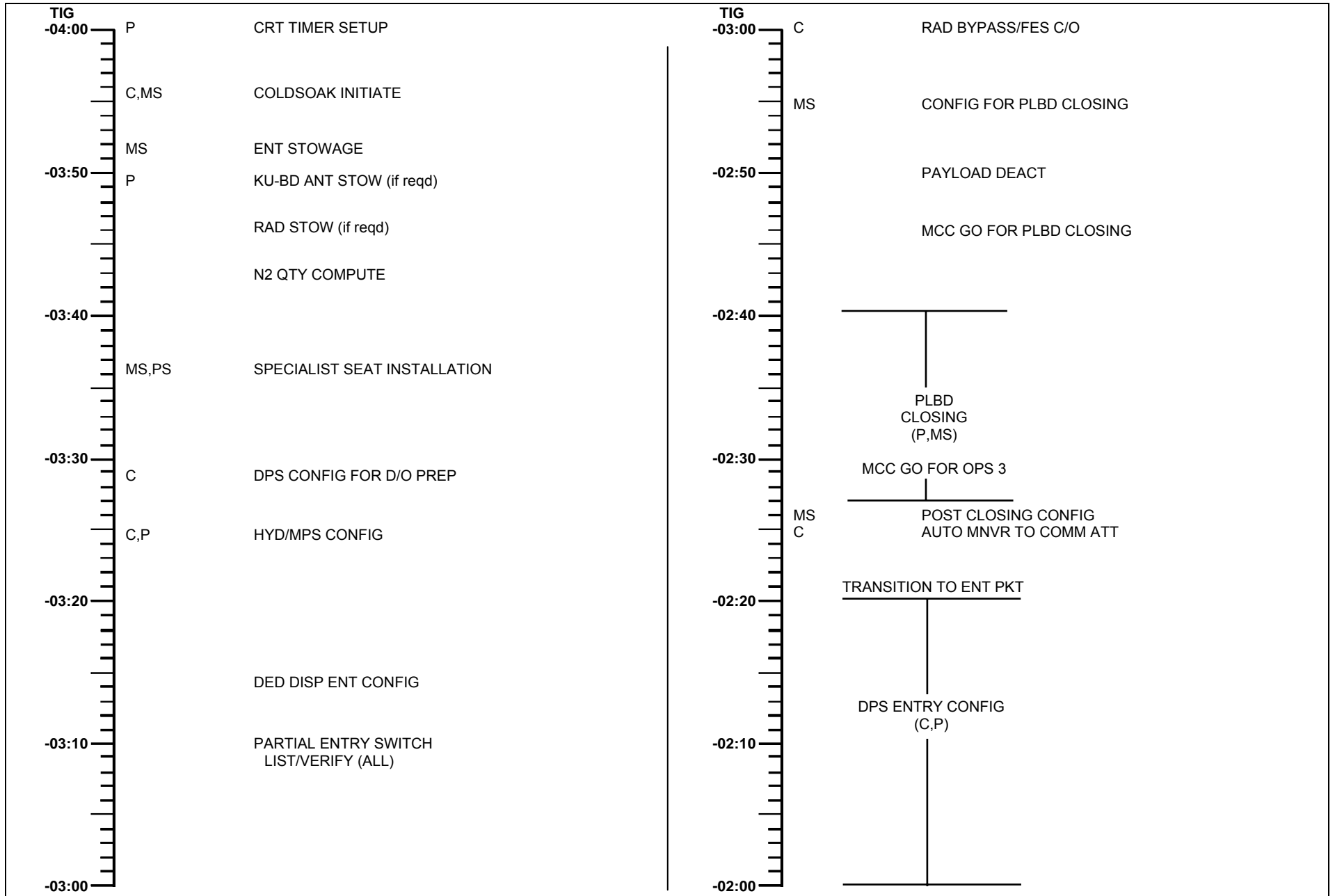
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**NOMINAL DEORBIT PREP PROCEDURES**

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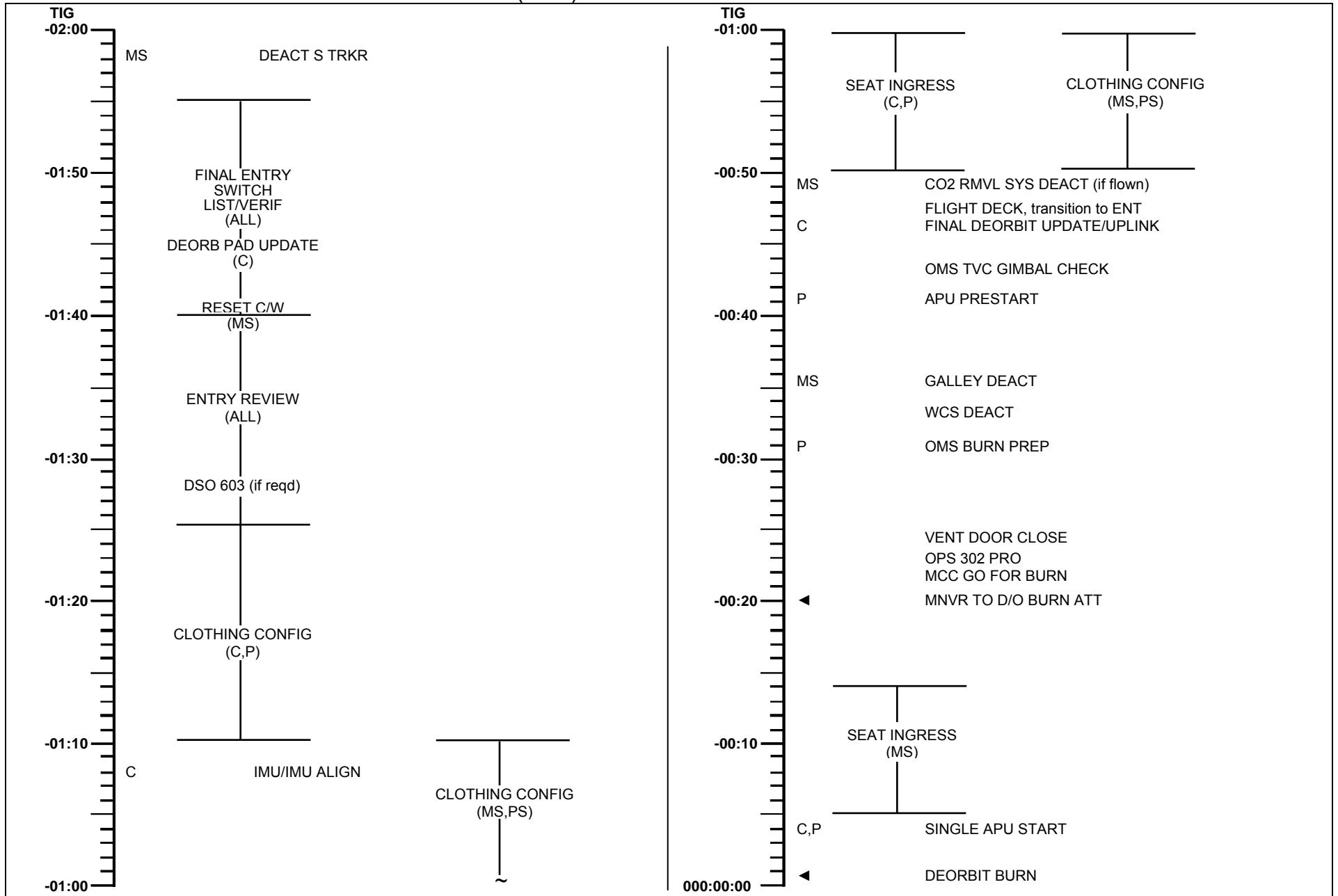


# NOMINAL DEORBIT PREP SUMMARY TIMELINE





# NOMINAL DEORBIT PREP SUMMARY TIMELINE (Cont)



## NOMINAL DEORBIT PREP

For cabin temperature management, use maximum of 25% on backlit panel lighting unless reqd for visibility

- \* If TIME to TIG < 4 hr and > 2 hr 40 min: \*
- \* 1. ACCOMPLISH IMMEDIATELY: \*
- \* MNVR (TRK) BIASED -XSI (if not already in TAIL SUN) \*
- \* CRTX TGT ID +4 (blanks OM) \*
- \* BODY VECT +5 \*
- \* P +184 \*
- \*  $\sqrt{\text{OM}}$  (blank) \*
- \* Initiate TRK \*
- \* 2. Back out of PRIORITY PWRDN as reqd (ORB PKT, PRIOR PWRDN) \*
- \* 3. If previous FC PURGE was not accomplished within last 6 hr: \*
- \* Accomplish FC PURGE (ORB OPS, EPS) during D/O Prep prior to DPS ENTRY \*
- \* CONFIG \*
- \* 4. MS accomplish CABIN CONFIG/STOW (FLIGHT PLAN) during D/O Prep timeframe \*
- \* 5. Begin Deorbit Prep timeline immediately and perform procedure as rapidly as possible \*

VERIFY THAT FOLLOWING ACTIVITIES HAVE BEEN ACCOMPLISHED:

FCS CHECKOUT (ORB OPS, GNC)

RCS HOT FIRE TEST (ORB OPS, RCS)

CABIN CONFIG/STOW (FLIGHT PLAN)

IMU ALIGN – S TRK (ORB OPS, GNC)

MNVR (TRK) BIASED – XSI (FLIGHT PLAN, DETAILED TIMELINE)

FC PURGE (ORB OPS, EPS)

Back out of PRIORITY PWRDN as reqd (ORB PKT, PRIOR PWRDN)

TIG		1: GNC UNIV PTG	2: SM SYS SUMM 1
-04:00	A5(B1) AUTO VERN RT 0.2 DB 1.0	P	<u>CRT TIMER SETUP</u> [ 1 ]
		C,MS	<u>COLDSOAK INITIATE</u> [ 2 ]
-03:55			Verify in ATT: DAP: A5/AUTO/VERN(ALT) If no FWD RCS: √A6/AUTO/ALT √DAP: B set to B1
		MS	<u>ENT STOWAGE</u> [ 3 ], 1-31 <u>ENT AIRLOCK CONFIG</u> [ 3A ], 1-32
-03:50		P	KU-BD ANT STOW, if deployed (ORB OPS, <u>COMM/INST</u> )
			RAD STOW, if reqd (ORB OPS, <u>ECLS</u> )
-03:45			<u>N2 QTY COMPUTE</u> Add N2 QTY 1 + 2 Then annotate CABIN PRESS LEAK NOMOGRAPH (ENT PKT, <u>ECLS</u> )
-03:40	S66		<u>DETERMINE H2 DEPLETED TANKS</u> Note all H2 tanks with Qty < 3% Then annotate DEORBIT BURN FLIGHT RULES, ELEC section (step 8) for depleted tanks (ENT, <u>BURN CARDS</u> )
	S68, 168		
-03:35	MS, PS		<u>SPECIALIST SEAT INSTALLATION</u>
-03:30			

CRT TIMER SETUP [ 1 ]

1: GNC 2 TIME  
SET CRT TIMER TO COUNT DOWN TO TIG (perform for GNC & SM)

ENTRY DAY (HR:MIN:SEC – MET)

ITEM 17 +   +   +

24 HR LATE DELAYED DEORBIT

ITEM 17 +   +   +

1: GNC UNIV PTG

COLDSOAK INITIATE [ 2 ]

C L1 FES CONFIG  
FLASH EVAP CNTLR PRI A,B, SEC (three) – OFF  
RAD CNTLR OUT TEMP – HI  
When FREON EVAP OUT TEMP > 50 degF, FLASH  
EVAP CNTLR PRI B(A) – ON  
HI LOAD DUCT HTR – B

H2O LOOP C/O AND CONFIG  
SM 88 APU/ENVIRON THERM

NOTE  
INCR decreases ICH FLOW

L1 H2O LOOP 2 BYP MODE – MAN  
MAN – INCR or DECR (adjust until  
ICH FLOW ~950 ± 50)

If first Deorbit Prep:

L1 H2O PUMP LOOP 1 – ON  
√LOOP 1 BYP MODE – MAN  
MAN – DECR (hold 5 sec)

CRT √H2O LOOP 1 ICH FLOW – increasing

L1 H2O LOOP 1 BYP MAN – INCR (Adjust until ICH  
FLOW ~950 ± 50)  
H2O PUMP LOOP 1 (two) – OFF,B

HYD/MPS CONFIG 5

W/B STEAM VENT HTR ACT

R2           √BLR CNTLR/HTR (three) – B  
                   PWR (three)           – ON

NOTE

HTR reqd to be on 2 hr prior to APU act

HYD CIRC PUMP TERM

R2           HYD CIRC PUMP (three) – OFF

SSME HYD REPRESS PREP

C3           √FCS CH (four) – AUTO  
 O17          ATVC (four)   – ON

DED DISP ENT CONFIG 6

O14,          RGA (four)           – ON

O15,          cb MNA,B,C ADTA (four) – cl

O16          MNA,B ACCEL 1, 2 (two) – cl

                DDU L (two)       – cl

                √MNA, C DDU AFT (two) – op

                MNB, C DDU R (two) – cl

                ASA (four)           – ON

                ACCEL 4,3 (two)       – ON

MDU          AFD1                 – OFF

O7           If OV105:

                GPS 1,3 PWR (two) – ON

                GPS PWRUP (ORB OPS, GNC) if reqd

                If OV103,4:

                  TACAN MODE (three) – GPC

                  ANT SEL (three) – AUTO

O8           RADAR ALTM (two) – ON

                MLS (three)           – ON

                CH tw (three) – See DEL PAD (ENT), PRPLT/DEL PADS)

F3           TRIM PNL (two)   – ON

**TIG**  
**-03:30**  
A5(B1)  
AUTO  
VERN  
RT 0.2  
DB 1.0

**-03:25** C,P      HYD/MPS CONFIG **5**, 1-8

**-03:20**

**-03:15**      DED DISP ENT CONFIG **6**, 1-8

**-03:10** C  
P  
MS

**-03:05**

**-03:00**

1: GNC 0 GPC MEMORY      2: BFS, GNC 0 BFS MEMORY

If single G2: DPS CONFIG FOR D/O PREP **4a**

ENSURE BFS GPC CAN COMMAND AN IDP **4b**

PARTIAL ENT SWITCH LIST/VERIF (FWD), 3-4 thru 3-6  
PARTIAL ENT SWITCH LIST/VERIF (FWD), 3-7 and 3-8  
PARTIAL ENT SWITCH LIST/VERIF (AFT), 3-9  
PARTIAL ENT SWITCH LIST/VERIF (MID), 3-10 thru 3-12

**NOTE**  
√MCC for unaccounted-for sw or  
cb config discrepancies

DPS CONFIG FOR D/O PREP **4a**

**NOTE**  
No keyboard entries or sw throws 10 sec:  
Before and after moding PASS GPCs to RUN  
Before OPS transition or set expansion/contraction  
requests until new OPS base page is displayed

P/I Locker      ACTIVATE GPC 2 (if in HALT)  
Remove and stow GPC Mode Switch Guard

O6      √GPC MODE 2 – HALT (tb-bp)  
√OUTPUT 2 – NORM  
√PWR 2 – ON  
MODE 2 – STBY (tb-RUN),  
RUN

CONFIG GPC	2	12000
STR 1	1	1
2	2	2
3	1	1
4	2	2
PL 1/2	0	0
CRT 1	1	1
2	2	2
3	0	0
4	2	2
L 1	0	0
2	0	0
MM 1	1	1
2	2	2

TRANSITION GPCs 1 & 2 TO OPS 2  
(if GPC 2 just activated)

1: GNC 0 GPC MEMORY  
CONFIG – ITEM 1 +2 EXEC  
Modify MC 2 per table →  
GNC, OPS 201 PRO

1: GNC 22 S TRK/COAS CNTL  
S TRK -Y,-Z: STAR TRK – ITEM 3,4 EXEC

1: GNC 21 IMU ALIGN  
RESUME

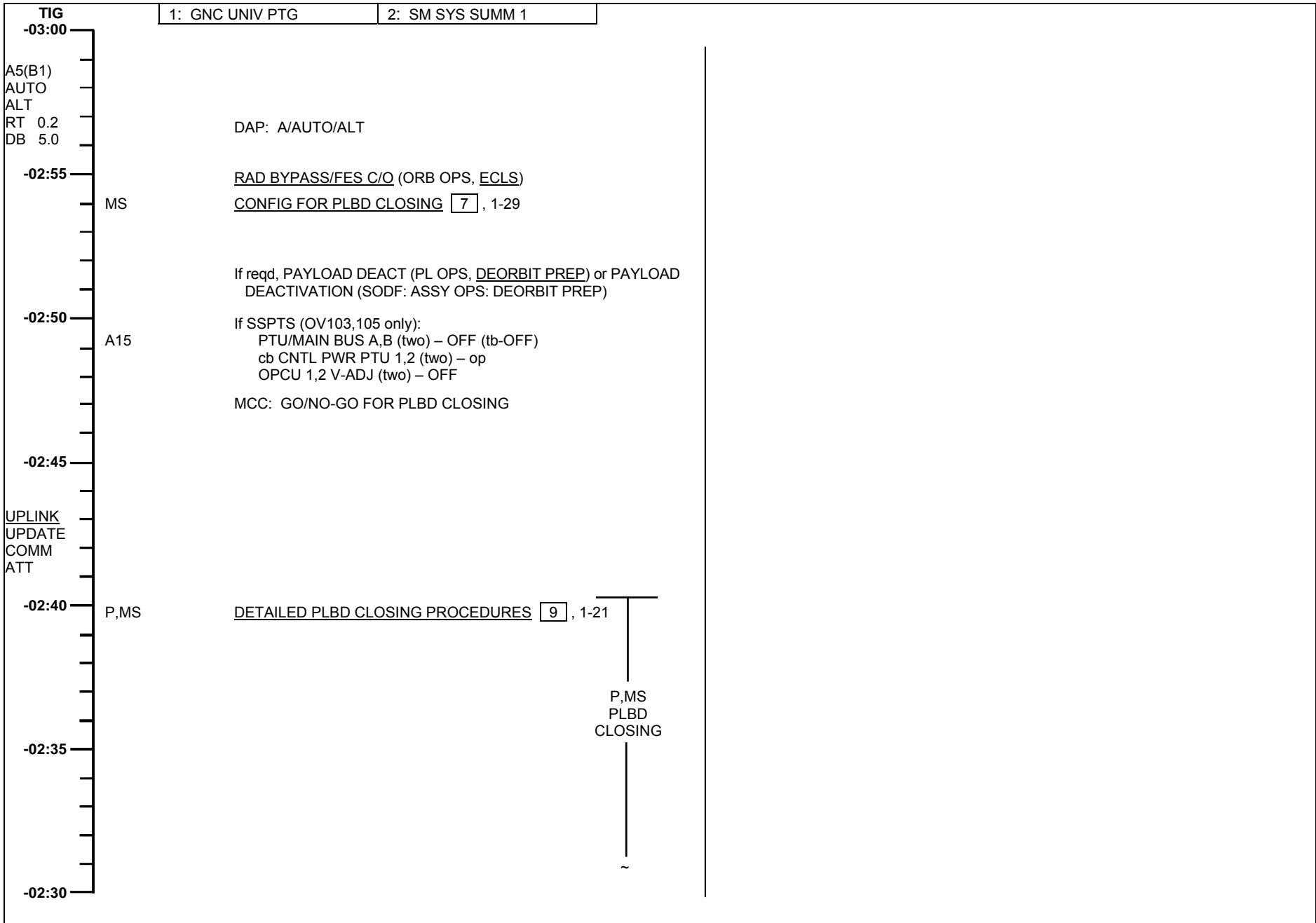
ENSURE BFS GPC CAN COMMAND AN IDP **4b**

O6      √GPC PWR 5 – ON  
MODE 5 – STBY (tb-RUN)

C3      BFC CRT DISP – ON  
SEL – 2+3

C3      2: BFS, GNC BFS MEMORY or SM THERMAL  
BFC CRT DISP – OFF  
SEL – 3+1

Block  deleted



DPS ENTRY CONFIG 12

\* If IMU or RHC dilemma, do not proceed with OPS 3 transition \*

√Att mnvr complete  
 √RGA,AA,ASA,IMU (all) – ON

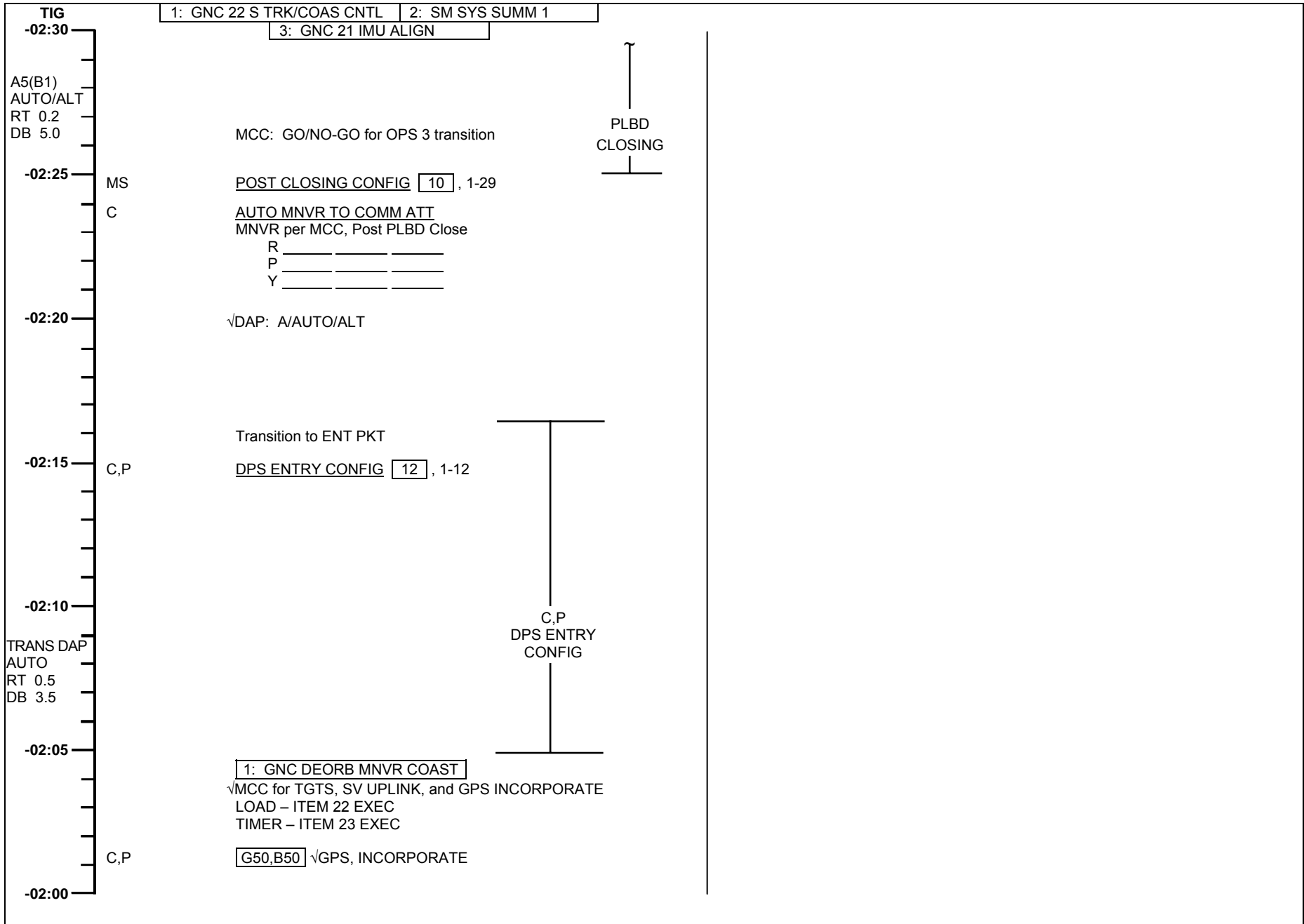
NOTE

No keyboard entries or sw throws 10 sec:  
 Before and after moding PASS GPCs to RUN  
 Before OPS transition or set expansion/contraction requests until new OPS base page is displayed

- C2  
CRTLX  
F6,F7,F8
- 1. MEDS CONFIG  
 IDP/CRT 3 PWR – ON  
 GPC/CRT 2/3 EXEC  
 √All forward MDUs ON and selected to primary port
- O6
- 2. VERIFY GPC CONFIG  
 √GPC MODE 3 – HALT (tb-bp)  
 √PWR 3 – ON  
 √OUTPUT 1,2 – NORM (tb-gray)  
     √3,5 – NORM (tb-bp)  
     √4 – TERM (tb-bp)  
 √MODE 1,2,4 – RUN (tb-RUN)  
     3 – STBY (tb-RUN)  
     √5 – STBY (tb-RUN)
- 3. SM CHECKPOINT/UL CNTL ENA  
 1: SM 60 SM TABLE MAINT  
 2: SM 1 DPS UTILITY
- CRT2  
CRTL1
- MMU ASSIGN 2 SM – ITEM 4 EXEC  
 CKPT INITIATE – ITEM 18 EXEC  
 √Update of CKPT TIME and STATUS GOOD indicated
- CRT2  
CRTL1
- MMU ASSIGN 1 SM – ITEM 3 EXEC  
 CKPT INITIATE – ITEM 18 EXEC  
 √Update of CKPT TIME and STATUS GOOD indicated
- CRT2
- CKPT RETRV ENA – ITEM 12 EXEC (\*)  
 UL CNTL ENA – ITEM 36 EXEC
- 4. LOAD ENTRY TFL/RECONFIG UPLK  
 Perform LOAD PDI DECOM FORMAT and LOAD PCMMU FORMAT for entry config (ORB OPS FS, COMM/INST)
- C2
- Set event timer to count down to TIG
- 5. TRANSITION GPC 1&2 TO GNC OPS 3  
 1: GNC 0 GPC MEMORY  
 CONFIG – ITEM 1 +3 EXEC

	Modify MC 3 per table →	CONFIG GPC	3
	GNC, OPS 301 PRO	STR	1 1
	1: GNC DEORB MNVR COAST	2	2
		3	1
	6. <u>TRANSITION BFS GPC TO GNC OPS 3</u>	4	2
C3	BFC CRT DISP – ON	PL 1/2	0
	√SEL = 3+1	CRT	1 1
	3: BFS, GNC BFS MEMORY	2	2
		3	2
O6 CRTL3	GPC OUTPUT 5 – B/U (tb-bp)	4	0
	√TFL ENA – ITEM 29 (*)	L	1 0
	BFS, GNC OPS 301 PRO	2	0
	3: BFS, GNC DEORB MNVR COAST	MM	1 1
		2	2
	7. <u>TRANSITION GPC 1,2,3,4 TO GNC OPS 3</u>		
	SM, OPS 000 PRO		
	X: SM GPC MEMORY		
O6	GPC OUTPUT 4 – NORM (tb-gray)	CONFIG GPC	3
	MODE 3,5 (two) – RUN (tb-RUN)	STR	1 1
	If no comm, sel best antenna	2	2
	1: GNC 0 GPC MEMORY	3	3
	√CONFIG – ITEM 1 +3 EXEC	4	4
	Modify MC 3 per table →	PL 1/2	1
	GNC OPS 301 PRO	CRT	1 1
	1: GNC DEORB MNVR COAST	2	2
CRTL3	BFS, GNC OPS 000 PRO	3	3
	BFS, GNC OPS 301 PRO	4	0
	BFC CRT DISP – OFF	L	1 0
	(GPC 3 commanding IDP 3)	2	0
	BFC CRT DISP – ON	MM	1 1
	* If any IMU failed or not aligned:	* 2	* 2
	* 3: BFS, GNC 51 OVERRIDE *		
	* Aff IMU – desel *		
	8. <u>MNVR BACK TO COMM ATT</u>		





DEORB PAD UPDATE 17

MCC update:

OMS PRPLT PAD, DEL PAD (ENT, PRPLT/DEL PADS) and DEORBIT  
MNVR PAD (ENT, MNVR PADS)

\* If MCC cannot provide DEORB TGT, use Deorbit Manager on PGSC \*

LANDING SITE UPDATE

1: GNC 50 HORIZ SIT

SEL SITE see DEL PAD (ENT, PRPLT/DEL PADS)

CHECK TGTs

1: GNC DEORB MNVR COAST

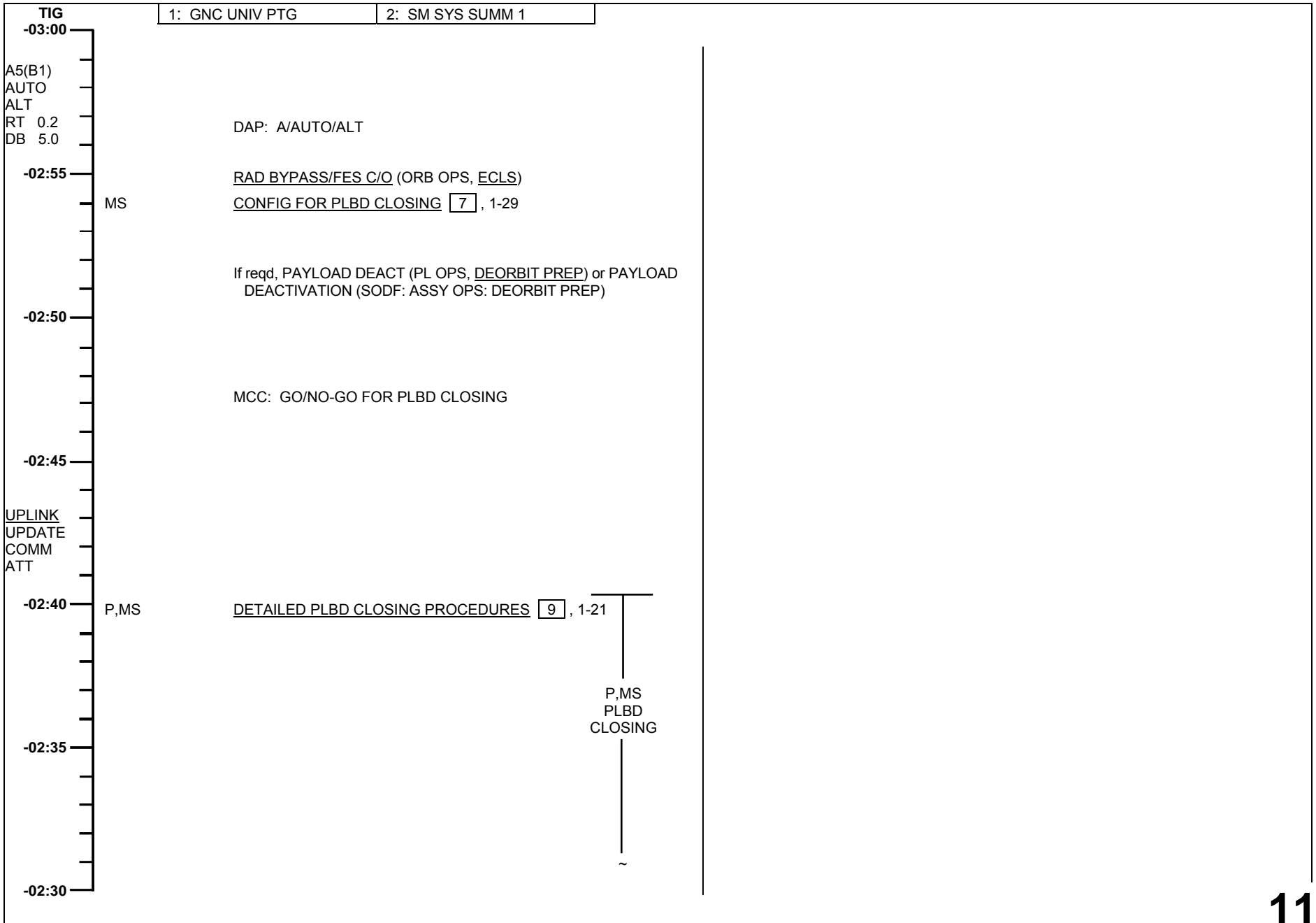
√PASS and BFS TGT per DEORBIT MNVR PAD (ENT, MNVR PADS)

√PASS and BFS solution per DEORBIT MNVR PAD (ENT, MNVR PADS)

BURN ATT, HA HP

$\Delta$ VTOT

TGO



DPS ENTRY CONFIG 12

\* If IMU or RHC dilemma, do not proceed with OPS 3 transition \*

√Att mnvr complete  
 √RGA,AA,ASA,IMU (all) – ON

NOTE

No keyboard entries or sw throws 10 sec:  
 Before and after moding PASS GPCs to RUN  
 Before OPS transition or set expansion/contraction requests until new OPS base page is displayed

1. MEDS CONFIG  
 IDP/CRT 3 PWR – ON  
 GPC/CRT 2/3 EXEC  
 √All forward MDUs ON and selected to primary port
2. VERIFY GPC CONFIG  
 √GPC MODE 3 – HALT (tb-bp)  
     √PWR 3 – ON  
     √OUTPUT 1,2 – NORM (tb-gray)  
         √3,5 – NORM (tb-bp)  
         √4 – TERM (tb-bp)  
     √MODE 1,2,4 – RUN (tb-RUN)  
         3 – STBY (tb-RUN)  
         √5 – STBY (tb-RUN)
3. SM CHECKPOINT/UL CNTL ENA  
     1: SM 60 SM TABLE MAINT  
     2: SM 1 DPS UTILITY
- CRT2 MMU ASSIGN 2 SM – ITEM 4 EXEC  
 CRT1 CKPT INITIATE – ITEM 18 EXEC  
 √Update of CKPT TIME and STATUS GOOD indicated
- CRT2 MMU ASSIGN 1 SM – ITEM 3 EXEC  
 CRT1 CKPT INITIATE – ITEM 18 EXEC  
 √Update of CKPT TIME and STATUS GOOD indicated
- CRT2 CKPT RETRV ENA – ITEM 12 EXEC (\*)  
 UL CNTL ENA – ITEM 36 EXEC
4. LOAD ENTRY TFL/RECONFIG UPLK  
 Perform LOAD PDI DECOM FORMAT and LOAD PCMMU FORMAT for entry config (ORB OPS FS, COMM/INST)
- C2 Set event timer to count down to TIG
5. TRANSITION GPC 1&2 TO GNC OPS 3  
     1: GNC 0 GPC MEMORY  
 CONFIG – ITEM 1 +3 EXEC

Modify MC 3 per table  
 GNC, OPS 301 PRO

1: GNC DEORB MNVR COAST

6. TRANSITION BFS GPC TO GNC OPS 3

BFC CRT DISP – ON

√SEL = 3+1

3: BFS, GNC BFS MEMORY

GPC OUTPUT 5 – B/U (tb-bp)

√TFL ENA – ITEM 29 (\*)

BFS, GNC OPS 301 PRO

3: BFS, GNC DEORB MNVR COAST

7. TRANSITION GPC 1,2,3,4 TO GNC OPS 3

SM, OPS 000 PRO

X: SM GPC MEMORY

GPC OUTPUT 4 – NORM (tb-gray)

MODE 3,5 (two) – RUN (tb-RUN)

If no comm, sel best antenna

1: GNC 0 GPC MEMORY

√CONFIG – ITEM 1 +3 EXEC

Modify MC 3 per table

GNC OPS 301 PRO

1: GNC DEORB MNVR COAST

BFS, GNC OPS 000 PRO

BFS, GNC OPS 301 PRO

BFC CRT DISP – OFF

(GPC 3 commanding IDP 3)

BFC CRT DISP – ON

\*If any IMU failed or not aligned: \*

3: BFS, GNC 51 OVERRIDE \*

\* Aff IMU – desel \*

8. MNVR BACK TO COMM ATT

9. LOAD IN TGTs

1: GNC DEORB MNVR COAST

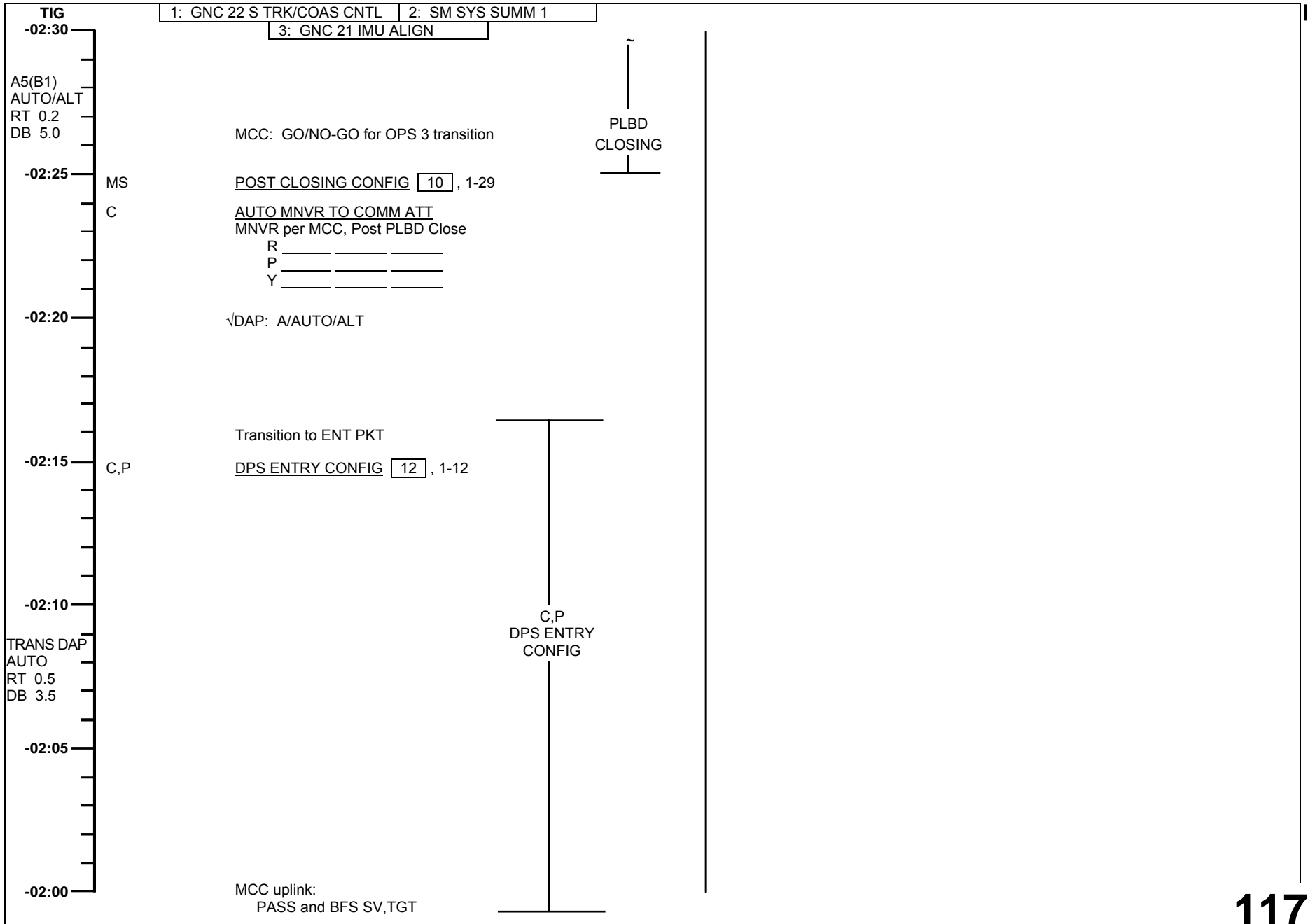
√MCC for TGT and SV UPLINK

LOAD – ITEM 22 EXEC

TIMER – ITEM 23 EXEC

CONFIG GPC	3	12000
STR	1	1
	2	2
	3	1
	4	2
PL	1/2	0
CRT	1	1
	2	2
	3	2
	4	0
L	1	0
	2	0
MM	1	1
	2	2

CONFIG GPC	3	12340
STR	1	1
	2	2
	3	3
	4	4
PL	1/2	1
CRT	1	1
	2	2
	3	3
	4	0
L	1	0
	2	0
MM	1	1
	2	2



DEORB PAD UPDATE 17

MCC update:

OMS PRPLT PAD, DEL PAD (ENT, PRPLT/DEL PADS) and DEORBIT  
MNVR PAD (ENT, MNVR PADS)

\* If MCC cannot provide DEORB TGT, use Deorbit \*  
\* Manager on PGSC \*

LANDING SITE UPDATE

1: GNC 50 HORIZ SIT

SEL SITE see DEL PAD (ENT, PRPLT/DEL PADS)

CHECK TGTs

1: GNC DEORB MNVR COAST

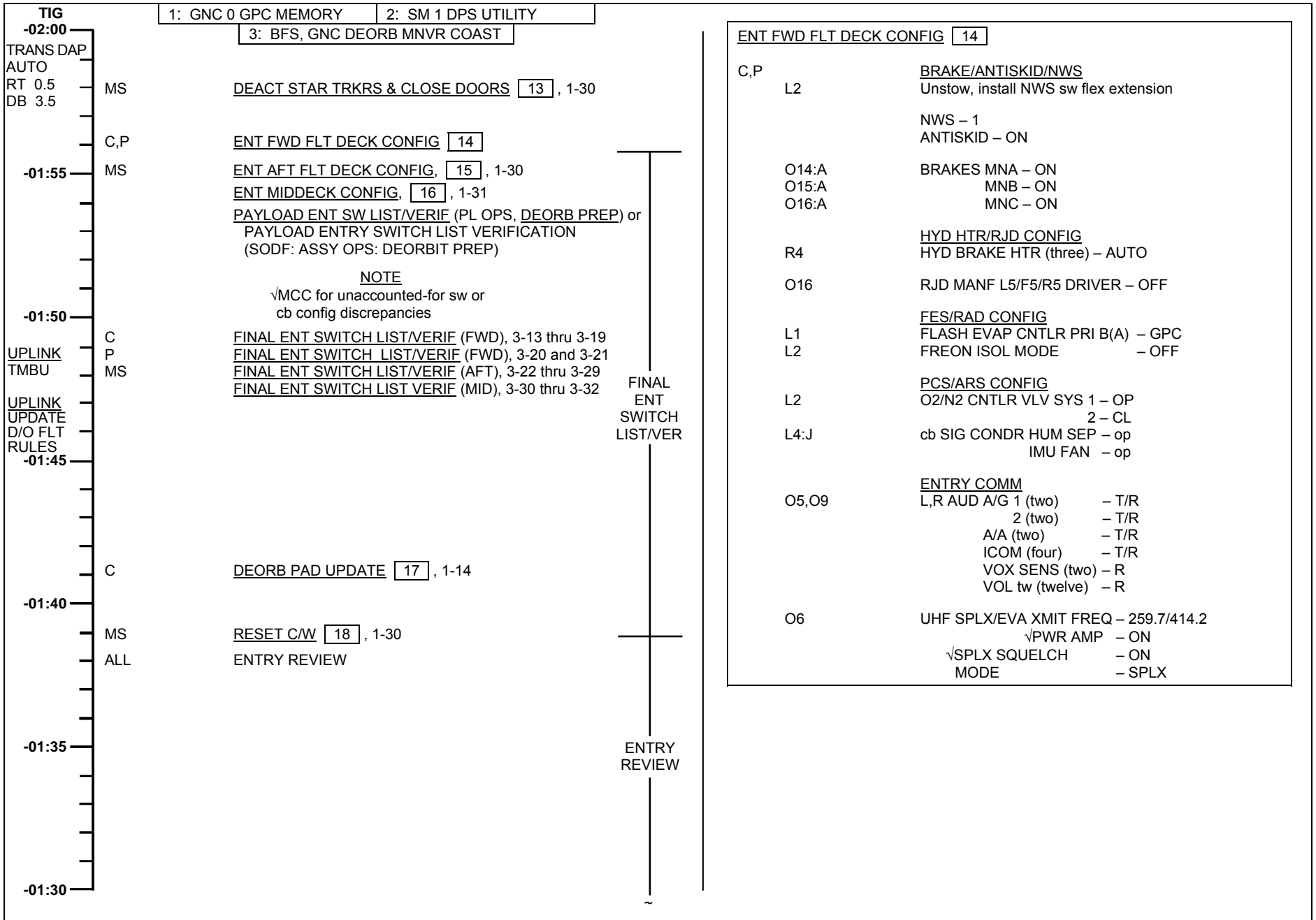
√PASS and BFS TGT per DEORBIT MNVR PAD (ENT, MNVR PADS)

√PASS and BFS solution per DEORBIT MNVR PAD (ENT, MNVR PADS)

BURN ATT, HA HP

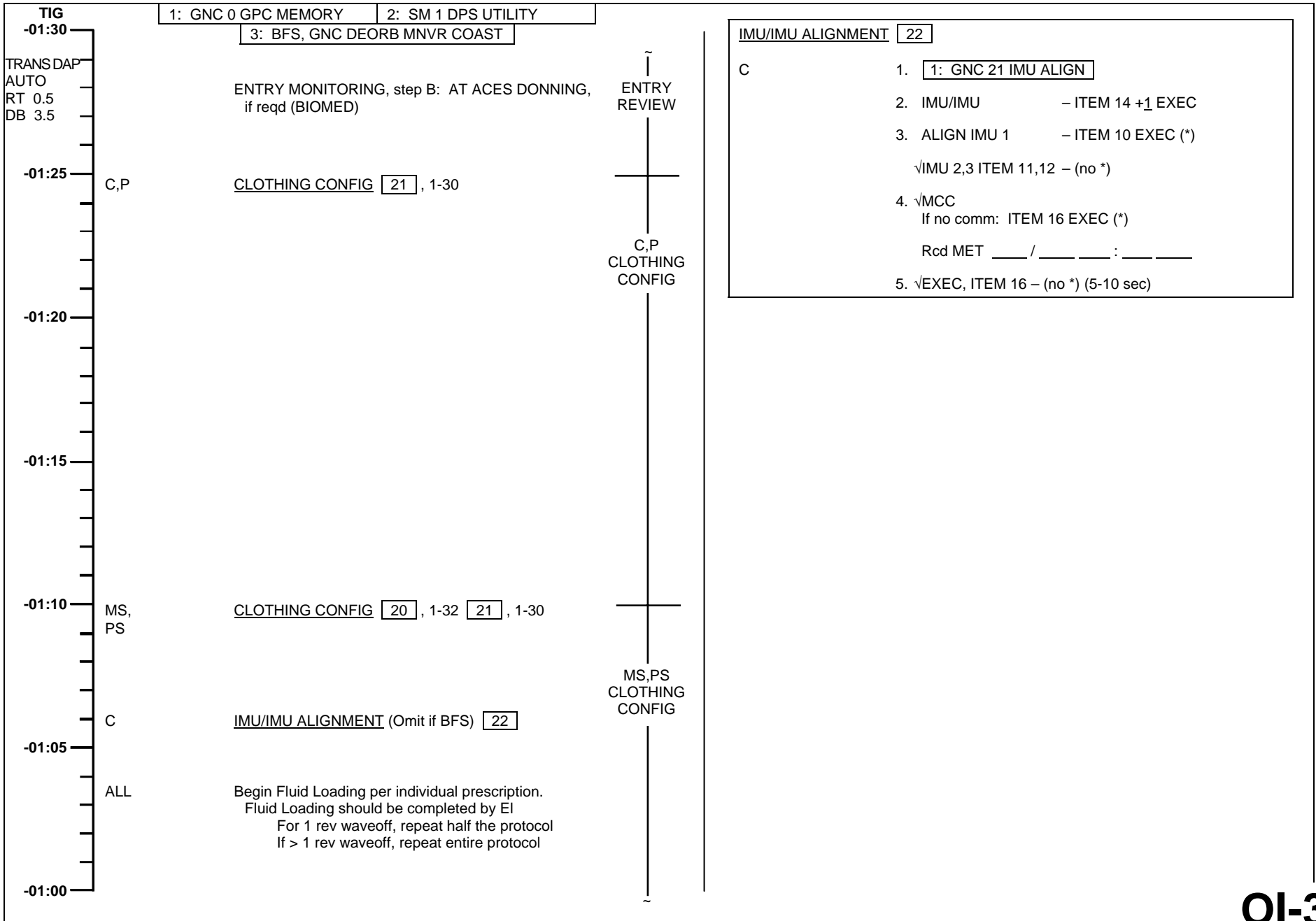
ΔVTOT

TGO

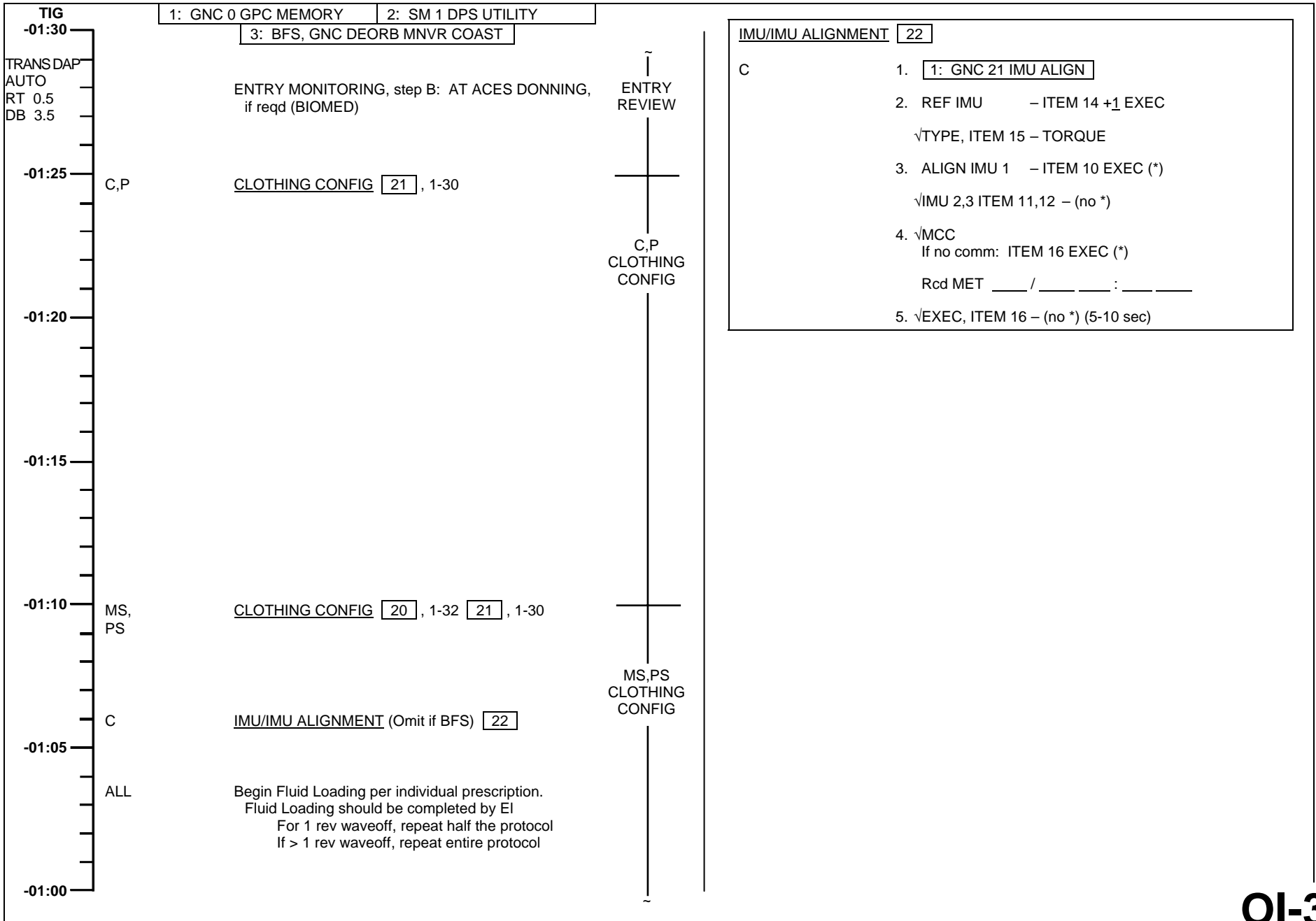


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TIG		1: GNC DEORB MNVR COAST	2: GNC DEORB MNVR COAST	
-01:00	TRANS DAP	C,P	3: BFS, GNC DEORB MNVR COAST	MS,PS CLOTHING CONFIG
	AUTO	C,P	SEAT INGRESS	
	RT 0.5	C,P	HUD SETUP 23	
	DB 3.5	C,P	Adjust seat Exercise brake pedals	
-00:55		C	C6 LEH O2 vlv (four) – OP	
		C,P	ACES PRESS INTEGRITY CHECK	
		MS	AFD AUD SPKR CONFIG 28, 1-29	
		MS	WIRELESS STOW, if flown 24	
-00:50		MS	CO2 RMVL SYS DEACT, if flown 25, 1-32	
		C,P	Stow all unnecessary FDF articles FLIGHT DECK, go to ENT, DEORBIT BURN	
-00:45				
-00:40				
-00:35		MS	GALLEY DEACT 26, 1-31	
			NOTE WCS must be deactivated prior to EI	
		MS	WCS DEACT MS 27, 1-32	
		MS	MD AUD SPKR CONFIG 29, 1-32	
-00:30				

HUD SETUP 23  
Remove, stow HUD Covers (two)  
Ensure Cloth Cover does not obscure light sensor

WIRELESS STOW, if flown 24  
Disconnect, stow Wireless Comm (if reqd)  
√Aft deck lts as reqd

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# AUTO PLBD CLOSING

## DETAILED PLBD CLOSING PROCEDURES 9

### CAUTION

Verify no obstructions before closing and latching PLBD (Ku ANT,RMS,RAD,etc)

Use MANUAL mode for subsequent BFS PLBD ops if BFS AUTO sequence has been interrupted by reversing latch/door drive direction or if MANUAL mode has already been used during mission

- R13L
- \* If no motion determined visually or 'OP/CL' \*
  - \* not blank within 10 sec after cmd: \*
  - \* PL BAY DR – STOP \*
  - \* Perform MAL, MECH, 9.1a \*
  - \* If Latch not 'CL' in single-motor time: \*
  - \* PL BAY DR – STOP \*
  - \* Perform MAL, MECH, 9.1e \*
  - \* If door motion stops and not 'RDY' or 'CL': \*
  - \* PL BAY DR – STOP \*
  - \* Perform MAL, MECH, 9.1g \*
- \* If SM GPC fails during this operation: \*
- \* PL BAY DR SYS (two) – DSBL \*
  - \* DR – STOP \*
  - \* Perform PASS SM GPC FAIL (ORB PKT, DPS) \*

### NOTE

Note any single-motor operations (continue ops)  
(single-motor times = 2x listed dual-motor times)

### CONFIGURE FOR AUTO MODE

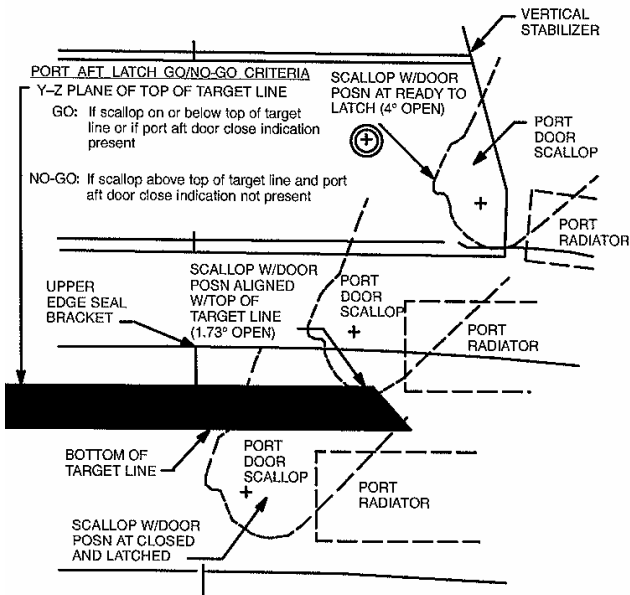
- CRT4 1. SM, OPS 202 PRO or BFS, SM 63 PL BAY DOORS
- 4: SM PL BAY DOORS
- R13L √PL BAY DR – STOP
- CRT4 √PBD SW – STOP
- √MAN SEL (ten) – (no \*)
- √PBD SW BYPASS – (no\*)
2. AC POWER ON – ITEM 1 EXEC (\*)
3. AUTO MODE SEL – ITEM 3 EXEC (\*)
- R13L 4. PL BAY DR SYS (two) – ENA
- CRT4 √OP/CL STATUS (ten) – OP

## CLOSE PLBDs USING AUTO MODE

- R13L 5. PL BAY DR – CL
- CRT4 \* If PORT DOOR not 'CL' within 6 sec of 'RDY': \*
- R13L \* PL BAY DR – STOP \*
- \* Go to PORT BKHD LATCH TROUBLESHOOTING \*
- \* (AUTO MODE) 9A, 1-23 \*
- CRT4 √PORT DOOR – blank,RDY,CL (~63 sec)
- √FWD, AFT LATCHES – blank, CL (~30 sec)
- √STBD DOOR – blank
6. When Stbd Door as close as possible to Port Door before contact, perform PLBD fit check:
- R13L PL BAY DR – STOP
- Determine C/L Latch clearance on C/L LATCH EXTENDED GUIDE ROLLER TRAJECTORY NO-GO DIAGRAM, 1-22
- \* If NO-GO for PLBD CLOSE: \*
- \* If no waveoff capability: \*
- \* Perform MAL, MECH, SSR-3 (SIMULTANEOUS PLBD CL) \*
- \* If waveoff OK: \*
- \* √MCC \*
7. PL BAY DR – CL
- CRT4 \* If STBD DOOR not 'CL' within ~6 sec of 'RDY': \*
- R13L \* PL BAY DR – STOP \*
- \* Go to STBD BKHD LATCH TROUBLESHOOTING \*
- \* (AUTO MODE) 9B, 1-23 \*
- CRT4 √STBD DOOR – CL (~63 sec)
- √FWD,AFT LATCHES (two) – blank,CL (~30 sec)
- √CENTER LATCHES 1-4,13-16 (two) – blank,CL (~20 sec)
- √5-8, 9-12 (two) – blank,CL (~20 sec)
- R13L 8. PL BAY DR – STOP
- POST-PLBD CLOSING CLEANUP
- CRT4 9. PL BAY DR SYS (two) – DSBL
- √OP/CL STATUS (ten) – CL
10. AC POWER OFF – ITEM 2 EXEC (\*)
11. GPC/CRT 54 EXEC

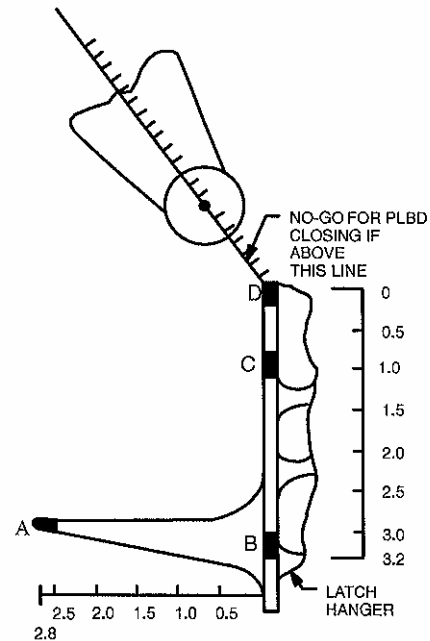
# AUTO PLBD CLOSING (Cont)

## PORT AFT BULKHEAD LATCH GO/NO-GO DIAGRAM



FUNCTION	PLBD CONTROL								PLBD DISPLAY PL MDM								
	Ref: MA73C:C&D for MCA (cb)																
	MTR 1				MTR 2				C	C	O	O	C	R	R	R	O
	AC/MCA	CNTL	MDM	SYS	AC/MCA	CNTL	MDM	SYS	A	B	A	B	A	B	C		
LATCH																	
5-8	1/MID3	AB3/AB2	PL1	2	3/MID2	CA3/CA1	PL2	1	1	2	1	2					
9-12	1/MID1	AB3/AB1	PL1	1	3/MID4	CA3/CA2	PL2	2	1	2	1	2					
1-4	1/MID3	AB3/AB2	PL1	2	3/MID2	CA3/CA1	PL2	1	1	2	1	2					
13-16	3/MID4	CA3/CA2	PL2	2	2/MID2	BC3/BC1	PL1	1	2	1	2	1					
S FWD	1/MID1	AB3/AB1	PL1	1	2/MID4	BC3/BC2	PL2	2	1	2	1	2					
S AFT	3/MID4	CA3/CA2	PL2	2	2/MID2	BC3/BC1	PL1	1	2	1	2	1					
S DOOR	1/MID1	AB3/AB1	PL1	1	2/MID4	BC3/BC2	PL2	2					1	1	2	2	1
													2	1	2	2	2
P FWD	1/MID1	AB3/AB1	PL1	1	2/MID4	BC3/BC2	PL2	2	1	2	1	2					
P AFT	1/MID3	AB3/AB2	PL1	2	3/MID2	CA3/CA1	PL2	1	1	2	1	2					
P DOOR	3/MID4	CA3/CA2	PL2	2	2/MID2	BC3/BC1	PL1	1					2	1	1	2	2
													1	1	1	2	1

## C/L LATCH EXTENDED GUIDE ROLLER TRAJECTORY NO-GO DIAGRAM





PORT BKHD LATCH TROUBLESHOOTING (AUTO MODE) [9A]

- CRT4 1. √PORT DOOR FWD, AFT MICRO-SW STATs  
 If PORT DOOR AFT 'C' = '0':  
 : 2. √PORT AFT BULKHEAD LATCH GO/NO DIAGRAM, 1-22  
 : If NO-GO:  
 L Go to MAL, MECH, SSR-2 (CONTINGENCY PLBD CLOSURE)
- If PORT DOOR FWD 'C' = '0':  
 :  
 : NOTE  
 : Use PLB camera A to view port fwd bkhd latch  
 : hook/roller #3 as seen in figures 1-1 and 1-2, 1-24
- R13L 3. PL BAY DR SYS 1 – DSBL  
 :  
 : During the following step, monitor latch hook #3 while driving to  
 : ensure hook motion and proper roller engagement  
 :  
 : \* If latch hook #3 stops moving while commanded, or \*  
 : \* it appears that the hook is going to miss or jam \*  
 : \* into its roller: \*  
 : \* PL BAY DR – STOP \*  
 : \* Go to MAL, MECH, SSR-2 (CONTINGENCY \*  
 : \* PLBD CLOSURE) \*
4. PL BAY DR – CL  
 :  
 : 5. When proper roller engagement verified for latch #3:  
 L PL BAY DR – STOP  
 SYS 1 – ENA
6. Go to step 5 of AUTO PLBD CLOSING [9], 1-21 ignoring the starred  
 block

STBD BKHD LATCH TROUBLESHOOTING (AUTO MODE) [9B]

- CRT4 1. √STBD DOOR FWD, AFT MICRO-SW STATs  
 If STBD DOOR AFT (FWD) 'C' = '0':  
 :  
 : NOTE  
 : Use PLB camera C(D) to view stbd aft (fwd) bkhd latch  
 : hook/roller #3 as seen in figures 1-1 and 1-2, 1-24
- R13L 2. PL BAY DR SYS 1(2) – DSBL  
 :  
 : During the following step, monitor latch hook #3 while driving to  
 : ensure hook motion and proper roller engagement  
 :  
 : \* If at any point latch hook #3 stops moving while \*  
 : \* commanded, or it appears that the hook is going \*  
 : \* to miss or jam into its roller: \*  
 : \* PL BAY DR – STOP \*  
 : \* Go to MAL, MECH, SSR-2 (CONTINGENCY \*  
 : \* PLBD CLOSURE) \*
3. PL BAY DR – CL  
 :  
 : 4. When proper roller engagement verified for latch #3:  
 : PL BAY DR – STOP  
 L SYS 1(2) – ENA
5. Go to step 7 of AUTO PLBD CLOSING [9], 1-21 ignoring the starred  
 block

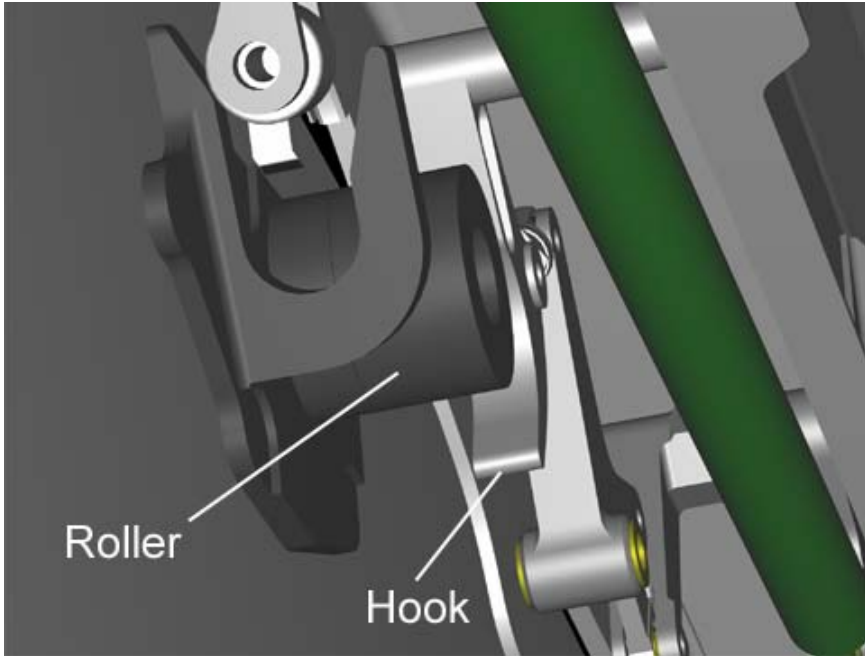


Figure 1-1.- Latch hook/roller #3 typical view from PLB camera

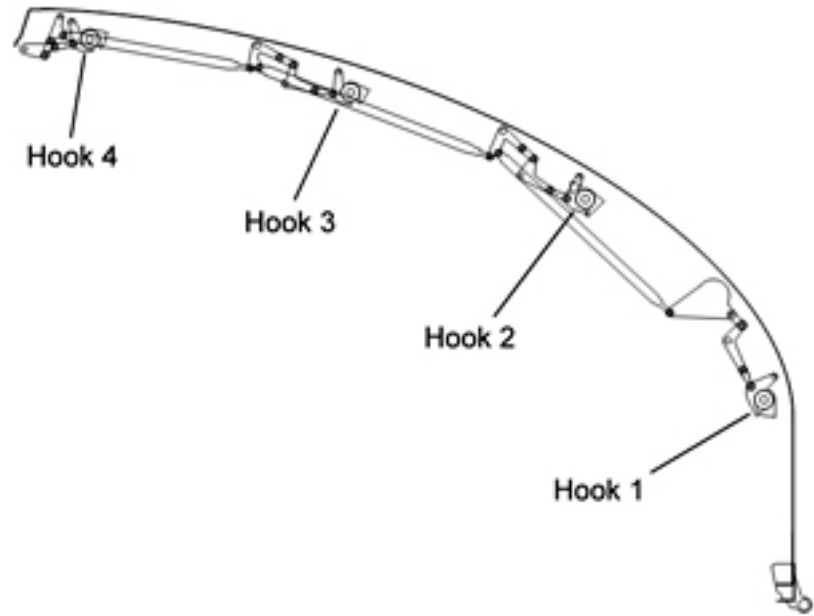


Figure 1-2.- Typical latch hook/roller numbering

# MANUAL PLBD CLOSING

## DETAILED PLBD CLOSING PROCEDURES

### CAUTION

Verify no obstructions before closing and latching PLBD (Ku ANT,RMS,RAD,etc)

Use MANUAL mode for subsequent BFS PLBD ops if BFS AUTO sequence has been interrupted by reversing latch/door drive direction or if MANUAL mode has already been used during mission

- R13L
- \* If no motion determined visually or 'OP/CL' \*
  - \* not blank within 10 sec after cmd: \*
  - \* PL BAY DR – STOP \*
  - \* Go to MAL, MECH, 9.1a \*
  - \* If Latch not 'CL' in single-motor time: \*
  - \* PL BAY DR – STOP \*
  - \* Go to MAL, MECH, 9.1e \*
  - \* If door motion stops and not 'RDY' or 'CL': \*
  - \* PL BAY DR – STOP \*
  - \* Go to MAL, MECH, 9.1g \*
- \* If SM GPC fails during this operation: \*
  - \* PL BAY DR SYS (two) – DSBL \*
  - \* DR – STOP \*
  - \* Go to PASS SM GPC FAIL (ORB PKT, DPS) \*

### NOTE

Note any single-motor operations (continue ops)  
(single-motor times = 2x listed dual-motor times)

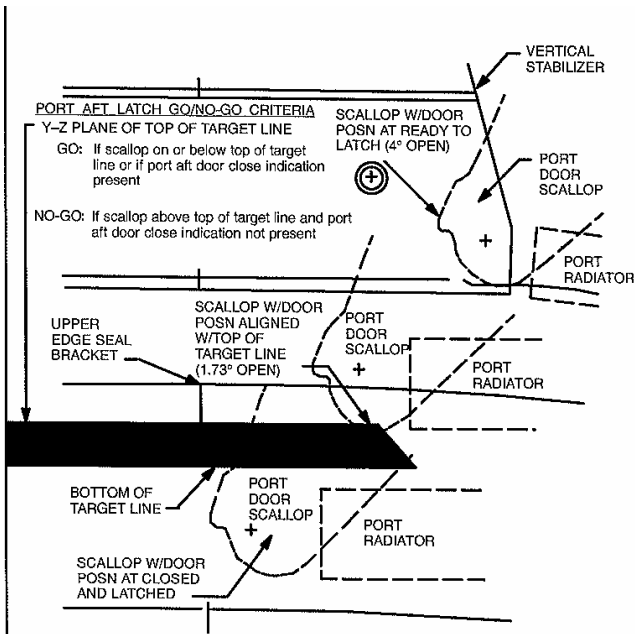
### CONFIGURE FOR MANUAL MODE

- CRT4 1. SM, OPS 202 PRO or BFS, SM 63 PL BAY DOORS  
4: SM PL BAY DOORS
- R13L √PL BAY DR – STOP  
CRT4 √PBD SW – STOP  
√MAN SEL (ten) – (no \*)  
√PBD SW BYPASS – (no \*)
2. AC POWER ON – ITEM 1 EXEC (\*)  
√AUTO MODE SEL – (no \*)
- R13L 3. PL BAY DR SYS (two) – ENA  
CRT4 √OP/CL STATUS (ten) – OP
- CLOSE PORT DOOR, FWD & AFT LATCHES
- CRT4 4. Select PORT DOOR – ITEM 13 EXEC (\*)  
R13L 5. PL BAY DR – CL
- CRT4 \* If PORT DOOR not 'CL' within 6 sec of 'RDY': \*  
R13L \* PL BAY DR – STOP \*  
\* Go to PORT BKHD LATCH TROUBLESHOOTING \*  
\* (MANUAL MODE) 9C, 1-27 \*
- CRT4 √PORT DOOR – blank,RDY,CL (~63 sec)  
R13L 6. PL BAY DR – STOP

- CRT4 7. Select PORT FWD,AFT LATCHES – ITEM 11, 12 EXEC (\*)  
R13L 8. PL BAY DR – CL  
CRT4 √PORT DOOR – CL  
√FWD,AFT LATCHES (two) – blank, CL (~30 sec)
- R13L 9. PL BAY DR – STOP  
CRT4 10. Deselect PORT FWD,AFT LATCHES, & DOOR – ITEM 11,12,13 EXEC (no \*)
- CLOSE STBD DOOR, FWD & AFT LATCHES
- R13L 11. Select STBD DOOR – ITEM 10 EXEC (\*)  
CRT4 12. PL BAY DR – CL  
√STBD DOOR – blank
- R13L 13. When Stbd Door as close as possible to Port Door before contact, perform fit check:  
PL BAY DR – STOP  
Determine C/L Latch clearance on C/L LATCH EXTENDED GUIDE ROLLER TRAJECTORY NO-GO DIAGRAM, 1-26  
\* If NO-GO for PLBD CLOSE: \*  
\* If no waveoff capability: \*  
\* | Go to MAL, MECH SSR-3 (SIMULTANEOUS PLBD CL) \*  
\* If waveoff OK: \*  
\* √MCC \*
- CRT4 14. PL BAY DR – CL  
R13L \* If STBD DOOR not 'CL' within 6 sec of 'RDY': \*  
\* PL BAY DR – STOP \*  
\* Go to STBD BKHD LATCH TROUBLESHOOTING \*  
\* (MANUAL MODE) 9D, 1-27 \*
- CRT4 √STBD DOOR – RDY,CL (~63 sec)  
R13L 15. PL BAY DR – STOP  
CRT4 16. Select STBD FWD,AFT LATCHES – ITEM 8,9 EXEC (\*)  
R13L 17. PL BAY DR – CL  
CRT4 √STBD DR – CL  
√FWD AFT LATCHES (two) – blank, CL (~30 sec)
- R13L 18. PL BAY DR – STOP  
CRT4 19. Deselect STBD FWD,AFT LATCHES & DOOR – ITEM 8,9,10 EXEC (no \*)
- CLOSE C/L LATCHES
- R13L 20. Select CENTER LATCHES 1-4,13-16 – ITEM 6,7 EXEC (\*)  
CRT4 21. PL BAY DR – CL  
√CENTER LATCHES 1-4,13-16 (two) – blank,CL (~20 sec)
- R13L 22. PL BAY DR – STOP  
CRT4 23. Deselect CENTER LATCHES 1-4,13-16 – ITEM 6,7 EXEC (no \*)  
24. Select CENTER LATCHES 5-8,9-12 – ITEM 4,5 EXEC (\*)  
R13L 25. PL BAY DR – CL  
CRT4 √CENTER LATCHES 5-8,9-12 (two) – blank,CL (~20 sec)
- R13L 26. PL BAY DR – STOP  
CRT4 27. Deselect CENTER LATCHES 5-8,9-12 – ITEM 4,5 EXEC (no \*)
- POST-PLBD CLOSING CLEANUP
- R13L 28. PL BAY DR SYS (two) – DSBL  
CRT4 √OP/CL STATUS (ten) – CL
29. AC POWER OFF – ITEM 2 EXEC (\*)  
30. GPC/CRT 54 EXEC

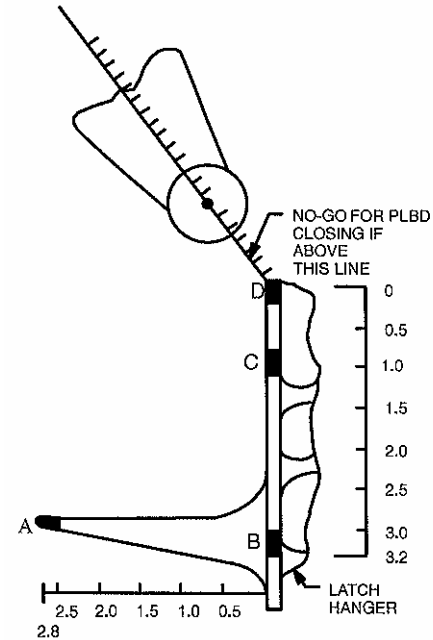
# MANUAL PLBD CLOSING (Cont)

## PORT AFT BULKHEAD LATCH GO/NO-GO DIAGRAM



FUNCTION	PLBD CONTROL								PLBD DISPLAY PL MDM								
	Ref: MA73C:C&D for MCA (cb)																
	MTR1				MTR2				C C O O C R R R O		A B A B		A B C				
	AC/MCA	CNTL	MDM	SYS	AC/MCA	CNTL	MDM	SYS	A	B	A	B	A	B	C		
LATCH																	
5-8	1/MID3	AB3/AB2	PL1	2	3/MID2	CA3/CA1	PL2	1	1	2	1	2					
9-12	1/MID1	AB3/AB1	PL1	1	3/MID4	CA3/CA2	PL2	2	1	2	1	2					
1-4	1/MID3	AB3/AB2	PL1	2	3/MID2	CA3/CA1	PL2	1	1	2	1	2					
13-16	3/MID4	CA3/CA2	PL2	2	2/MID2	BC3/BC1	PL1	1	2	1	2	1					
S FWD	1/MID1	AB3/AB1	PL1	1	2/MID4	BC3/BC2	PL2	2	1	2	1	2					
S AFT	3/MID4	CA3/CA2	PL2	2	2/MID2	BC3/BC1	PL1	1	2	1	2	1					
S DOOR	1/MID1	AB3/AB1	PL1	1	2/MID4	BC3/BC2	PL2	2					1	1	2	2	1
P FWD	1/MID1	AB3/AB1	PL1	1	2/MID4	BC3/BC2	PL2	2	1	2	1	2					
P AFT	1/MID3	AB3/AB2	PL1	2	3/MID2	CA3/CA1	PL2	1	1	2	1	2					
P DOOR	3/MID4	CA3/CA2	PL2	2	2/MID2	BC3/BC1	PL1	1					2	1	1	2	2
													1	1	1	2	1

## C/L LATCH EXTENDED GUIDE ROLLER TRAJECTORY NO-GO DIAGRAM



PORT BKHD LATCH TROUBLESHOOTING (MANUAL MODE) [9C]

- CRT4 1. √PORT DOOR FWD, AFT MICRO-SW STATs  
 If PORT DOOR AFT 'C' = '0':  
 : 2. √PORT AFT BULKHEAD LATCH GO/NO DIAGRAM, 1-26  
 : If NO-GO:  
 L Go to MAL, MECH, SSR-2 (CONTINGENCY PLBD CLOSURE)
- If PORT DOOR FWD 'C' = '0':  
 :  
 : NOTE  
 : Use PLB camera A to view port fwd bkhd latch  
 : hook/roller #3 as seen in figures 1-3 and 1-4, 1-28
- R13L 3. PL BAY DR SYS 1 – DSBL  
 :  
 : During the following step, monitor latch hook #3 while driving to  
 : ensure hook motion and proper roller engagement  
 :  
 : \* If at any point latch hook #3 stops moving while \*  
 : \* commanded, or it appears that the hook is going \*  
 : \* to miss or jam into its roller: \*  
 : \* PL BAY DR – STOP \*  
 : \* Go to MAL, MECH, SSR-2 (CONTINGENCY \*  
 : \* PLBD CLOSURE) \*
- CRT4 4. Select PORT FWD,AFT LATCHES – ITEM 11,12 EXEC (\*)  
 R13L 5. PL BAY DR – CL  
 :  
 : 6. When proper roller engagement verified for latch #3:  
 : PL BAY DR – STOP  
 : SYS 1 – ENA  
 L Go to step 8 of MANUAL PLBD CLOSING [9], 1-25
7. Go to step 7 of MANUAL PLBD CLOSING [9], 1-25

STBD BKHD LATCH TROUBLESHOOTING (MANUAL MODE) [9D]

- CRT4 1. √STBD DOOR FWD, AFT MICRO-SW STATs  
 If STBD DOOR AFT (FWD) 'C' = '0':  
 :  
 : NOTE  
 : Use PLB camera C(D) to view stbd aft (fwd) bkhd latch  
 : hook/roller #3 as seen in figures 1-3 and 1-4, 1-28
- R13L 2. PL BAY DR SYS 1(2) – DSBL  
 :  
 : During the following step, monitor latch hook #3 while driving to  
 : ensure hook motion and proper roller engagement  
 :  
 : \* If at any point latch hook #3 stops moving while \*  
 : \* commanded, or it appears that the hook is going \*  
 : \* to miss or jam into its roller: \*  
 : \* PL BAY DR – STOP \*  
 : \* Go to MAL, MECH, SSR-2 (CONTINGENCY \*  
 : \* PLBD CLOSURE) \*
- CRT4 3. Select STBD FWD,AFT LATCHES – ITEM 8,9 EXEC (\*)  
 : 4. PL BAY DR – CL  
 :  
 : 5. When proper roller engagement verified for latch #3:  
 : PL BAY DR – STOP  
 L SYS 1(2) – ENA
6. Go to step 17 of MANUAL PLBD CLOSING [9], 1-25

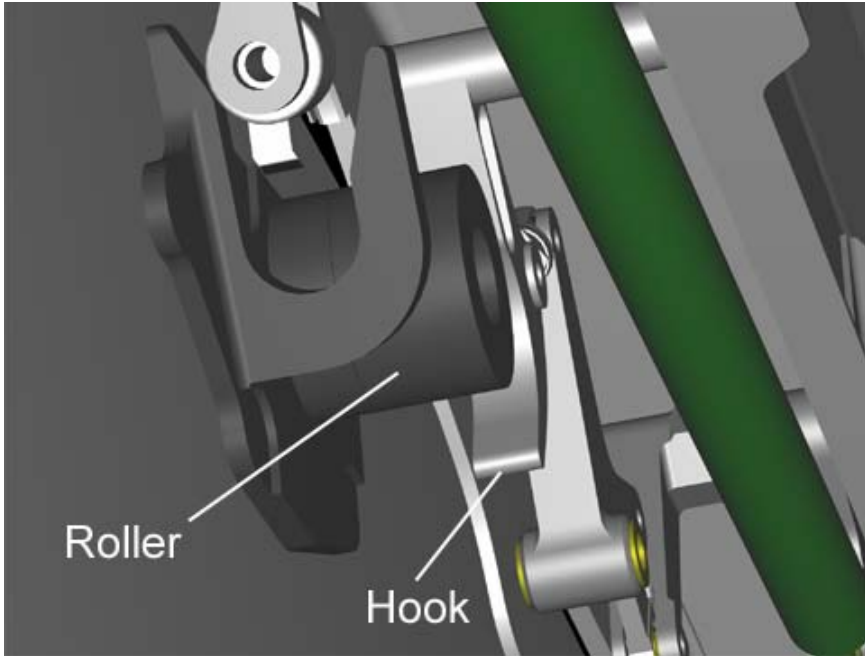


Figure 1-3.- Latch hook/roller #3 typical view from PLB camera

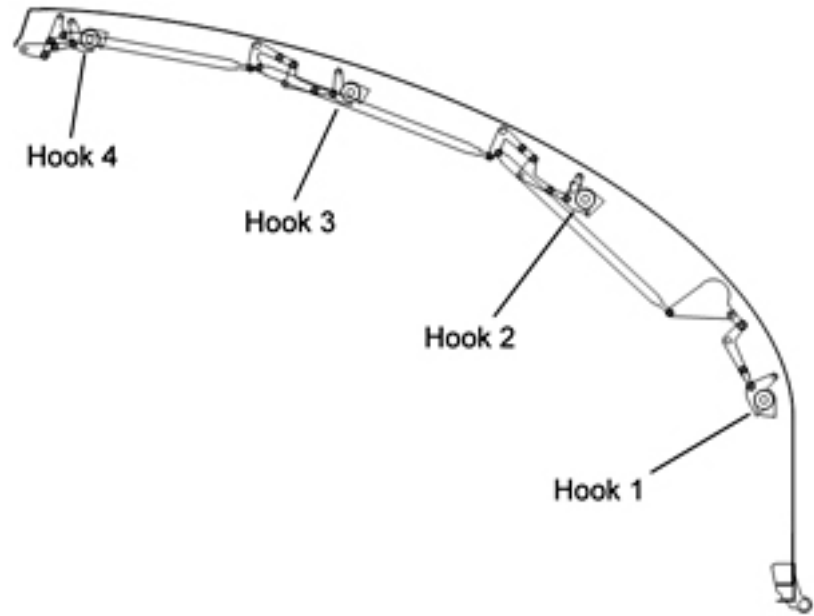


Figure 1-4.- Typical latch hook/roller numbering

# MS AFT FLIGHT DECK ACTIVITIES

**NOTE**

WAIT FOR GO FROM CDR OR PLT BEFORE STARTING ANY ACTIVITY ON THIS PAGE

TIME (TIG-)	MS AFT DECK ACTIONS
3:35	<u>SPECIALIST SEAT INSTALLATION</u> Verify Leg Attach Collars (four) – DOWN/LOCKED
3:10	<u>PARTIAL ENT SWITCH LIST/VERIF (AFT)</u>
2:55	<u>CONFIG FOR PLBD CLOSING</u> [7]
2:51	If reqd, PAYLOAD DEACT, (PL OPS, <u>DEORB PREP</u> ) or PAYLOAD DEACTIVATION (SODF: ASSY OPS: DEORBIT PREP)
2:40	<u>DETAILED PLBD CLOSING PROCEDURES</u> [9], 1-21
2:25	<u>POST CLOSING CONFIG</u> [10]
1:56	<u>DEACT STAR TRKRS &amp; CLOSE DOORS</u> [13], 1-30 <u>ENT AFT FLT DECK CONFIG</u> [15], 1-30
1:55	<u>PAYLOAD ENT SW LIST/VERIF</u> (PL OPS, <u>DEORB PREP</u> or <u>PAYLOAD ENTRY SWITCH LIST VERIFICATION</u> (SODF: ASSY OPS: DEORBIT PREP)
1:50	<u>FINAL ENT SWITCH LIST VERIF (AFT)</u> , 3-22 thru 3-33
1:41	<u>RESET C/W</u> [18], 1-30
1:40	<u>ENTRY REVIEW</u>
1:28	DSO 603, if reqd (BIOMED, <u>BIOMED DSOs</u> )
1:10	<u>CLOTHING CONFIG</u> [21], 1-30
1:00	Begin Fluid Loading per individual prescription. Fluid Loading should be completed by EI For 1 rev waveoff, repeat half the protocol If > 1 rev waveoff, repeat entire protocol
0:53	<u>AFT AUD SPKR CONFIG</u> [28]
0:52	<u>WIRELESS STOW</u> , if flown [24], 1-19

<u>CONFIG FOR PLBD CLOSING</u> [7]	
	<u>CONFIG RMS/OBSS</u> (if RMS/OBSS onboard) √Elbow Camr in aligned position • Pan 90° from X-axis • Tilt per decal
A8L	RMS PWR – OFF (SM ALERT, BCE BYP MCIU) PORT RMS HTR (two) – OFF
R11L	<u>SET UP LIGHTS</u> IDP/CRT4 PWR – ON
MDU	√CRT 4 PWR – ON
A6U	√ANNUN BUS SEL – MNC
	<b>NOTE</b> Minimum operating time for PLB Floodlights: 10 min ~3 min to full bright
A7U	PL BAY FLOOD AFT STBD – <input type="checkbox"/> PORT – <input type="checkbox"/> MID STBD – <input type="checkbox"/> PORT – <input type="checkbox"/> FWD STBD – <input type="checkbox"/> PORT – <input type="checkbox"/> BHD – <input type="checkbox"/>
	Record MET ____ / ____ : ____ : ____ * If PLB floodlight not ON to full bright within 5 min: * * (Aff) PL BAY FLOOD – OFF *
	<u>TV ACT</u> Perform ACTIVATION, OPERATION (Cue Card, <u>TV</u> ) If PLBD closing to be recorded on VTR, reinstall VIP-to-VTR jumper cable

Block [11] deleted

<u>AFT AUD SPKR CONFIG</u> [28]	
	Verify CDR, PLT on headsets
A13	OS AUD SPKR PWR – OFF MS COMM CCU PWR – OFF Disconnect and stow Handheld Mic Configure MHA to MS CCU per entry plug-in plan Connect Lightweight Headsets or ACES Comm Cap MS COMM CCU PWR – ON

<u>POST CLOSING CONFIG</u> [10]	
A8L	<u>CONFIG STBD RMS/OBSS</u> STBD RMS HTR (two) – OFF
R12 (OBSS) (OPP)	RSC PWR – OFF OBSS SW PWR – OFF cb OBSS SW PWR CB1 – op
	<b>NOTE</b> PLB Floodlights must be off for minimum of 10 min UNBLOCKED, 16 min BLOCKED prior to reuse After floodlights ON > 10 min: PL BAY FLOOD (all) – OFF
A7U	Install fresh 3-hr tape for entry video
L10 (VTR)	Reconnect Mini-Cam AVIU J1 video output to VTR IN, as reqd Perform DEACTIVATION (Cue Card, <u>TV</u> ), then: Stow Flight Deck Camrs, Accessories
	<u>FOOT LOOP CONFIG</u> Tape Foot Loops in egress routes

(Cont next page)

## Back of MS AFT FLIGHT DECK ACTIVITIES

### DEACT STAR TRKRS & CLOSE DOORS [ 13 ]

- O6 STAR TRKR PWR (two) – OFF
- O14:E,  
O15:E cb STAR TRKR -Z,-Y (two) – op
- O6 STAR TRKR DR CNTL SYS (two) – CL (start timer)  
√POS tb (two) – bp  
When both tb – cl (~8-24 sec) or either tb – bp > 24 sec:  
STAR TRKR DR CNTL SYS (two) – OFF
- \* If tb – bp > 8 sec, notify MCC \*

### RESET C/W (Contact CDR for additional parameters) [ 18 ]

#### NOTE

Expect 'MPS' light and 'HYD PRESS' light and master alarm. 'MPS' light will extinguish at OPS 303 PRO

R13U		
PARAMETER NAME	C/W CH	ENA/INH
MPS He REG P C	39	ENA
L	49	ENA
R	59	ENA
MANF P LO2	69	INH
LH2	79	INH
HYD P 1	99	ENA
2	109	ENA
3	119	ENA

### CLOTHING CONFIG [ 21 ]

Unstow, don:  
ACES  
Harness  
Boots

Remove radiation dosimeter from inflight garments and insert in ACES

Connect flight deck cooling units per  
PWR/DATA/VIDEO: ASCENT/ENTRY CONFIG  
(REF FS, UTIL PWR)

- A11,A15,  
F1,O19 DC UTIL PWR MNA(B,C) – ON as reqd  
Cooling units – Hose Jumper Plug installed  
Pre-chill cooling units 10 min prior to seat ingress

### ENT AFT FLT DECK CONFIG [ 15 ]

- DSP  
A6L SYS PWR MN A,MN B (two) – OFF (hold 5 sec)  
√SYS 1,SYS 2 tb (two) – OFF  
cb ESS 1BC SYS PWR CNTL SYS 1 – op  
2CA SYS PWR CNTL SYS 2 – op  
MN A,B DOCK LIGHT (four) – op  
MN A,B,C LOG (six) – op
- HYD HTR  
A12 HYD HTR (eight) – OFF
- ENTRY COMM  
A1L S-BD PM MODE – STDN LO  
NSP CODING (two) – OFF  
S-BAND PAYLOAD  
S-BD PL CH SEL INTRG 1,2 tw (six) – 910,910  
PWR SYS – OFF  
SEL – PSP  
ANT POLAR – L CIRC  
PSP CMD OUTPUT – PL UMB
- A1R AUD CTR VOICE RCD SEL CH1 – ICOM A  
CH2 – ICOM B
- If WVS installed:  
A7 √WIRELESS VIDEO PWR – OFF  
√WIRELESS VIDEO HTR – OFF
- R14:C cb MNB KU ANT HTR – op  
UHF EVA (two) – op  
:D Open all cbs except TV CABIN (14)  
:E Open all D CAMR and RMS CAMR cbs (6)  
:F √cb MN A ESS 1BC LDG GEAR ARM/DN RESET – op
- NOTE  
Review or mark cb location for ease of finding during post landing procedures
- VPU √VPU POWER – OFF  
R10 MS AUD A/G 1 – T/R  
A/G 2 – T/R  
A/A – T/R  
ICOM (two) – T/R  
VOX SENS – R  
VOL tw (five) – R  
XMIT/ICOM MODE – R
- L9 PS AUD PWR – AUD TONE  
A/G 1 – T/R  
A/G 2 – T/R  
A/A – T/R  
ICOM (two) – T/R  
AUD VOX SENS – R  
XMIT/ICOM MODE – R  
VOL tw (five) – R  
ICOM RECORDER OPS, if reqd (ORB OPS, COMM/INST)
- O19 TV PWR – ON
- L10 (MUX) VTR/CC PWR – ON (LED on)  
(VIP) PWR – ON (LED on, DATA FLOW LED flashes twice)  
(VTR) √ON/STANDBY LED – green



# MS MIDDECK ACTIVITIES

**NOTE**

WAIT FOR GO FROM CDR OR PLT BEFORE STARTING ANY ACTIVITY ON THIS PAGE

TIME (TIG-)	MS MIDDECK ACTIONS
3:50	<u>ENT STOWAGE</u> [ 3 ]
3:50	<u>ENT AIRLOCK CONFIG</u> [ 3A ], 1-32
3:35	<u>SPECIALIST SEAT INSTALLATION</u> Verify Leg Attach Collars (four) – DOWN/LOCKED Verify LiOH Door Latches (four) – ENGAGED
3:10	<u>PARTIAL ENT SWITCH LIST/VERIF (MID)</u> , 3-10 thru 3-12
1:55	<u>ENT MIDDECK CONFIG</u> [ 16 ]
1:50	<u>FINAL ENT SWITCH LIST/VERIF (MID)</u> , 3-30 thru 3-32
1:40	<u>ENTRY REVIEW</u>
1:28	DSO 603, if reqd (BIOMED, <u>BIOMED DSOs</u> )
1:10	<u>CLOTHING CONFIG</u> [ 20 ], 1-32
1:00	Begin Fluid Loading per individual prescription. Fluid Loading should be completed by EI For 1 rev waveoff, repeat half the protocol If > 1 rev waveoff, repeat entire protocol
0:55	Remove, stow Side Hatch UV Filter, Locking Device, and Pyro Box Safing Pin
0:51	<u>MD AUD SPKR CONFIG</u> [ 29 ], 1-32
0:50	<u>CO2 RMVL SYS DEACT</u> , if flown [ 25 ], 1-32
0:35	<u>GALLEY DEACT</u> [ 26 ]
0:33	<u>WCS DEACT</u> [ 27 ], 1-32

<u>ENT MIDDECK CONFIG</u> [ 16 ]	
MO42F	<u>ENTRY COMM</u> MIDDECK SPKR AUD A/G 1 – T/R A/G 2 – T/R A/A – T/R ICOM (two) – T/R VOX SENS – R VOL tw (five) – R XMIT/ICOM MODE – R
MO10W	<u>MIDDECK PCS</u> 14.7 CAB REG INLET vlv (two) – CL H2O TK N2 REG INLET vlv (two) – OP O2 REG INLET vlv (two) – CL
MO32M	LEH O2 vlv (two) – R
MO69M	LEH O2 8 vlv – CL Remove, stow O2 Bleed Orifice LEH O2 8 vlv – R 7 vlv – R
SIDE HATCH	NEG PRESS RLF VLV COVER (two) – pull open to vent; push firmly to close
MA73C:F	<u>RMS PNL LTS</u> (if RMS onboard) cb RMS PRI $\Phi$ A – op B/U $\Phi$ A – op <u>AC UTILITY OUTLET</u> cb AC1 MAR 3 $\Phi$ – op

<u>ENT STOWAGE</u> [ 3 ] <u>PERSONAL HYGIENE SYS STOWAGE</u> Stow: Personal Hygiene Kits Hose <u>AIRLOCK CLOSEOUT</u> Tether soft goods to EVA tether point or A/L Stowage Bag. Gray Tape to floor <u>POLE SETUP</u> Reinstall Stbd Pip Pin Reinstall large Port Pin: Retract and hold Locking Pin (Ring) Reinstall large Pin Release Locking Pin (Ring) Slide forward Safing Latch ✓ Pole Straps secure <u>FDI STOWAGE</u> Stow FLIGHT PLAN <u>CABIN CONFIG</u> Stow: Backup PGSC Middeck Camrs, Accessories FWD/AFT Shades, Filters Exercise Equipment Quick Don Masks ✓ Retention net is in ASC/ENT config <u>EGRESS ROUTE CONFIG</u> Tape Foot Loops in egress routes <p style="text-align: center;"><b>NOTE</b></p> Chemlights are middeck carry-on items. Activate green chemlights after TIG. Do not activate orange chemlights (slide ops only) Install green chemlights (8 ea) near egress hdw and egress routes Install orange chemlights (2 ea) above side hatch
---

<u>GALLEY DEACT</u> [ 26 ]		
GALLEY	OVEN/RHS	– OFF
	H2O HTRS (two)	– OFF
	✓OVEN FAN	– OFF
	✓REHYD STA lever	– cl (push in)
	✓OVEN DOOR LATCH	– latched
MA73C:G	cb AC3 GALLEY FAN (three)	– op
ML86B:A	MNC SPLY H2O GALLEY SPLY	– op
:B	MNA GALLEY OVEN	– op
	MNB GALLEY H2O HTR	– op

(Cont next page)

## Back of MS MIDDECK ACTIVITIES

### ENT AIRLOCK CONFIG 3A

- |                   |   |
|-------------------|---|
| MO13Q             | 1. √AIRLK FAN A(B) – OFF  |
| TNL EXT           | 2. √Inlet flex duct stowed and bypass duct strapped to Tunnel Extension wall. Unstow, install cap on Airlock Fan outlet                                 |
| MA73C:G           | 3. cb AC1,2 ARLK TNL FAN A,B (six) – op   |
| EXT A/L           | 4. Unstow, install diffuser cap on middeck floor air fitting  |
| AW18A             | 5. NEG PRESS RLF vlv cover (two) – pull open to vent; push firmly to close  |
| INNER HATCH       | 6. LTG FLOOD 1(3,4) – OFF   |
|                   | 7. Perform AIRLOCK ENTRY SWITCH LIST/VERIFICATION, 3-3  |
|                   | 8. Close hatch:<br>Position handle to preclosing posn per decal<br>Hatch – rotate about hinge and push<br>Handle – CCW to LATCH<br>Lock lever to LOCKED |
|                   | 9. Equal vlv (two) – NORM, install caps   |
| MIDDECK FLR MO13Q | 10. √EMU O2 ISOL vlv – CL   |
|                   | 11. AIRLK 2 – OFF/ON  |
|                   | 12. √AIRLK H2O S/O vlv – OP (tb-op)<br>If TNL ADAPT flown:  |
| ML86B:E           | 13. cb MNA FLOOD TNL ADAPT 2 – op<br>cb MNB FLOOD TNL ADAPT 3 – op<br>cb MNC FLOOD TNL ADAPT 4 – op   |
| :F                | 14. cb MNA FLOODS AIRLK 1 – op<br>MIDDECK 9 – op<br>cb MNB FLOODS MIDDECK 10 – op<br>AIRLK 3 – op<br>cb MNC FLOODS AIRLK 4 – op                         |
| :G                | 15. cb ESS 1BC FLOOD AIRLK 2 – op<br>If TNL ADAPT flown:<br>16. cb ESS 1BC FLOOD TNL ADAPT 1 – op   |

### CLOTHING CONFIG 20

Unstow, don:  
ACES  
Harness  
Boots

Remove radiation dosimeter from inflight garments and insert in ACES; if waveoff, remove radiation dosimeter from ACES and insert in inflight garments

#### NOTE

Refer to flight specific utility outlet plug-in plan if reqd

Connect middeck cooling units per PWR/DATA/VIDEO:  
ASCENT/ENTRY CONFIG (REF FS, UTIL PWR)

- |   |   |
|---|---|
| MO13Q,<br>MO30F,<br>MO52J,<br>PDB J2(3,4),<br>ML85E (MUP) | DC UTIL PWR MNA(B,C) – ON as reqd<br>Cooling units – Hose Jumper Plug installed<br>Pre-chill cooling units 10 min prior to seat ingress |
|---|---|

### CO2 RMVL SYS DEACT 25

- |       |  |
|-------|--|
| MO51F | CNTRLR 2(1) MODE – STBY (hold 3 sec)<br>Wait 6 sec   |
|       | √CNTRLR 2(1) OPER It – off<br>√FAIL It – on<br>MNC(A) – OFF<br>√CNTRLR 2(1) FAIL It – off<br>AC 3(1) – OFF (hold 3 sec)<br>AC 3(1) cbs (three) – op<br>COM INSTR – OFF |
|       | Remove and replace LiOH Canister in position A with one fresh LiOH Canister  |

### WCS DEACT 27

- |               |   |
|---------------|---|
| WCS (EDO WCS) | VAC VLV – CL<br>√MODE sel – AUTO<br>FAN SEP sel – OFF<br>Unstow hose from cradle, attach hose to WCS housing via Velcro straps<br>Stow:<br>WCS Trash Can<br>Mirror<br>Privacy Curtain<br>Foot/toe restraints – up, latched  |
| EDO WCS       | If EDO WCS:<br>Secure urinal hose with Velcro strap<br>URINAL SEL – OFF<br>WCS PWR SEL (two) – OFF 1, OFF 2<br>Commode lid lock – lock<br>√COMPACTOR – stowed<br>COMPACTOR CLEANING LATCH PIN – disengaged<br>LOCK PINS (three) – tighten (snug)<br>Stow thigh restraints<br>Close and latch door |
| ML31C         | VAC VENT ISOL VLV BUS SEL – MNB<br>CNTL – CL (tb-CL)<br>NOZ HTR – OFF<br>√Middeck lts as reqd   |

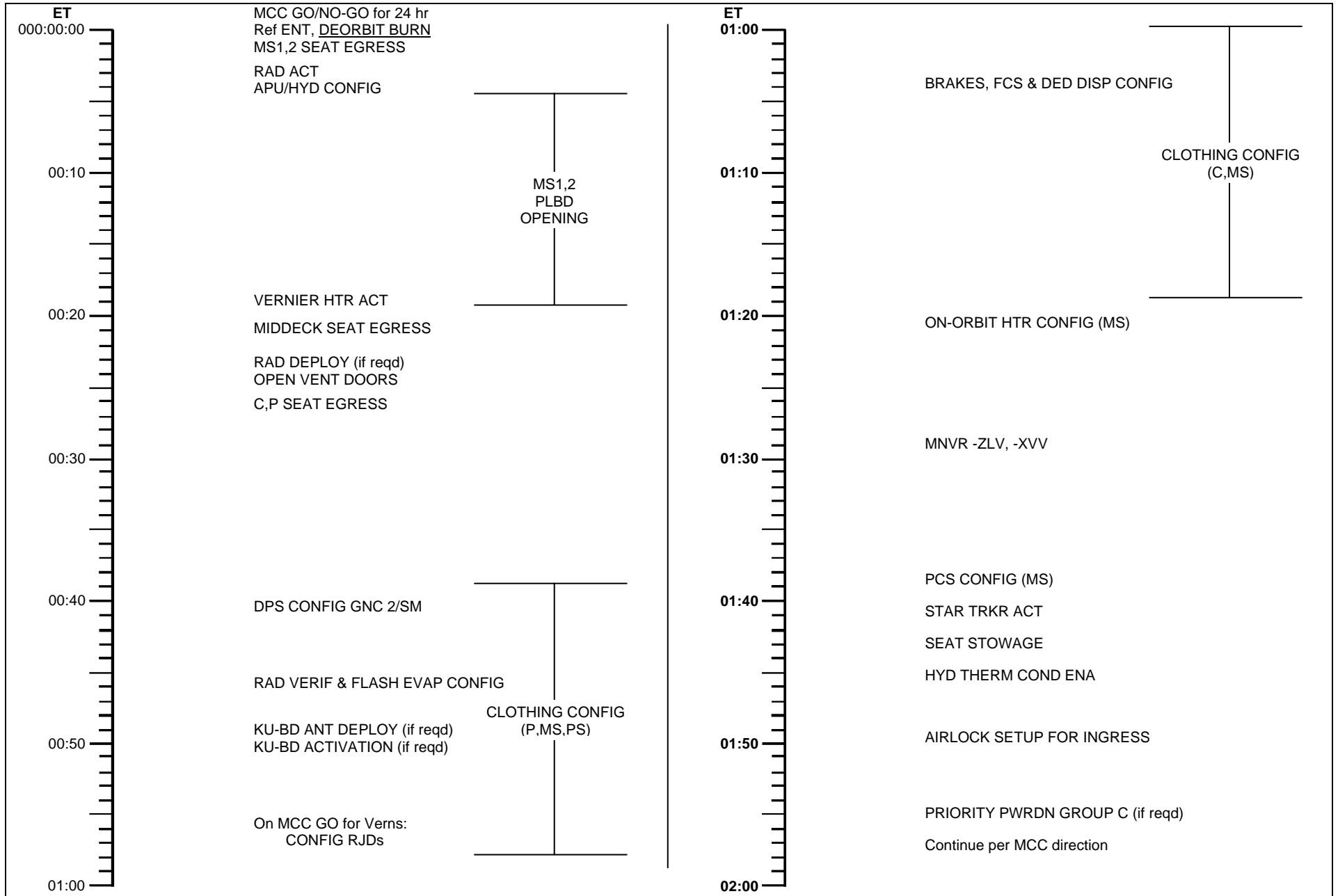
### MD AUD SPKR CONFIG 29

- |                |   |
|----------------|---|
| MO42F<br>MO39M | MIDDECK AUD SPKR PWR – OFF<br>MIDDECK COMM CCU PWR – OFF<br>Disconnect and stow Handheld Mic<br>Configure MHA to MID CCU per entry plug-in plan<br>Connect Lightweight Headsets or ACES Comm Cap<br>MIDDECK COMM CCU PWR – ON |
|----------------|---|

## DEORBIT PREP BACKOUT PROCEDURES

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# DEORBIT PREP BACKOUT SUMMARY TIMELINES



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ET		1: GNC DEORB MNVR COAST	2: GNC DEORB MNVR COAST	3: BFS, GNC DEORB MNVR COAST
00:00:00	MCC/CREW GO/NO-GO FOR 24 HR	MS1,2	C6	Ref ENT, DEORBIT BURN LEH O2 vlv (four) – CL FLT DECK SPECIALIST SEAT EGRESS (all others remain seated) CONFIG FOR PLBD OPENING [1], 2-15
	TRANS DAP AUTO RT 0.5 DB 3.5	C	P,MS	RAD ACT [2] APU/HYD CONFIG [3]
			MS	PLBD OPENING [5], 2-13
00:10				MS1,2 PLBD OPENING
		C,P	O5,O9	MCC: GO/NO-GO for PRIORITY PWRDN GROUP C scheduled at ET 02:00 L,R AUD A/G 2 (two) – RCV XMIT/ICOM MODE – PTT/VOX (recommended)
			O6	UHF MODE – OFF
00:15		C	L1	CAB TEMP CNTLR – 2 TEMP – adj rotary as reqd
		C	L4:J	cb SIG COND HUM SEP – cl IMU FAN – cl
		MS		VERNIER HTR ACT [6]
00:20		MS,PS		WHEN PLBD OPENING COMPLETE: SEAT EGRESS (all middeck)
		MS	MO32M	LEH O2 vlv (two) – CL
			MO69M	– CL
		MS		RAD DEPLOY, if reqd (ORB OPS, ECLS)
		MS		PRELIM MIDDECK CONFIG [7], 2-17
		P		OPEN VENT DOORS [1: GNC 51 OVERRIDE]
00:25				VENT DOOR CNTL OPEN – ITEM 43 EXEC (*)
		C,P		Unstow/install HUD covers (two) SEAT EGRESS
00:30		MS		FDF/COMM CONFIG MS AFT ACTIVITIES [8], 2-15

**RAD ACT [2]**

C L1

√RAD CNTLR OUT TEMP – NORM  
BYP VLV MODE (two) – AUTO  
CNTLR LOOP (two) – AUTO A(B)

After ~90 sec,  
√RAD BYP VLV tb (two) – RAD

- \* If tb(s) remain in BYP or return to BYP: \*
- \* Use alternate RAD CNTLR \*
- \* Do not drive BYP VLV(s) manually \*
- \* If tb(s) bp: \*
- \* Do not select alternate RAD CNTLR \*
- \* Do not drive BYP VLV(s) manually \*
- \* If EVAP OUT T low or H2O ICH OUT T \*
- \* low: \*
- \* RAD BYP VLV MODE (two) – MAN \*
- \* MAN SEL (two) – BYP \*
- \* (after ~3 sec tb-BYP) \*

**APU/HYD CONFIG [3]**

P R2

APU SHUTDOWN (EPCL, APU/HYD)

BLR N2 SPLY (three) – OFF  
HYD MN PUMP PRESS (three) – NORM

MS A12

APU HTR GAS GEN/FUEL PUMP (three) – A AUTO

**VERNIER HTR ACT [6]**

P A14

RCS/OMS HTR FWD RCS JET 5 – AUTO  
AFT RCS JET 5 – AUTO

**NOTE**  
Delay use of verniers until MCC GO in GNC OPS 2

**CLOTHING CONFIG** 9

Doff/Stow:  
Harness,Boots,ACES,UCD (if not used)

Remove radiation dosimeter from ACES and insert in inflight garments

Doff/Stow in Wet Trash (if used):  
UCD (clamp)  
Emesis Bag (unstow new Bag)

**DPS CONFIG TO GNC2/SM** 11

**NOTE**

No keyboard entries or sw throws 10 sec:  
Before and after moding PASS GPCs to RUN  
Before OPS transition or set expansion/contraction requests until new OPS base page is displayed

1. **TRANSITION TO GNC OPS 201**

GNC 0 GPC MEMORY

√CONFIG – ITEM 1 +2 EXEC

Config for single G2 GPC ops unless directed otherwise by MCC:

Modify MC 2 per table →

		DUAL G2	SINGLE G2
CONFIG GPC		2	2
STR	1	1	1
	2	2	1
	3	1	1
	4	2	1
PL	1/2	0	0
CRT	1	1	1
	2	2	1
	3	0	0
	4	2	1
L	1	0	0
	2	0	0
MM	1	1	1
	2	2	1

C3

Modify MC 2 per table →

BFC CRT DISP – OFF

GNC, OPS 201 PRO

GNC UNIV PTG

DAP: B/AUTO/PRI

GNC 1 DPS UTILITY

√CKPT RETRV ENA – ITEM 12 EXEC (\*)

BFC CRT DISP – ON

BFS, MSG RESET (√BFC It off)

CRT GNC, GPC/CRT 04 EXEC

If single G2 GPC ops:

MAJ FUNC – PL

GPC/CRT 2/X EXEC

X: PL GPC MEMORY

CONFIG ITEM 45 +2 EXEC

GPC ITEM 46 +2 EXEC

STORE ITEM 47 EXEC

Store complete when MC = 02

√All IDPs deassigned from FD GPC

O6

GPC MODE 2 – STBY (tb-bp)

– HALT (tb-bp)

– STBY (tb-RUN)

– HALT (tb-bp)

C3  
CRTX

2. **FREEZE DRY GPC 3**

BFC CRT DISP – OFF

MAJ FUNC – PL

GPC/CRT 3/X EXEC

X: PL GPC MEMORY

CONFIG – ITEM 45 +2 EXEC

GPC – ITEM 46 +3 EXEC

STORE – ITEM 47 EXEC

Store complete when MC = 02 (~16 sec)

√All IDPs deassigned from FD GPC

GPC MODE 3 – STBY (tb-bp)

– HALT (tb-bp)

– STBY (tb-RUN)

– HALT (tb-bp)

O6

CRTY

3. **TRANSITION GPC 4 TO SM OPS 201(401)**

MAJ FUNC – SM

GPC/CRT 4/X EXEC

X: SM GPC MEMORY

CONFIG – ITEM 1 +4 EXEC

√MC 4(5) per table →

SM, OPS 201(401) PRO

X: SM ANTENNA

DAP: B/AUTO/PRI

SM 1 DPS UTILITY

UL CNTL AUTO – ITEM 35 EXEC

CRTX

	CONFIG GPC	4(5) 00040
STR	1	0
	2	0
	3	0
	4	0
PL	1/2	4
CRT	1	4
	2	4
	3	0
	4	4
L	1	4
	2	0
MM	1	4
	2	4

C3  
CRT3

4. **RECONFIG GPCs**

BFC CRT DISP – ON

BFS, GNC OPS 000 PRO

3: BFS, GNC GPC MEMORY

C3

BFC CRT DISP – OFF

O6

√All IDPs deassigned from BFS

GPC MODE 5 – STBY (tb-RUN)

(releases payload buses 1,2)

then HALT (tb-bp)

OUTPUT 4 – TERM (tb-bp)

5 – NORM (tb-bp)

P/I Locker

Unstow and install GPC Mode Switch Guard

C2

5. **MEDS RECONFIG**

GPC/CRT 03 EXEC

44 EXEC

IDP/CRT3 PWR – OFF



ET	1: GNC 51 OVERRIDE	2: GNC DEORB MNVR COAST	3: BFS, GNC DEORB MNVR COAST
00:30			
TRANS DAP			
AUTO			
RT 0.5			
DB 3.5			
00:35			
P		<u>CLOTHING CONFIG</u> [9], 2-6	CLOTHING CONFIG (P,MS,PS)
MS,PS		<u>CLOTHING CONFIG</u> [10], 2-15	
00:40			
C		If reqd, PAYLOAD REACT (PL OPS, <u>DEORB PREP</u> ) or PAYLOAD REACTIVATION (SODF: ASSY OPS: DEORBIT PREP)	
(A1) B1			
AUTO/PRI		<u>DPS CONFIG TO GNC2/SM</u> [11], 2-6 and 2-7	
RT 0.5			
DB 3.0			
00:45			
P		<u>RAD VERIF &amp; FLASH EVAP CONFIG</u> [12]	CLOTHING CONFIG (P,MS,PS)
MS		<u>RMS PNL LT, TEMP MON, HTR ACT, OBSS,</u> <u>C/W</u> [13], 2-16	
C		<u>KU-BD ANT DEPLOY</u> , if reqd (ORB OPS, <u>COMM/INST</u> ) <u>KU-BD ACTIVATION</u> , if reqd (ORB OPS, <u>COMM/INST</u> )	
00:50			
MS		<u>MIDDECK CONFIG</u> [14], 2-17 and 2-18	
C,P		If MCC GO for use of verniers: <u>CONFIG RJDs</u> RJD MANF L5/F5/R5 DRIVER – ON, wait 5 sec DAP: A/AUTO/VERN Else, load DAP A5 (Nose and Tail) or A6 (Tail)	
00:55	O16:F		
A1 (B1)		<u>GNC 20 DAP CONFIG</u>	
AUTO		ITEM 10 +0.1 EXEC	
VERN		11 +1 0 EXEC	
RT 0.2		22 +1 EXEC	
DB 1.0		DAP: A/AUTO/ALT	
01:00			

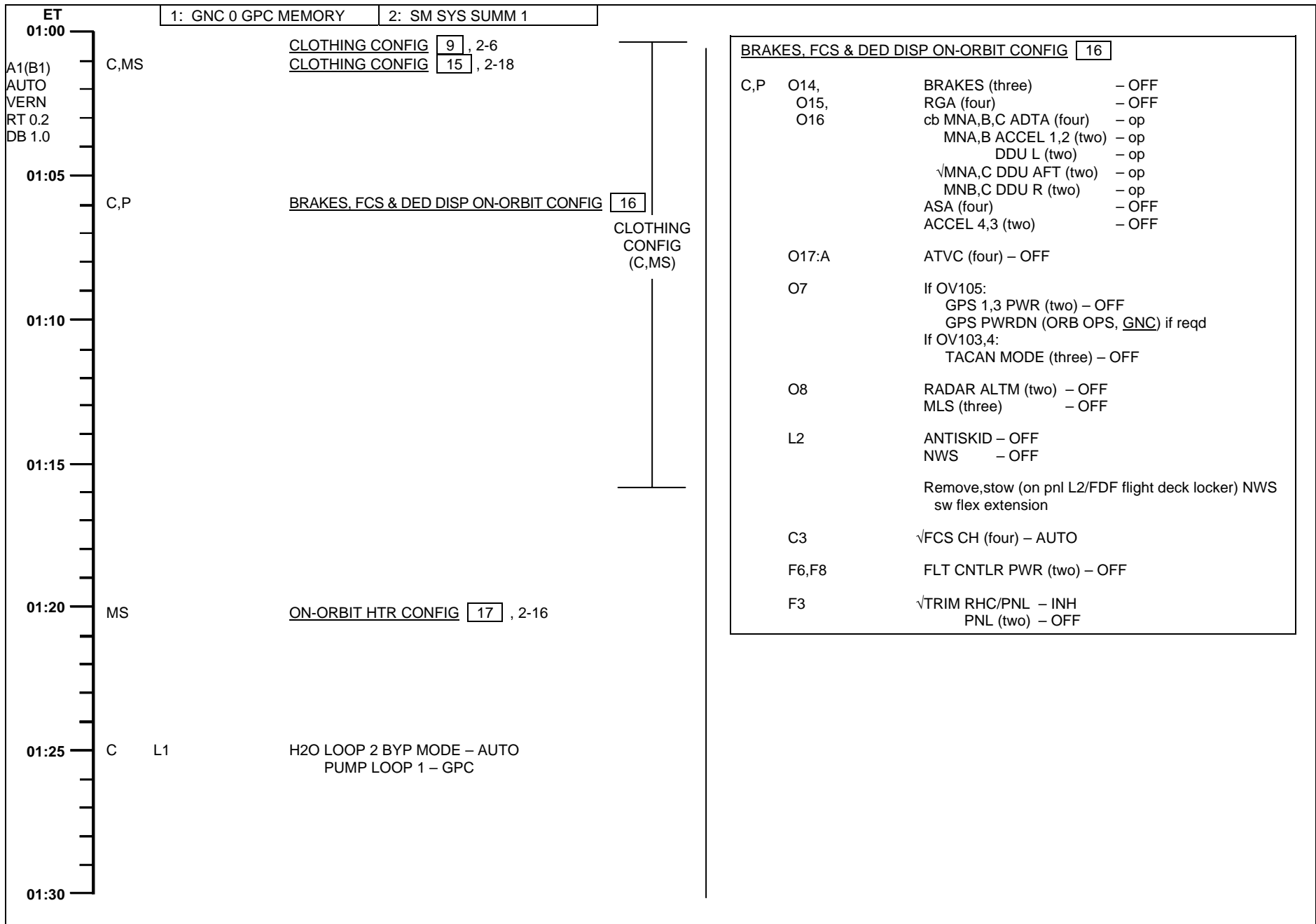
6. TFL/DFL FOR ON-ORBIT OPS  
 √MCC for TFL/DFL config  
 Perform LOAD PCMMU FORMAT (ORB OPS FS, COMM/INST) and LOAD PDI DECOM FORMAT (ORB OPS FS, COMM/INST)

7. ERROR LOG RESET  
 After MCC GO:  
SM 0 GPC MEMORY  
 ERR LOG RESET – ITEM 48 EXEC  
GNC 0 GPC MEMORY  
 ERR LOG RESET – ITEM 48 EXEC

RAD VERIF & FLASH EVAP CONFIG [12]

L1 √RAD BYP VLV tb (two) – RAD FLOW  
 CRT2 When FREON LOOP RAD OUT T < 60 degF:  
 L1 HI LOAD EVAP – OFF  
 FLASH EVAP CNTLR PRI B(A) – OFF  
 L2 FREON ISOL MODE – AUTO  
2: SM SYS SUMM 1

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ET		1: GNC 0 GPC MEMORY	2: SM SYS SUMM
01:30	C		<u>AUTO MNVR -ZLV, -XVV</u> √TGT ID +2 BODY VECT +3 OM +0 DAP: A/AUTO/VERN Initiate TRK
01:35			
01:40	C,MS P		<u>ON-ORBIT PCS2(1) CONFIG</u> <input type="checkbox"/> 19, 2-18 <u>STAR TRKR ACT</u> <input type="checkbox"/> 20
	MS,PS		<u>SPECIALIST SEAT REMOVAL/STOWAGE</u>
01:45	P R2		<u>HYD THERM COND ENA</u> HYD CIRC PUMP (three) – GPC
01:50	MS		<u>AIRLOCK SETUP FOR INGRESS</u> <input type="checkbox"/> 21, 2-18
01:55			
02:00			On MCC call: PRIORITY PWRDN GROUP C, if reqd (ORB PKT, <u>PRIORITY PWRDN</u> )  Continue per MCC direction

<u>STAR TRKR ACT</u> <input type="checkbox"/> 20	
O14:E, O15:E	cb STAR TRKR -Z,-Y (two) – cl
O6	STAR TRKR PWR (two) – ON
C2	GNC I/O RESET
O6	STAR TRKR DR CNTL SYS (two) – OP (start timer) √POS tb (two) – bp When both tb – OP (~8-24 sec) <u>or either tb – bp &gt; 24 sec:</u> STAR TRKR DR CNTL SYS (two) – OFF
	<input type="checkbox"/> X: GNC 22 S TRK/COAS CNTL
	S TRK -Y,-Z: STAR TRK – ITEM 3,4 (*)
	<input type="checkbox"/> X: GNC 21 IMU ALIGN
	RESUME
	* If tb – bp > 8 sec, notify MCC *

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# PLBD OPENING

## DETAILED PLBD OPENING PROCEDURES 5

### CAUTION

Use MANUAL mode for subsequent BFS PLBD ops if BFS AUTO sequence has been interrupted by reversing latch/door drive direction or if MANUAL mode has already been used during mission

- |      |   |
|------|---|
| R13L | * If no motion determined visually or 'OP/CL' * |
|      | * not blank within 10 sec after cmd: *          |
|      | * PL BAY DR – STOP *                            |
|      | * Go to MAL, MECH, 9.1a *                       |
|      | * If Latch not 'OP' in single-motor time: *     |
|      | * PL BAY DR – STOP *                            |
|      | * Go to MAL, MECH, 9.1d *                       |
|      | * If door motion stops and not 'OP': *          |
|      | * PL BAY DR – STOP *                            |
|      | * Go to MAL, MECH, 9.1f *                       |
| O6   | * If BFS GPC fails during operation: *          |
|      | * PL BAY DR SYS (two) – DSBL *                  |
|      | * DR – STOP *                                   |
|      | * MDM PL1,2 (two) – OFF *                       |
|      | * GPC MODE 5 – STBY, HALT *                     |
|      | * MDM PL1,2 (two) – ON *                        |
|      | * Proceed with DPS CONFIG TO GNC2/SM 11, then * |
|      | * continue in MANUAL PLBD OPENING PROCEDURE, *  |
|      | * as reqd *                                     |
| R13L | * If SM GPC fails during this operation: *      |
|      | * PL BAY DR SYS (two) – DSBL *                  |
|      | * DR – STOP *                                   |
|      | * Go to PASS SM GPC FAIL (ORB PKT, DPS) *       |

### NOTE

Note any single-motor ops (continue ops)  
(single-motor times = 2x listed dual-motor times)

## AUTO PLBD OPENING PROCEDURE

- |                |  |
|----------------|--|
| MS CRTX        | 1. SM, OPS 202 PRO or BFS, SM 63 PL BAY DOORS  |
|                | X: SM PL BAY DOORS                             |
| R13L CRTX      | √PL BAY DR – STOP                              |
|                | √PBD SW – STOP                                 |
|                | √MAN SEL (ten) – (no *)                        |
|                | √PBD SW BYPASS – (no *)                        |
| R13L CRTX      | 2. AC POWER ON – ITEM 1 EXEC (*)               |
|                | √AUTO MODE SEL – (no *)                        |
|                | 3. PL BAY DR SYS (two) – ENA                   |
|                | √OP/CL STATUS (ten) – CL                       |
|                | √AOS   |
|                | OPEN C/L LATCHES 5-8 (MANUAL MODE)             |
| R13L CRTX R13L | 4. Select CENTER LATCHES 5-8 – ITEM 4 EXEC (*) |
|                | 5. PL BAY DR – OP                              |
|                | √CENTER LATCHES 5-8 – blank, OP (~20 sec)      |
|                | 6. PL BAY DR – STOP                            |

## OPEN REMAINING LATCHES/DOORS (AUTO MODE)

- |           |  |
|-----------|--|
| R13L CRTX | 7. AUTO MODE SEL – ITEM 3 EXEC (*)                             |
|           | 8. PL BAY DR – OP  |
|           | √CENTER LATCHES 9-12 – blank, OP (~20 sec)                     |
|           | √CENTER LATCHES 1-4,13-16 (two) – blank, OP (~20 sec)          |
|           | √STBD FWD,AFT LATCHES (two) – blank, OP (~30 sec)              |
|           | √DOOR – RDY, blank, OP (~63 sec)                               |
|           | √PORT FWD,AFT LATCHES (two) – blank, OP (~30 sec)              |
|           | √DOOR – RDY, blank, OP (~63 sec)                               |
| R13L      | 9. PL BAY DR – STOP  |
|           | POST-PLBD OPENING CLEANUP                                      |
| R13L CRTX | 10. PL BAY DR SYS (two) – DSBL                                 |
|           | √OP/CL STATUS (ten) – OP                                       |
|           | 11. AC POWER OFF – ITEM 2 EXEC (*)                             |
|           | 12. SM, OPS 201 PRO (if PASS SM)                               |
|           | X: SM ANTENNA  |
| A7U       | 13. After floodlights ON > 10 min:<br>PL BAY FLOOD (all) – OFF |

## MANUAL PLBD OPENING PROCEDURE

- |                     |  |
|---------------------|--|
| MS CRTX             | 1. SM, OPS 202 PRO or BFS, SM 63 PL BAY DOORS                |
|                     | X: SM PL BAY DOORS   |
| R13L CRTX           | √PL BAY DR – STOP  |
|                     | √PBD SW – STOP   |
|                     | √MAN SEL (ten) – (no *)                                      |
|                     | √PBD SW BYPASS – (no *)                                      |
| R13L CRTX           | 2. AC POWER ON – ITEM 1 EXEC (*)                             |
|                     | √AUTO MODE SEL – (no *)                                      |
|                     | 3. PL BAY DR SYS (two) – ENA                                 |
|                     | √OP/CL STATUS (ten) – CL                                     |
|                     | √AOS   |
|                     | OPEN C/L LATCHES   |
| R13L CRTX R13L CRTX | 4. Select CENTER LATCHES 5-8 – ITEM 4 EXEC (*)               |
|                     | 5. PL BAY DR – OP  |
|                     | √CENTER LATCHES 5-8 – blank, OP (~20 sec)                    |
| R13L CRTX           | 6. PL BAY DR – STOP  |
|                     | 7. Deselect CENTER LATCHES 5-8 – ITEM 4 EXEC (no *)          |
|                     | 8. Select CENTER LATCHES 9-12 – ITEM 5 EXEC (*)              |
| R13L CRTX           | 9. PL BAY DR – OP  |
|                     | √CENTER LATCHES 9-12 – blank, OP (~20 sec)                   |
| R13L CRTX           | 10. PL BAY DR – STOP   |
|                     | 11. Deselect CENTER LATCHES 9-12 – ITEM 5 EXEC (no *)        |
|                     | 12. Select CENTER LATCHES 1-4,13-16 – ITEM 6,7 EXEC (*)      |
| R13L CRTX R13L CRTX | 13. PL BAY DR – OP   |
|                     | √CENTER LATCHES 1-4,13-16 (two) – blank, OP (~20 sec)        |
|                     | 14. PL BAY DR – STOP   |
|                     | 15. Deselect CENTER LATCHES 1-4,13-16 – ITEM 6,7 EXEC (no *) |

**PLBD OPENING (Cont)**

- R13L 16. OPEN STBD FWD,AFT LATCHES & DOOR  
 CRTX 17. Select STBD FWD,AFT LATCHES – ITEM 8,9 EXEC (\*)  
 R13L 17. PL BAY DR – OP  
 CRTX √STBD FWD,AFT LATCHES (two) – blank, OP (~30 sec)  
 R13L 18. PL BAY DR – STOP  
 CRTX 19. Deselect STBD FWD,AFT LATCHES – ITEM 8,9 EXEC (\*)  
 R13L 20. Select STBD DOOR – ITEM 10 EXEC (\*)  
 CRTX 21. PL BAY DR – OP  
 R13L √STBD DOOR – RDY, blank, OP (~63 sec)  
 CRTX 22. PL BAY DR – STOP  
 R13L 23. Deselect STBD DOOR – ITEM 10 EXEC (\*)  
 CRTX
- R13L 24. OPEN PORT FWD,AFT LATCHES & DOOR  
 CRTX 25. Select PORT FWD,AFT LATCHES – ITEM 11,12 EXEC (\*)  
 R13L 25. PL BAY DR – OP  
 CRTX √PORT FWD,AFT LATCHES (two) – blank, OP (~30 sec)  
 R13L 26. PL BAY DR – STOP  
 CRTX 27. Deselect PORT FWD,AFT LATCHES – ITEM 11,12 EXEC (no \*)  
 R13L 28. Select PORT DOOR – ITEM 13 EXEC (\*)  
 CRTX 29. PL BAY DR – OP  
 R13L √PORT DOOR – RDY, blank, OP (~63 sec)  
 CRTX 30. PL BAY DR – STOP  
 R13L 31. Deselect PORT DOOR – ITEM 13 EXEC (no \*)  
 CRTX

- R13L 32. POST-PLBD OPENING CLEANUP  
 CRTX 32. PL BAY DR SYS (two) – DSBL  
 √OP/CL STATUS (ten) – OP  
 33. AC POWER OFF – ITEM 2 EXEC (\*)  
 34. SM, OPS 201 PRO (if PASS SM)  
 X: SM ANTENNA  
 A7U 35. After floodlights ON > 10 min:  
 PL BAY FLOOD (all) – OFF

FUNCTION	PLBD CONTROL								PLBD DISPLAY PL MDM										
	Ref: MA73C:C&D for MCA cbs																		
	MTR 1				MTR 2				C	C	O	O	C	R	R	R	O		
	AC/MCA	CNTL	MDM	SYS	AC/MCA	CNTL	MDM	SYS	A	B	A	B	A	B	C				
LATCH																			
5-8	1/MID3	AB3/AB2	PL1	2	3/MID2	CA3/CA1	PL2	1	1	2	1	2							
9-12	1/MID1	AB3/AB1	PL1	1	3/MID4	CA3/CA2	PL2	2	1	2	1	2							
1-4	1/MID3	AB3/AB2	PL1	2	3/MID2	CA3/CA1	PL2	1	1	2	1	2							
13-16	3/MID4	CA3/CA2	PL2	2	2/MID2	BC3/BC1	PL1	1	2	1	2	1							
S FWD	1/MID1	AB3/AB1	PL1	1	2/MID4	BC3/BC2	PL2	2	1	2	1	2							
S AFT	3/MID4	CA3/CA2	PL2	2	2/MID2	BC3/BC1	PL1	1	2	1	2	1							
S DOOR	1/MID1	AB3/AB1	PL1	1	2/MID4	BC3/BC2	PL2	2							1	1	2	2	1
															2	1	2	2	2
P FWD	1/MID1	AB3/AB1	PL1	1	2/MID4	BC3/BC2	PL2	2	1	2	1	2							
P AFT	1/MID3	AB3/AB2	PL1	2	3/MID2	CA3/CA1	PL2	1	1	2	1	2							
P DOOR	3/MID4	CA3/CA2	PL2	2	2/MID2	BC3/BC1	PL1	1							2	1	1	2	2
															1	1	1	2	1



# MS AFT DECK BACKOUT ACTIVITIES

## NOTE

WAIT FOR GO FROM CDR OR PLT BEFORE STARTING ANY ACTIVITY ON THIS PAGE

TIME (ET)	MS AFT ACTIONS
00:01	C6 LEH O2 vlv (four) – CL
00:02	<u>CONFIG FOR PLBD OPENING</u> [ 1 ]
00:20	<u>SPECIALIST SEAT EGRESS</u>
00:30	<u>FDF/COMM CONFIG</u> [ 8 ]
00:38	<u>CLOTHING CONFIG</u> [ 10 ]
00:40	If reqd, PAYLOAD REACT (PL OPS, <u>DEORBIT PREP</u> ) or PAYLOAD REACTIVATION (SODF: ASSY OPS: <u>DEORBIT PREP</u> )
00:47	<u>RMS PNL LT, TEMP MON, HTR ACT, OBSS, C/W</u> [ 13 ], 2-16
01:20	<u>ON-ORBIT HTR CONFIG</u> [ 17 ], 2-16
01:42	<u>SPECIALIST SEAT REMOVAL/STOWAGE</u>

<u>CONFIG FOR PLBD OPENING</u> [ 1 ]	
<u>4: BFS, SM 63 PL BAY DOORS</u>	
<u>SET UP LIGHTS</u>	
A6U	ANNUN BUS SEL – MNC
<b>NOTE</b> Minimum operating time for PLB Floodlights: 10 min. Lights must be off for minimum of 10 min UNBLOCKED, 16 min BLOCKED prior to reuse. ~3 min to full bright	
A7U	PL BAY FLOOD AFT STBD – <input type="checkbox"/>
	PORT – <input type="checkbox"/>
	MID STBD – <input type="checkbox"/>
	PORT – <input type="checkbox"/>
	FWD STBD – <input type="checkbox"/>
	PORT – <input type="checkbox"/>
	BHD – <input type="checkbox"/>
Record MET ____ / ____ : ____ : ____	
* If PLB Floodlight not ON to full bright within 5 min: *	
* (Aff) PL BAY FLOOD – OFF *	
<u>CONFIG STBD RMS/OBSS</u>	
A8L	STBD RMS HTR (two) – AUTO
R12 (OPP)	cb OBSS SW PWR CB1 – cl
	OBSS SW PWR – ON
(OBSS)	RSC PWR – ON

<u>FDF/COMM CONFIG</u> [ 8 ]	
<u>COMM CONFIG</u>	
Unstow: Headsets, Handheld Mics and/or Wireless Comm if flown	
If WCCS, perform STD WCCS CONFIG (ORB OPS, <u>COMM/INST</u> ) or see <u>WCCS COMM PLAN</u> (Cue Card)	
If flight deck Handheld Mic/speaker operation:	
R10	MS AUD PWR – AUD/TONE
	A/G 1 – T/R, tw-2
	A/G 2 – RCV, tw-2
	A/A – RCV, tw-2
	ICOM A – T/R, tw-2
	ICOM B – RCV, tw-2
	XMIT/ICOM MODE – PTT/PTT
A13	OS AUD SPKR PWR – SPKR/MIC
	MSTR SPKR VOL – 8
A11	MS COMM CCU PWR – OFF
	Connect Handheld Mic to CCU
	MS COMM CCU PWR – ON
R6,L5	CCU PWR – OFF
A1L	S-BD PM MODE – TDRS DATA
	NSP CODING (two) – ON
	OCA SETUP (ORB OPS, <u>PGSC</u> ) A/G 2 MODE
	OCA S-BAND MODEM (MFX) ACTIVATION (ORB OPS, <u>PGSC</u> )
	COLOR PRINTER UNSTOW AND ASSEMBLE (ORB OPS, <u>PGSC</u> )
	ICOM RECORDER OPS, if reqd (ORB OPS, <u>COMM/INST</u> )
O19	TV PWR – OFF
L10 (VTR)	ON/STANDBY – PRESS (red LED on)
(VIP)	PWR – OFF (LED off)
(MUX)	VTR/CC PWR – OFF (LED off)
<u>FDF CONFIG</u>	
Stow:	
	ENT
	ENT PKT
	ENT Cue Cards
Unstow (if reqd):	
	Deploy Orbit Cue Cards

<u>CLOTHING CONFIG</u> [ 10 ]	
Doff/stow:	
Harness, Boots, ACES, UCD (if not used)	
Remove radiation dosimeter from ACES and insert in inflight garments	
Doff, stow in Wet Trash (if used):	
	UCD (clamp)
	Emesis Bag (unstow new bag)

(Cont next page)



# MS MIDDECK BACKOUT ACTIVITIES

NOTE

WAIT FOR GO FROM CDR OR PLT BEFORE STARTING ANY ACTIVITY ON THIS PAGE

TIME (ET)	MS MIDDECK ACTIONS
00:20	<u>SPECIALIST SEAT EGRESS</u>
00:21	MO32M LEH O2 vlv (two) – CL MO69M LEH O2 vlv (two) – CL
00:22	<u>PRELIM MIDDECK CONFIG</u> <span style="border: 1px solid black; padding: 0 2px;">7</span>
00:40	If reqd, PAYLOAD REACT, (PL OPS, <u>DEORB PREP</u> ) or PAYLOAD REACTIVATION (SODF: ASSY OPS: DEORBIT PREP)
00:52	<u>MIDDECK CONFIG</u> <span style="border: 1px solid black; padding: 0 2px;">14</span>
01:00	<u>CLOTHING CONFIG</u> <span style="border: 1px solid black; padding: 0 2px;">15</span> , 2-18
01:40	<u>ON-ORBIT PCS 2(1) CONFIG</u> <span style="border: 1px solid black; padding: 0 2px;">19</span> , 2-18
01:42	<u>SPECIALIST SEAT REMOVAL/STOWAGE</u>
01:50	<u>AIRLOCK SETUP FOR INGRESS</u> <span style="border: 1px solid black; padding: 0 2px;">21</span> , 2-18

<u>PRELIM MIDDECK CONFIG</u> <span style="border: 1px solid black; padding: 0 2px;">7</span>	
	<u>INSTALL FILTERS</u> Unstow,install: Side Hatch UV Filter and Locking Device Pyro Box Safing Pin
	<u>COMM CONFIG</u> Unstow: Headsets, Handheld Mics and/or Wireless Comm if flown (see <u>WCCS COMM PLAN</u> (Cue Card))
	If WCCS perform STD WCCS CONFIG (ORB OPS, <u>COMM/INST</u> ) or see <u>WCCS COMM PLAN</u> (Cue Card)
MO42F	If middeck Handheld Mic/speaker operation: MIDDECK SPKR AUD SPKR PWR – SPKR/MIC A/G 1 – T/R, tw-2 A/G 2 – RCV, tw-2 A/A – RCV, tw-2 ICOM A – T/R, tw-2 ICOM B – RCV, tw-2 XMIT/ICOM MODE – PTT/PTT MSTR SPKR VOL – 8
MO39M	MIDDECK COMM CCU PWR – OFF Connect Handheld Mic to CCU MIDDECK COMM CCU PWR – ON
ML31C	<u>HTR CONFIG</u> VAC VENT ISOL VLV BUS SEL – MNA NOZ HTR – ON ISOL VLV CNTL – OP (tb-OP)
	* If VAC VENT ISOL VLV CNTL tb – CL or bp: * * VAC VENT ISOL VLV BUS SEL – MNB * * CNTL – OP (tb-OP) * * If VAC VENT ISOL VLV CNTL tb still CL or bp: * * √MCC for further actions *

<u>MIDDECK CONFIG</u> <span style="border: 1px solid black; padding: 0 2px;">14</span>	
ML86B:A :B	<u>GALLEY ACTIVATION</u> cb MNC SPLY H2O GALLEY SPLY – cl cb MNA GALLEY OVEN – cl cb MNB GALLEY H2O HTR – cl
R11L:G GALLEY	√SPLY H2O GALLEY SPLY VLV – OP (tb-OP) H2O HTRS (two) – ON OVEN/RHS – ON
MA73C:G	cb AC3 GALLEY FAN (three) – cl Unstow,install Personal Hygiene Hose
WCS (EDO WCS)	<u>WCS ACTIVATION</u> VAC VLV – OP
	If EDO WCS: √CANISTER – LOCK Commode lid lock – use URINAL SEL – SEP 1 WCS PWR SEL (two) – AUTO 1, OFF 2 √FAN PWR – AUTO √URN DIV VLV – FAN SEP 1 Open commode lid √Commode airflow √Fecal Bag installed Close commode lid Unstrap urinal hose Velcro strap Unstow urinal hose √Urinal airflow √URINAL READY It – on (5-15 sec) Stow urinal hose COMPACTOR LOCK PINS (three) – loosen (use 1/4-in Hex Wrench, if reqd) √COMPACTOR ARM LOCK PIN – raised COMPACTOR CLEANING LATCH PIN – engaged Install Fecal Bag and Lid Dispensers
	If WCS: Unstow Urinal Hose from Velcro strap, install hose in cradle √MODE – AUTO √CRADLE – AUTO FAN SEP SEL sw – 1 Unstow hose from cradle (√airflow) √WCS ON It – ON Stow hose in cradle √WCS ON It – OFF
	Unstow,install: WCS Trash Can Mirror Urine Collection Cue Card Foot/Toe Restraint – down,locked (Cont next page)



## AIRLOCK ENTRY SWITCH LIST/VERIFICATION (TIG-3:50)

### AIRLOCK

AW18A.....	3-3
AW18D .....	3-3
AW18H .....	3-3
AW82B.....	3-3

## PARTIAL ENTRY SWITCH LIST/VERIFICATION (TIG-3:10)

### LEFT SEAT

F3.....	3-4
F7.....	3-4
L,R HUD .....	3-4
F2.....	3-5
O7 .....	3-5
O13.....	3-5
L side OVHD flood ...	3-5
F1.....	3-6
F6.....	3-6
L5.....	3-6

### RIGHT SEAT

O8.....	3-7
R side OVHD flood ..	3-7
F4.....	3-7
F8.....	3-7
R2 .....	3-8
R6 .....	3-8
O17 .....	3-8

### AFT

O19.....	3-9
C5 .....	3-9
C7 .....	3-9
A11 .....	3-9









### MIDDECK-FWD

MO58F.....	3-10
MO39M .....	3-10
MO52J .....	3-10
MO30F .....	3-10
MD44F .....	3-10
MD24K.....	3-10
A/L HATCH .....	3-10
MO63P (OV103,OV104) .....	3-10
ML86B .....	3-11

### MIDDECK-AFT

MO13Q .....	3-12
ML18F.....	3-12
ML26C .....	3-12
ML31C .....	3-12

### LEGEND

 - left	 - right
 - up	R - as reqd
 - center	 - cb close
 - down	 - cb open
 - indicates switch/display not checked during ENT SWITCH LIST/VERIFICATION. Switch/display pictorials are generic representations and are not intended to depict actual switch positions. $\sqrt{MCC}$ if additional clarification reqd	

### CIRCUIT BREAKER SNAP RING

#### COLOR CODES

<u>COLOR</u>	<u>CONFIGURATION</u>
Red	Open at all times
Green	Open on orbit only
Yellow	Open ascent, close per procedure
Orange	Open orbit through entry
Blank (no ring)	Always closed or as reqd

# ENT SWITCH LIST/VERIF

## FINAL ENTRY SWITCH LIST/VERIFICATION (TIG-1:50)

### LEFT SEAT

L4.....	3-13
L1.....	3-14
L2.....	3-15
C2/C3.....	3-16
O1.....	3-17
O5.....	3-17
O6.....	3-18
O14.....	3-19
O15.....	3-19

### RIGHT SEAT

O16.....	3-20
O9.....	3-20
R1.....	3-21
R4.....	3-21

### AFT









R10.....	3-22
R12U.....	3-22
R11L.....	3-22
R13L.....	3-23
R14.....	3-23
A1L,R.....	3-24
A12.....	3-25
A13.....	3-25
L9.....	3-26
A6L.....	3-27
A7L	
(APDS CNTL PNL) .	3-28
A15.....	3-29

### MIDDECK-FWD

MO42F.....	3-30
MO32M.....	3-30
MO69M.....	3-30
MO51F.....	3-30

### MIDDECK-AFT

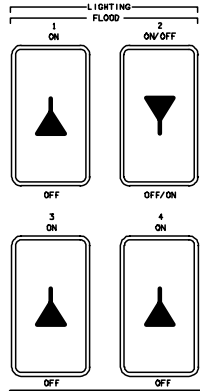
MA73C.....	3-31
MO10W.....	3-32
WCS.....	3-32
EDO WCS.....	3-32

<u>LEGEND</u>	
 – left	 – right
 – up	R – as reqd
 – center	 – cb close
 – down	 – cb open
 – indicates switch/display not checked during ENT SWITCH LIST/VERIFICATION. Switch/display pictorials are generic representations and are not intended to depict actual switch positions. √MCC if additional clarification reqd	

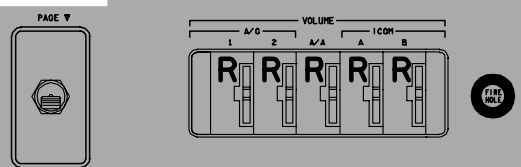
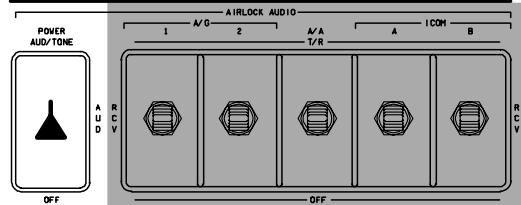
<u>CIRCUIT BREAKER SNAP RING</u>	
<u>COLOR</u>	<u>COLOR CODES</u>
Red	Open at all times
Green	Open on orbit only
Yellow	Open ascent, close per procedure
Orange	Open orbit through entry
Blank (no ring)	Always closed or as reqd

OV103

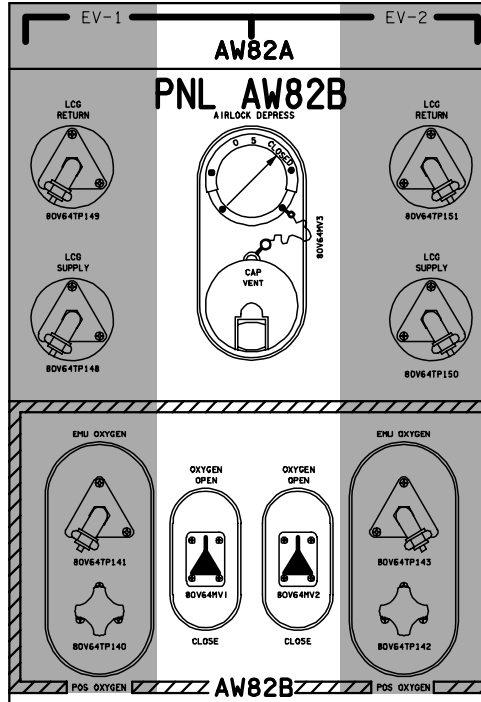
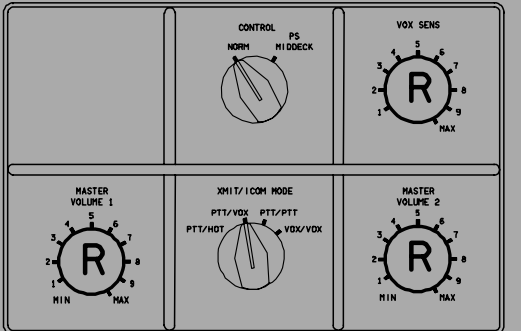
PNL AW18A



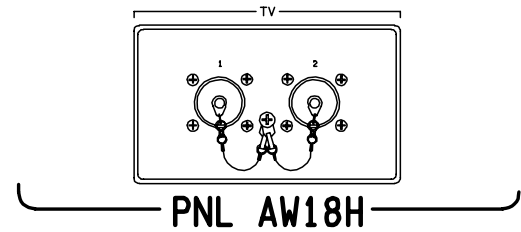
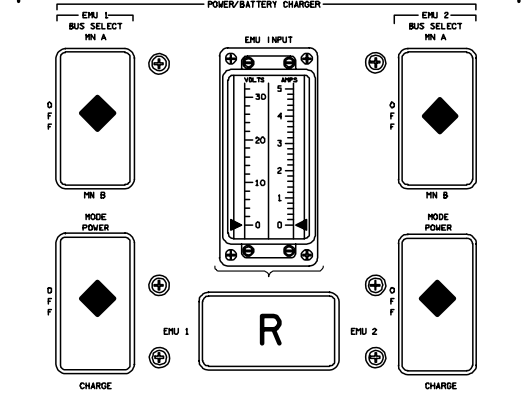
AW18A



PNL AW18D

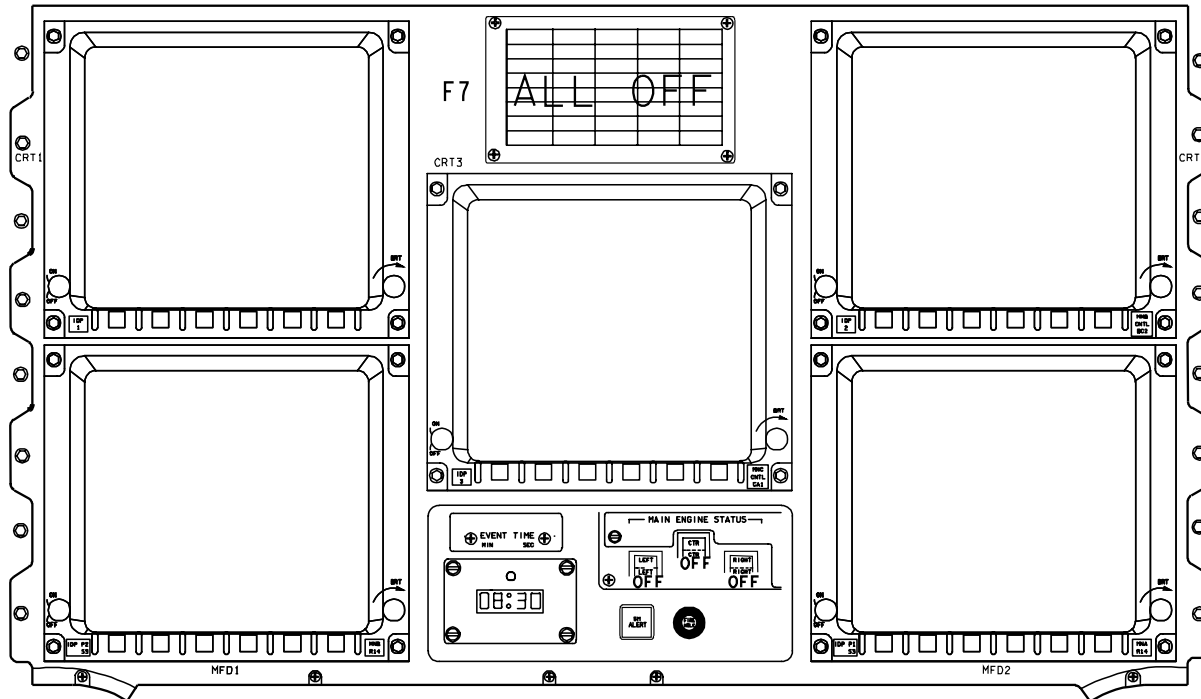
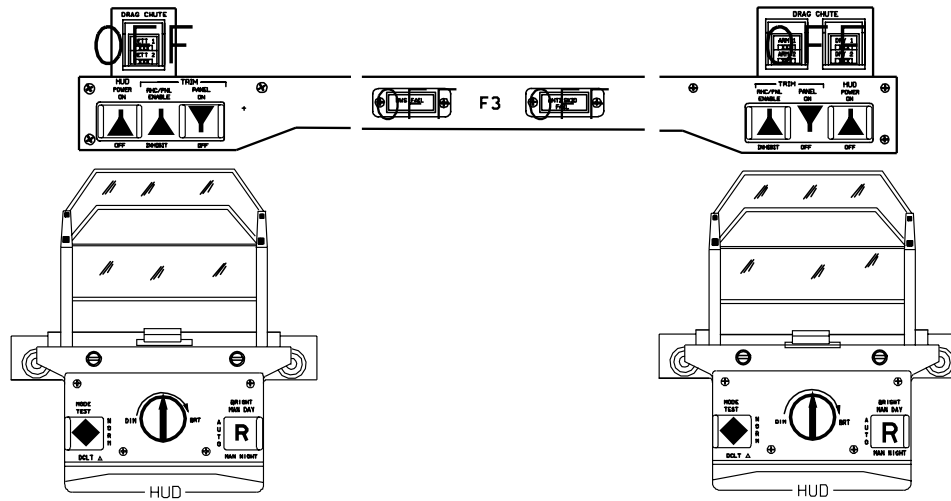


PNL AW18H



PNL AW18H

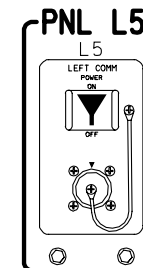
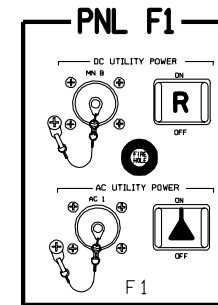
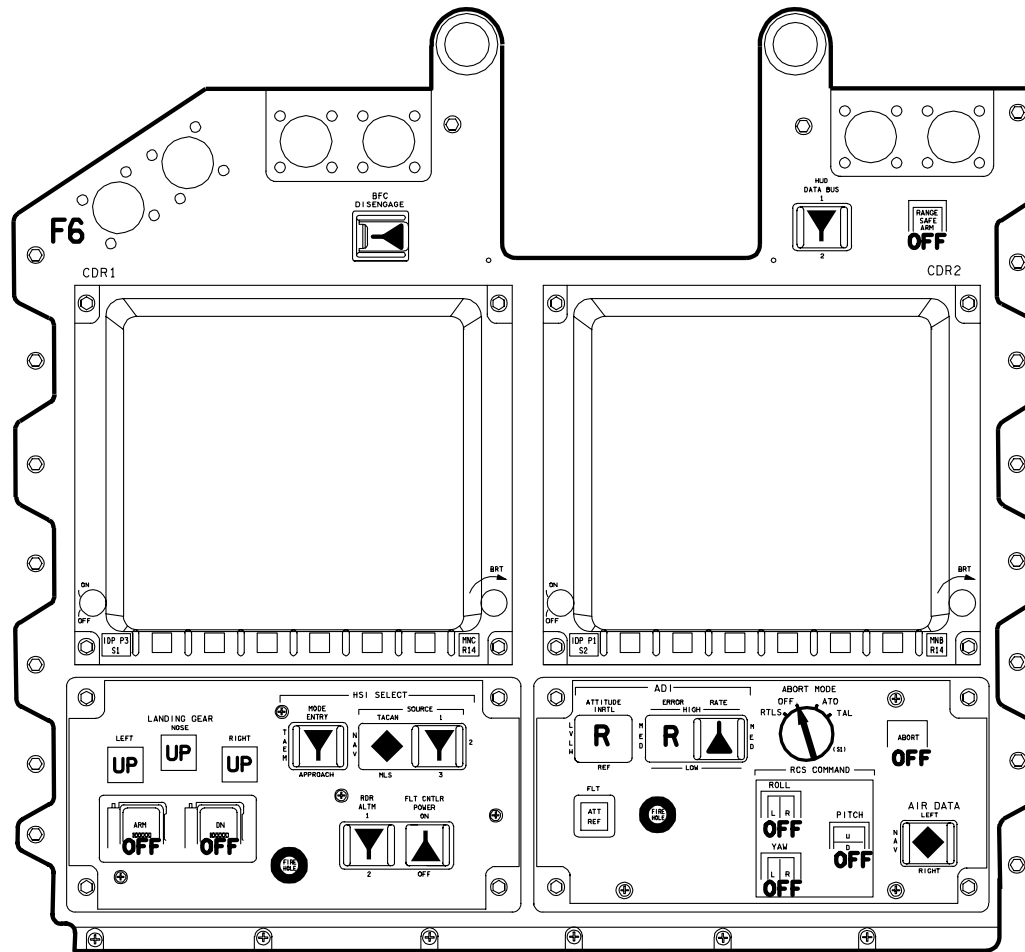
OV103



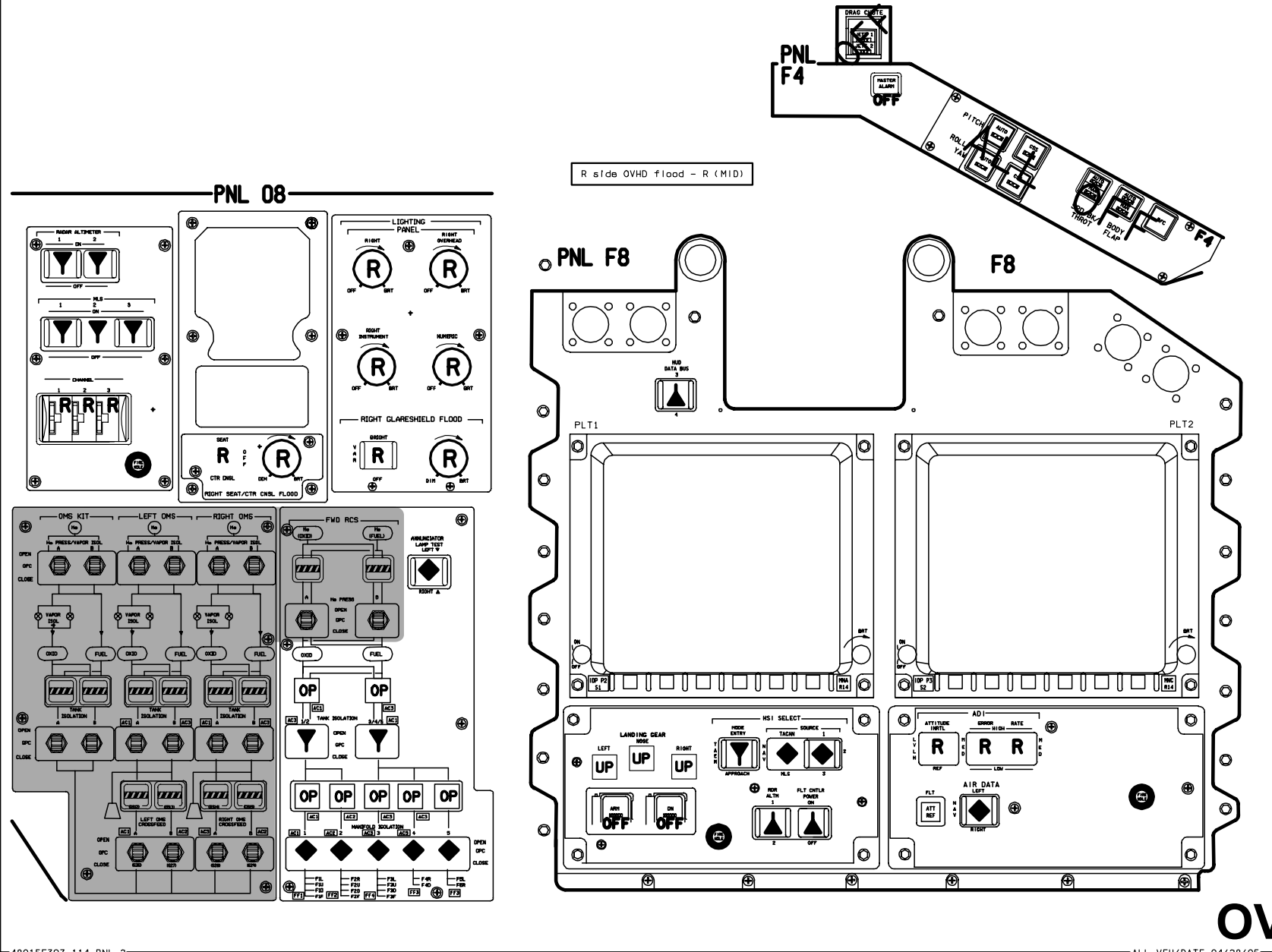




OV103



OV103



48015E307\_114. PNL: 2

ALL VEH/DATE 04/28/05

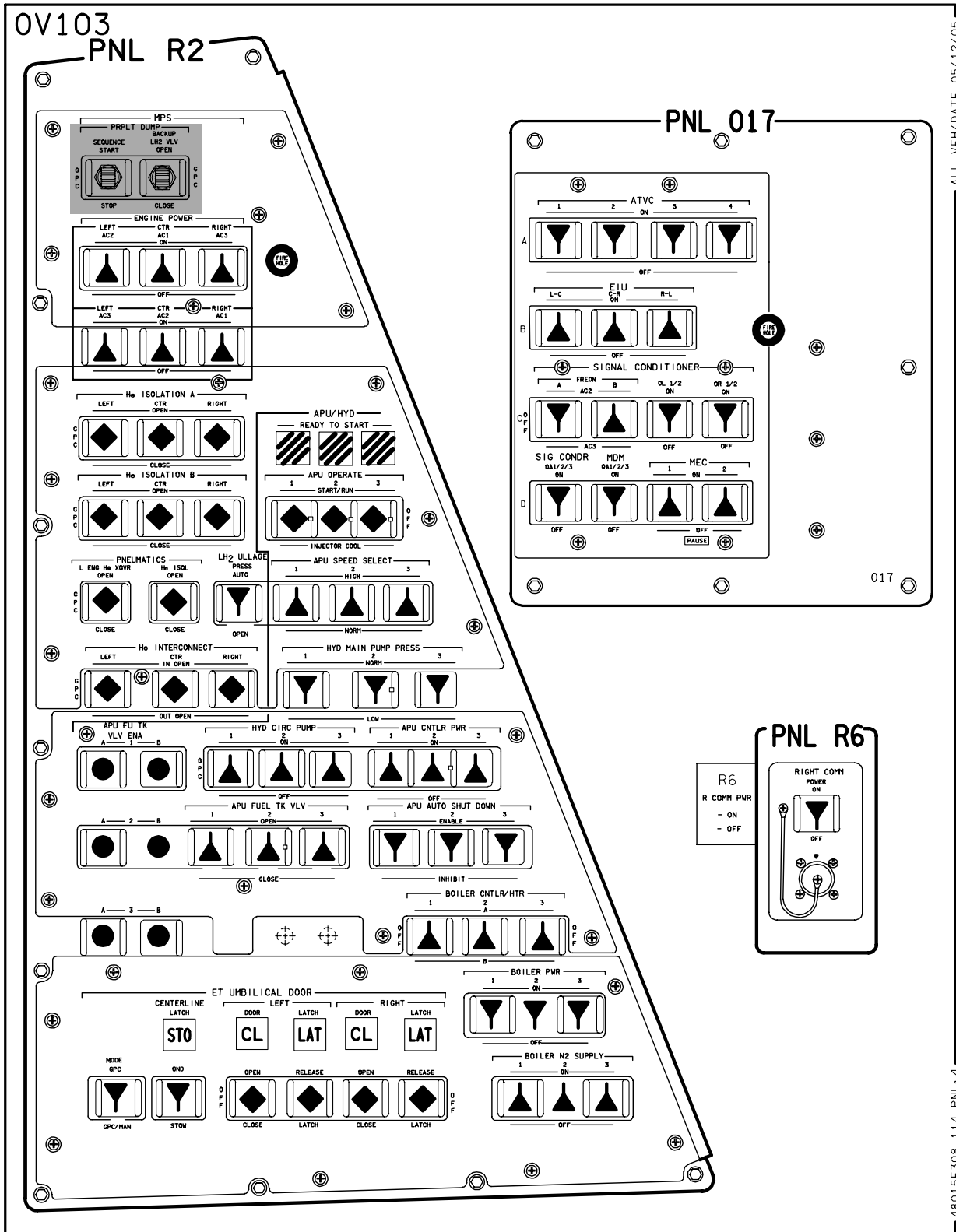
OV103

(OV103) A3-7

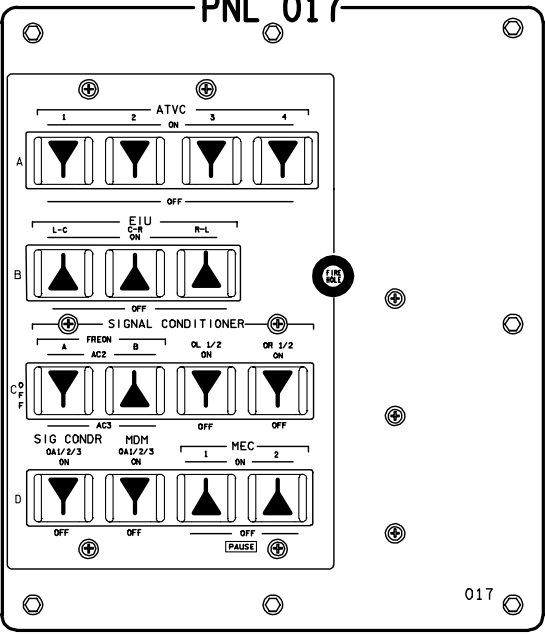
D/O/3/GEN P

OV103

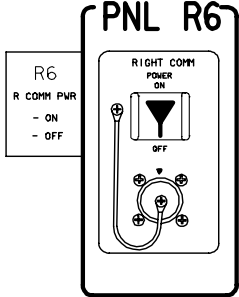
PNL R2



PNL 017



PNL R6



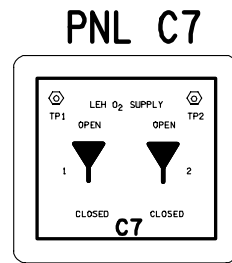
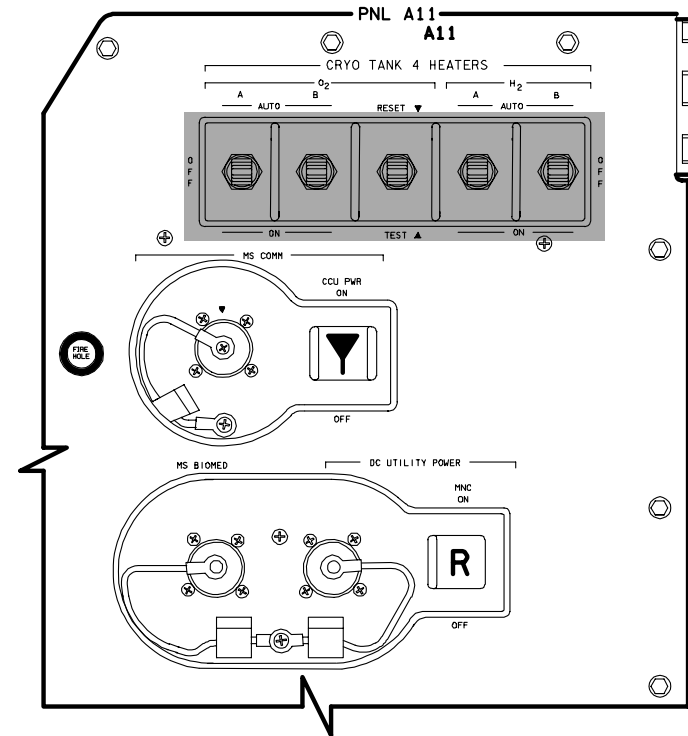
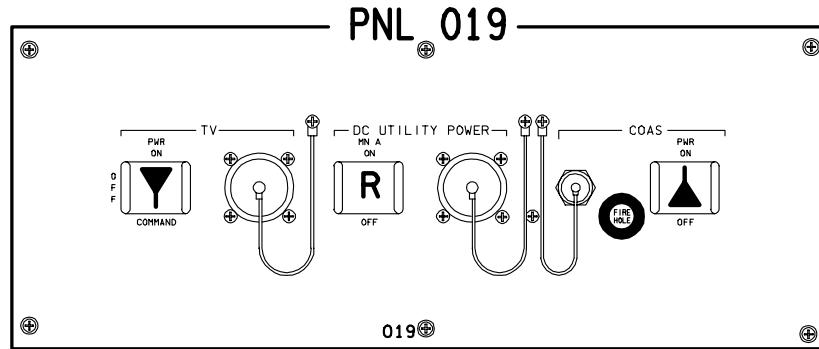
ALL VEH/DATE 05/12/05 48015E308\_114\_PNL R 4

OV103

(OV103) A3-8

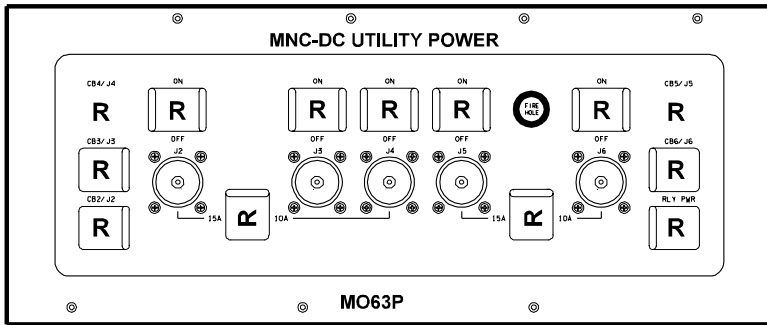
D/O/ALL/GEN P

OV103

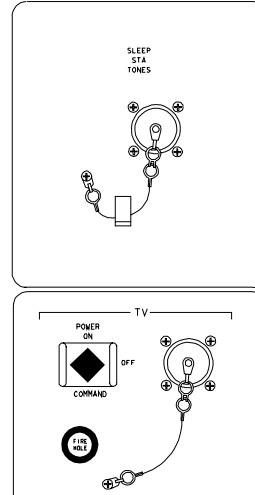


**AIRLOCK HATCH**

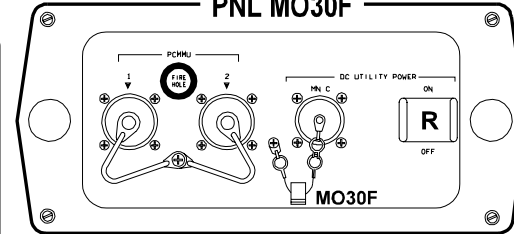
ACTUATOR HANDLE - LATCHED  
 LOCK LEVER - LOCKED  
 EQUALIZATION VLV (TWO) - NORM  
 -CAPS INSTALLED



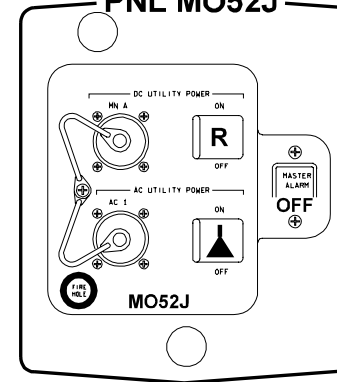
**PNL MO58F**



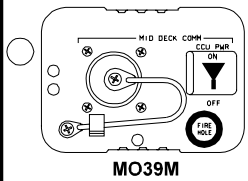
**PNL MO30F**



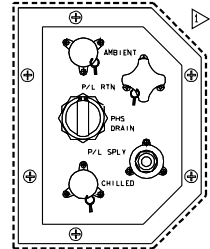
**PNL MO52J**



**PNL MO39M**



**PNL MD24K**

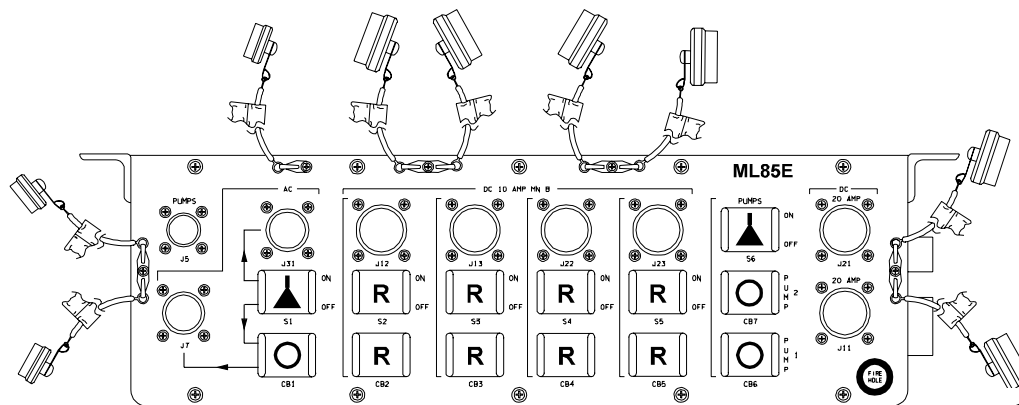


NOTE: NOT VISIBLE IF MAR FLOWN

**PNL MD44F**

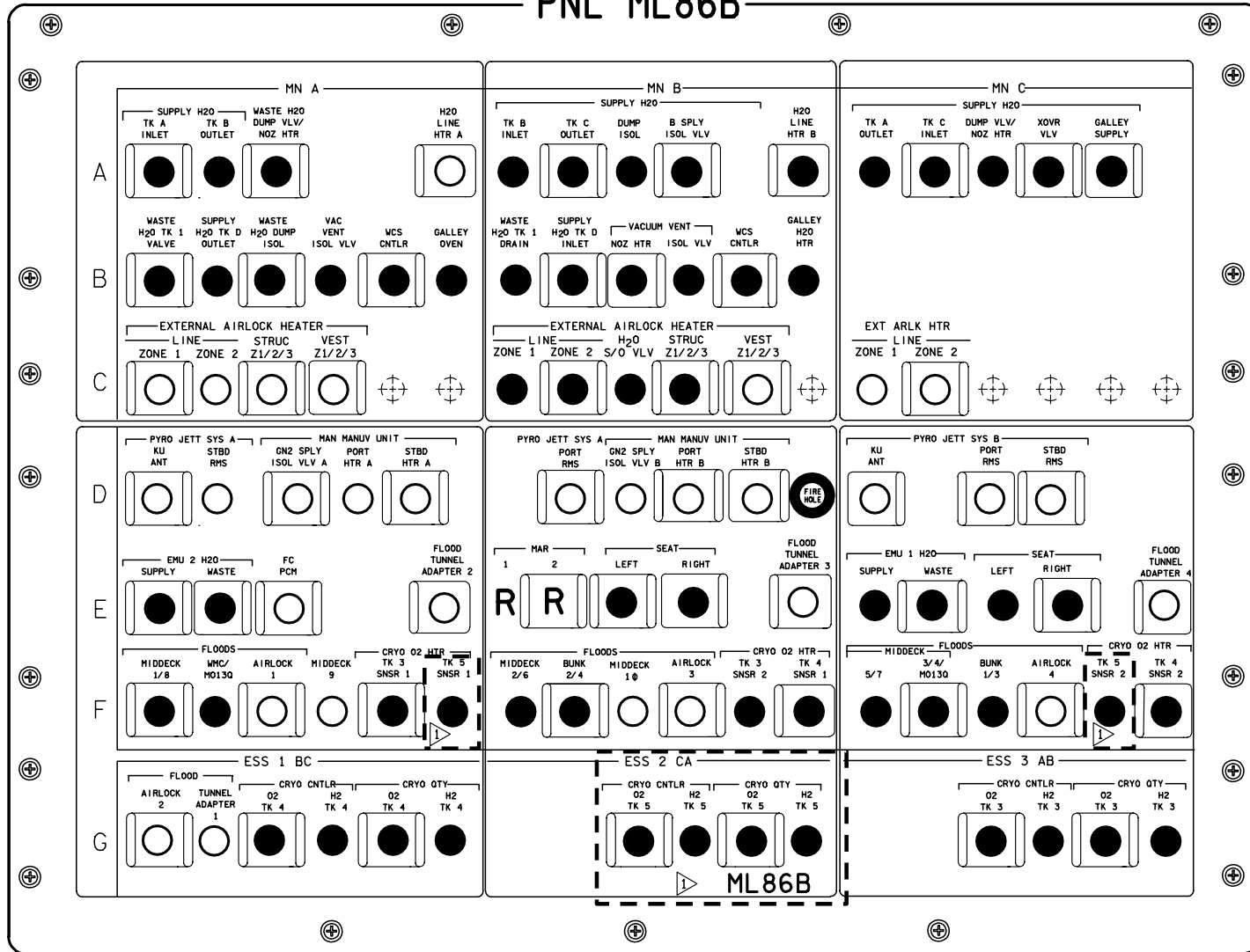
CAB TEMP CNTL ACT LINKAGE - SECONDARY ACTUATOR

**PNL ML85E**



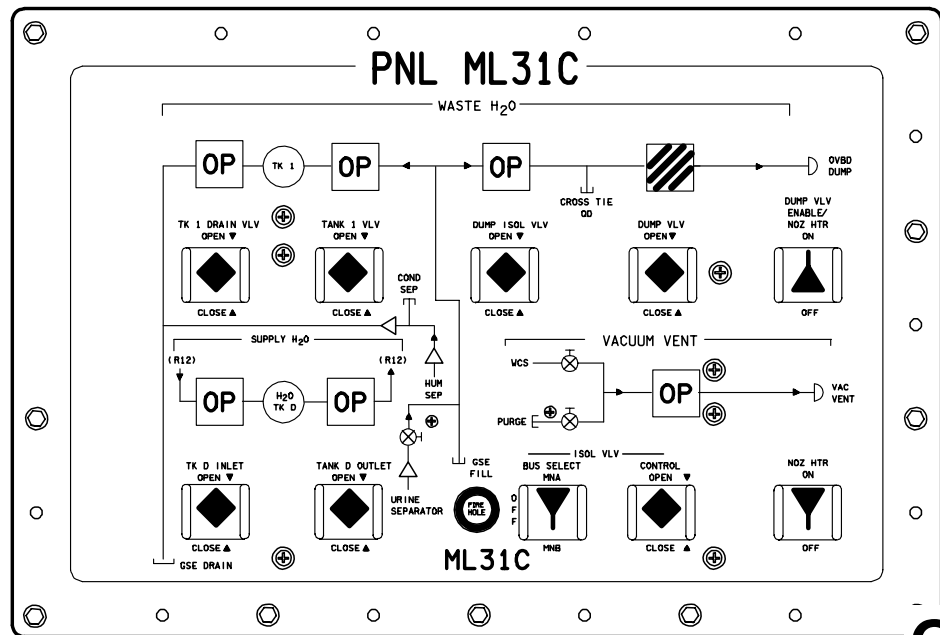
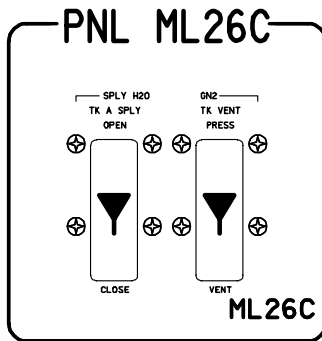
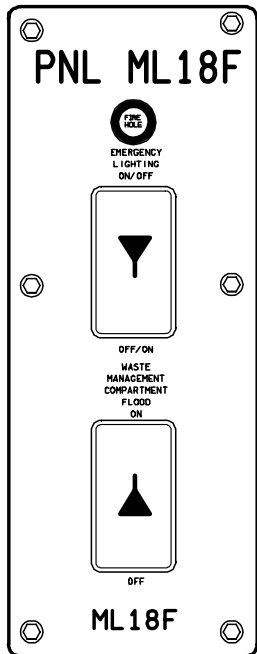
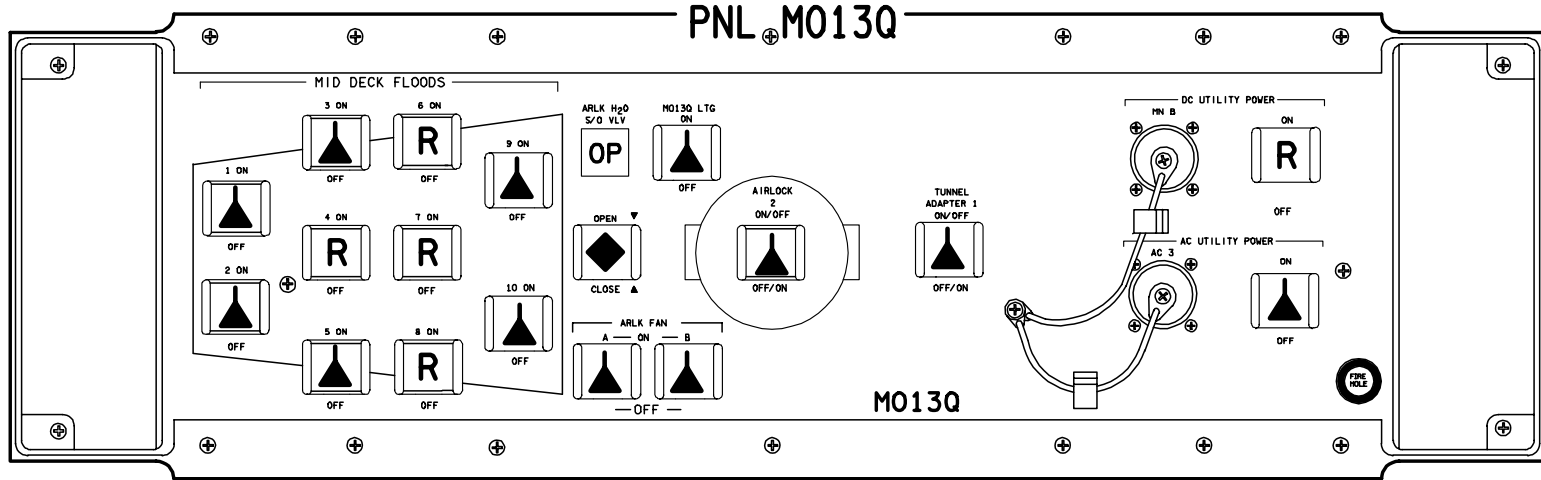
OV103

PNL ML86B



NOTE: ▷ OPEN IF TK 5 NOT FLOWN

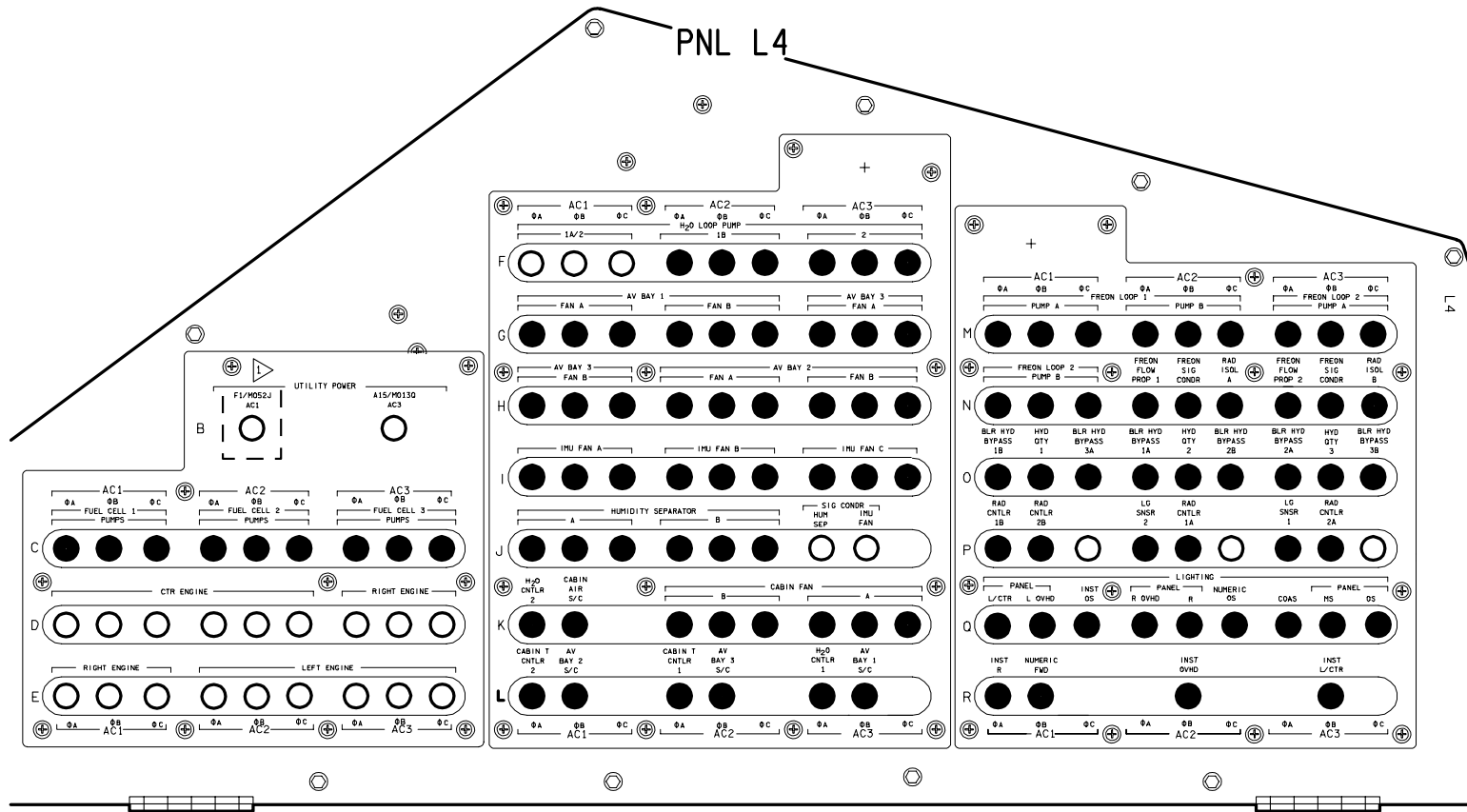
OV103




OV103

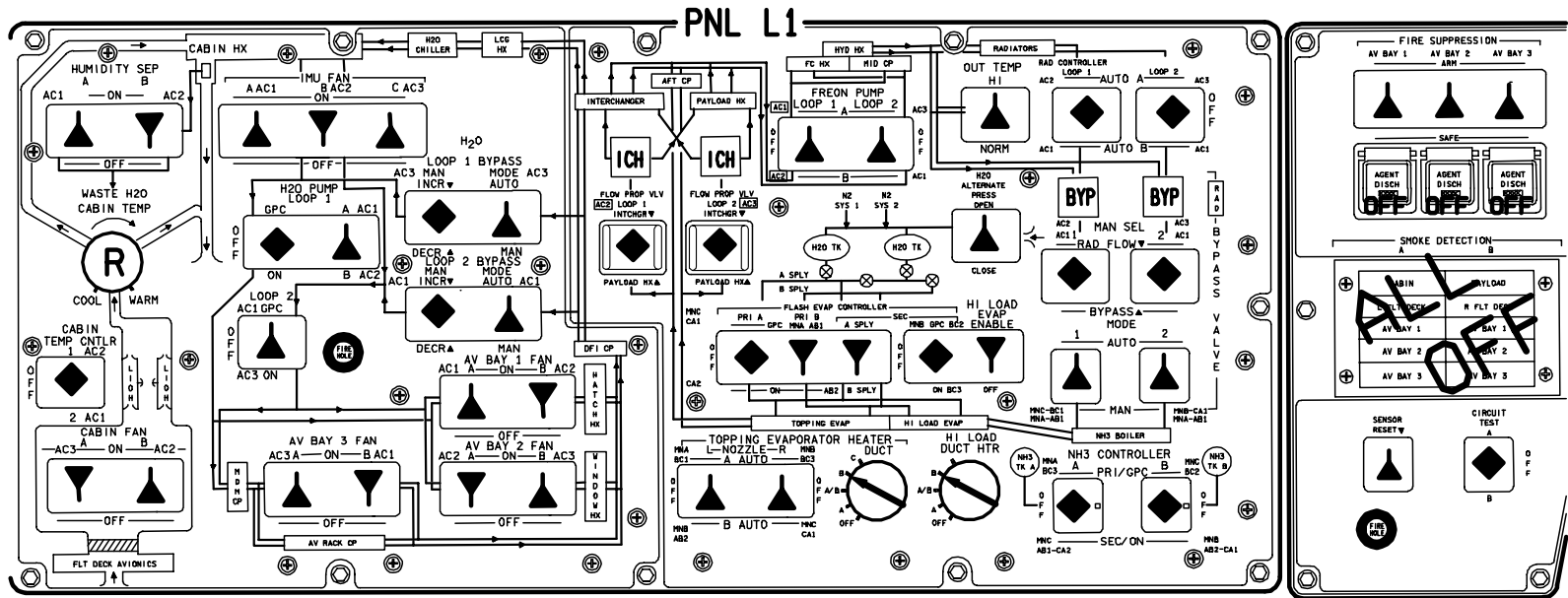


OV103



NOTE:  CB CAN REMAIN CLOSED FOR AC PGSC USAGE.  
 OPEN WHEN PGSC UNPOWERED/STOWED

OV103



48015E314\_114, PNL 2

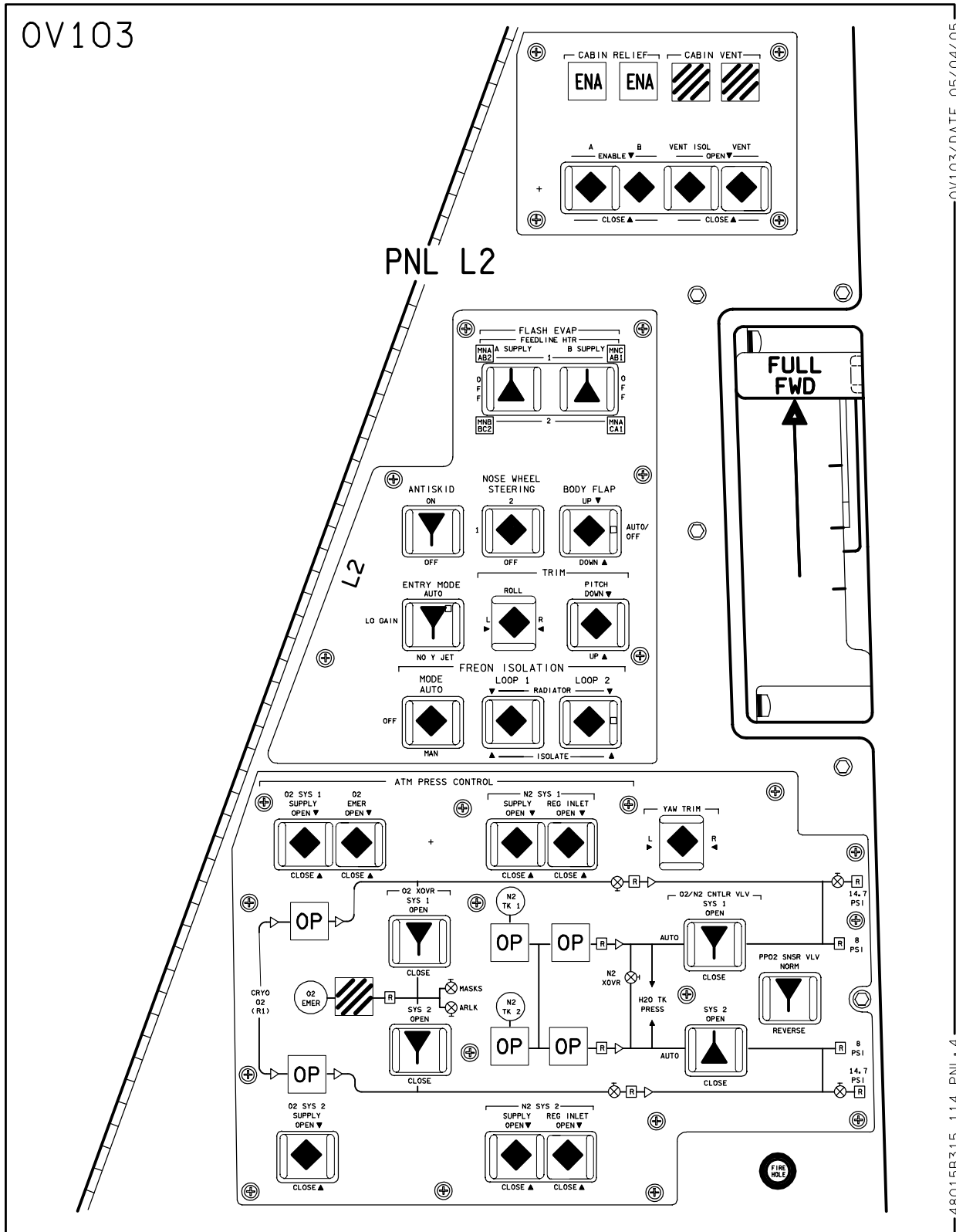
ALL VEH/DATE 04/28/05

(OV103) A3-14

OV103

D/O/ALL/GEN P

OV103



OV103/DATE 05/04/05

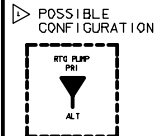
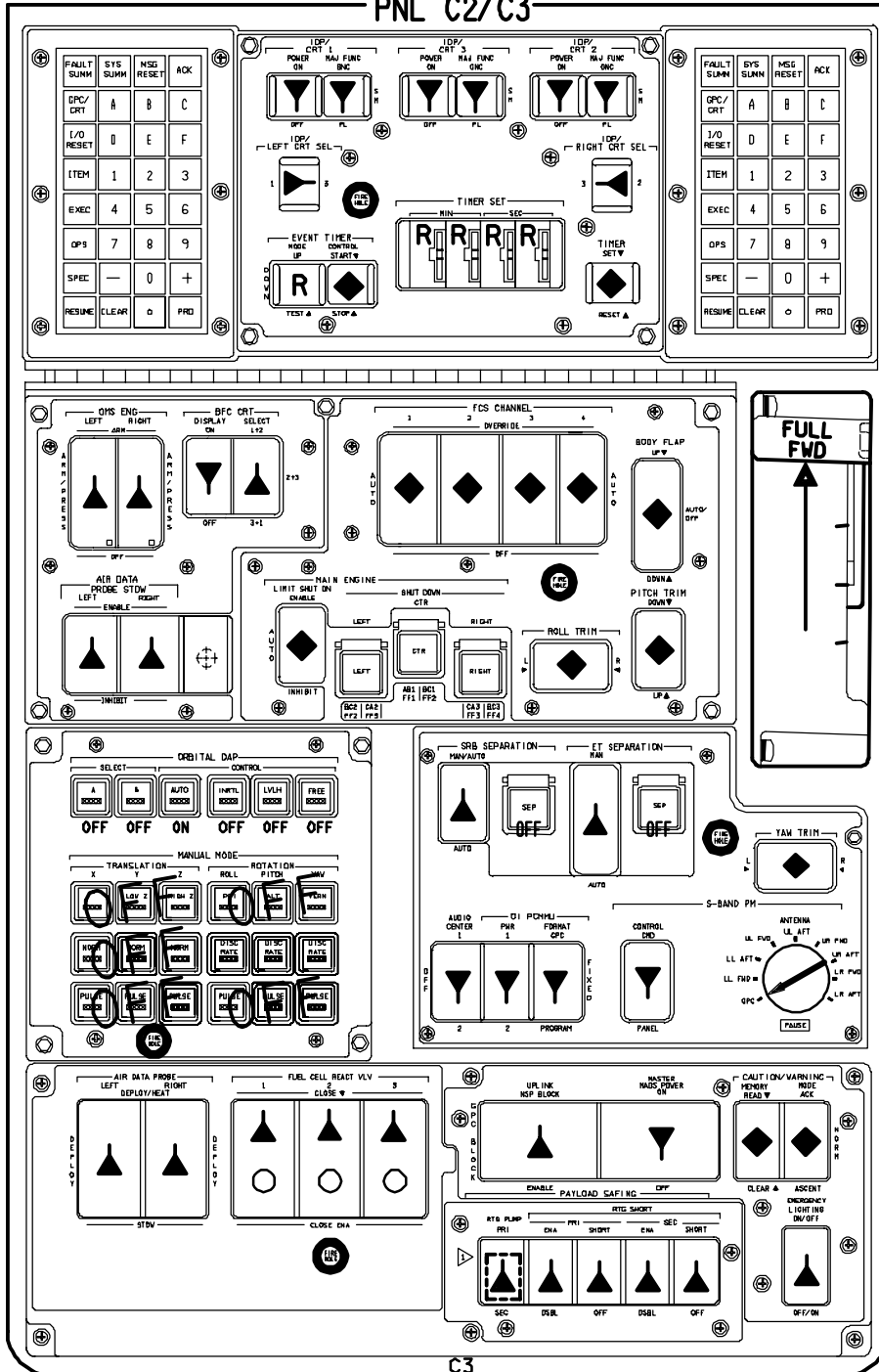
48015B315\_114, PNL 4

OV103

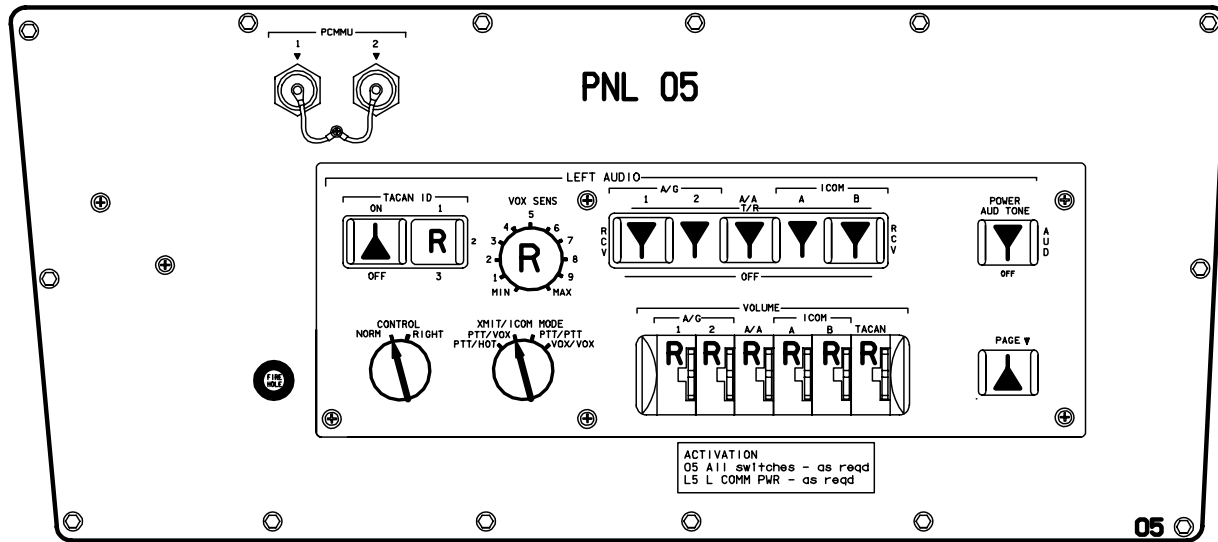
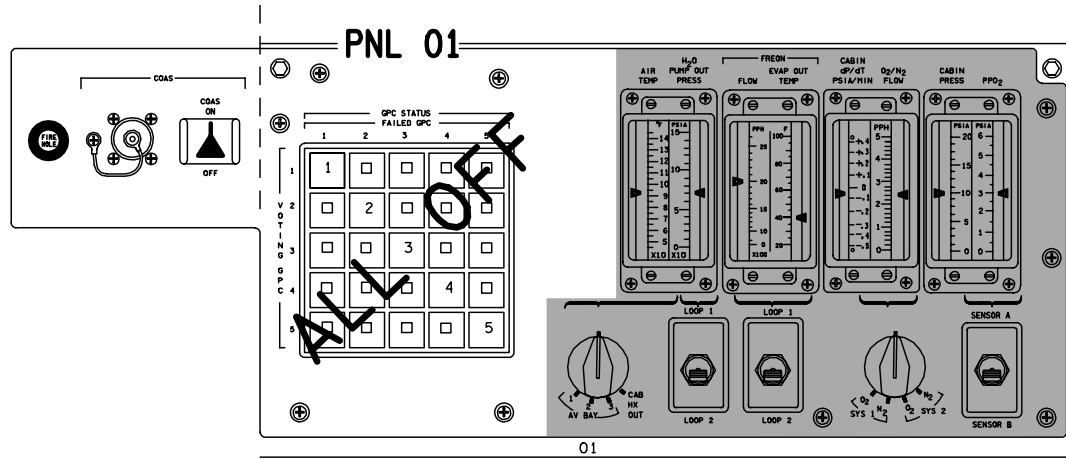
(OV103) A3-15

D/O/3/GEN P

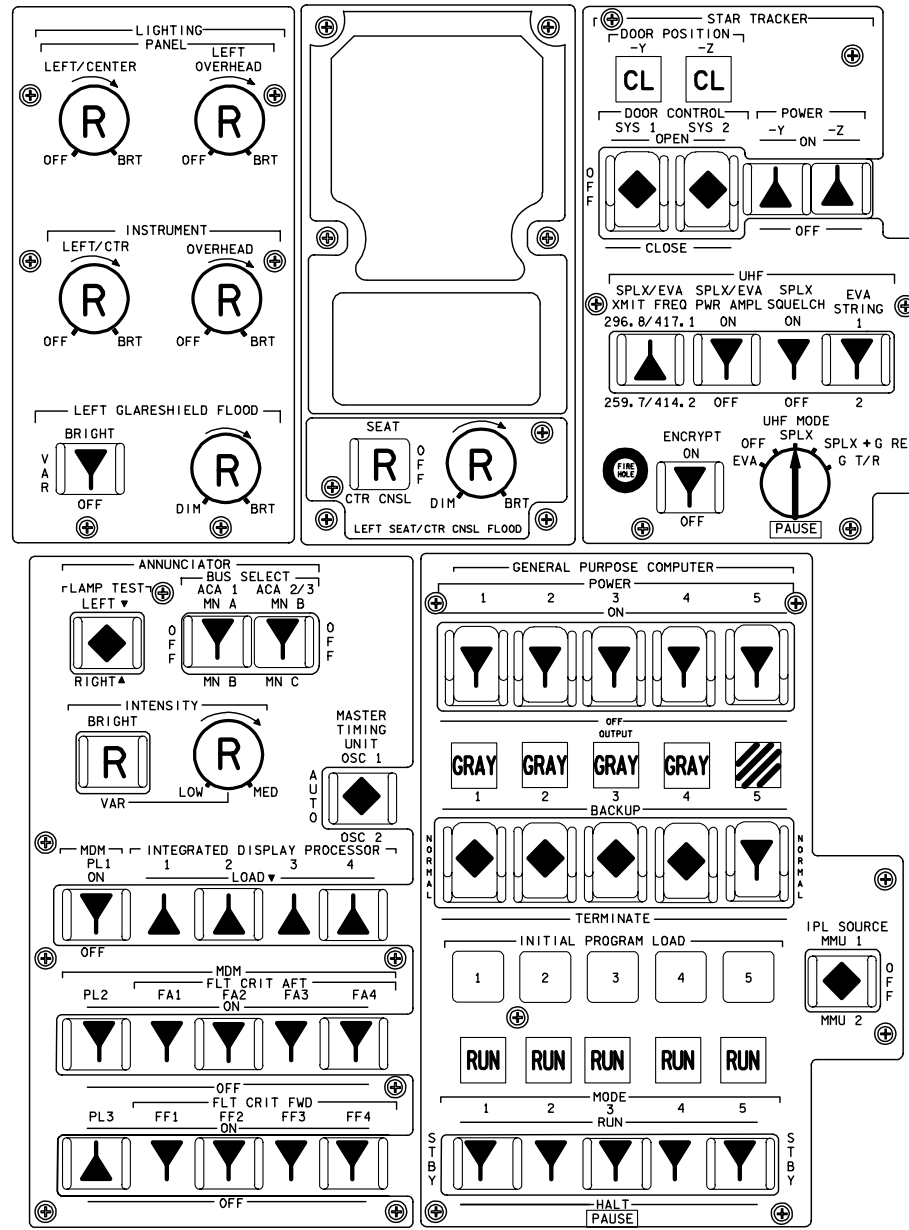
PNL C2/C3

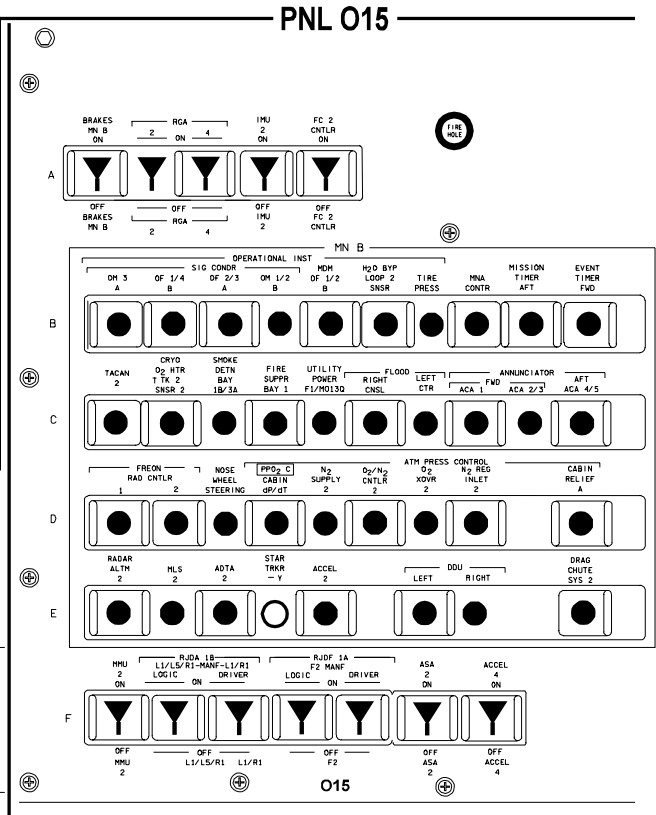
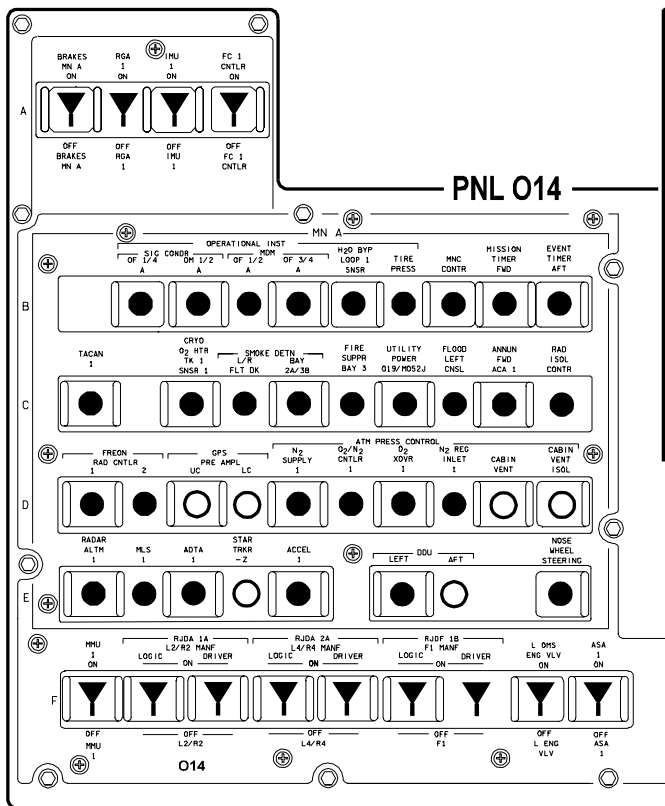


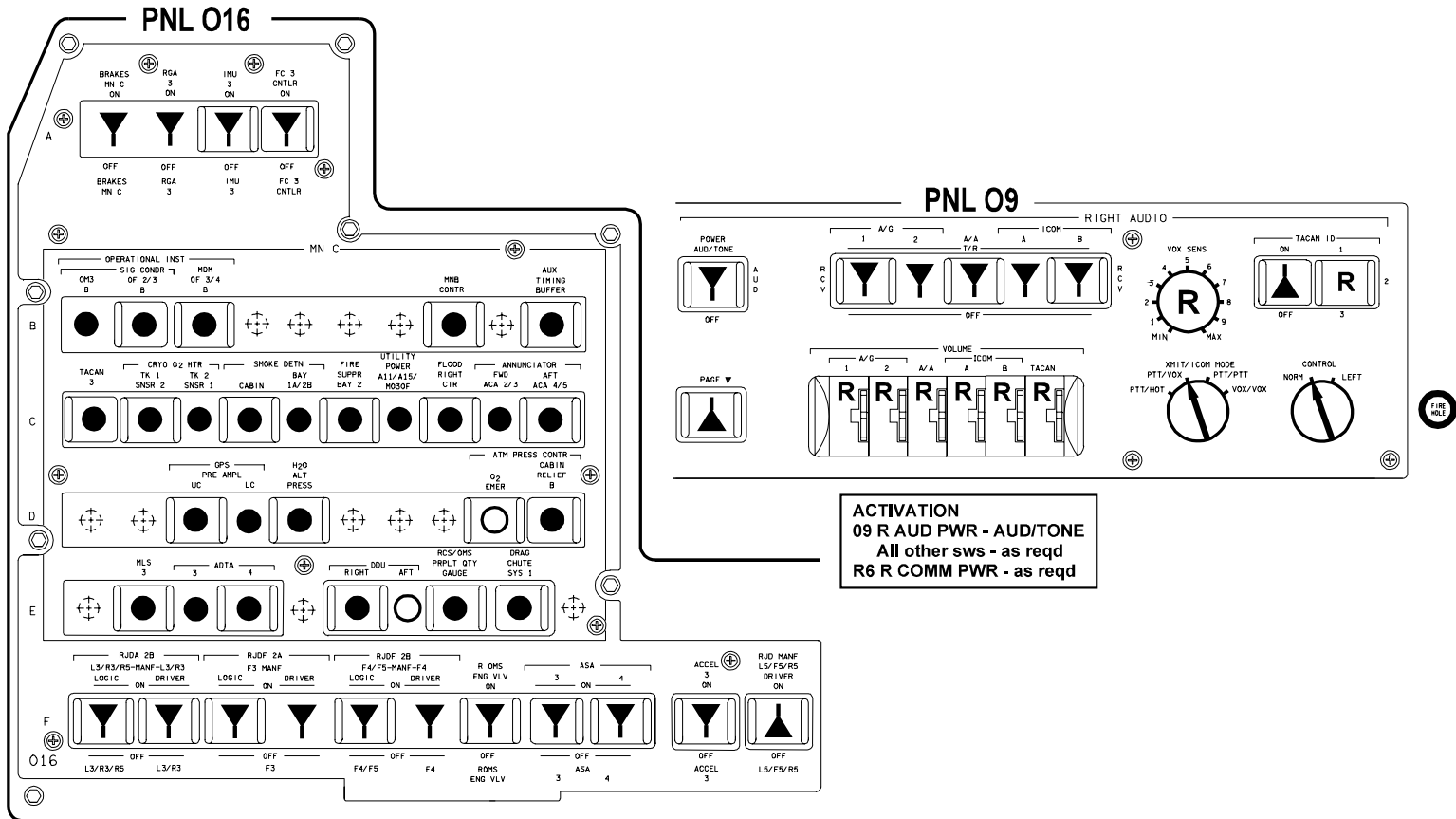
OV103



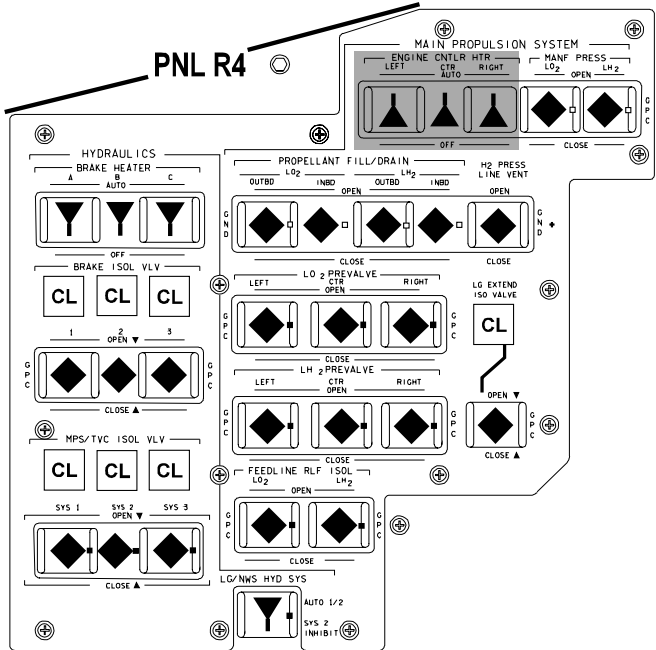
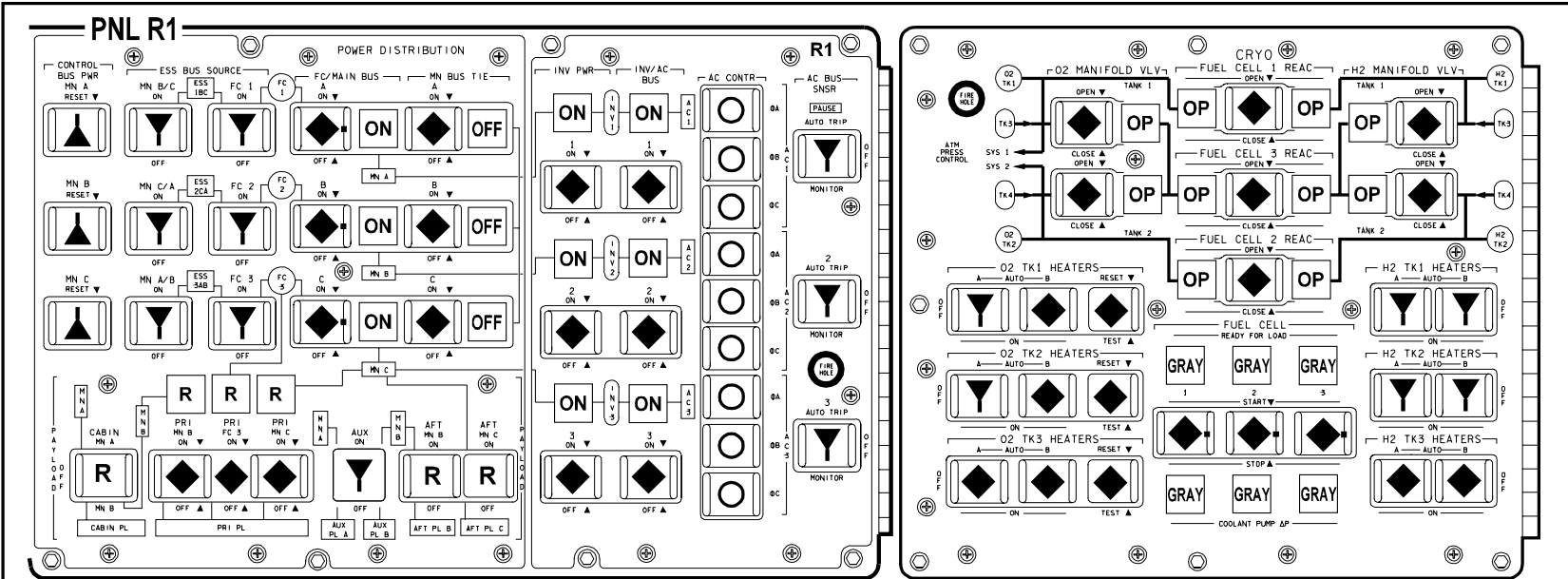
PNL 06



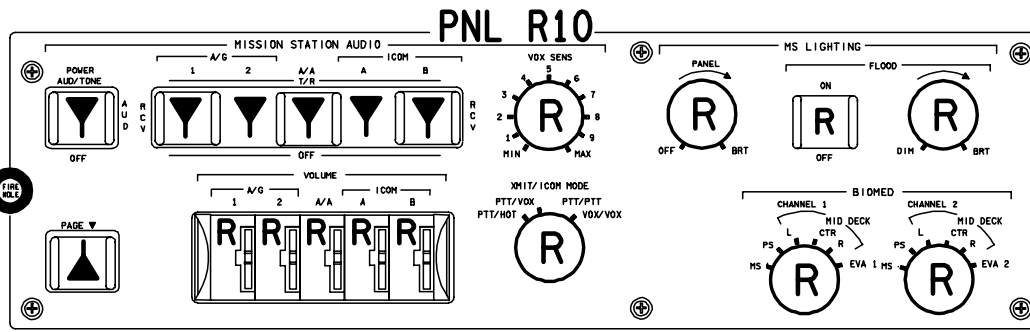




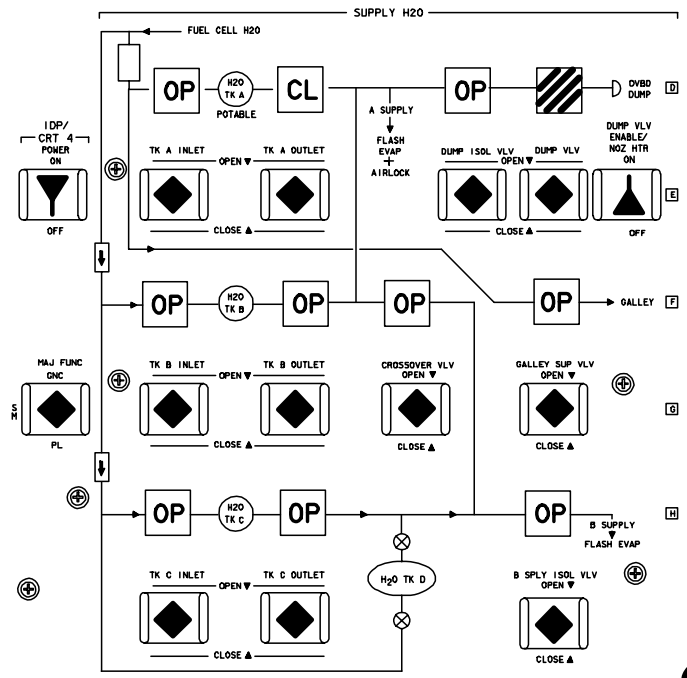
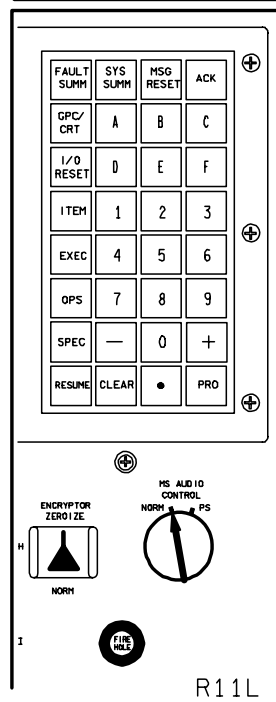
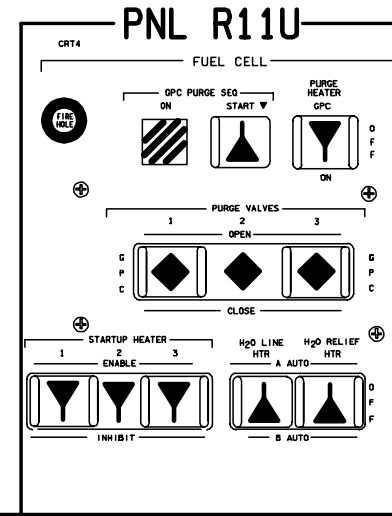




OV103

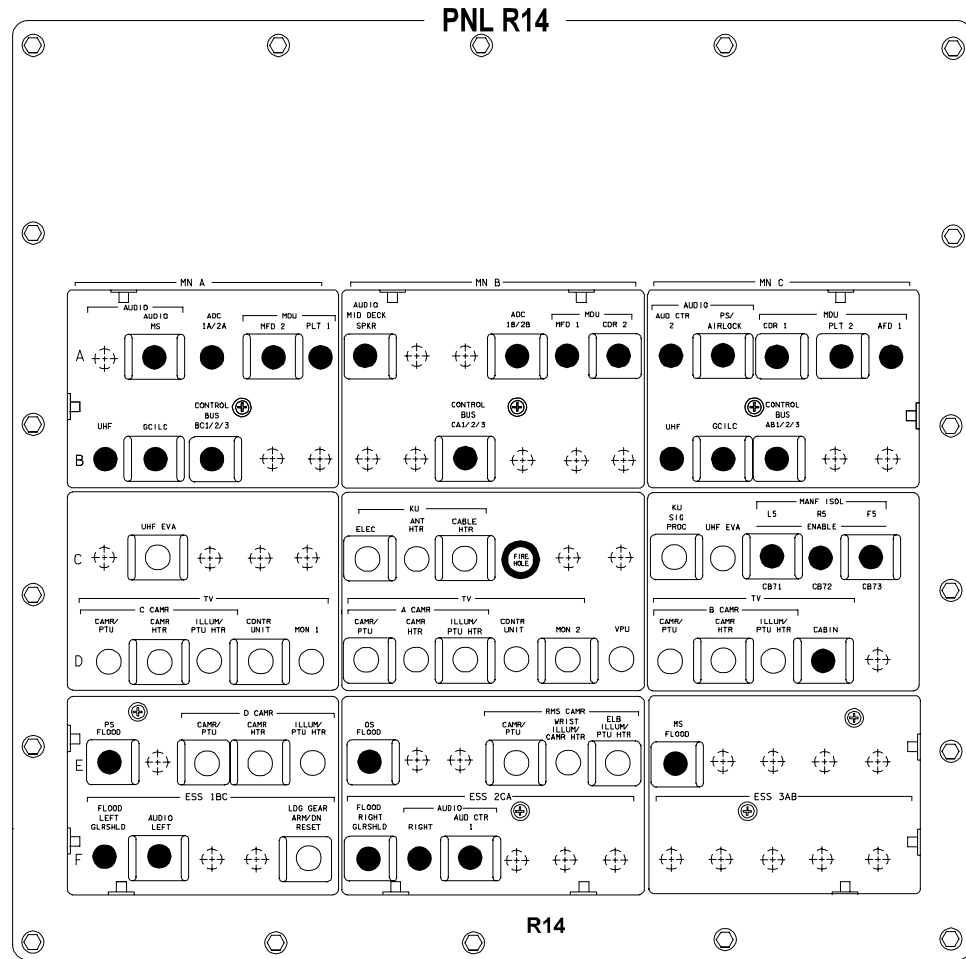
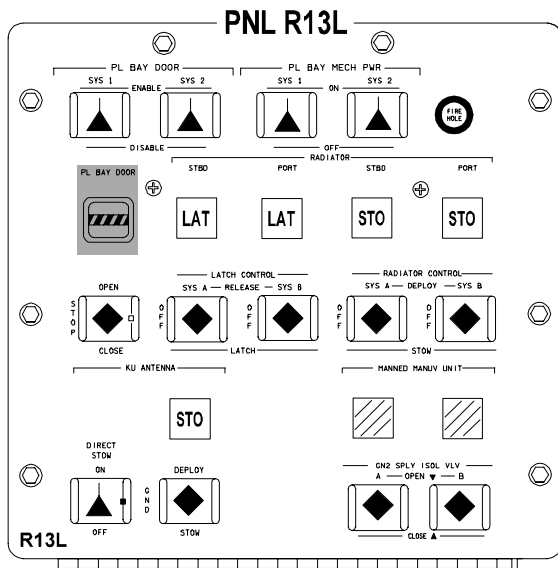


ACTIVATION  
 R10 MS AUD PWR - AUD/TONE  
           All other sws - as reqd  
 R12 MS AUD CONTL - NORM  
 A11 MS COMM CCU PWR - ON

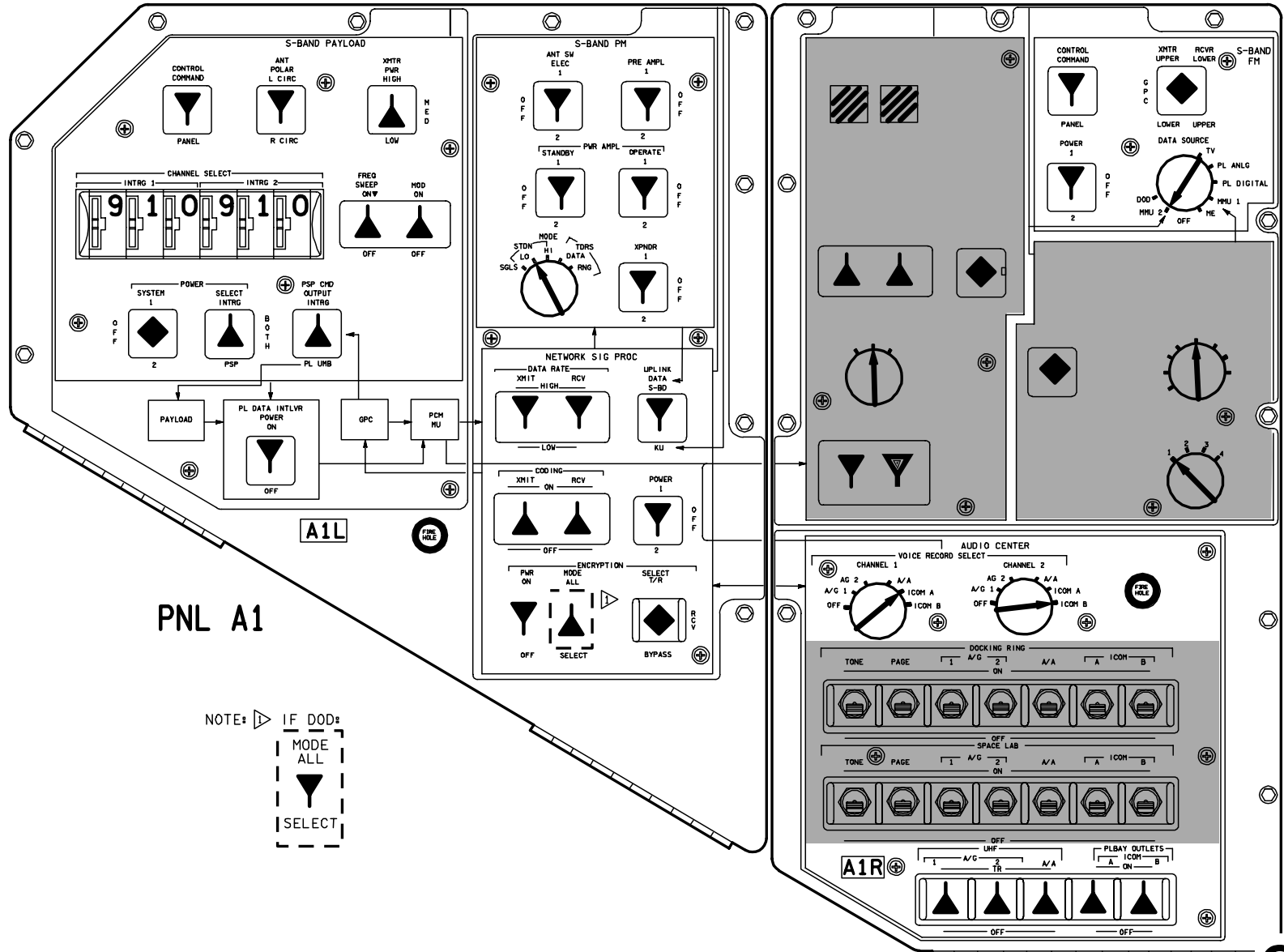


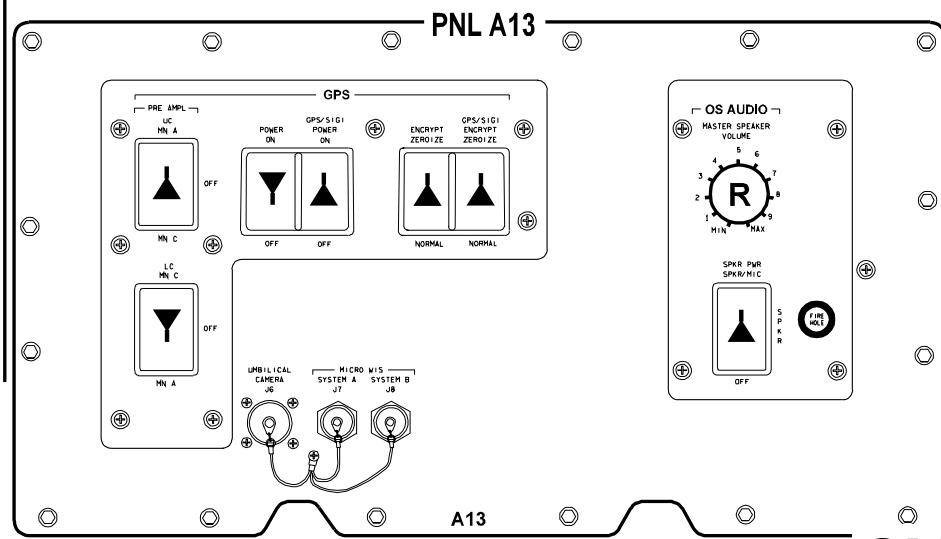
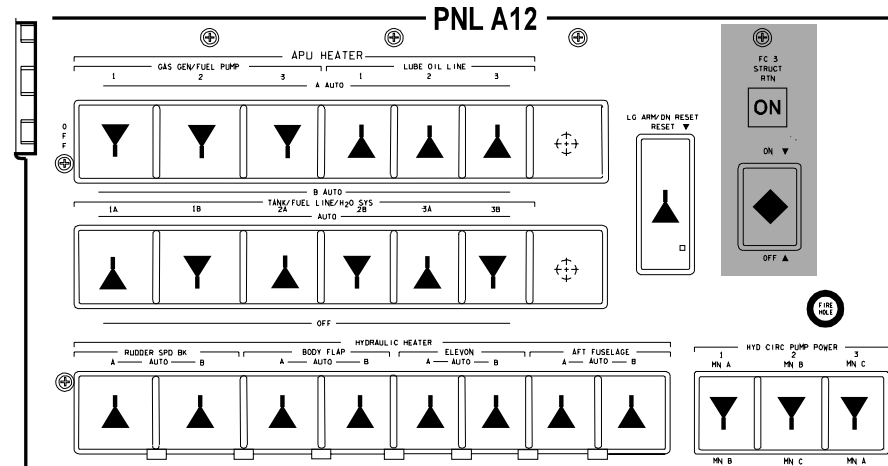
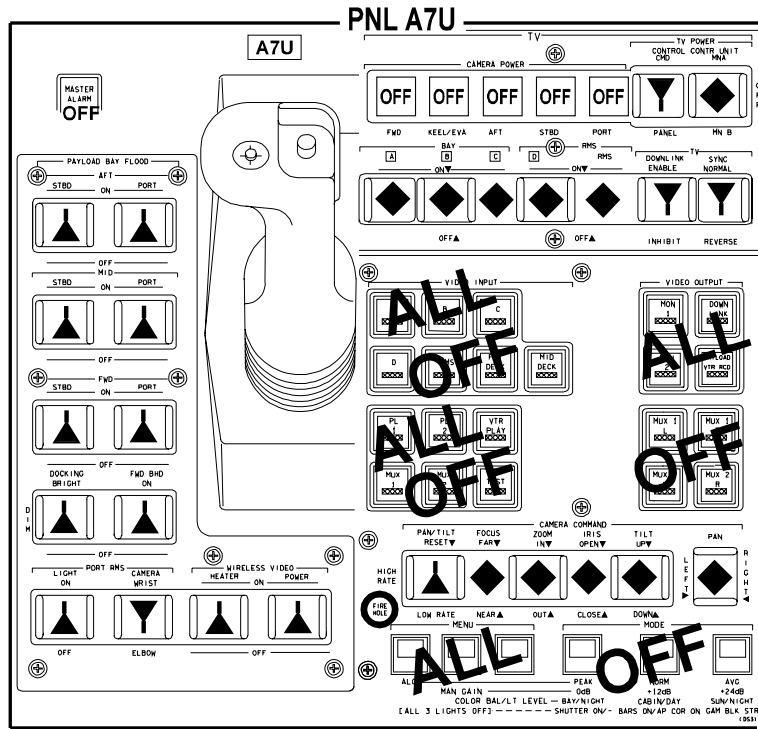
OV103

OV103



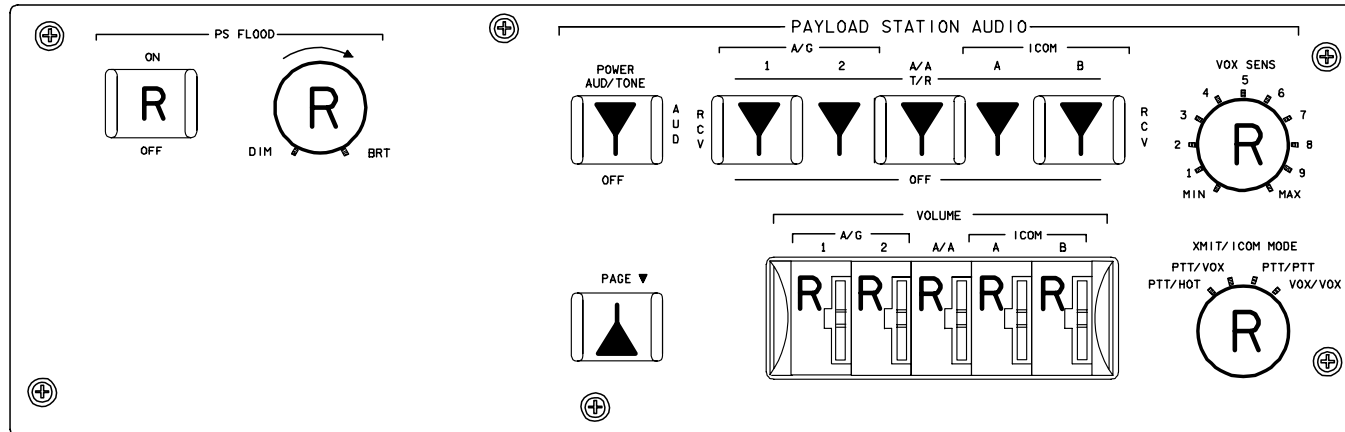
OV103





OV103

PNL L9

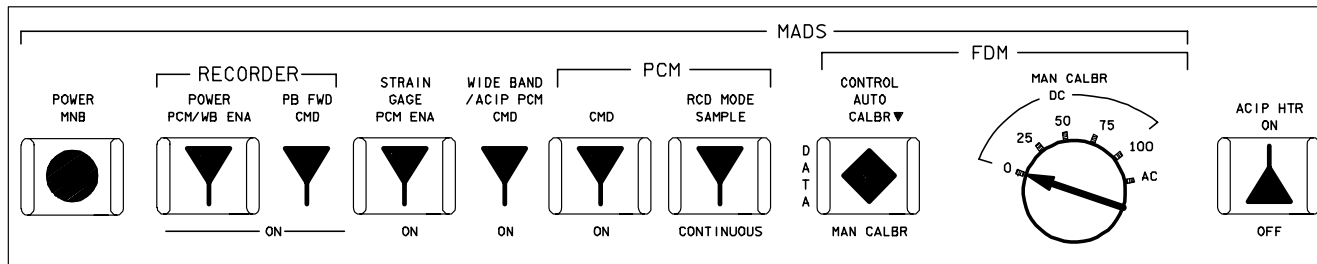
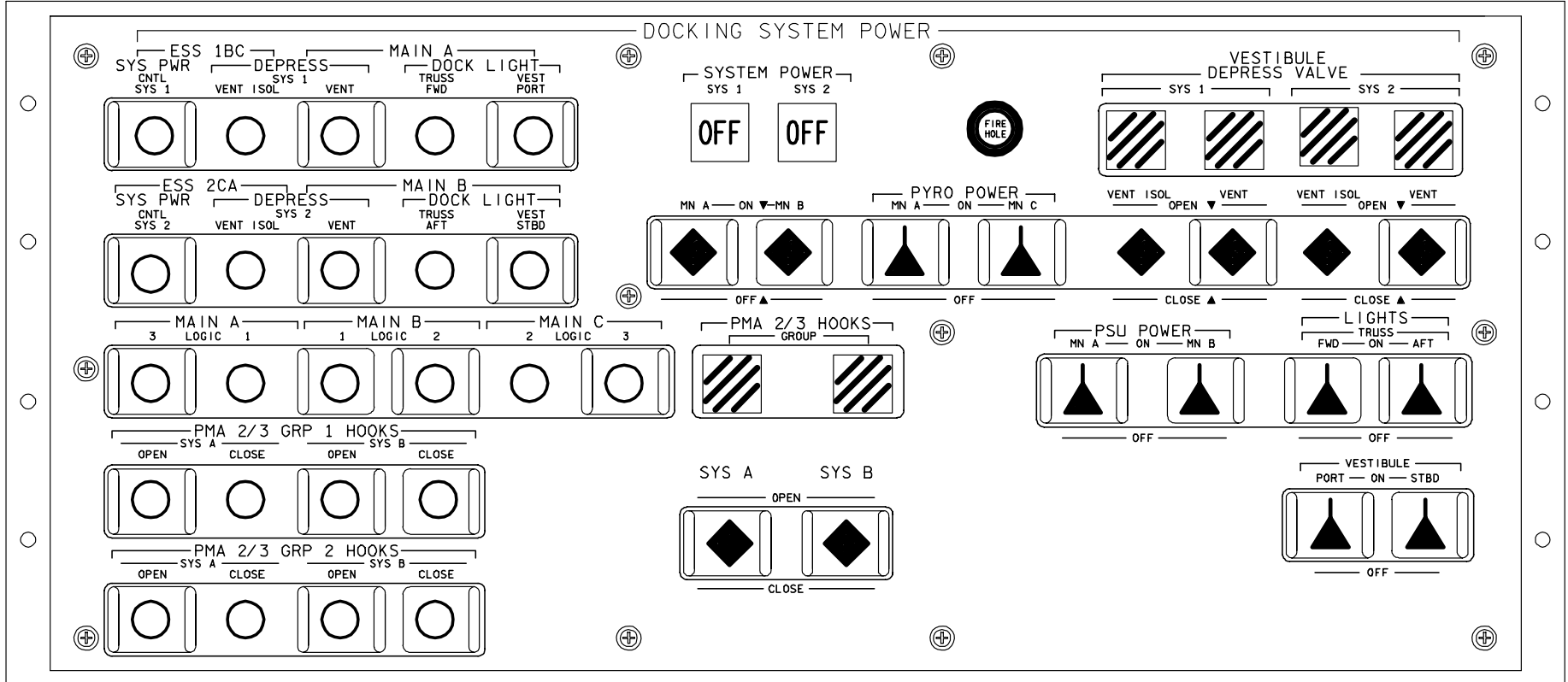


ACTIVATION  
L9 All switches - as reqd  
A15 PS COMM CCU PWR - ON

L9

OV103

PNL A6L



OV103

48015E327\_114. PNL 1

OV103/DATE 04/28/05

OV103

**CONTROL PANEL POWER**

A ON OFF      B ON OFF      C ON OFF

**HEATERS/DCU POWER**

H1 ON OFF      H2/DCU ON OFF      H3/DCU ON OFF

**APDS POWER**

A<sub>DS</sub> ON OFF      B<sub>DS</sub> ON OFF      C<sub>DS</sub> ON OFF

**STATUS**

POWER	ON	INITIAL	CONTACT
APDS PROTECT	CIRCUIT OFF	CAPTURE	CAPTURE
RING	ALIGNED	RING	FORWARD POSITION
RING	INITIAL POSITION	TO HOOK	
FIXERS	OFF	INTER	SEALED
HOOKS 1	OPEN	HOOKS 1	CLOSED
HOOKS 2	OPEN	HOOKS 2	CLOSED
LATCHES	CLOSED	LATCHES	OPEN
UNDOCK	COMPLET	RING	FINAL POSITION

**PYROS**

A<sub>p</sub> ON OFF      B<sub>p</sub> ON OFF      C<sub>p</sub> ON OFF

A<sub>p</sub>      C<sub>p</sub>

**FIRE HOLE**

**OFF**

**OFF**

**PYRO COMMANDS**

PYRO CIRC PROT OFF      PYRO CIRC PROT ON

ACT HOOKS FIRING      PAS HOOKS FIRING

**APDS CONTROL COMMANDS**

OPEN HOOKS      OPEN LATCHES

UNDOCKING

A<sub>DS</sub>      B<sub>DS</sub>      C<sub>DS</sub>

**OFF**

LAMP TEST

PNL A7L

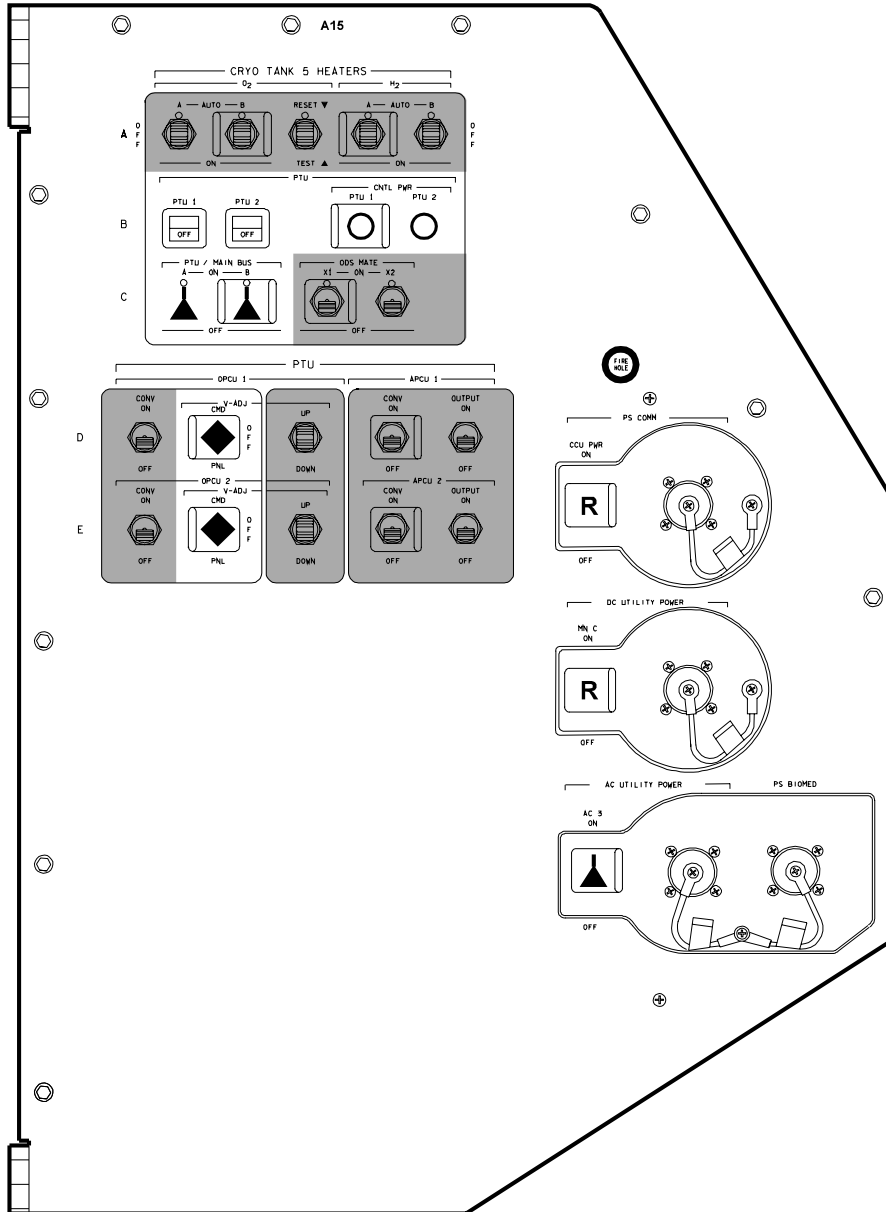
**APDS CONTROL COMMANDS**

POWER ON	POWER OFF	RING OUT	RING IN
APDS CIRC PROT OFF	CLOSE HOOKS	CLOSE LATCHES	FIXER OFF

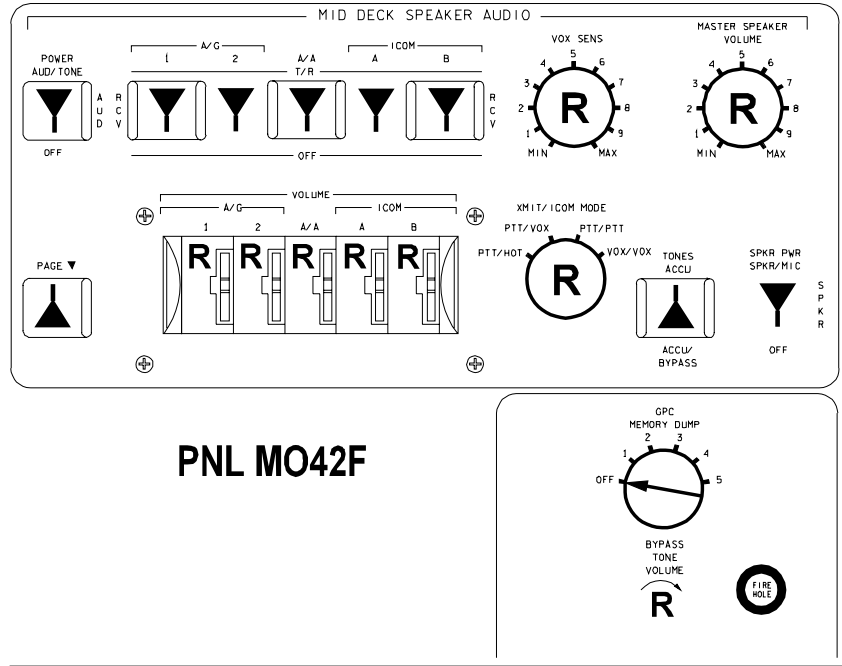
APDS CONTROL PANEL



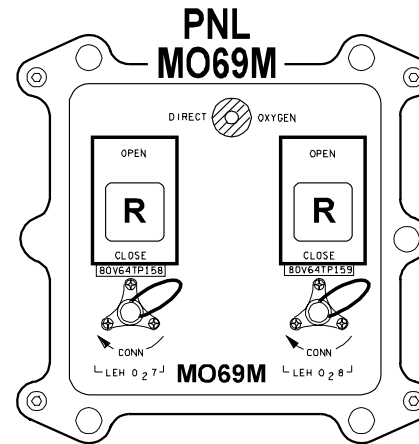
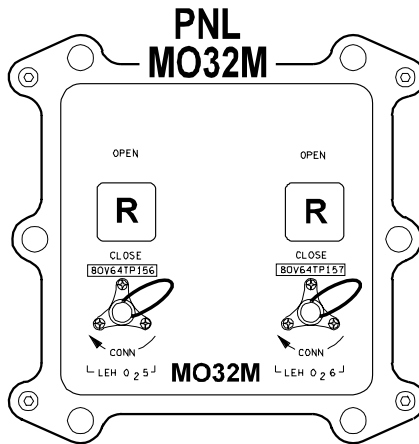
OV103

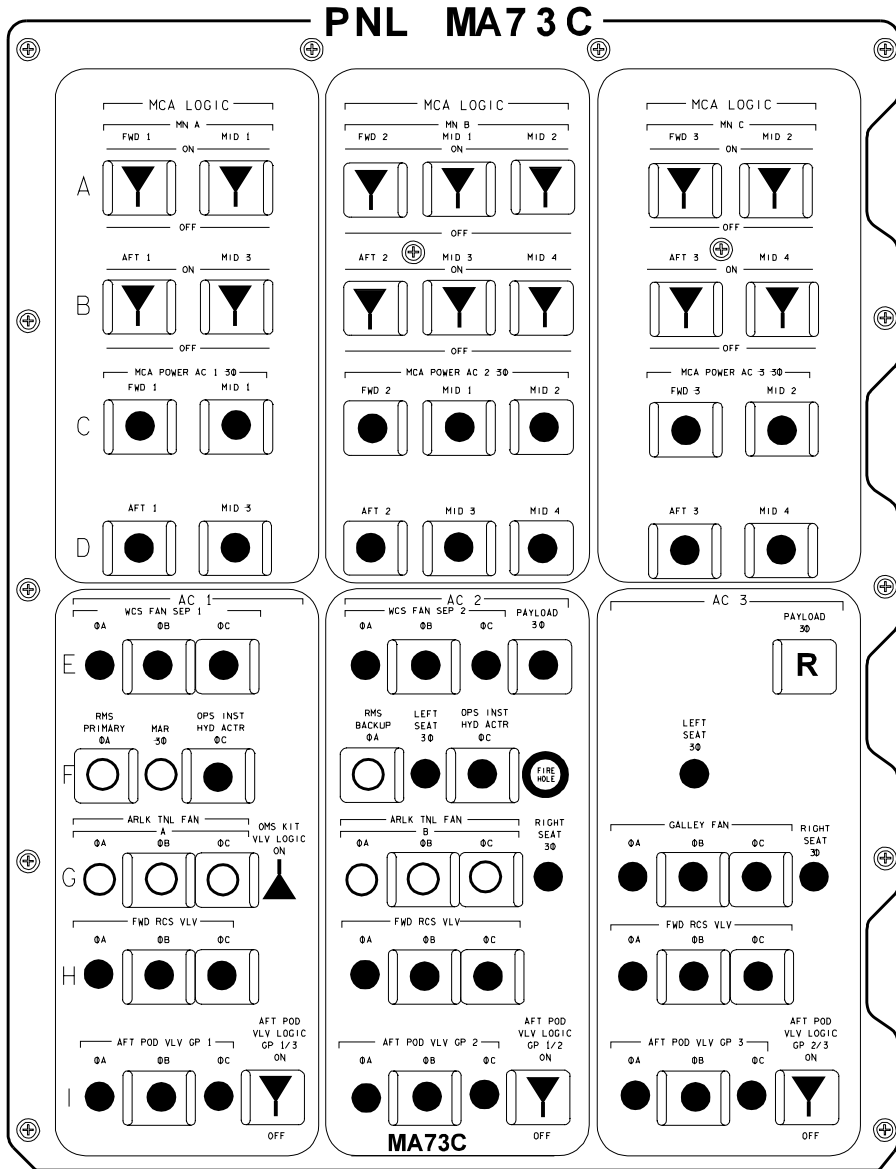


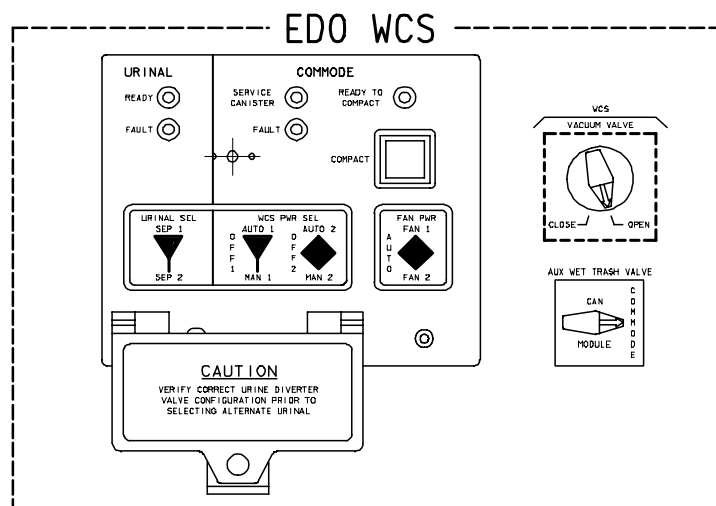
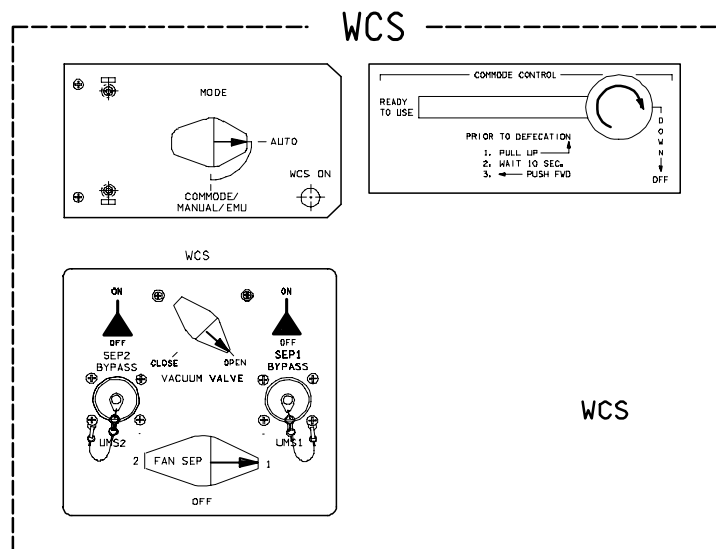
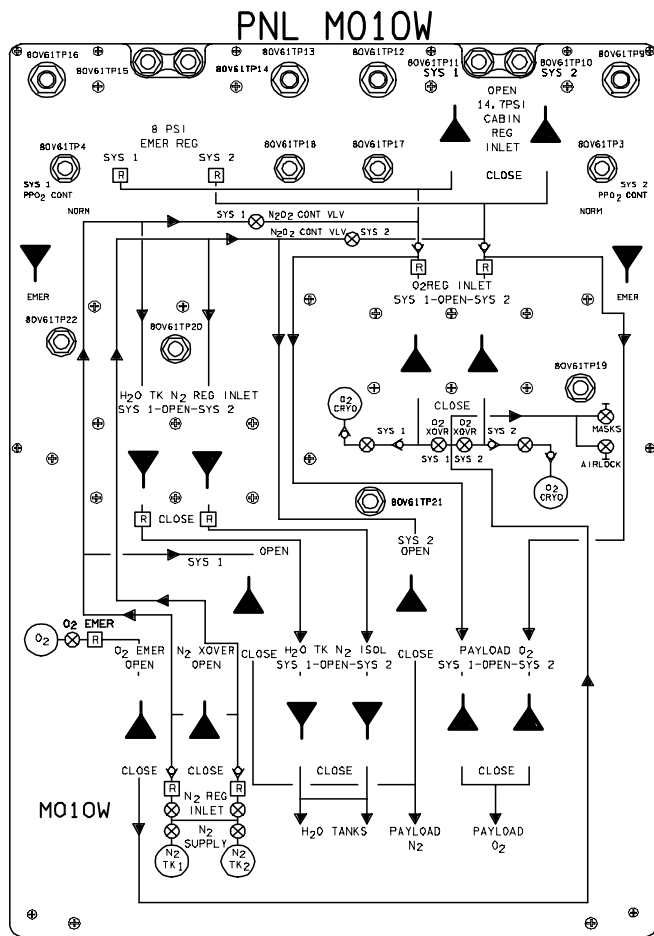
# OV103

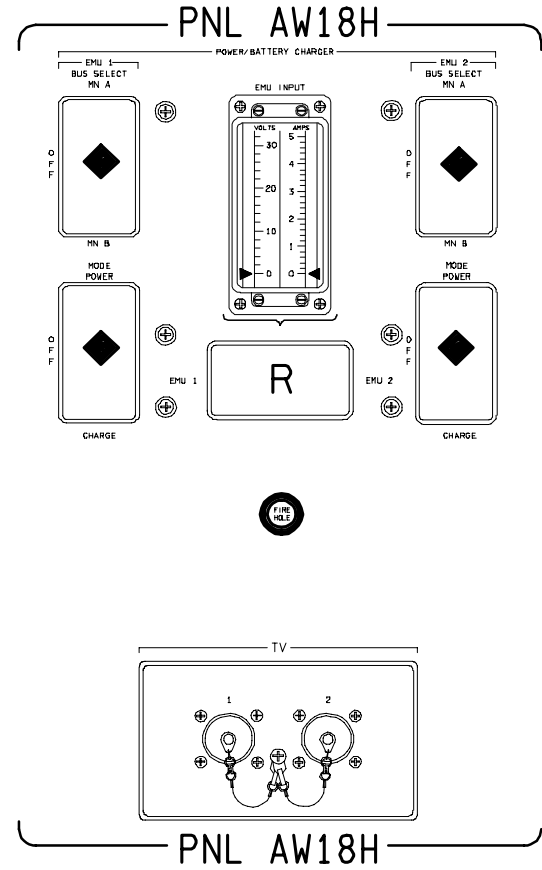
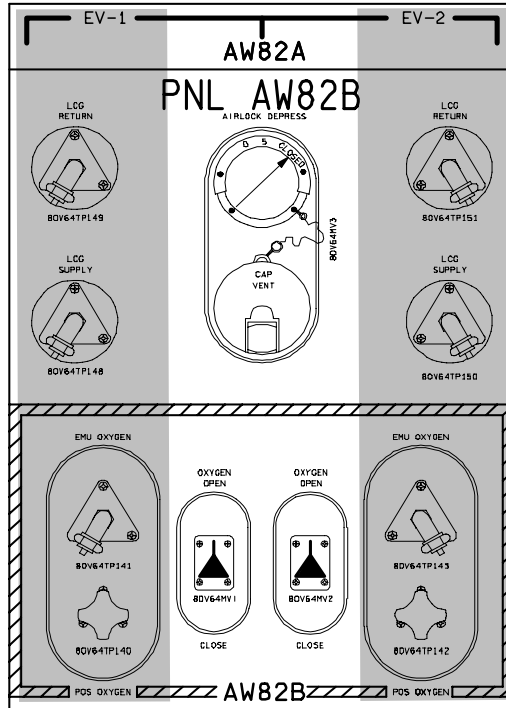
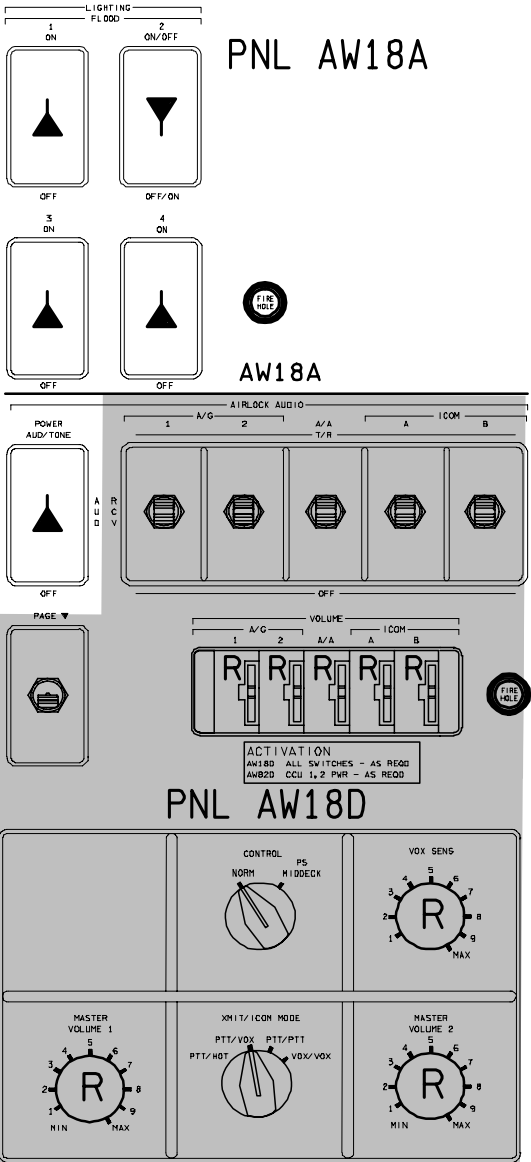


**PNL MO42F**

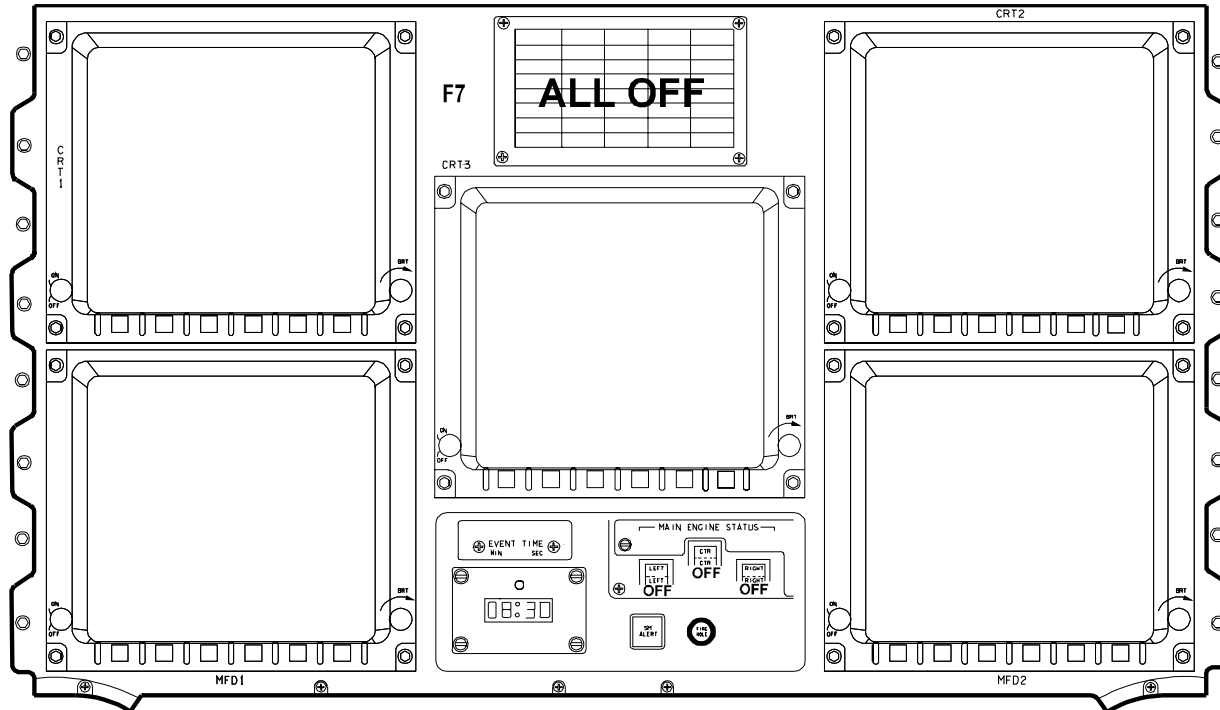
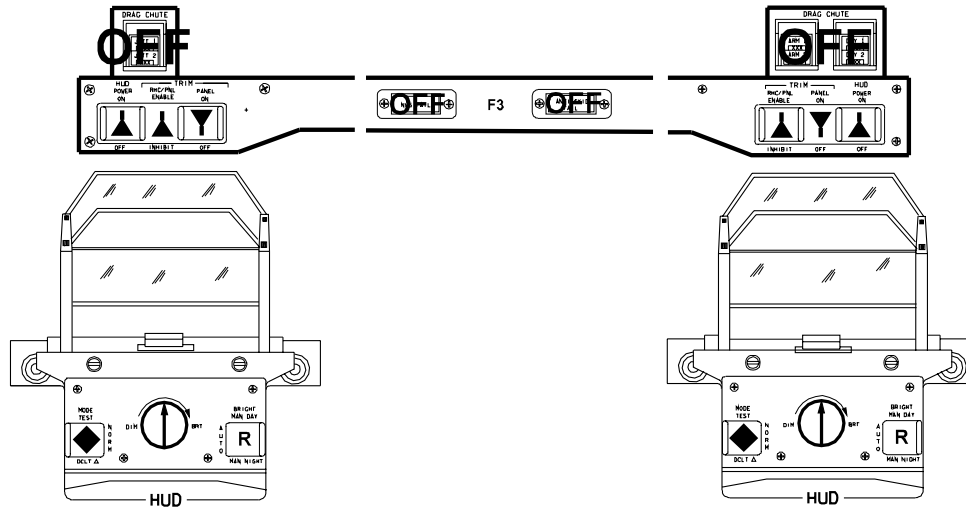




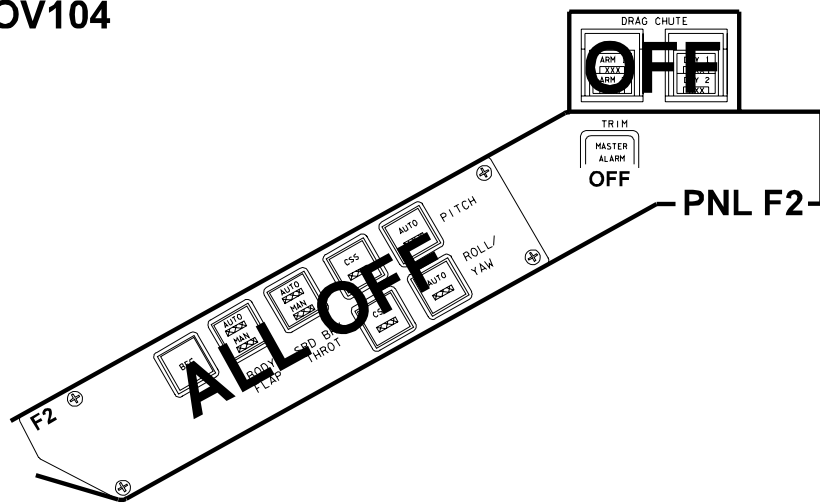




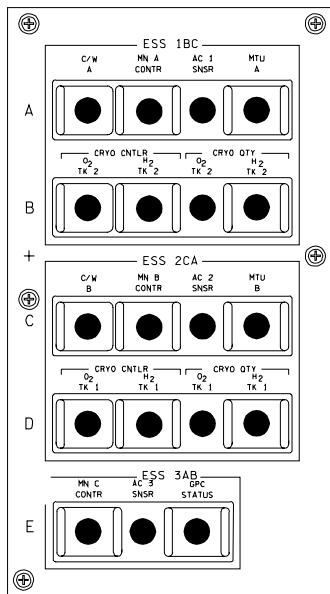
OV104



OV104

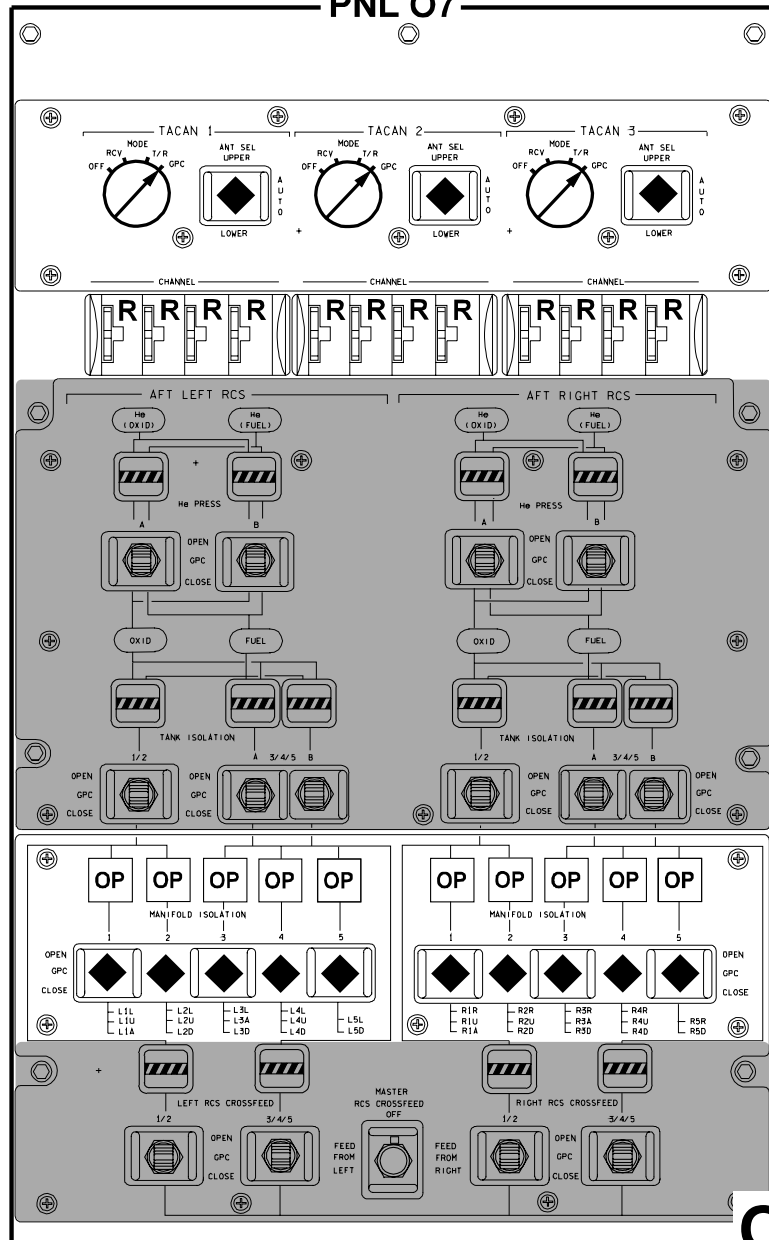


PNL O13



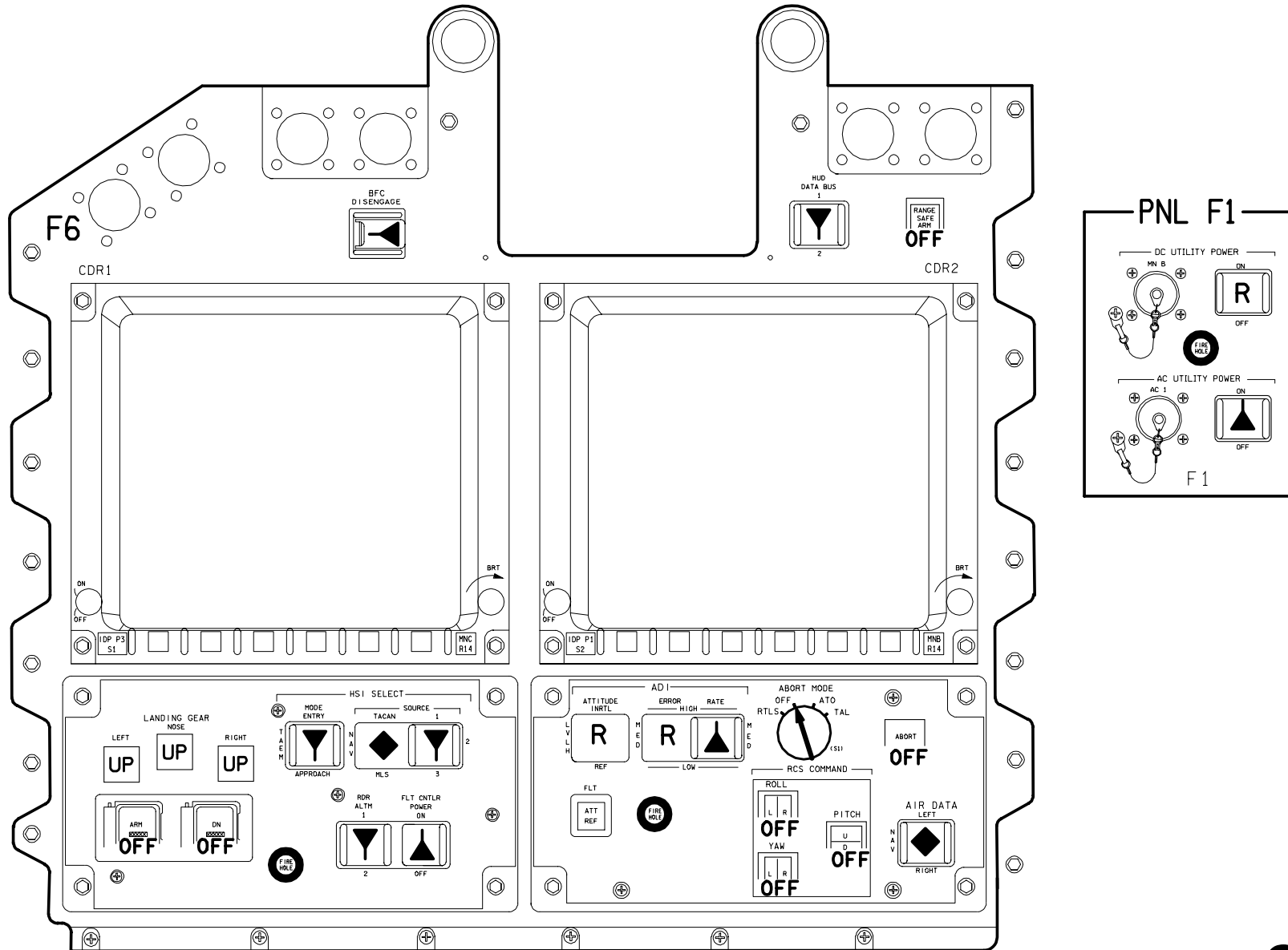
L side OVHD flood - R (MID)

PNL O7



OV104

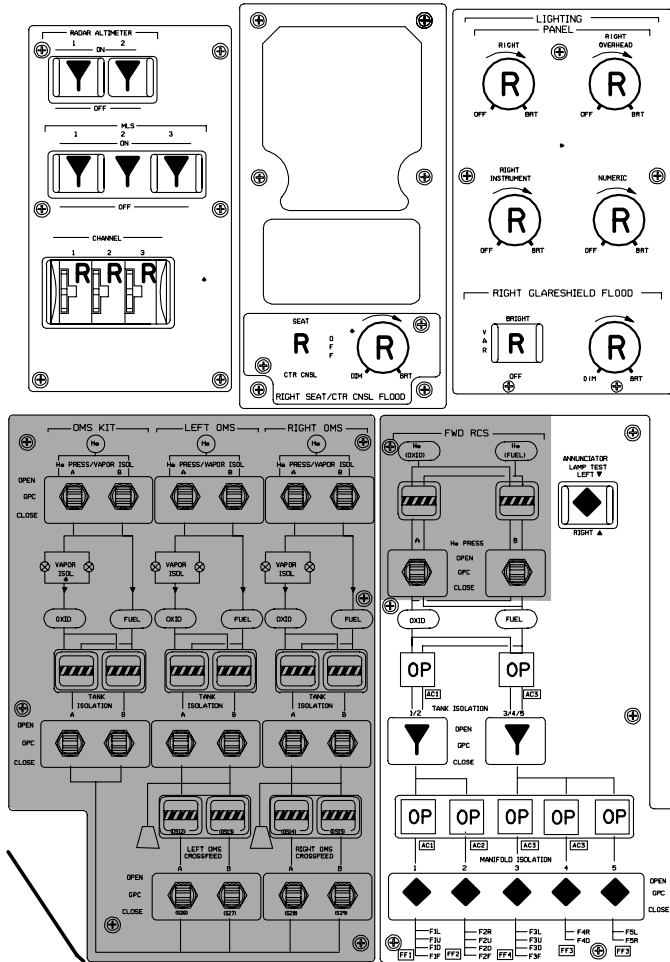
OV104



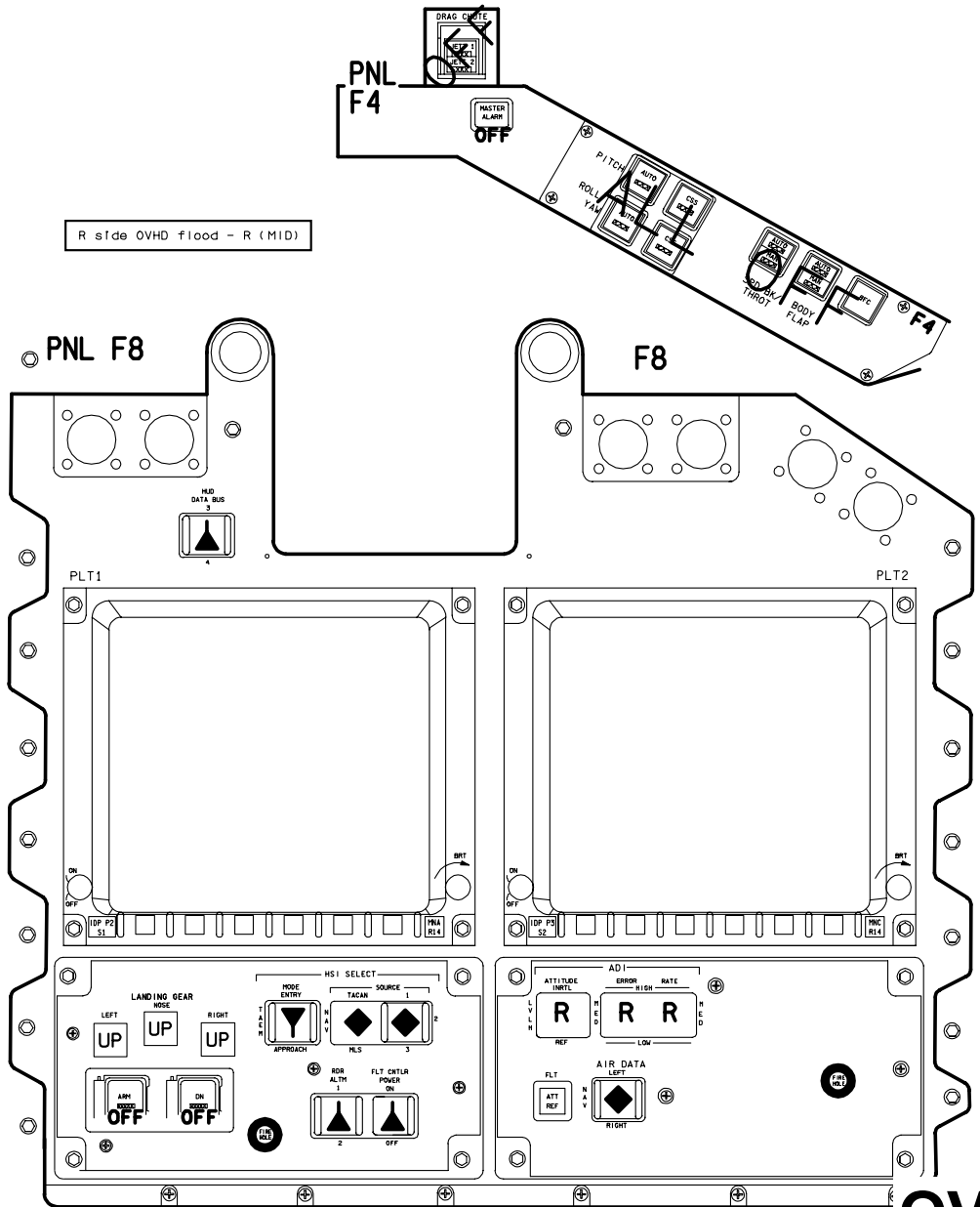


OV104

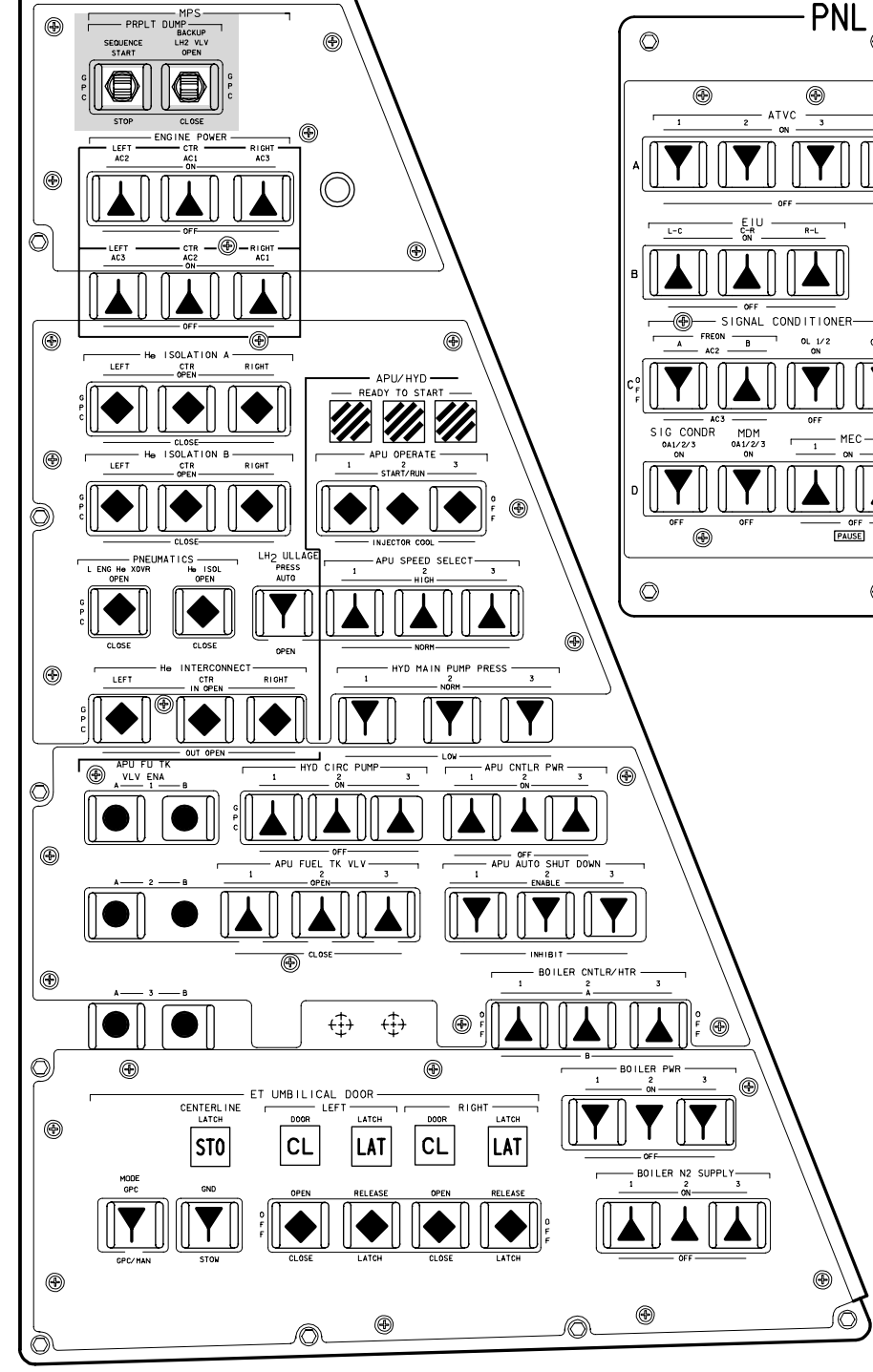
PNL 08



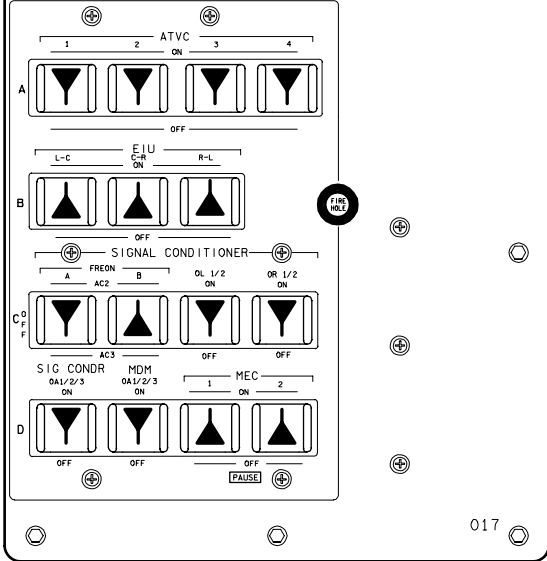
R side OVHD flood - R (MID)



OV104  
PNL R2



PNL 017



017

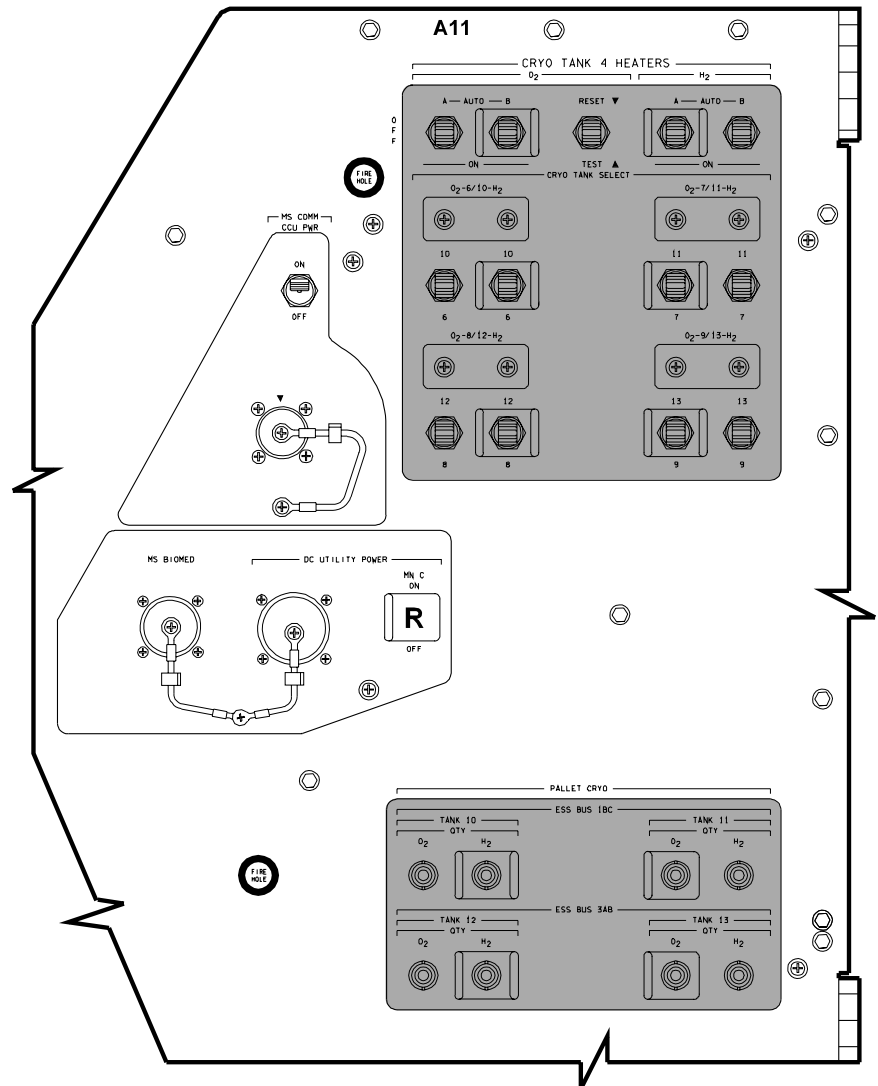
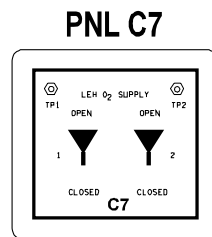
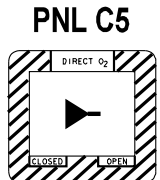
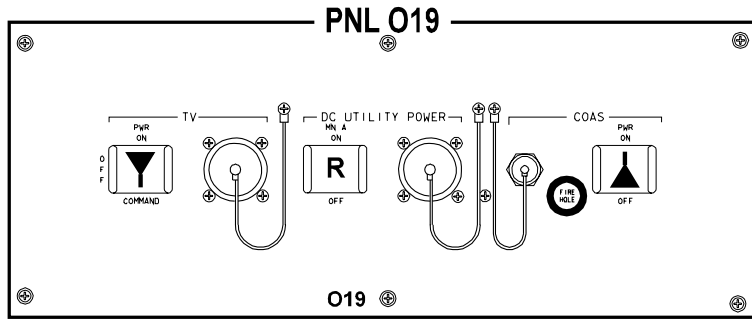
ALL VEH/DATE 11/29/04  
48015C308\_114, PNL, 5

**OV104**

(OV104) B3-8

D/O/ALL/GEN P

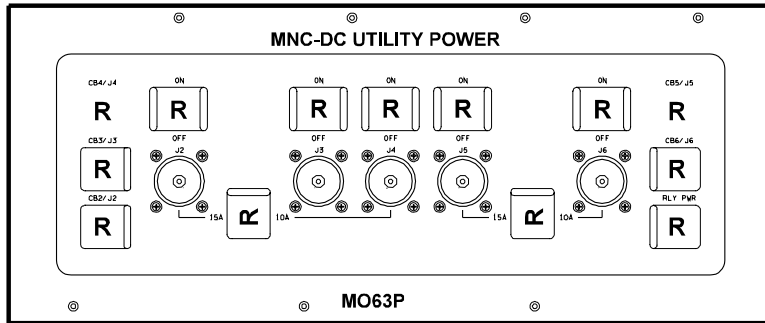
# OV104



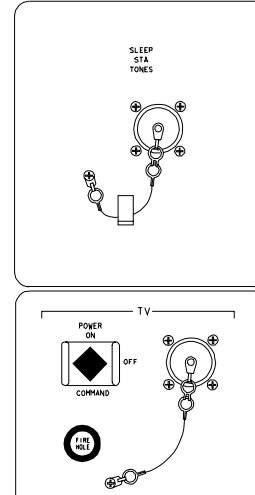
# OV104

## AIRLOCK HATCH

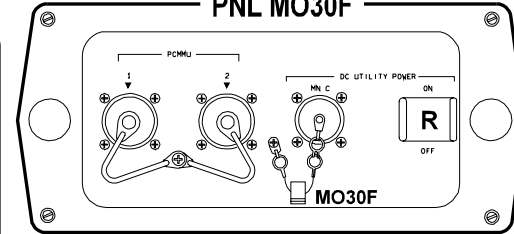
ACTUATOR HANDLE - LATCHED  
 LOCK LEVER - LOCKED  
 EQUALIZATION VLV (TWO) - NORM  
 -CAPS INSTALLED



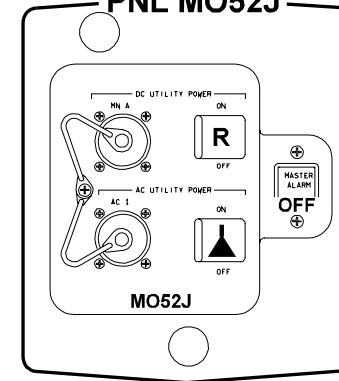
## PNL MO58F



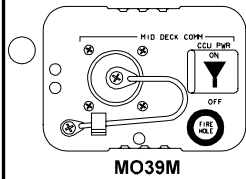
## PNL MO30F



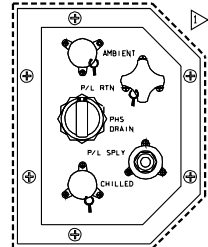
## PNL MO52J



## PNL MO39M



## PNL MD24K

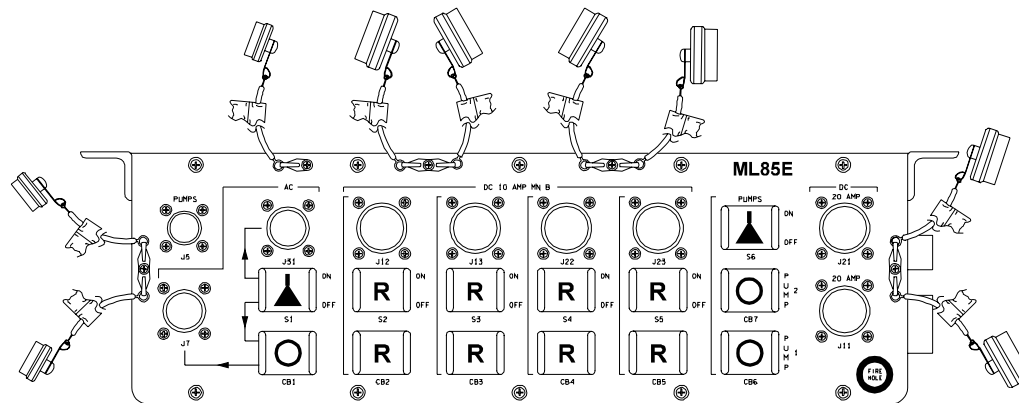


NOTE: ▷ NOT VISIBLE IF MAR FLOWN

## PNL MD44F

CAB TEMP CNTL ACT LINKAGE - SECONDARY ACTUATOR

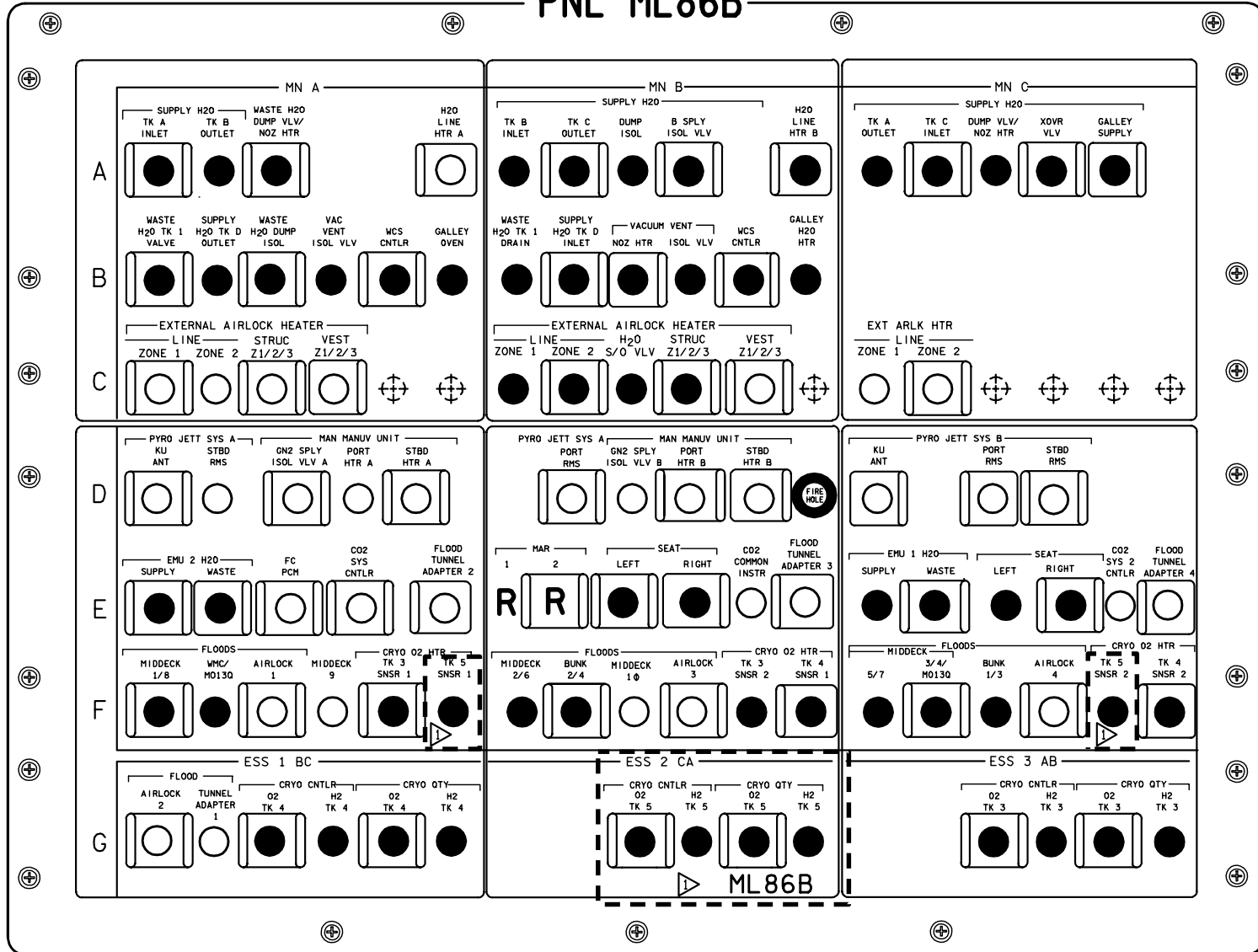
## PNL ML85E



# OV104

OV104

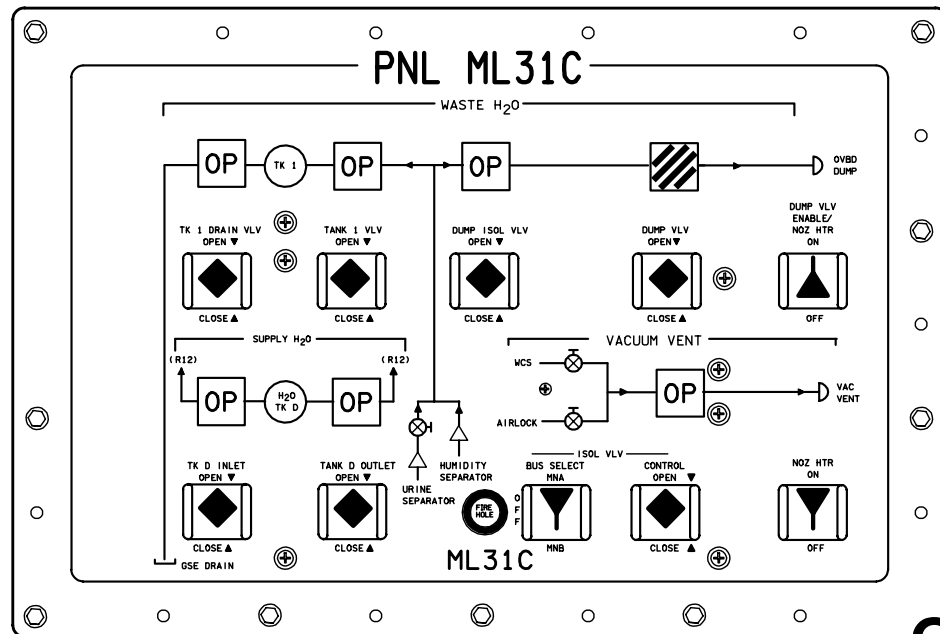
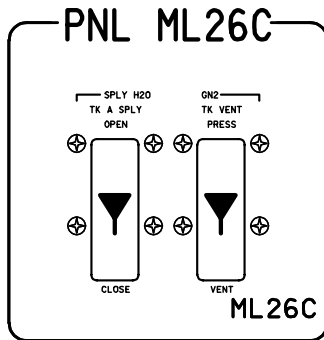
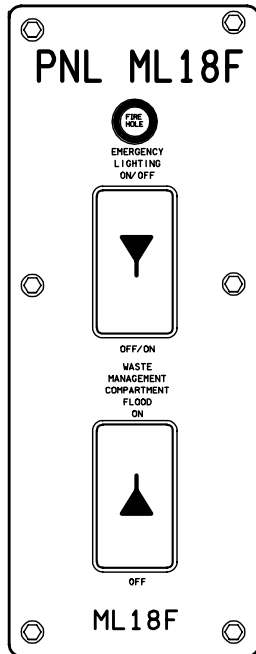
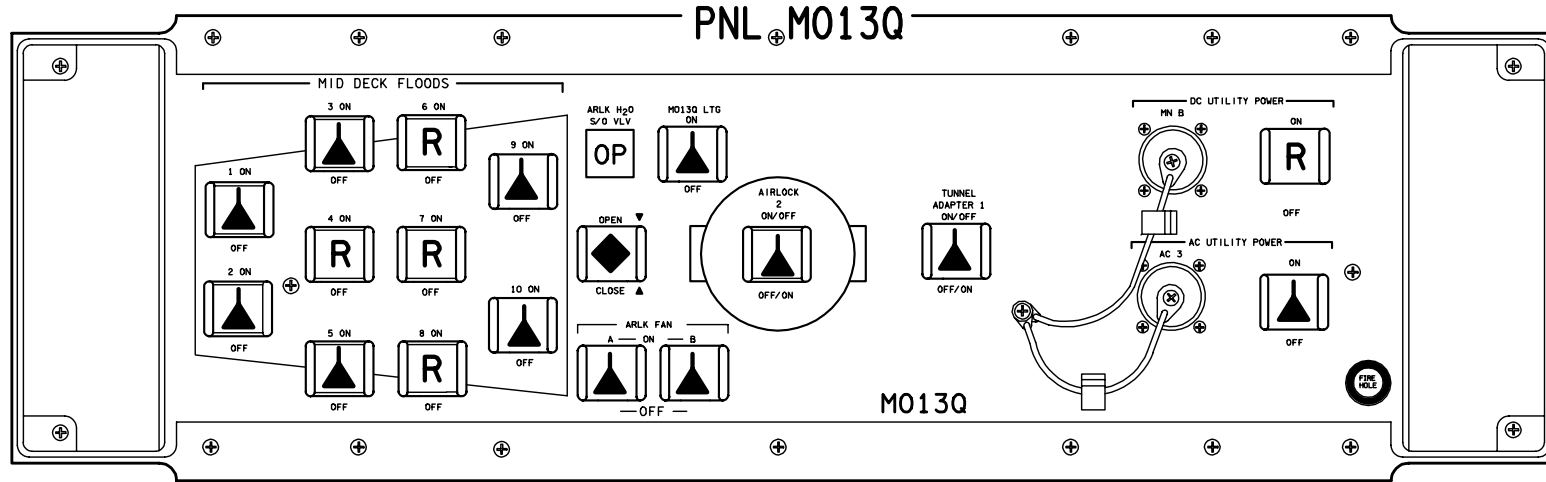
PNL ML86B

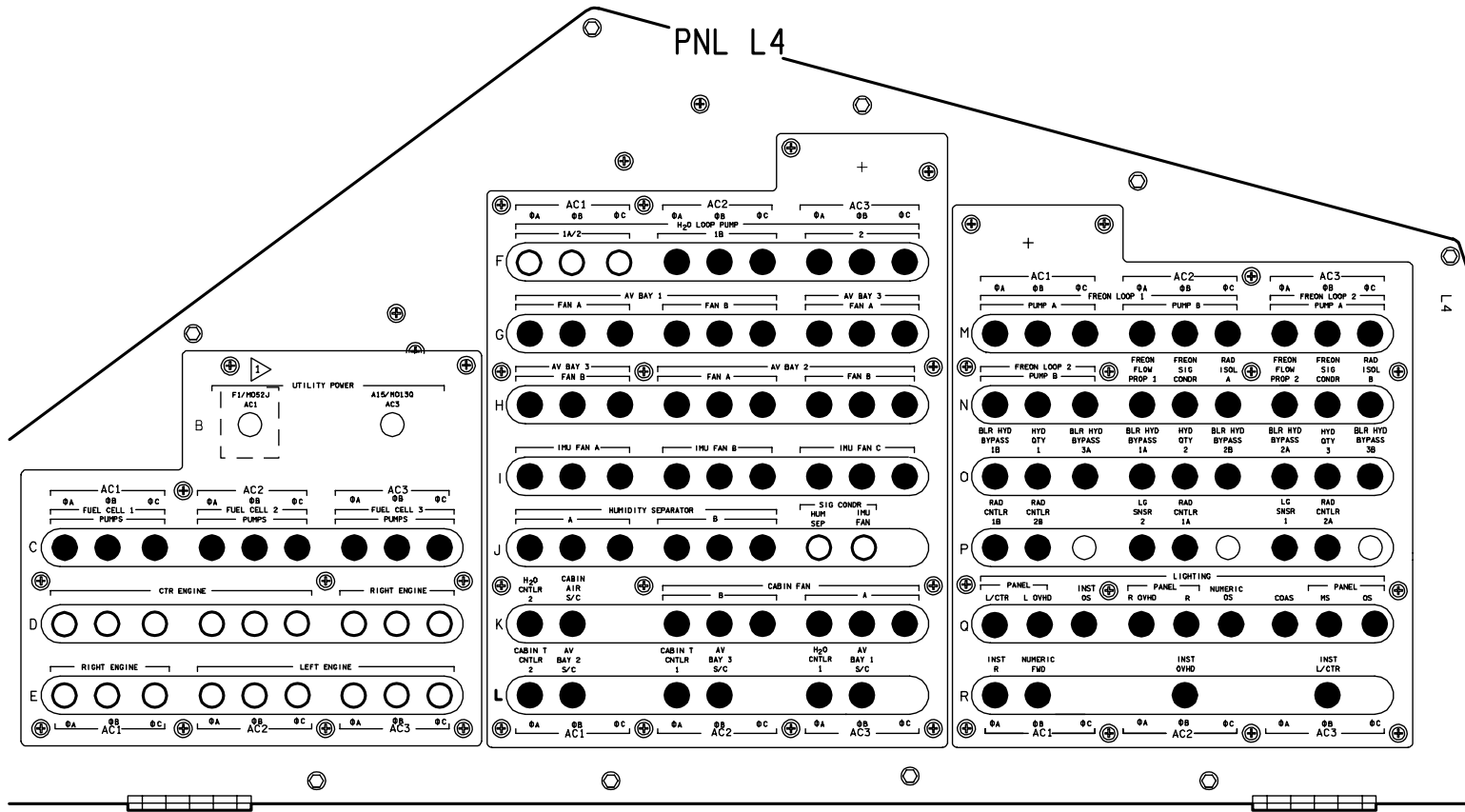


NOTE: ▷ OPEN IF TK 5 NOT FLOWN

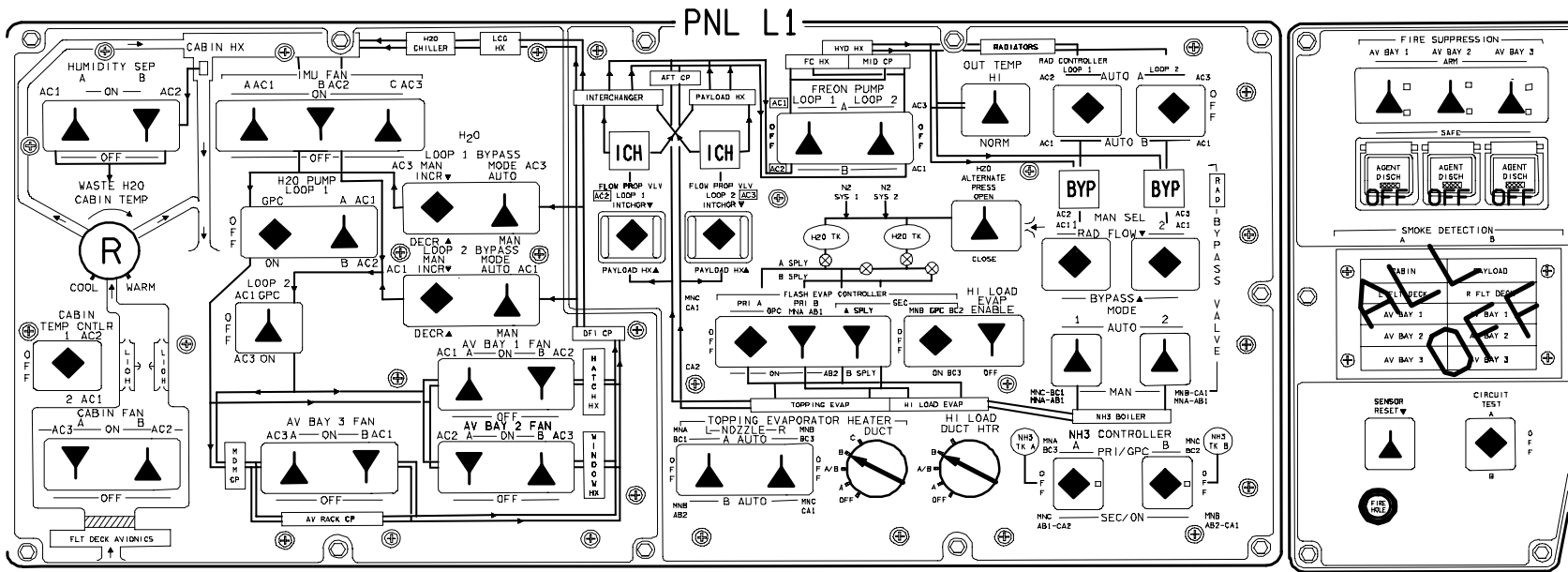
OV104

OV104





NOTE: CB CAN REMAIN CLOSED FOR AC PGSC USAGE.  
OPEN WHEN PGSC UNPOWERED/STOWED

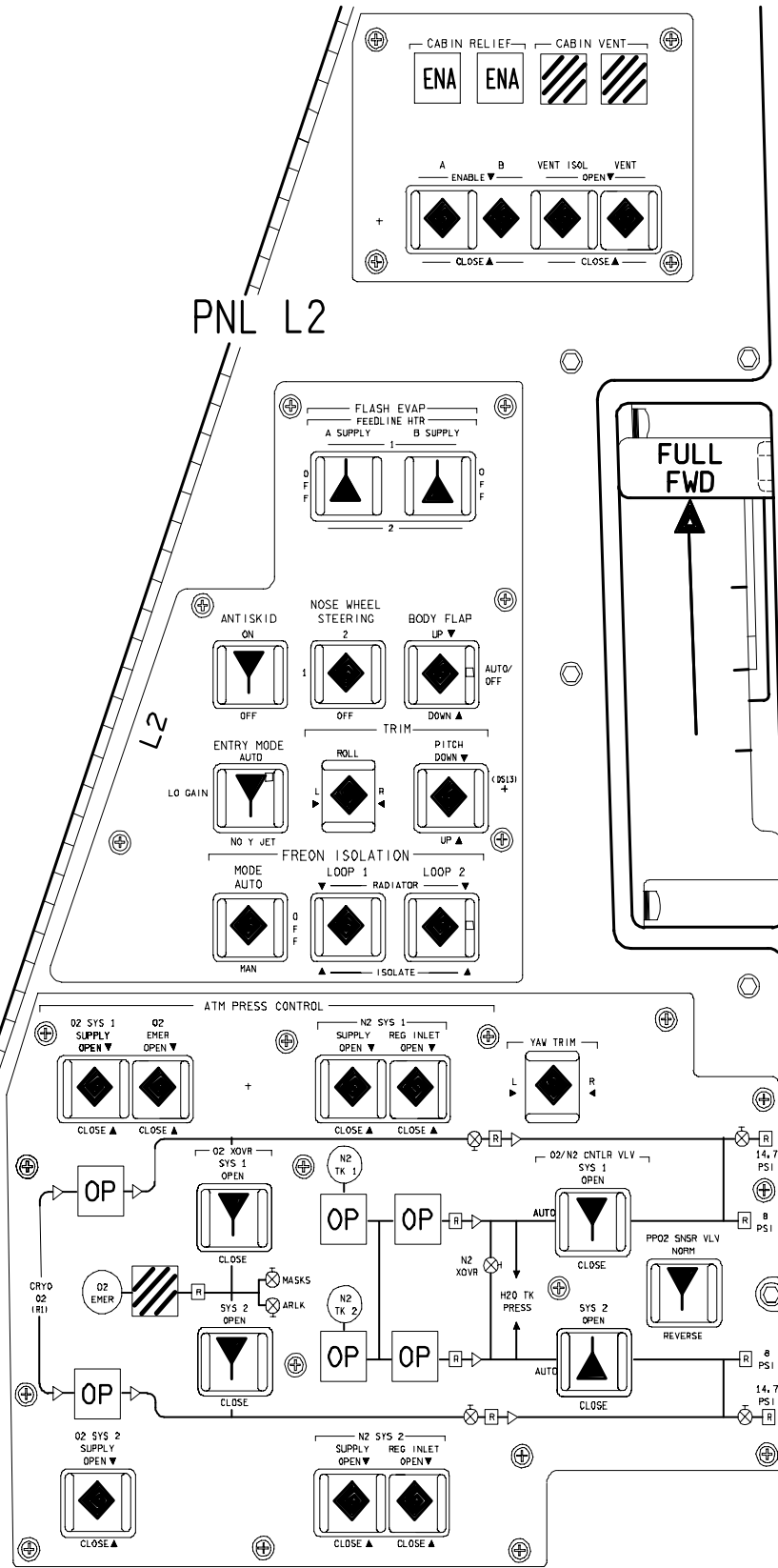




OV104

OV104/DATE 12/10/02

PNL L2



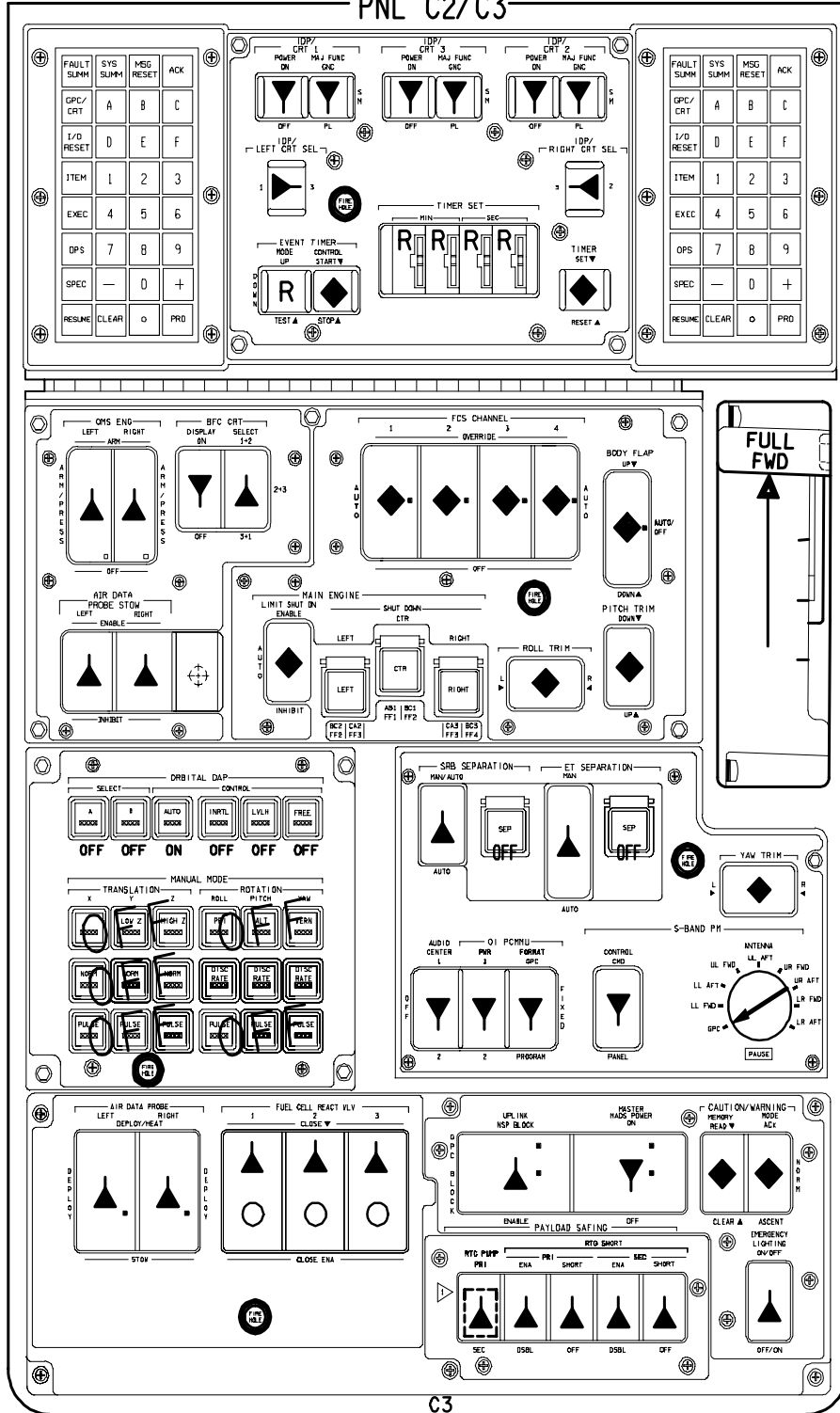
48015C315\_114, PNL, I

OV104

(OV104) B3-15

D/O/4/GEN P

PNL C2/C3



C3

OV104/DATE 12/10/02

48015C315-11-4, PNL 1

POSSIBLE CONFIGURATION

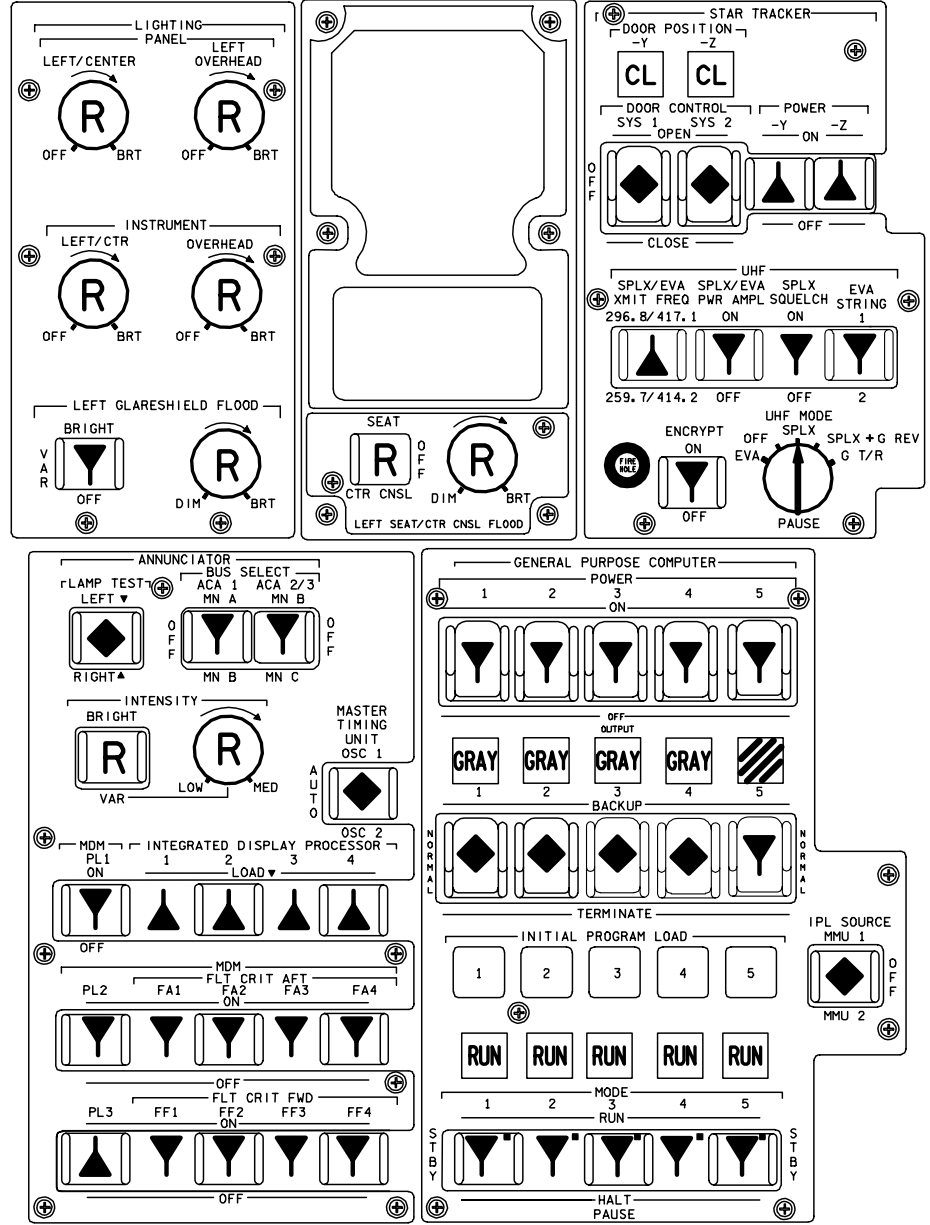
RTG PUMP PRI

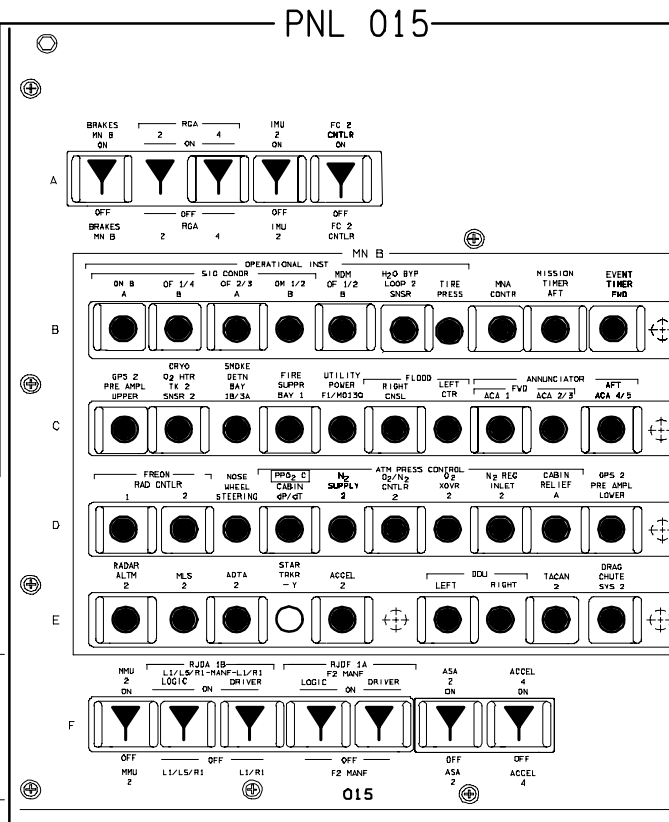
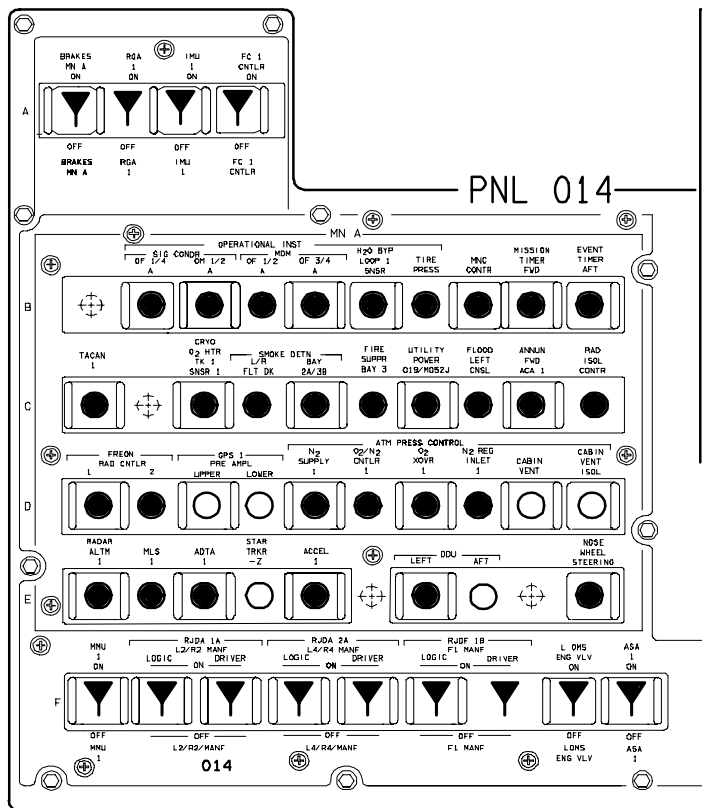
ALT

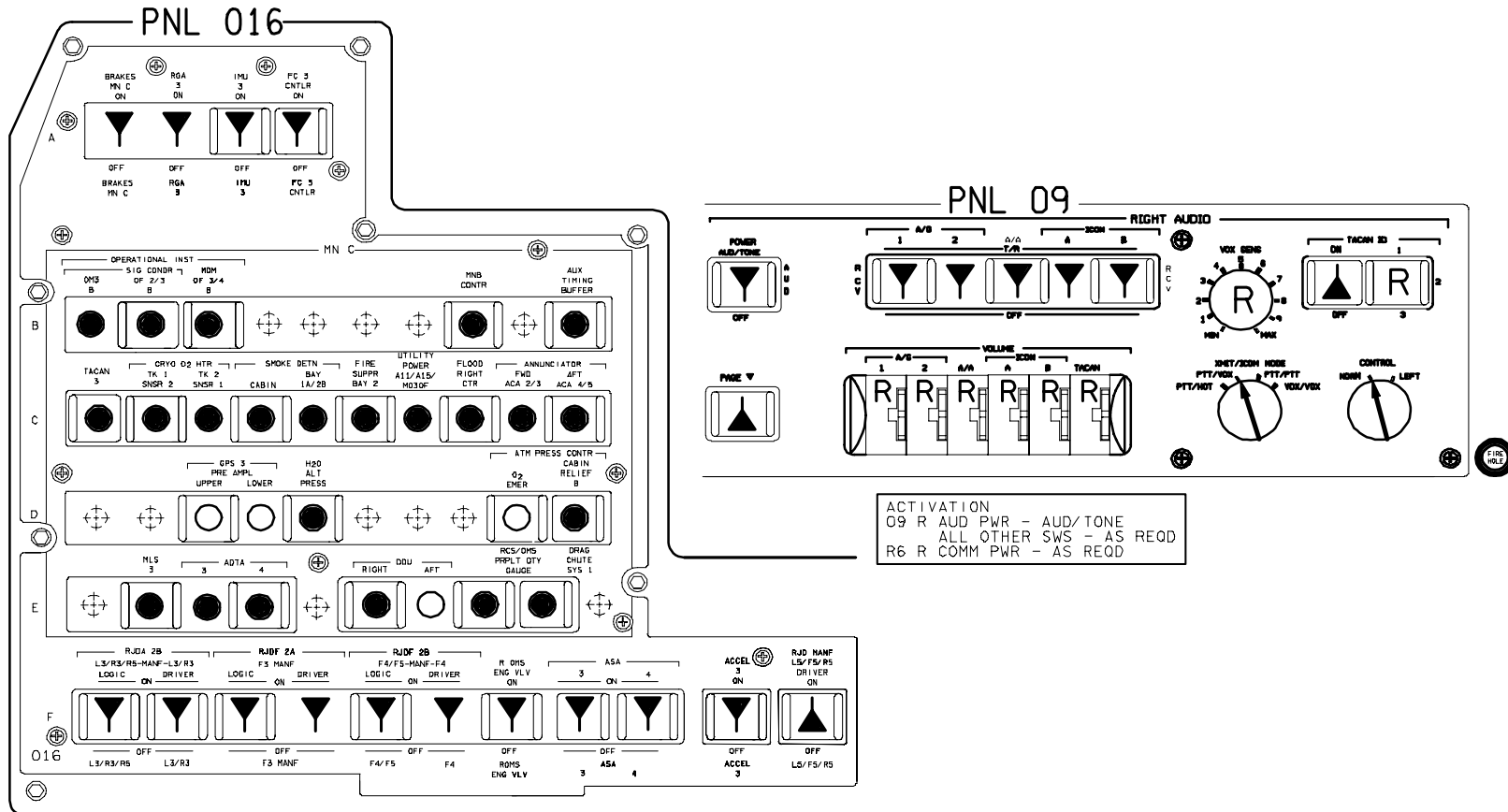


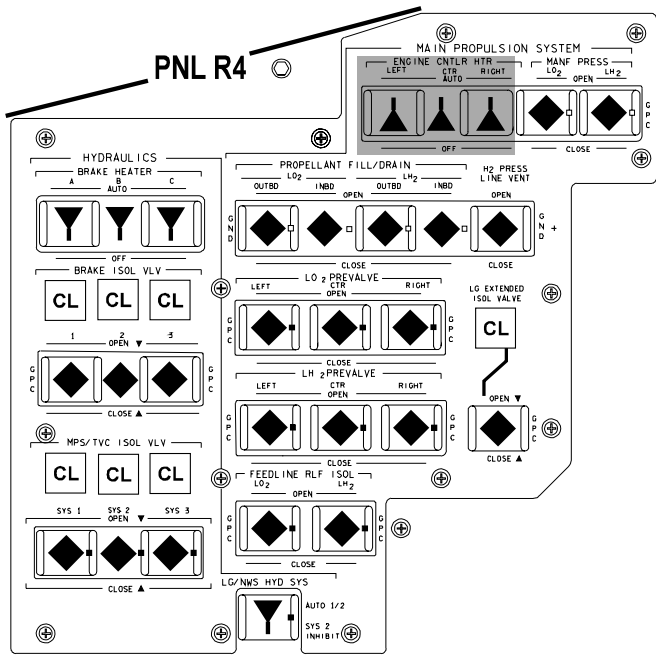
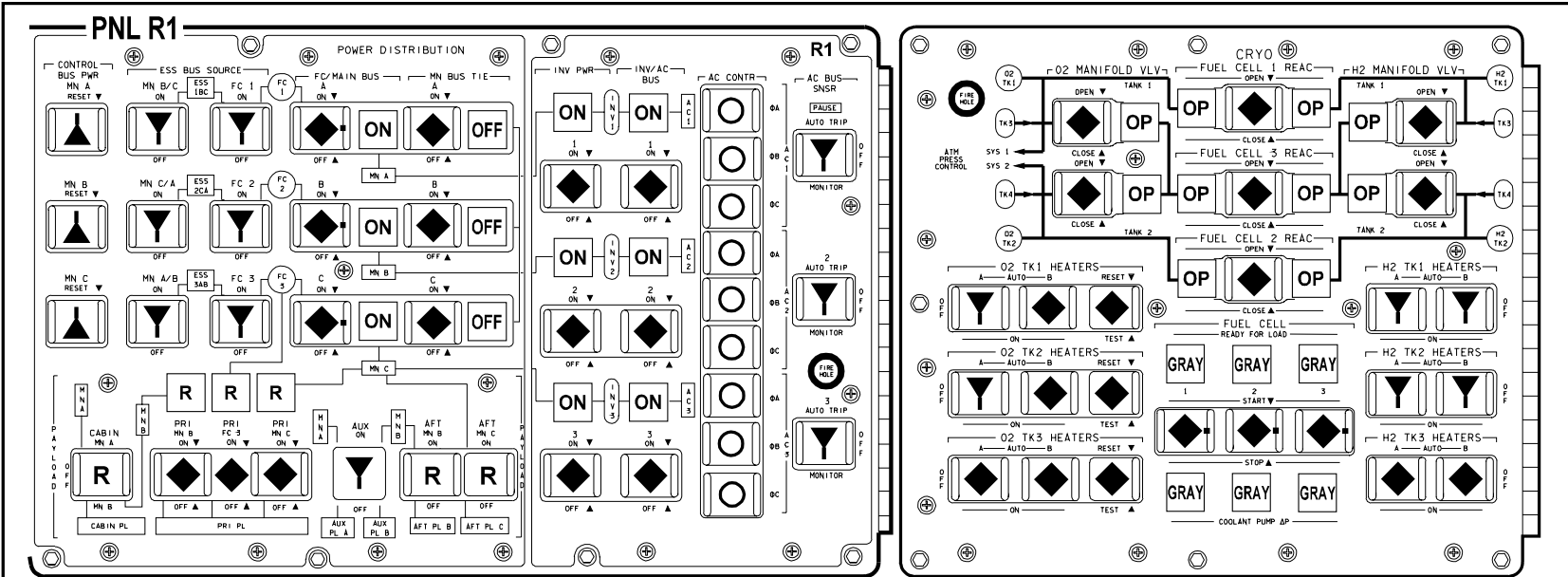
OV104

PNL 06









48015F321\_115, PNL 1

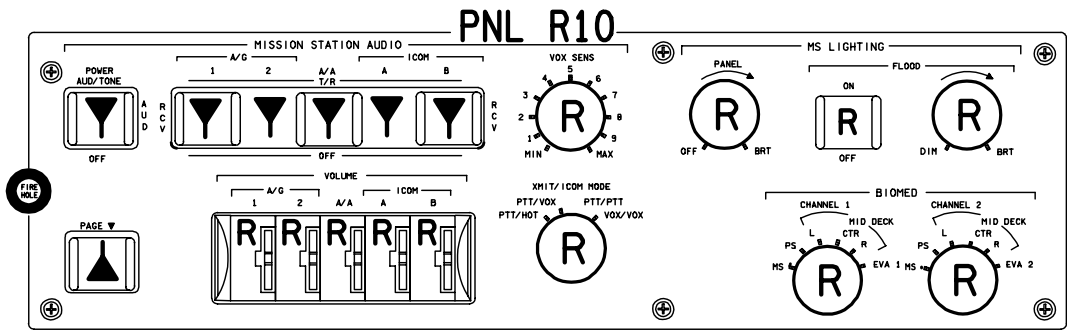
ALL VEH/DATE 06/27/06

(OV104) B3-21

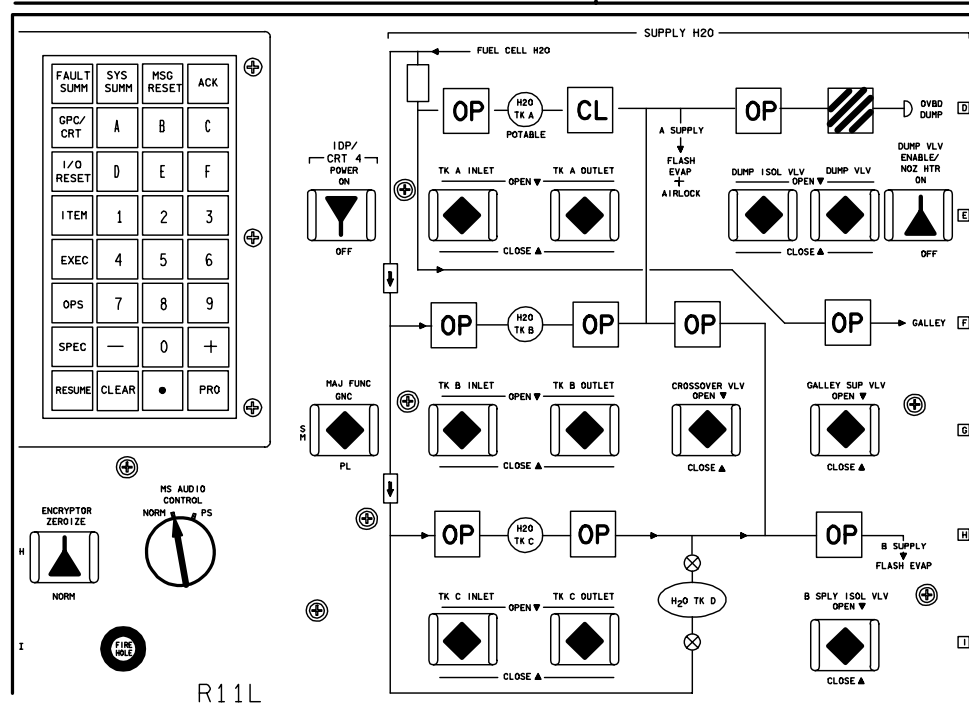
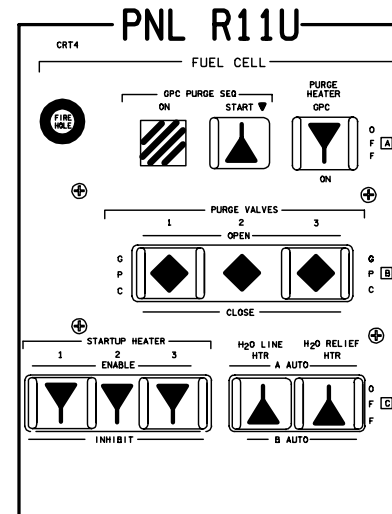
**OV104**

D/O/ALL/GEN P

OV104



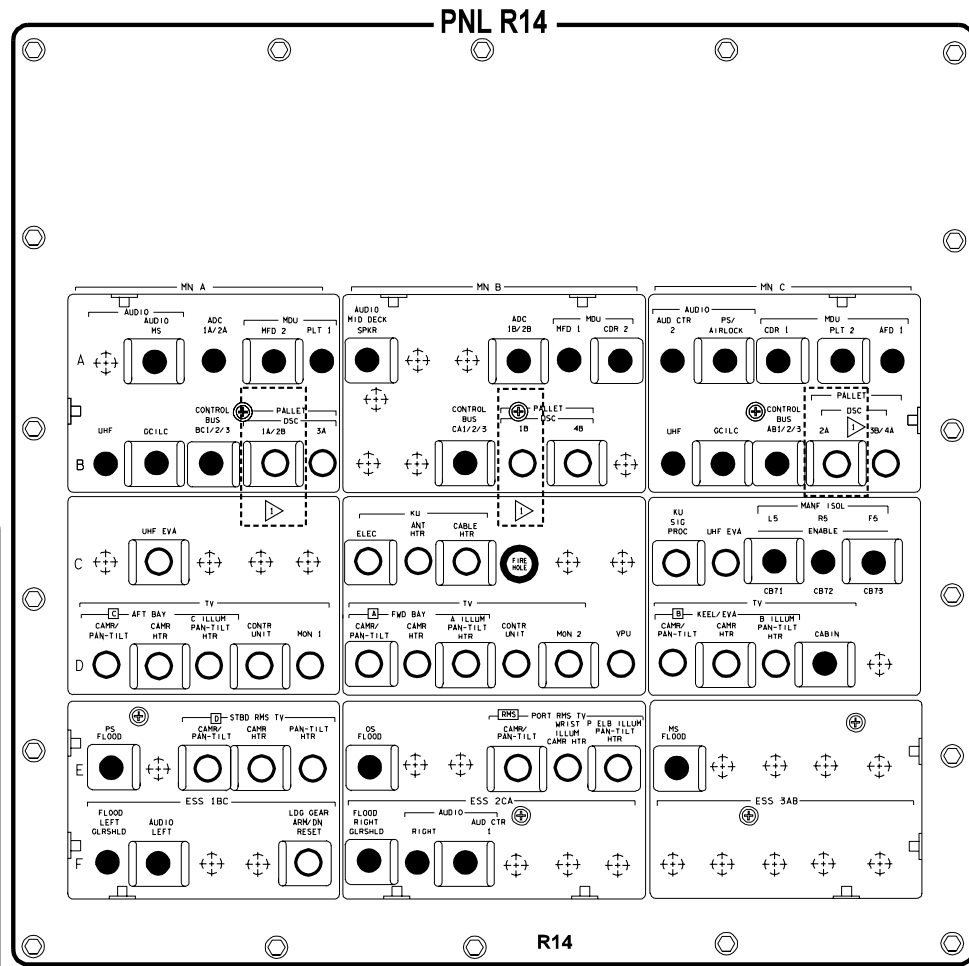
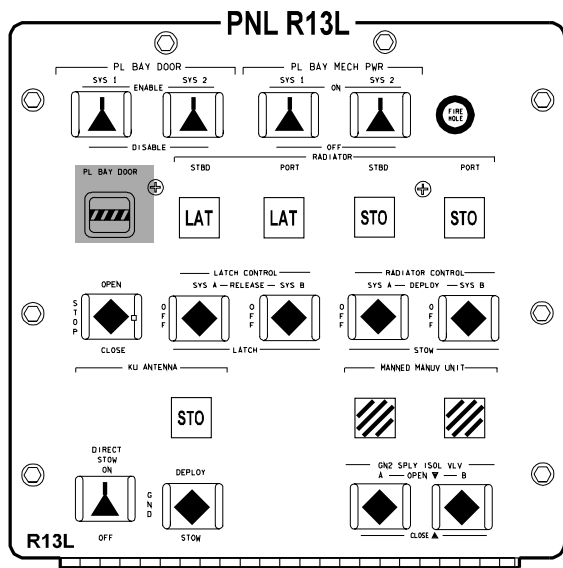
ACTIVATION  
 R10 MS AUD PWR - AUD/TONE  
 ALL OTHER SWS - AS REQD  
 R12 MS AUD CONTL - NORM  
 A11 MS COMM CCU PWR - ON



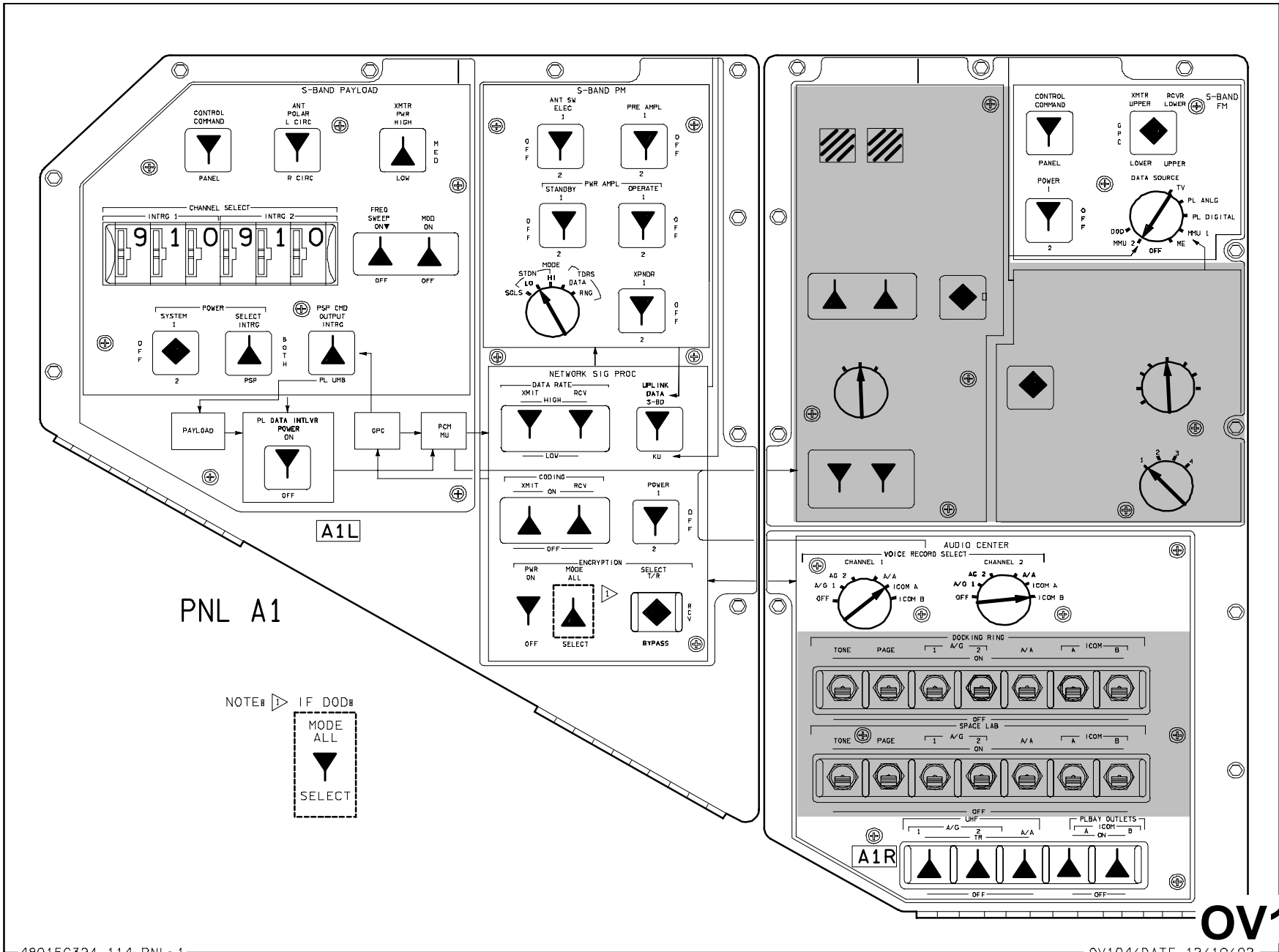
OV104



# OV104

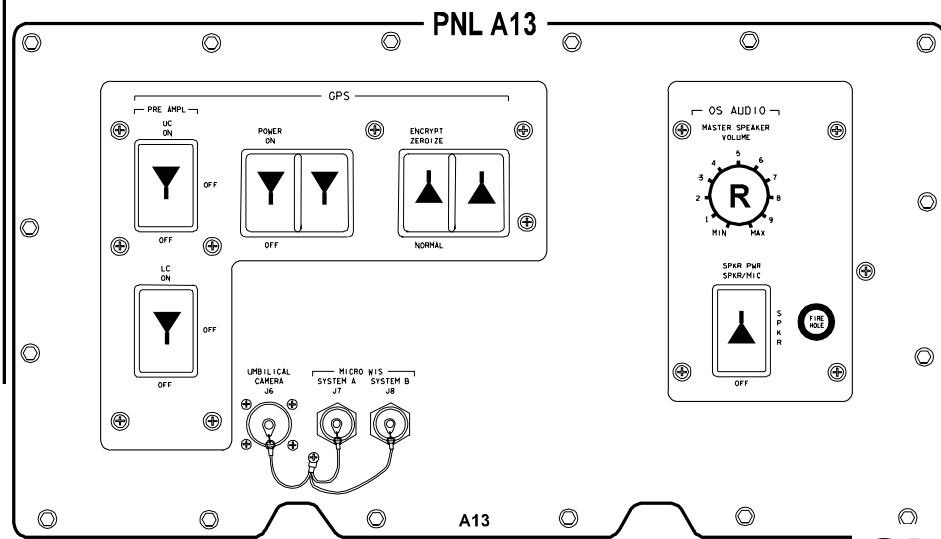
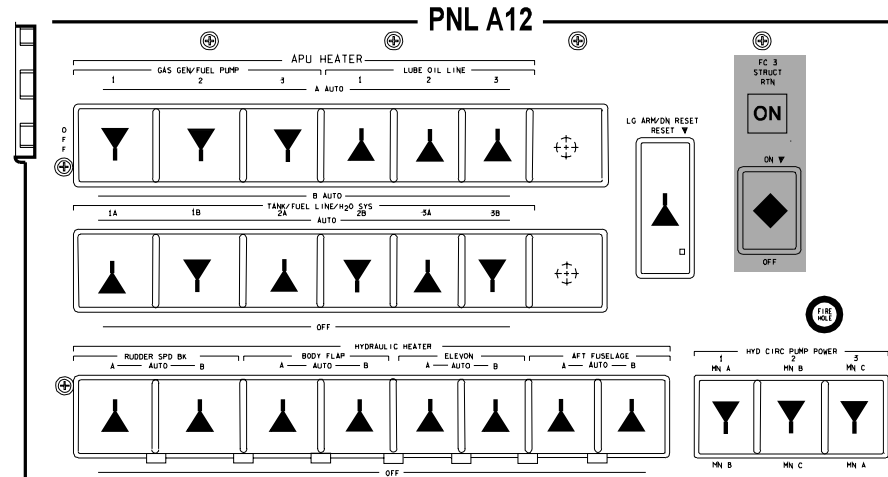
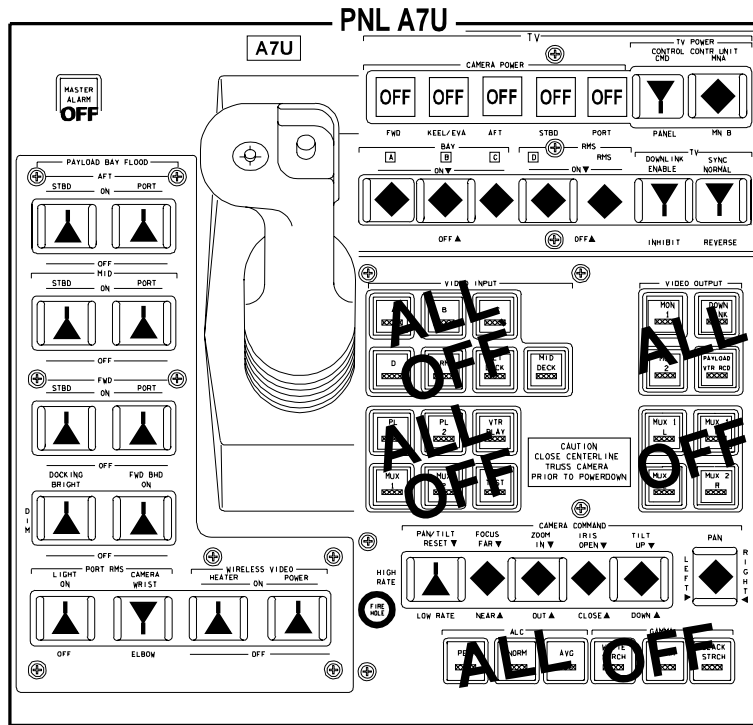


NOTE: ► CLOSED IF EDO



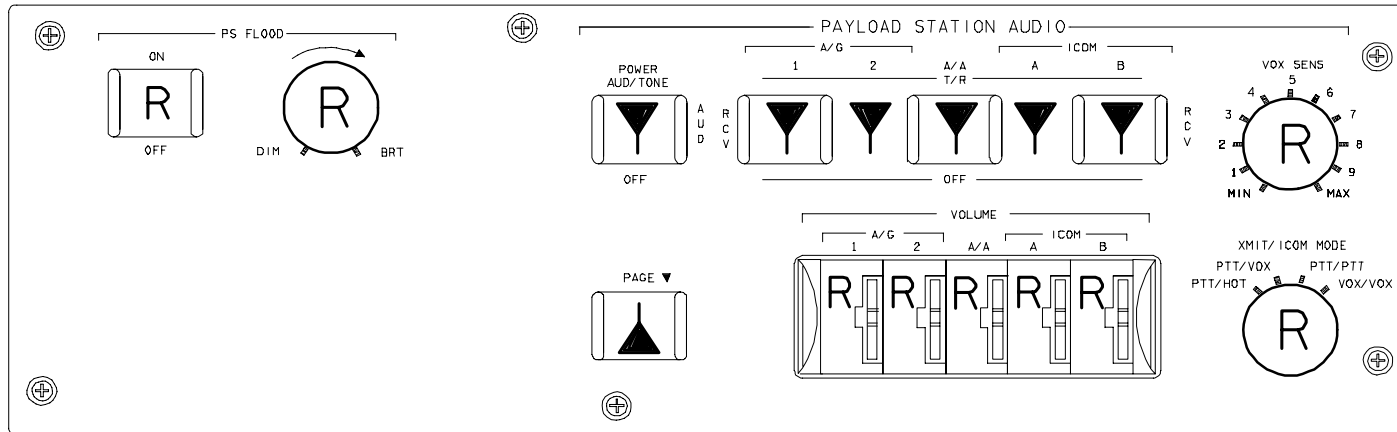
PNL A1

**OV104**



OV104

PNL L9



FIRE HOLE

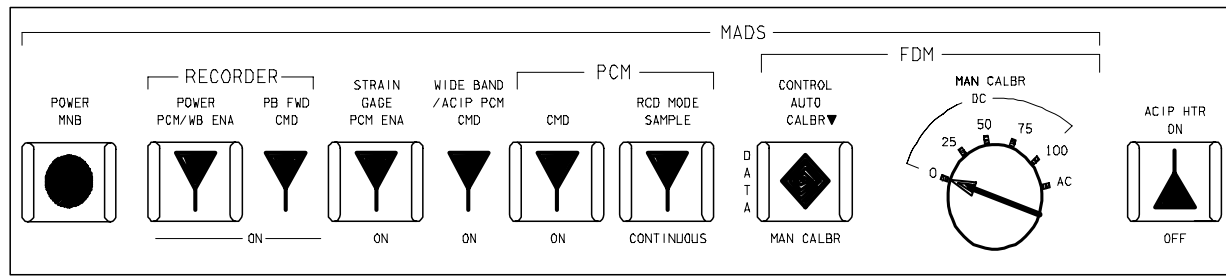
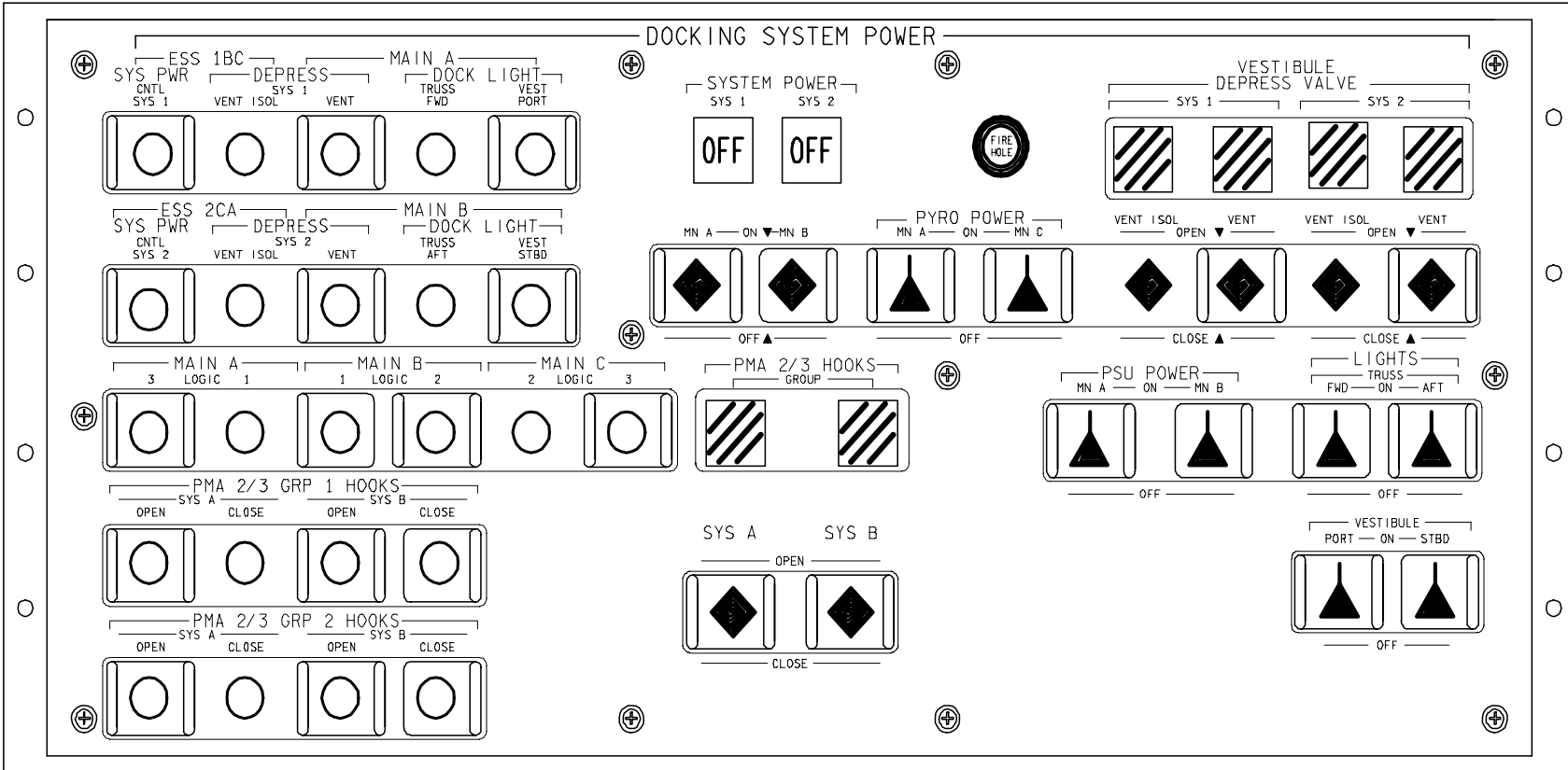
L9

ACTIVATION  
 L9 ALL SWITCHES - AS REQD  
 A15 PS COMM CCU PWR - ON

OV104

OV104

PNL A6L

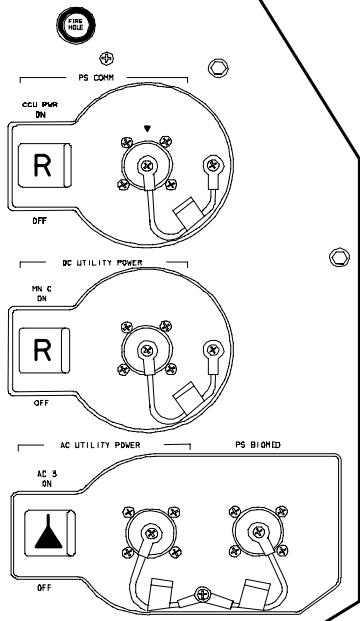
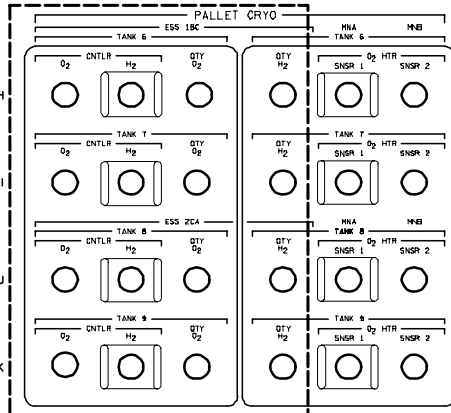
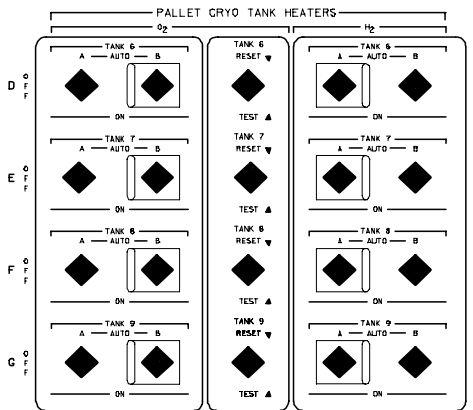
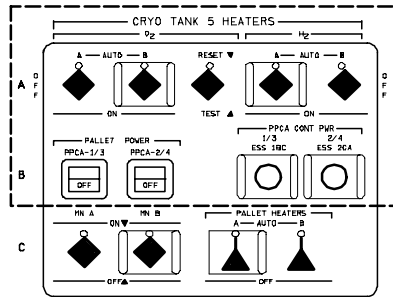


OV104

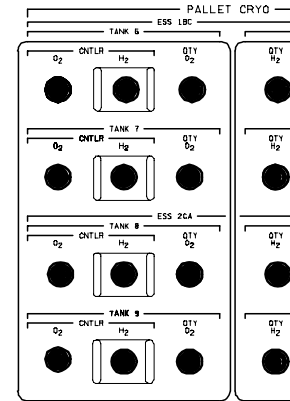


OV104

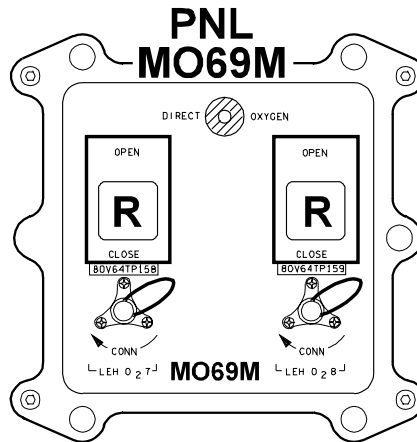
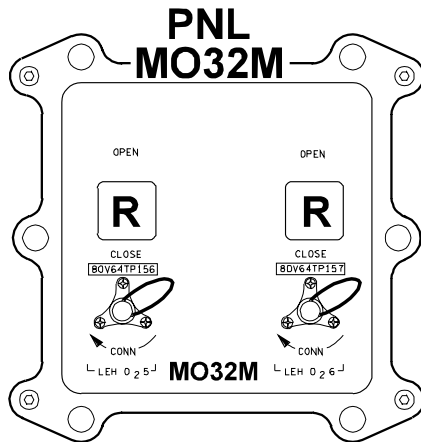
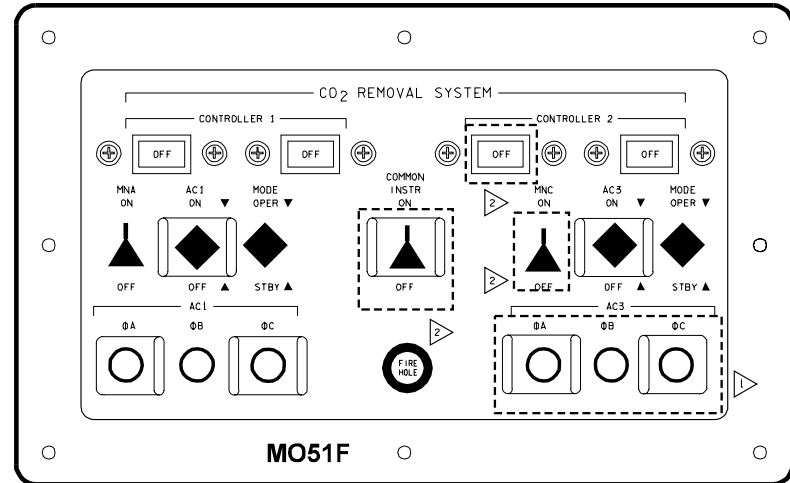
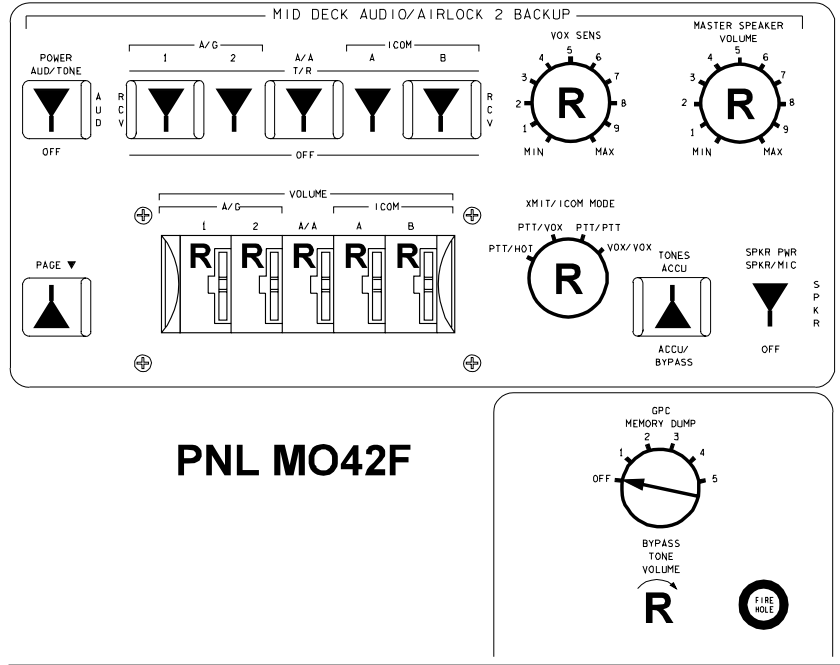
A15



▶ cbs CLOSED FOR EDO MISSIONS

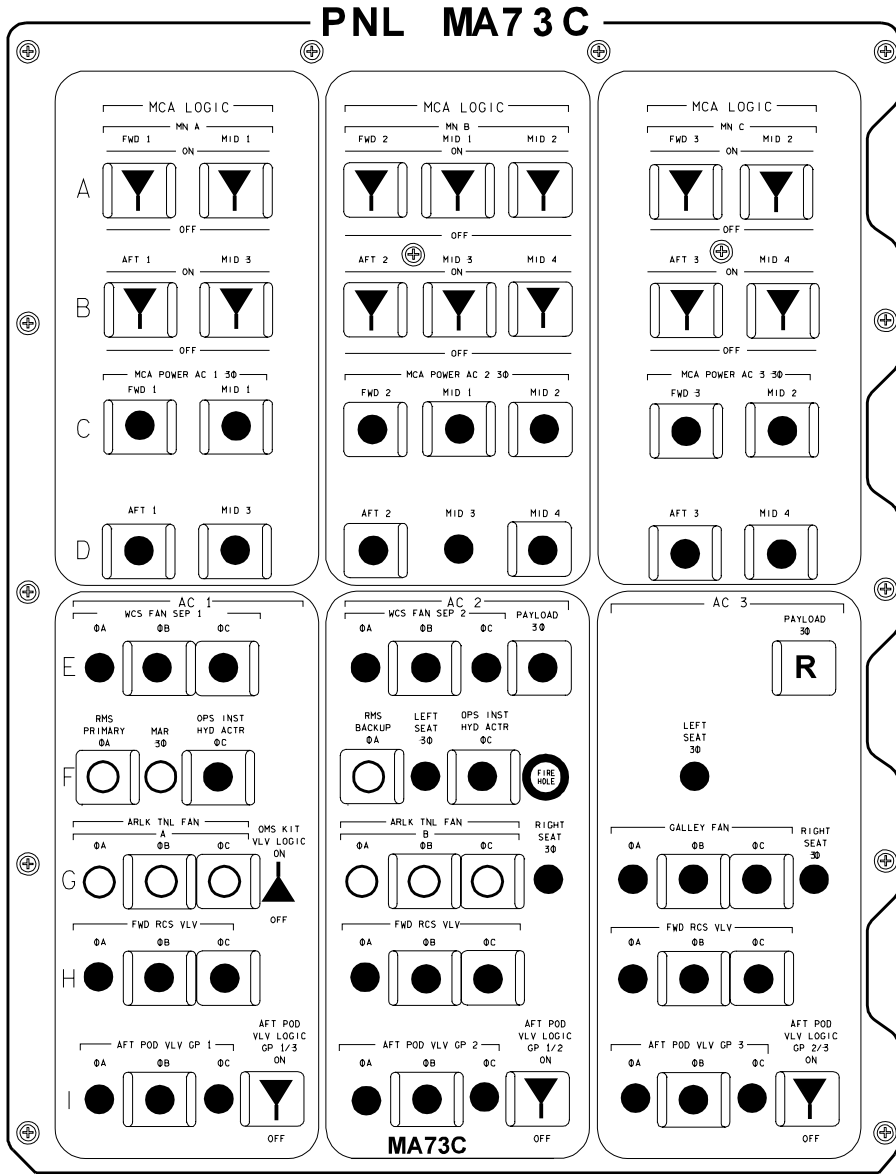


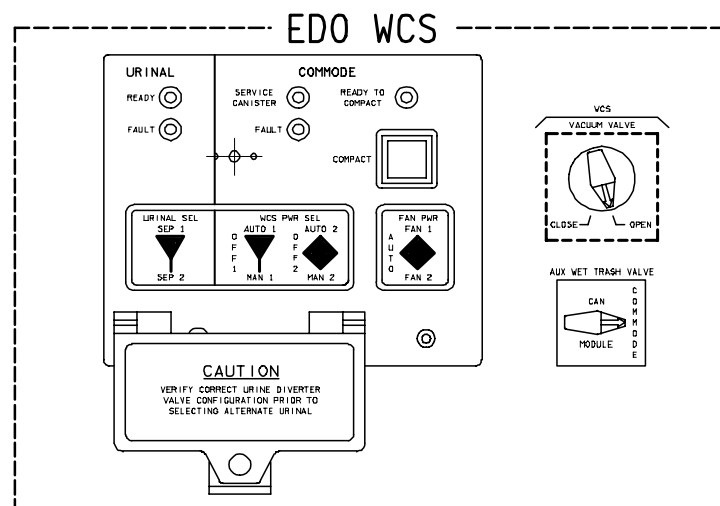
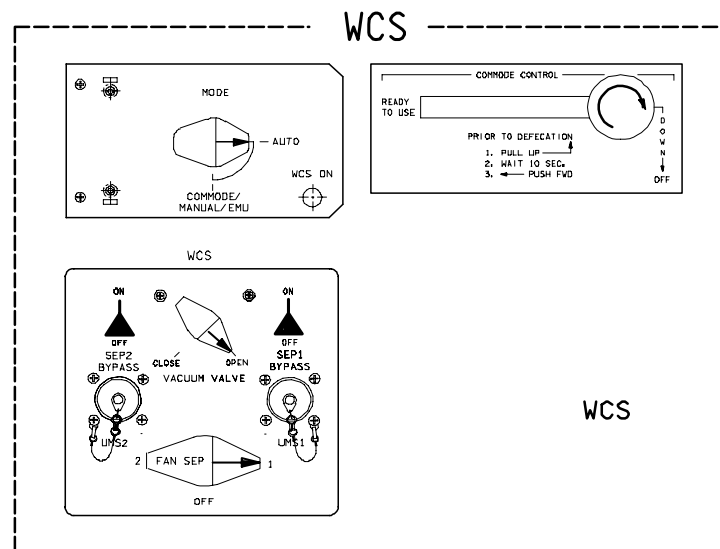
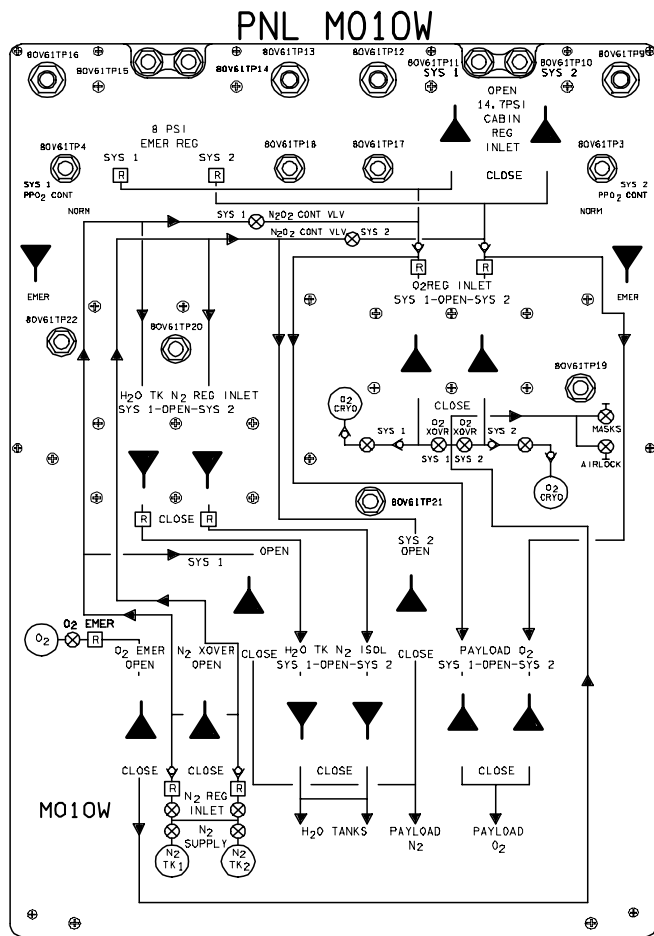
# OV104

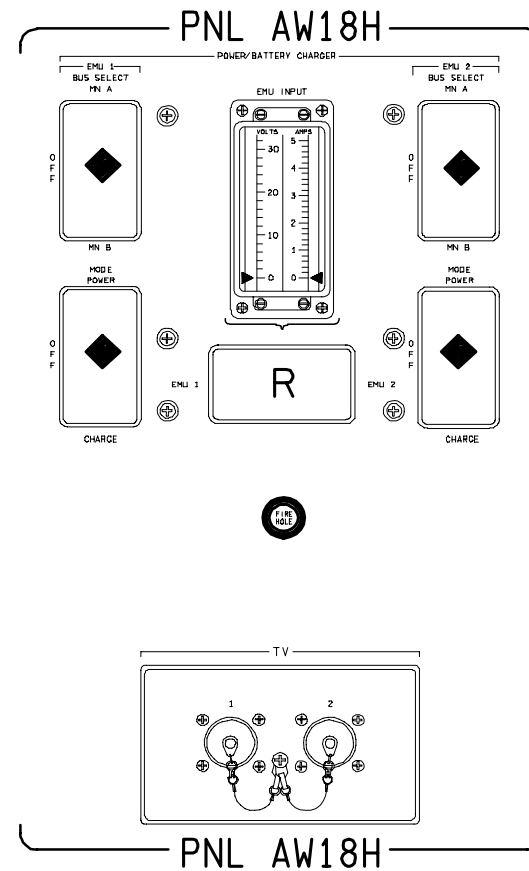
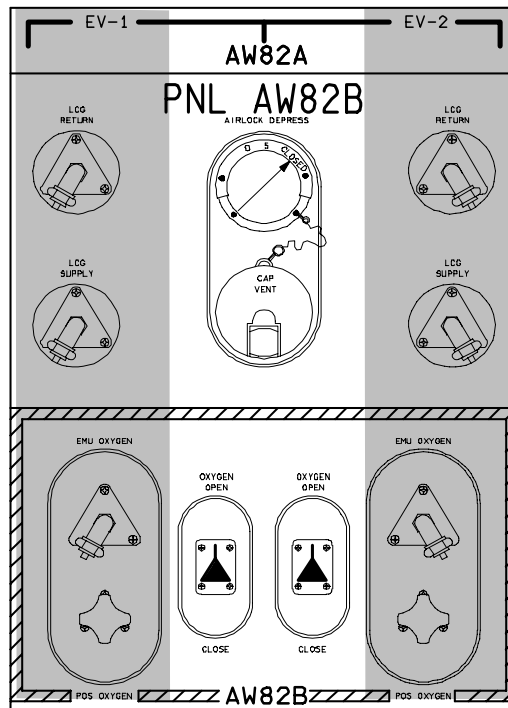
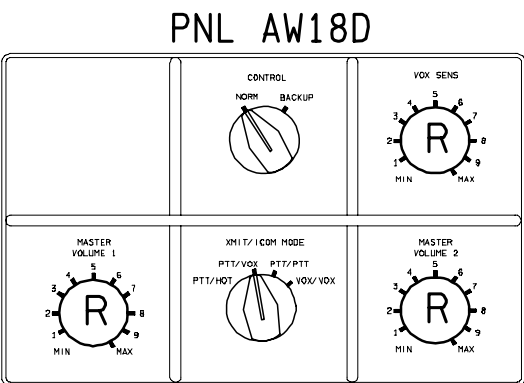
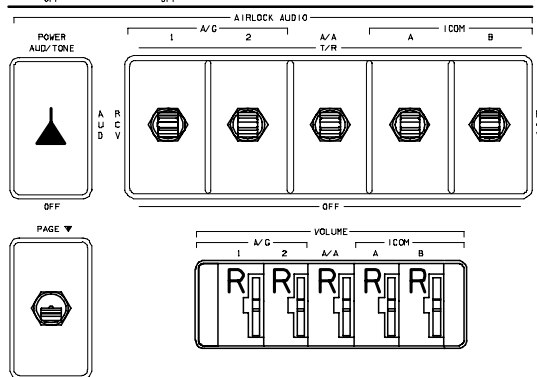
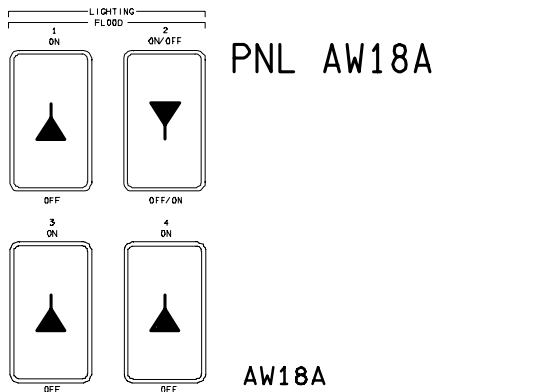


NOTES: ▷ CLOSED IF CO2 RMVL SYS FLOWN  
▷ ON IF CO2 RMVL SYS FLOWN

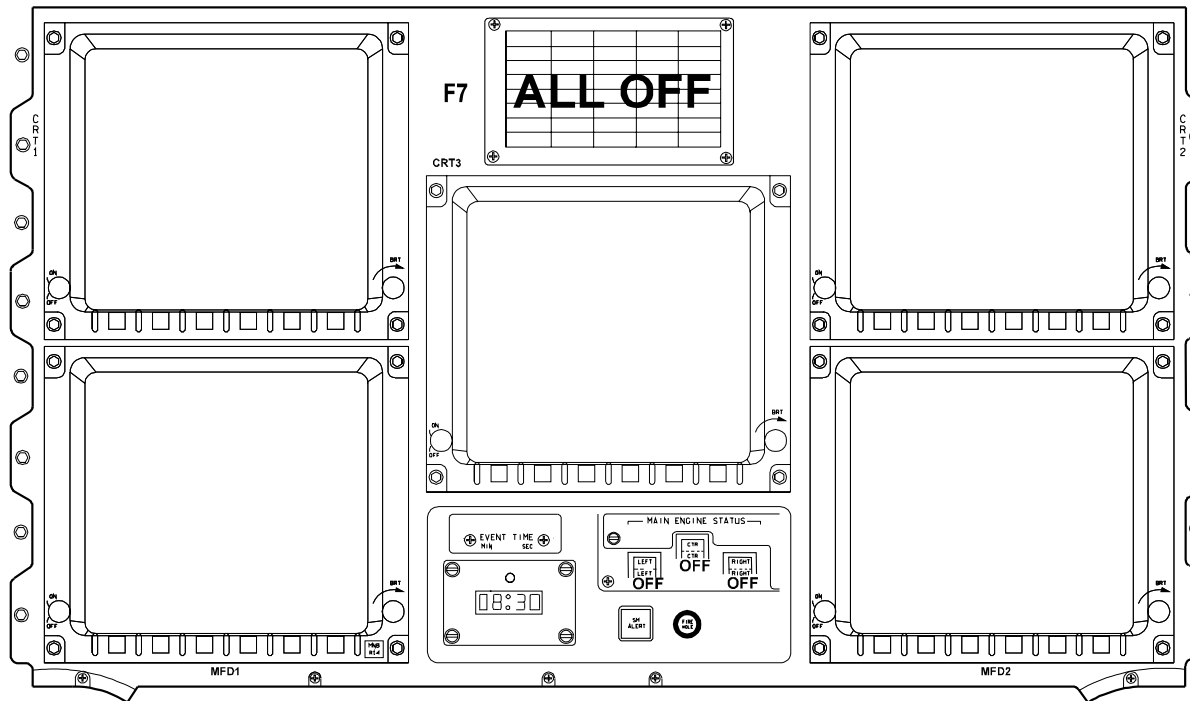
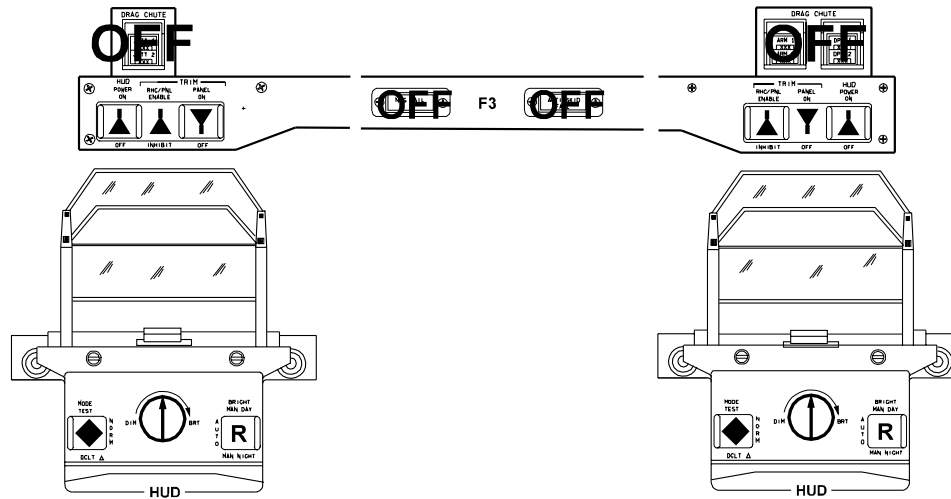




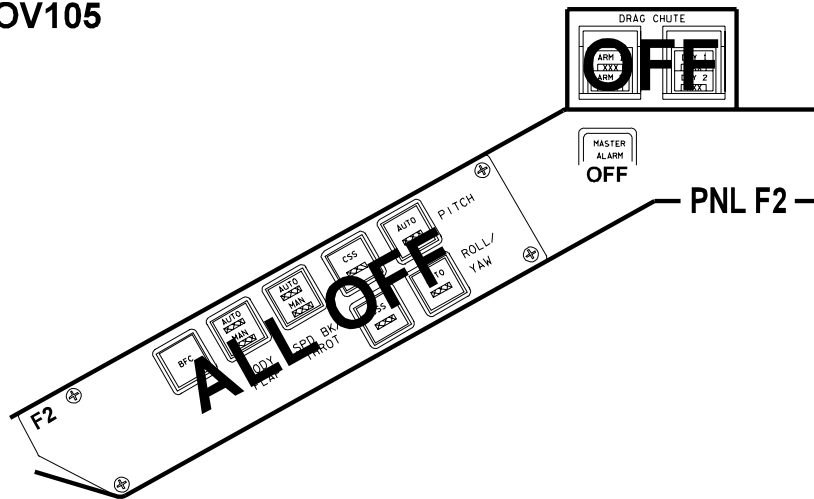




OV105

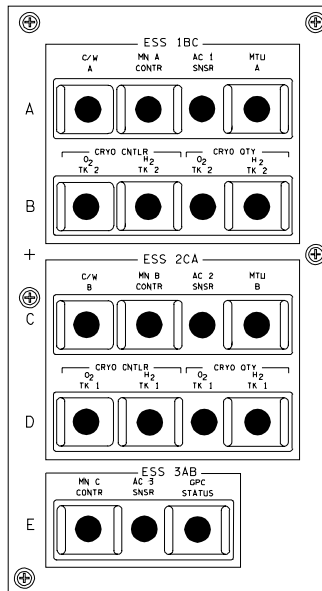


OV105



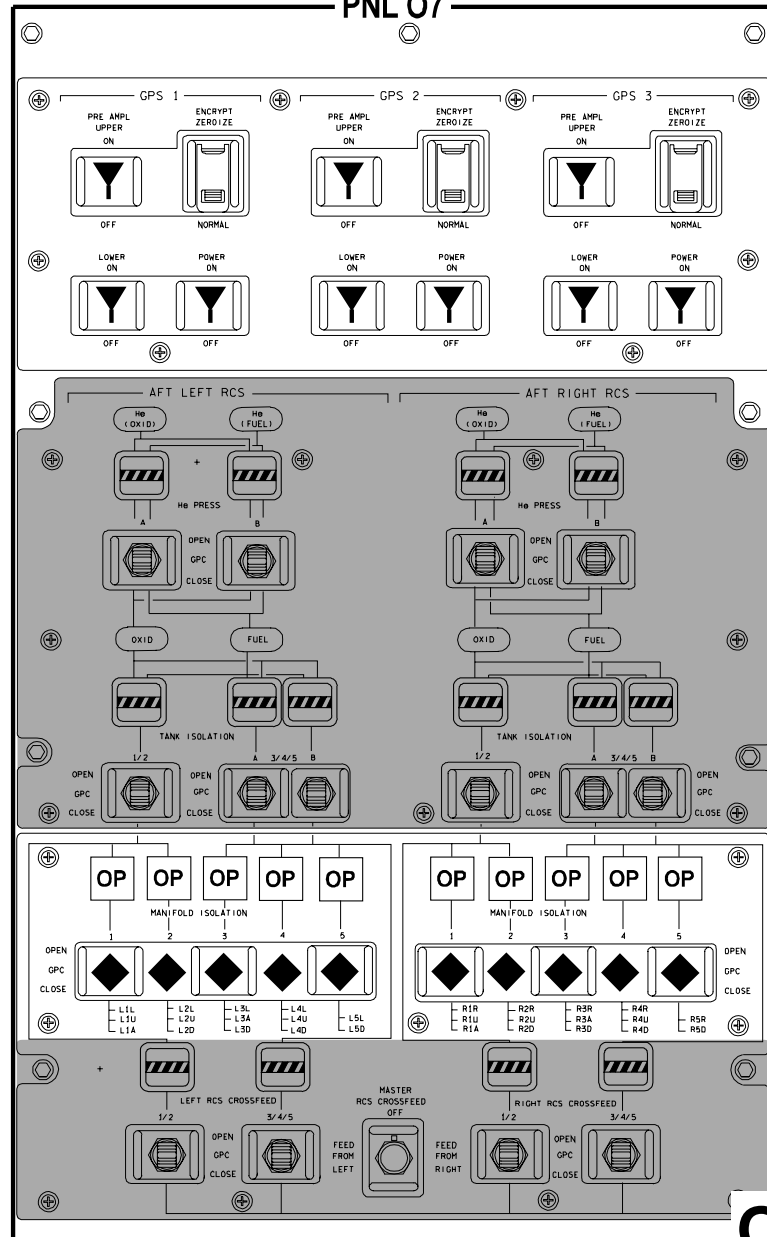
PNL F2

PNL 013



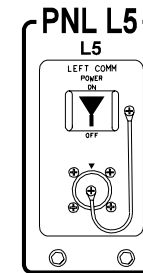
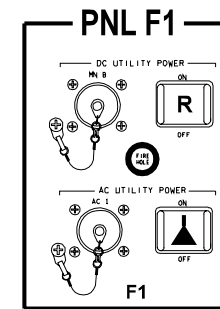
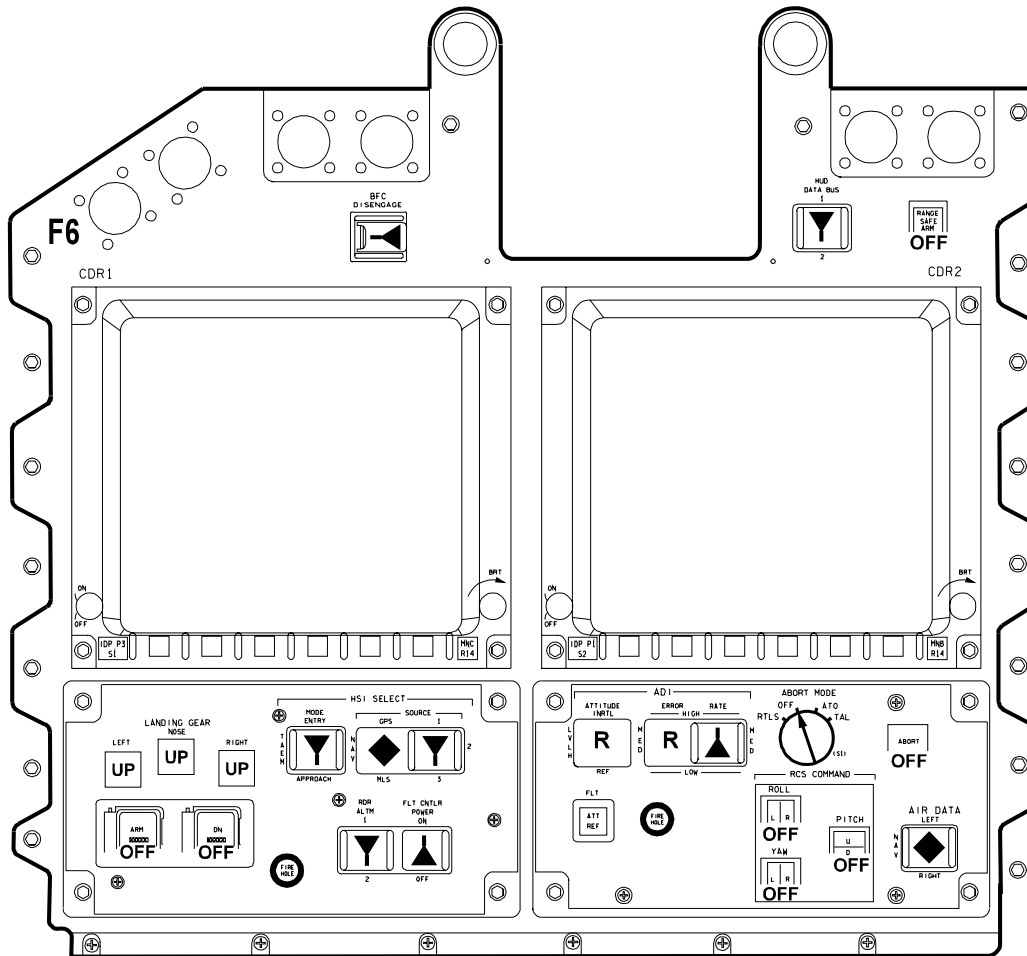
L side OVHD flood - R (MID)

PNL 07



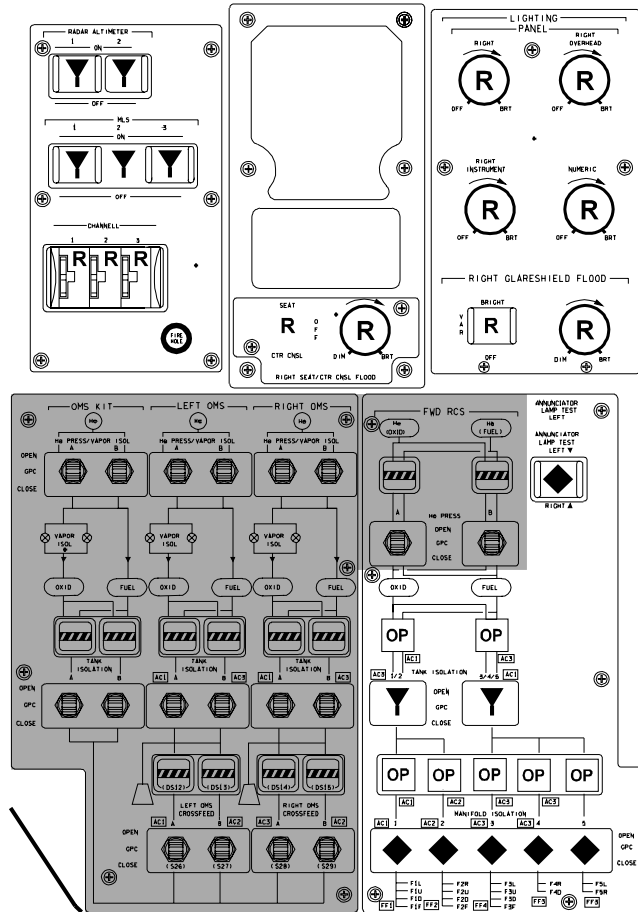
OV105

OV105

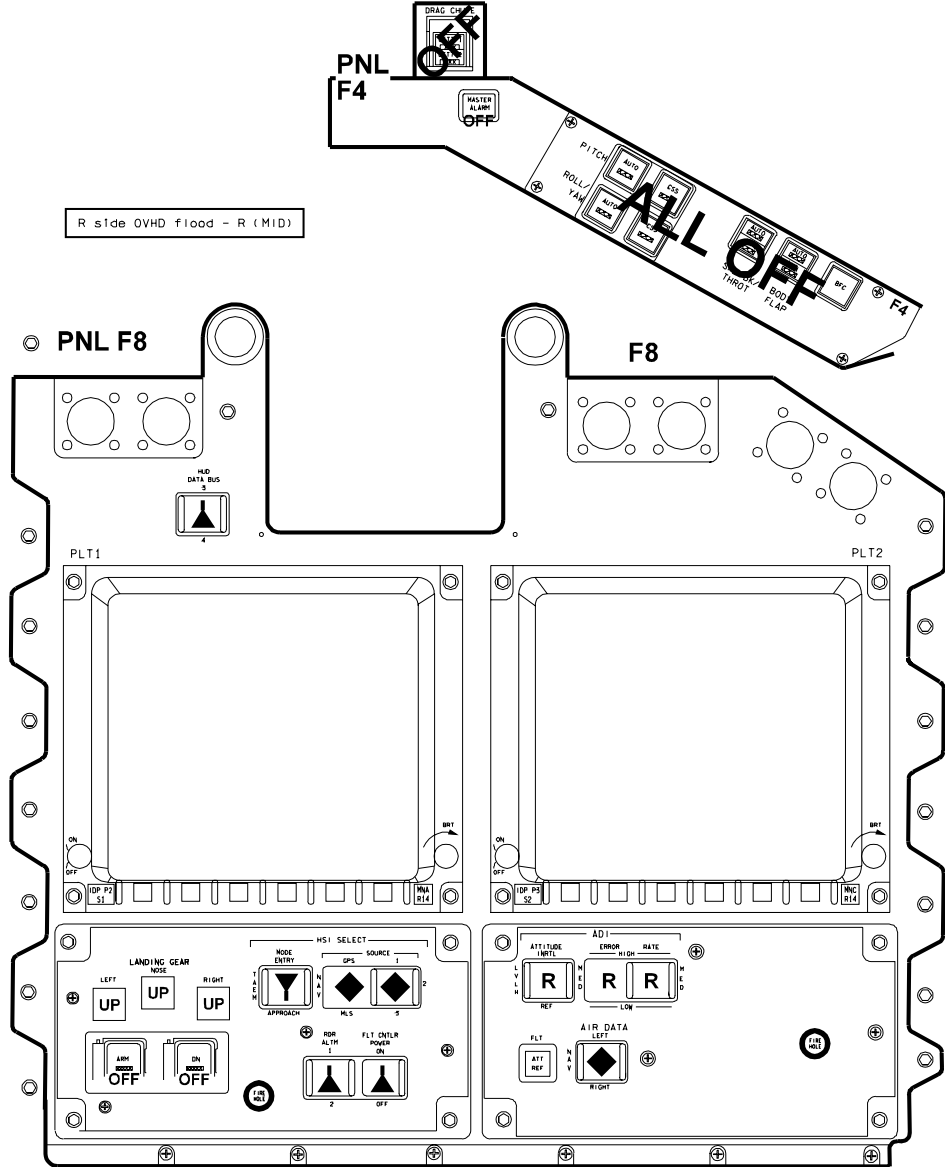


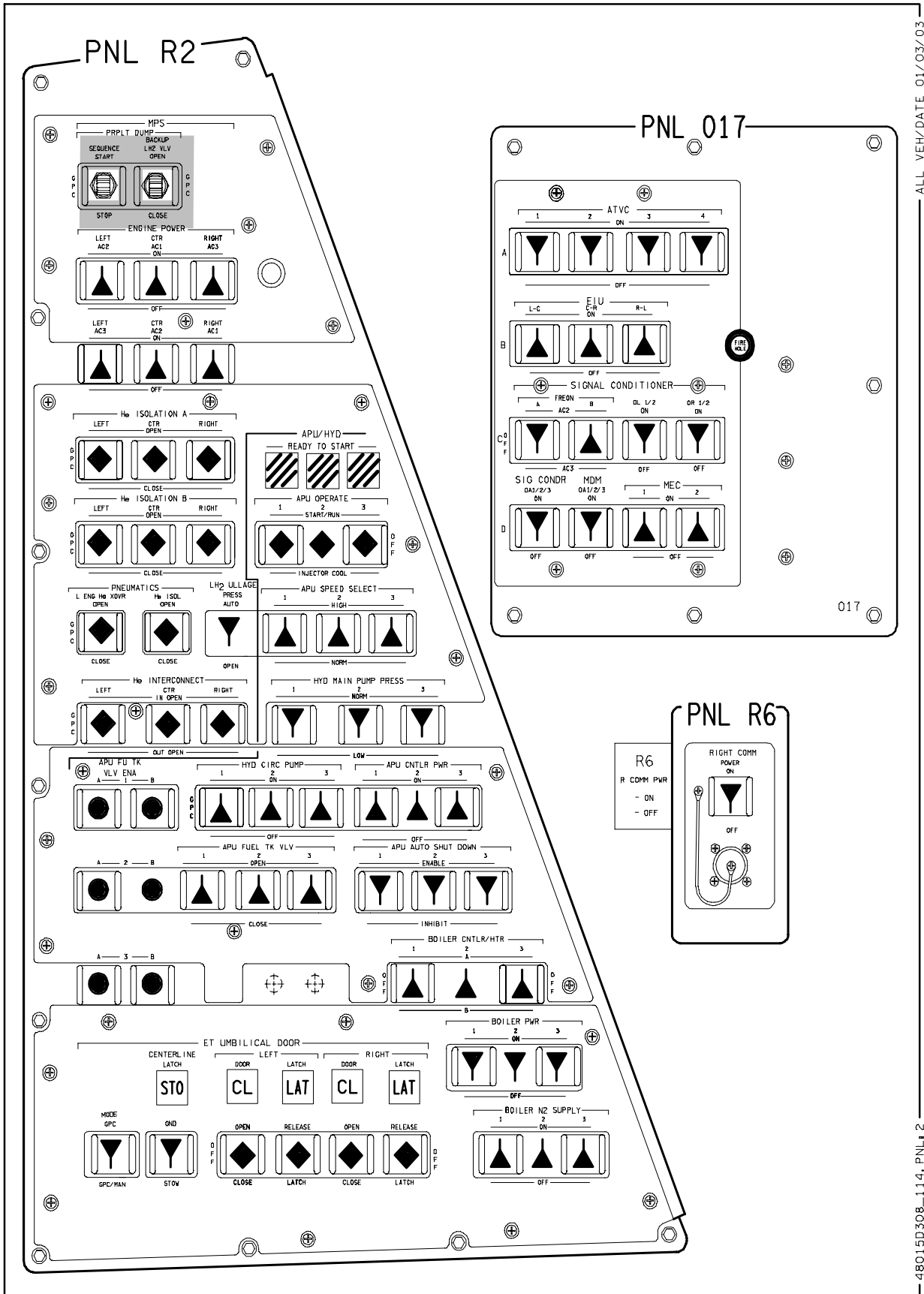
OV105

PNL O8



R side OVHD flood - R (MID)





ALL VEH/DATE 01/03/03

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**OV105**

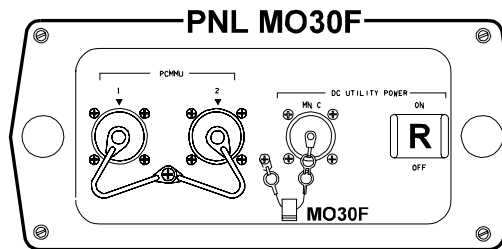
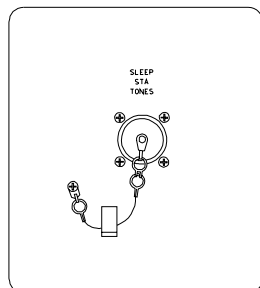
(OV105) C3-8

D/O/ALL/GEN P

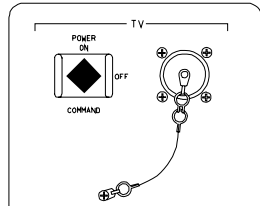




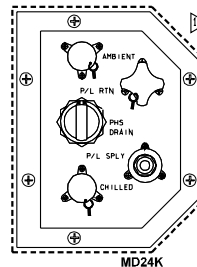
PNL MO58F



**AIRLOCK HATCH**  
 ACTUATOR HANDLE - LATCHED  
 LOCK LEVER - LOCKED  
 EQUALIZATION VLV ( TWO ) - NORM  
 -CAPS INSTALLED



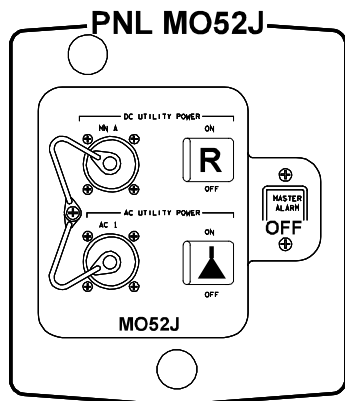
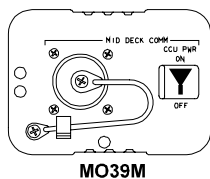
PNL MD24K



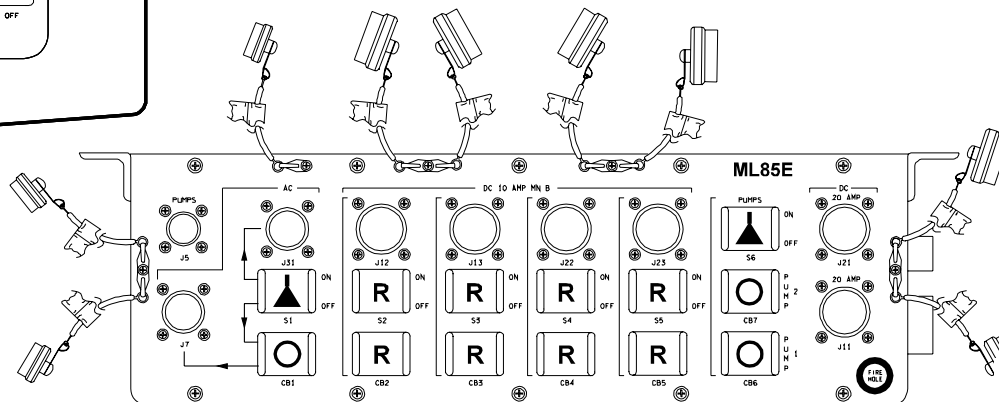
**PNL MD44F**  
 CAB TEMP CNTL ACT LINKAGE - SECONDARY ACTUATOR

NOTE: NOT VISIBLE IF MAR FLOWN

PNL MO39M

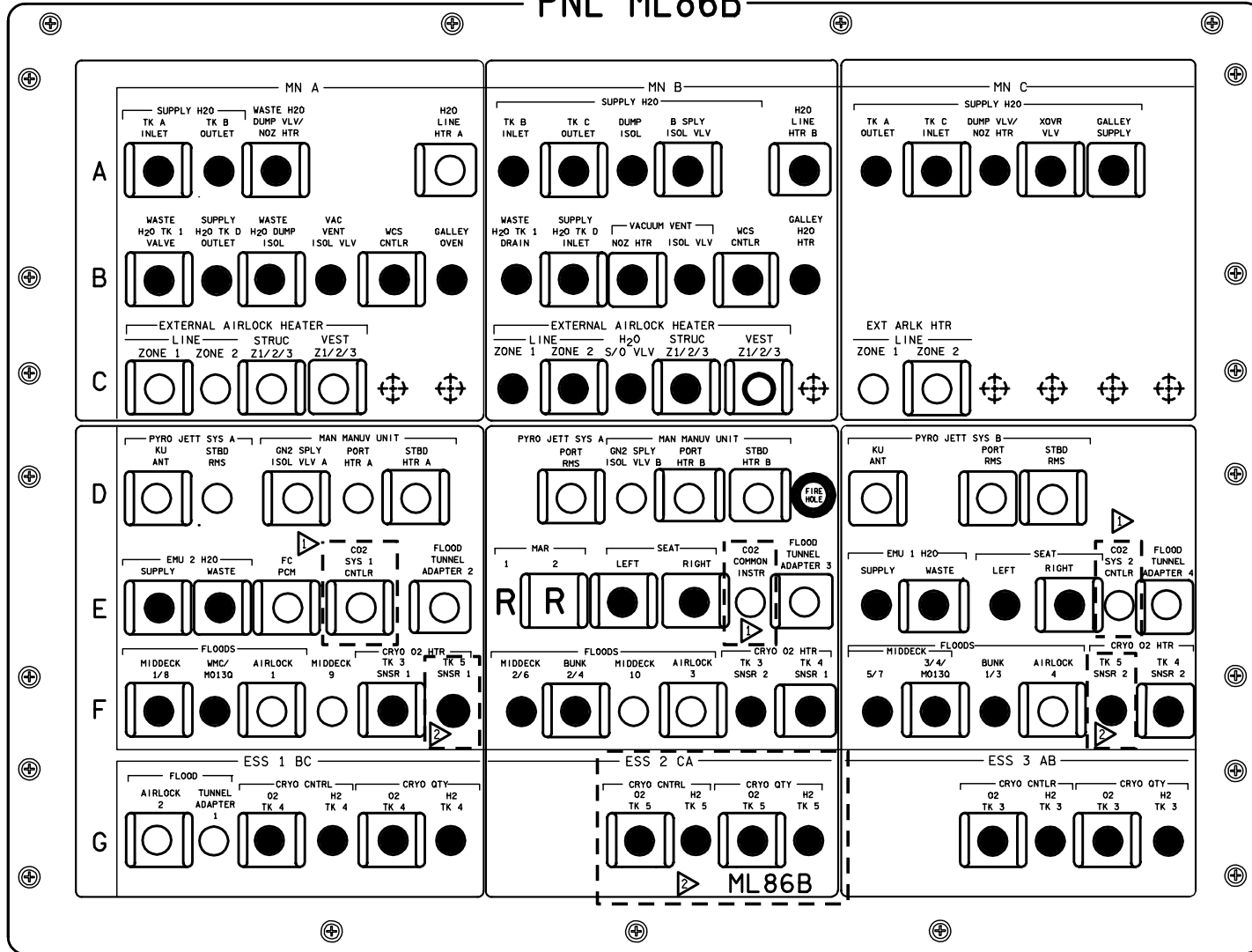


PNL ML85E



OV105

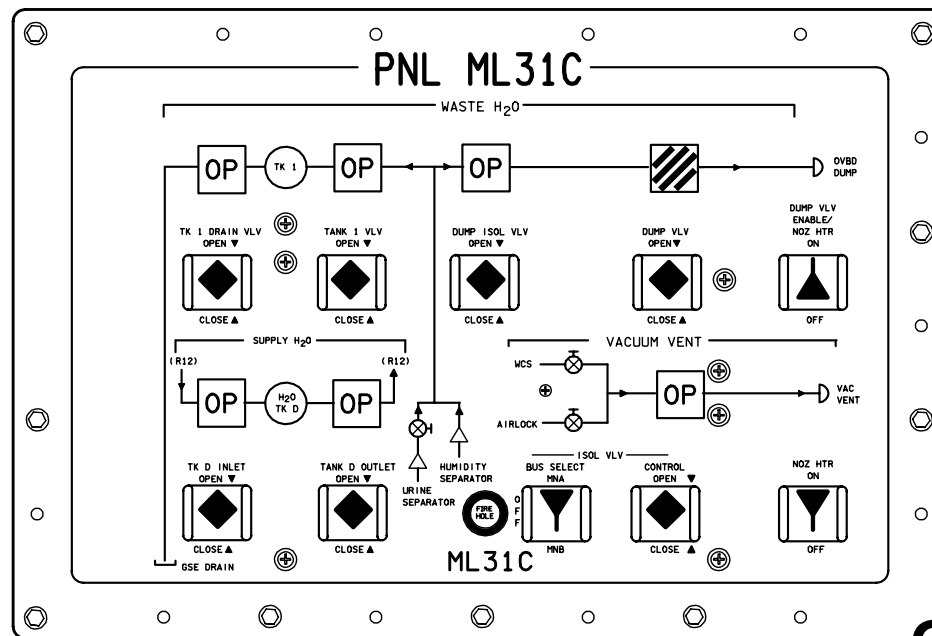
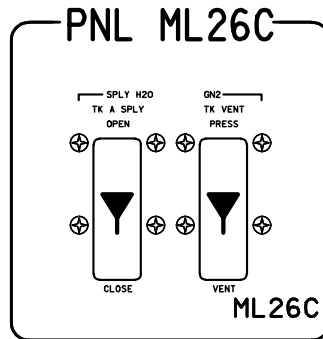
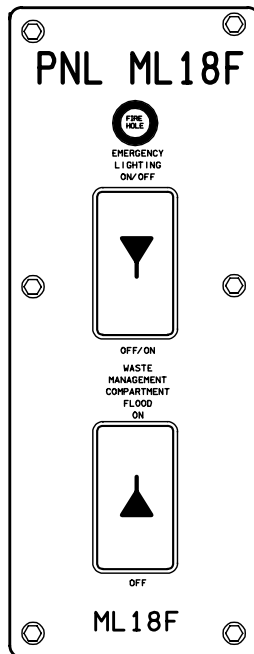
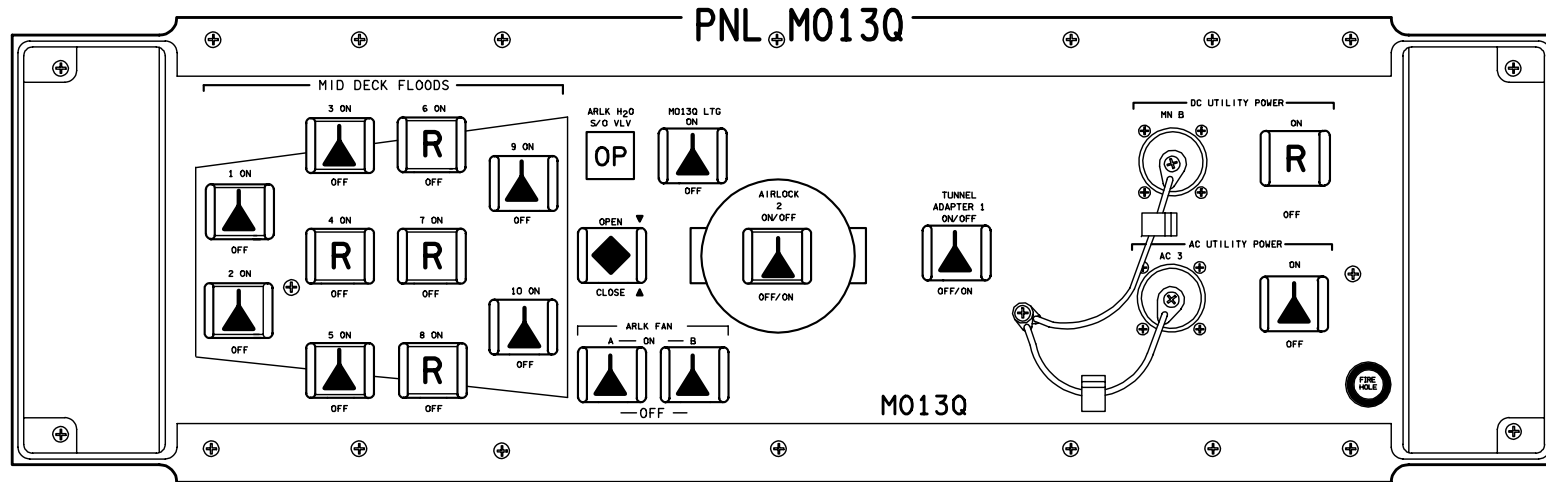
PNL ML86B



NOTES: ▷ CLOSED IF CO2 RML SYS FLOWN

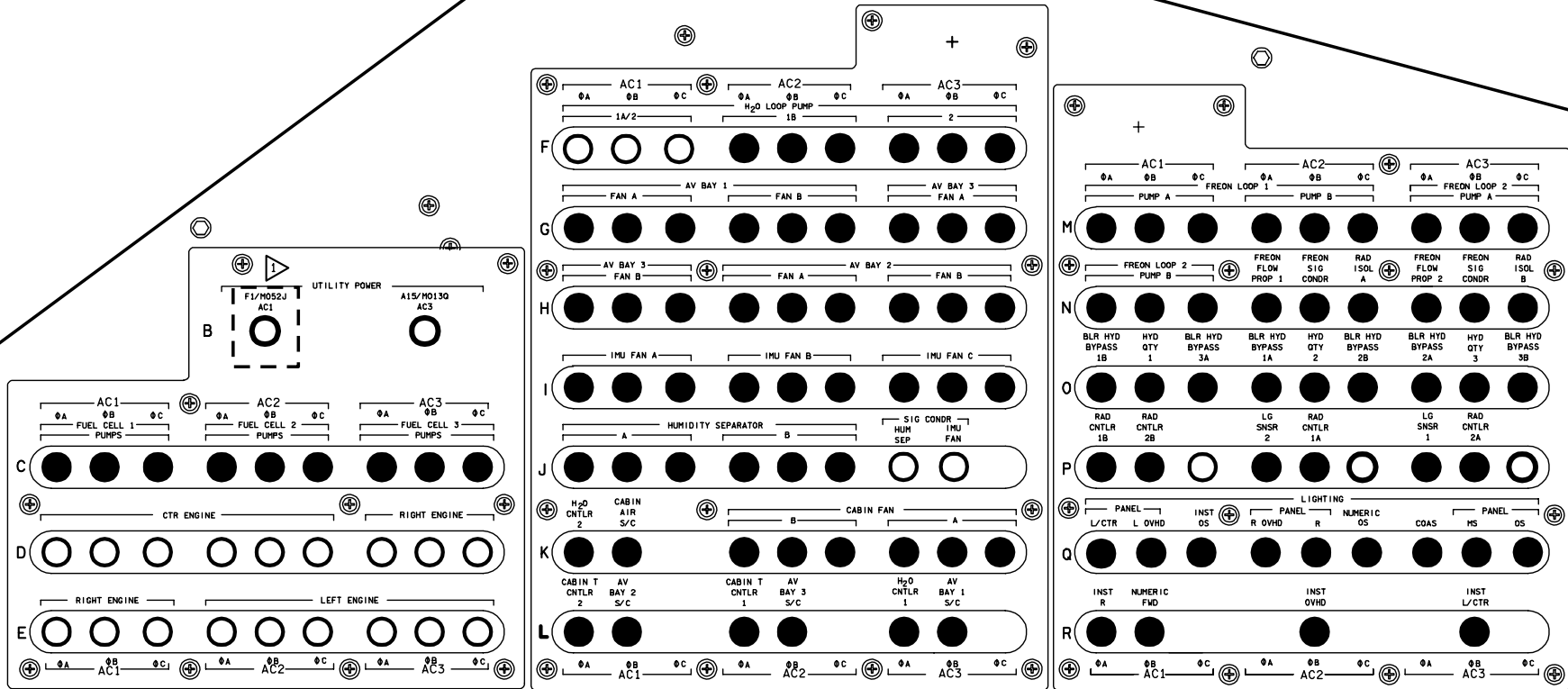
▷ OPEN IF TK 5 NOT FLOWN

OV105



OV105

PNL L4



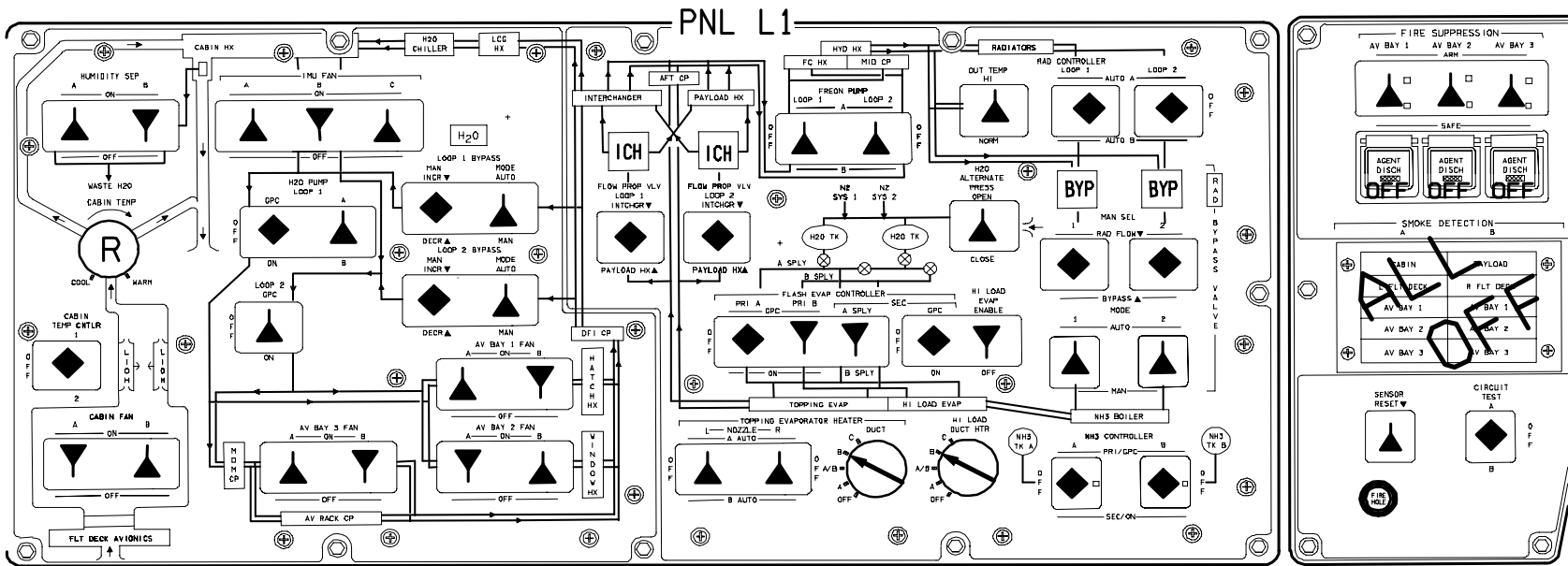
NOTE: CB CAN REMAIN CLOSED FOR AC PGSC USAGE. OPEN WHEN PGSC UNPOWERED/STOWED

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OV105/DATE 11/23/04

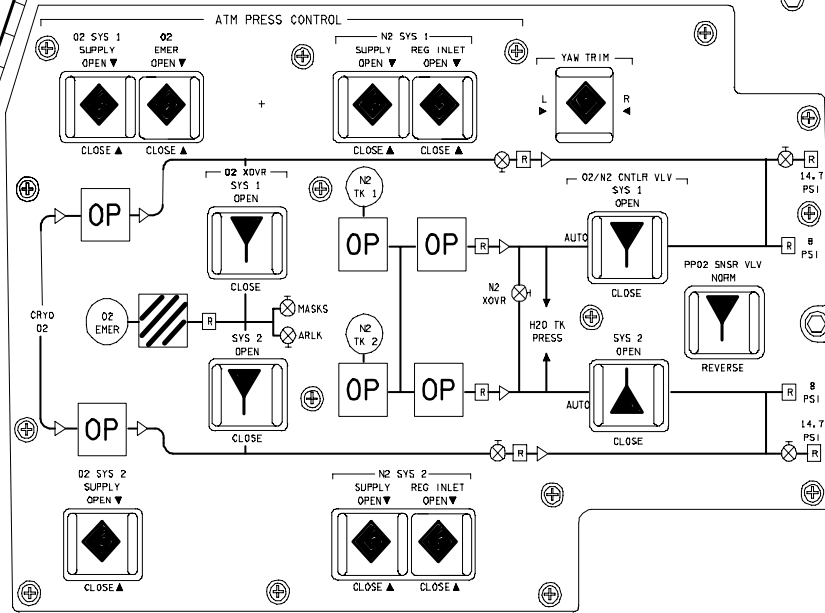
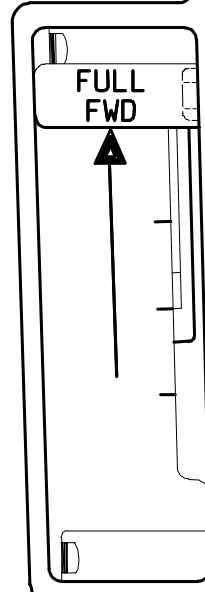
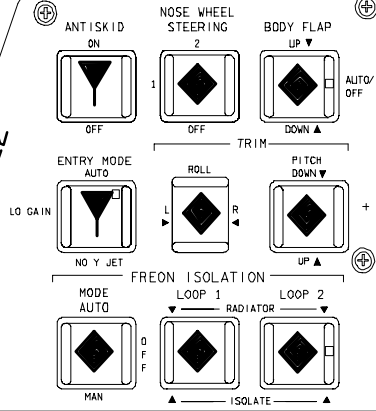
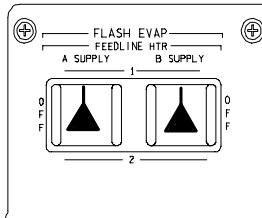
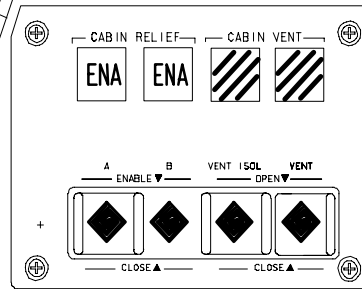
(OV105) C3-13

**OV105**  
D/O/5/GEN P



OV105

PNL L2



OV105/DATE 12/10/02

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OV105

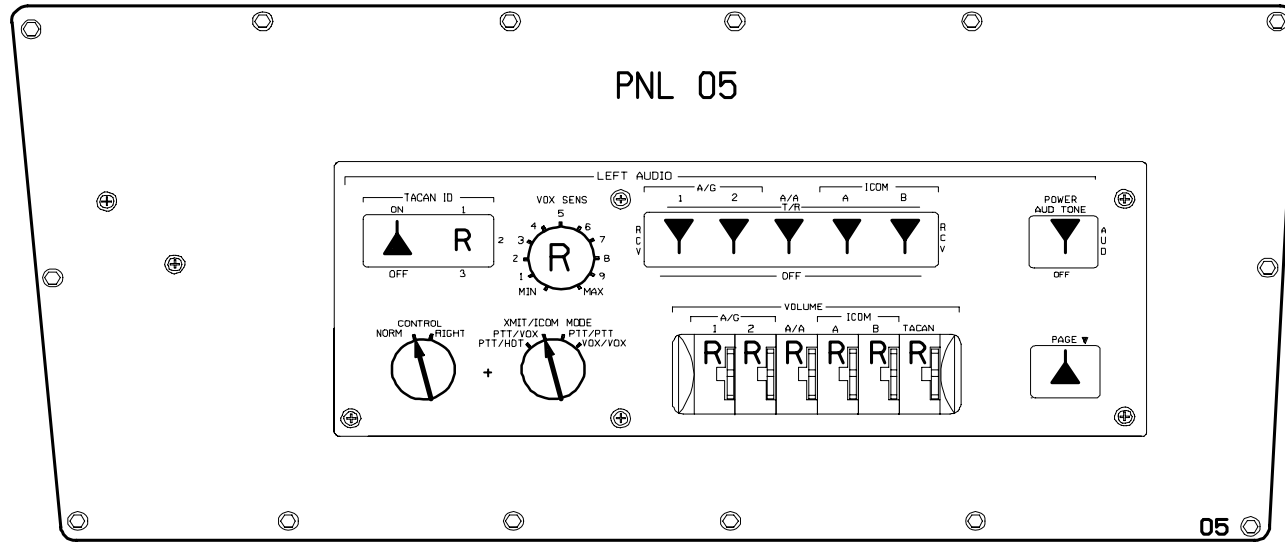
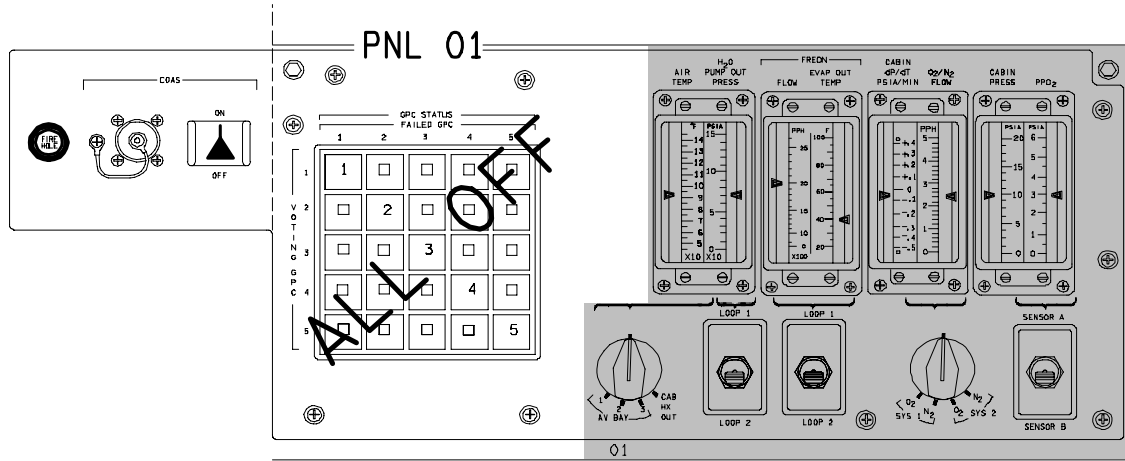
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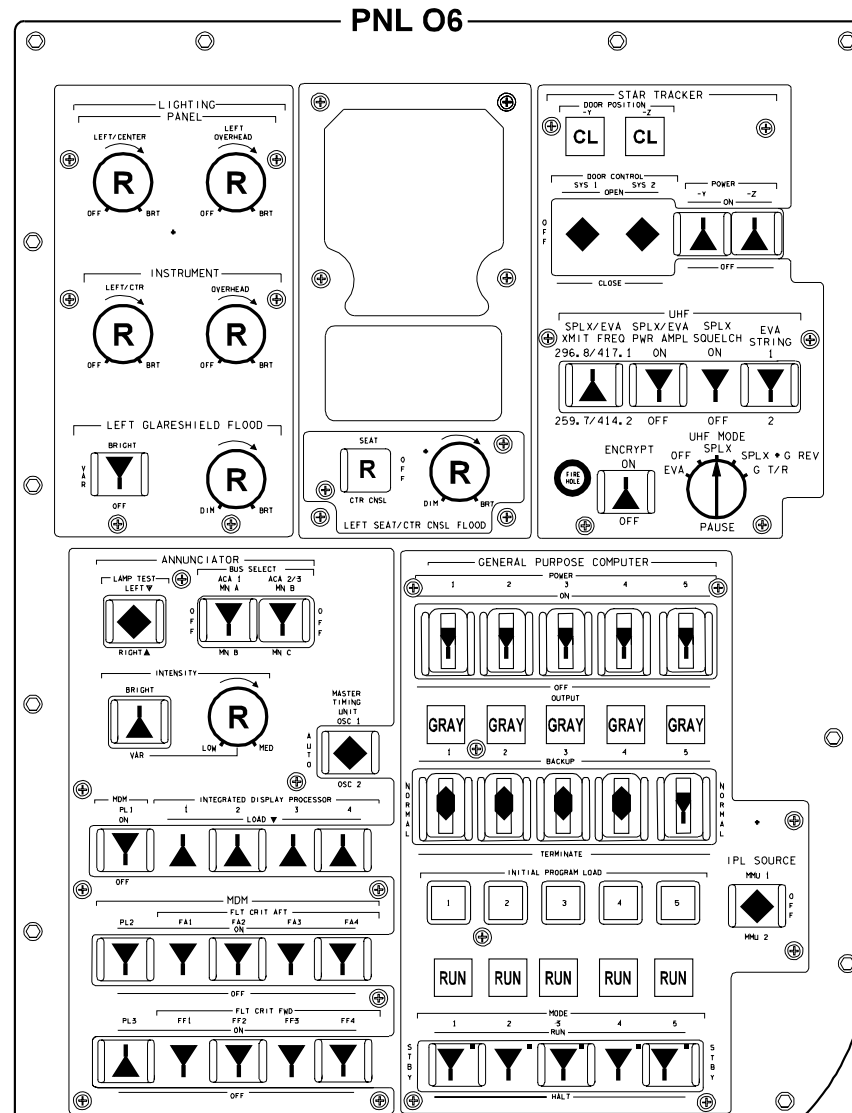
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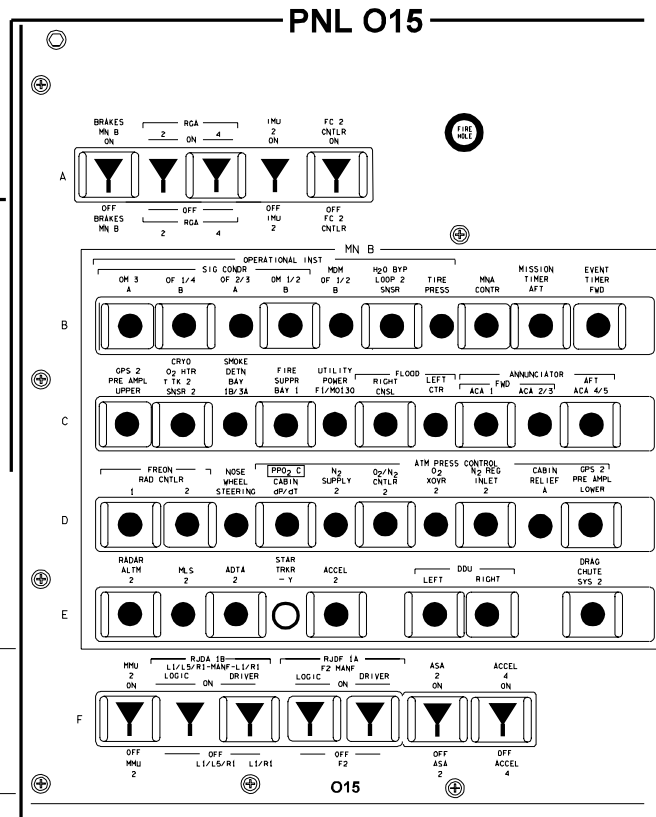
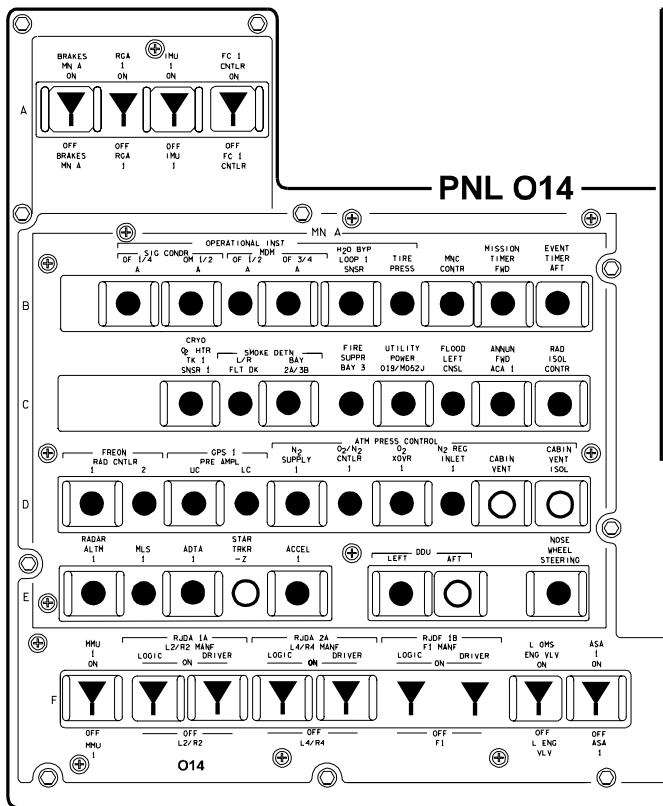




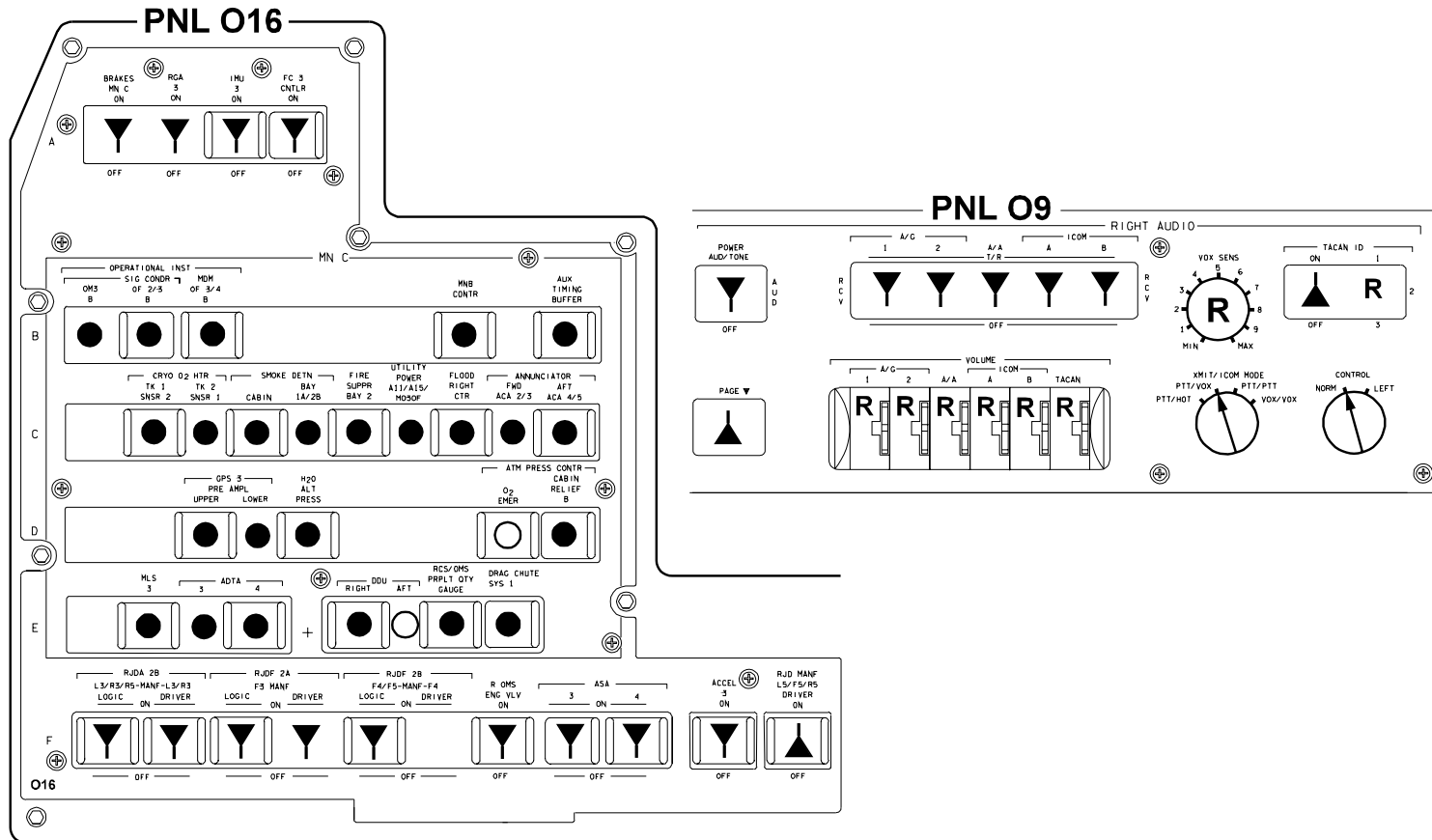
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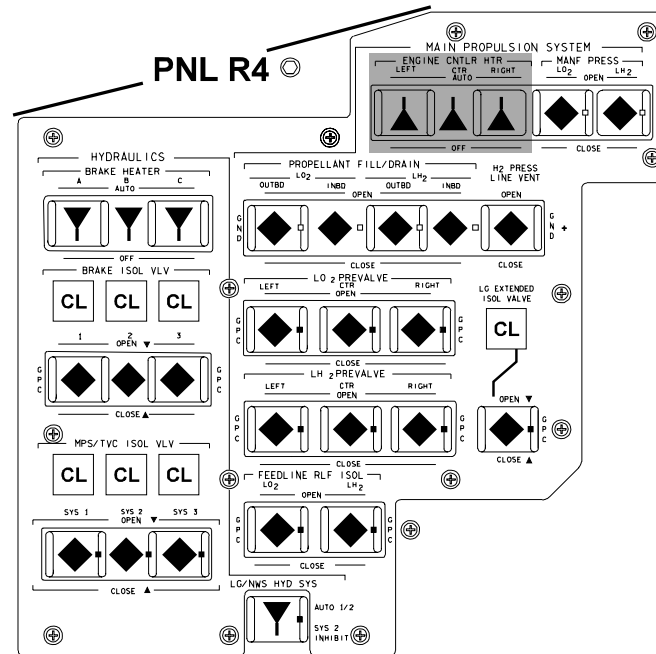
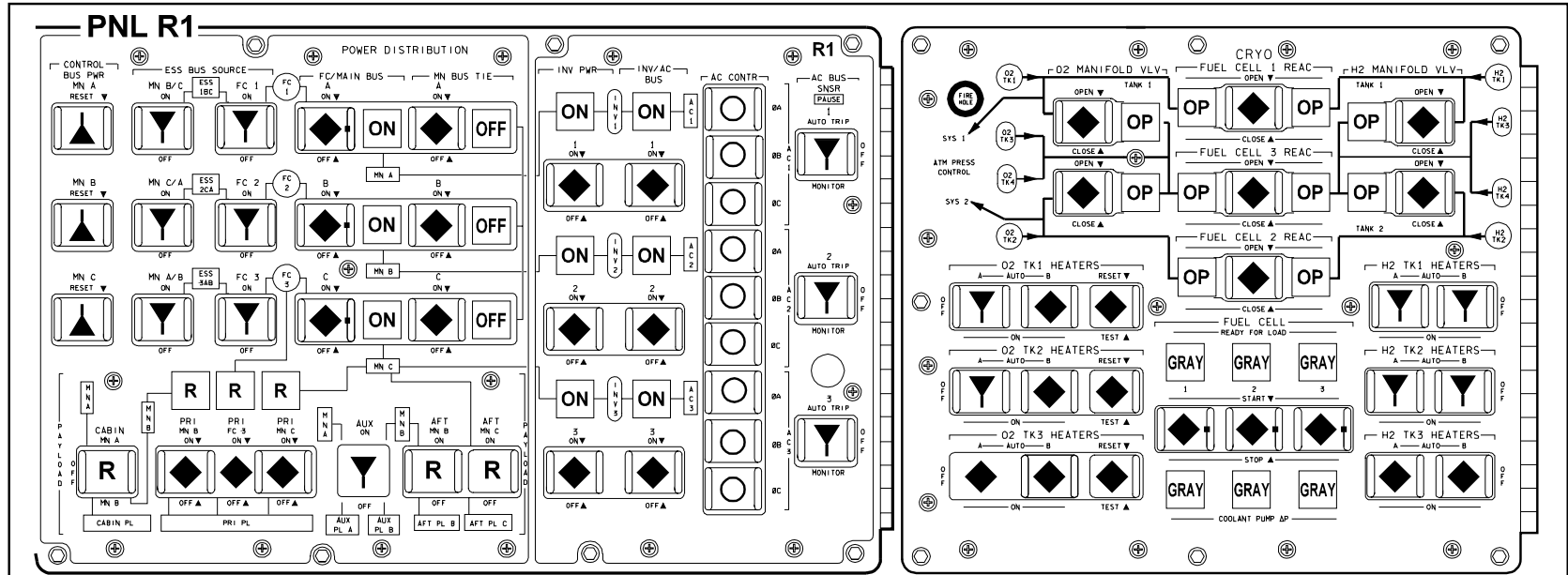




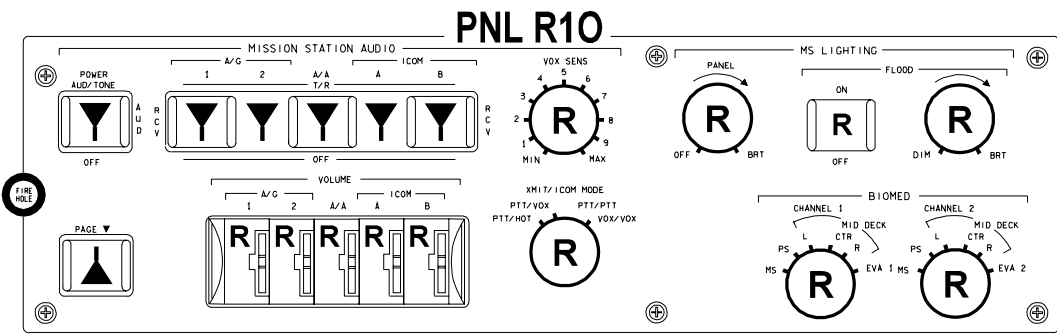


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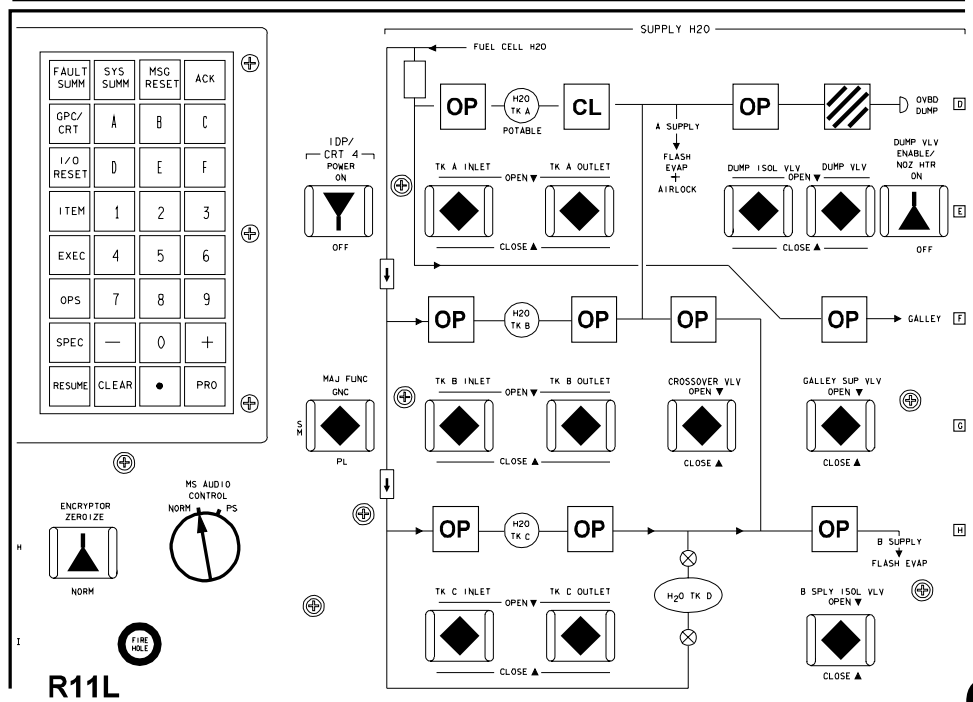
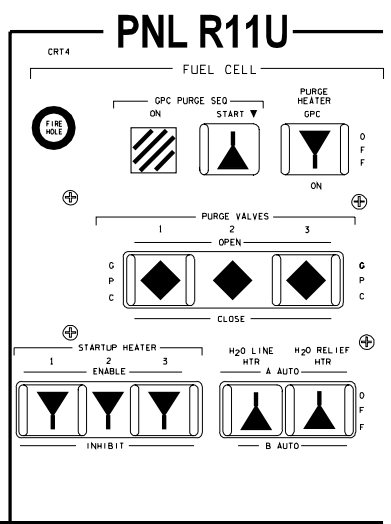


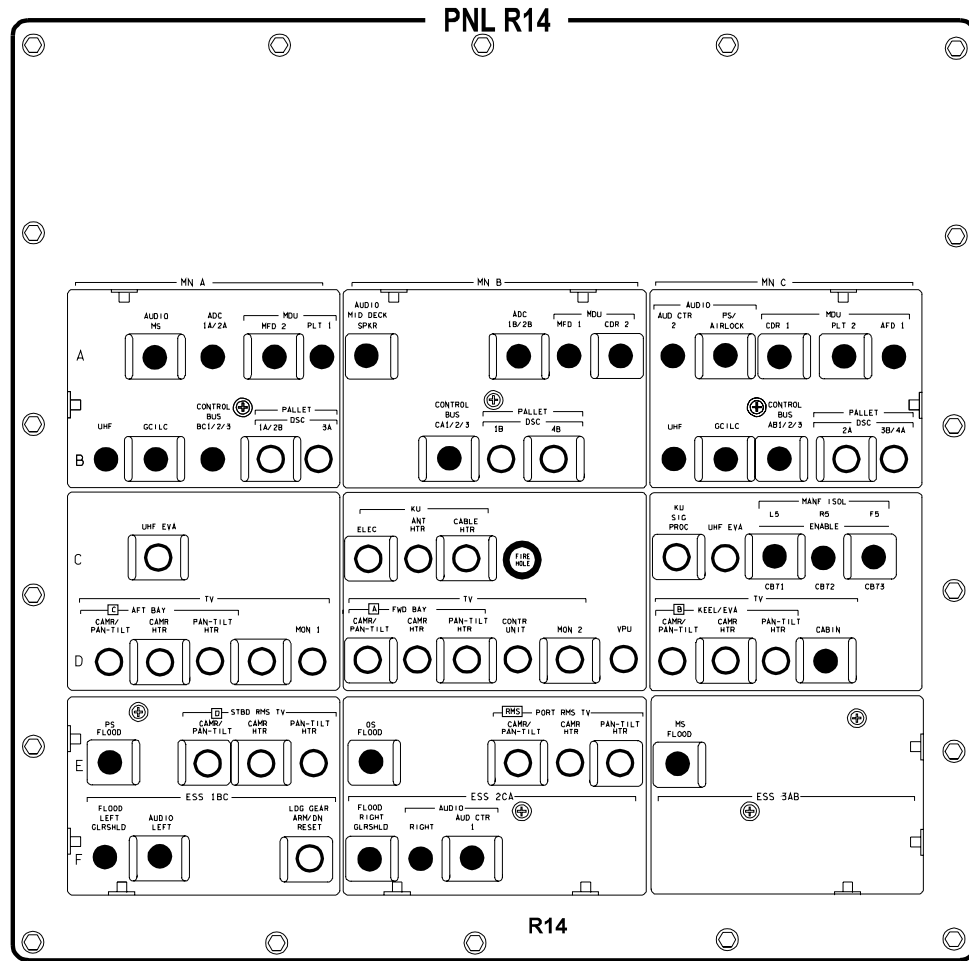
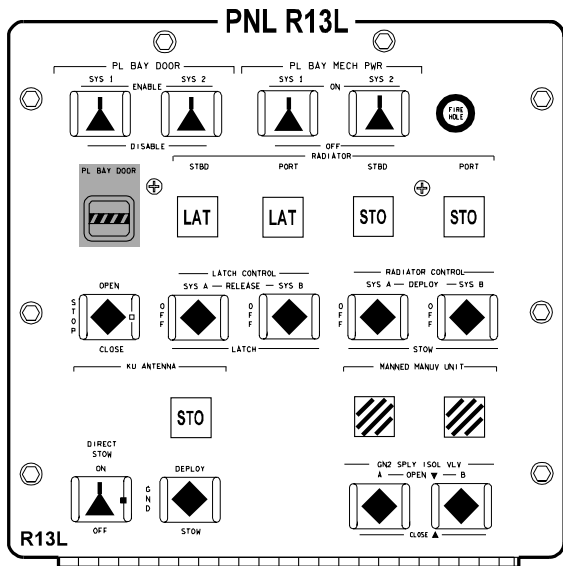


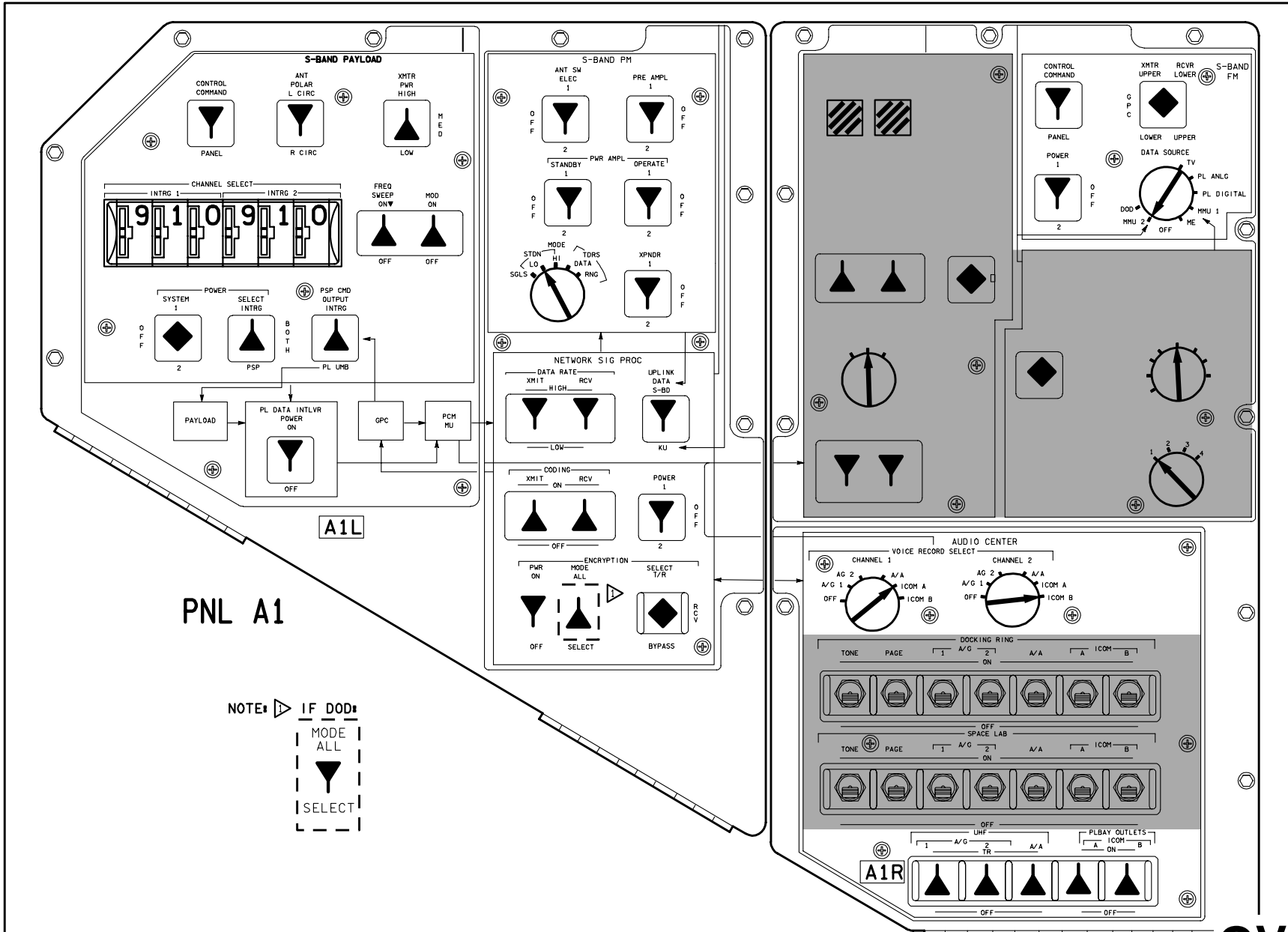
# OV105



ACTIVATION  
 R10 MS AUD PWR - AUD/TONE  
 All other sws - as reqd  
 R12 MS AUD CONTL - NORM  
 A11 MS COMM CCU PWR - ON







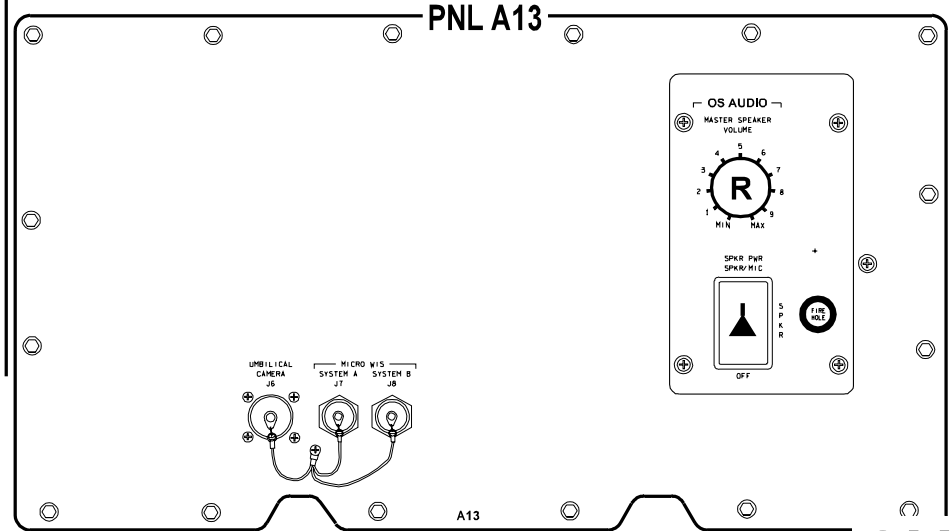
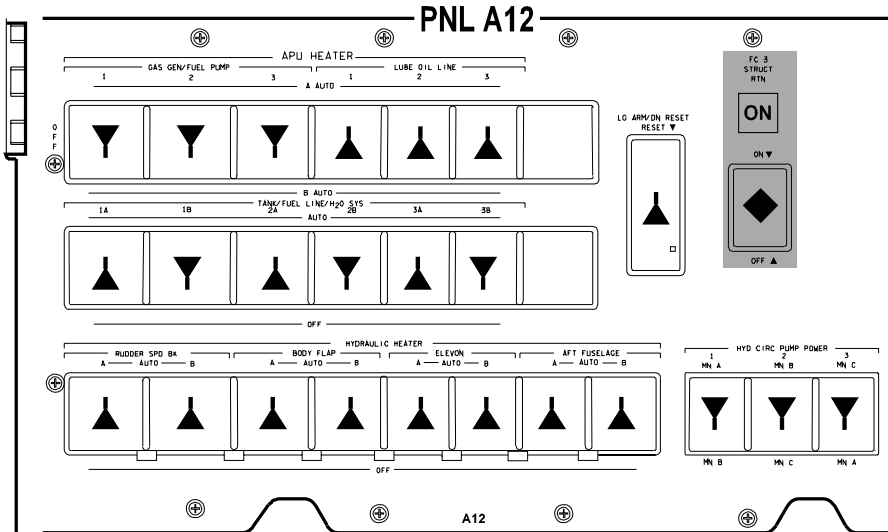
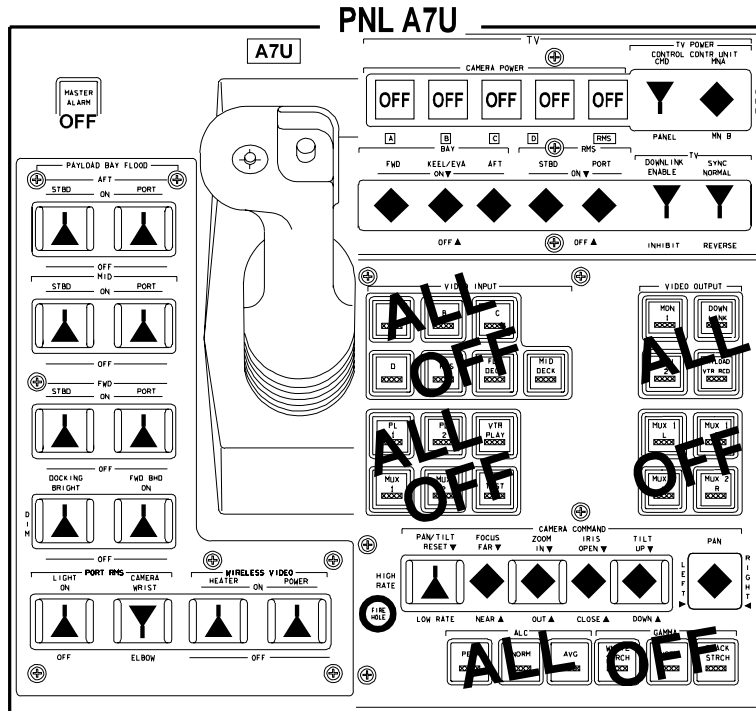
PNL A1

NOTE: IF DOD:  
 MODE ALL  
 SELECT

**OV105**

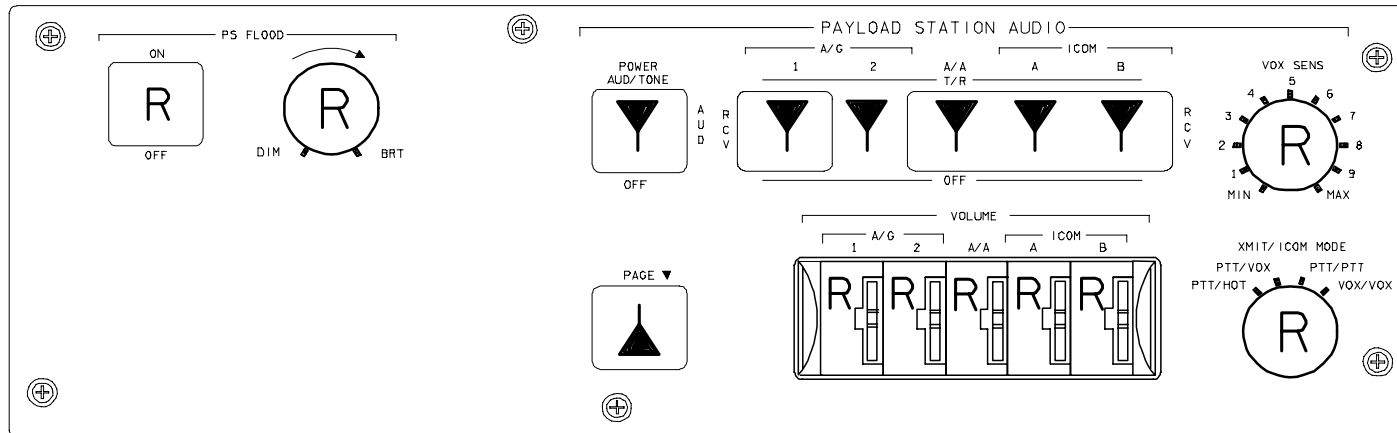


OV105



OV105

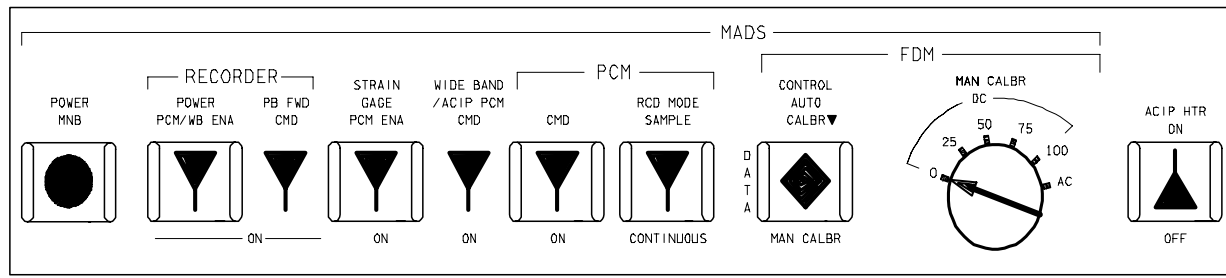
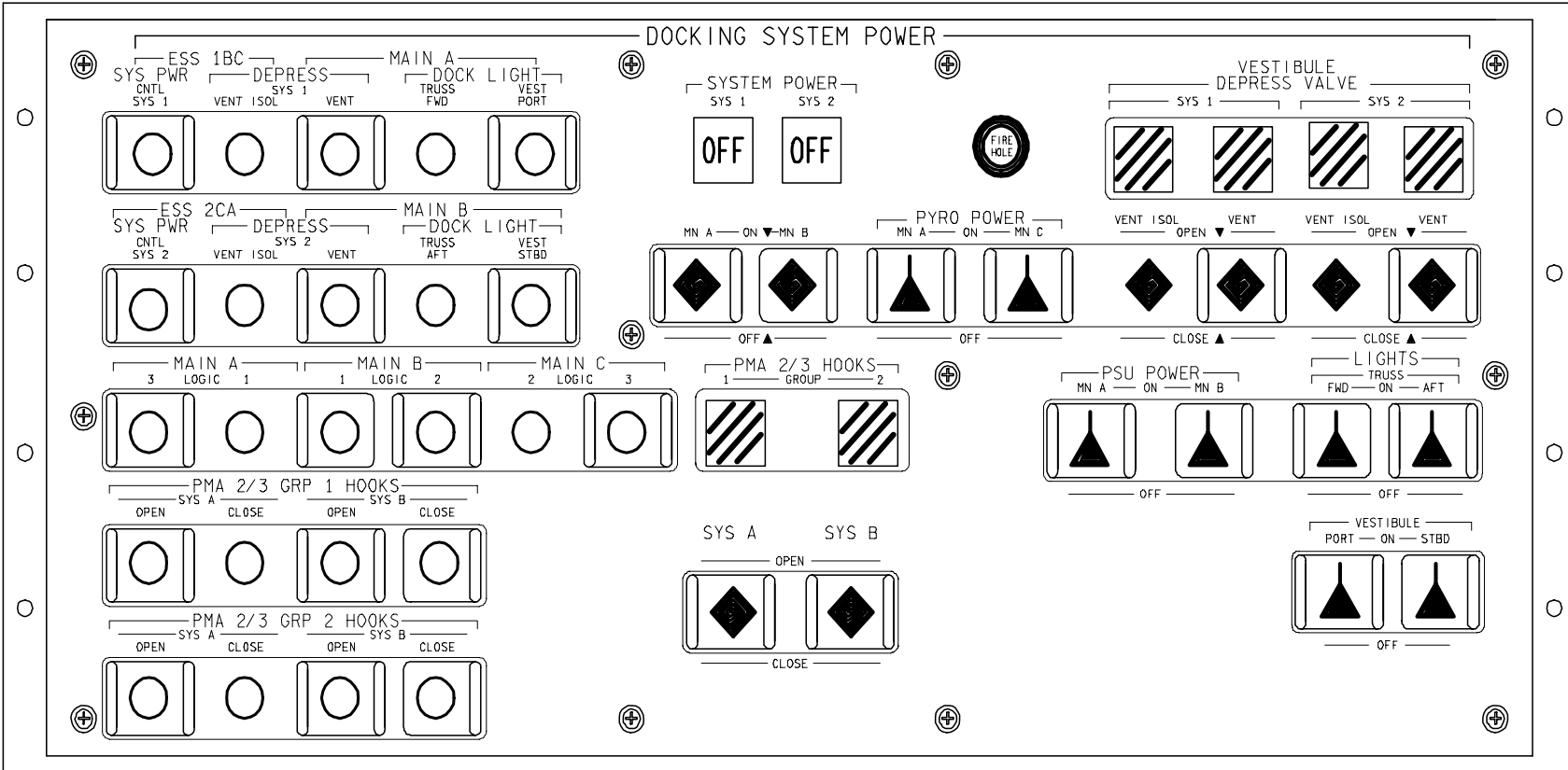
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L9

OV105

PNL A6L



OV105

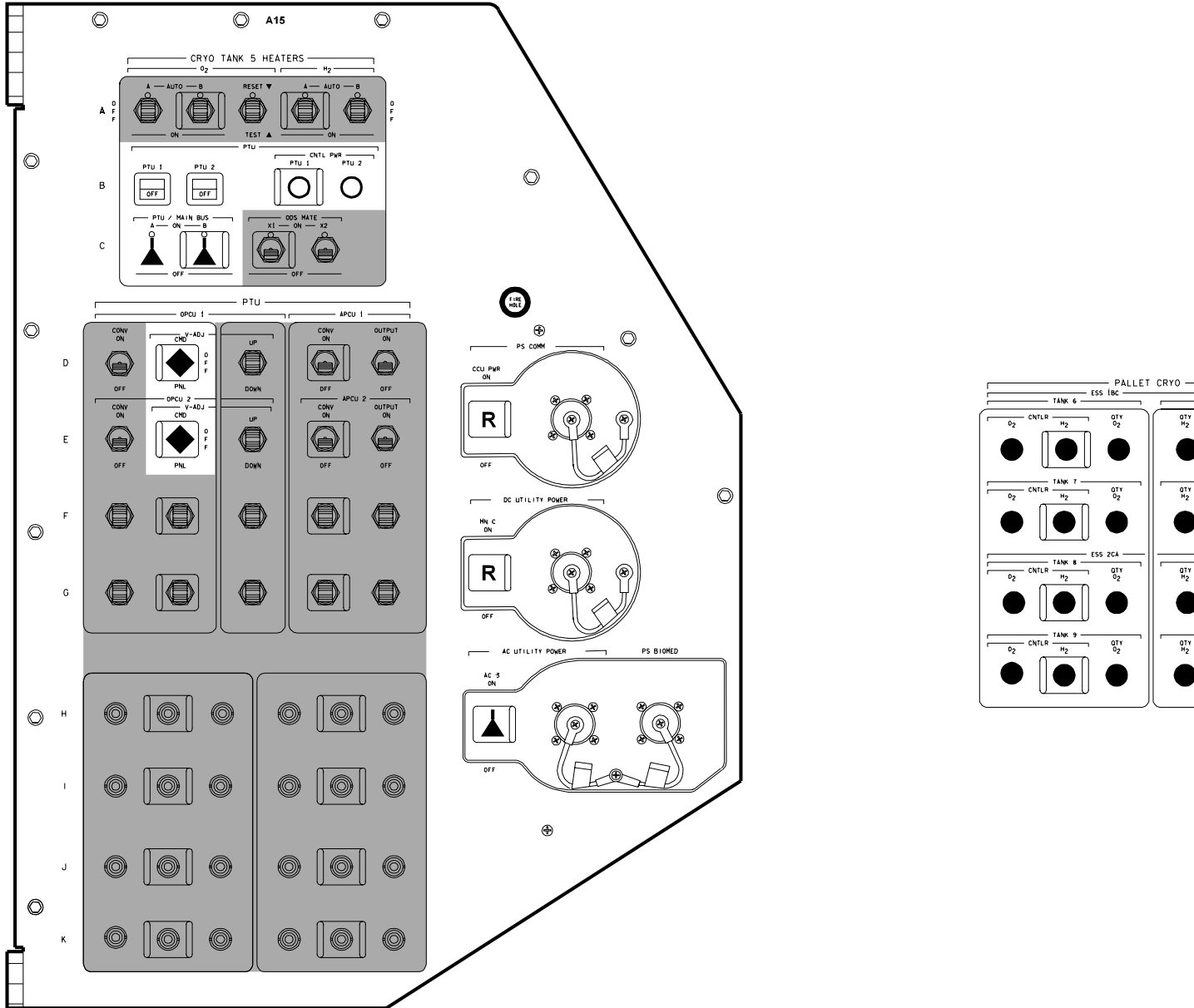
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OV105/DATE 12/10/02

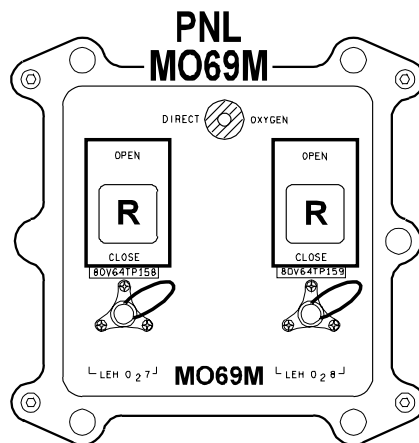
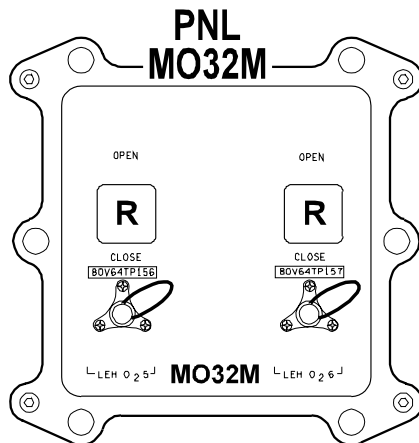
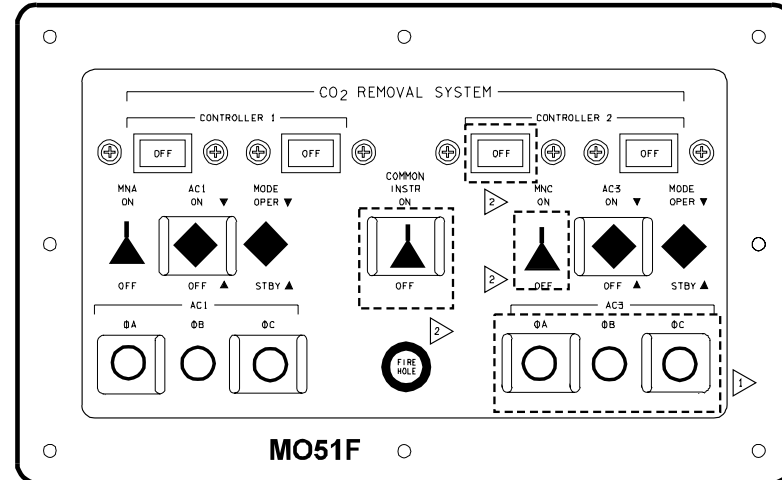
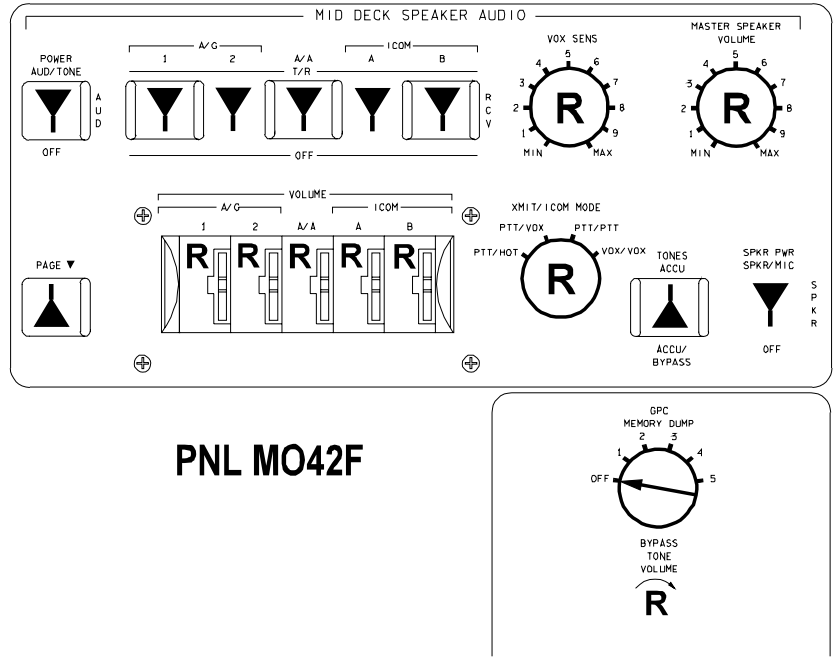
(OV105) C3-27

D/O/5/GEN P

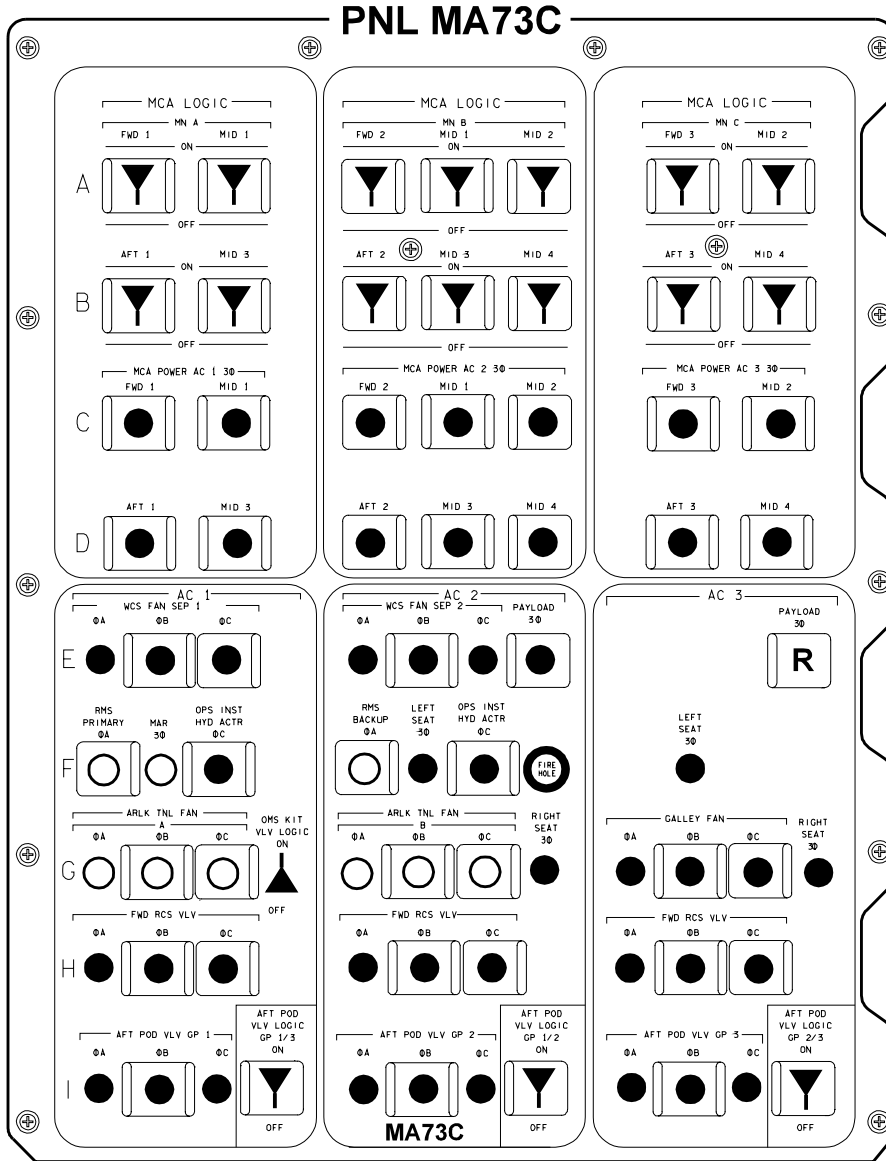


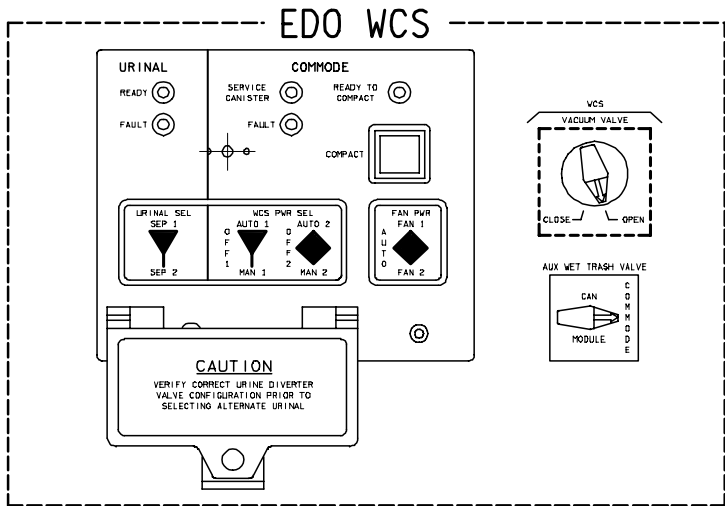
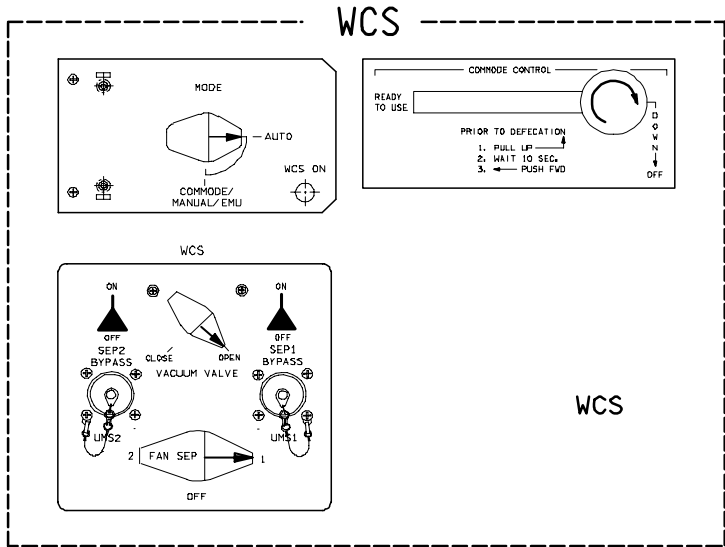
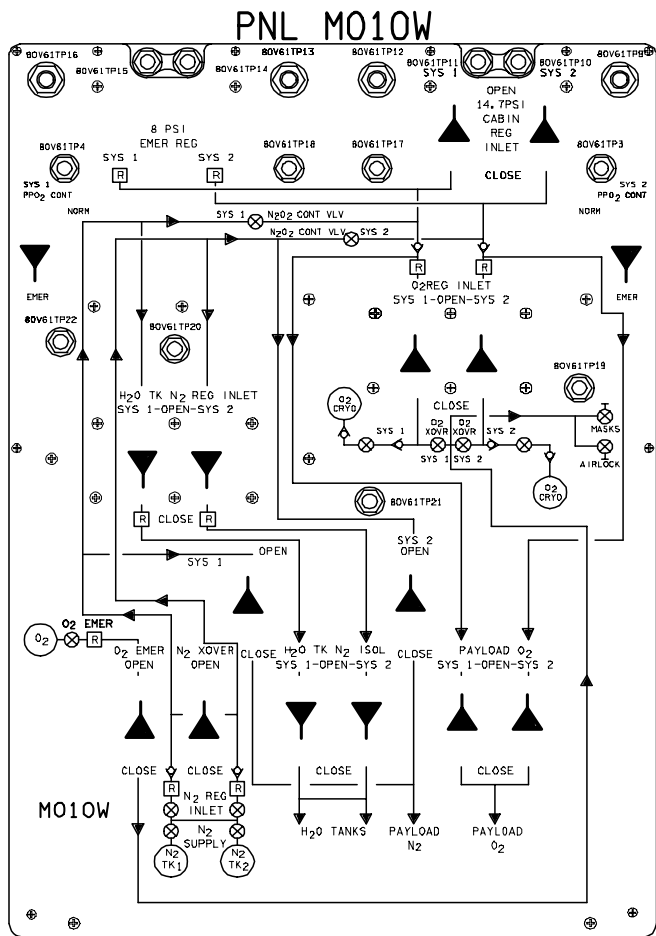


# OV105



NOTES: CLOSED IF CO2 RMVL SYS FLOWN  
 ON IF CO2 RMVL SYS FLOWN







**BFS DEORBIT PREP NOTES**

# BFS DEORBIT PREP NOTES

## BFS DEORBIT PREP NOTES

- 1) BFS cannot support COAS Cal or an IMU Align
- 2) No AUTO DAP or AUTO TVC is available with BFS.  
After OPS 304 Transition, CSS must be used
- 3) BFS does not support MSN TIMER updates
- 4) BFS supports manual RCS to RCS Xfeed only
- 5) BFS follows PASS port moding via BFS I/O RESET
- 6) BFS does not support the following switches:

### NOTE

Boldface indicates items affected during Entry (MM 304)

### LEFT SEAT

C	L1	H2O PUMP LOOP 1 (GPC pos only)
F6		<b>ADI ERR</b> <b>RATE</b> <b>HSI SEL MODE</b> <b>SOURCE 1, 2, 3</b> <b>RDR ALTM</b>
C, P	C3	DAP pb (six) MAN MODE TRANSLATION pb (eight) jet option PRI,ALT,VERN pb
O7		<b>MSTR RCS XFEED</b> AFT L,R RCS TK ISOL (six) (GPC pos only) XFEED (four) (GPC pos only)

### RIGHT SEAT

P	F8	<b>AIR DATA (slaved to CDRs)</b> <b>ADI ERR</b> <b>RATE</b> <b>ATT (slaved to CDRs)</b> <b>ATT REF pb</b> <b>HSI SEL MODE</b> <b>HSI SEL SOURCE TACAN (OV103,4),</b> <b>GPS (OV105), MLS, NAV</b> <b>(slaved to CDRs)</b>
	F3	<b>RDR ALTM</b> <b>R TRIM RHC/PNL</b>
	R2	HYD CIRC PUMP (three) (GPC pos only)
<u>AFT</u>	<u>MS</u>	R12U FC PURGE VLV (three) (GPC pos only)* HTR (GPC pos only)* GPC PURGE SEQ

\* FC PURGE valve and heater functions can be ground-commanded through BFS when switches are in GPC position. Therefore, place these switches in GPC for entry

**CONTINGENCY DELTAS TO NOMINAL DEORBIT PREP**

NOTE

Perform NOMINAL DEORBIT PREP procedure with  
CONTINGENCY DELTAS for specific case

LOSS OF 2 CAB FANS ..... 5-3

LOSS OF AV BAY AIR COOLING ..... 5-4

8 PSI DEORBIT PREP ..... 5-6

AV BAY FIRE ..... 5-8

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## LOSS OF 2 CAB FANS

Assumes LOSS OF 2 CAB FANS (ORB PKT, PWRDN) accomplished

1. Minimize use of IDPs,MDUs,FLT CNTLR PWR,DDUs to reduce cabin heat load and to save for use during entry
2. Minimize lighting
3. Wipe off any visible moisture with towels
4. Use IDP/CRT 4 when possible. Use one IDP/CRT with two MDUs as reqd. Use two IDP/CRTs with two MDUs for DPS ENTRY CONFIG. Save two forward IDP/CRTs with four MDUs that interface with those IDPs for entry
5. In DED DISP ENT CONFIG, do not power DDUs unless reqd. Minimize use
6. In DPS ENTRY CONFIG, skip SM CKPT except UL CNTL ENA – ITEM 36 EXEC. Skip MC9 RECONFIG
7. In CLOTHING CONFIG, prepare ACESs for donning. Don QDM if cabin temp > 90 degF and discomfort occurs. If cabin temp > 95 degF and no evaporative cooling, don ACES, activate O2, and close visor. Inflate Anti-G Suit as needed for circulatory support
8. ENTRY SWITCH LIST/VER will not reflect pwrnd items
9. FLUID LOADING: Continue drinking 8 oz container of water every 15 min with salt tablets every other 8 oz container through entry
10. Maintain tail Sun attitude/leave window shades installed until TIG-15 min

For ENTRY C/L deltas, go to LOSS OF 2 CAB FANS (ENT PKT, PWRDN)



**LOSS OF AV BAY AIR COOLING (Cont)**

RECONFIG MC 9 TABLE (GNC 9) FOR POST LANDING →

5. In C,P ENT FWD FLT DECK CONFIG:

- O14:A If AV BAY 1 air cooling lost:  
 O15:A     √BRAKES MNA – OFF  
 O16:A             MNB – ON  
            √MNC – OFF  
 O14:A If AV BAY 2 air cooling lost:  
 O15:A     BRAKES MNA – ON  
 O16:A             √MNB – OFF  
            MNC – ON

6. ENT SWITCH LIST/VERIF will not reflect pwrn items

7. Incorporate following pen and inks to ENT MNVR

Cue Cards:

- El: Power up affected air-cooled equipment  
 except affected TACAN (OV103,4) (EQUIP COOLING  
 MATRIX, ENT PKT, ECLS)

If OV103,4:

- V = 10K: If unaffected TACAN failed,  
 Affected TACAN MODE – GPC

O7

8. If just prior to OPS 302 TRANSITION, affected GPCs have  
 been in HALT for ≥ 3.5 hr, add to RS as follows:

- a. Modify MC3 per table →  
 b. MODE affected GPCs to RUN  
 c. BFC CRT DISP – OFF  
    OPS 301 PRO  
    BFC CRT DISP – ON  
    BFS GNC I/O RESET  
 d. FCS CH (four) – AUTO

9. Update GPC/FCS CHANNEL CONFIGURATION (Cue Card)

CONFIG	LOSS OF		
	BAY 1	BAY 2	BAY 3
GPC	9	9	9
	02300	10040	12040
STR 1	3	1	1
2	2	4	2
3	3	1	4
4	2	4	2
PL 1/2	2	1	1
CRT 1	2	1	1
2	3	4	2
3	0	0	4
4	3	4	0
L 1	0	0	1
2	0	0	2
MM 1	2	1	1
2	3	4	2

CONFIG	LOSS OF		
	BAY 1	BAY 2	BAY 3
GPC	3	3	3
	12340	12045	12340
STR 1	1	1	1
2	2	2	2
3	3	4	4
4	4	5	3
PL 1/2	2	1	1
CRT 1	2	1	1
2	1	2	2
3	3	4	4
4	0	0	0
L 1	0	0	0
2	0	0	0
MM 1	2	1	1
2	3	4	2





## 8 PSI DEORBIT PREP (Cont)

9. In DED DISP ENT CONFIG, delay activation of ADTAs, GPS, TACANs, MLS, RAs, and DDUs
10. In ENT FWD FLT DECK CONFIG block 14, skip panel L2 actions under PCS/ARS CONFIG
11. In ENT MIDDECK CONFIG block 16, skip all of MIDDECK PCS
12. Continue to manage cabin atmosphere per O2(N2) FLOW HIGH/CABIN P LOW/dP/dT (OPCL, ECLS) as reqd until just prior to WCS DEACT block 27. When ready to perform WCS DEACT, config PCS as follows:

MO10W	14.7 CABIN REG INLET SYS 1,2 – CL
	O2 REG INLET SYS 1,2 – CL
	H2O TK N2 REG INLET 1,2 VLV – OP
MO69M	LEH O2 8 VLV – CL
	Remove, stow Bleed Orifice
L2	O2/N2 CNTRL VLV SYS 1,2 – OP
	O2 XOVR SYS 1,2 – OP
C5	DIRECT O2 VLV – CL
	When PPO2 < 2.2
	DON ACES, open LEH O2 vlvs
	check tabs, visors – CL, Suit O2 – ON
13. ENTRY SWITCH LIST/VER will not reflect pwrdn items

### IN ENT CL

14. At TIG-4, activate DDUs
15. At EI, activate ADTAs
16. At V=15K, activate TACANs (except OV105), MLSs, RAs

## AV BAY FIRE

Assumes AV BAY FIRE (ORB PKT, PWRDN) and MAL, ECLS SSR-12, AV BAY FIRE RECOVERY/RECONFIG accomplished

1. For Av Bay 1 or 2 loss, skip DPS CONFIG FOR D/O PREP 4a , but perform ENSURE BFS GPC CAN COMMAND AN IDP 4b  
If Av Bay 3 loss, perform both DPS CONFIG FOR D/O PREP 4a and ENSURE BFS GPC CAN COMMAND AN IDP 4b
2. In APU/HYD CONFIG:  
If AV BAY 1 or 2 air cooling lost:  
| FCS CH (four) – ORIDE  
If AV BAY 3 air cooling lost:  
√FCS CH 1,2,3 (three) – AUTO  
4 – OFF
3. During DED DISP ENT CONFIG, power up only three ADTAs, three AAs, two MLSs, and two GPS (OV105) or two TACANs (OV103,4)

**AV BAY FIRE (Cont)**

4. During DPS ENTRY CONFIG
  - a. If loss of Av Bay 3, do not pwrap GPC 3
  - b. During SM CHECKPOINT, skip MMU 1 (if Av Bay 1) or MMU 2 (if Av Bay 2)
  - c. Using column for affected Av Bay, substitute appropriate NBAT in following activities

TRANSITION GPC 1 & 2 TO OPS 3

CONFIG GPC	LOSS OF		
	BAY 1	BAY 2	BAY 3
	3 02000	3 10000	3 12000
STR 1	2	1	1
2	2	1	2
3	2	1	1
4	2	1	2
PL 1/2	0	0	0
CRT 1	2	1	1
2	2	1	2
3	2	1	2
4	0	0	0
L 1	0	0	0
2	0	0	0
MM 1	2	1	1
2	2	1	2

TRANSITION GPC 1,2,3,4 TO OPS 3

CONFIG GPC	LOSS OF		
	BAY 1	BAY 2	BAY 3
	3 02300	3 10040	3 12040
STR 1	3	1	1
2	2	4	2
3	3	1	4
4	2	4	2
PL 1/2	2	1	1
CRT 1	2	1	1
2	3	4	2
3	2	1	4
4	0	0	0
L 1	0	0	0
2	0	0	0
MM 1	2	1	1
2	3	4	2

RECONFIG MC 9 TABLE (GNC 9)  
FOR POST LANDING

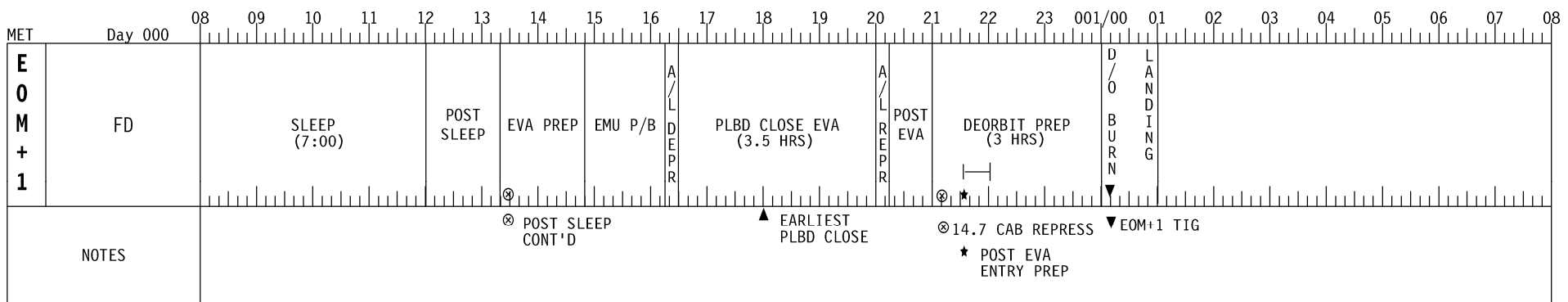
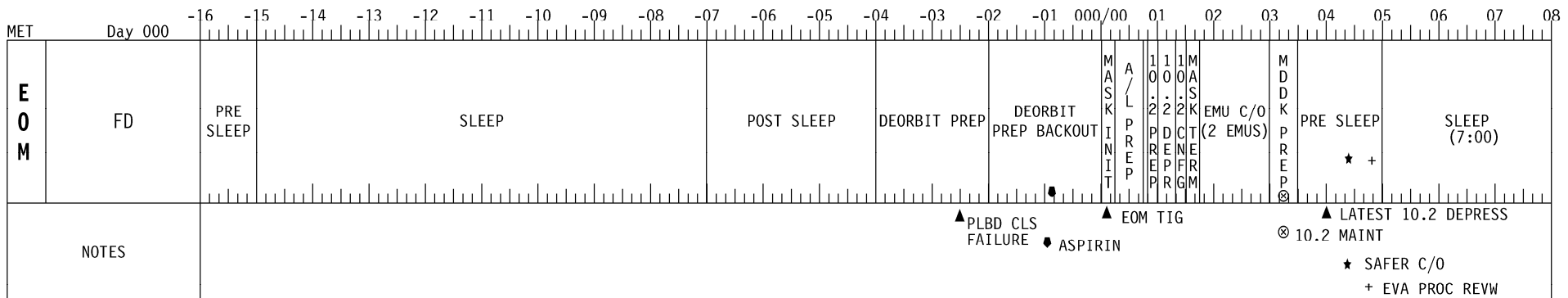
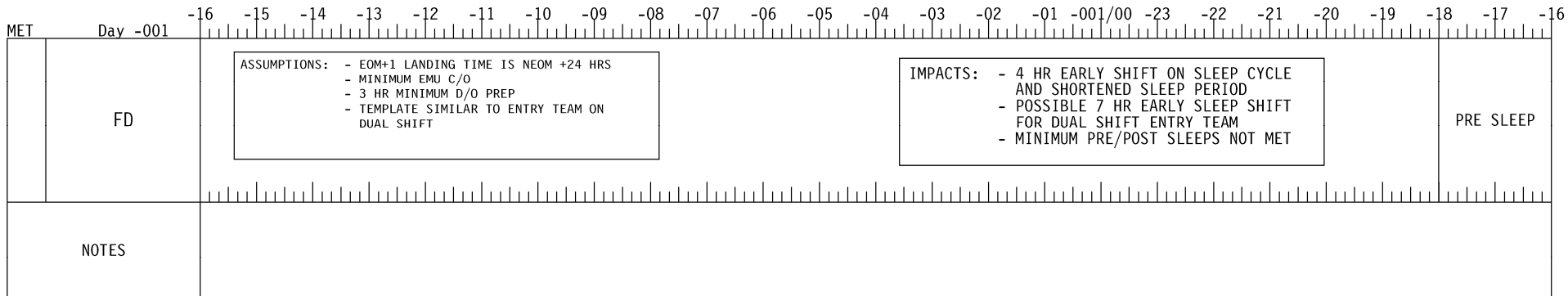
CONFIG GPC	LOSS OF		
	BAY 1	BAY 2	BAY 3
	9 02300	9 10040	9 12040
STR 1	3	1	1
2	2	4	2
3	3	1	4
4	2	4	2
PL 1/2	2	1	1
CRT 1	2	1	1
2	3	4	2
3	0	0	4
4	3	4	0
L 1	0	0	1
2	0	0	2
MM 1	2	1	1
2	3	4	2

5. ENT SWITCH LIST/VERIF pictorials will not reflect pwrn items

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**PLBD CONTINGENCY EVA TIMELINE**

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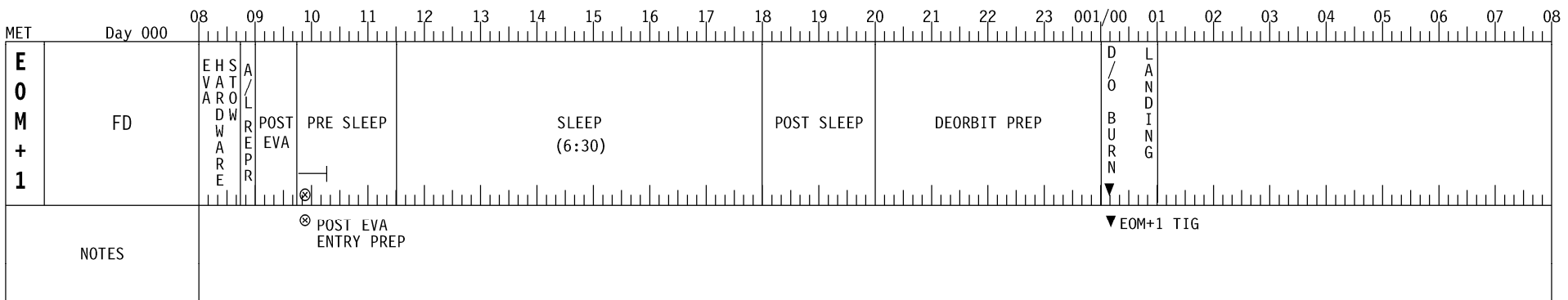
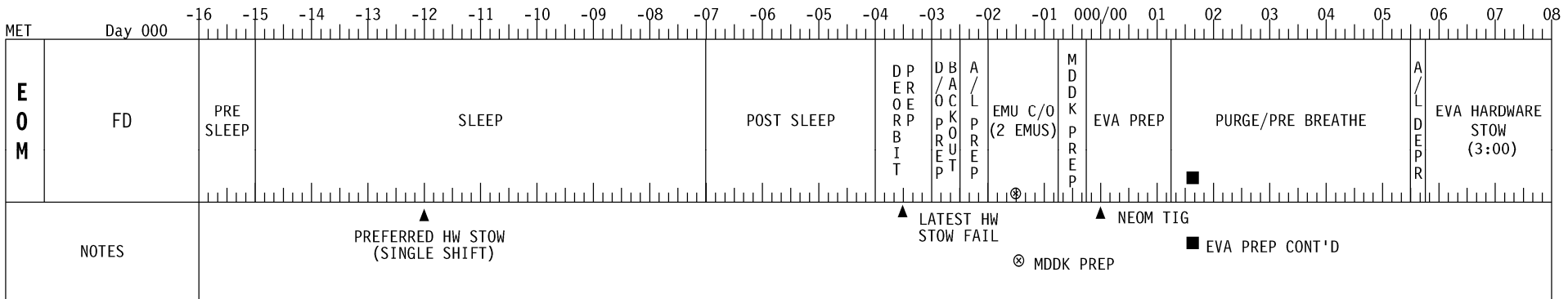
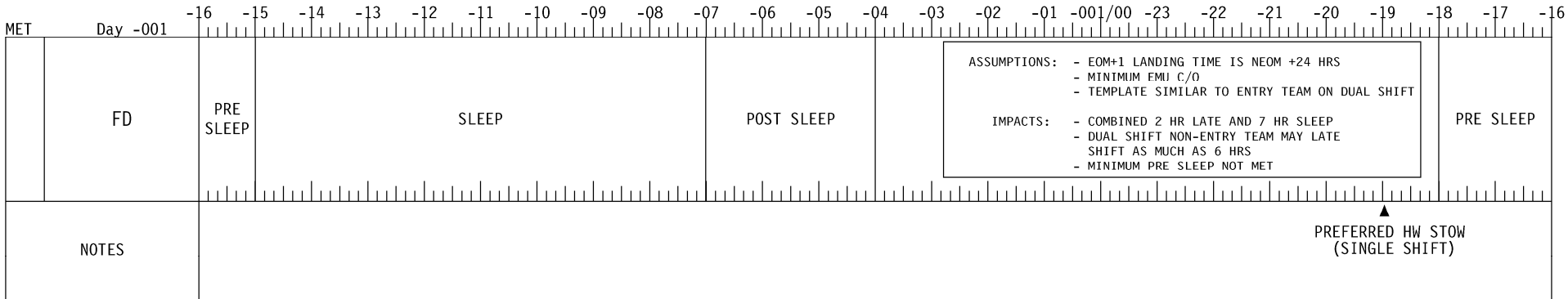
## PLBD CONTINGENCY EVA NOTES

1. This timeline is an overview template that covers a payload bay door contingency EVA with a 10.2 cabin depress. The scenario starts from a closure failure 1.5 hr into the deorbit prep followed by a D/O PREP BACKOUT and cabin depress activities. The EVA and landing will occur on the EOM + 1 day
2. The timeline assumes that a two-crewmember 3.5 hr EVA to repair the problem is immediately followed by an entry to the prime landing site
3. Specific procedure block callouts for the EV and IV crewmembers during the EVA will be coordinated in real time
4. RCS hot fire testing, FCS C/O, and CABIN STOW are assumed to be previously accomplished
5. The timeline utilizes minimum activity durations for POST/PRE SLEEPS, EMU C/O, and DEORBIT PREP
6. The crew will be reqd to perform A/L PREP during Mask Pre-Breathe prior to cabin depress
7. Due to necessity of performing the EVA on the same day as landing, the crew is reqd to start their sleep period 3.5 hr earlier than the previous day
8. This template can be adapted for dual-shift timelines by scheduling Non-Entry team sleep with Entry team sleep in order to modify the timeline to single-shift operations
9. The MET scale on this timeline is actually a PET scale counting down to nominal deorbit TIG



## HARDWARE CONTINGENCY EVA TIMELINE

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## HARDWARE CONTINGENCY EVA NOTES

1. This timeline is an overview template that covers KU antenna, RMS, and RAD stow contingency EVAs with a “no cabin depress” scenario starting from a stow failure as late as 30 min into deorbit prep. The Pre-Breathe and EVA will be performed after D/O BACKOUT is complete and a landing will occur on the EOM + 1 day
2. The timeline assumes a two-crewmember 3 hr EVA to repair the problem
3. Specific procedure block callouts for the EV and IV crewmembers during the EVA will be coordinated in real time
4. RCS hot fire testing, FCS C/O, and CABIN STOW are assumed to be previously accomplished
5. The timeline utilizes minimum activity durations for EMU C/O and PRE/POST SLEEP
6. Due to the necessity of the timeline, the crew is reqd to shorten their sleep to 7 hr and shift the sleep late by 2 hr
7. This template can be adapted for dual-shift timelines by scheduling Non-Entry team sleep with Entry team sleep in order to modify the timeline to single-shift operations
8. The MET scale on this timeline is actually a PET scale counting down to nominal deorbit TIG

CUE CARD CONFIGURATION

MS MIDDECK ACTIVITIES (Front).....	CC 8-2
(Back).....	CC 8-3
MS MIDDECK BACKOUT ACTIVITIES (Front) .....	CC 8-4
(Back).....	CC 8-5

CUE CARD  
CONFIG

# CUE CARD CONFIG

TOP

## MS MIDDECK ACTIVITIES

NOTE

WAIT FOR GO FROM CDR OR PLT BEFORE STARTING ANY ACTIVITY ON THIS PAGE

TIME (TIG-)	MS MIDDECK ACTIONS
3:50	<u>ENT STOWAGE</u> [ 3 ]
3:50	<u>ENT AIRLOCK CONFIG</u> [ 3A ], 1-32
3:35	<u>SPECIALIST SEAT INSTALLATION</u> Verify Leg Attach Collars (four) – DOWN/LOCKED Verify LiOH Door Latches (four) – ENGAGED
3:10	<u>PARTIAL ENT SWITCH LIST/VERIF (MID)</u> , 3-10 thru 3-12
1:55	<u>ENT MIDDECK CONFIG</u> [ 16 ]
1:50	<u>FINAL ENT SWITCH LIST/VERIF (MID)</u> , 3-30 thru 3-32
1:40	<u>ENTRY REVIEW</u>
1:28	DSO 603, if reqd (BIOMED, BIOMED DSOs)
1:10	<u>CLOTHING CONFIG</u> [ 20 ], 1-32
1:00	Begin Fluid Loading per individual prescription. Fluid Loading should be completed by EI For 1 rev waveoff, repeat half the protocol If > 1 rev waveoff, repeat entire protocol
0:55	Remove, stow Side Hatch UV Filter, Locking Device, and Pyro Box Safing Pin
0:51	<u>MD AUD SPKR CONFIG</u> [ 29 ], 1-32
0:50	<u>CO2 RMVL SYS DEACT</u> , if flown [ 25 ], 1-32
0:35	<u>GALLEY DEACT</u> [ 26 ]
0:33	<u>WCS DEACT</u> [ 27 ], 1-32

<u>ENT MIDDECK CONFIG</u> [ 16 ]																																	
MO42F	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 150px;"><u>ENTRY COMM</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MIDDECK SPKR AUD</td> <td>A/G 1</td> <td></td> <td>- T/R</td> </tr> <tr> <td></td> <td>A/G 2</td> <td></td> <td>- T/R</td> </tr> <tr> <td></td> <td>A/A</td> <td></td> <td>- T/R</td> </tr> <tr> <td></td> <td>ICOM (two)</td> <td></td> <td>- T/R</td> </tr> <tr> <td></td> <td>VOX SENS</td> <td></td> <td>- R</td> </tr> <tr> <td></td> <td>VOL tw (five)</td> <td></td> <td>- R</td> </tr> <tr> <td></td> <td>XMIT/ICOM MODE</td> <td></td> <td>- R</td> </tr> </table>	<u>ENTRY COMM</u>				MIDDECK SPKR AUD	A/G 1		- T/R		A/G 2		- T/R		A/A		- T/R		ICOM (two)		- T/R		VOX SENS		- R		VOL tw (five)		- R		XMIT/ICOM MODE		- R
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<u>ENT STOWAGE</u> [ 3 ]
<u>PERSONAL HYGIENE SYS STOWAGE</u>
Stow:
Personal Hygiene Kits Hose
<u>AIRLOCK CLOSEOUT</u>
Tether soft goods to EVA tether point or A/L Stowage Bag. Gray Tape to floor
<u>POLE SETUP</u>
Reinstall Stbd Pip Pin Reinstall large Port Pin: Retract and hold Locking Pin (Ring) Reinstall large Pin Release Locking Pin (Ring) Slide forward Safing Latch
√ Pole Straps secure
<u>DFD STOWAGE</u>
Stow FLIGHT PLAN
<u>CABIN CONFIG</u>
Stow:
Backup PGSC Middeck Camrs, Accessories FWD/AFT Shades, Filters Exercise Equipment Quick Don Masks
√ Retention net is in ASC/ENT config
<u>EGRESS ROUTE CONFIG</u>
Tape Foot Loops in egress routes
NOTE
Chemlights are middeck carry-on items. Activate green chemlights after TIG. Do not activate orange chemlights (slide ops only)
Install green chemlights (8 ea) near egress hdw and egress routes Install orange chemlights (2 ea) above side hatch

<u>GALLEY DEACT</u> [ 26 ]																
GALLEY	<table style="width: 100%; border-collapse: collapse;"> <tr> <td>OVEN/RHS</td> <td></td> <td>- OFF</td> </tr> <tr> <td>H2O HTRS (two)</td> <td></td> <td>- OFF</td> </tr> <tr> <td>√ OVEN FAN</td> <td></td> <td>- OFF</td> </tr> <tr> <td>√ REHYD STA lever</td> <td></td> <td>- cl (push in)</td> </tr> <tr> <td>√ OVEN DOOR LATCH</td> <td></td> <td>- latched</td> </tr> </table>	OVEN/RHS		- OFF	H2O HTRS (two)		- OFF	√ OVEN FAN		- OFF	√ REHYD STA lever		- cl (push in)	√ OVEN DOOR LATCH		- latched
OVEN/RHS		- OFF														
H2O HTRS (two)		- OFF														
√ OVEN FAN		- OFF														
√ REHYD STA lever		- cl (push in)														
√ OVEN DOOR LATCH		- latched														
MA73C:G	cb AC3 GALLEY FAN (three)	- op														
ML86B:A	MNC SPLY H2O GALLEY SPLY	- op														
:B	MNA GALLEY OVEN	- op														
	MNB GALLEY H2O HTR	- op														

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D/O/ALL/GEN P, 1

D/O-1a/E/E

TOP  
BACK OF "MS MIDDECK ACTIVITIES"

ENT AIRLOCK CONFIG <span style="float: right;">3A</span>	
MO13Q	1. √AIRLK FAN A(B) – OFF
TNL EXT	2. √Inlet flex duct stowed and bypass duct strapped to Tunnel Extension wall. Unstow, install cap on Airlock Fan outlet
MA73C:G	3. cb AC1,2 ARLK TNL FAN A,B (six) – op
EXT A/L	4. Unstow, install diffuser cap on middeck floor air fitting
AW18A	5. NEG PRESS RLF vlv cover (two) – pull open to vent; push firmly to close
INNER HATCH	6. LTG FLOOD 1(3,4) – OFF
	7. Perform AIRLOCK ENTRY SWITCH LIST/VERIFICATION, 3-3
	8. Close hatch: Position handle to preclosing posn per decal Hatch – rotate about hinge and push Handle – CCW to LATCH Lock lever to LOCKED
	9. Equal vlv (two) – NORM, install caps
MIDDECK FLR	10. √EMU O2 ISOL vlv – CL
MO13Q	11. AIRLK 2 – OFF/ON
	12. √AIRLK H2O S/O vlv – OP (tb-op) If TNL ADAPT flown:
ML86B:E	13. cb MNA FLOOD TNL ADAPT 2 – op cb MNB FLOOD TNL ADAPT 3 – op cb MNC FLOOD TNL ADAPT 4 – op
:F	14. cb MNA FLOODS AIRLK 1 – op MIDDECK 9 – op cb MNB FLOODS MIDDECK 10 – op AIRLK 3 – op cb MNC FLOODS AIRLK 4 – op
:G	15. cb ESS 1BC FLOOD AIRLK 2 – op If TNL ADAPT flown: 16. cb ESS 1BC FLOOD TNL ADAPT 1 – op

CLOTHING CONFIG <span style="float: right;">20</span>	
	Unstow, don: ACES Harness Boots
	Remove radiation dosimeter from inflight garments and insert in ACES; if waveoff, remove radiation dosimeter from ACES and insert in inflight garments
	<u>NOTE</u> Refer to flight specific utility outlet plug-in plan if reqd
	Connect middeck cooling units per PWR/DATA/VIDEO: ASCENT/ENTRY CONFIG (REF FS, UTIL PWR)
MO13Q, MO30F, MO52J, PDB J2(3,4), ML85E (MUP)	DC UTIL PWR MNA(B,C) – ON as reqd Cooling units – Hose Jumper Plug installed Pre-chill cooling units 10 min prior to seat ingress

CO2 RMVL SYS DEACT <span style="float: right;">25</span>	
MO51F	CNTRLR 2(1) MODE – STBY (hold 3 sec) Wait 6 sec
	√CNTRLR 2(1) OPER It – off √FAIL It – on MNC(A) – OFF √CNTRLR 2(1) FAIL It – off AC 3(1) – OFF (hold 3 sec) AC 3(1) cbs (three) – op COM INSTR – OFF
	Remove and replace LiOH Canister in position A with one fresh LiOH Canister

WCS DEACT <span style="float: right;">27</span>	
WCS (EDO WCS)	√VAC VLV – CL √MODE sel – AUTO FAN SEP sel – OFF Unstow hose from cradle, attach hose to WCS housing via Velcro straps Stow: WCS Trash Can Mirror Privacy Curtain Foot/toe restraints – up, latched
EDO WCS	If EDO WCS: Secure urinal hose with Velcro strap URINAL SEL – OFF WCS PWR SEL (two) – OFF 1, OFF 2 Commode lid lock – lock √COMPACTOR – stowed COMPACTOR CLEANING LATCH PIN – disengaged LOCK PINS (three) – tighten (snug) Stow thigh restraints Close and latch door
ML31C	VAC VENT ISOL VLV BUS SEL – MNB CNTL – CL (tb-CL) NOZ HTR – OFF √Middeck Its as reqd

MD AUD SPKR CONFIG <span style="float: right;">29</span>	
MO42F MO39M	MIDDECK AUD SPKR PWR – OFF MIDDECK COMM CCU PWR – OFF Disconnect and stow Handheld Mic Configure MHA to MID CCU per entry plug-in plan Connect Lightweight Headsets or ACES Comm Cap MIDDECK COMM CCU PWR – ON

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D/O/ALL/GEN P, 1

TOP

### MS MIDDECK BACKOUT ACTIVITIES

NOTE

WAIT FOR GO FROM CDR OR PLT BEFORE STARTING ANY ACTIVITY ON THIS PAGE

TIME (ET)	MS MIDDECK ACTIONS
00:20	<u>SPECIALIST SEAT EGRESS</u>
00:21	MO32M LEH O2 vlv (two) – CL MO69M LEH O2 vlv (two) – CL
00:22	<u>PRELIM MIDDECK CONFIG</u> [ 7 ]
00:40	If reqd, PAYLOAD REACT, (PL OPS, <u>DEORB PREP</u> ) or PAYLOAD REACTIVATION (SODF: ASSY OPS: DEORBIT PREP)
00:52	<u>MIDDECK CONFIG</u> [ 14 ]
01:00	<u>CLOTHING CONFIG</u> [ 15 ], 2-18
01:40	<u>ON-ORBIT PCS 2(1) CONFIG</u> [ 19 ], 2-18
01:42	<u>SPECIALIST SEAT REMOVAL/STOWAGE</u>
01:50	<u>AIRLOCK SETUP FOR INGRESS</u> [ 21 ], 2-18

<u>PRELIM MIDDECK CONFIG</u> [ 7 ]	
	<u>INSTALL FILTERS</u> Unstow,install: Side Hatch UV Filter and Locking Device Pyro Box Safing Pin
	<u>COMM CONFIG</u> Unstow: Headsets, Handheld Mics and/or Wireless Comm if flown (see <u>WCCS COMM PLAN</u> (Cue Card))  If WCCS perform STD WCCS CONFIG (ORB OPS, <u>COMM/INST</u> ) or see <u>WCCS COMM PLAN</u> (Cue Card)
MO42F	If middeck Handheld Mic/speaker operation: MIDDECK SPKR AUD SPKR PWR – SPKR/MIC A/G 1 – T/R, tw-2 A/G 2 – RCV, tw-2 A/A – RCV, tw-2 ICOM A – T/R, tw-2 ICOM B – RCV, tw-2 XMIT/ICOM MODE – PTT/PTT MSTR SPKR VOL – 8
MO39M	MIDDECK COMM CCU PWR – OFF Connect Handheld Mic to CCU MIDDECK COMM CCU PWR – ON
ML31C	<u>HTR CONFIG</u> VAC VENT ISOL VLV BUS SEL – MNA NOZ HTR – ON ISOL VLV CNTL – OP (tb-OP)  * If VAC VENT ISOL VLV CNTL tb – CL or bp: * * VAC VENT ISOL VLV BUS SEL – MNB * * CNTL – OP (tb-OP) * * If VAC VENT ISOL VLV CNTL tb still CL or bp: * * \MCC for further actions *

MIDDECK CONFIG [ 14 ]

ML86B:A :B	<u>GALLEY ACTIVATION</u> cb MNC SPLY H2O GALLEY SPLY – cl cb MNA GALLEY OVEN – cl cb MNB GALLEY H2O HTR – cl √SPLY H2O GALLEY SPLY VLV – OP (tb-OP)
R11L:G GALLEY	H2O HTRS (two) – ON OVEN/RHS – ON
MA73C:G	cb AC3 GALLEY FAN (three) – cl Unstow,install Personal Hygiene Hose
WCS (EDO WCS)	<u>WCS ACTIVATION</u> VAC VLV – OP  If EDO WCS: √CANISTER – LOCK Commode lid lock – use URINAL SEL – SEP 1 WCS PWR SEL (two) – AUTO 1, OFF 2 √FAN PWR – AUTO √URN DIV VLV – FAN SEP 1 Open commode lid √Commode airflow √Fecal Bag installed Close commode lid Unstrap urinal hose Velcro strap Unstow urinal hose √Urinal airflow √URINAL READY It – on (5-15 sec) Stow urinal hose COMPACTOR LOCK PINS (three) – loosen (use 1/4-in Hex Wrench, if reqd) √COMPACTOR ARM LOCK PIN – raised COMPACTOR CLEANING LATCH PIN – engaged Install Fecal Bag and Lid Dispensers  If WCS: Unstow Urinal Hose from Velcro strap, install hose in cradle √MODE – AUTO √CRADLE – AUTO FAN SEP SEL sw – 1 Unstow hose from cradle (√airflow) √WCS ON It – ON Stow hose in cradle √WCS ON It – OFF  Unstow,install: WCS Trash Can Mirror Urine Collection Cue Card Foot/Toe Restraint – down,locked  (Cont next page)

D/O-2a/E/C

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D/O/ALL/GEN P



TOP  
BACK OF "MS MIDDECK BACKOUT ACTIVITIES"

MO51F CO2 RMVL SYS ACT (if flown)  
 √MCC prior to CO2 RMVL system activation  
 cb AC 3 (three) - cl  
 AC3 - ON (hold 3 sec)  
 MNC - ON  
 CNTRL 2 MODE - OPER (hold 3 sec)  
 Wait 6 sec  
 CNTRL 2 OPER It - on  
 COM INSTR - ON

If PRIORITY PWRDN GROUP C not reqd:  
PGSC ACTIVATION (backup PGSC) PGSC  
 ACTIVATION (ORB OPS, PGSC)

POLE STOWAGE  
 Remove large Port Pin:  
 Slide back Safing Latch  
 Retract and hold Locking Pin (Ring)  
 Remove large Pin  
 Release Locking Pin (Ring)  
 Remove Stbd Pip Pin  
 Stow Pole

FLOODLIGHT CONFIG  
 If TNL ADAPT flown:  
 ML86B:E cb MNA FLOOD TNL ADAPT 2 - cl  
 cb MNB FLOOD TNL ADAPT 3 - cl  
 cb MNC FLOOD TNL ADAPT 4 - cl  
 ML86B:F cb MNA FLOODS AIRLK 1 - cl  
 MIDDECK 9 - cl  
 cb MNB FLOODS MIDDECK 10 - cl  
 AIRLK 3 - cl  
 cb MNC FLOODS AIRLK 4 - cl  
 ML86B:G cb ESS 1BC FLOOD AIRLK 2 - cl  
 If TNL ADAPT flown:  
 cb ESS 1BC FLOOD TNL ADAPT 1 - cl

CLOTHING CONFIG 15

DoFF/stow:  
 Harness, Boots, ACES, UCD (if not used)

Remove radiation dosimeter from ACES and insert in inflight garments

DoFF, stow in Wet Trash (if used):  
 UCD (clamp)  
 Emesis Bag (unstow new bag)

ON-ORBIT PCS 2(1) CONFIG 19

C	L2	√O2 XOVR SYS (two) - OP O2/N2 CNTLR VLV SYS 1(2) - CL 2(1) - AUTO
	O1	O2/N2 FLOW sel - SYS 2(1) O2
	C7	√LEH O2 SPLY vlv (two) - OP Expect possible 'S66 CAB O2(N2) FLO 2(1)' msg
MS	MO10W	14.7 CAB REG INLET SYS 2(1) vlv - OP H2O TK N2 REG INLET SYS 1(2) vlv - CL O2 REG INLET SYS 2(1) vlv - OP
	MO69M	√LEH O2 8 vlv - CL Insert O2 Bleed Orifice Assembly into LEH O2 8 QD LEH O2 8 vlv - OP

AIRLOCK SETUP FOR INGRESS 21

INNER	1. Equal vlv caps (two) - remove, stow
HATCH	2. √Equal vlv (two) - NORM
	3. Open hatch per decal
AW18A	4. LTG FLOOD 1(3,4) - ON (as reqd)
MO13Q	5. AIRLK 2 - ON/OFF
	6. √AIRLK H2O S/O vlv - OP (tb-op)
MIDDECK FLR	7. √EMU O2 ISOL vlv - CL
	8. Remove, stow diffuser cap on middeck floor air fitting (mark)
	If Spacehab flown and reingress desired:
	9. Unstow, install bypass duct to middeck floor fitting
	10. Go to SPACEHAB INGRESS AFTER WAVEOFF (SH OPS, <u>ON-ORBIT</u> )
	If Orbiter only or Spacehab reingress not desired:
	11. Unstow bypass duct from Tunnel Extension wall and install on middeck floor fitting
	12. √Airflow at top of external airlock halo

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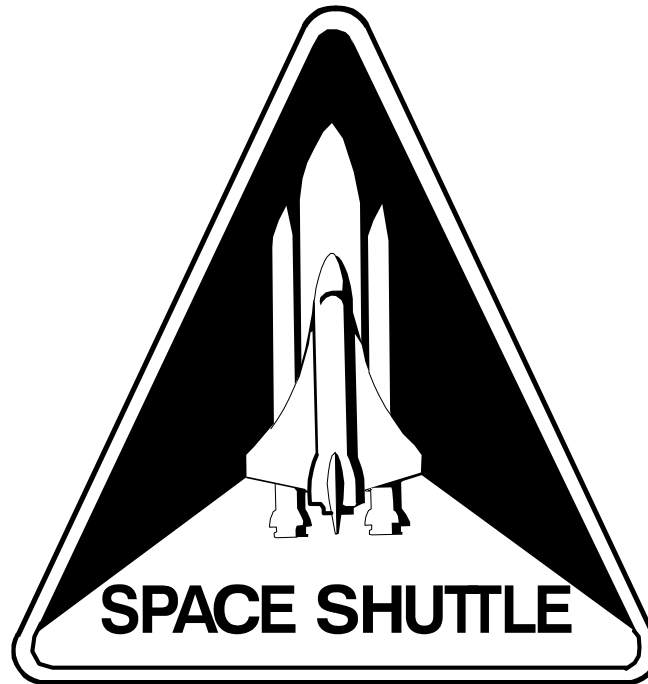
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D/O/ALL/GEN P, 1

D/O-2b/E/D

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**DEORBIT PREP**

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