

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).
Electronic copies of FDF books are available. URL: <http://mod.jsc.nasa.gov/do3/FDF/index.html>

DEORBIT PREP**GENERIC, REV P (Apr 15, 2007)****PCN-4 (Nov 2, 2007) Sheet 1 of 1**

List of Implemented Change Requests (482s):

MULTI-1809

Incorporate the following:

1. Replace iii and iv
2. Delete TEMP 1-11 thru TEMP 1-14
3. Replace 2-5 and 2-6
4. Replace (OV103) A3-25 and (OV103) A3-26, (OV104) B3-25 and (OV104) B3-26, (OV105) C3-25 and (OV105) C3-26

NOTE

For STS-122 and subsequent flights

Prepared by: _____
Publication Manager

Approved by: _____
Manager, Shuttle Procedures Management

Accepted by: _____
FDF Manager

Encl: 10 pages

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

DEORBIT PREP

GENERIC, REV P (Apr 15, 2007)

PCN-3 (Sept 17, 2007) Sheet 1 of 1

List of Implemented Change Requests (482s):

D/O-0853 MULTI-1801

Incorporate the following:

1. Replace iii and iv
2. Replace 1-29 and 1-30
3. Replace 2-15 and 2-16
4. Replace (OV103) A3-29 and (OV103) A3-30, (OV105) C3-29 and (OV105) C3-30

NOTE

For STS-120 and subsequent flights

Prepared by: Andrea Blaylock
Publication Manager

Approved by: Timberly Johnson
Manager, Shuttle Procedures Management

Accepted by: Michael E. Shaw
FDF Manager

Encl: 10 pages

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DEORBIT PREP

GENERIC, REV P (Apr 15, 2007)

PCN-2 (Sep 7, 2007) Sheet 1 of 1

List of Implemented Change Requests (482s):

D/O-852

MULTI-1793C (R)

R – Remainder

NOTE

For STS-120 and subsequent flights

Incorporate the following:

1. Replace iii thru vi
2. Replace 1-31 and 1-32
3. Replace 2-17 and 2-18
4. Replace (OV105) C3-9 and (OV105) C3-10
5. Replace CC 8-3 thru 8-6 (4 pages)

Prepared by:


Publication Manager

Approved by:


Manager, Shuttle Procedures Management

Accepted by:


FDF Manager

Encl: 14 pages

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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

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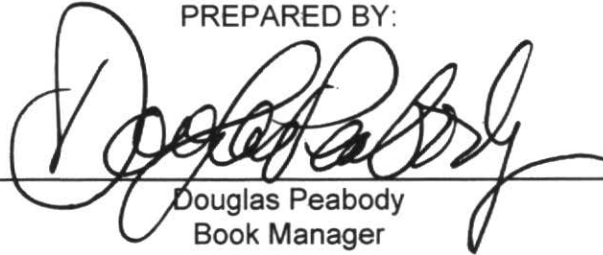
MISSION OPERATIONS DIRECTORATE

DEORBIT PREP

GENERIC, REVISION P

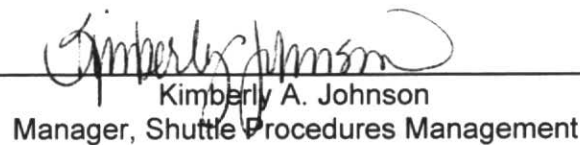
April 16, 2007

PREPARED BY:



Douglas Peabody
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APPROVED BY:



Kimberly A. Johnson
Manager, Shuttle Procedures Management

ACCEPTED BY:



Michael T. Hurt
FDF 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
PCN-2	09/07/07
PCN-3	09/17/07
PCN-4	11/02/07

Sign Off	*	ALL/GEN P	1-29	†	ALL/GEN P
ii	*	ALL/GEN P	1-30	†	ALL/GEN P,3
iii	*	ALL/GEN P,4	1-31		ALL/GEN P,1
iv	*	ALL/GEN P,4	1-32		ALL/GEN P,2
v	*	ALL/GEN P,2	2-1		ALL/GEN P
vi	*	ALL/GEN P	2-2		ALL/GEN P
vii		ALL/GEN P	2-3		ALL/GEN P
viii		ALL/GEN P	2-4		ALL/GEN P
1-1		ALL/GEN P	2-5		ALL/GEN P,4
1-2		ALL/GEN P	2-6		ALL/GEN P
1-3		ALL/GEN P	2-7		ALL/GEN P
1-4		ALL/GEN P	2-8		ALL/GEN P
1-5		ALL/GEN P	2-9		ALL/GEN P
1-6		ALL/GEN P	2-10		ALL/GEN P
1-7		ALL/GEN P	2-11		ALL/GEN P
1-8		ALL/GEN P	2-12		ALL/GEN P
1-9		ALL/GEN P	2-13		ALL/GEN P
1-10		ALL/GEN P	2-14		ALL/GEN P
1-11		ALL/GEN P	2-15	†	ALL/GEN P,3
1-12		ALL/GEN P	2-16	†	ALL/GEN P
1-13		ALL/GEN P	2-17		ALL/GEN P
1-14		ALL/GEN P	2-18		ALL/GEN P,2
TEMP 1-11		deleted	3-1		ALL/GEN P
TEMP 1-12		deleted	3-2		ALL/GEN P
TEMP 1-13		deleted	(OV103) A3-3		3/GEN P
TEMP 1-14		deleted	(OV103) A3-4		3/GEN P
1-15		ALL/GEN P	(OV103) A3-5		3/GEN P
1-16		ALL/GEN P	(OV103) A3-6		3/GEN P
A1-17		OI-30/GEN P,1	(OV103) A3-7		3/GEN P
A1-18		ALL/GEN P,1	(OV103) A3-8		ALL/GEN P
B1-17		OI-32/GEN P,1	(OV103) A3-9	‡	3/GEN P
B1-18		ALL/GEN P,1	(OV103) A3-10	‡	3/GEN P,1
1-19		ALL/GEN P	(OV103) A3-11	‡	3/GEN P
1-20		ALL/GEN P	(OV103) A3-12	‡	3/GEN P
1-21		ALL/GEN P	(OV103) A3-13		3/GEN P
1-22		ALL/GEN P	(OV103) A3-14		ALL/GEN P
1-23		ALL/GEN P	(OV103) A3-15		3/GEN P
1-24		ALL/GEN P	(OV103) A3-16		3/GEN P
1-25		ALL/GEN P	(OV103) A3-17		3/GEN P
1-26		ALL/GEN P	(OV103) A3-18		3/GEN P
1-27		ALL/GEN P	(OV103) A3-19		3/GEN P
1-28		ALL/GEN P	(OV103) A3-20		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) A3-21	ALL/GEN P	(OV105) C3-13	5/GEN P
(OV103) A3-22	3/GEN P	(OV105) C3-14	ALL/GEN P
(OV103) A3-23	3/GEN P	(OV105) C3-15	5/GEN P
(OV103) A3-24	3/GEN P	(OV105) C3-16	5/GEN P
(OV103) A3-25	3/GEN P,4	(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,3	(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,4
(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,3
(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,4	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,2
(OV105) C3-4	5/GEN P	CC 8-4	* ALL/GEN P
(OV105) C3-5	5/GEN P	CC 8-5	* ALL/GEN P,2
(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,2		
(OV105) C3-10	‡ 5/GEN P,1		
(OV105) C3-11	‡ 5/GEN P		
(OV105) C3-12	‡ 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/D
MS MIDDECK BACKOUT ACTIVITIES (Front).....	CC 8-4	D/O-2a/E/C
(Back).....	CC 8-5	D/O-2b/E/E

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<u>CONTENTS</u>	<u>PAGE</u>
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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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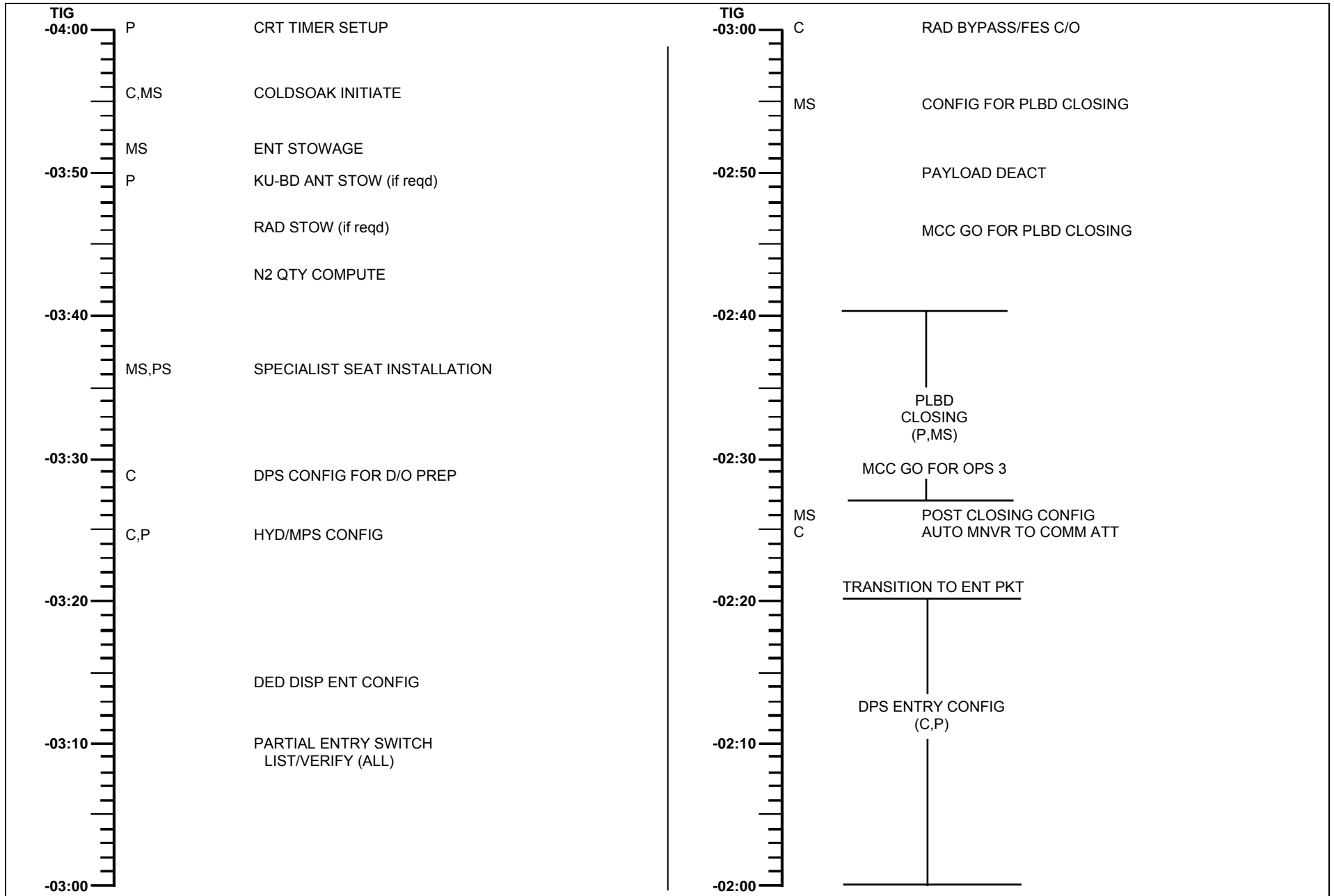
NOMINAL DEORBIT PREP OVERVIEW OF CONFIGURATION MANAGEMENT

DPS	OPS 1 ASC C/L					OPS 2 ON-ORBIT					OPS 2 DEORBIT PREP TIG -03:28					OPS 3 DEORBIT PREP TIG -02:20					SEAT INGRESS TIG -01:00					EI-5	V=15K																												
GPC OPS	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5																														
POWER OUTPUT MODE	G1	G1	G1	G1	BFS	G2	G2	G2F	SM	BFS	G2	G2	G2F	SM	BFS	G3	G3	G3	G3	BFS	G3	G3	G3	G3	BFS																														
	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	N	N	N	N	B	N	N	N	T	N	N	N	N	T	N	N	N	N	N	B	N	N	N	N	B
	R	R	R	R	R	R	R	H	R	H	R	R	H	R	S	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R															
CONFIG GPC	1 1 2 3 4 0					2 1 2 0 0 0					4 (5) 0 0 0 4 0					2 1 2 0 0 0					4 (5) 0 0 0 4 0					3 1 2 3 4 0					3 1 2 3 4 0																								
STR	1	1				1	0				1	0				1	0				1	0				1	0				1	2				1	2				1	2				1	2								
PL	1/2	1				0	4				0	4				0	4				0	4				0	4				1					1					1					1									
CRT	1	1				1	4				1	4				1	4				1	4				1	4				1	2				1	2				1	2				1	2								
L	1	1				0	4				0	4				0	4				0	4				0	4				0	0				0	0				0	0				0	0								
MM	1	1				1	4				1	4				1	4				1	4				1	4				1	2				1	2				1	2													
MDM	ALL ON					ALL ON					ALL ON					ALL ON					ALL ON																																		
D & C	DDU MDU IDP/CRT		L,R ALL FWD-ON 1,2,3,4			OFF CRT 1,2,4-ON 1,2,4-ON					L,R					ALL FWD-ON 1,2,3,4-ON																																							
E C L S	AV BAY FAN CABIN FAN IMU FAN WATER LP FREON LP RADIATOR		1-B,2-A,3-B A B 1-OFF,2-ON 1-B,2-B Stow			1-GPC,2-ON					1-OFF,2-ON																																												
F C S / N E A V A O I D S	FCS ASA ACCEL RGA ADTA IMU RA TACAN# GPS* UHF MLS		AUTO ALL ON ALL ON ALL ON ALL ON ALL ON ALL ON ALL ON ALL OFF			OFF OFF OFF OFF OFF OFF 2-ON, 1,3 OFF					ALL ON ALL ON ALL ON ALL ON ALL ON ALL ON																																												
R J D	RJDA RJDF VERNIER		ALL ON ALL ON OFF			ON															OFF																																		

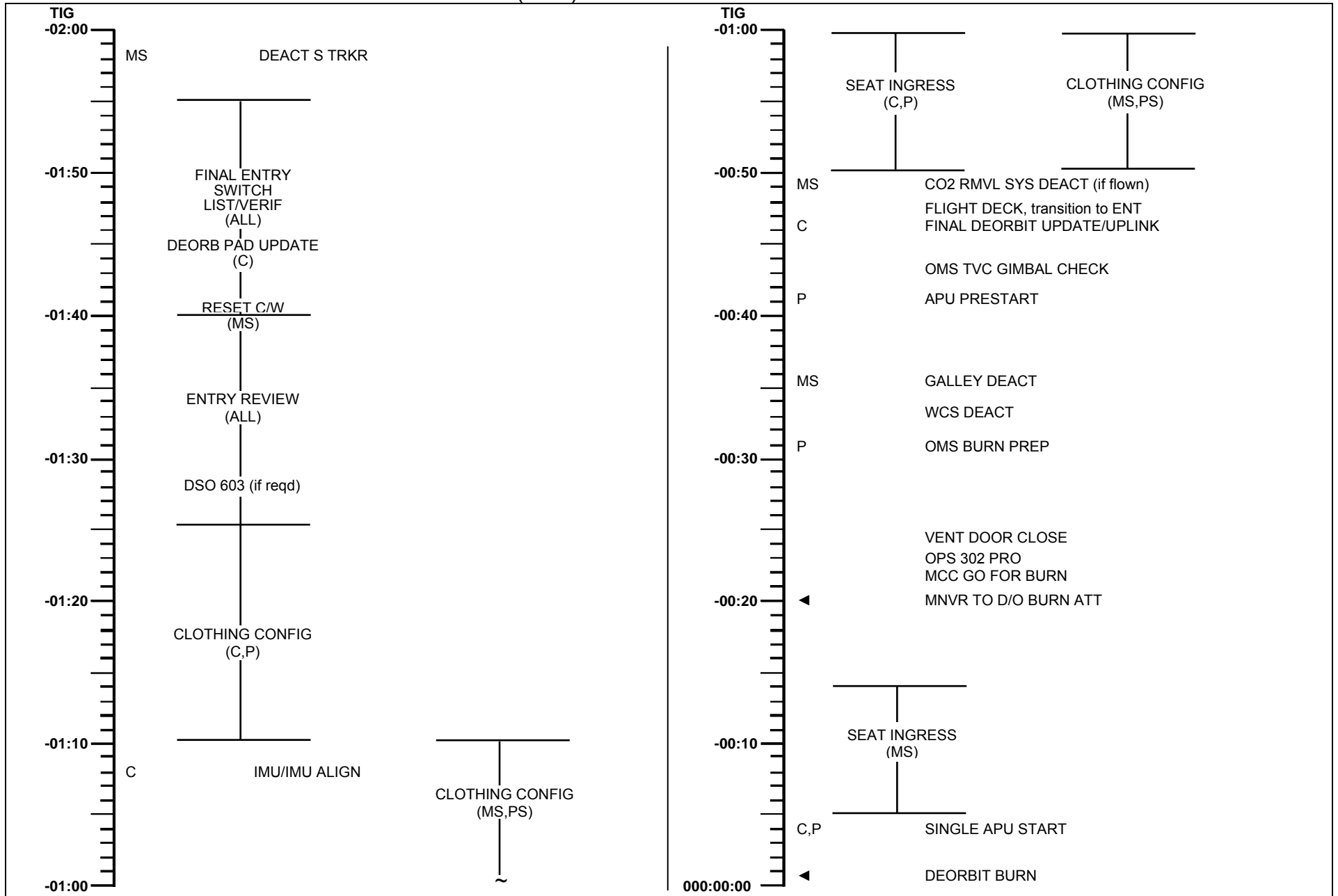
#TACAN not available on OV105

*Three-string GPS available only on OV105

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)

	1: GNC UNIV PTG	2: SM SYS SUMM 1	
<p>TIG -04:00 A5(B1) AUTO VERN RT 0.2 DB 1.0</p>	P		<u>CRT TIMER SETUP</u> [1]
-03:55	C,MS		<u>COLDSOAK INITIATE</u> [2]
			Verify in ATT: DAP: A5/AUTO/VERN(ALT) If no FWD RCS: √A6/AUTO/ALT √DAP: B set to B1
-03:50	MS		<u>ENT STOWAGE</u> [3], 1-31 <u>ENT AIRLOCK CONFIG</u> [3A], 1-32
-03:45	P		KU-BD ANT STOW, if deployed (ORB OPS, <u>COMM/INST</u>)
			RAD STOW, if reqd (ORB OPS, <u>ECLS</u>)
-03:40	S66		<u>N2 QTY COMPUTE</u> Add N2 QTY 1 + 2 Then annotate CABIN PRESS LEAK NOMOGRAPH (ENT PKT, <u>ECLS</u>)
	S68, 168		<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>)
-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 **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**

HYD/MPS CONFIG **5**, 1-8

-03:20

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

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

-03:10 C
P
MS

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

-03:05

-03:00

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

ACTIVATE GPC 2 (if in HALT)
Remove and stow GPC Mode Switch Guard

P/I Locker

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

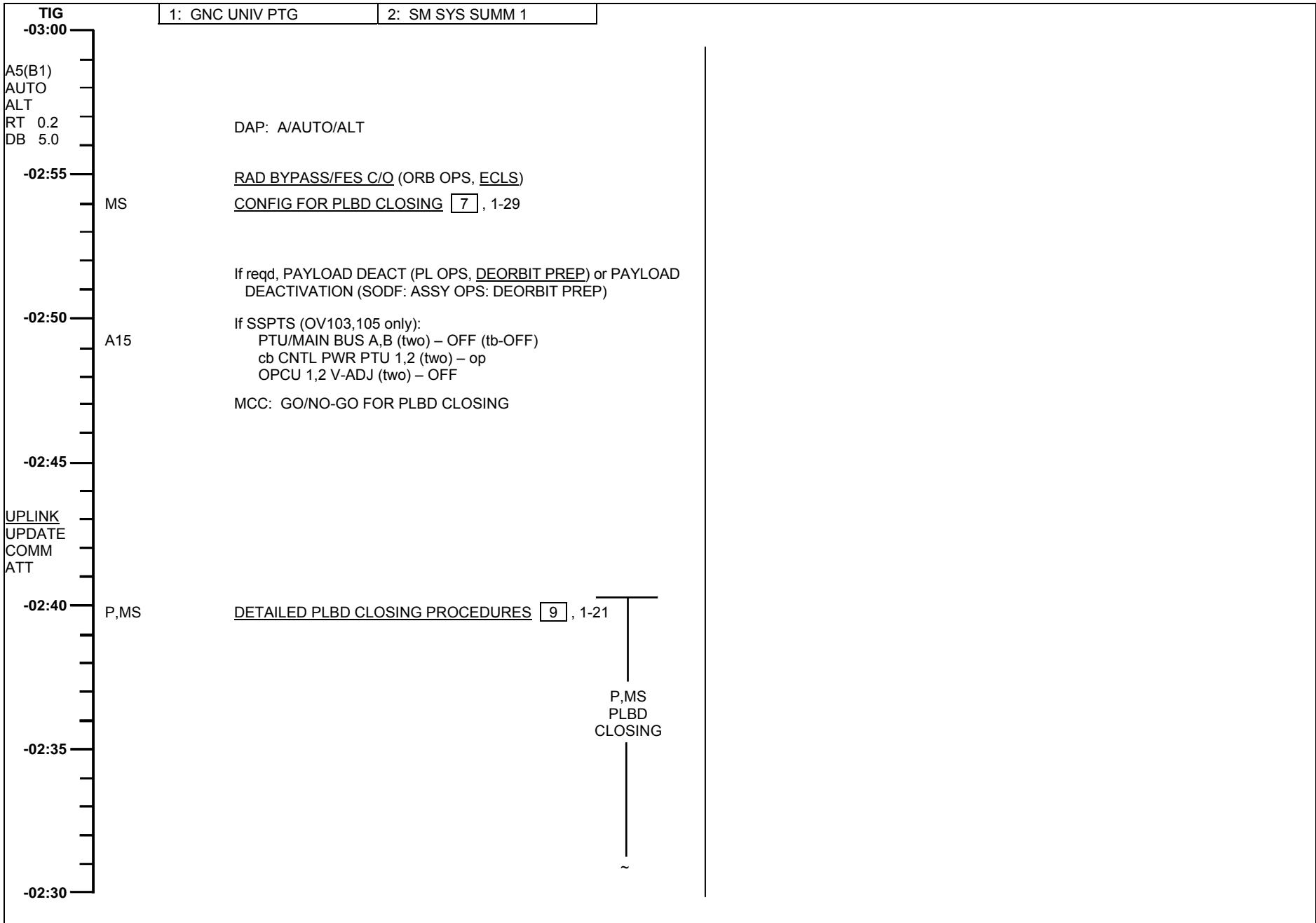
ENSURE BFS GPC CAN COMMAND AN IDP **4b**

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 *

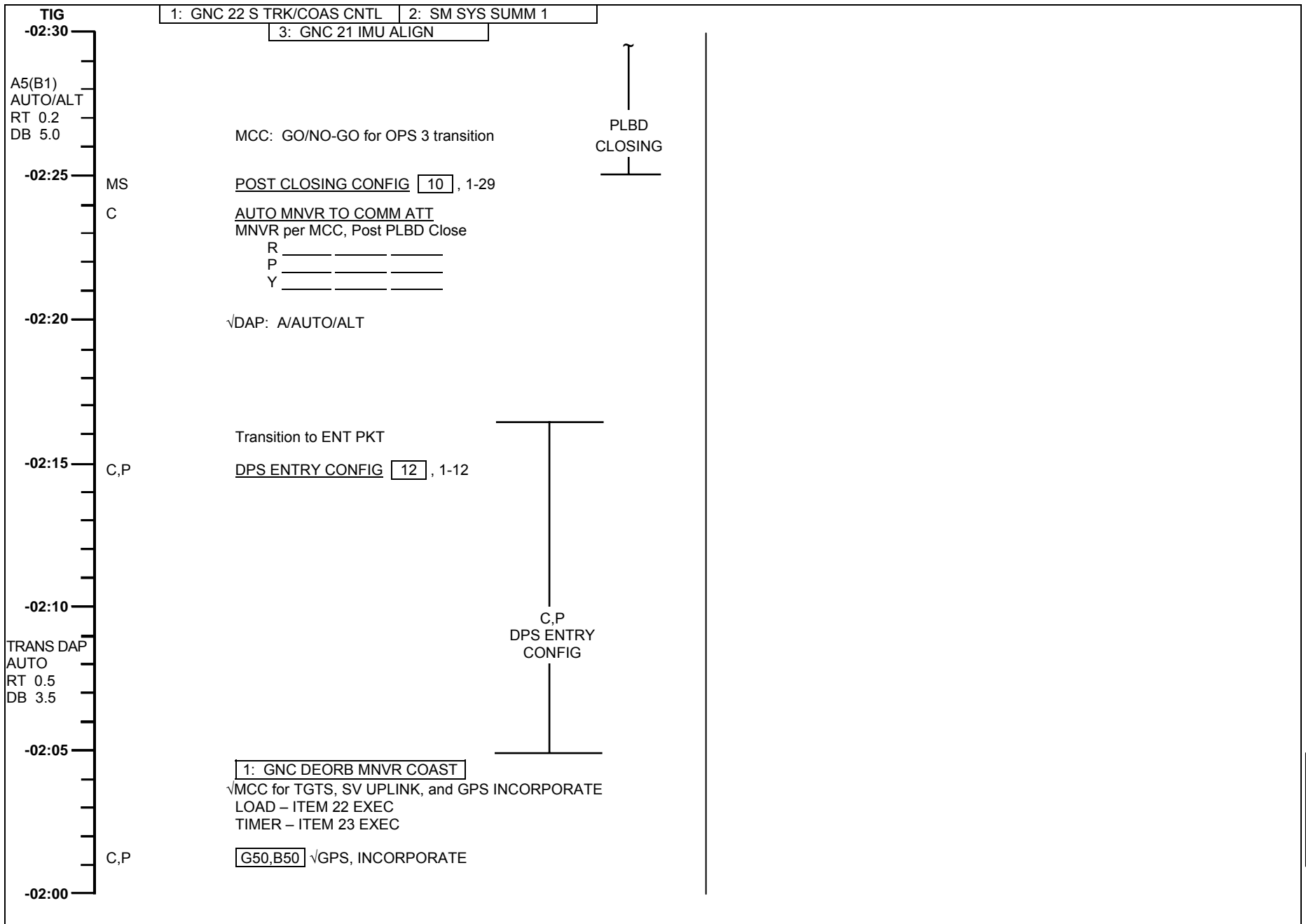
√Att mnvr complete
 √RGA,AA,ASA,IMU (all) – ON

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
CRT3	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

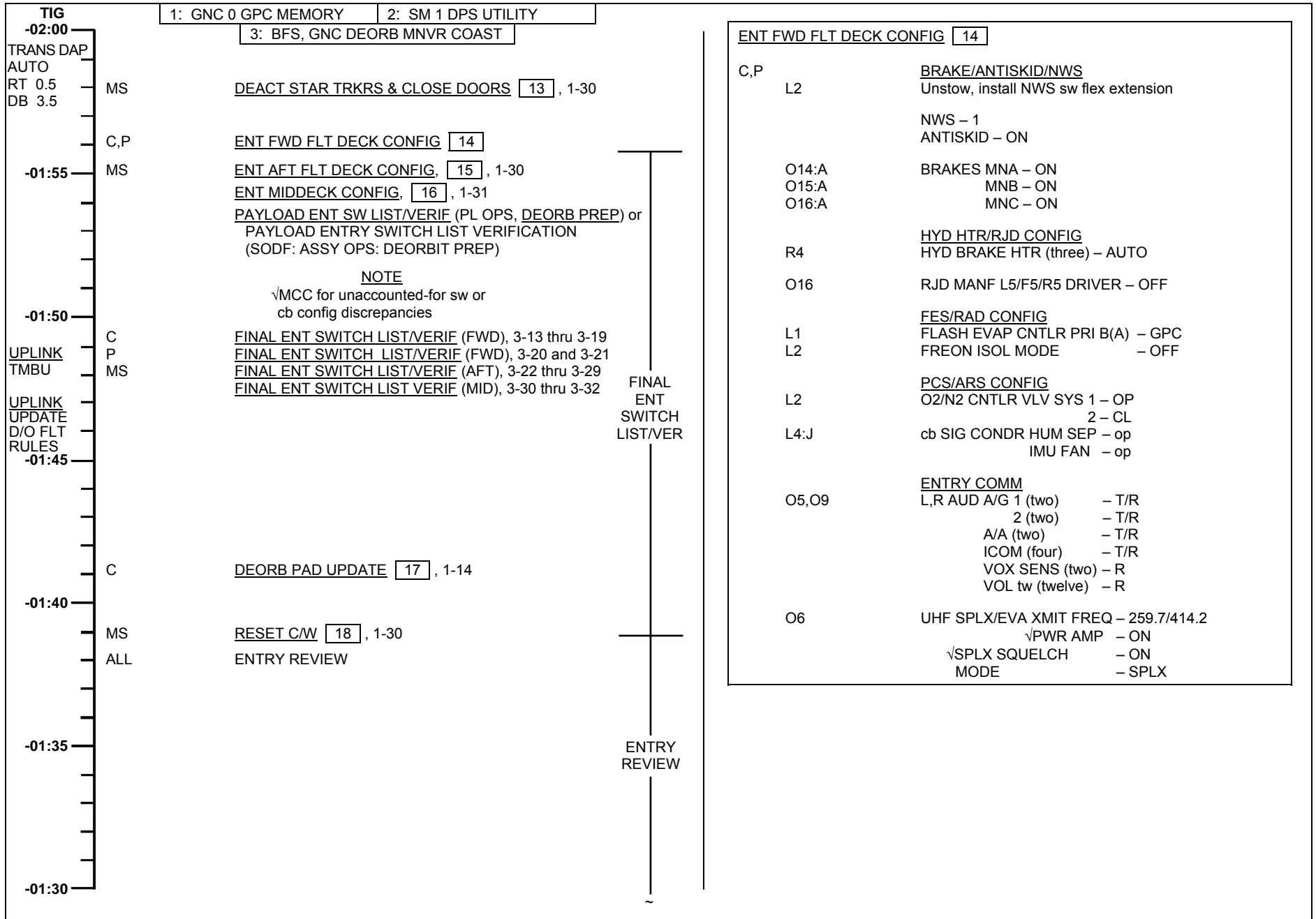
√PASS and BFS TGT per DEORBIT MNVR PAD (ENT, MNVR PADS)

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

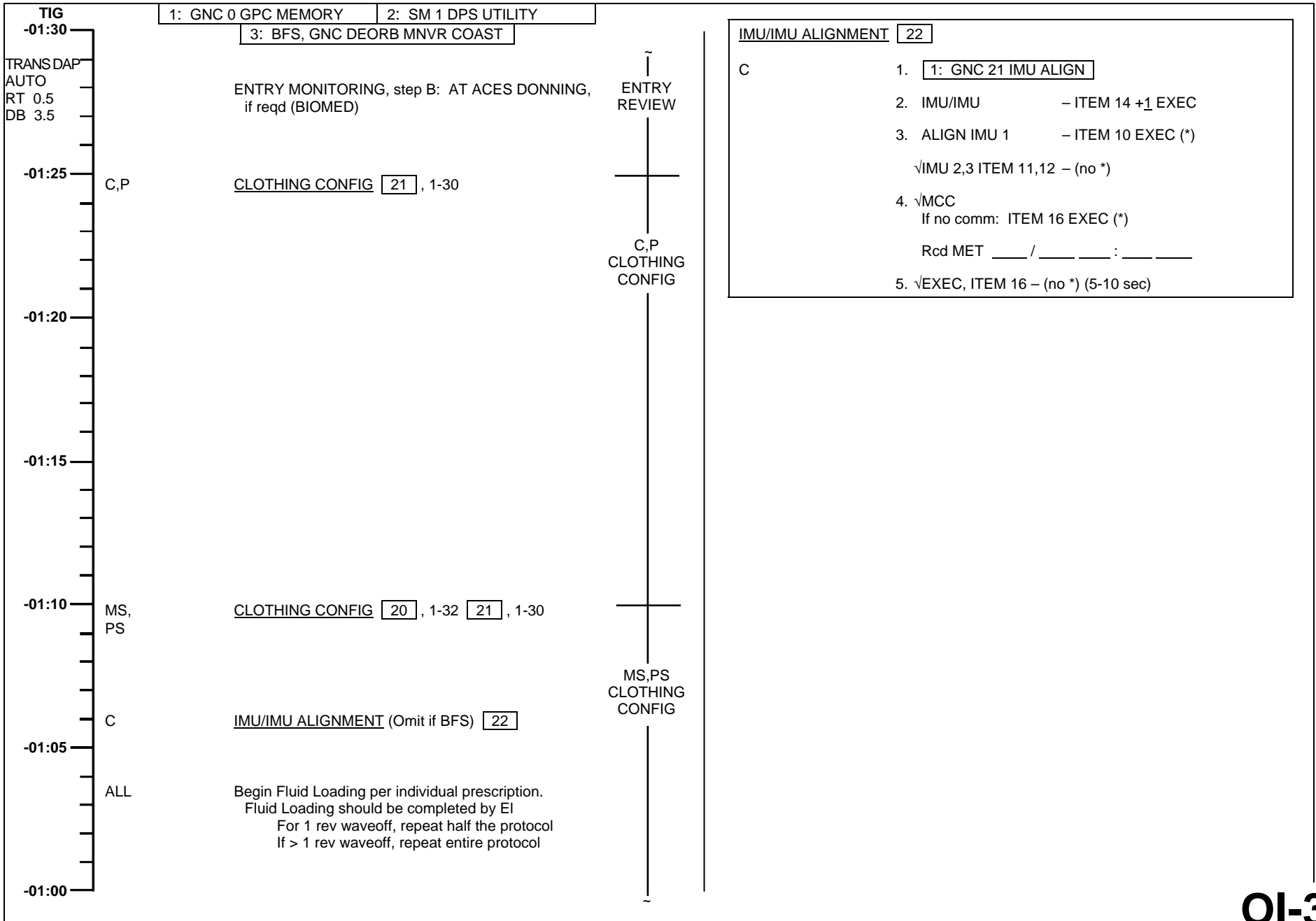
BURN ATT, HA HP

Δ VTOT

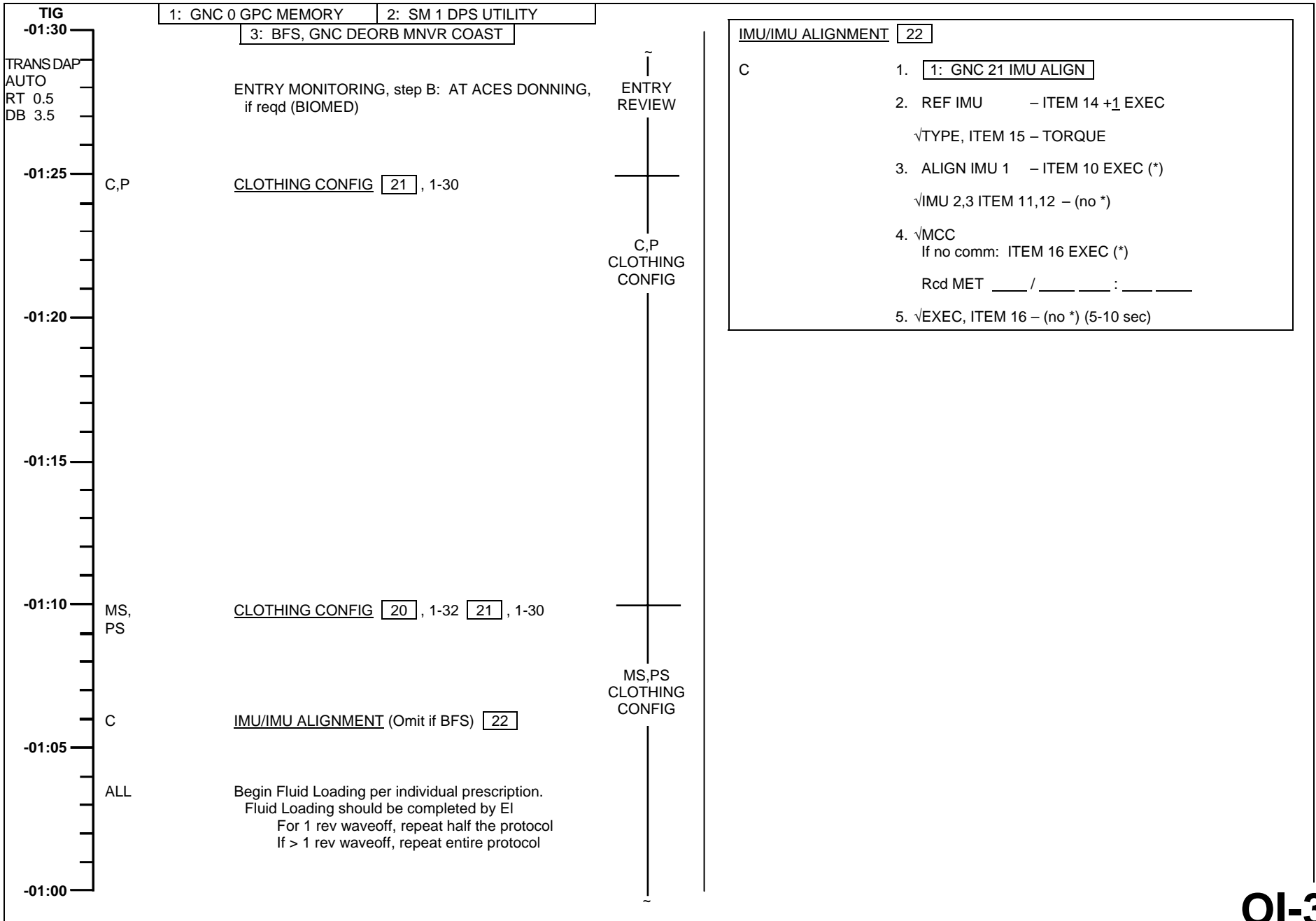
TGO



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

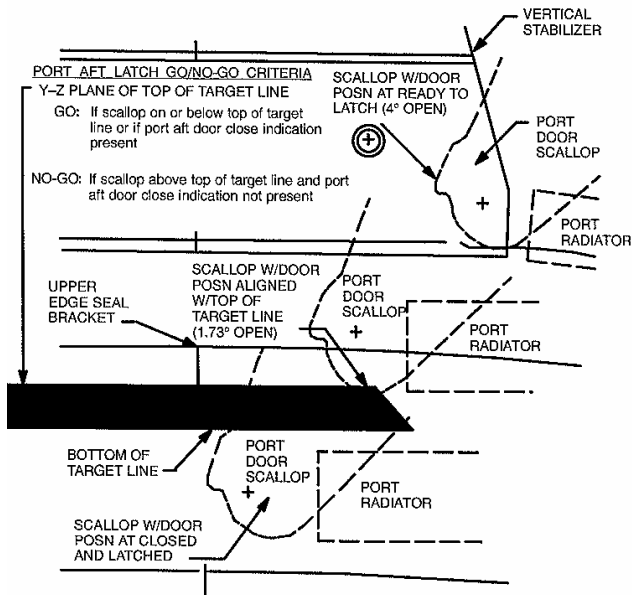
- CRT4 1. SM, OPS 202 PRO or BFS, SM 63 PL BAY DOORS
- 4: SM PL BAY DOORS
- R13L √PL BAY DR – STOP
- CRT4 √PBD SW – STOP
- √MAN SEL (ten) – (no *)
- √PBD SW BYPASS – (no*)
2. AC POWER ON – ITEM 1 EXEC (*)
3. AUTO MODE SEL – ITEM 3 EXEC (*)
- R13L 4. PL BAY DR SYS (two) – ENA
- CRT4 √OP/CL STATUS (ten)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

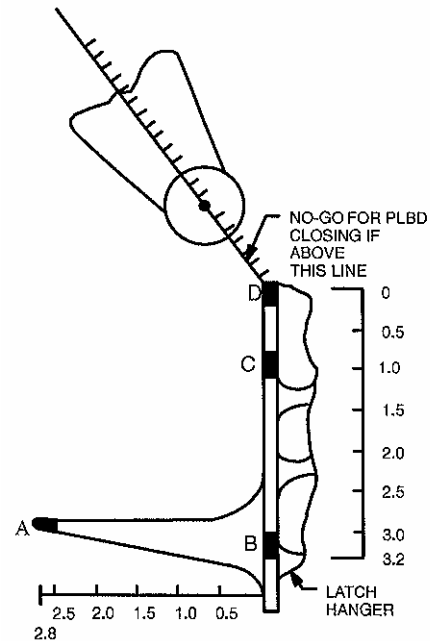
AUTO PLBD CLOSING (Cont)

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

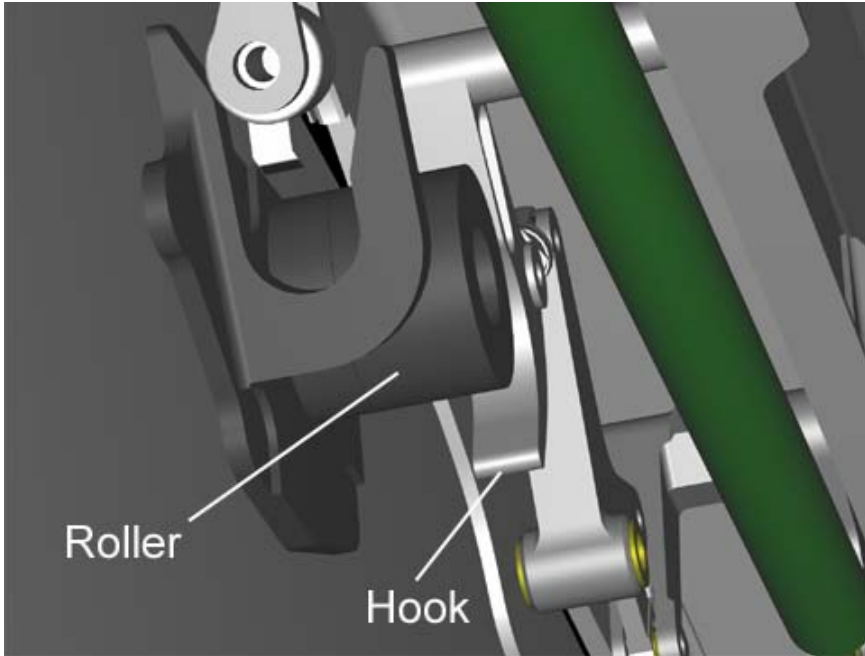


Figure 1-1.- Latch hook/roller #3 typical view from PLB camera

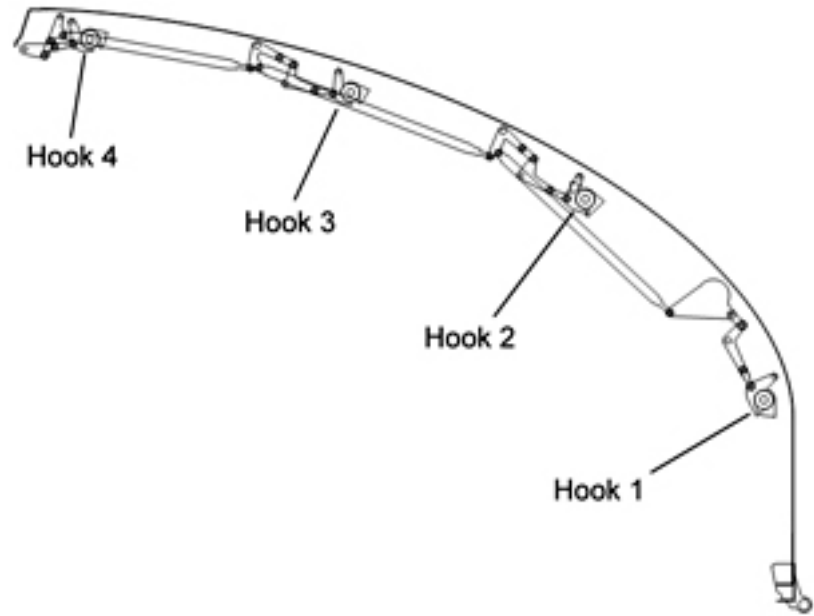


Figure 1-2.- Typical latch hook/roller numbering

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)

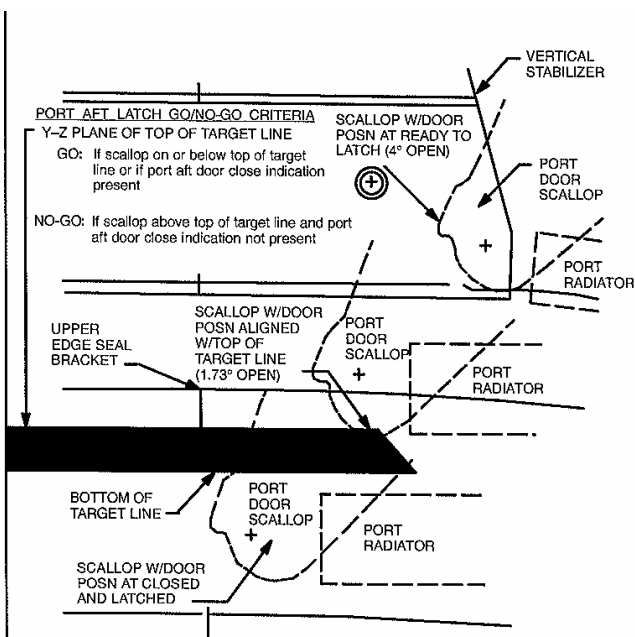
CONFIGURE FOR MANUAL MODE

- 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
11. Select STBD DOOR – ITEM 10 EXEC (*)
- R13L 12. PL BAY DR – CL
- CRT4 √STBD DOOR – blank
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 *
14. 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 *
- * (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
20. Select CENTER LATCHES 1-4,13-16 – ITEM 6,7 EXEC (*)
- R13L 21. PL BAY DR – CL
- CRT4 √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

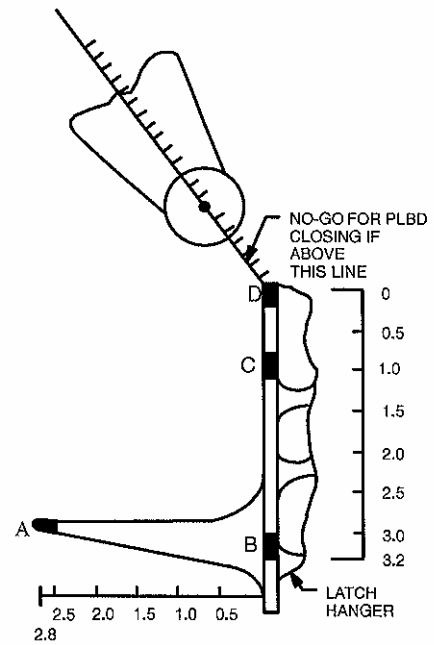
MANUAL PLBD CLOSING (Cont)

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	
	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

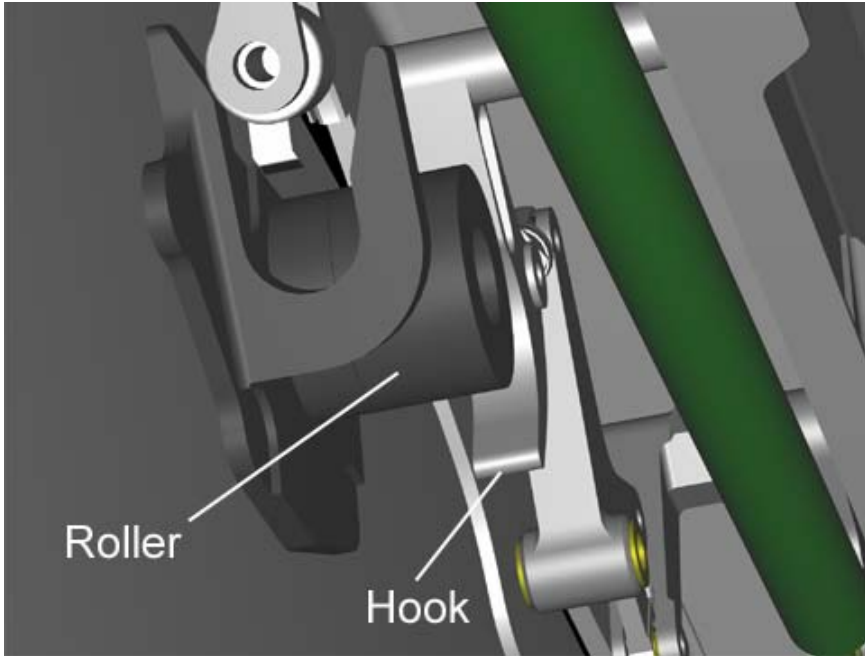


Figure 1-3.- Latch hook/roller #3 typical view from PLB camera

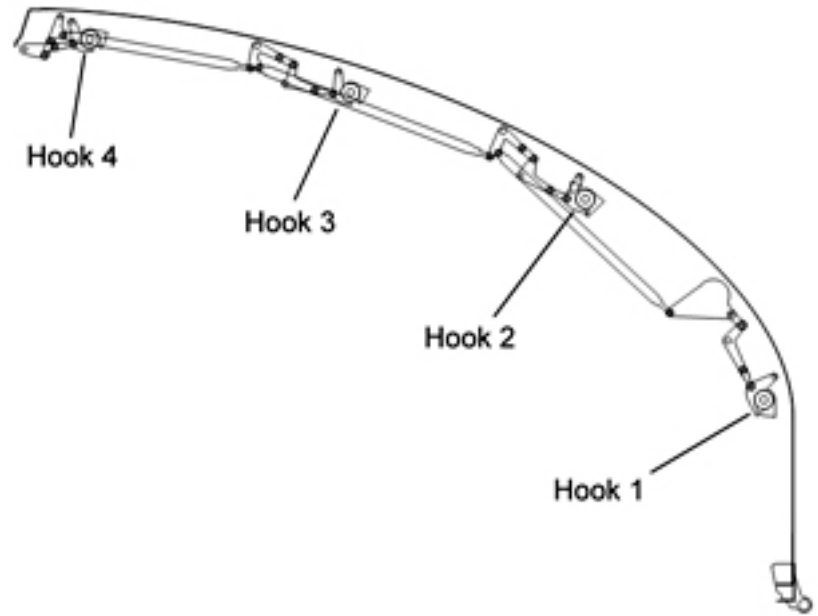


Figure 1-4.- Typical latch hook/roller numbering

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 & 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
	<u>NOTE</u> 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
	<u>NOTE</u> 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 Hē 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
- 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, 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	<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 ΦA – op B/U ΦA – op <u>AC UTILITY OUTLET</u> cb AC1 MAR 3Φ – 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;">NOTE</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. Disconnect bypass duct from middeck floor air fitting and strap to Tunnel Extension wall |
| 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 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,
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 25

- | | |
|-------|--|
| 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 27

- | | |
|------------------|--|
| 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 lts as reqd |

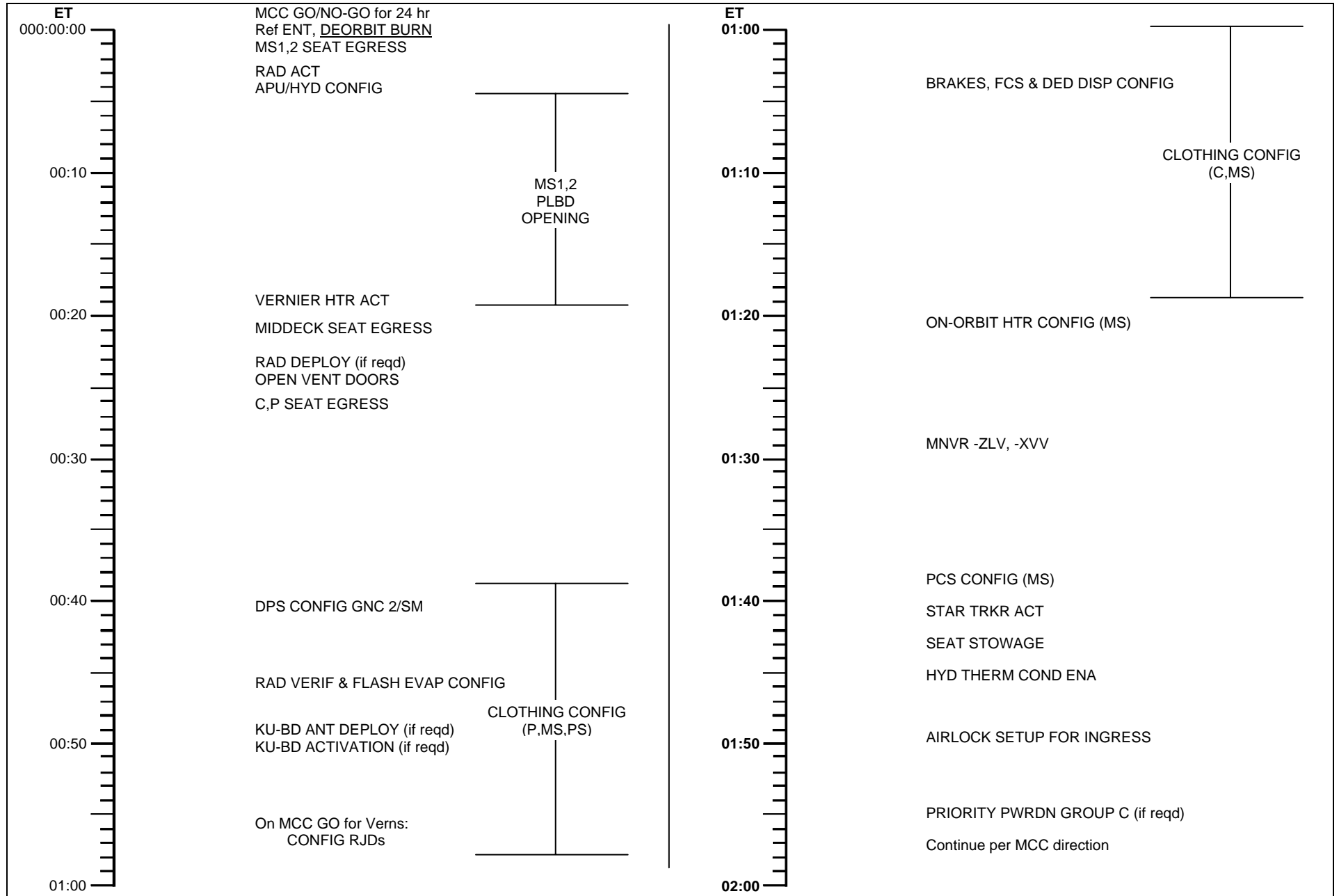
MD AUD SPKR CONFIG 29

- | | |
|----------------|---|
| 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 |
|----------------|---|

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		RAD ACT [2]
		P		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
			O6	L,R AUD A/G 2 (two) – RCV XMIT/ICOM MODE – PTT/VOX (recommended) 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		C,P		VENT DOOR CNTL OPEN – ITEM 43 EXEC (*) Unstow/install HUD covers (two) SEAT EGRESS
00:30		MS		PDF/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

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

C2 BFS, MSG RESET (√BFC It off)

CRT

GNC, GPC/CRT 04 EXEC

If single G2 GPC ops:

CRTX

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

O6

GPC MODE 3 – STBY (tb-bp)

– HALT (tb-bp)

– STBY (tb-RUN)

– HALT (tb-bp)

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 →

CRTX

SM, OPS 201(401) PRO

X: SM ANTENNA

DAP: B/AUTO/PRI

SM 1 DPS UTILITY

UL CNTL AUTO – ITEM 35 EXEC

	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			
MS,PS			
00:40			
C			
(A1) B1			
AUTO/PRI			
RT 0.5			
DB 3.0			
00:45			
P			
MS			
00:50			
C			
MS			
C,P			
00:55			
A1 (B1)			
AUTO			
VERN			
RT 0.2			
DB 1.0			
01:00			

CLOTHING CONFIG 9, 2-6

CLOTHING CONFIG 10, 2-15

If reqd, PAYLOAD REACT (PL OPS, DEORB PREP) or PAYLOAD REACTIVATION (SODF: ASSY OPS: DEORBIT PREP)

DPS CONFIG TO GNC2/SM 11, 2-6 and 2-7

RAD VERIF & FLASH EVAP CONFIG 12

RMS PNL LT, TEMP MON, HTR ACT, OBSS.

C/W 13, 2-16

KU-BD ANT DEPLOY, if reqd (ORB OPS, COMM/INST)

KU-BD ACTIVATION, if reqd (ORB OPS, COMM/INST)

MIDDECK CONFIG 14, 2-17 and 2-18

If MCC GO for use of verniers:

CONFIG RJDs

O16:F RJD MANF L5/F5/R5 DRIVER – ON, wait 5 sec

DAP: A/AUTO/VERN

Else, load DAP A5 (Nose and Tail) or A6 (Tail)

GNC 20 DAP CONFIG

ITEM 10 +0.1 EXEC

11 +1 0 EXEC

22 +1 EXEC

DAP: A/AUTO/ALT

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 2: SM 88 APU/ENVIRON THERM

√RAD BYP VLV tb (two) – RAD FLOW

CRT2 When FREON LOOP RAD OUT T < 60 degF:

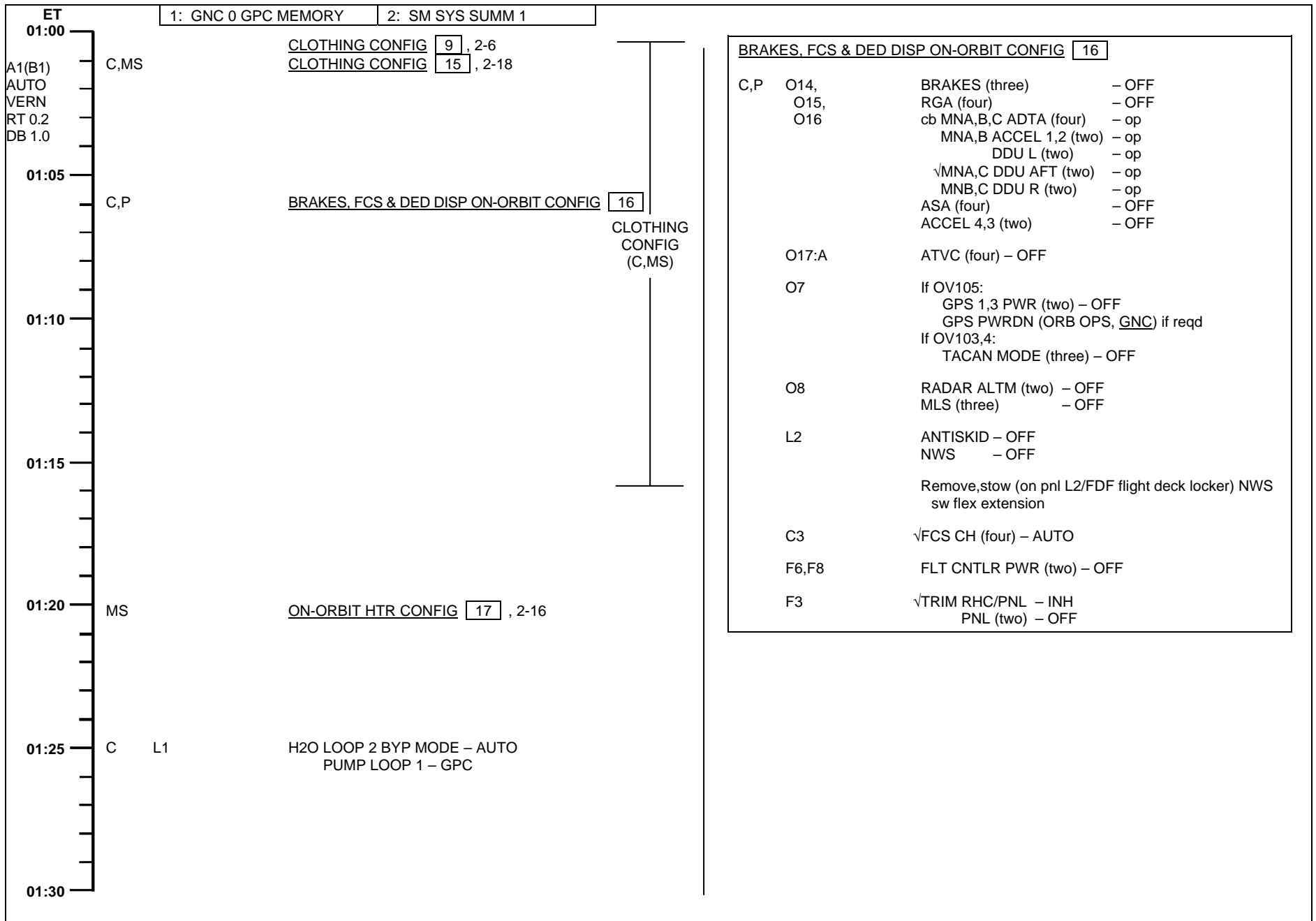
L1 HI LOAD EVAP – OFF

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> [19], 2-18 <u>STAR TRKR ACT</u> [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> [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> [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 > 24 sec:</u> STAR TRKR DR CNTL SYS (two) – OFF
	[X: GNC 22 S TRK/COAS CNTL]
	S TRK -Y,-Z: STAR TRK – ITEM 3,4 (*)
	[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 | <ul style="list-style-type: none"> * If no motion determined visually or 'OP/CL' * * not blank within 10 sec after cmd: * * PL BAY DR – STOP * * Go to MAL, <u>MECH</u>, 9.1a * * If Latch not 'OP' in single-motor time: * * PL BAY DR – STOP * * Go to MAL, <u>MECH</u>, 9.1d * * If door motion stops and not 'OP': * * PL BAY DR – STOP * * Go to MAL, <u>MECH</u>, 9.1f * |
| O6 | <ul style="list-style-type: none"> * 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 | <ul style="list-style-type: none"> * If SM GPC fails during this operation: * * PL BAY DR SYS (two) – DSBL * * DR – STOP * * Go to PASS SM GPC FAIL (ORB PKT, <u>DPS</u>) * |

NOTE

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

AUTO PLBD OPENING PROCEDURE

- | | |
|----------------|--|
| MS CRTX | <ol style="list-style-type: none"> 1. SM, OPS 202 PRO or BFS, SM 63 PL BAY DOORS
X: SM PL BAY DOORS |
| R13L CRTX | <ul style="list-style-type: none"> √PL BAY DR – STOP √PBD SW – STOP √MAN SEL (ten) – (no *) √PBD SW BYPASS – (no *) |
| R13L CRTX | <ol style="list-style-type: none"> 2. AC POWER ON – ITEM 1 EXEC (*) √AUTO MODE SEL – (no *) |
| R13L CRTX | <ol style="list-style-type: none"> 3. PL BAY DR SYS (two) – ENA √OP/CL STATUS (ten) – CL √AOS |
| R13L CRTX R13L | <p><u>OPEN C/L LATCHES 5-8 (MANUAL MODE)</u></p> <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 9. PL BAY DR – STOP |
| R13L CRTX | <p><u>POST-PLBD OPENING CLEANUP</u></p> <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 13. After floodlights ON > 10 min:
PL BAY FLOOD (all) – OFF |

MANUAL PLBD OPENING PROCEDURE

- | | |
|---------------------|--|
| MS CRTX | <ol style="list-style-type: none"> 1. SM, OPS 202 PRO or BFS, SM 63 PL BAY DOORS
X: SM PL BAY DOORS |
| R13L CRTX | <ul style="list-style-type: none"> √PL BAY DR – STOP √PBD SW – STOP √MAN SEL (ten) – (no *) √PBD SW BYPASS – (no *) |
| R13L CRTX | <ol style="list-style-type: none"> 2. AC POWER ON – ITEM 1 EXEC (*) √AUTO MODE SEL – (no *) |
| R13L CRTX | <ol style="list-style-type: none"> 3. PL BAY DR SYS (two) – ENA √OP/CL STATUS (ten) – CL √AOS |
| R13L CRTX R13L CRTX | <p><u>OPEN C/L LATCHES</u></p> <ol style="list-style-type: none"> 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 7. Deselect CENTER LATCHES 5-8 – ITEM 4 EXEC (no *) 8. Select CENTER LATCHES 9-12 – ITEM 5 EXEC (*) 9. PL BAY DR – OP √CENTER LATCHES 9-12 – blank, OP (~20 sec) 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 (*) 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 24. 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
	NOTE 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>)
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> 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 *

<u>MIDDECK CONFIG</u> 14	
ML86B:A	<u>GALLEY ACTIVATION</u> cb MNC SPLY H2O GALLEY SPLY – cl :B cb MNA GALLEY OVEN – cl cb MNB GALLEY H2O HTR – cl
R11L:G	√SPLY H2O GALLEY SPLY VLV – OP (tb-OP)
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)

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. √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

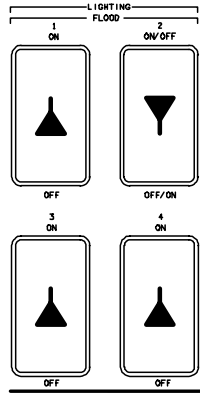
MA73C.....	3-31
MO10W.....	3-32
WCS.....	3-32
EDO WCS.....	3-32

<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	

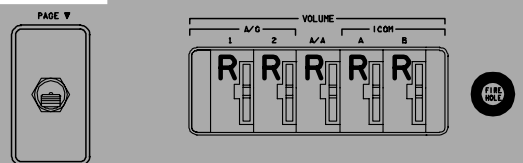
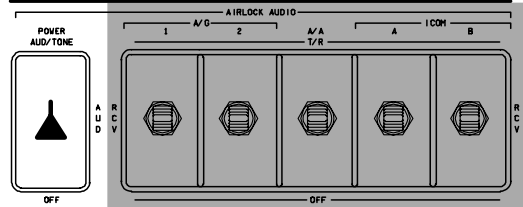
<u>CIRCUIT BREAKER SNAP RING COLOR CODES</u>	
<u>COLOR</u>	<u>CONFIGURATION</u>
Red	Open at all times
Green	Open on orbit only
Yellow	Open ascent, close per procedure
Orange	Open orbit through entry
Blank (no ring)	Always closed or as reqd

OV103

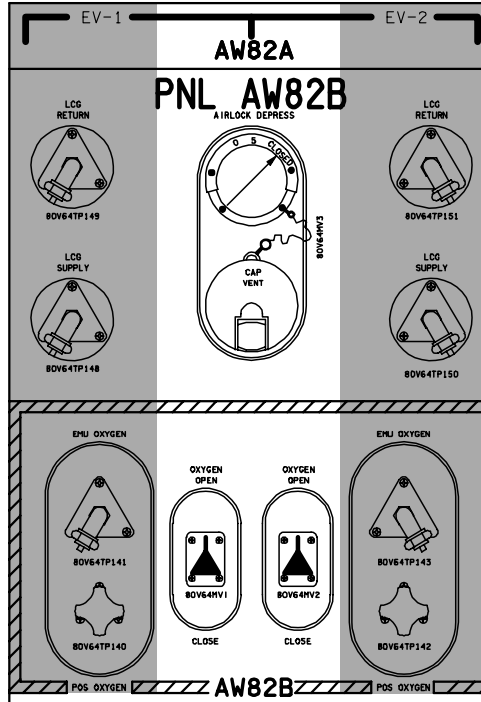
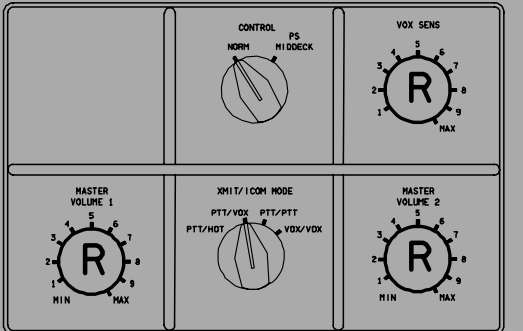
PNL AW18A



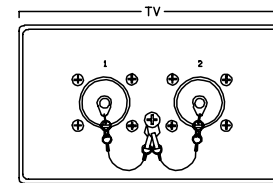
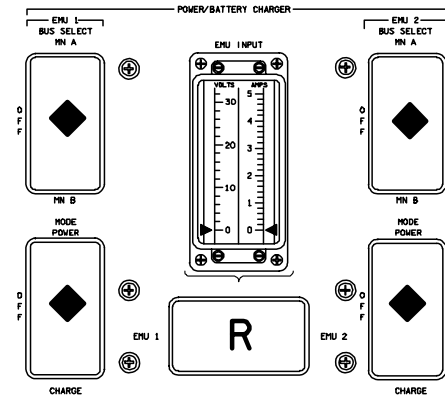
AW18A



PNL AW18D

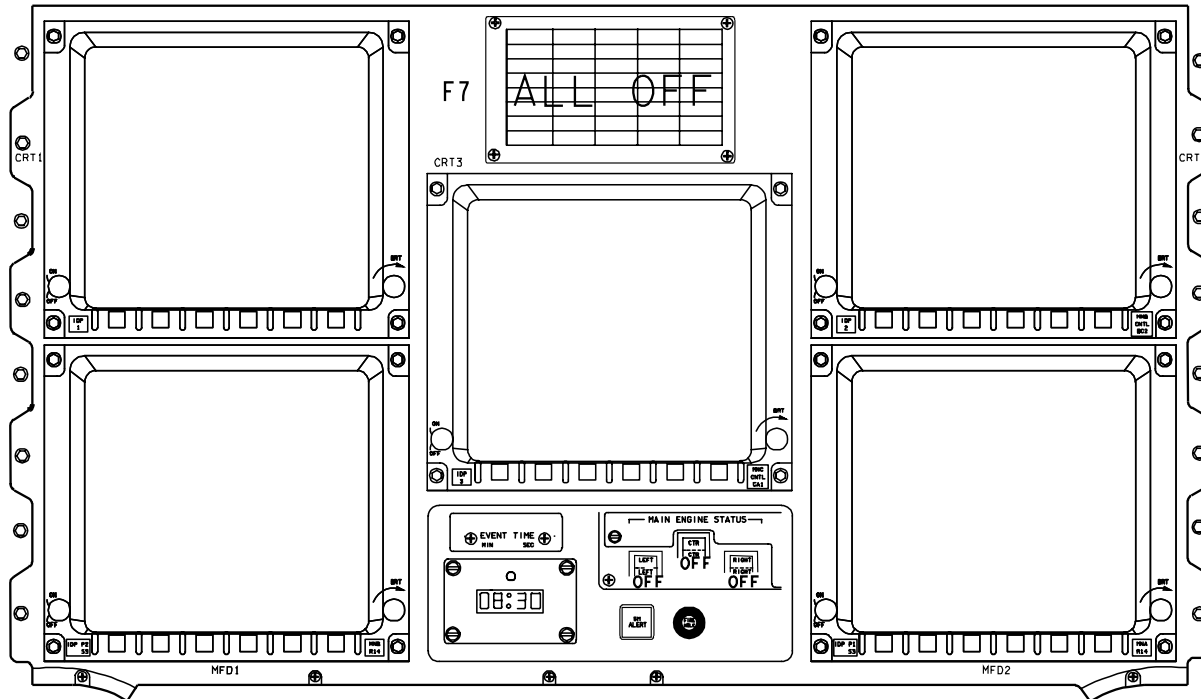
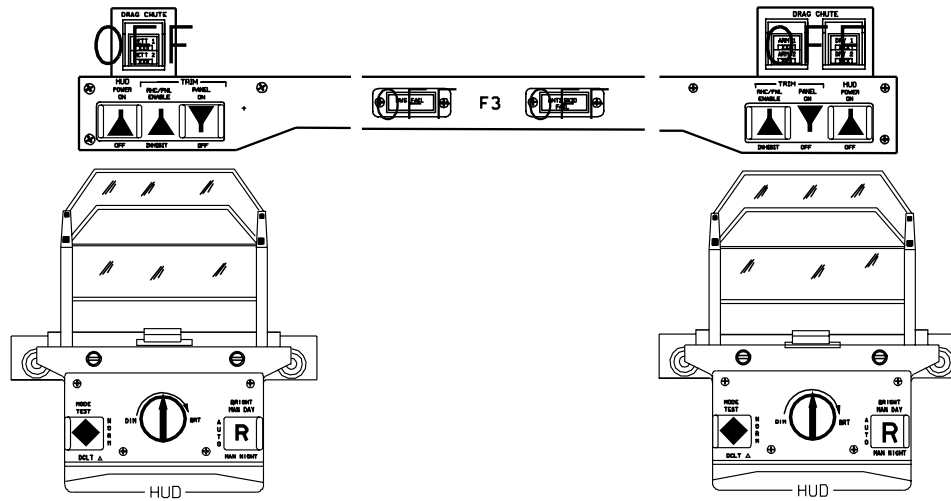


PNL AW18H

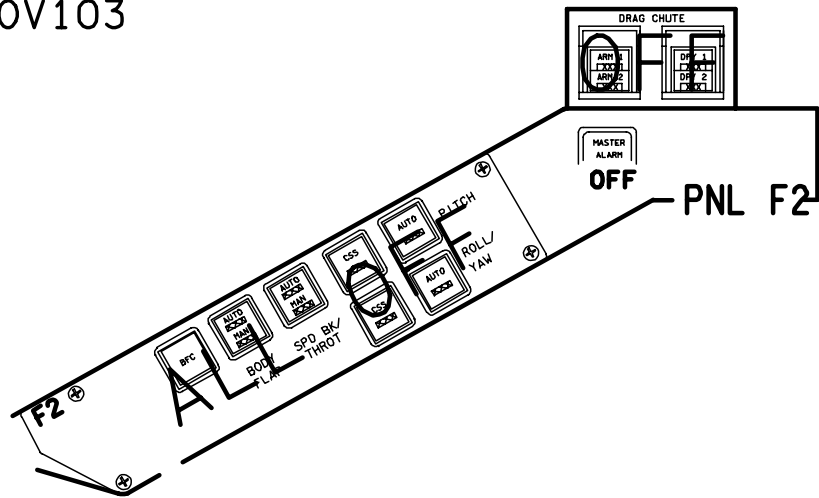


PNL AW18H

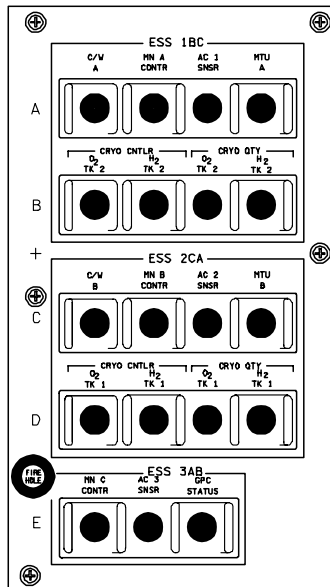
OV103



OV103

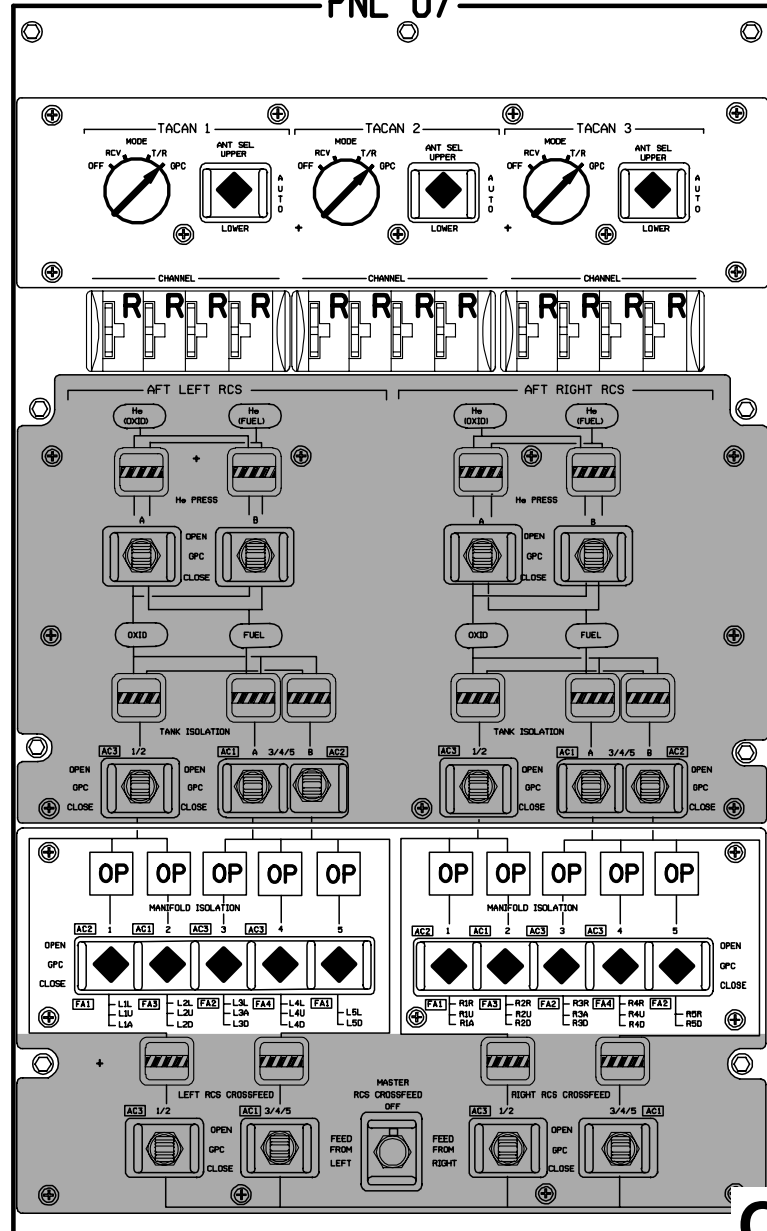


PNL 013

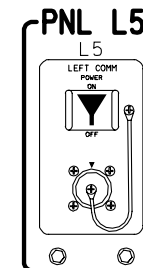
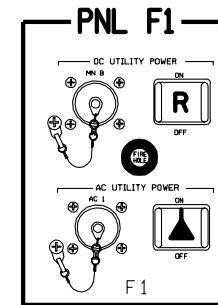
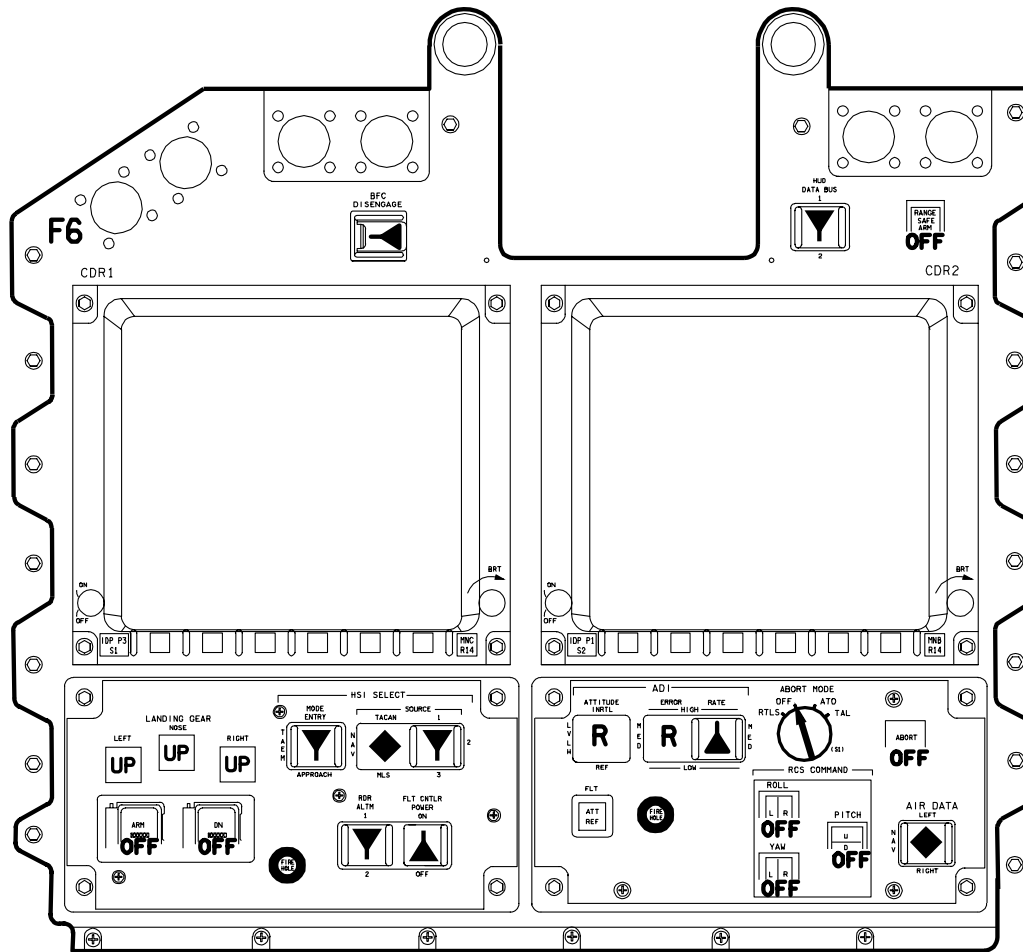


L side OVHD flood - R (MID)

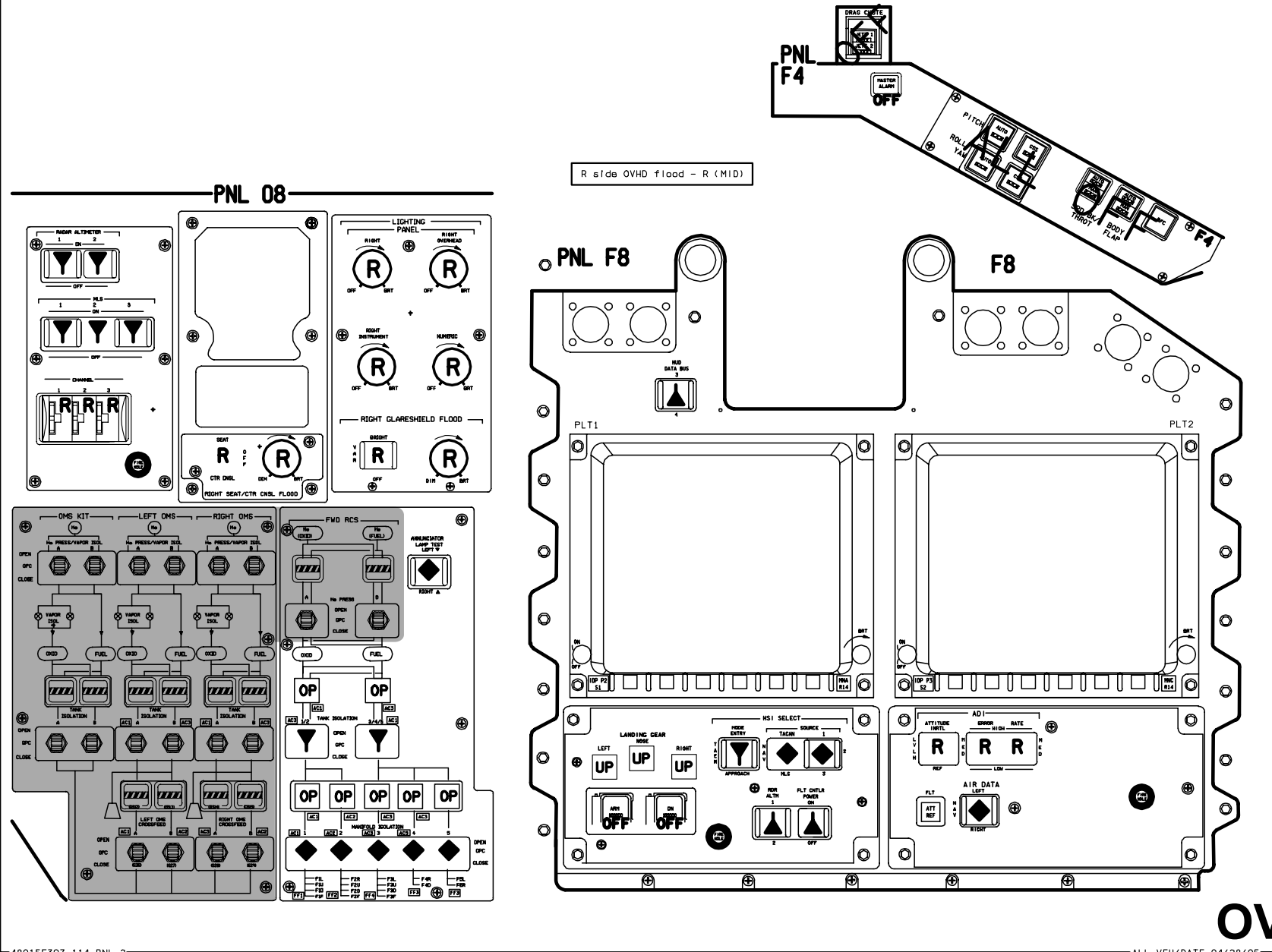
PNL 07



OV103



OV103



48015E307_114. PNL: 2

ALL VEH/DATE 04/28/05

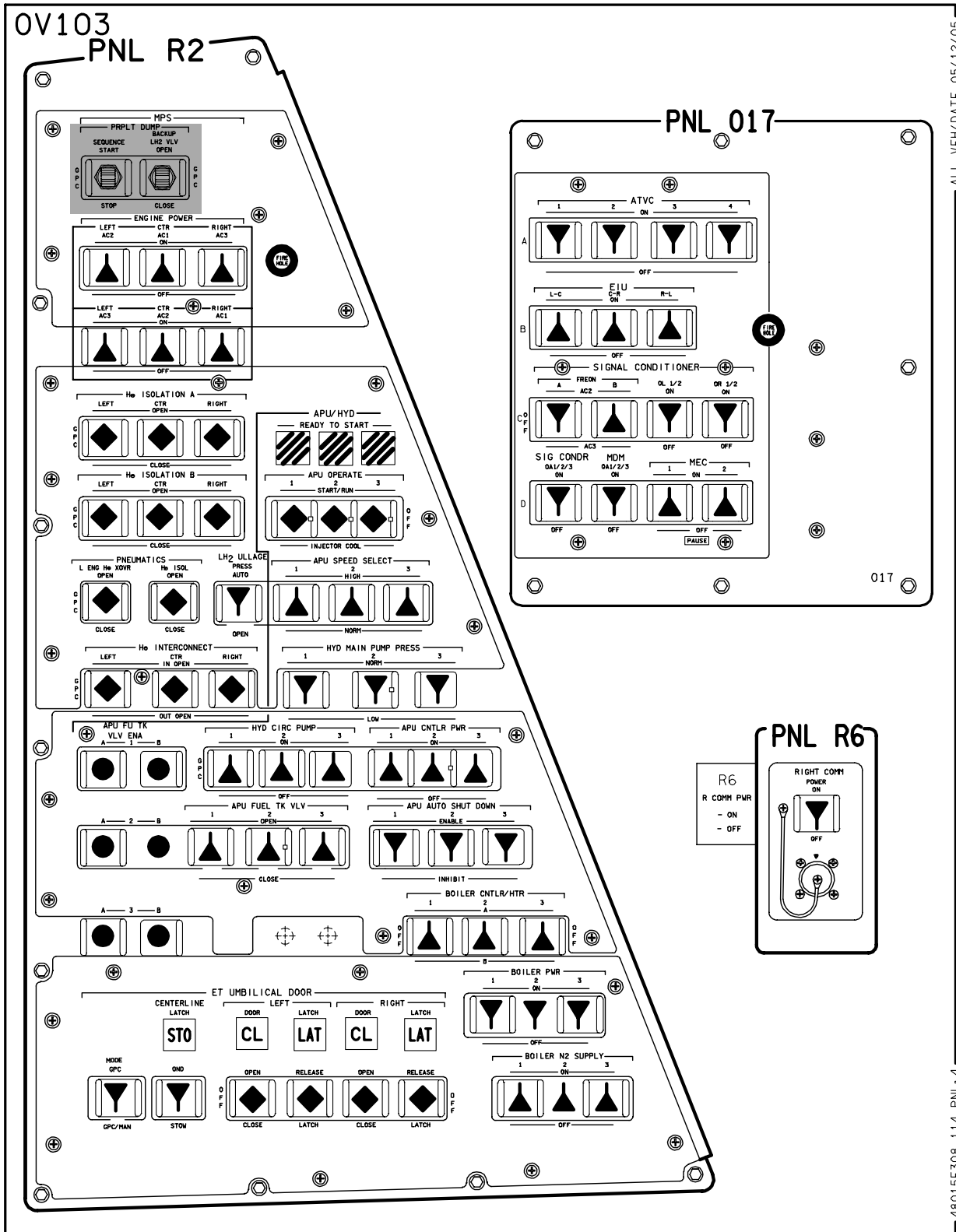
OV103

(OV103) A3-7

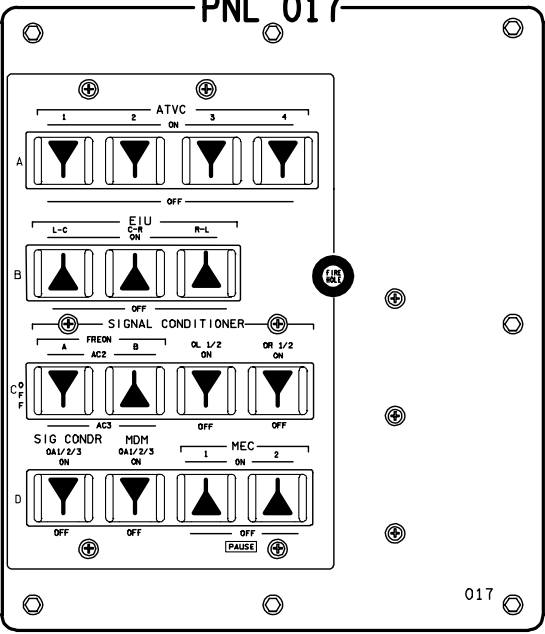
D/O/3/GEN P

OV103

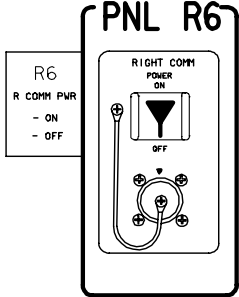
PNL R2



PNL 017



PNL R6



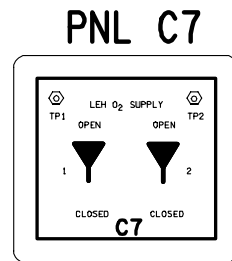
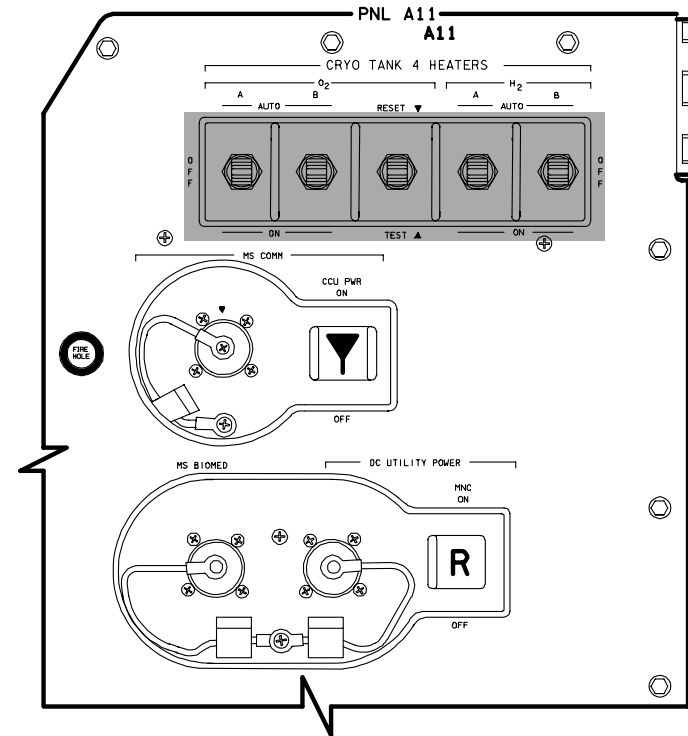
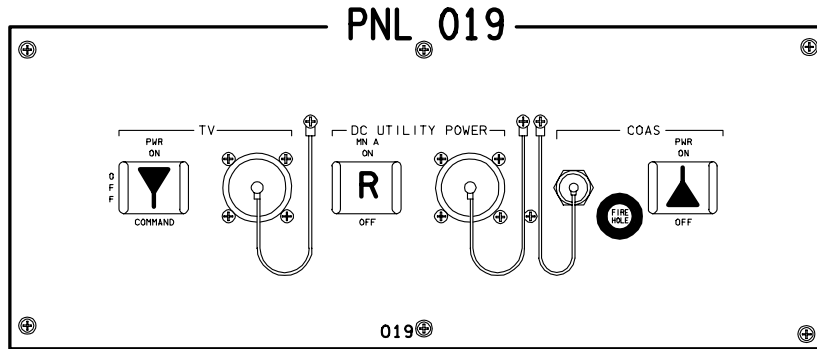
480.15E308_114, PNL R 4 ALL VEH/DATE 05/12/05

OV103

(OV103) A3-8

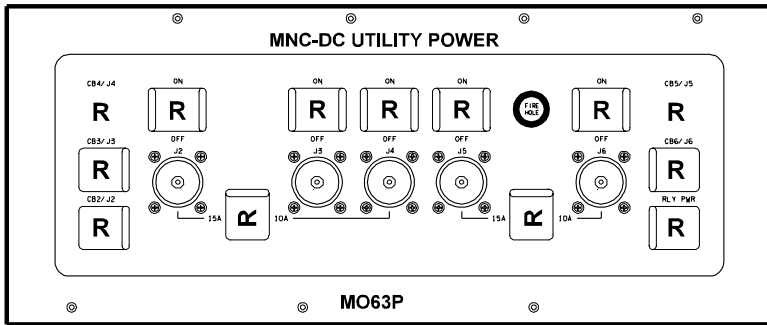
D/O/ALL/GEN P

OV103

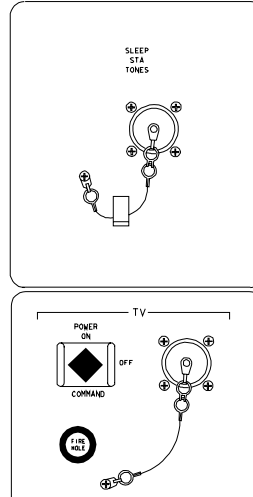


AIRLOCK HATCH

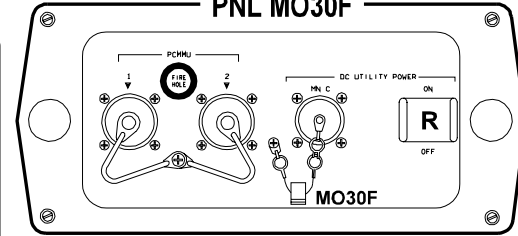
ACTUATOR HANDLE - LATCHED
 LOCK LEVER - LOCKED
 EQUALIZATION VLV (TWO) - NORM
 -CAPS INSTALLED



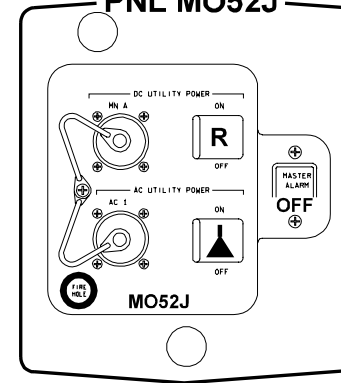
PNL MO58F



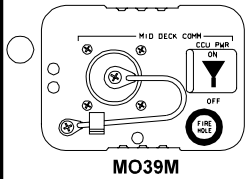
PNL MO30F



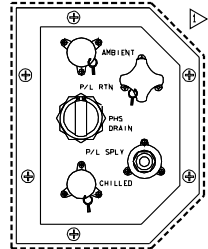
PNL MO52J



PNL MO39M



PNL MD24K

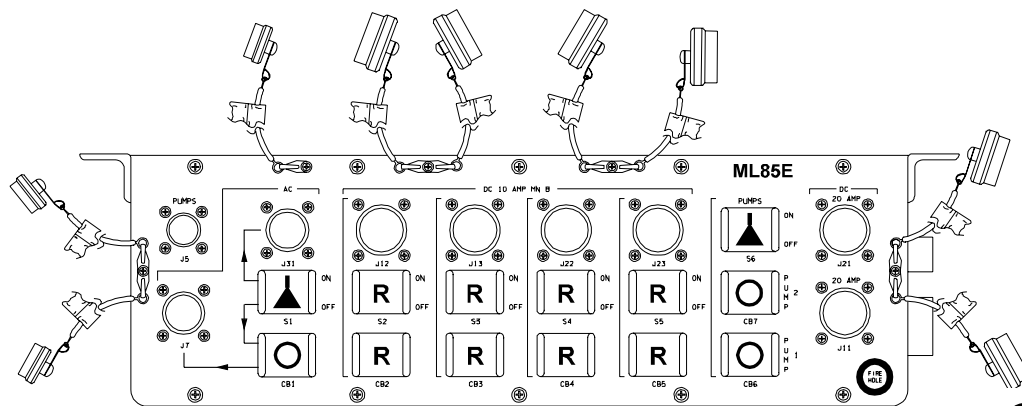


NOTE: NOT VISIBLE IF MAR FLOWN

PNL MD44F

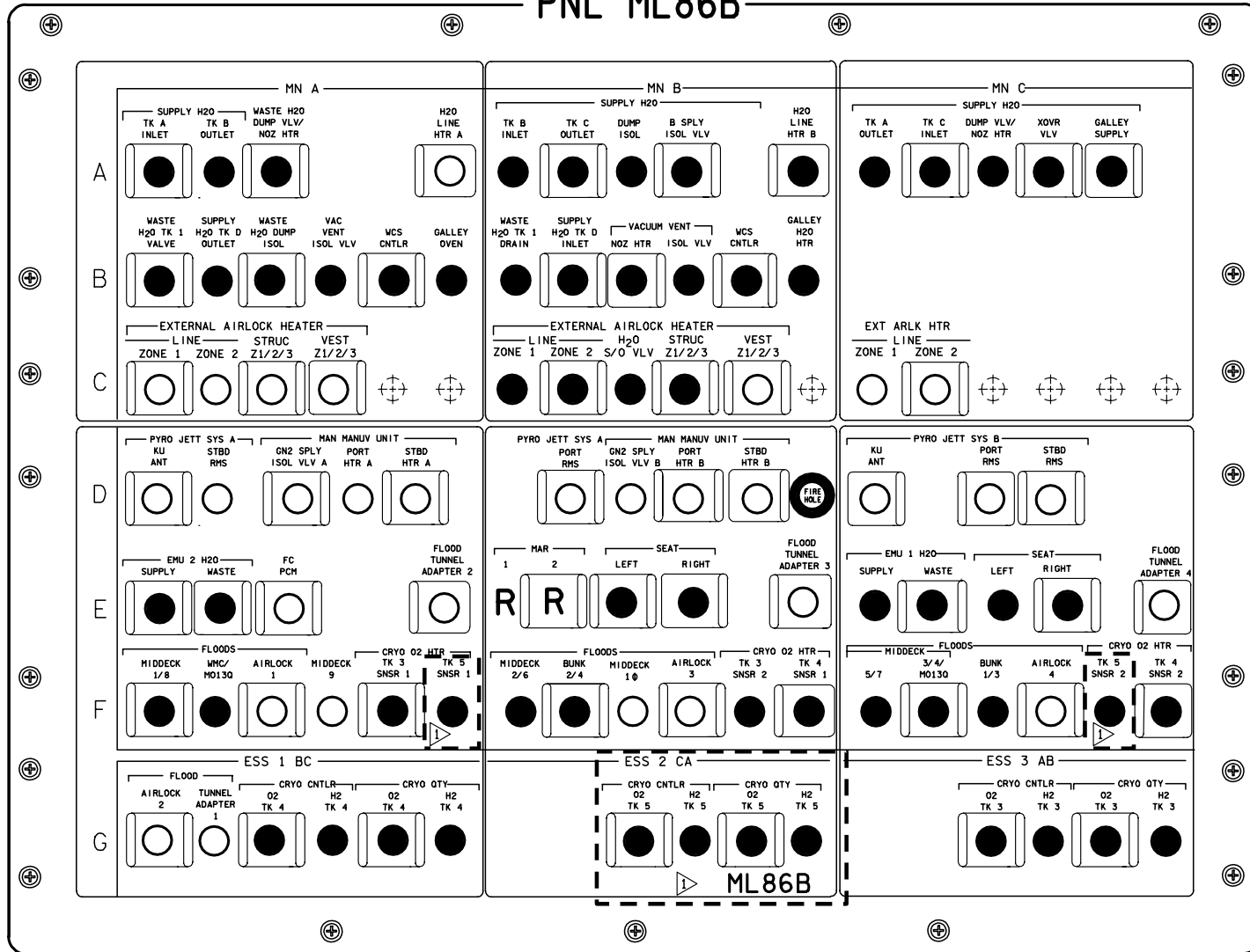
CAB TEMP CNTL ACT LINKAGE - SECONDARY ACTUATOR

PNL ML85E



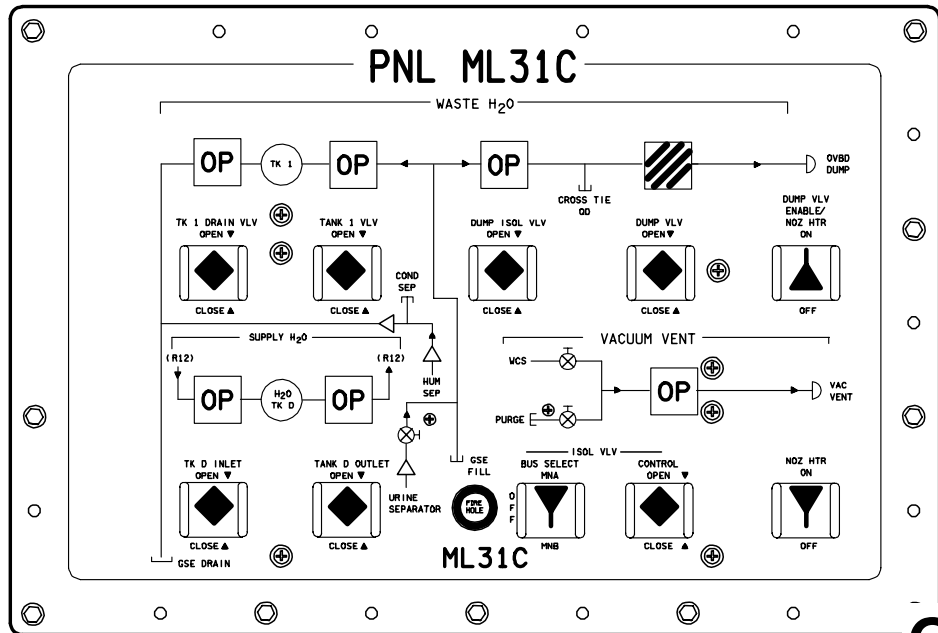
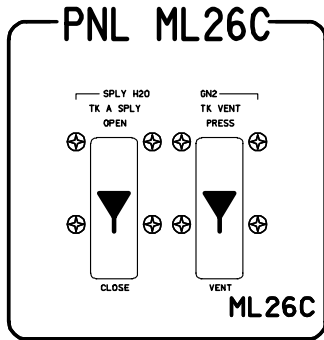
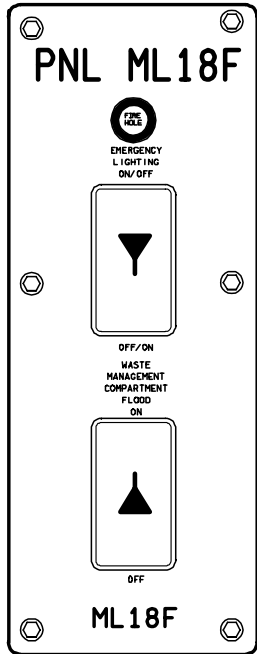
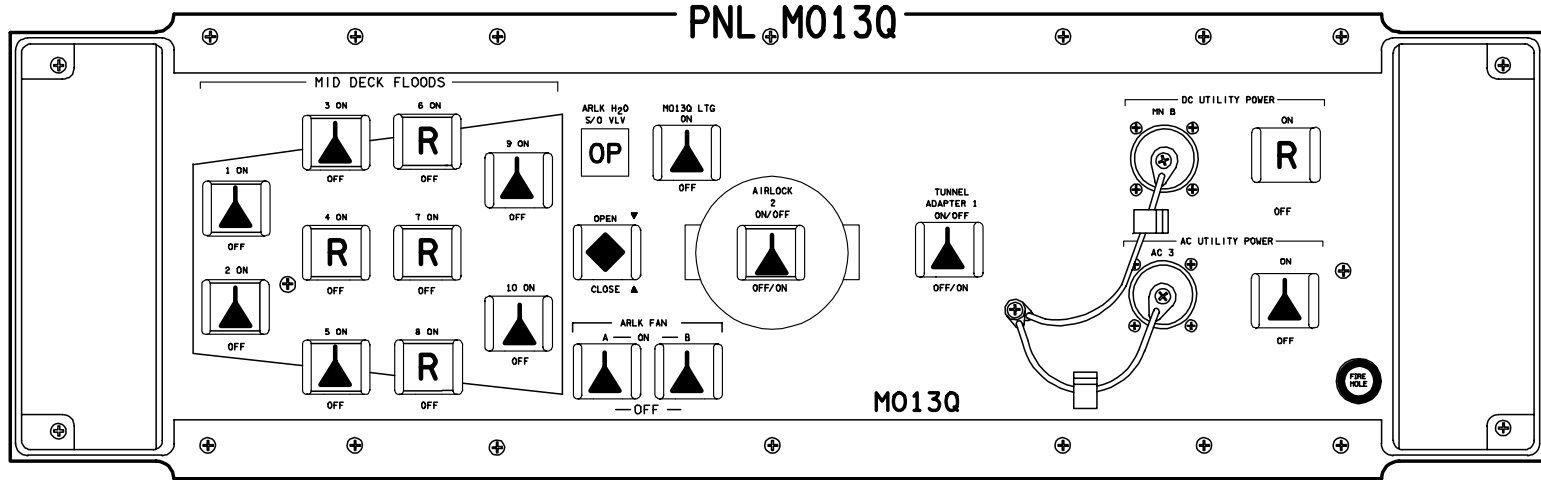
OV103

PNL ML86B



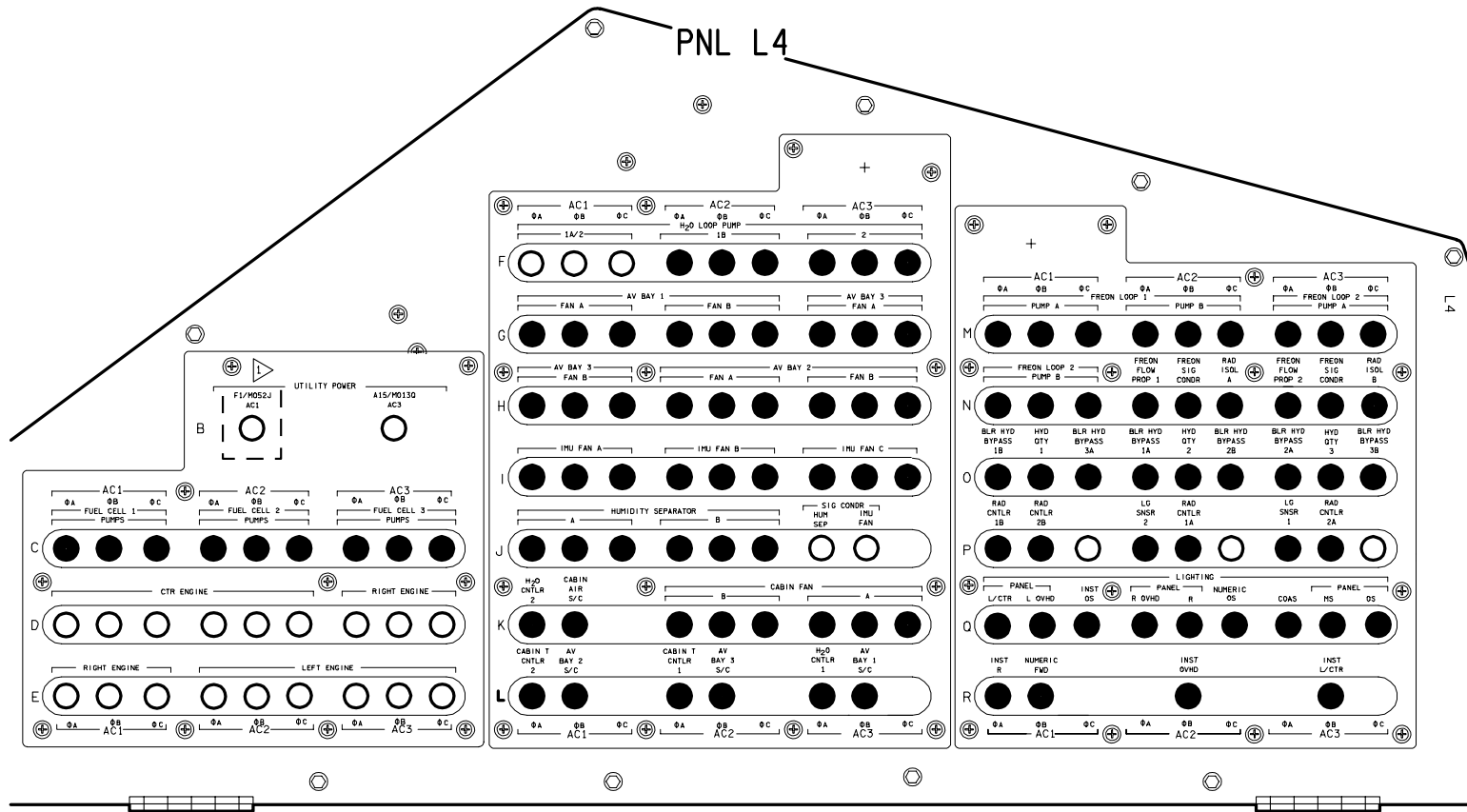
NOTE: ▷ OPEN IF TK 5 NOT FLOWN


OV103



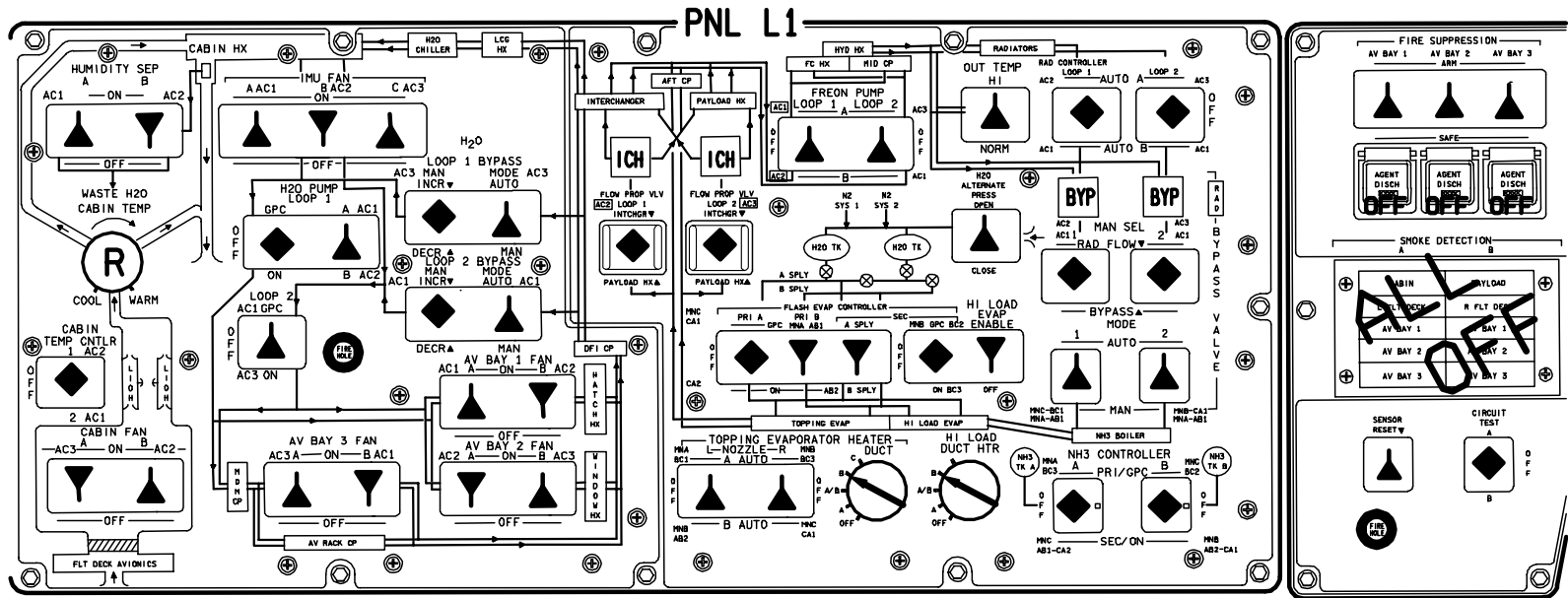
OV103

OV103



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

OV103



48015E314_114, PNL, 2

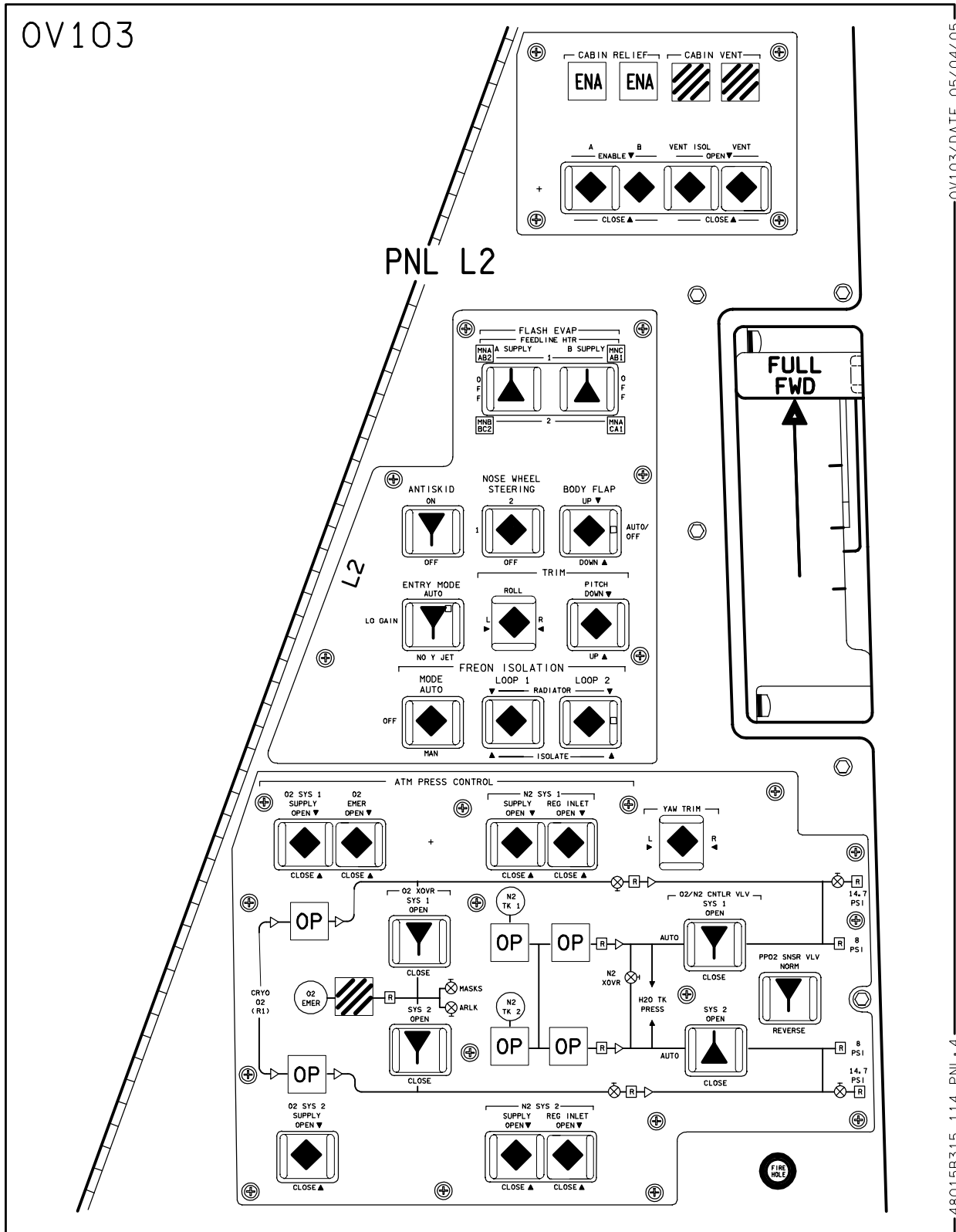
ALL VEH/DATE 04/28/05

(OV103) A3-14

OV103

D/O/ALL/GEN P

OV103



OV103/DATE 05/04/05

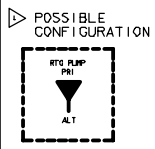
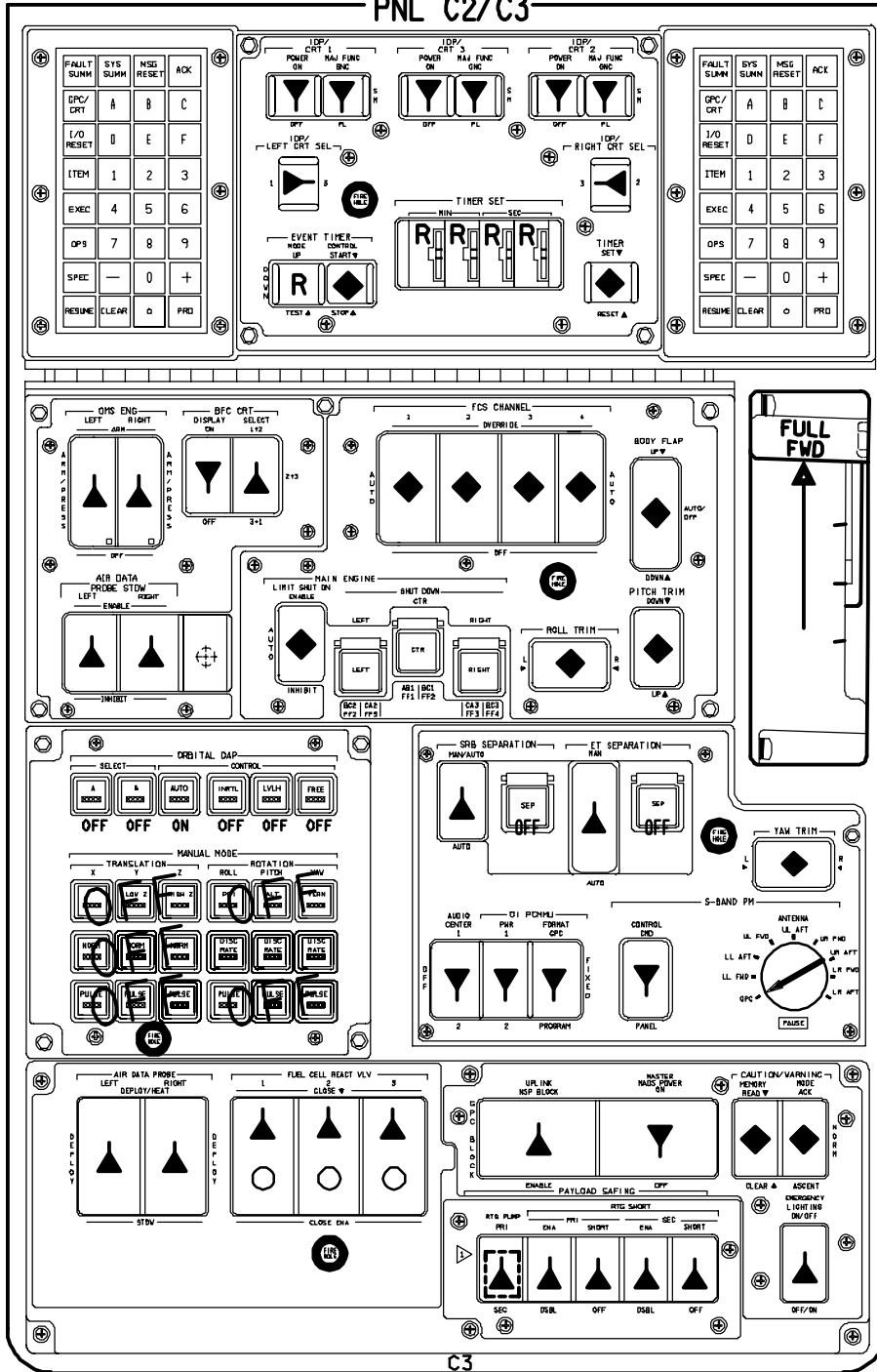
48015B315_114. PNL 4

OV103

(OV103) A3-15

D/O/3/GEN P

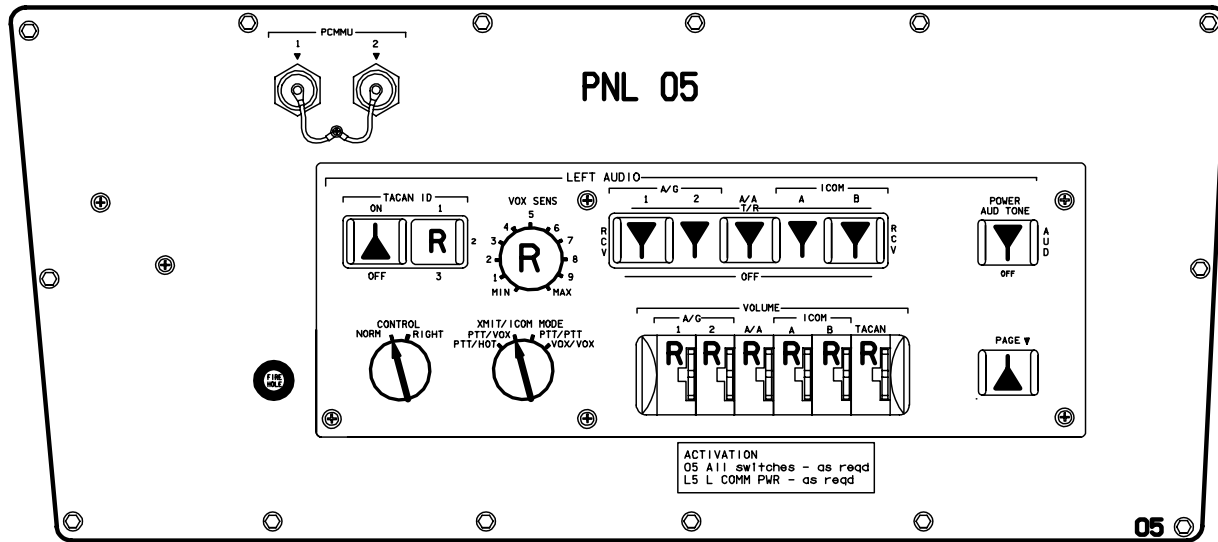
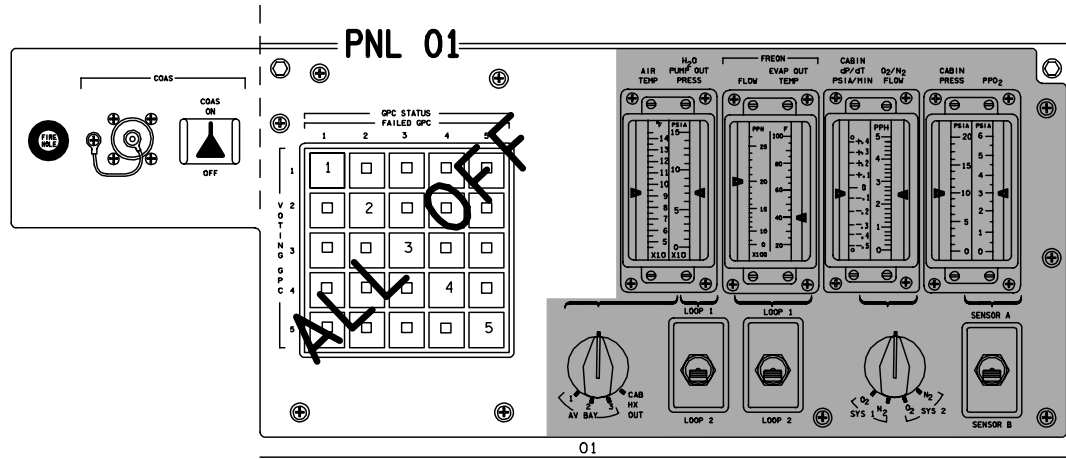
PNL C2/C3



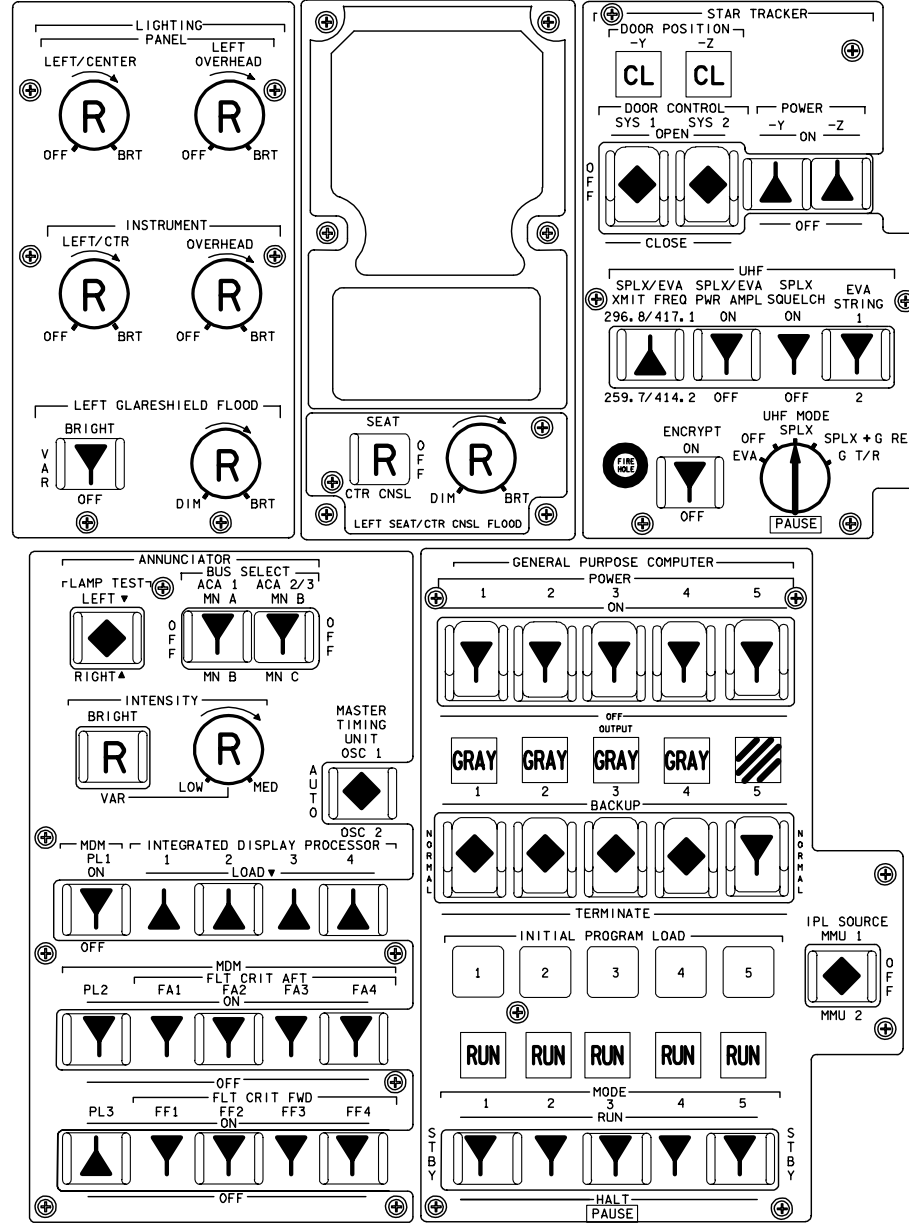
OV103/DATE 05/02/05

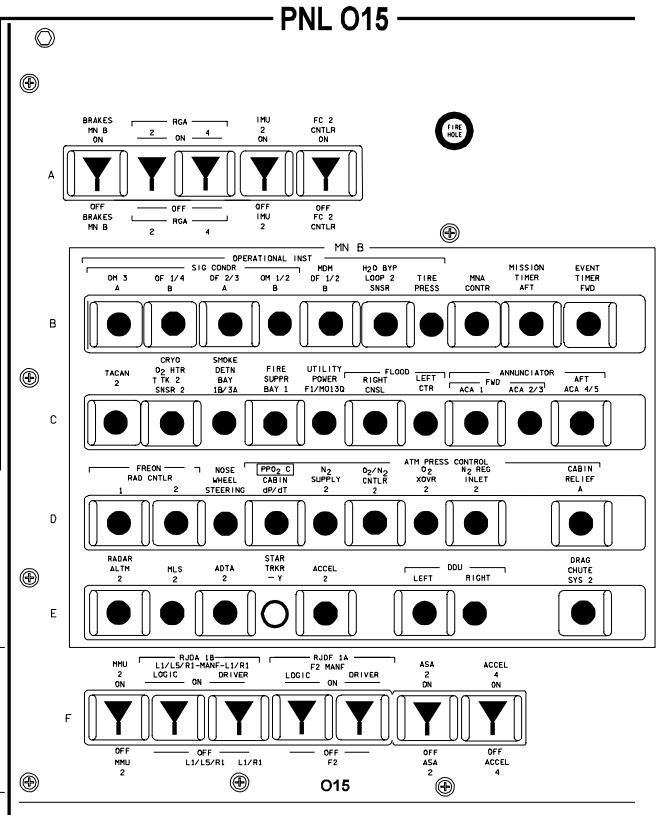
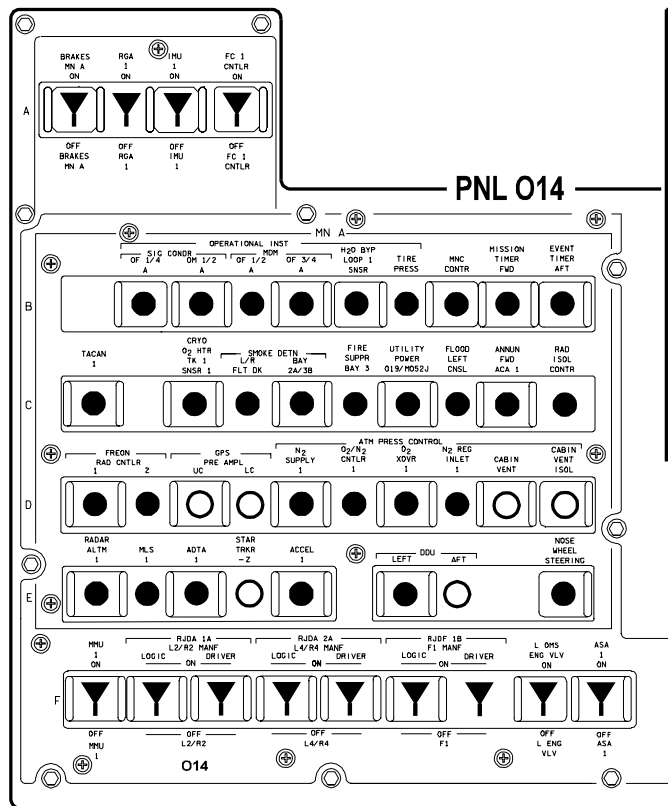
48015E316_1.14_PNL C2

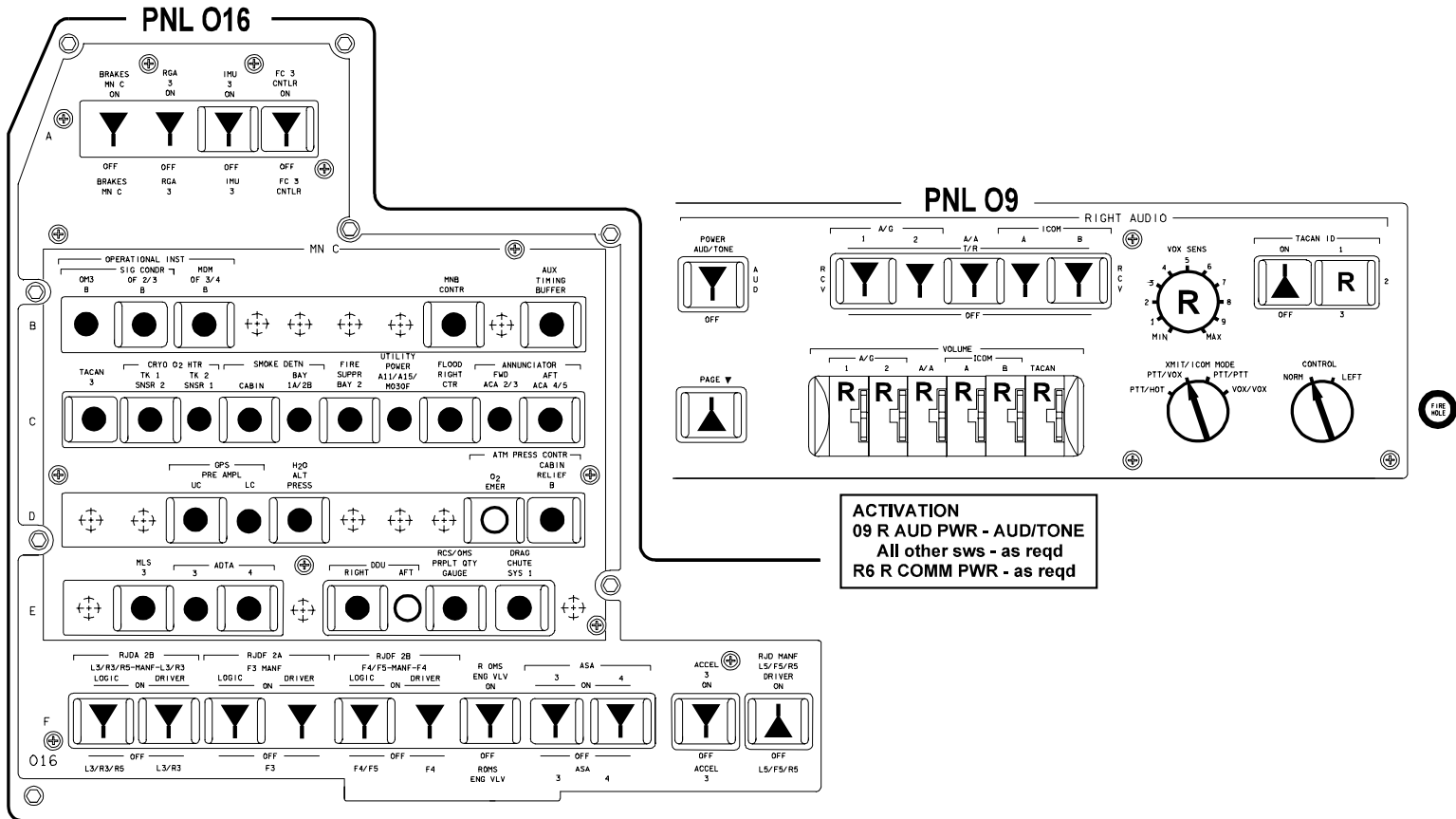
OV103

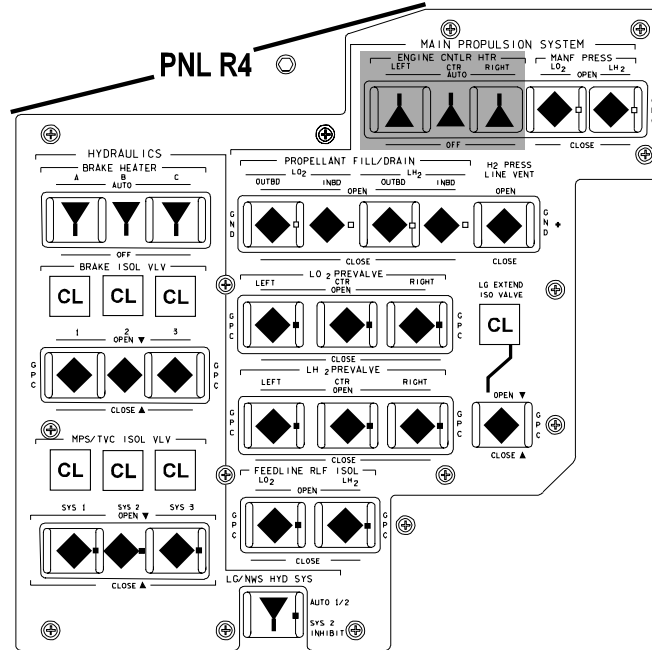
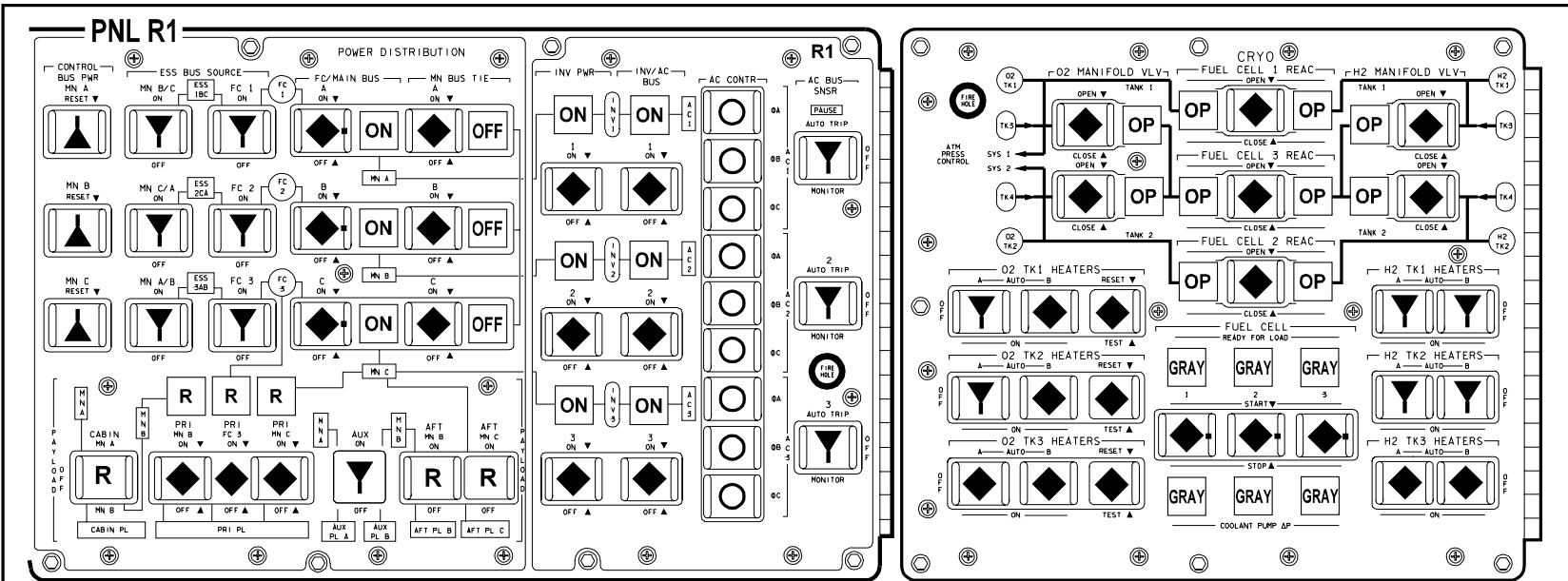


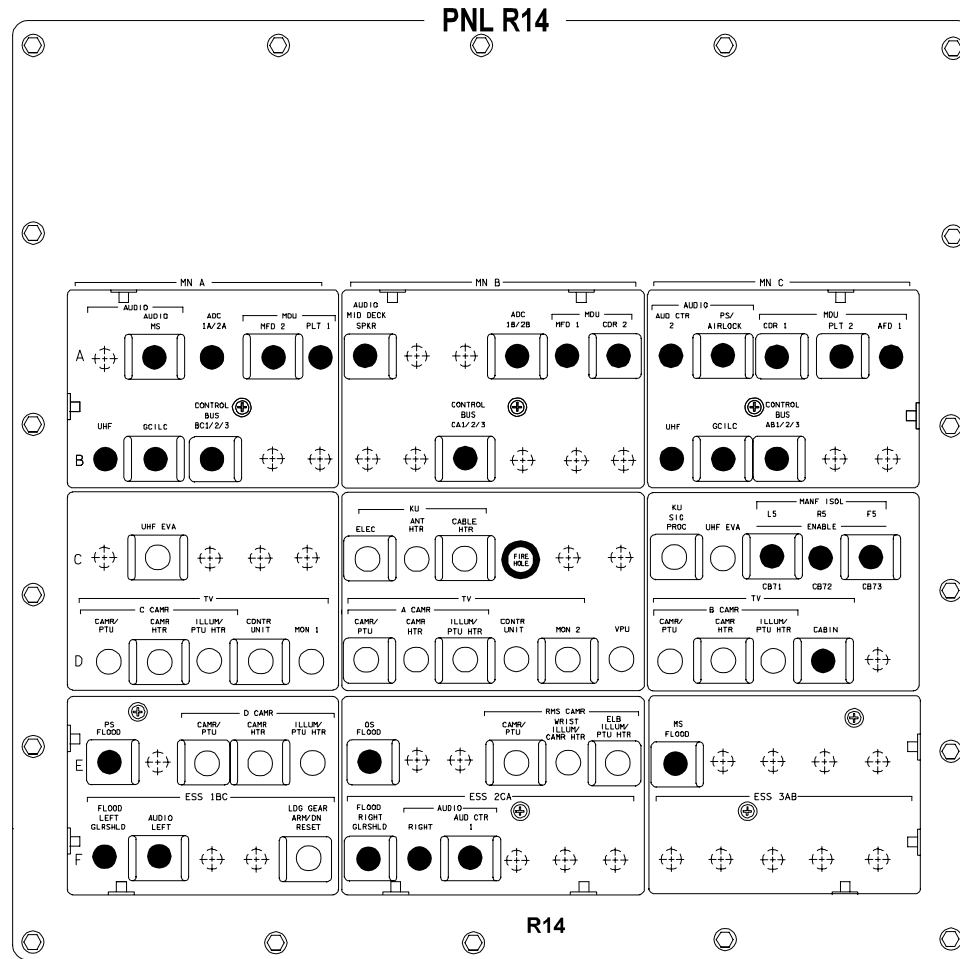
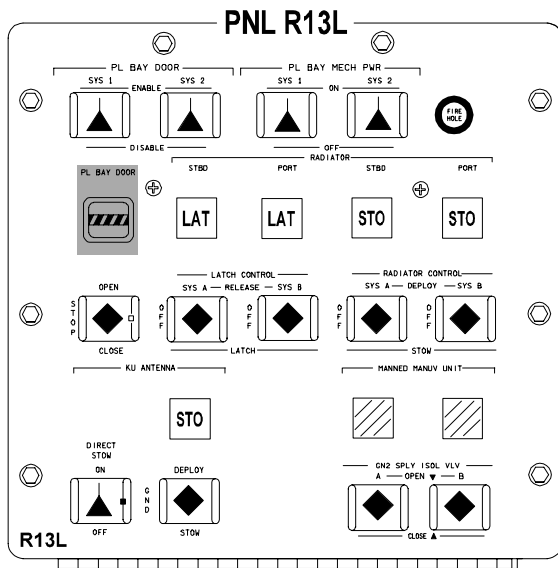
PNL 06



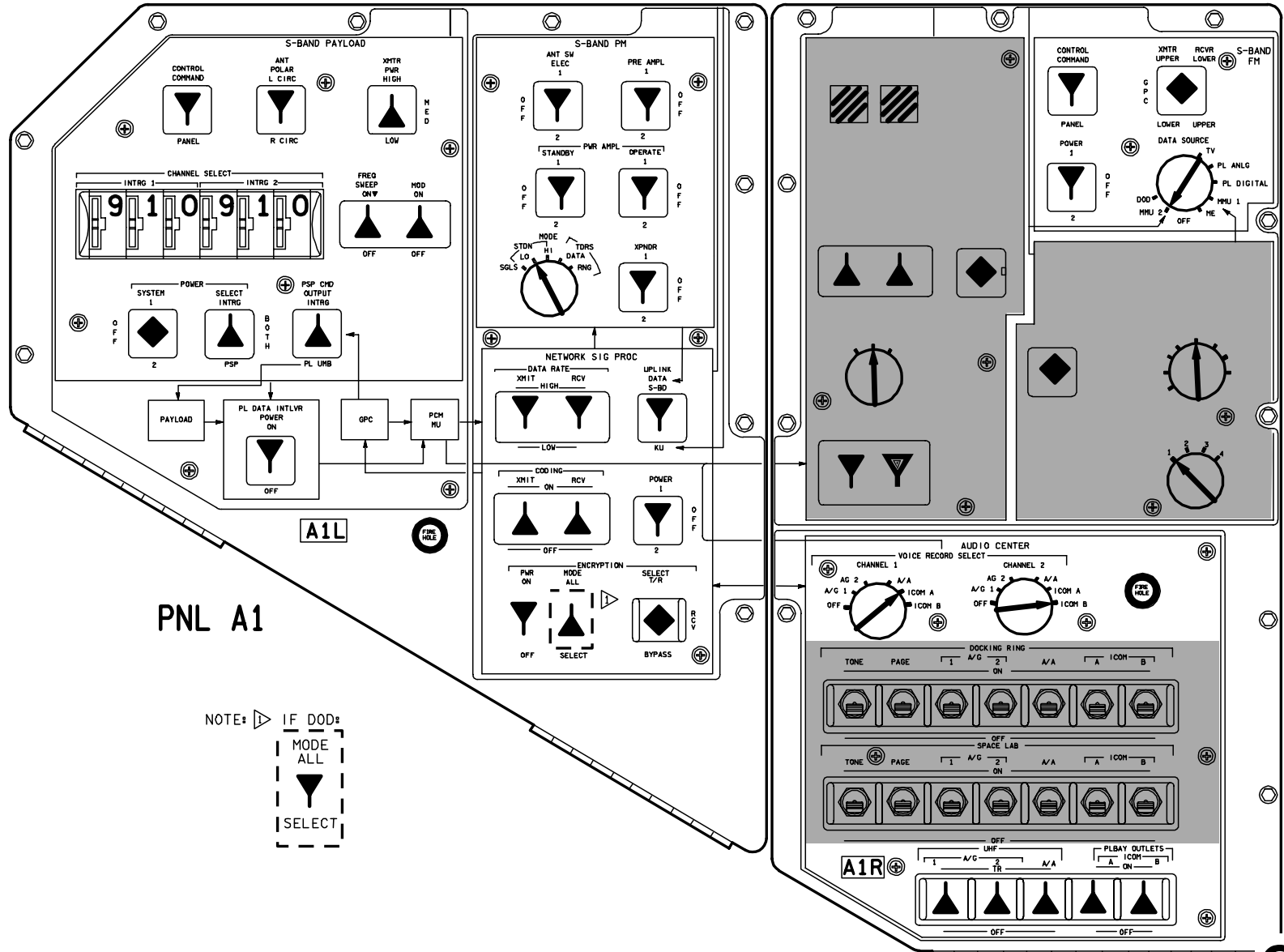








OV103



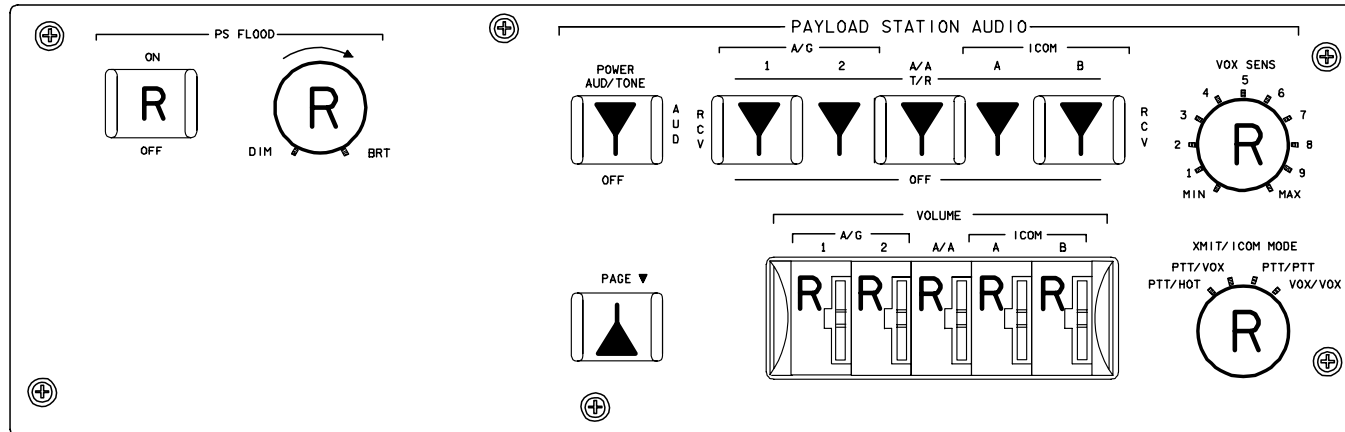
PNL A1

A1L

A1R

OV103

PNL L9

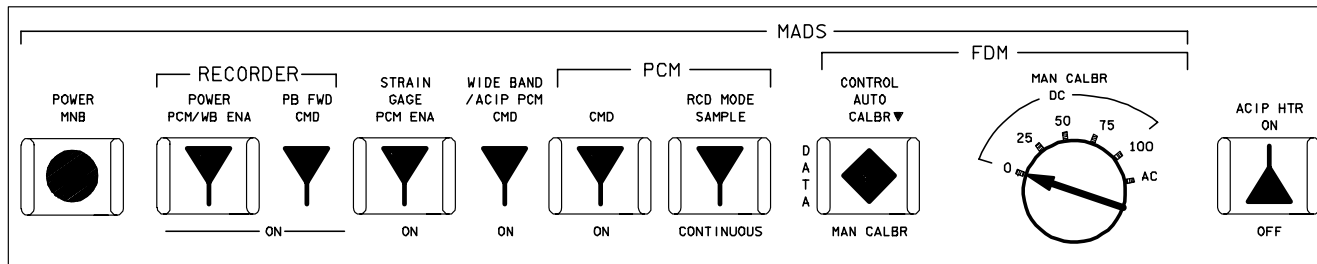
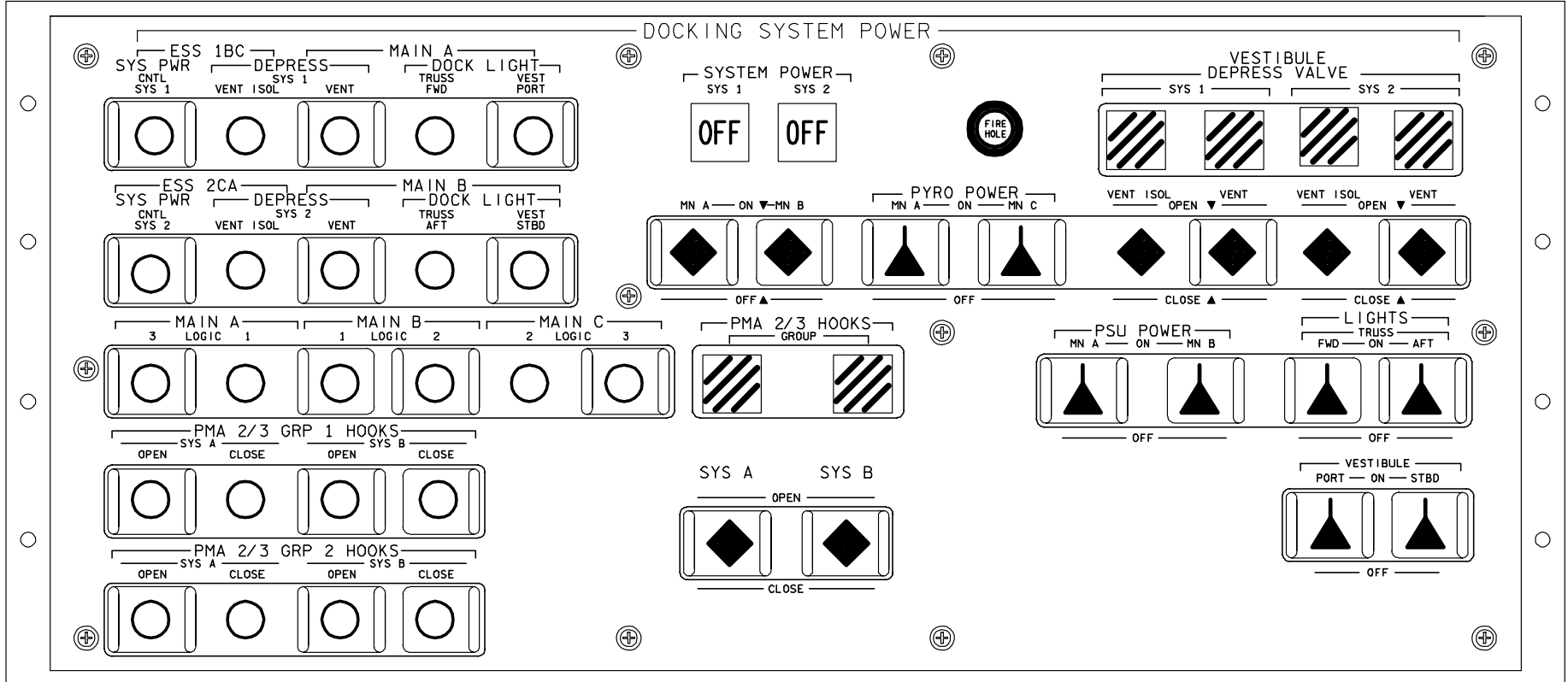


ACTIVATION
 L9 All switches - as reqd
 A15 PS COMM CCU PWR - ON

L9

OV103

PNL A6L



48015E327_114. PNL 1

OV103/DATE 04/28/05

OV103

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_{DS} ON OFF B_{DS} ON OFF C_{DS} 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_p ON OFF B_p ON OFF C_p ON OFF

A_p C_p

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_{DS} B_{DS} C_{DS}

OFF

LAMP TEST

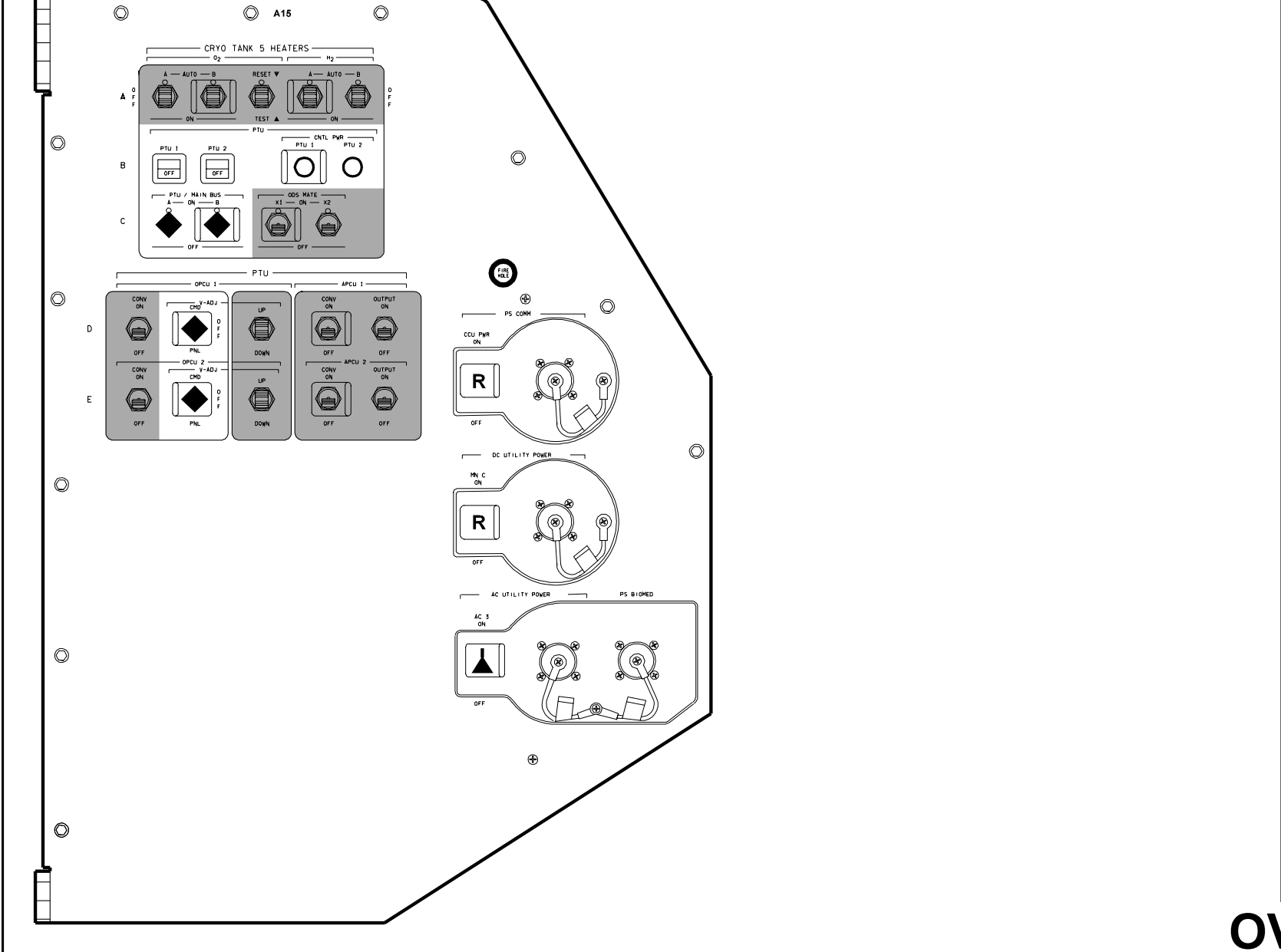
PNL A7L

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



48015E329_120, PNL 1

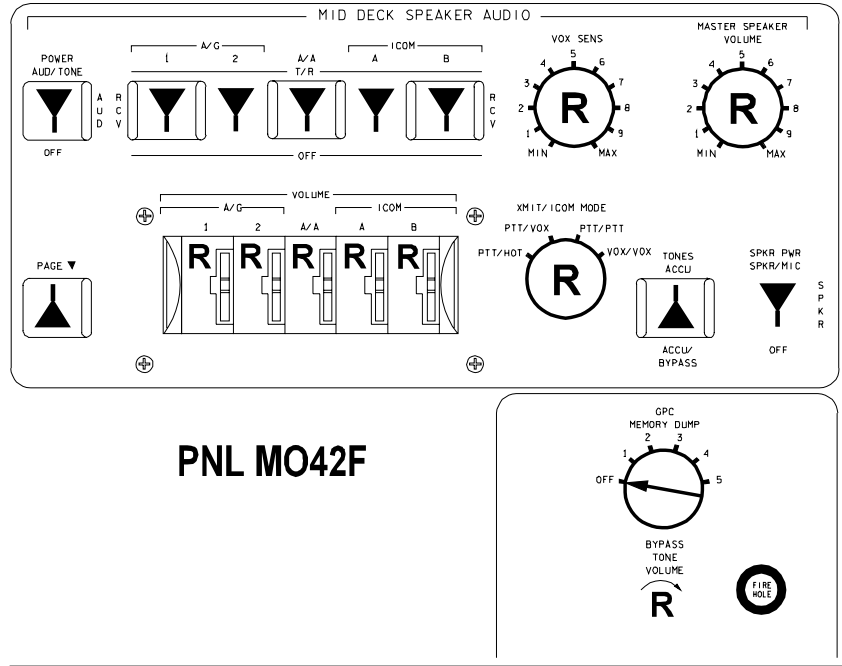
OV103/DATE 09/10/07

(OV103) A3-29

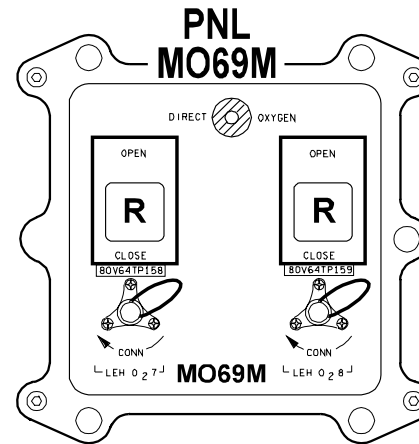
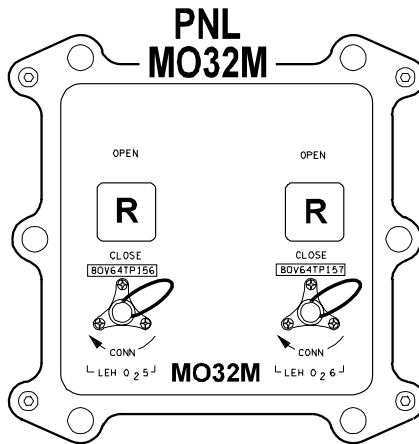
OV103

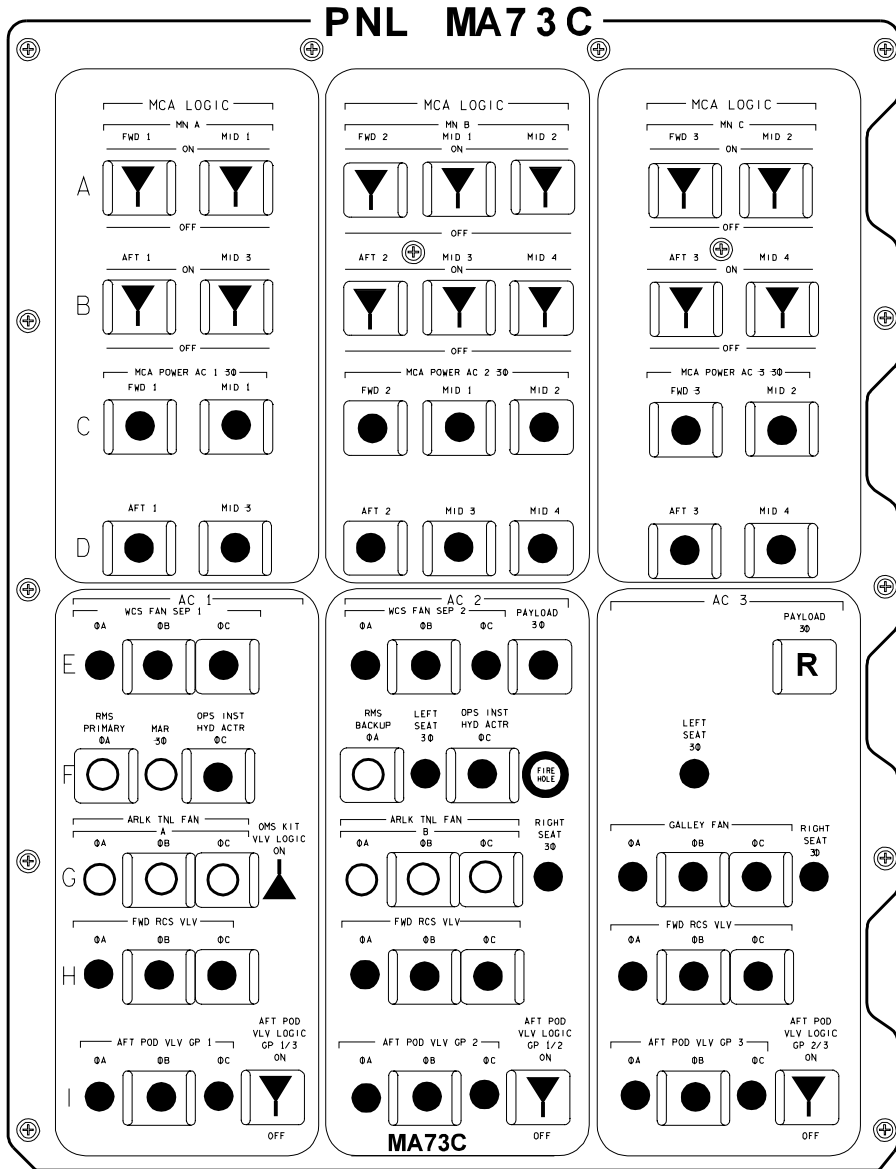
D/O/3/GEN P,3

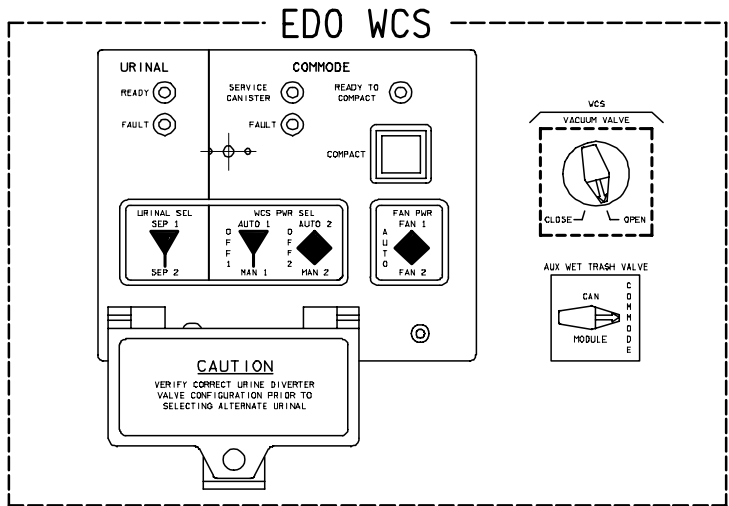
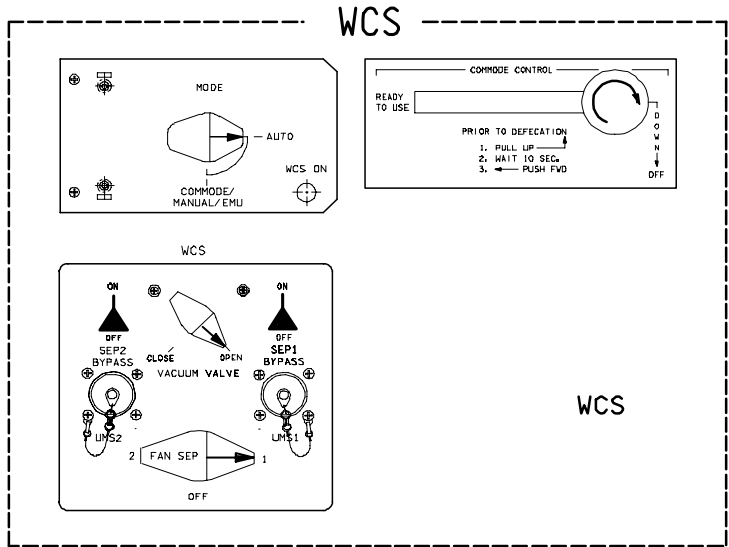
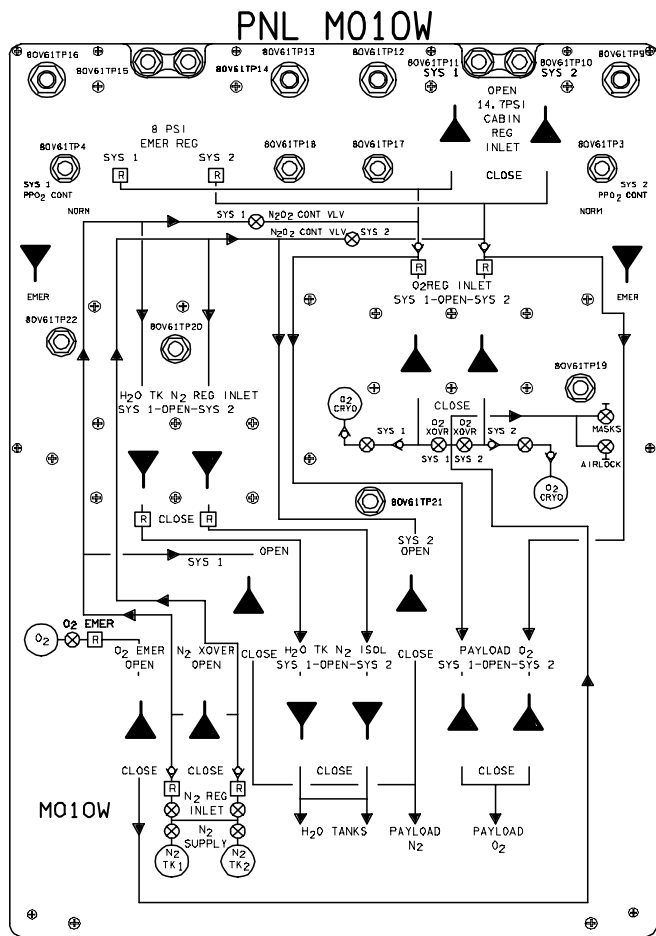
OV103

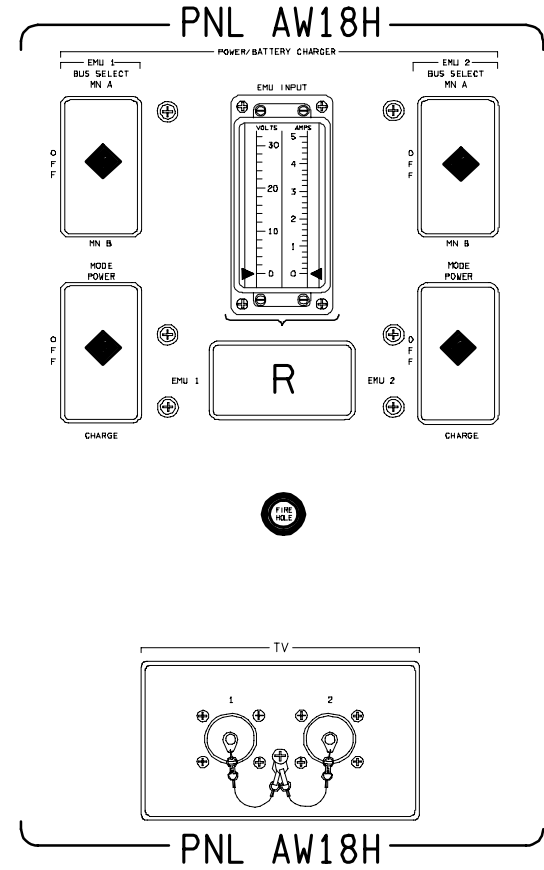
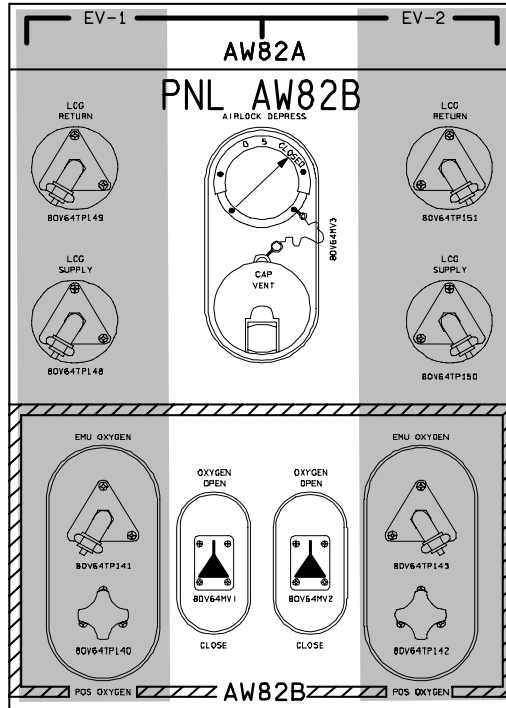
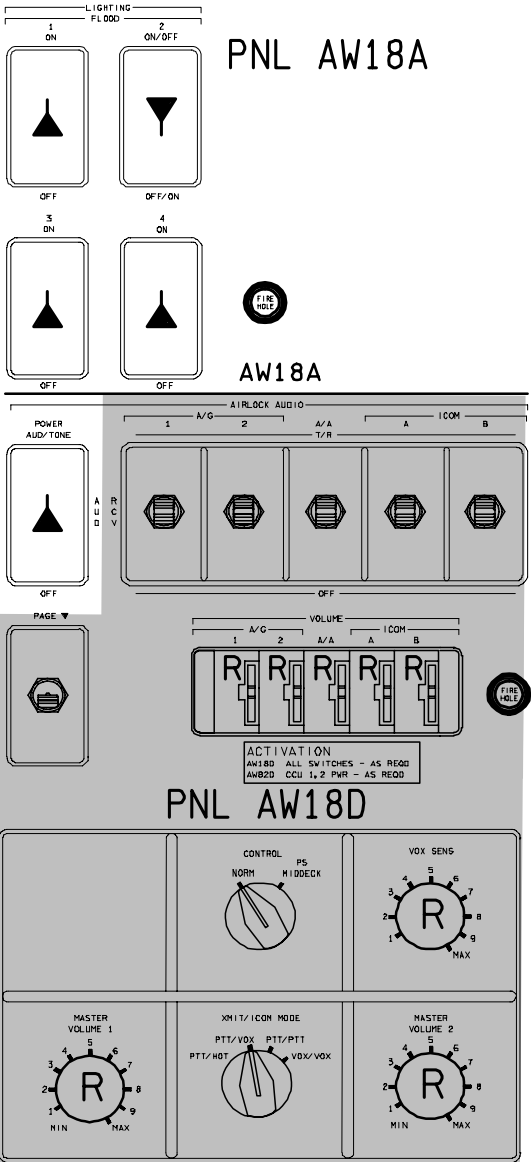


PNL MO42F

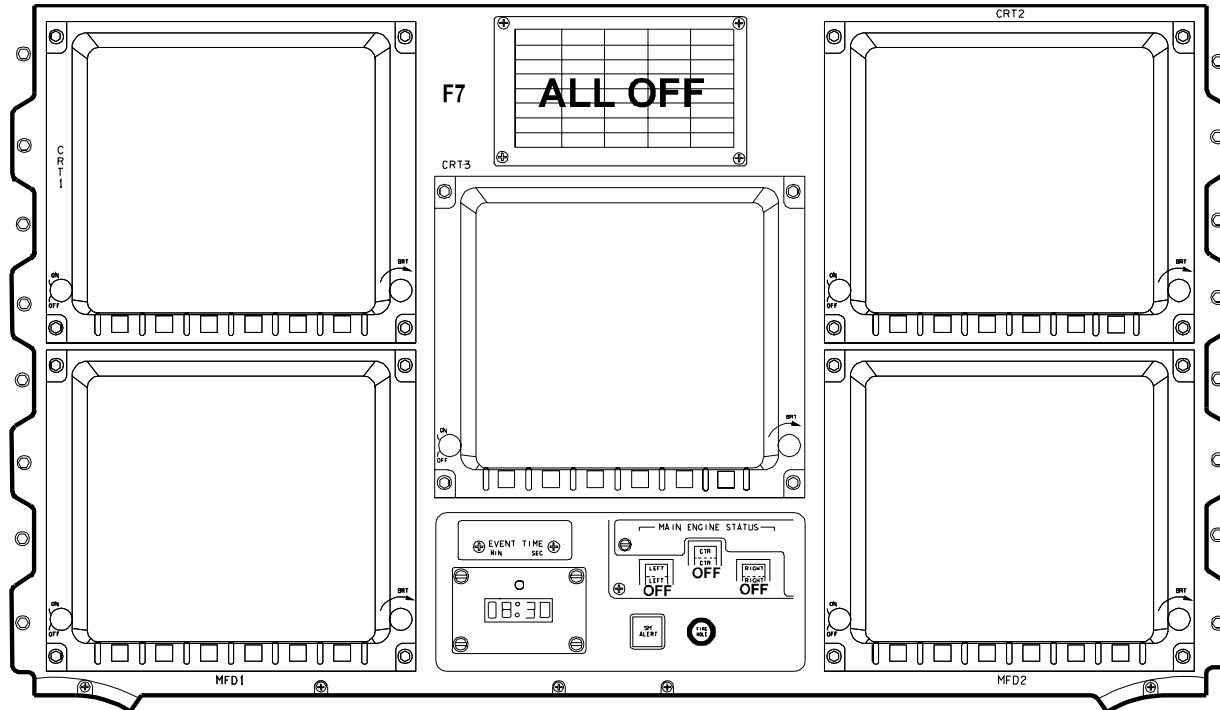
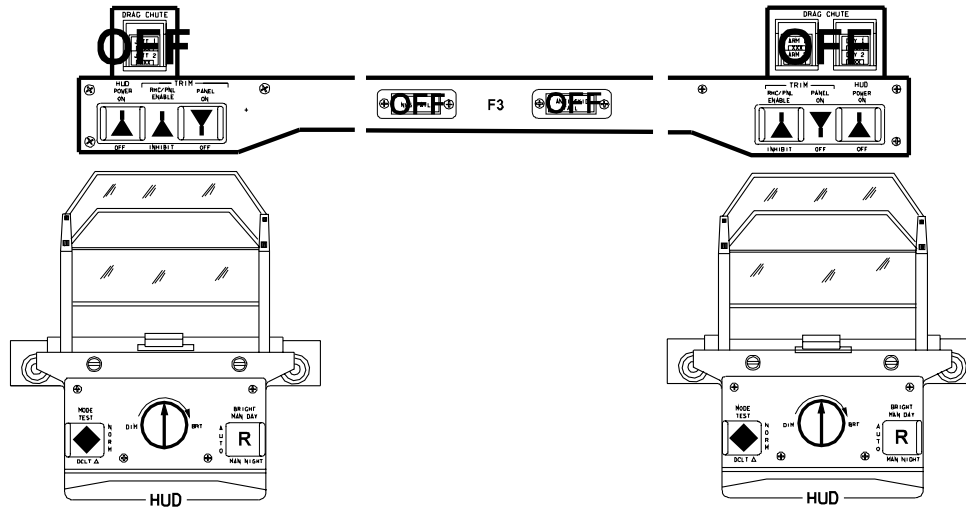








OV104



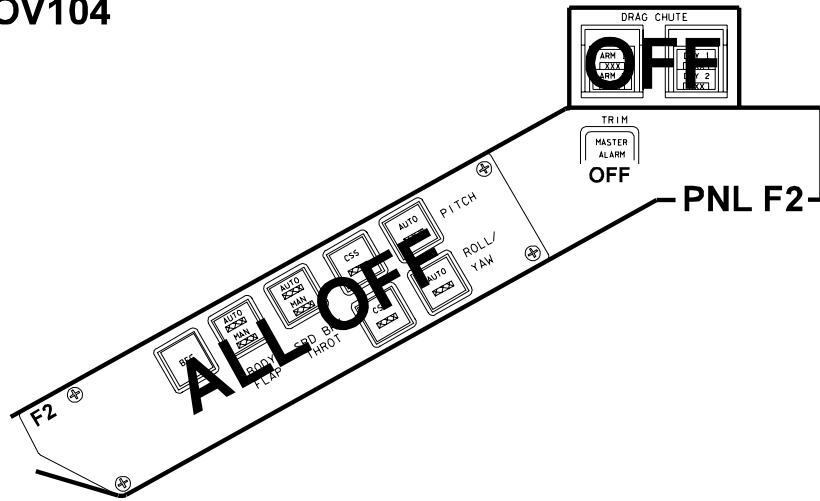
48015F304_121.PNL# 3

ALL VEH/DATE 09/28/05

(OV104) B3-4

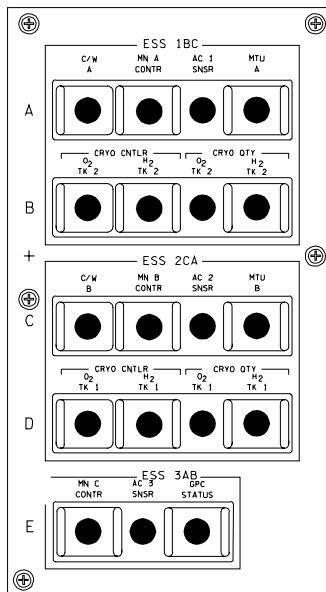
OV104
D/O/4/GEN P

OV104



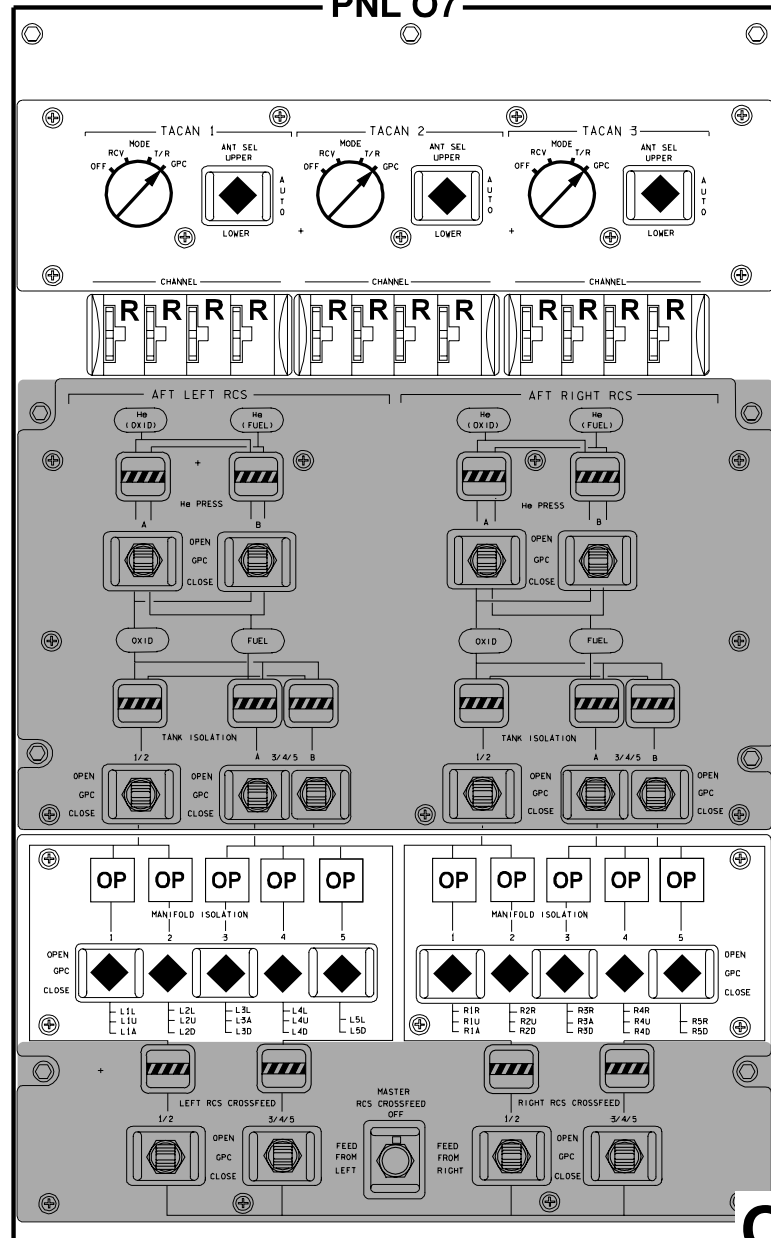
PNL F2

PNL O13



L side OVHD flood - R (MID)

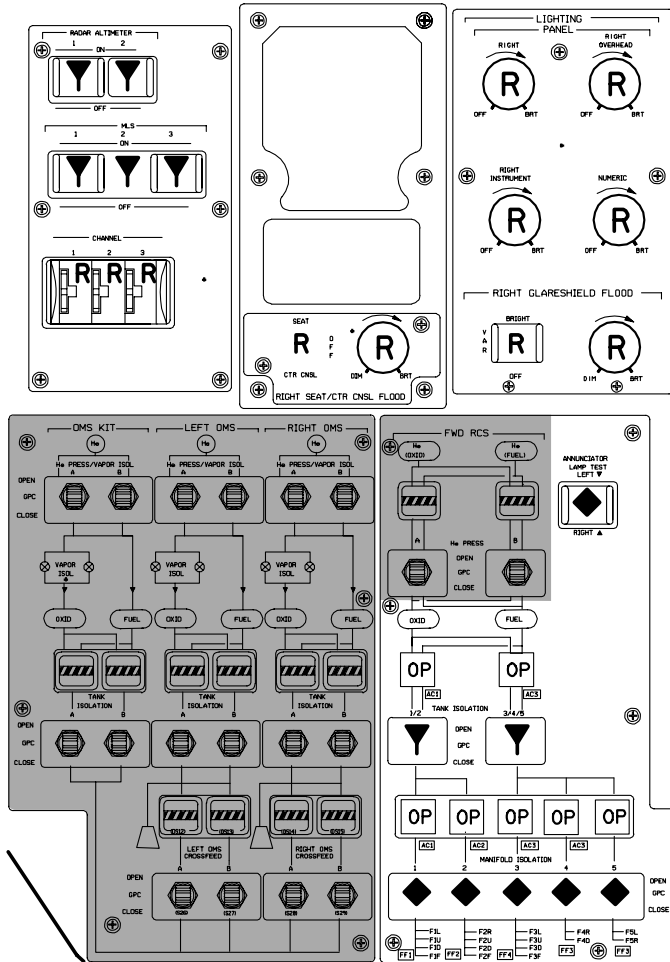
PNL O7



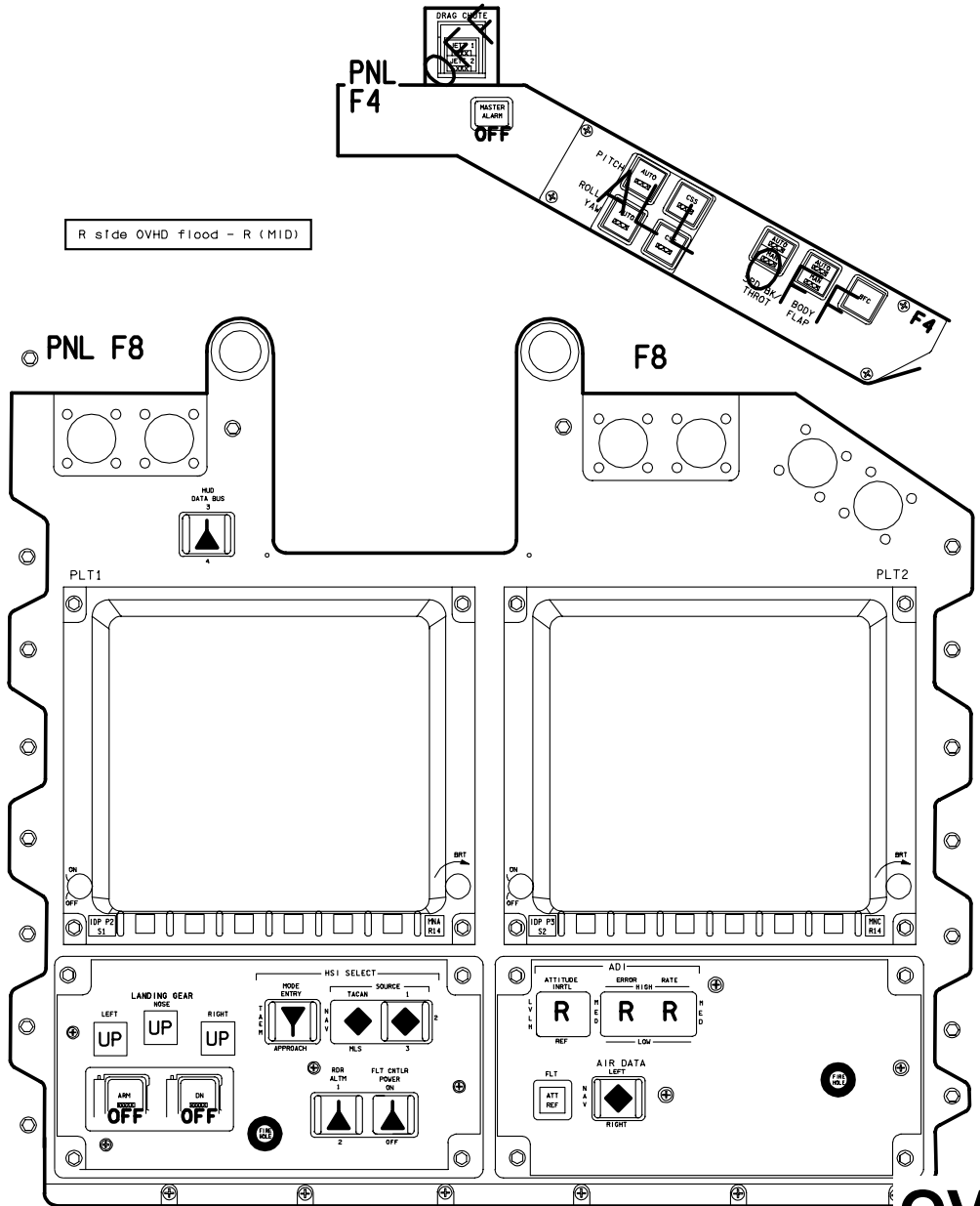
OV104

OV104

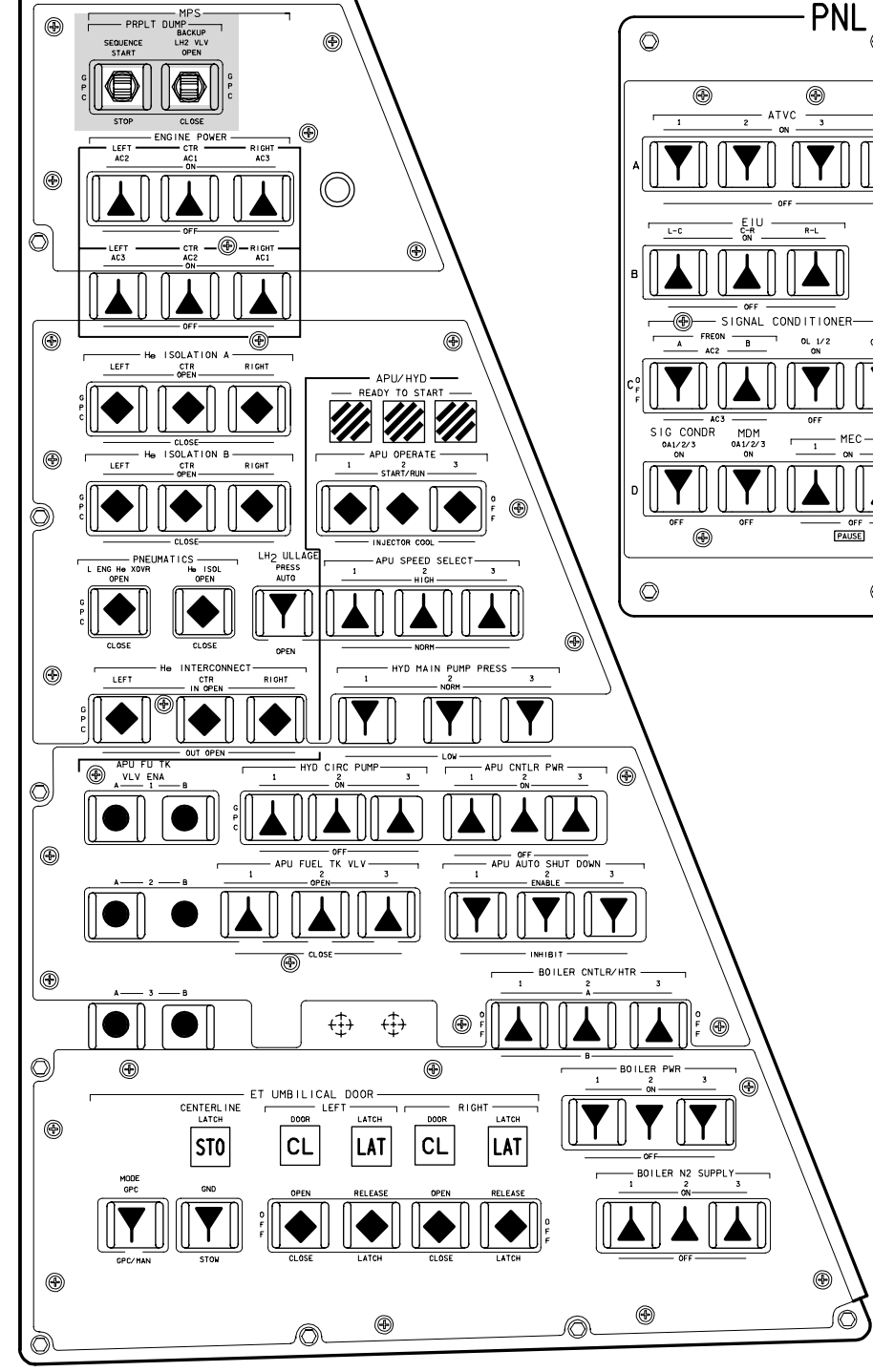
PNL 08



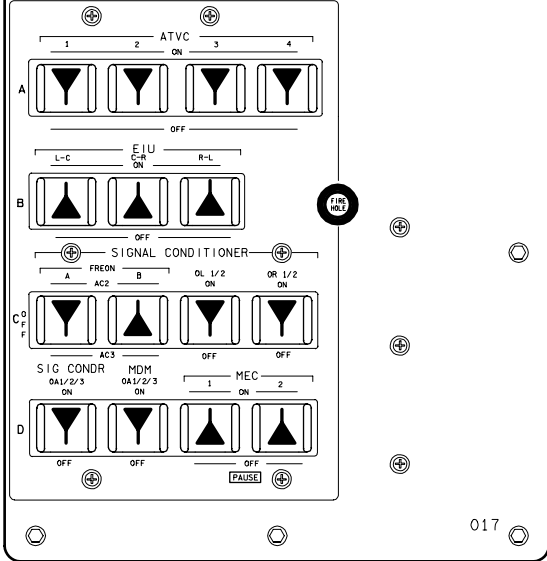
R side OVHD flood - R (MID)



OV104
PNL R2



PNL 017



017

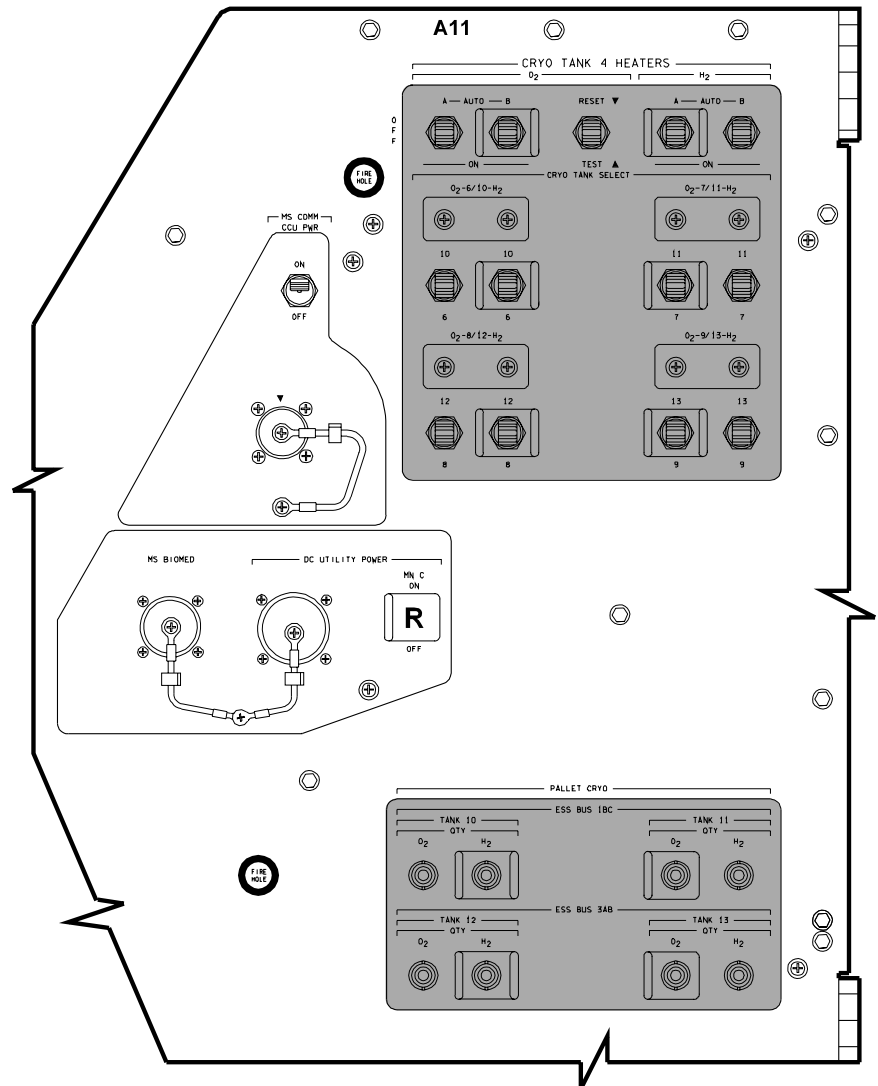
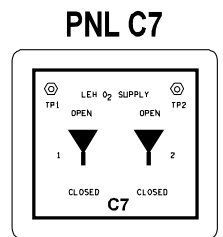
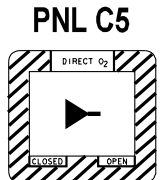
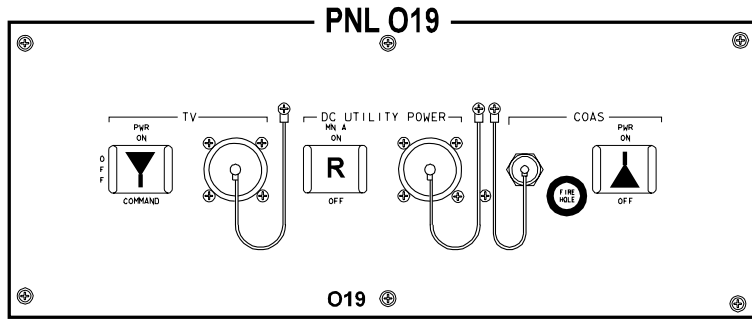
ALL VEH/DATE 11/29/04
48015C308_114, PNL, 5

OV104

(OV104) B3-8

D/O/ALL/GEN P

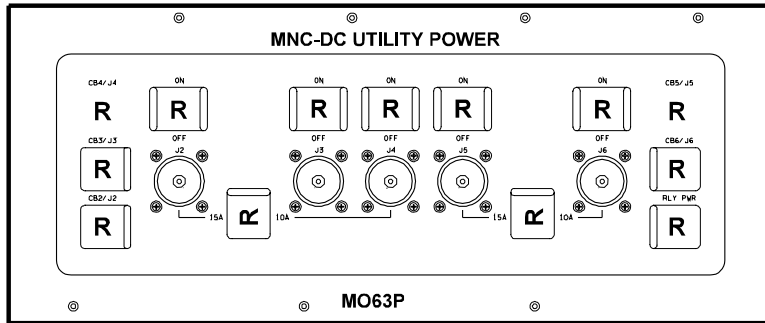
OV104



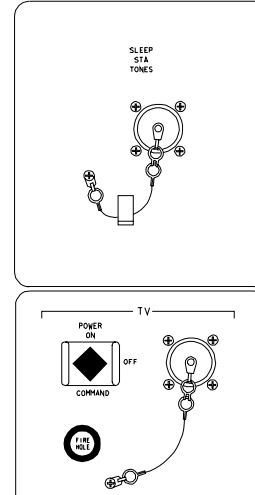
OV104

AIRLOCK HATCH

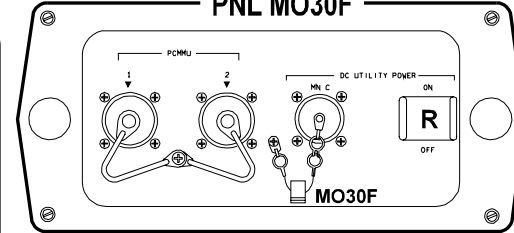
ACTUATOR HANDLE - LATCHED
 LOCK LEVER - LOCKED
 EQUALIZATION VLV (TWO) - NORM
 -CAPS INSTALLED



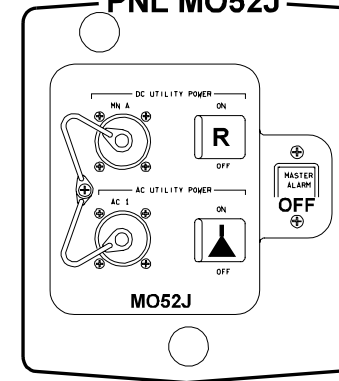
PNL MO58F



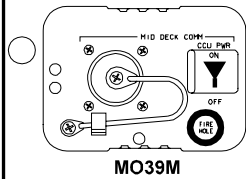
PNL MO30F



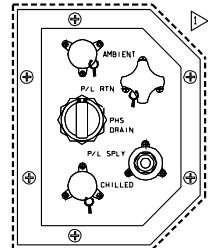
PNL MO52J



PNL MO39M



PNL MD24K

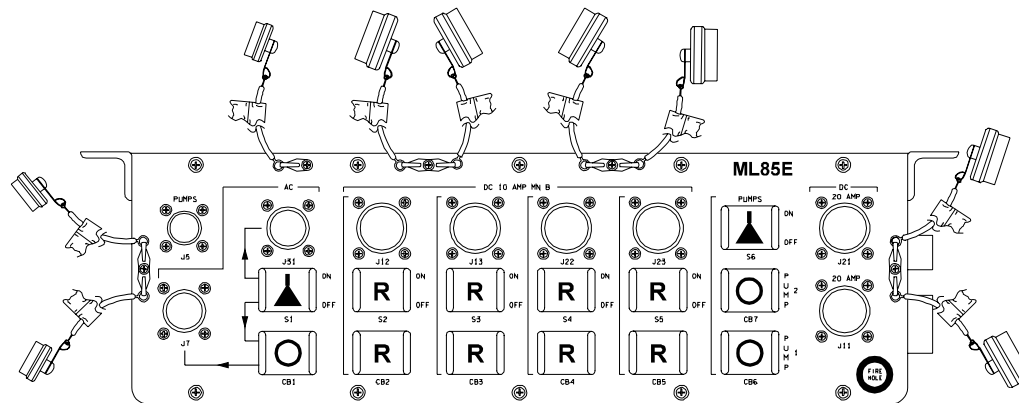


NOTE: NOT VISIBLE IF MAR FLOWN

PNL MD44F

CAB TEMP CNTL ACT LINKAGE - SECONDARY ACTUATOR

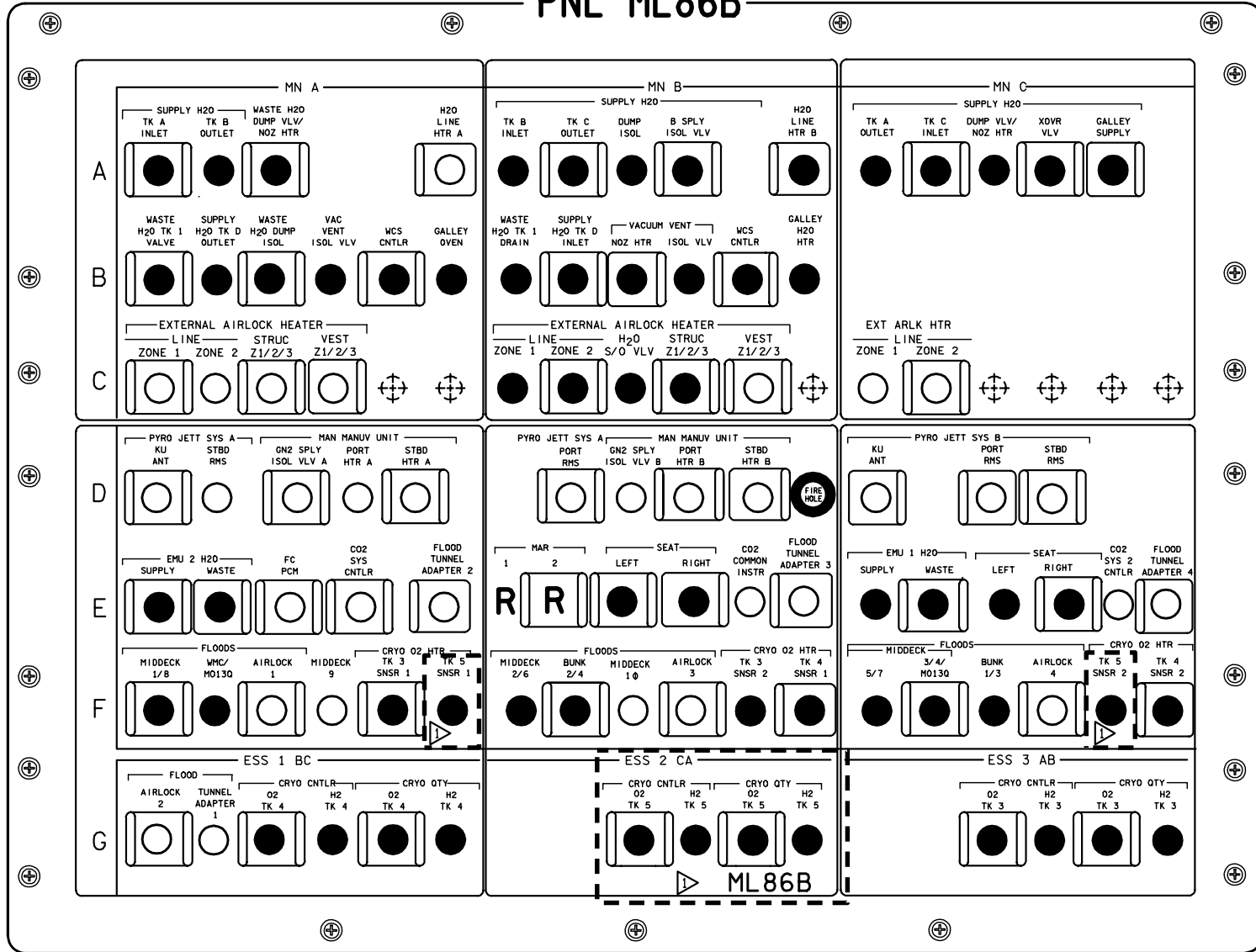
PNL ML85E



OV104

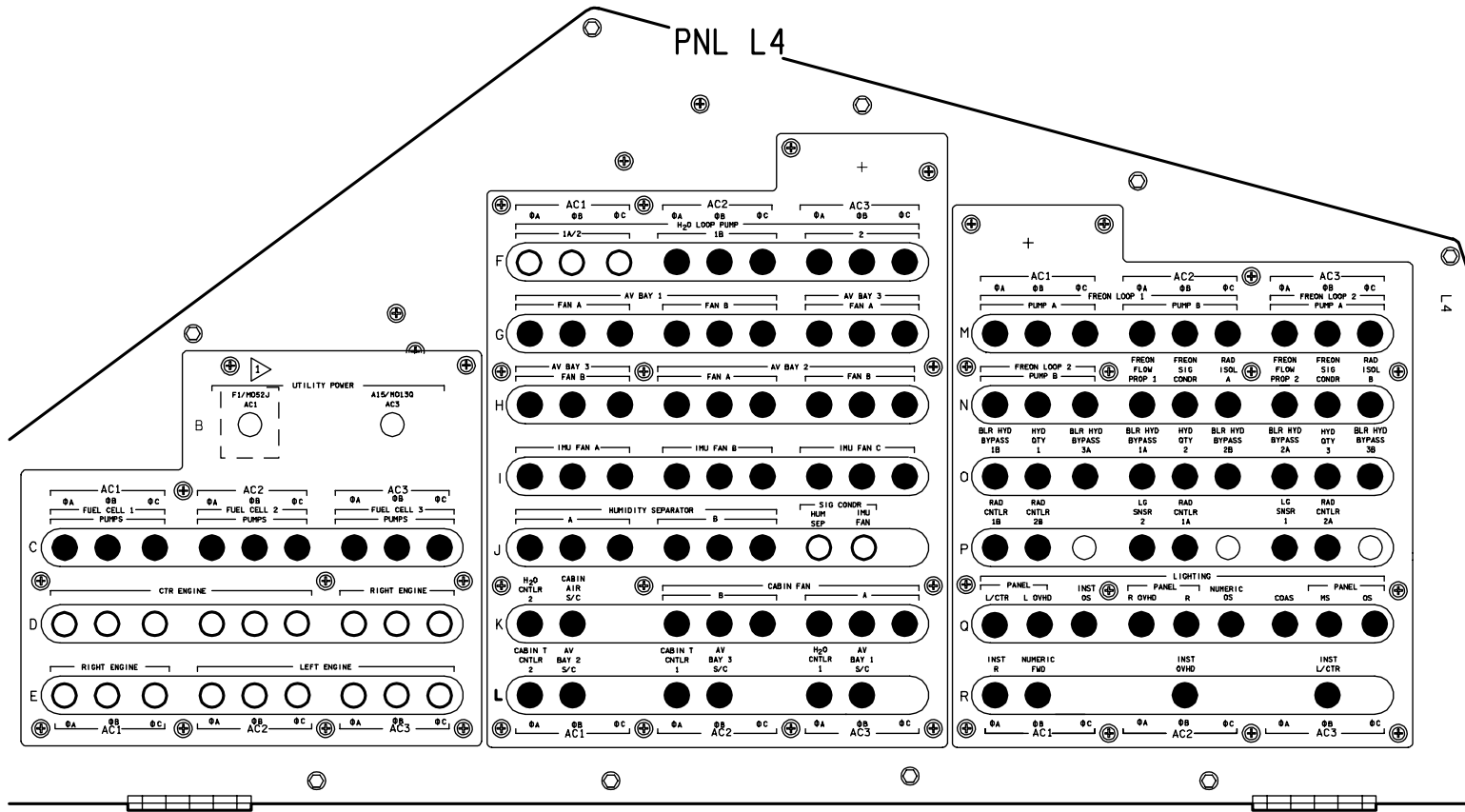
OV104

PNL ML86B

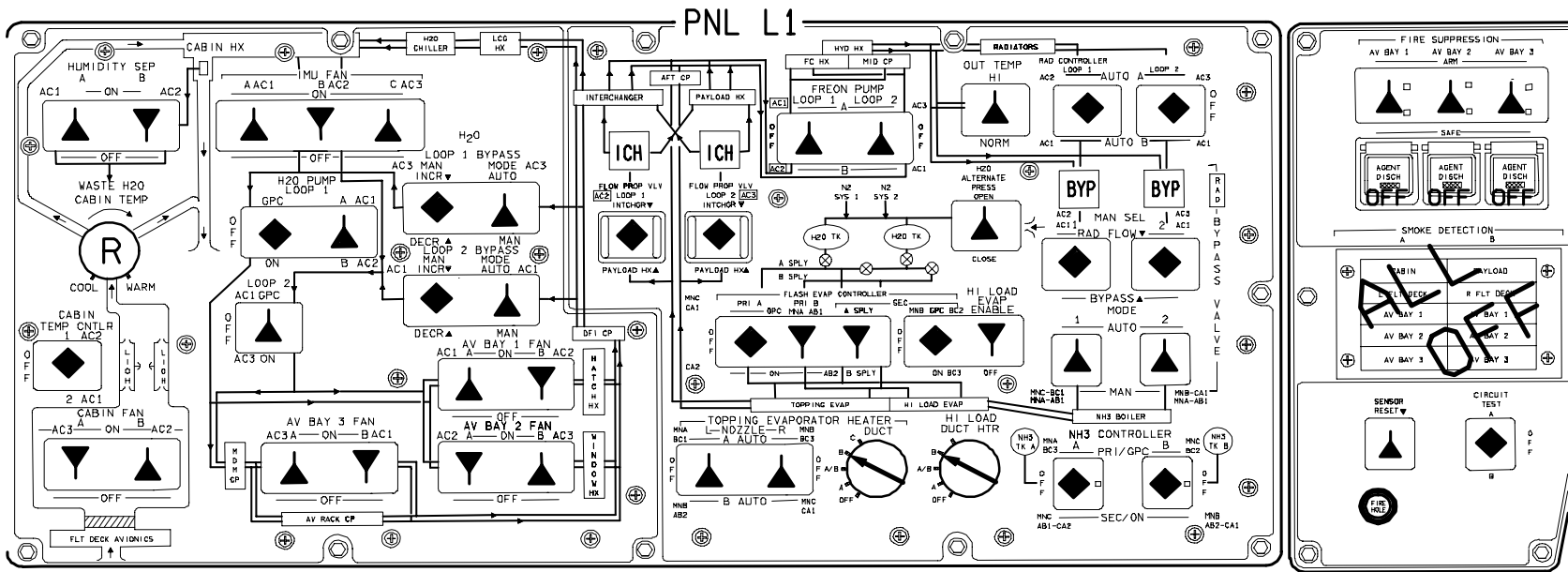


NOTE: ▷ OPEN IF TK 5 NOT FLOWN

OV104



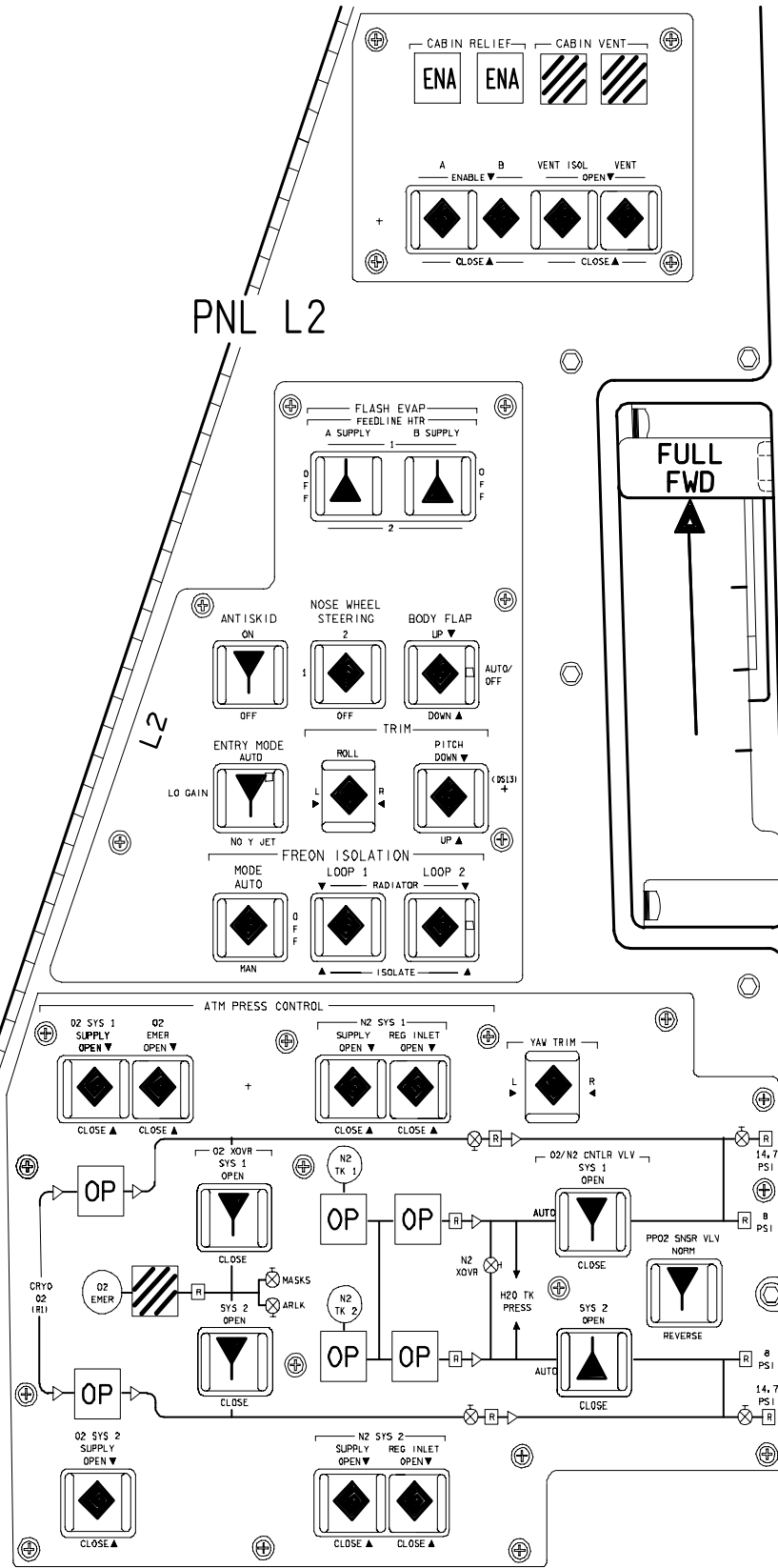
NOTE: ▷ CB CAN REMAIN CLOSED FOR AC PGSC USAGE.
 OPEN WHEN PGSC UNPOWERED/STOWED



OV104

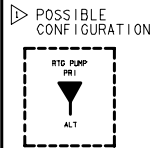
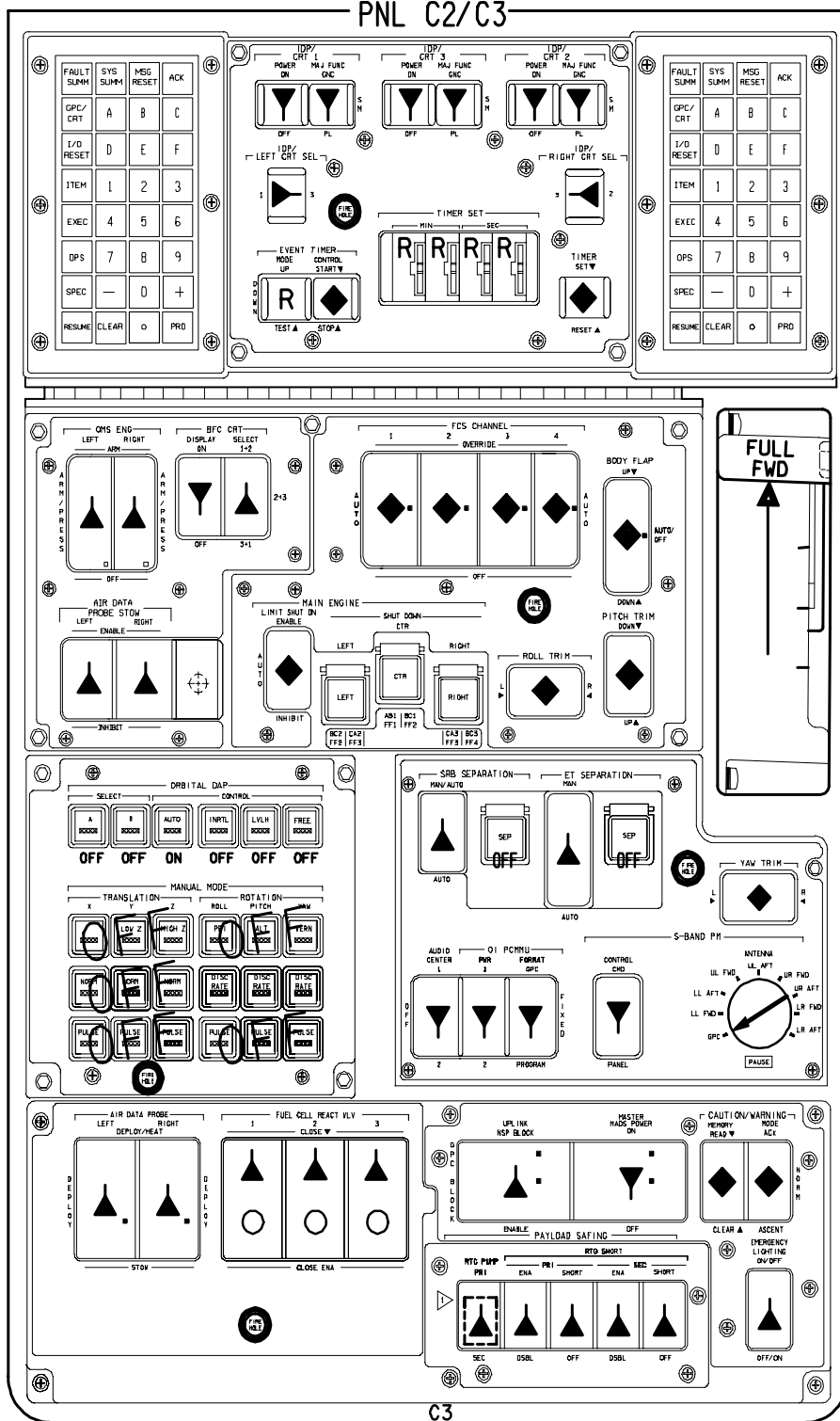
OV104/DATE 12/10/02

PNL L2

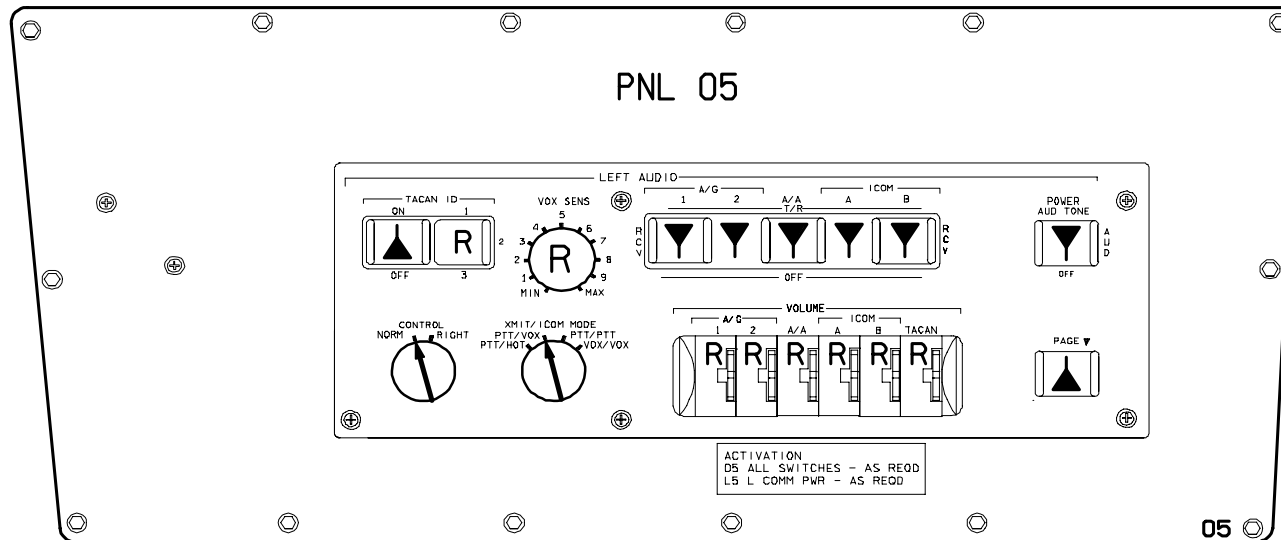
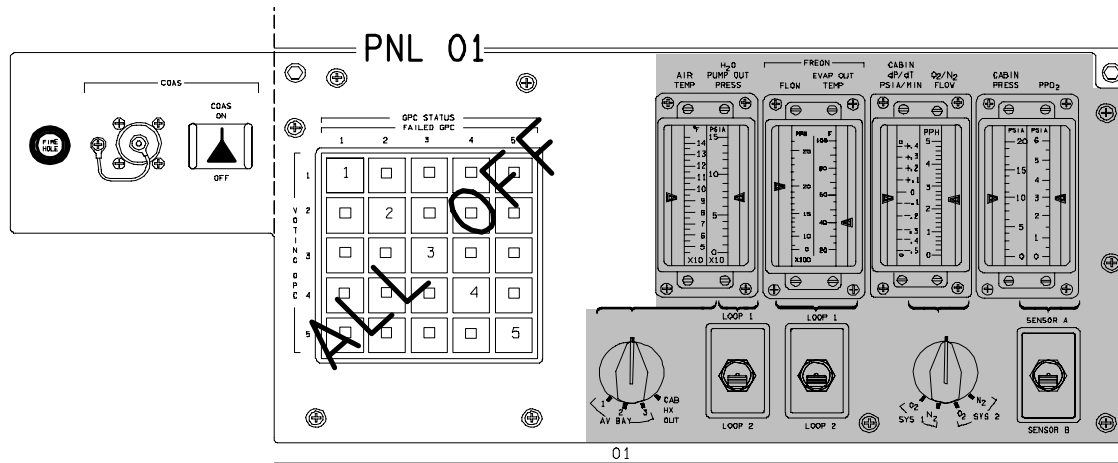


48015C315_114, PNL, I

OV104

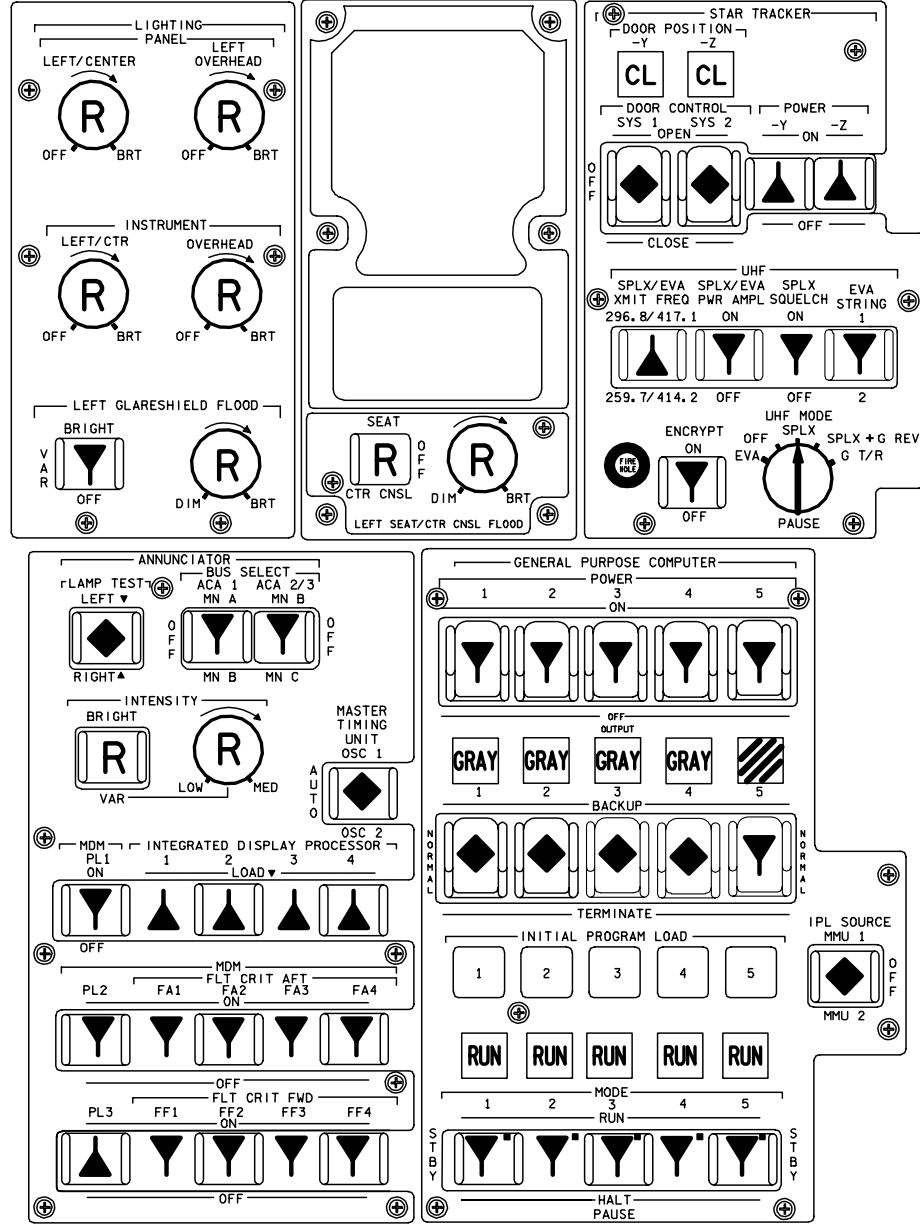


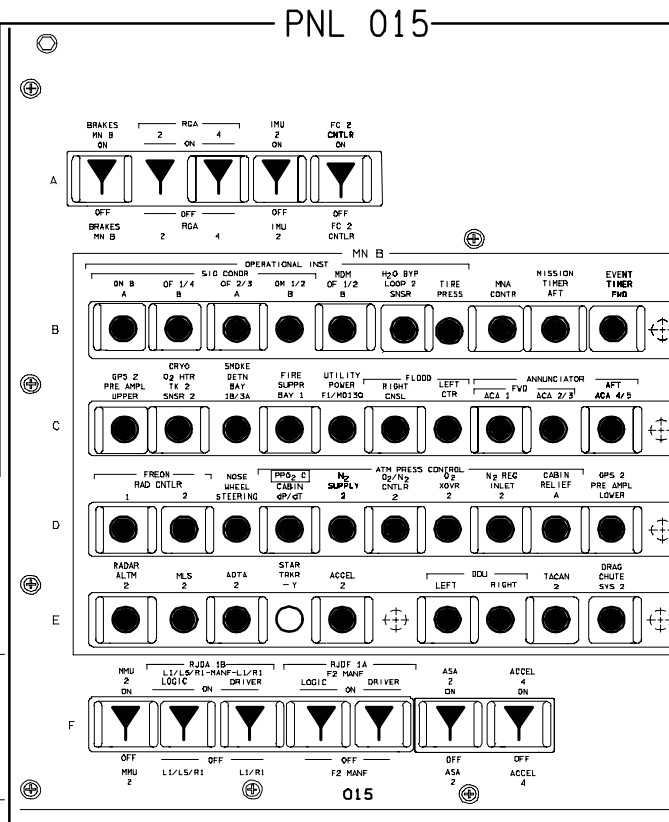
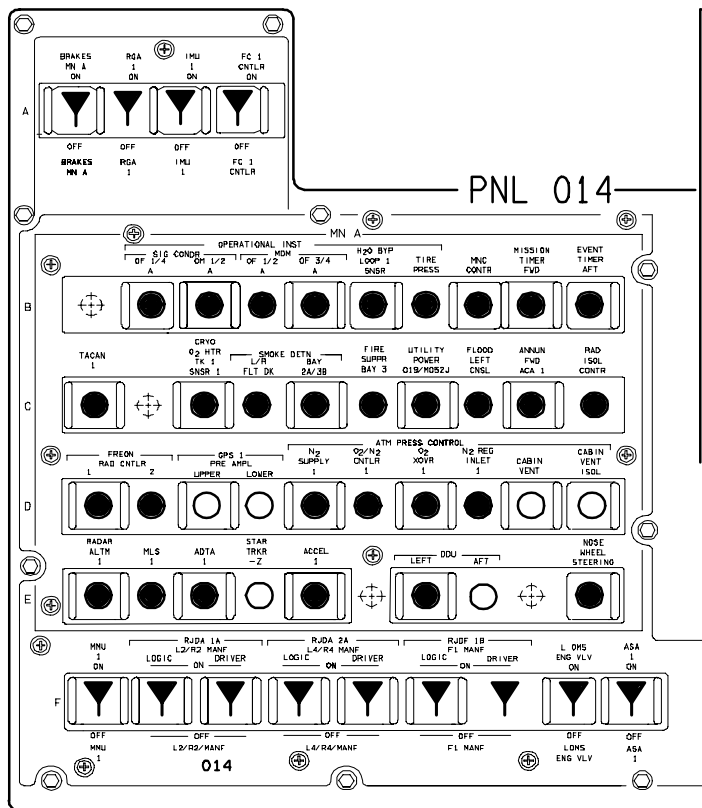
OV104

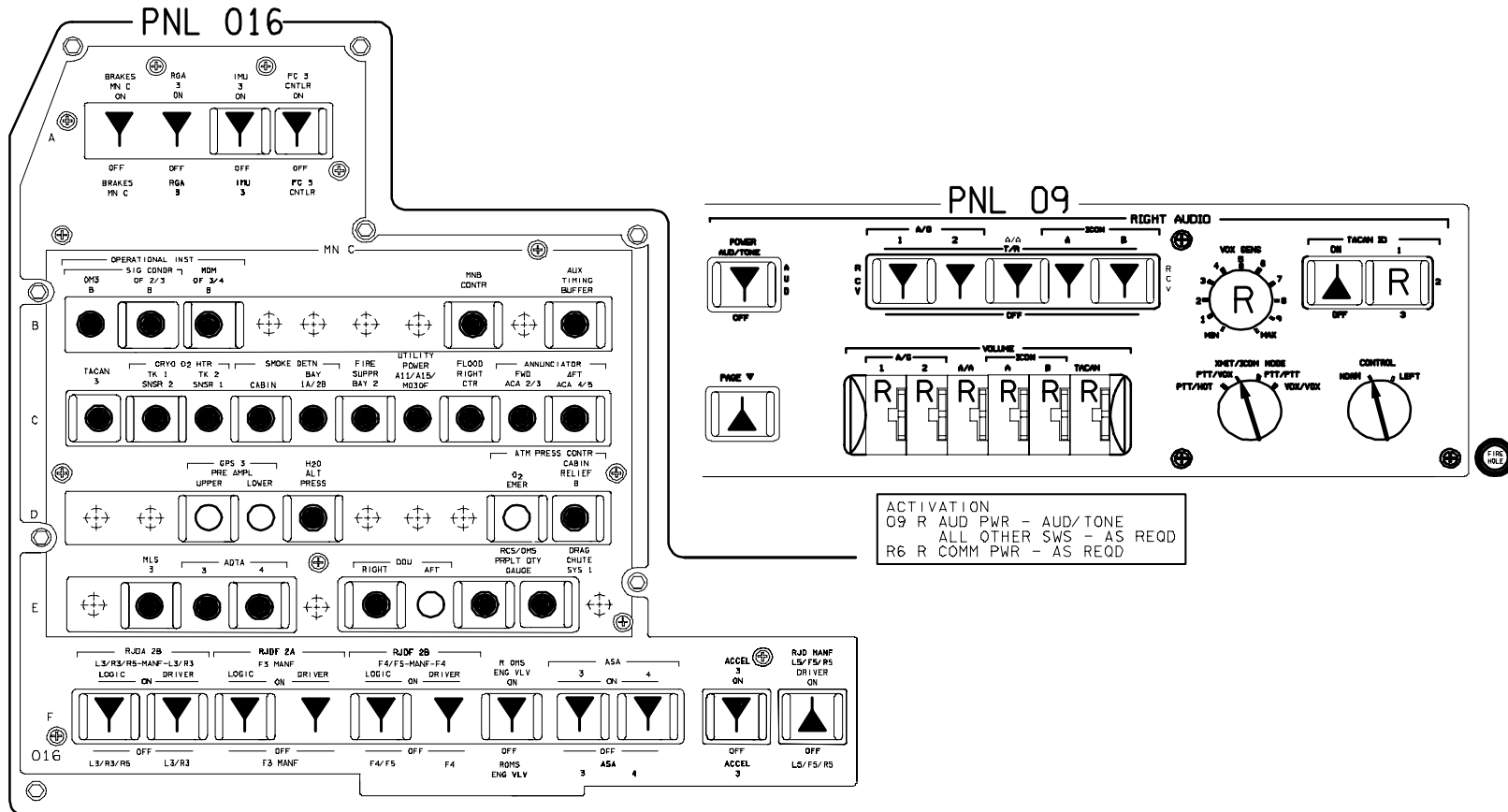


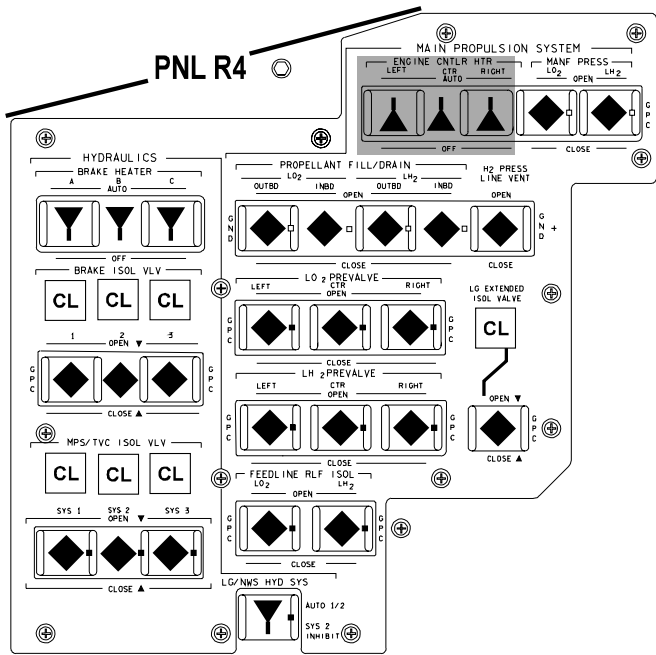
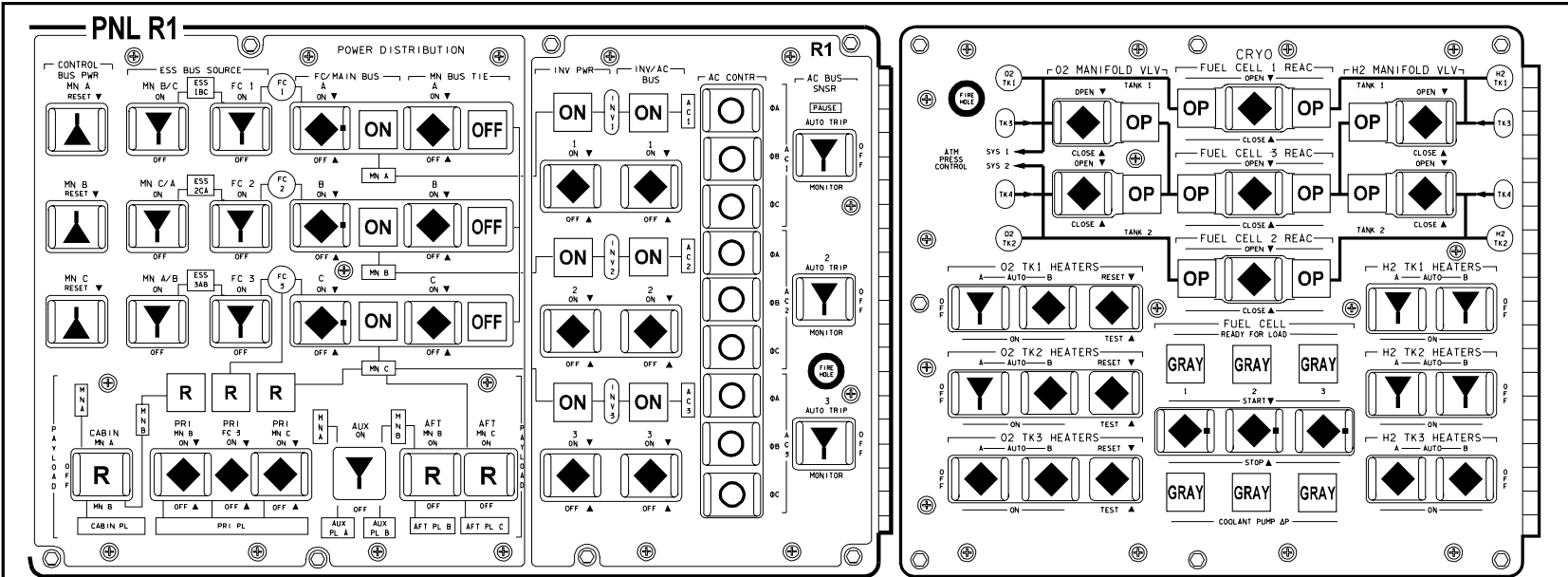
OV104

PNL 06









48015F321_115, PNL 1

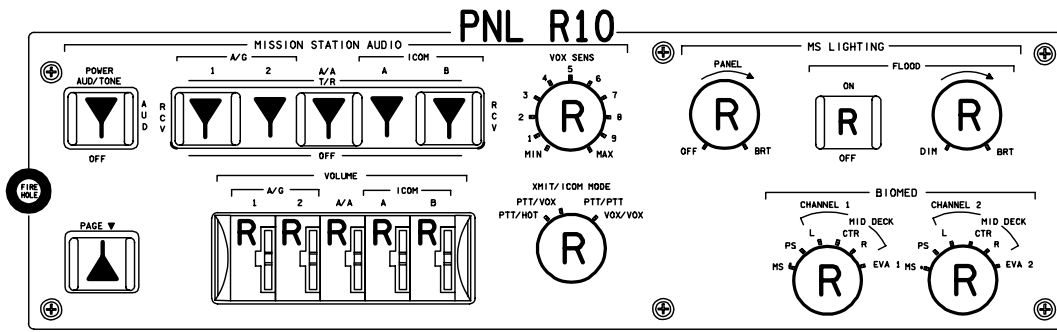
ALL VEH/DATE 06/27/06

OV104

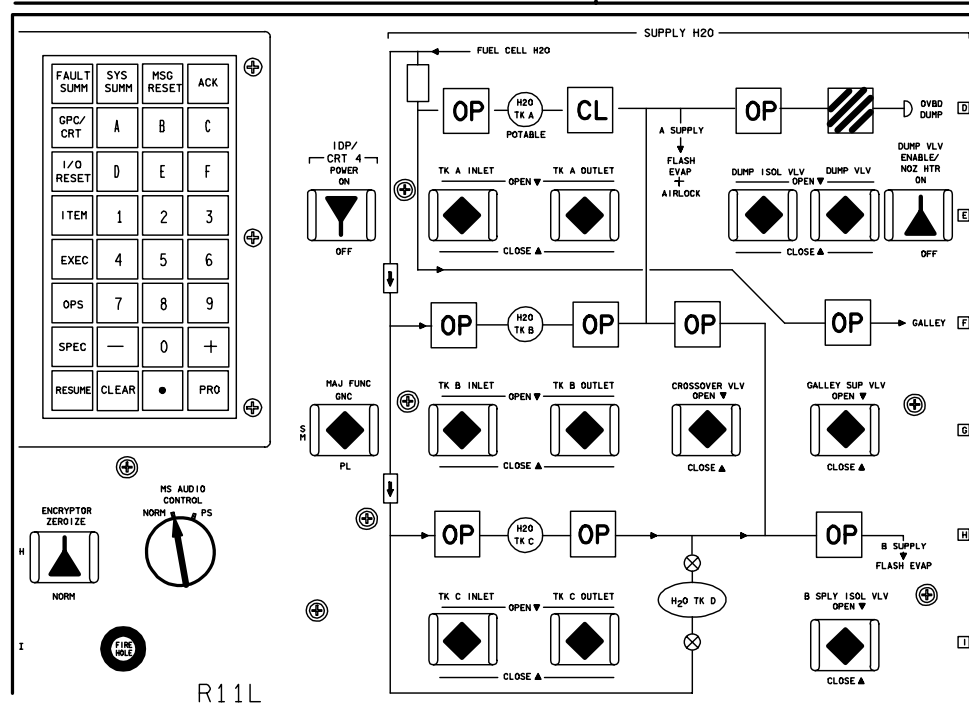
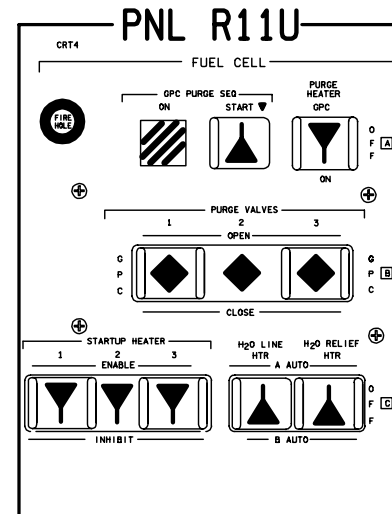
(OV104) B3-21

D/O/ALL/GEN P

OV104

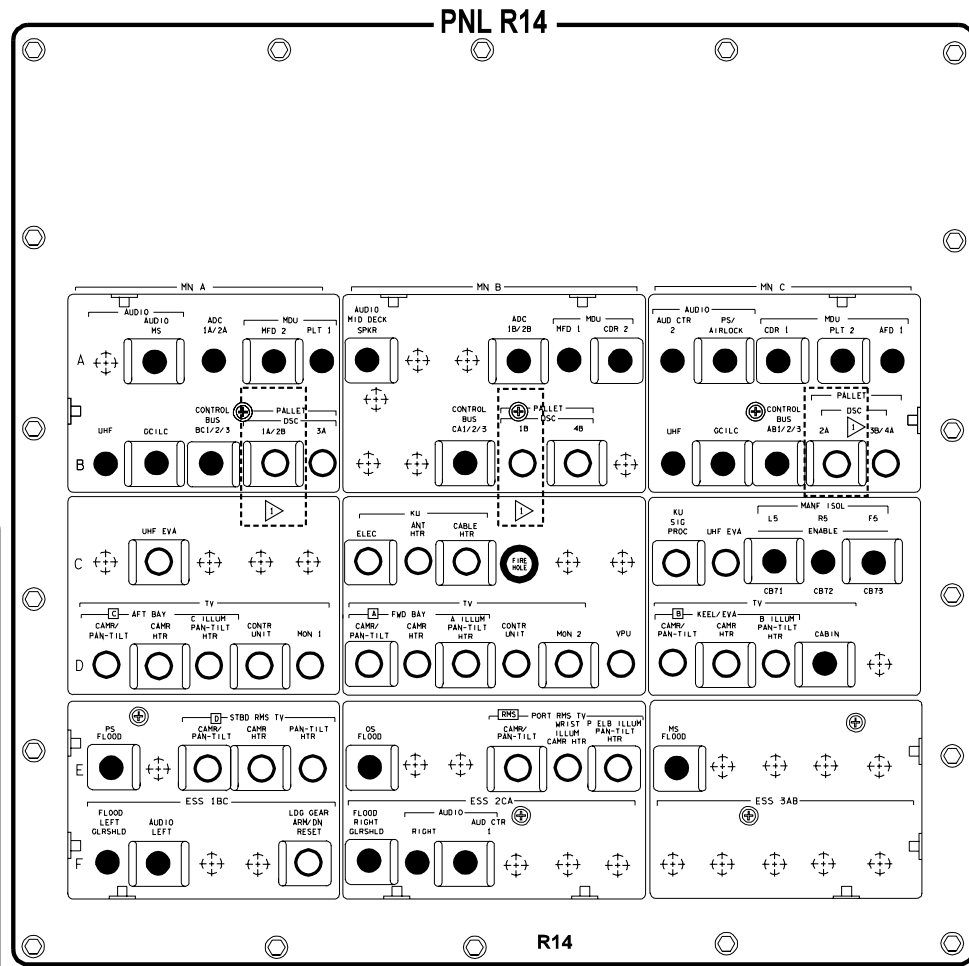
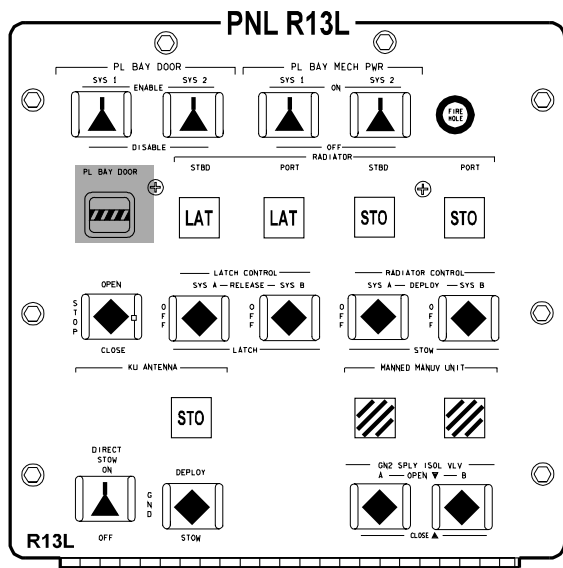


ACTIVATION
 R10 MS AUD PWR - AUD/TONE
 ALL OTHER SWS - AS REQD
 R12 MS AUD CONTL - NORM
 A11 MS COMM CCU PWR - ON

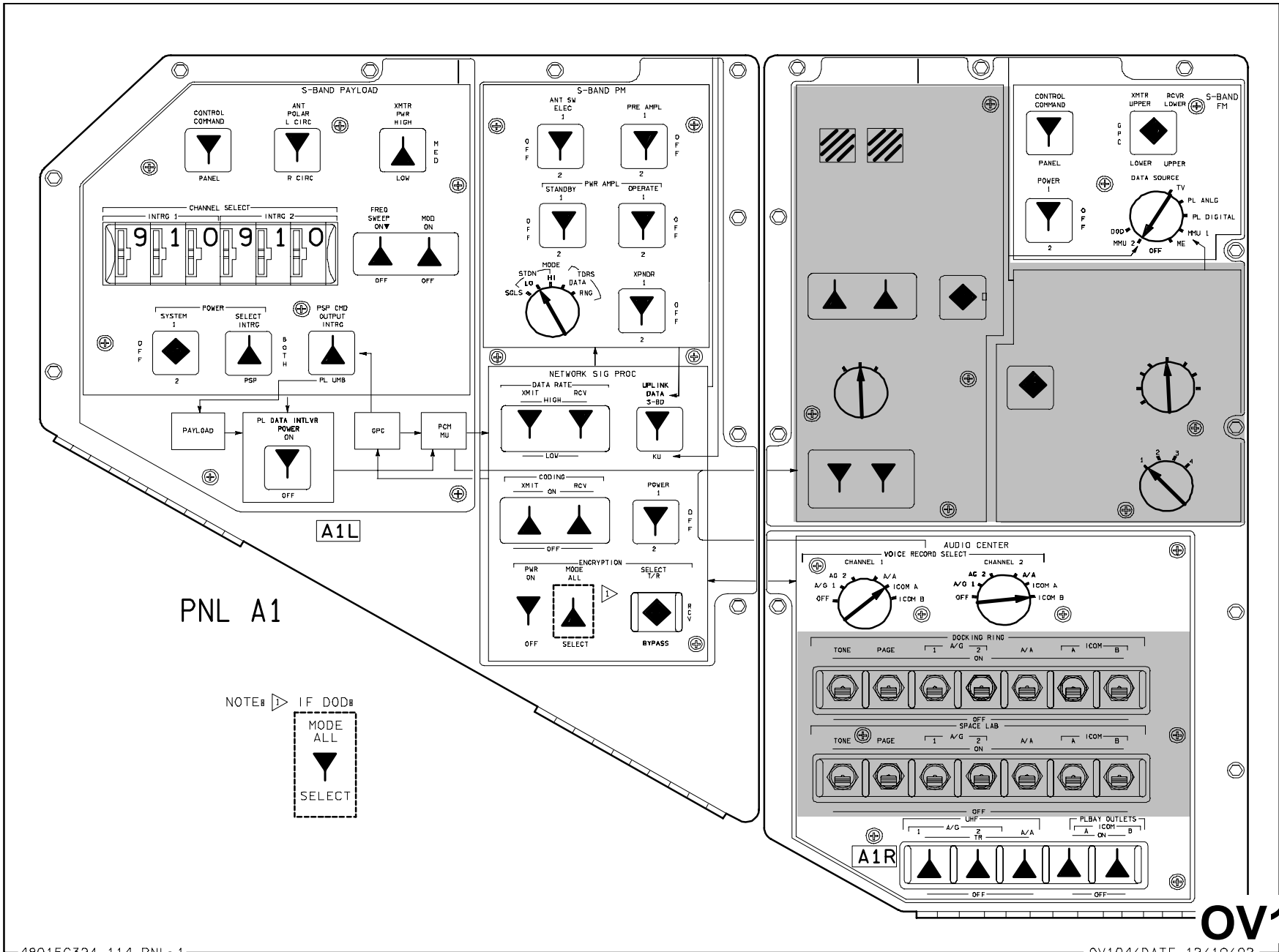


OV104

OV104



NOTE: ▷ CLOSED IF EDO

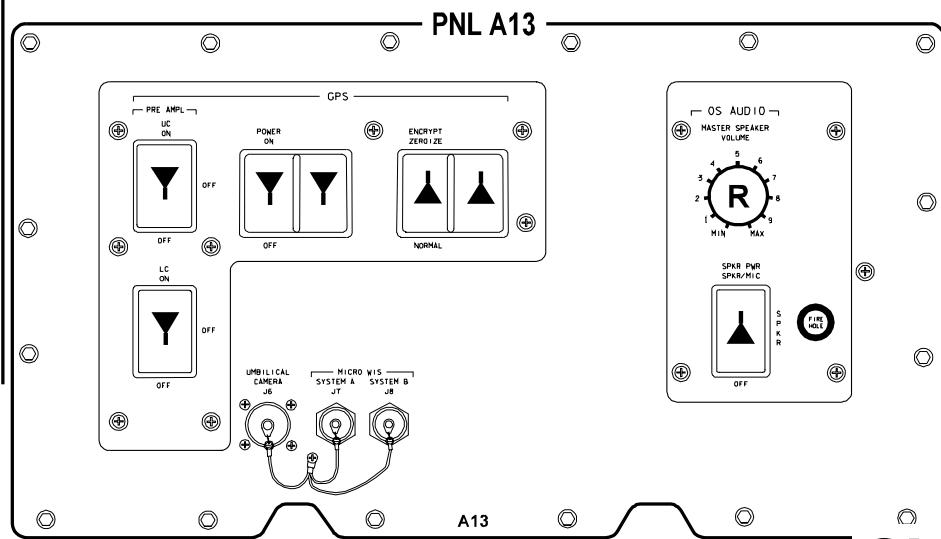
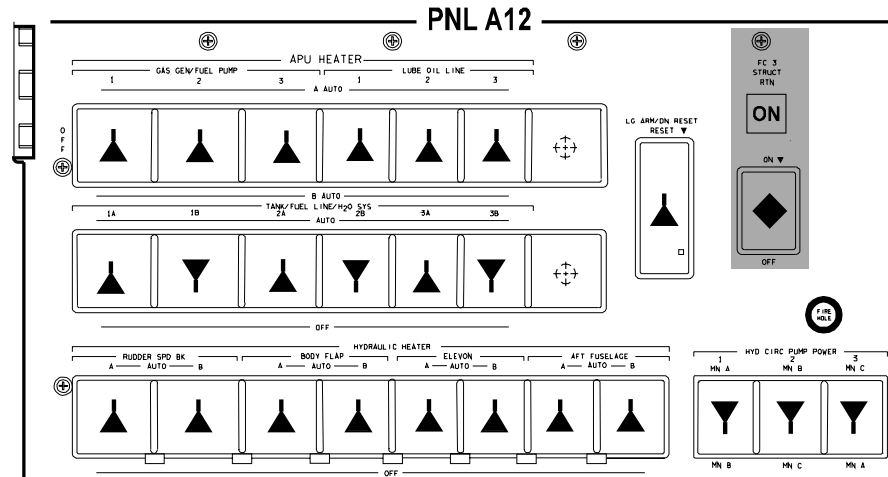
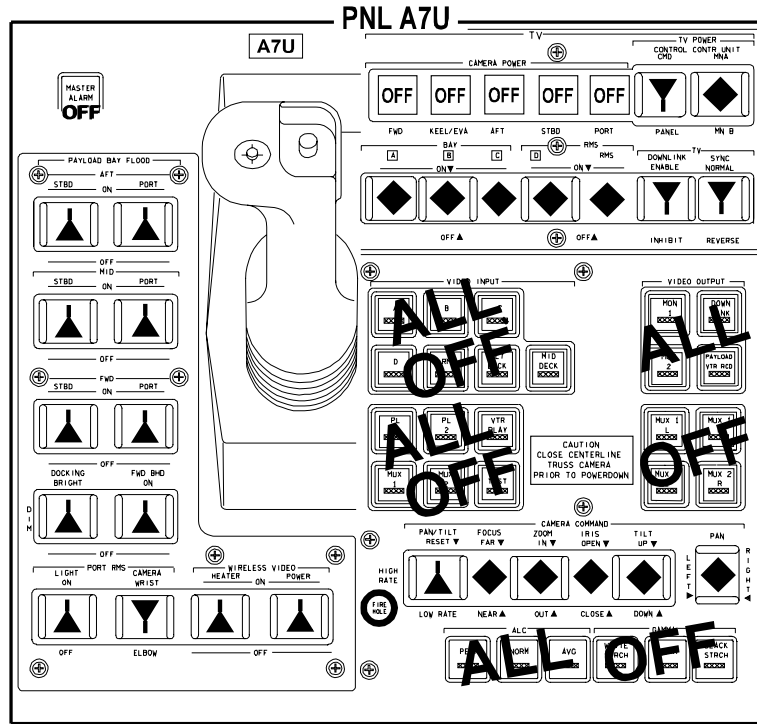


PNL A1

NOTE: IF DOD:
 MODE ALL
 SELECT

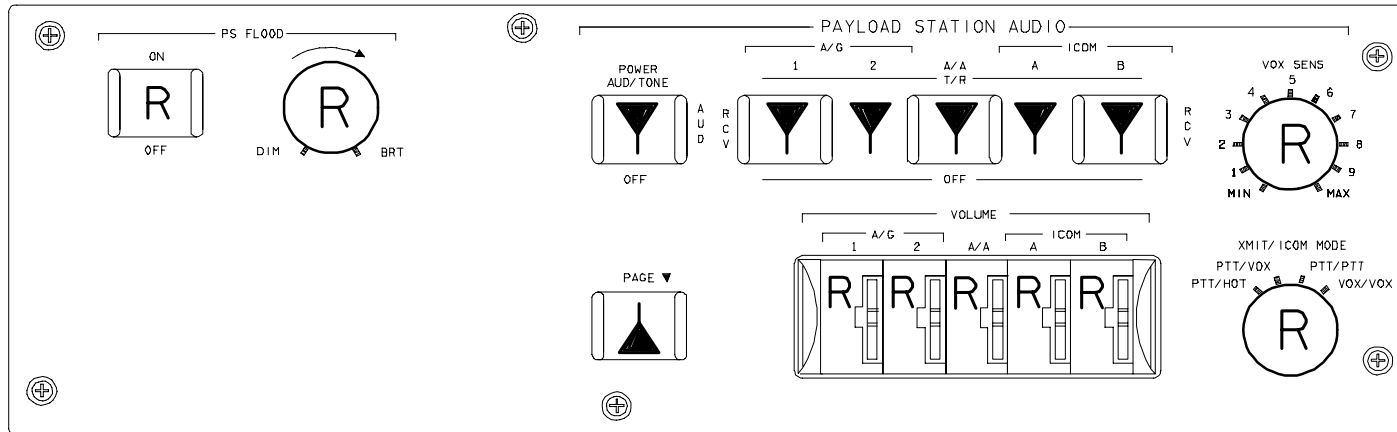
OV104

OV104



OV104

PNL L9

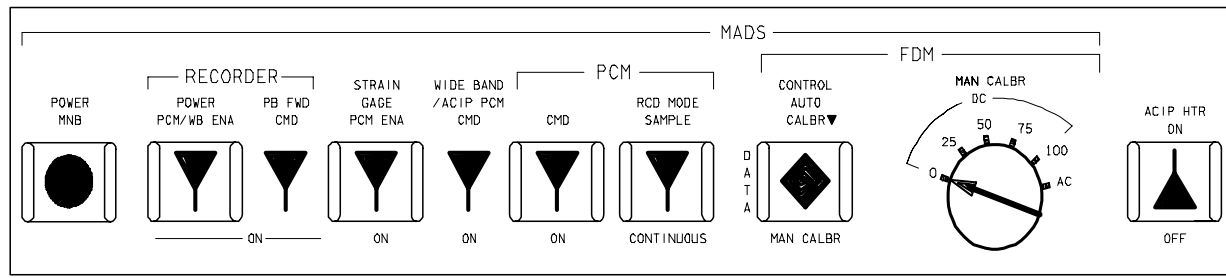
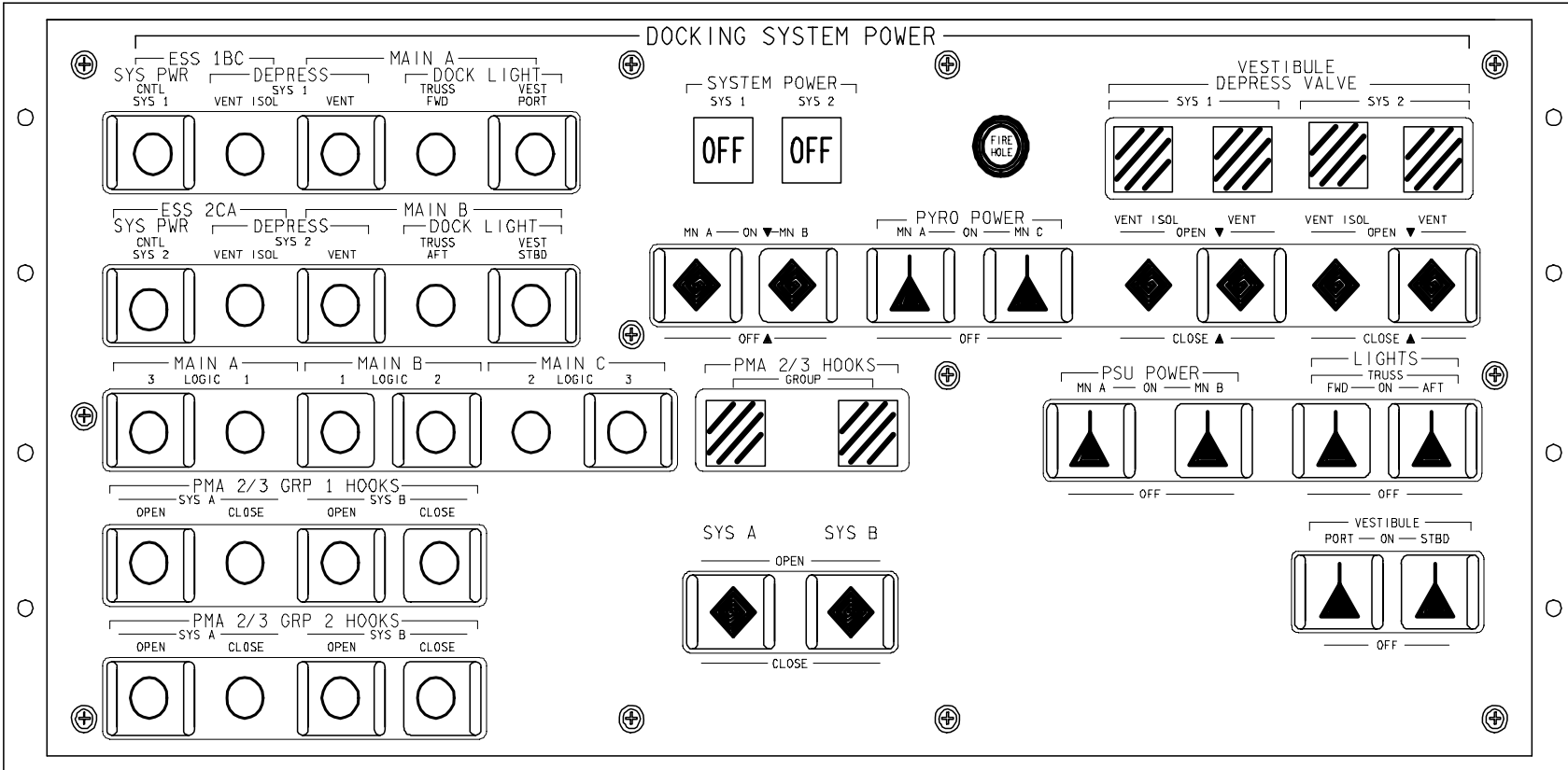


ACTIVATION
L9 ALL SWITCHES - AS REQD
A15 PS COMM CCU PWR - ON

L9

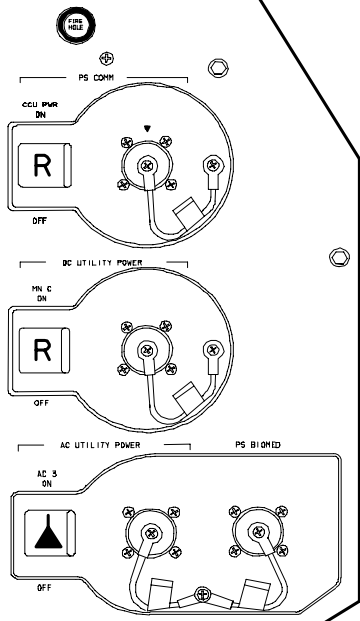
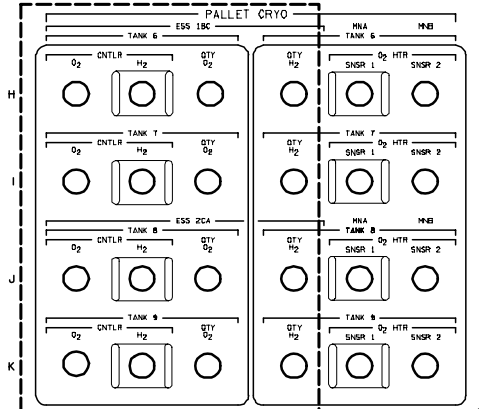
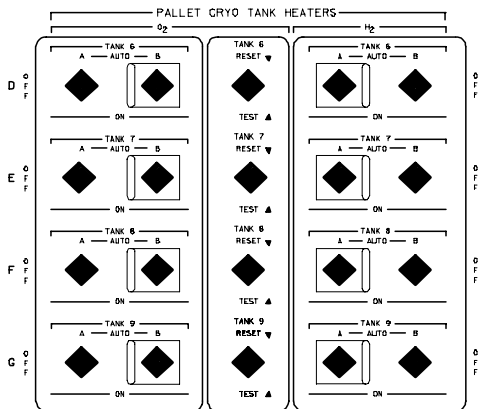
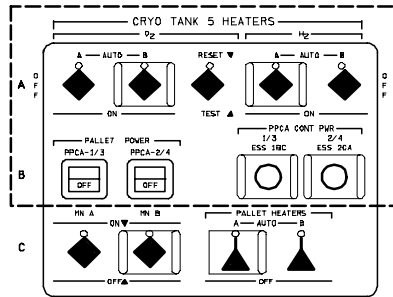
OV104

PNL A6L

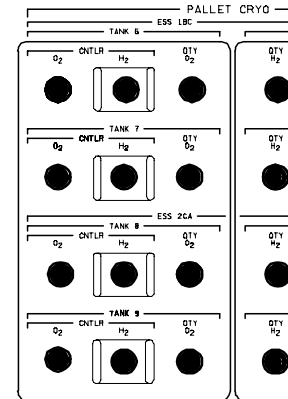


OV104

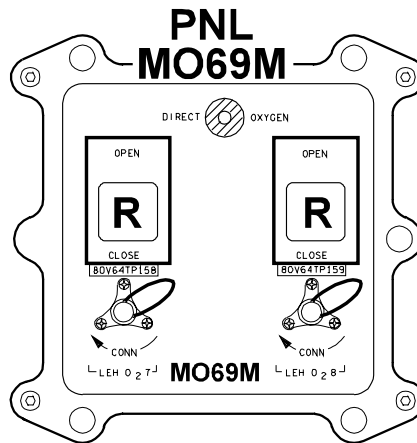
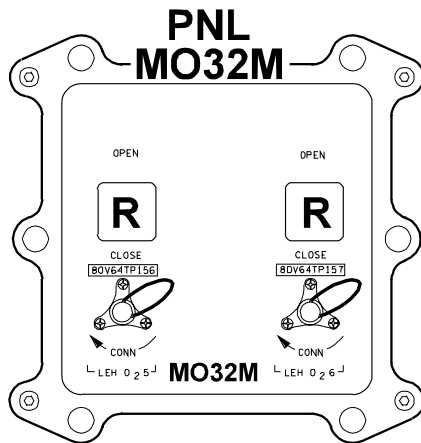
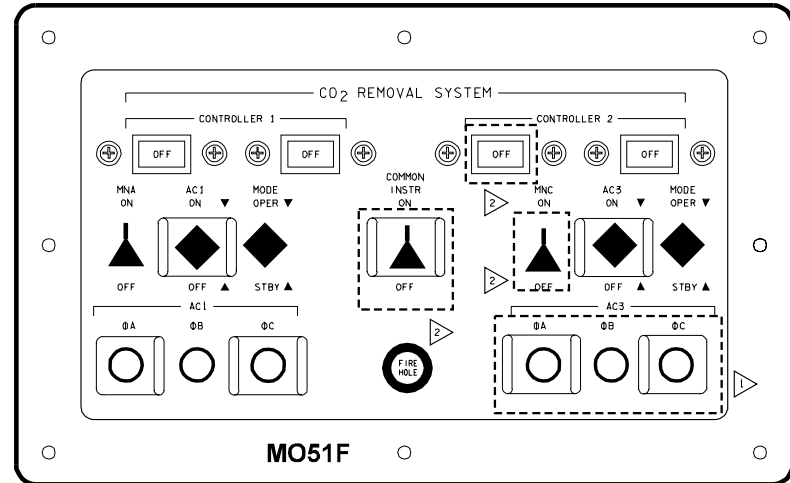
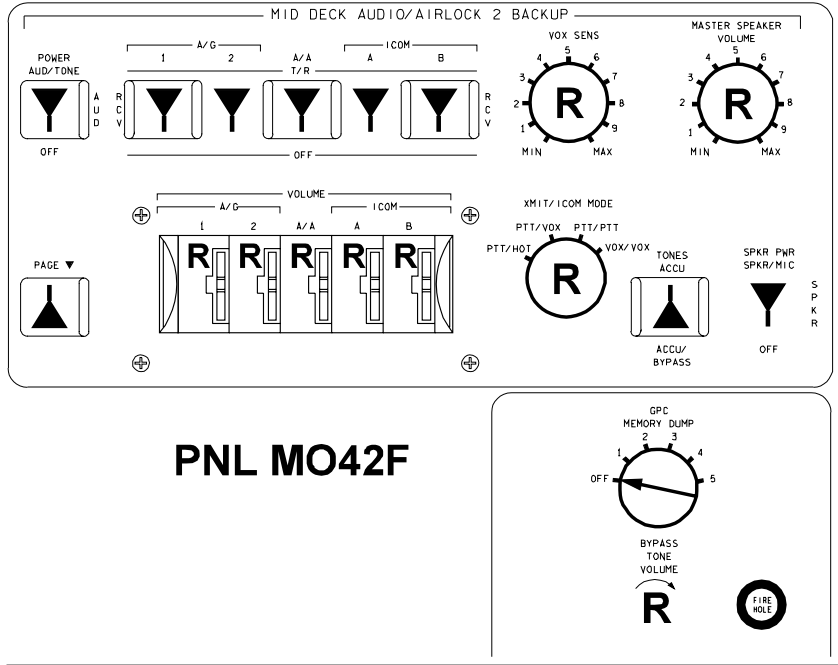
A15



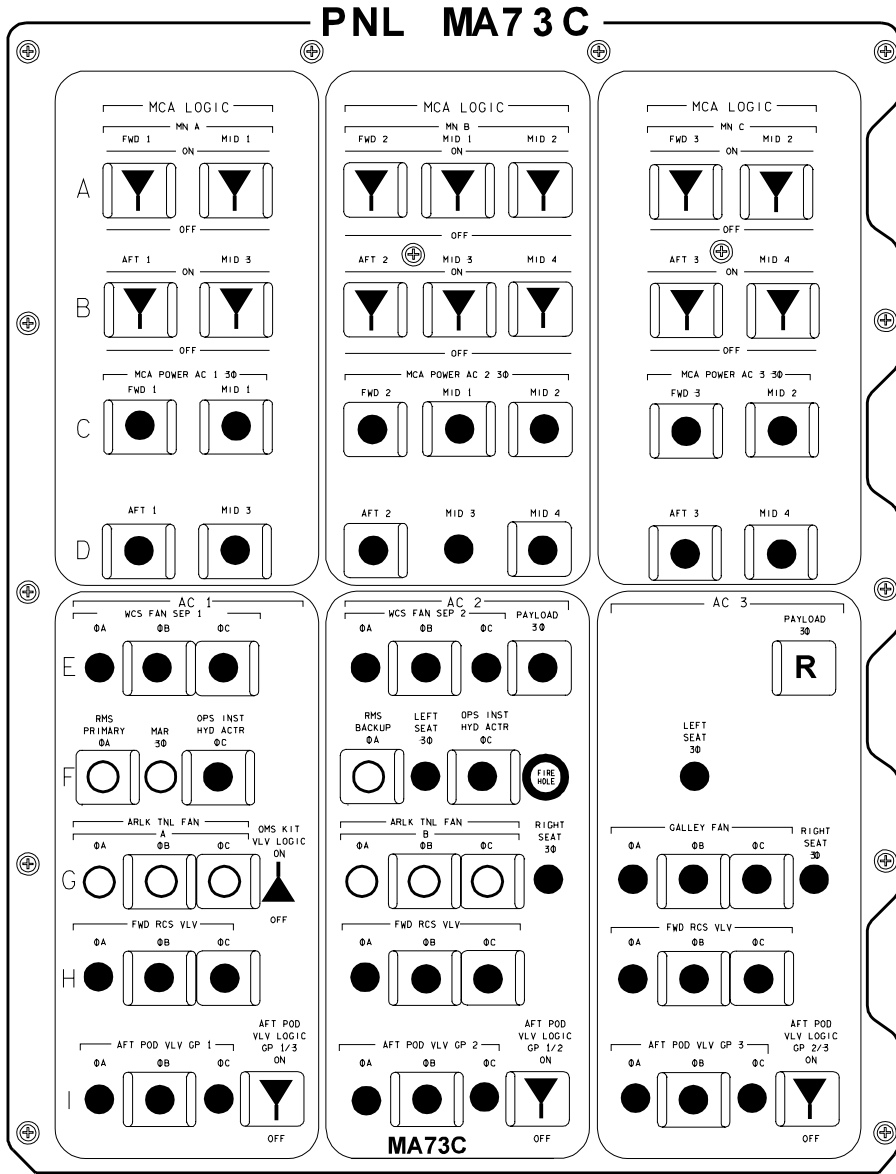
▶ cbs CLOSED FOR EDO MISSIONS

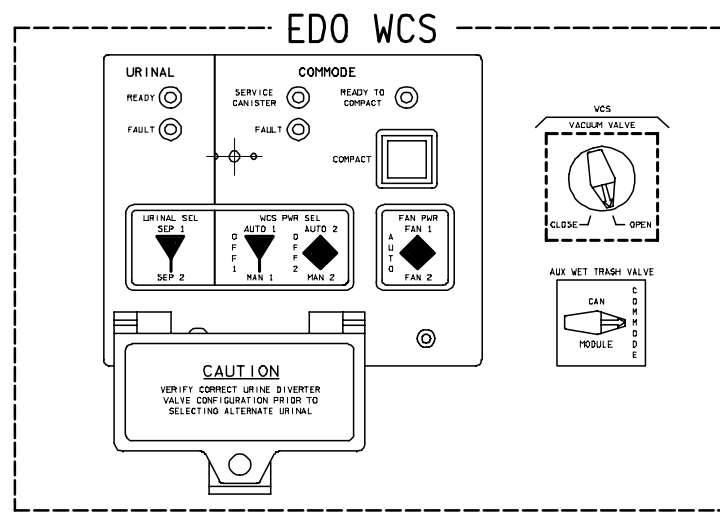
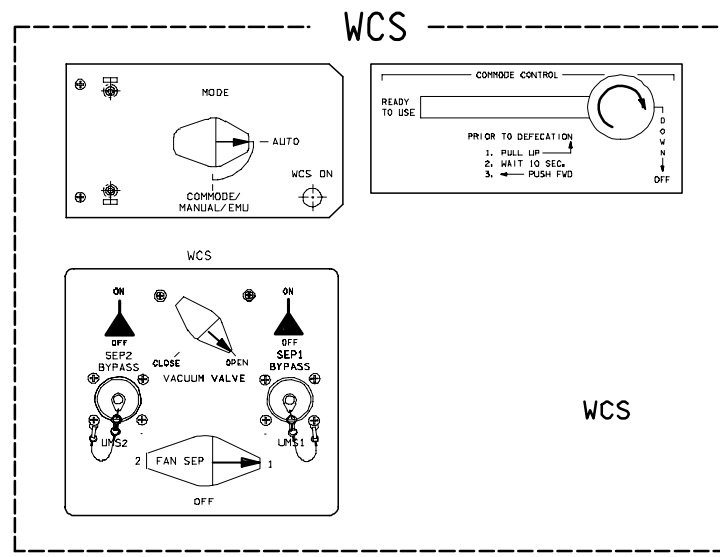
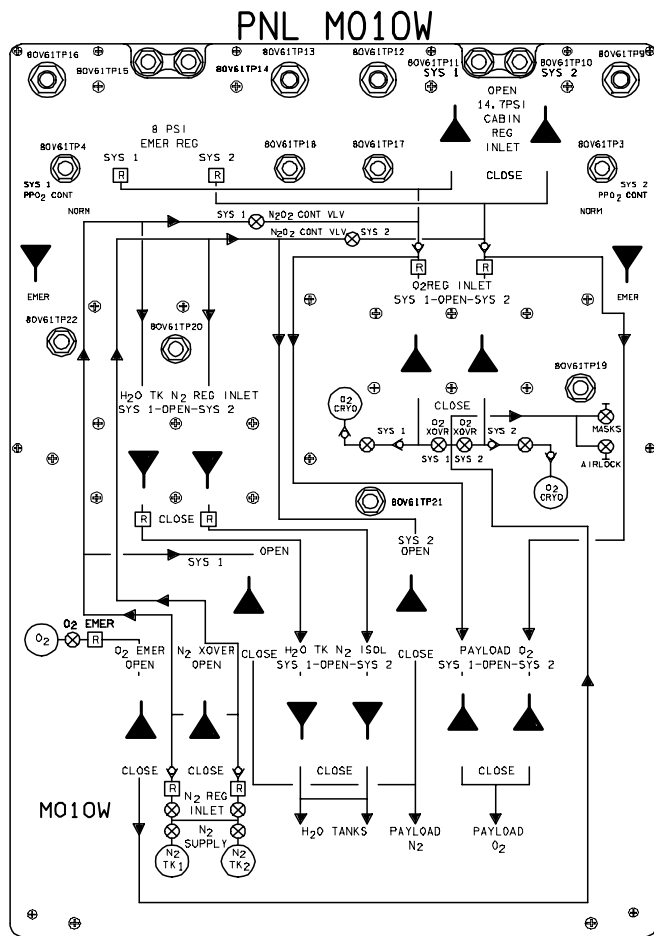


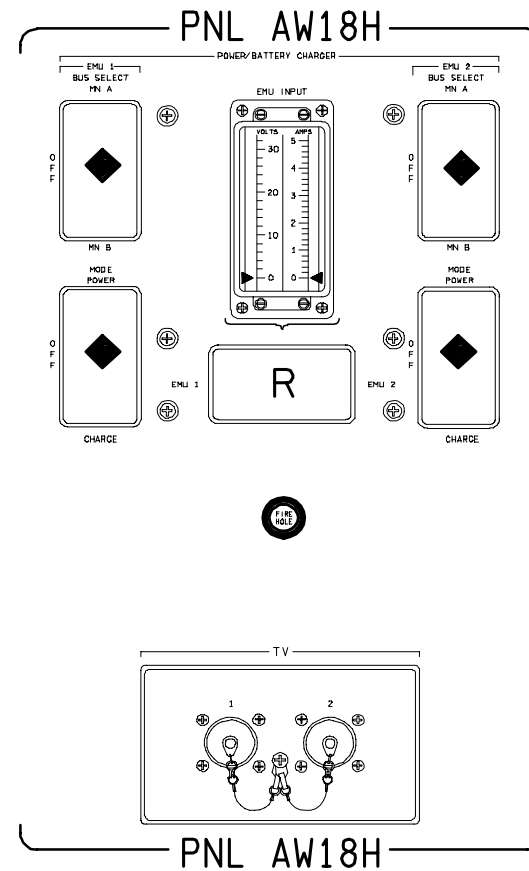
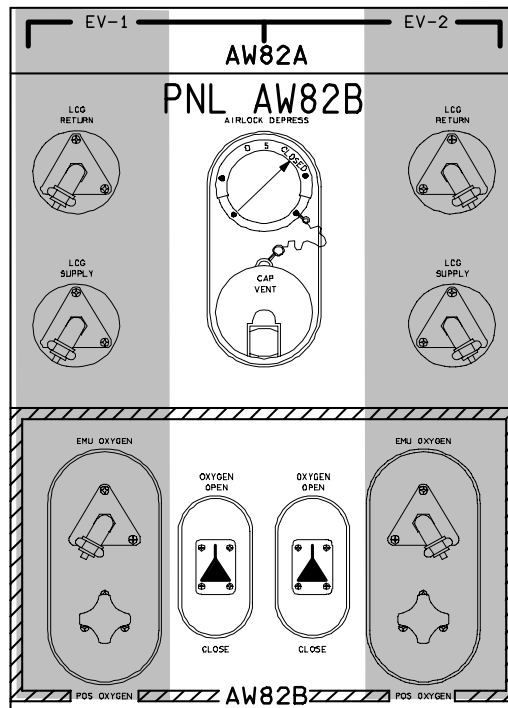
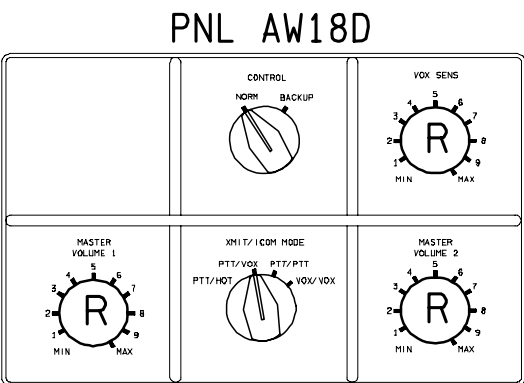
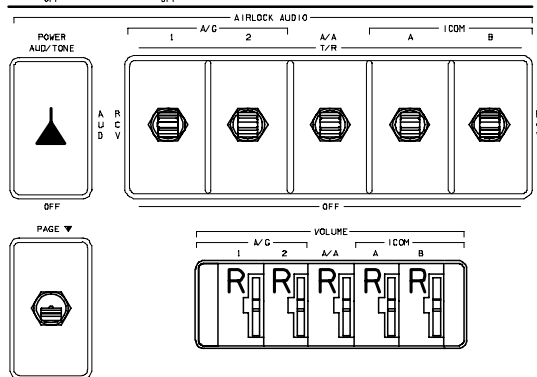
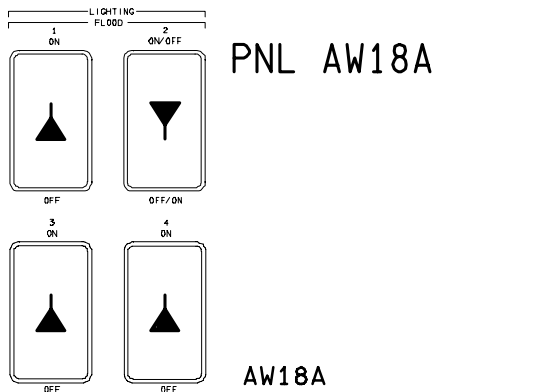
OV104



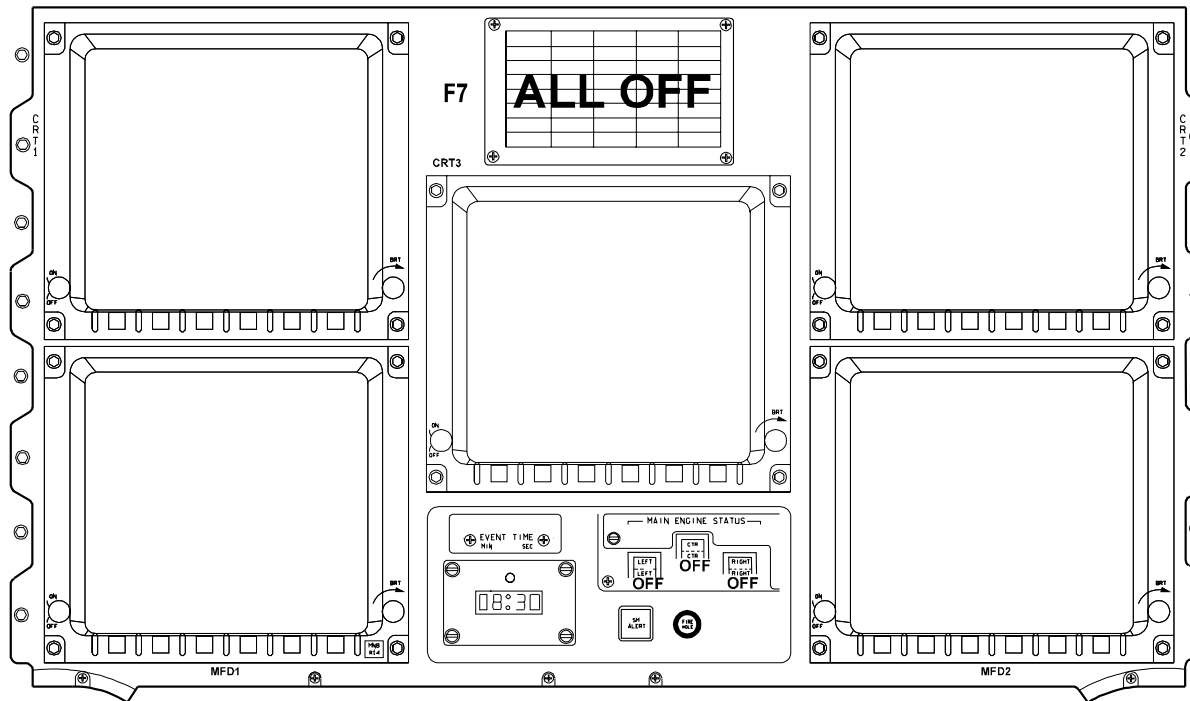
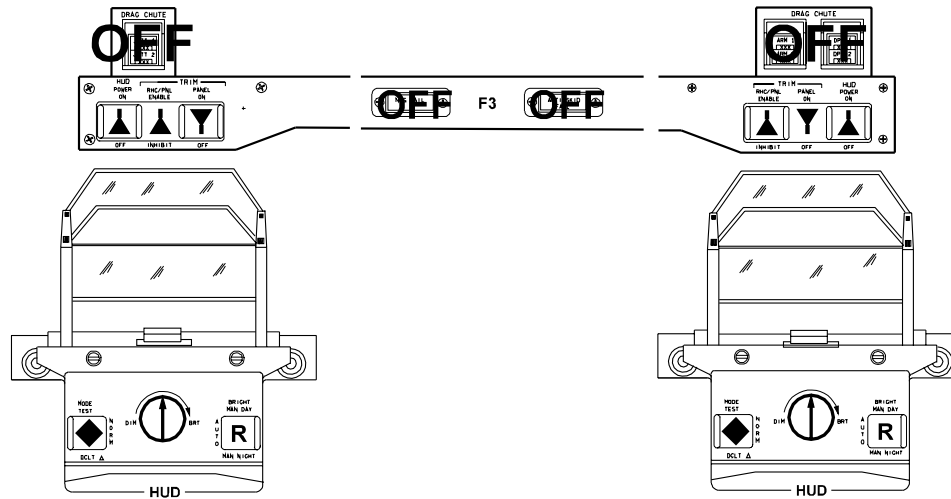
NOTES: ▷ CLOSED IF CO2 RMVL SYS FLOWN
▷ ON IF CO2 RMVL SYS FLOWN



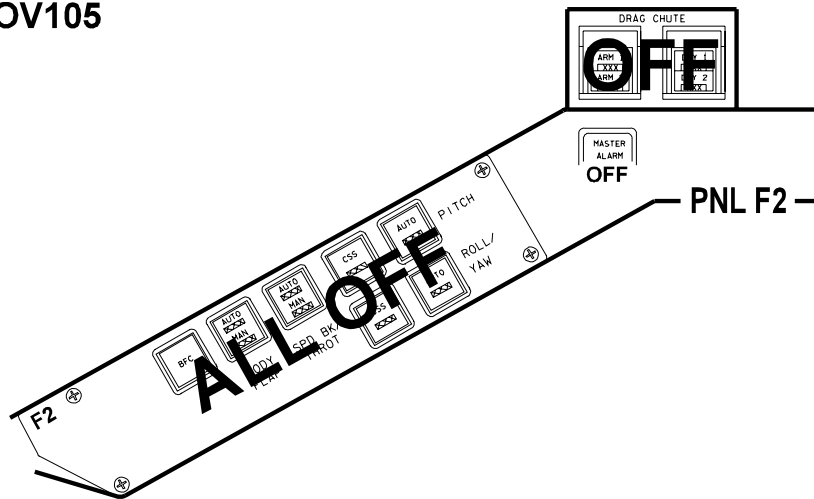




OV105

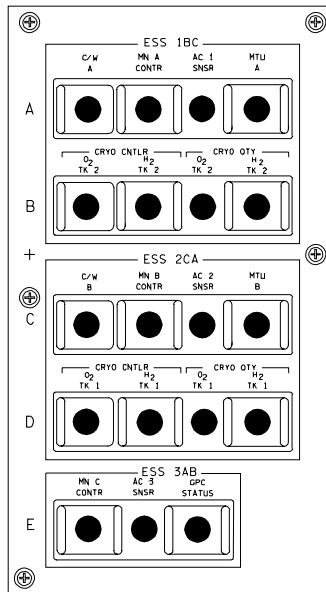


OV105



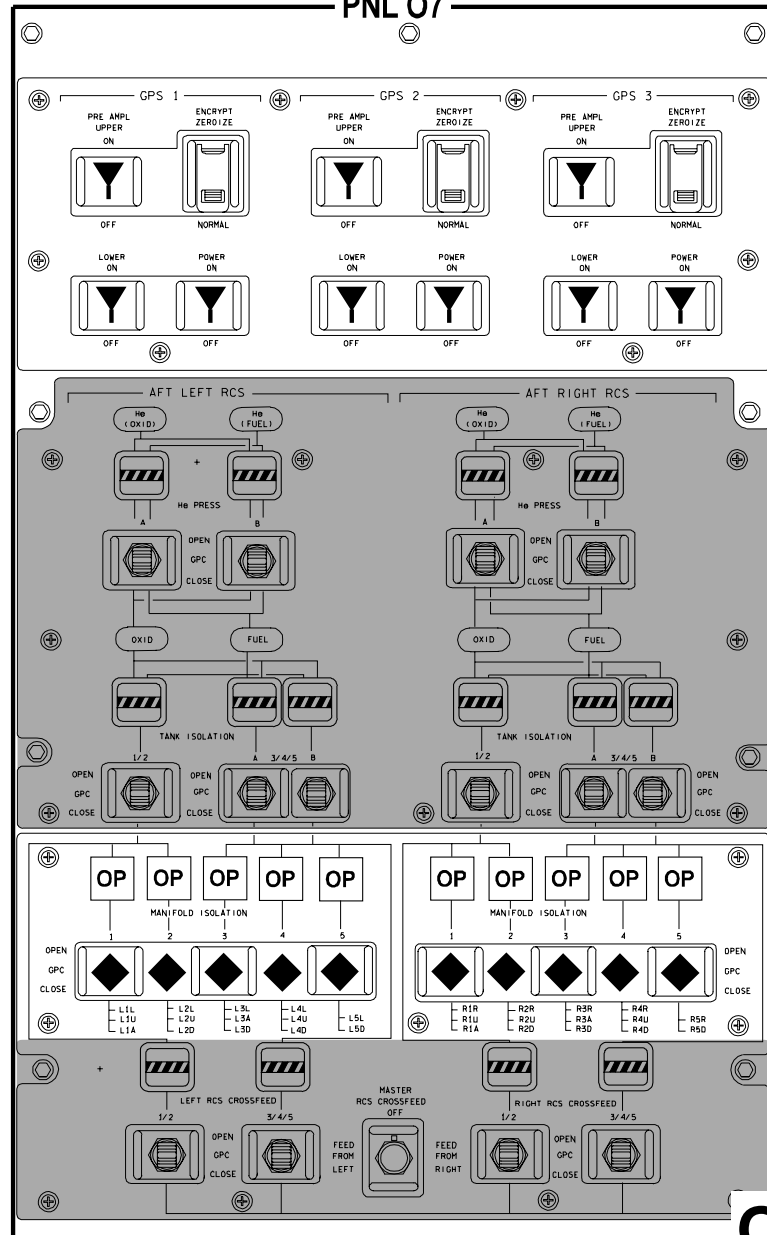
PNL F2

PNL O13



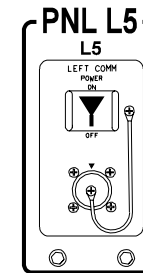
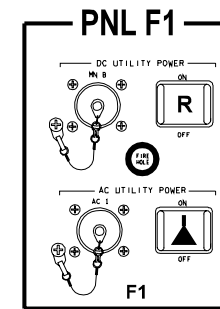
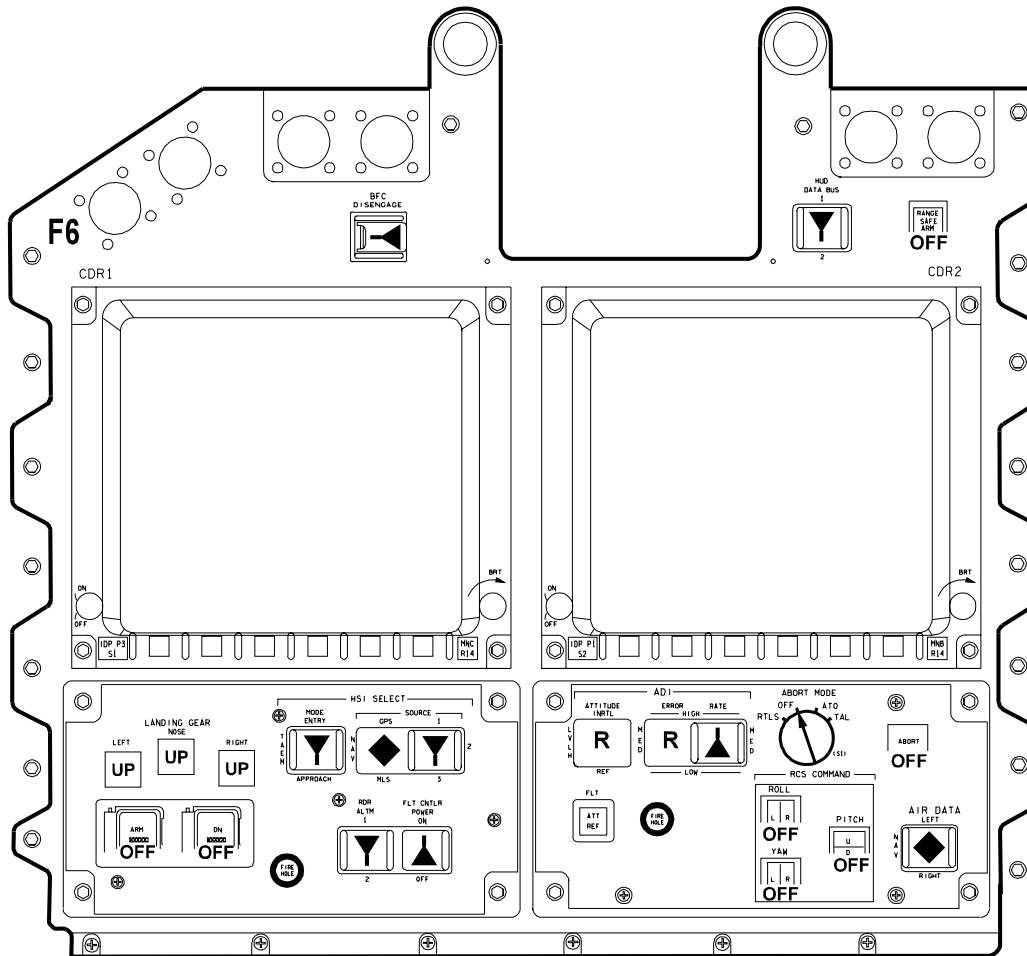
L side OVHD flood - R (MID)

PNL O7



OV105

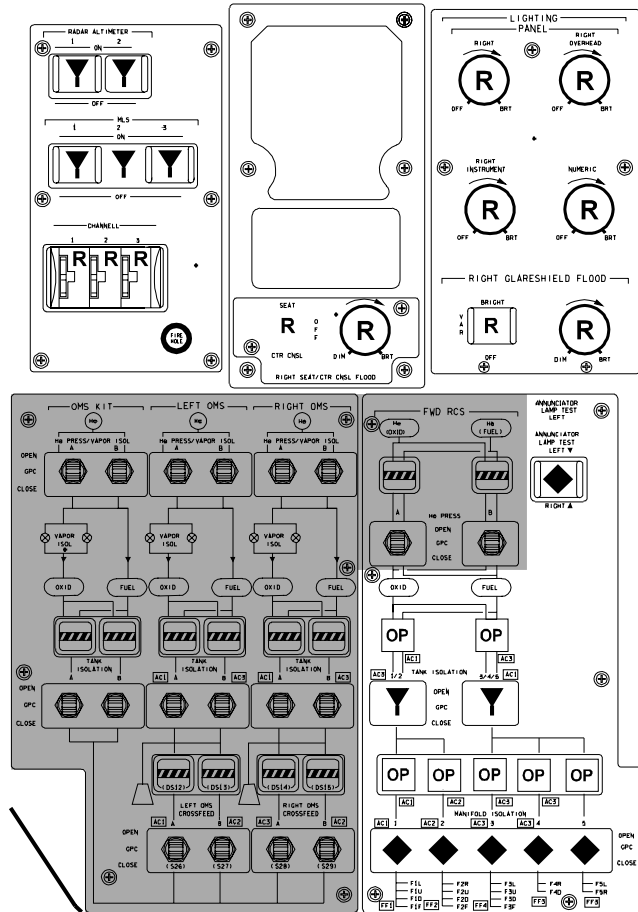
OV105



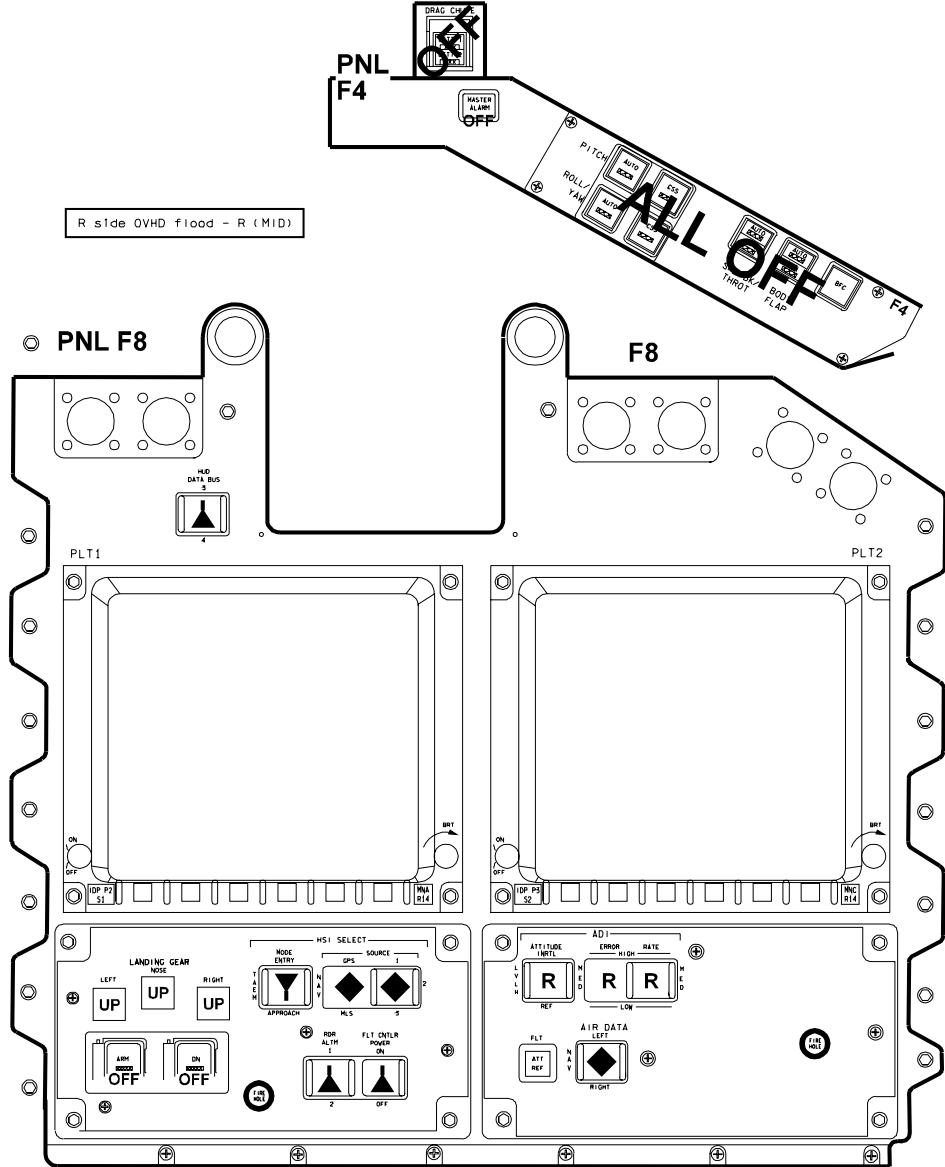
OV105

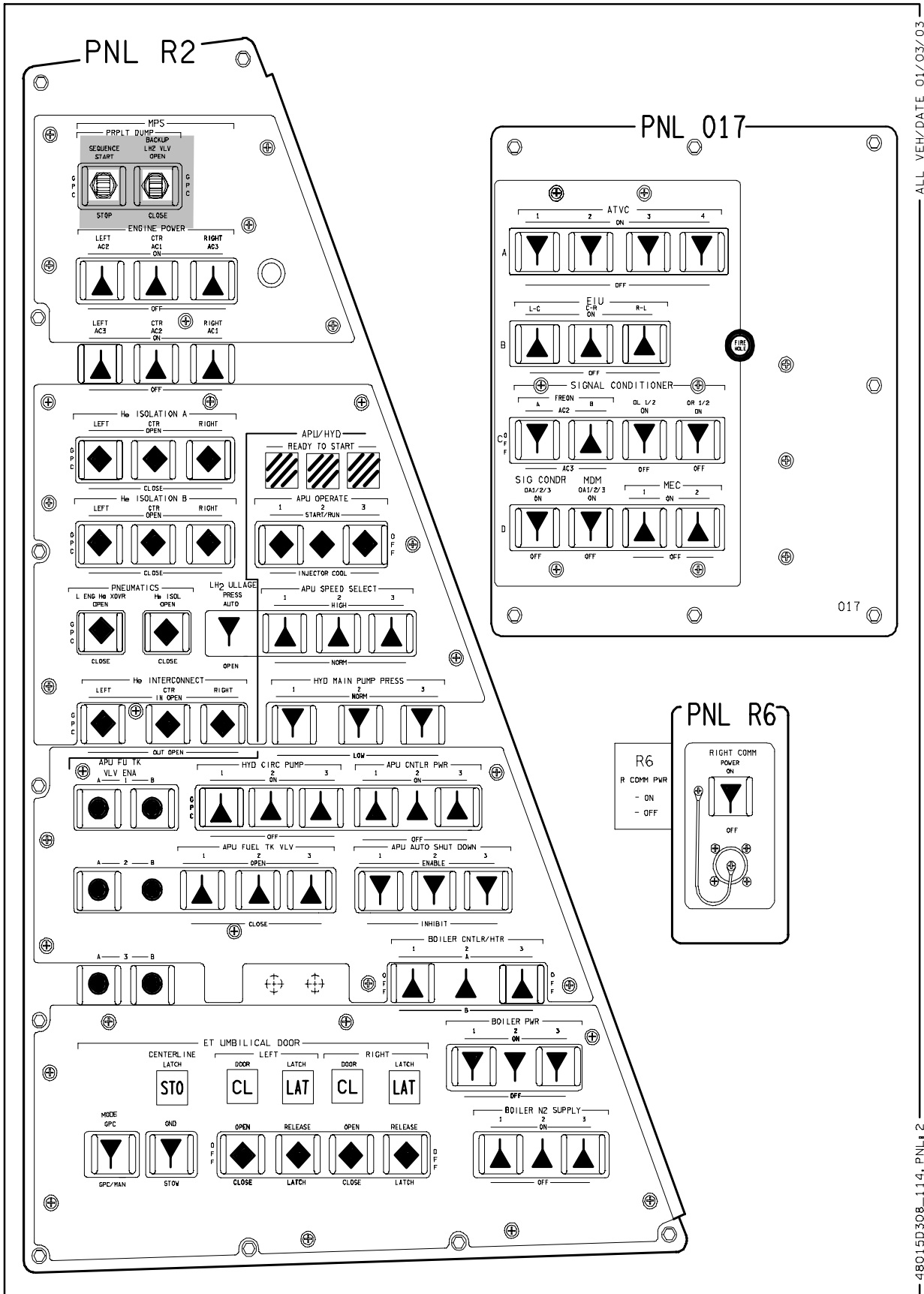
I

PNL O8



R side OVHD flood - R (MID)





ALL VEH/DATE 01/03/03

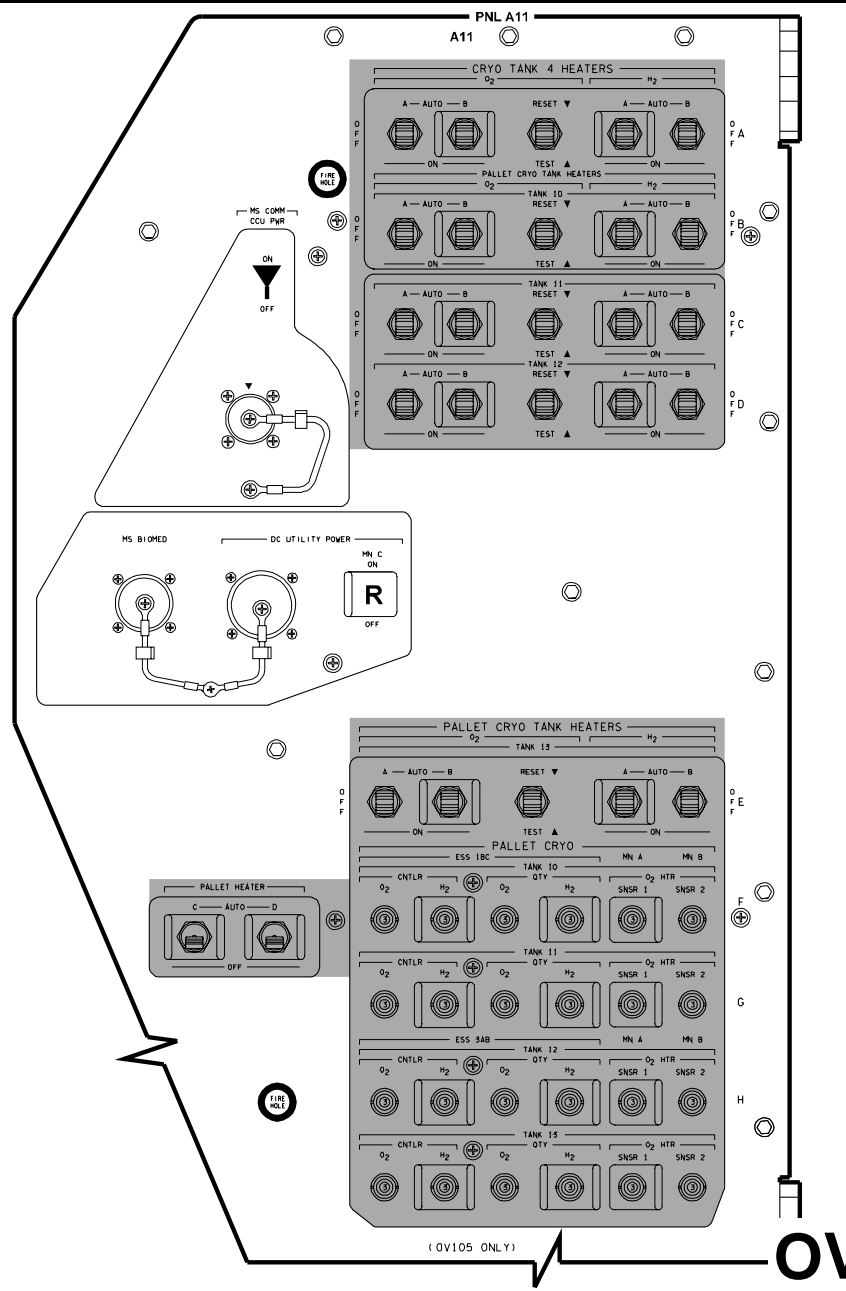
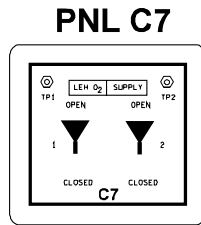
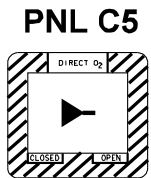
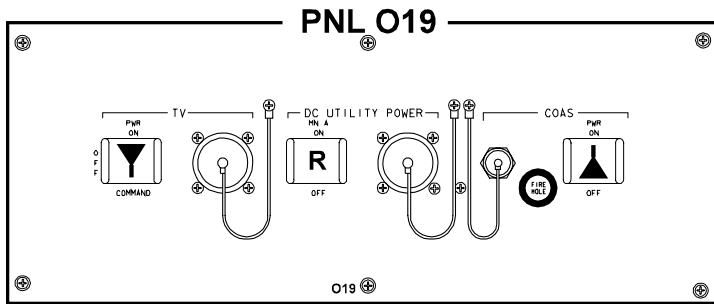
48015D308_114, PNL R 2

OV105

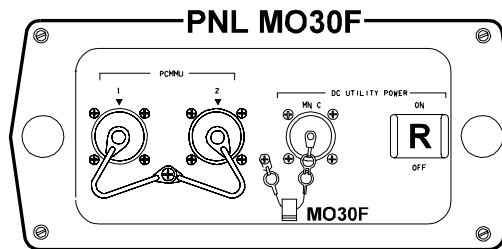
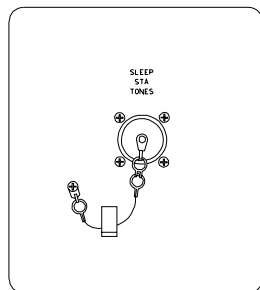
(OV105) C3-8

D/O/ALL/GEN P

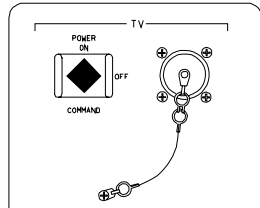
OV105



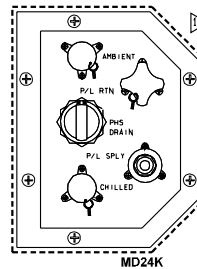
PNL MO58F



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



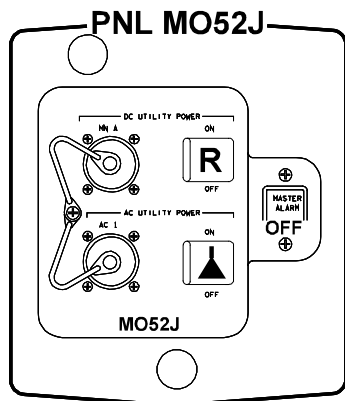
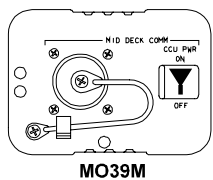
PNL MD24K



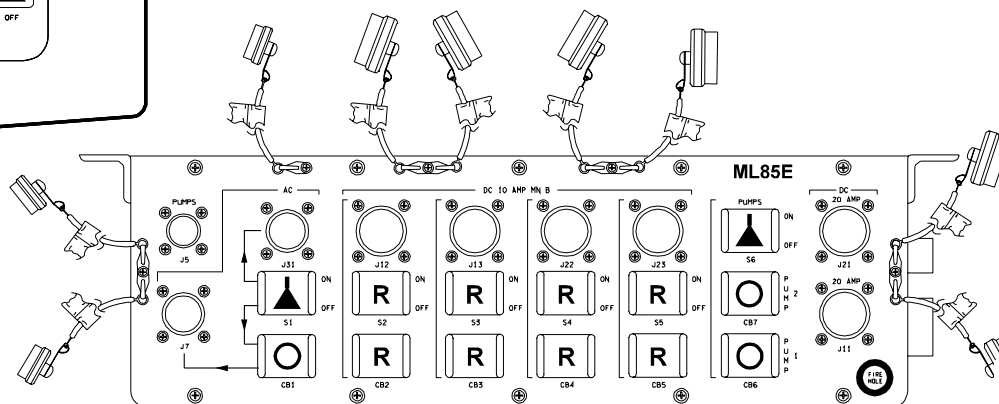
PNL MD44F
 CAB TEMP CNTL ACT LINKAGE - SECONDARY ACTUATOR

NOTE: NOT VISIBLE IF MAR FLOWN

PNL MO39M

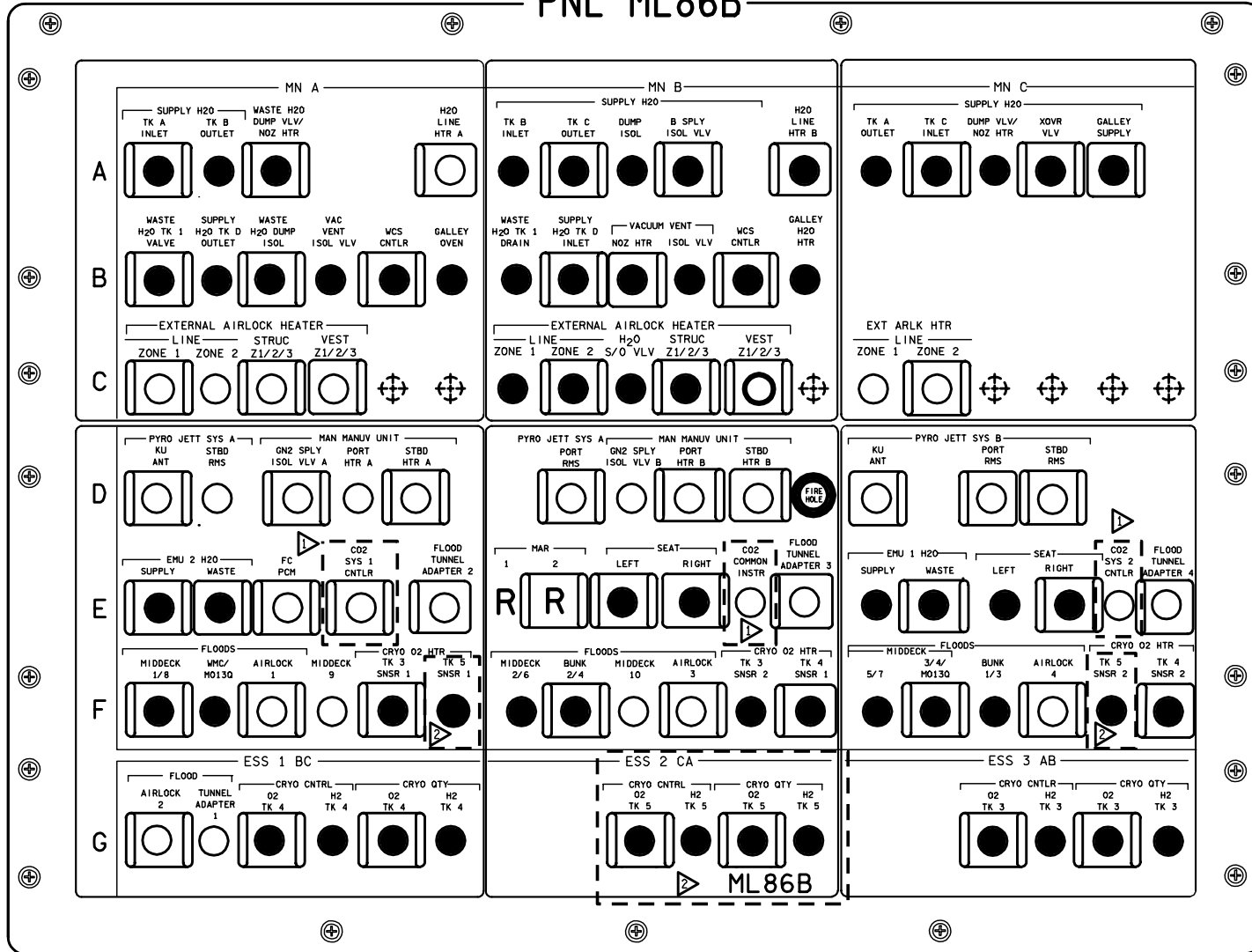


PNL ML85E



OV105

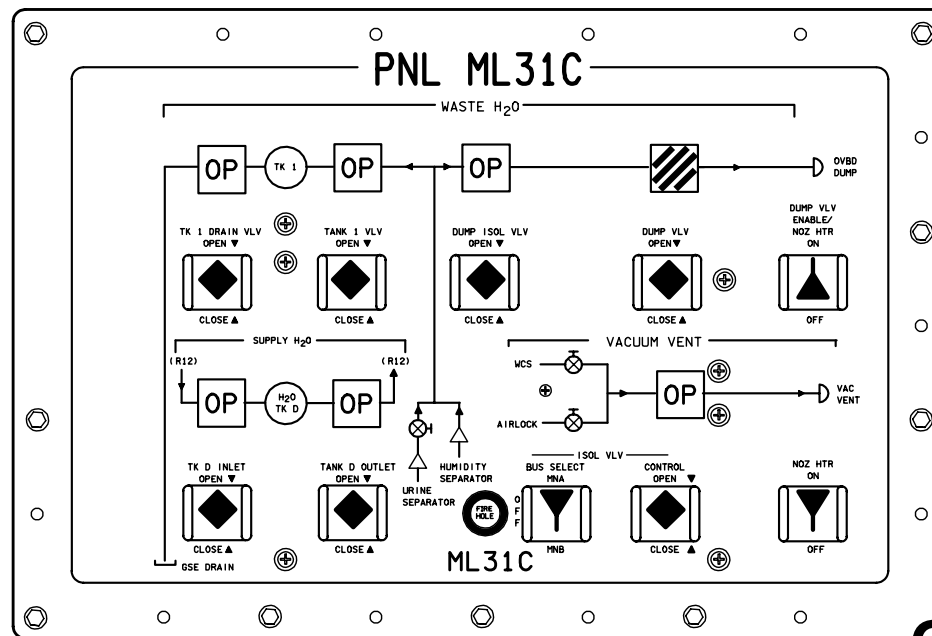
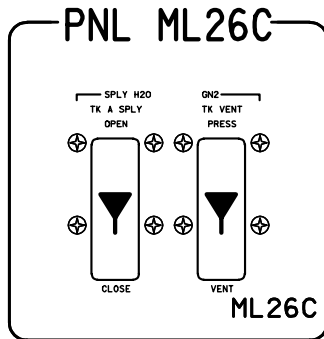
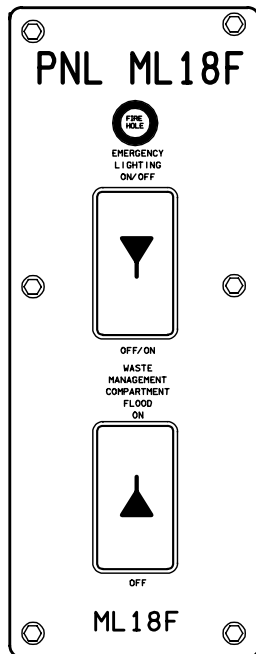
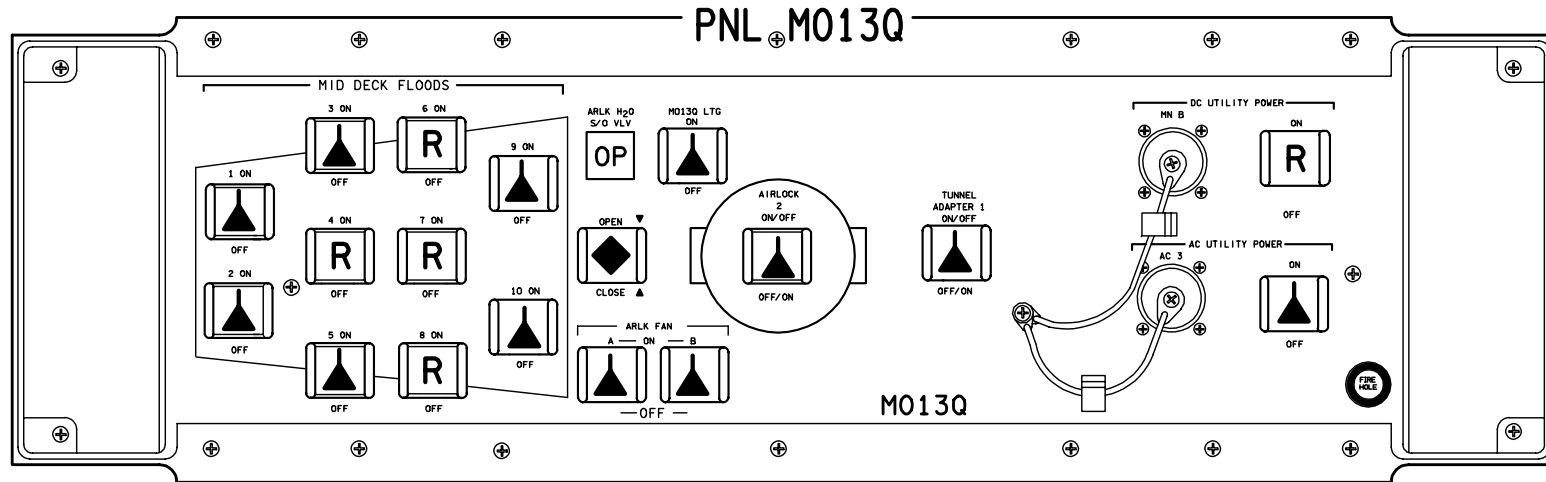
PNL ML86B



NOTES: ▷ CLOSED IF CO2 RML SYS FLOWN

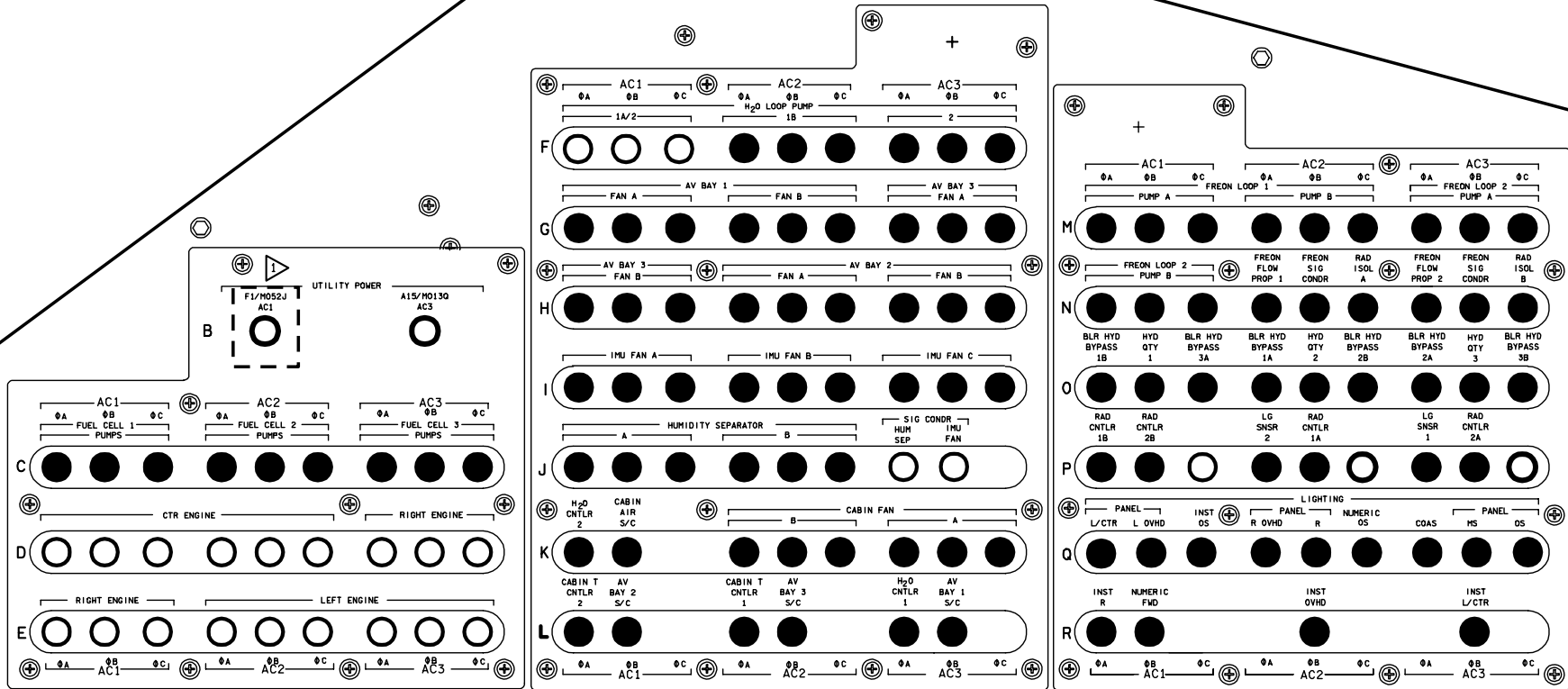
▷ OPEN IF TK 5 NOT FLOWN


OV105



OV105

PNL L4



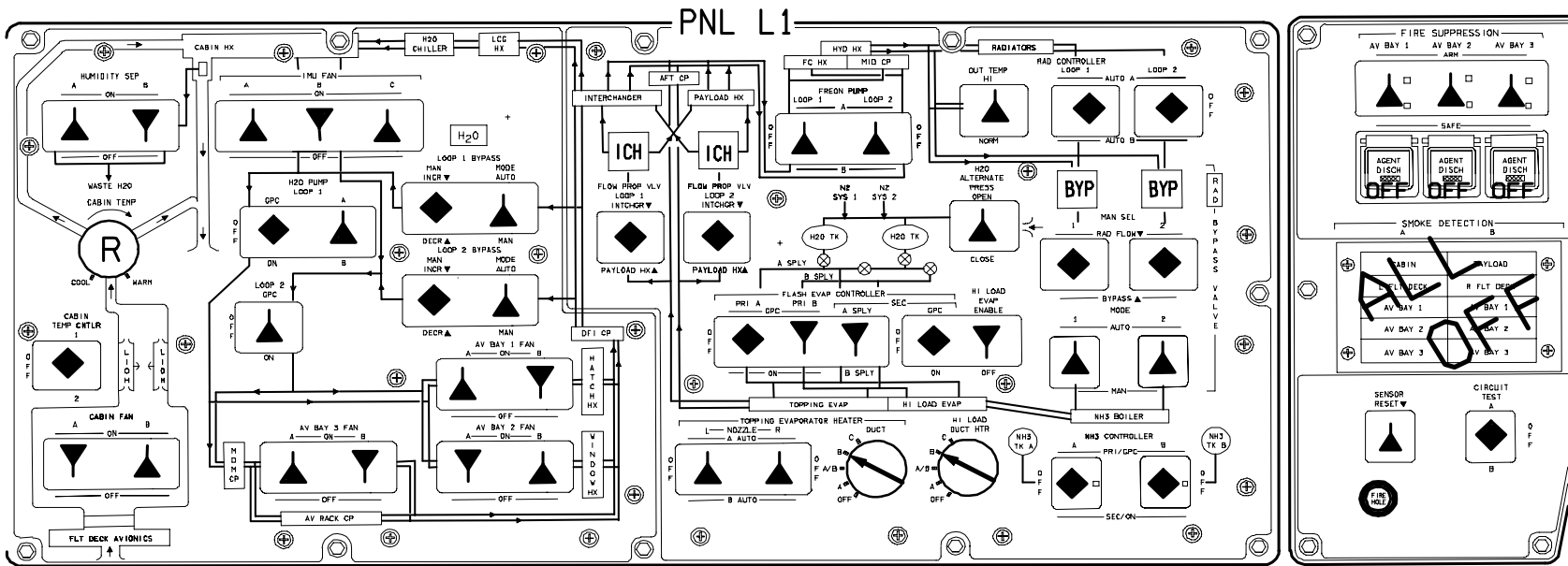
NOTE:  CB CAN REMAIN CLOSED FOR AC PGSC USAGE.
 OPEN WHEN PGSC UNPOWERED/STOWED

48015D313_114. PNL 3

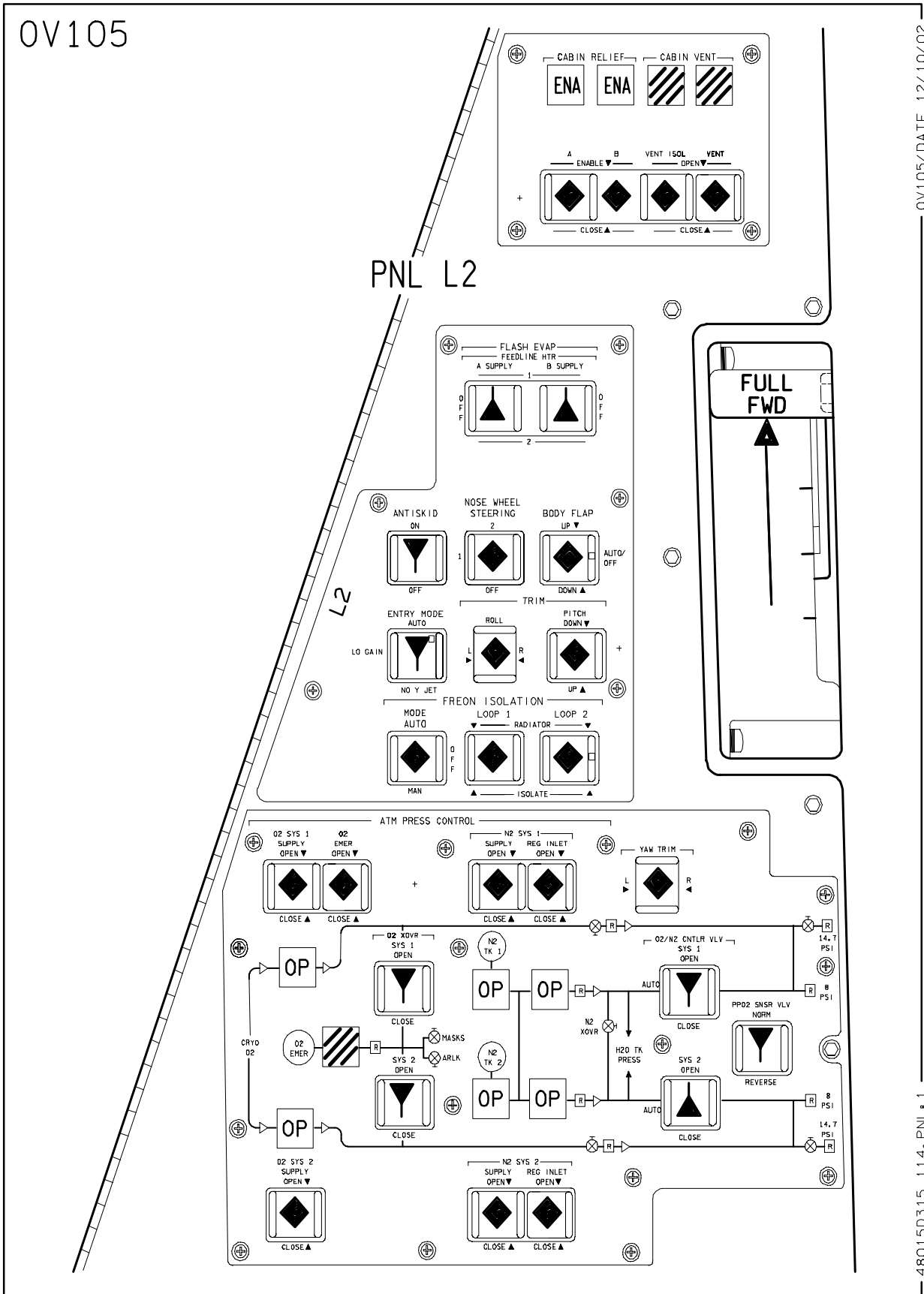
OV105/DATE 11/23/04

(OV105) C3-13

OV105
 D/O/5/GEN P



OV105



OV105/DATE 12/10/02

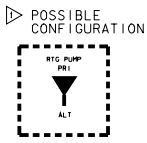
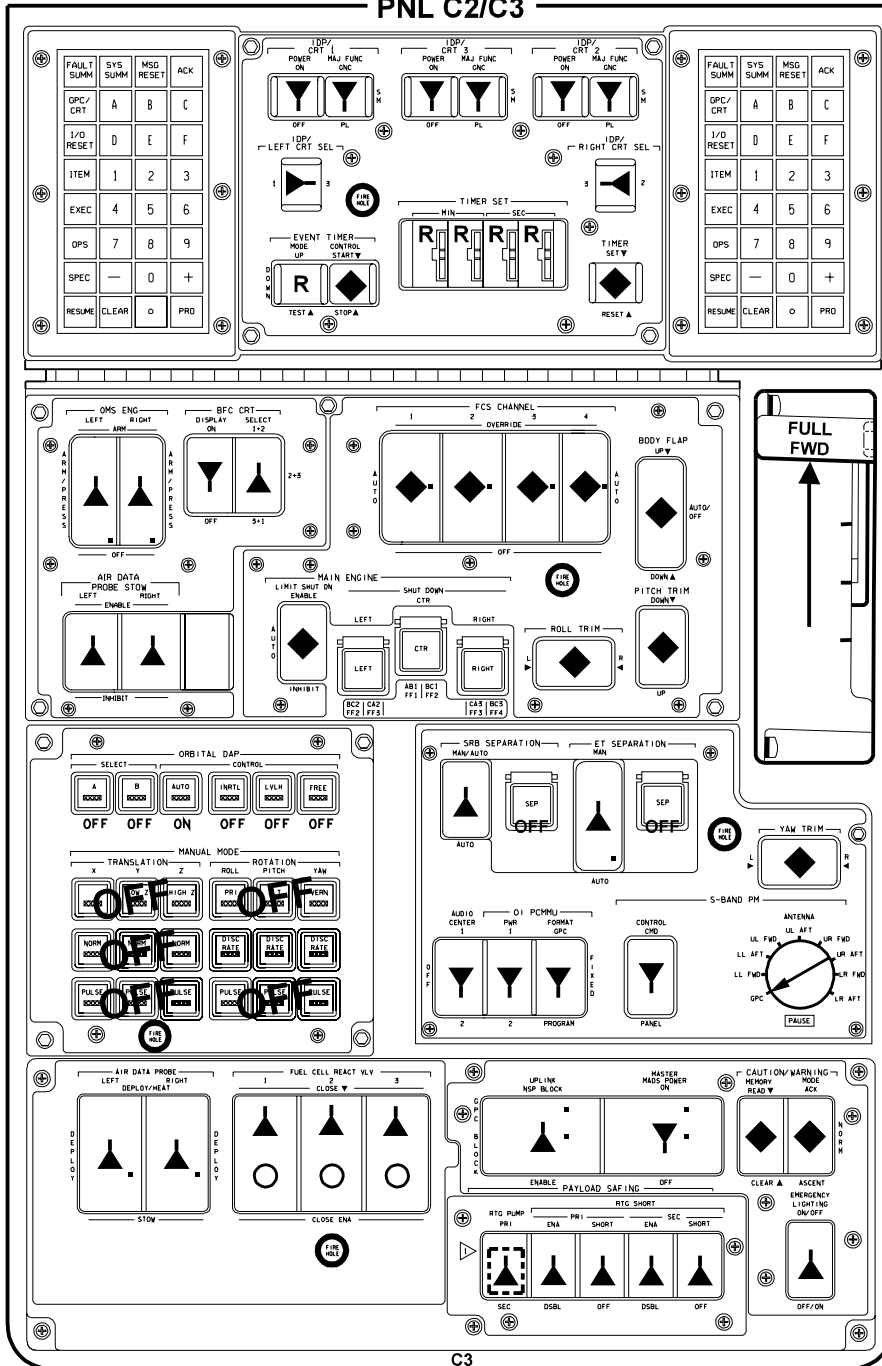
48015D315_114_PNL 1

OV105

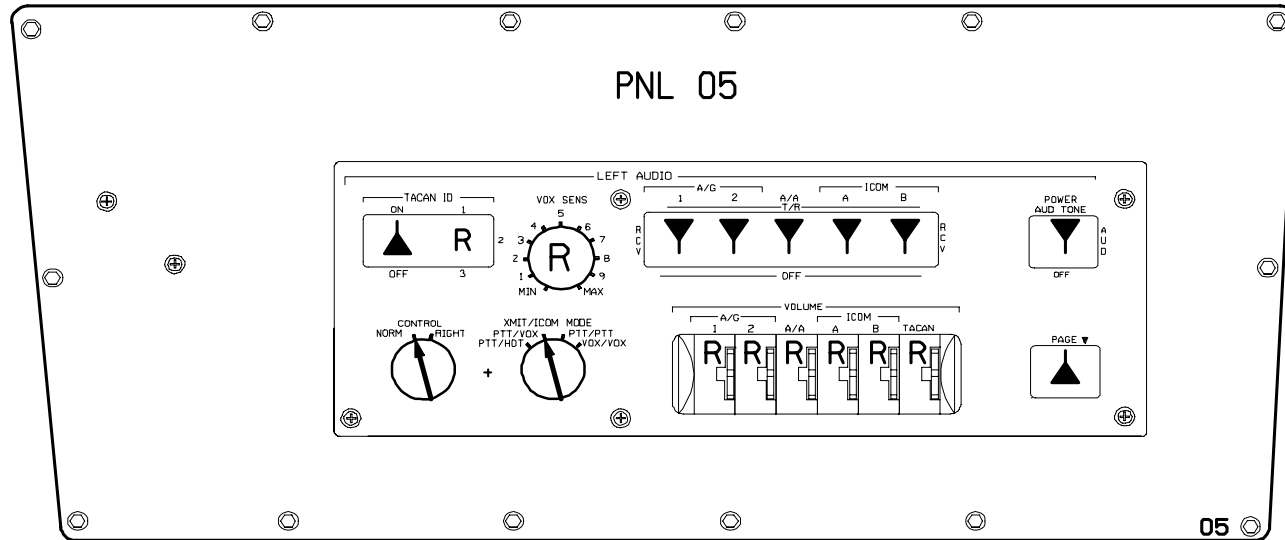
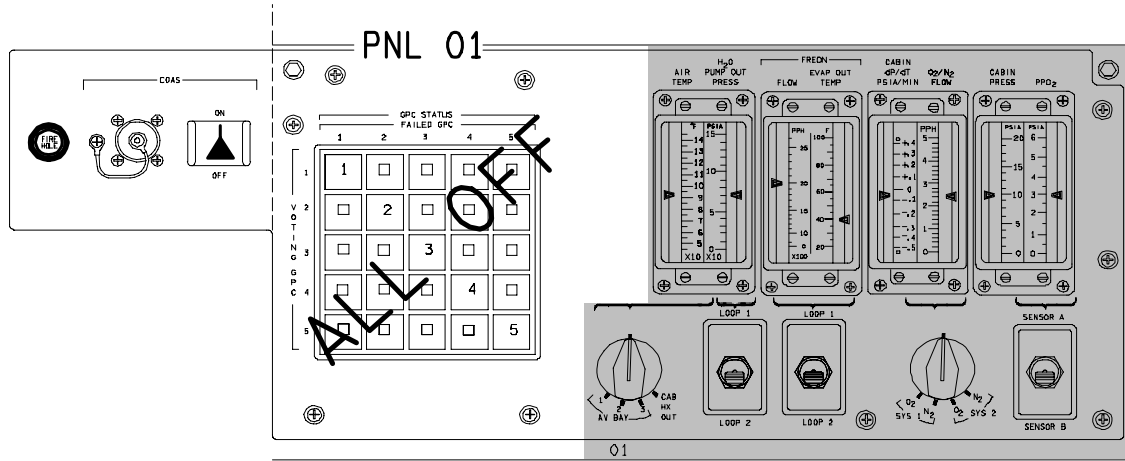
(OV105) C3-15

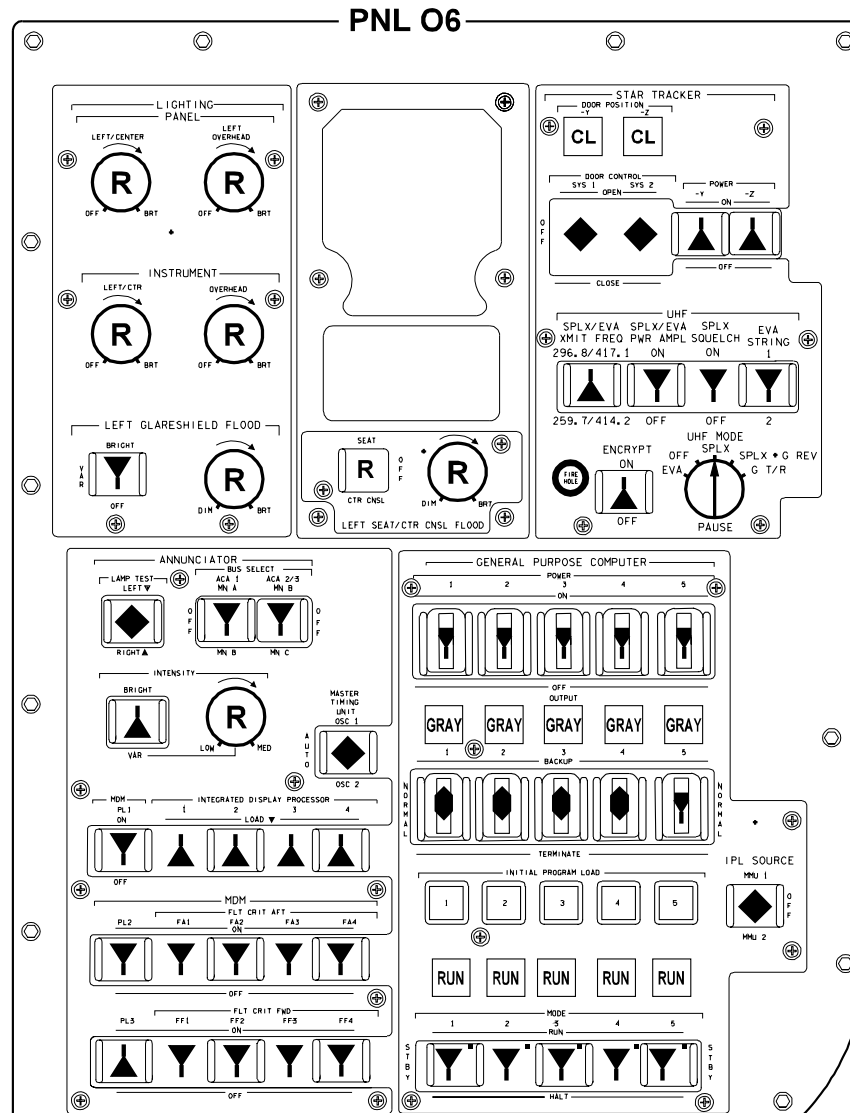
D/O/5/GEN P

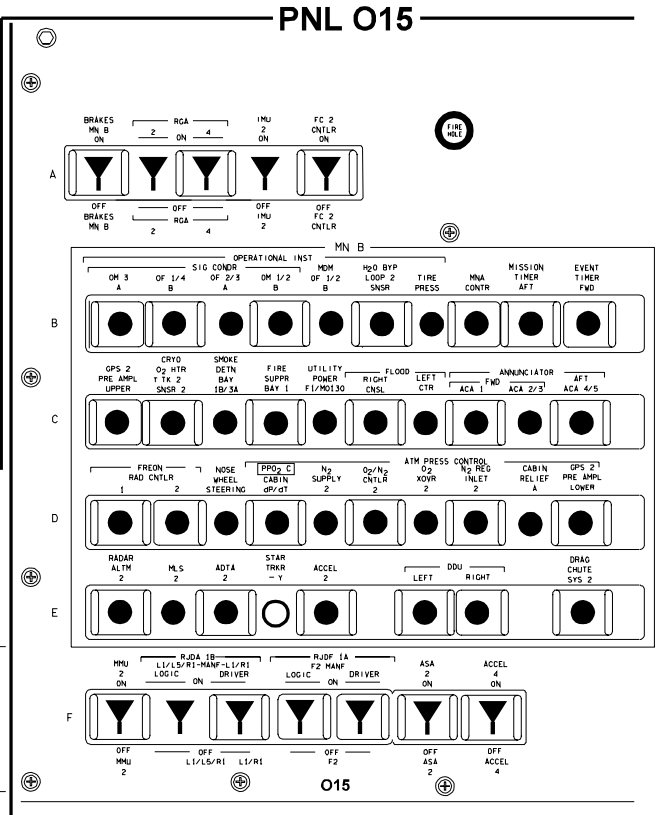
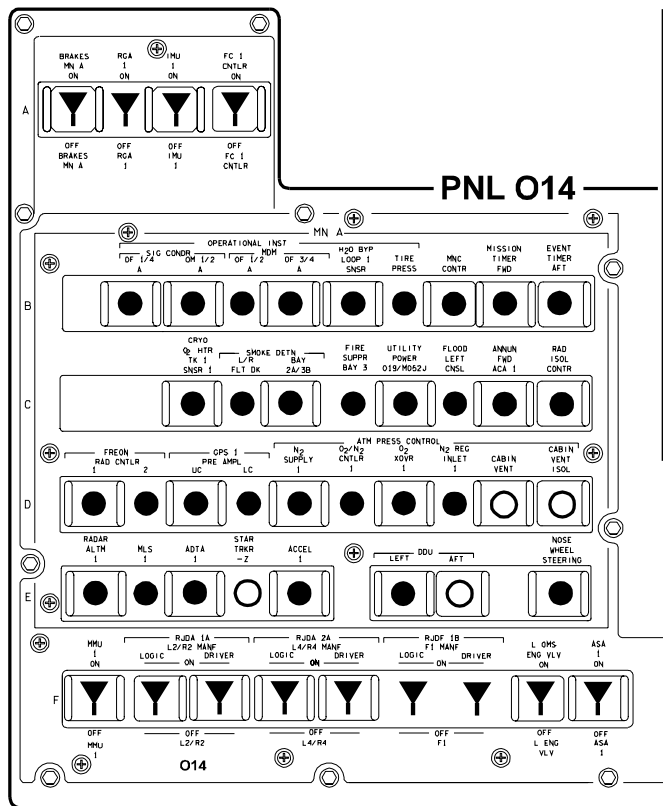
PNL C2/C3



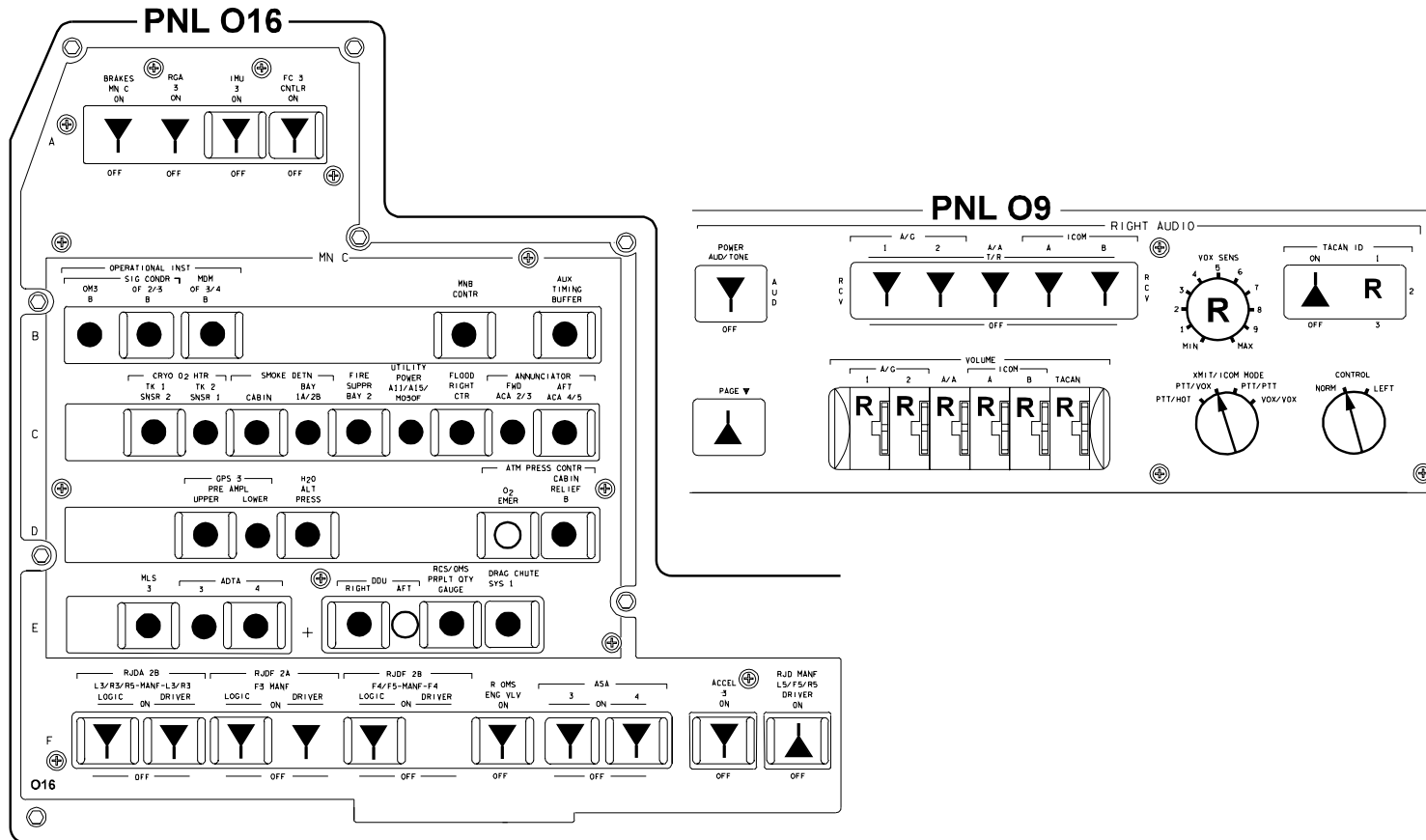
OV105

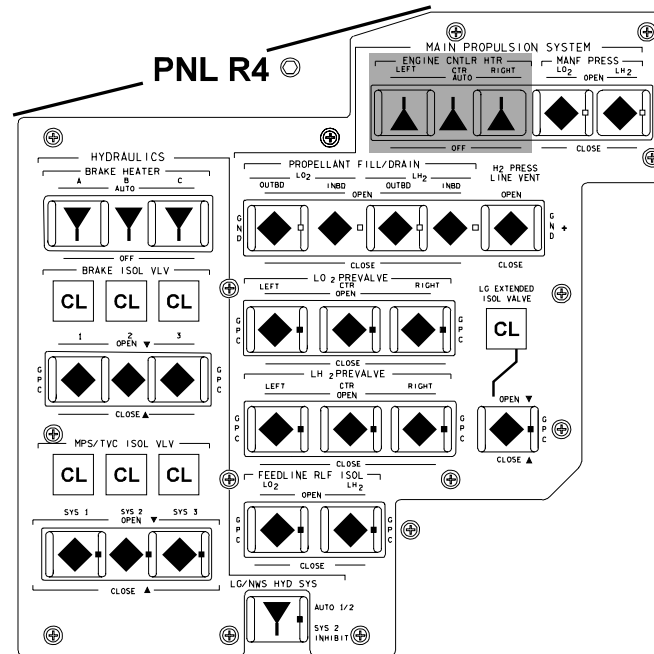
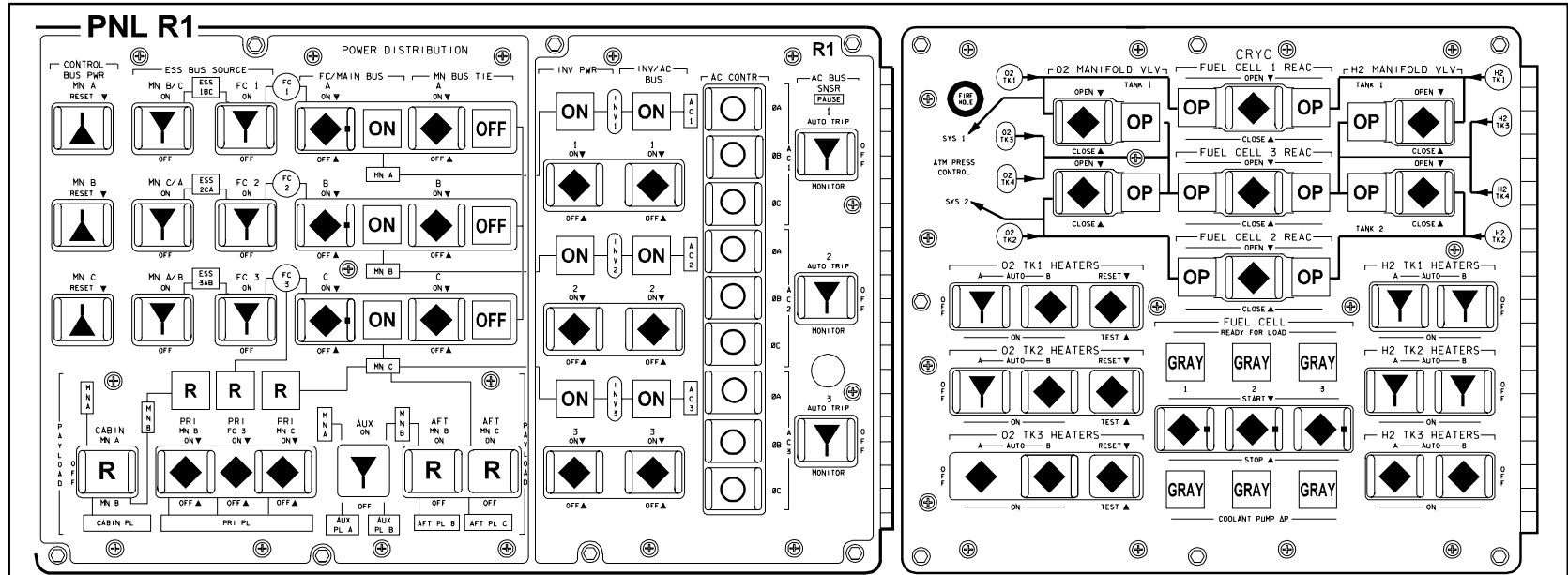




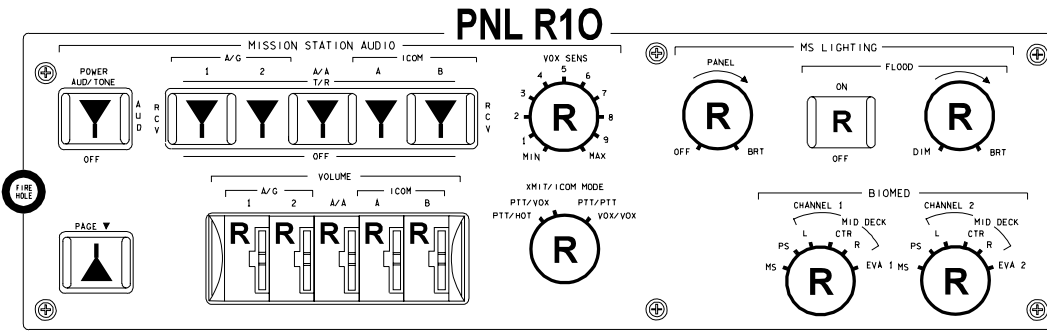


OV105

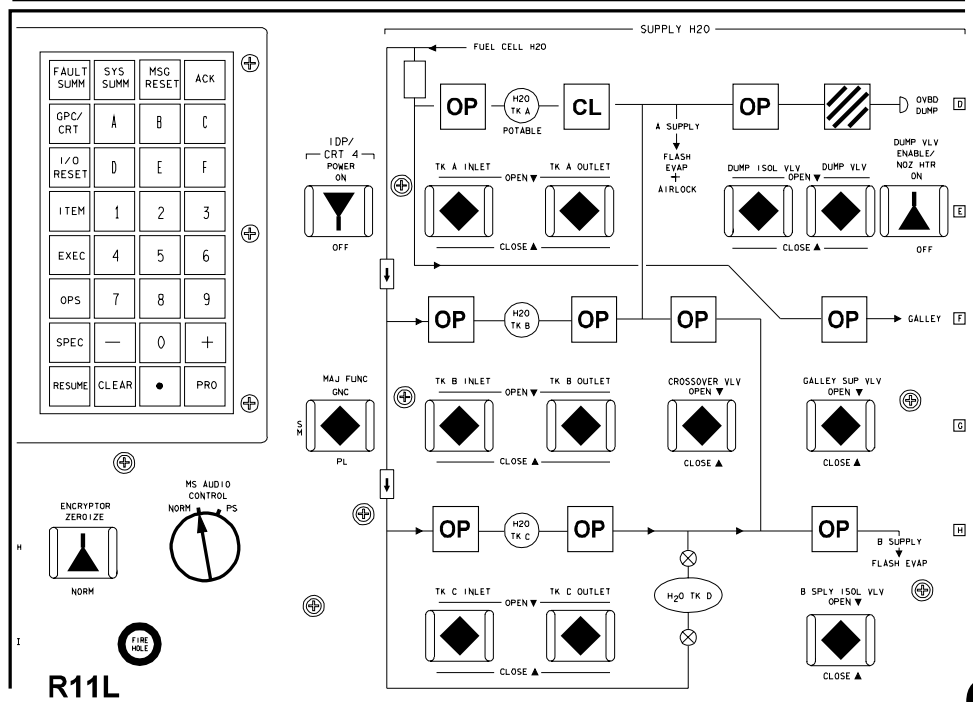
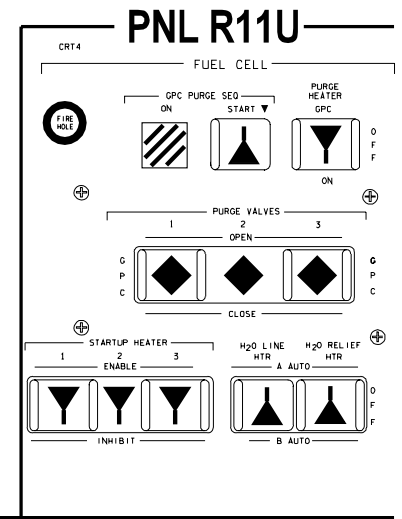




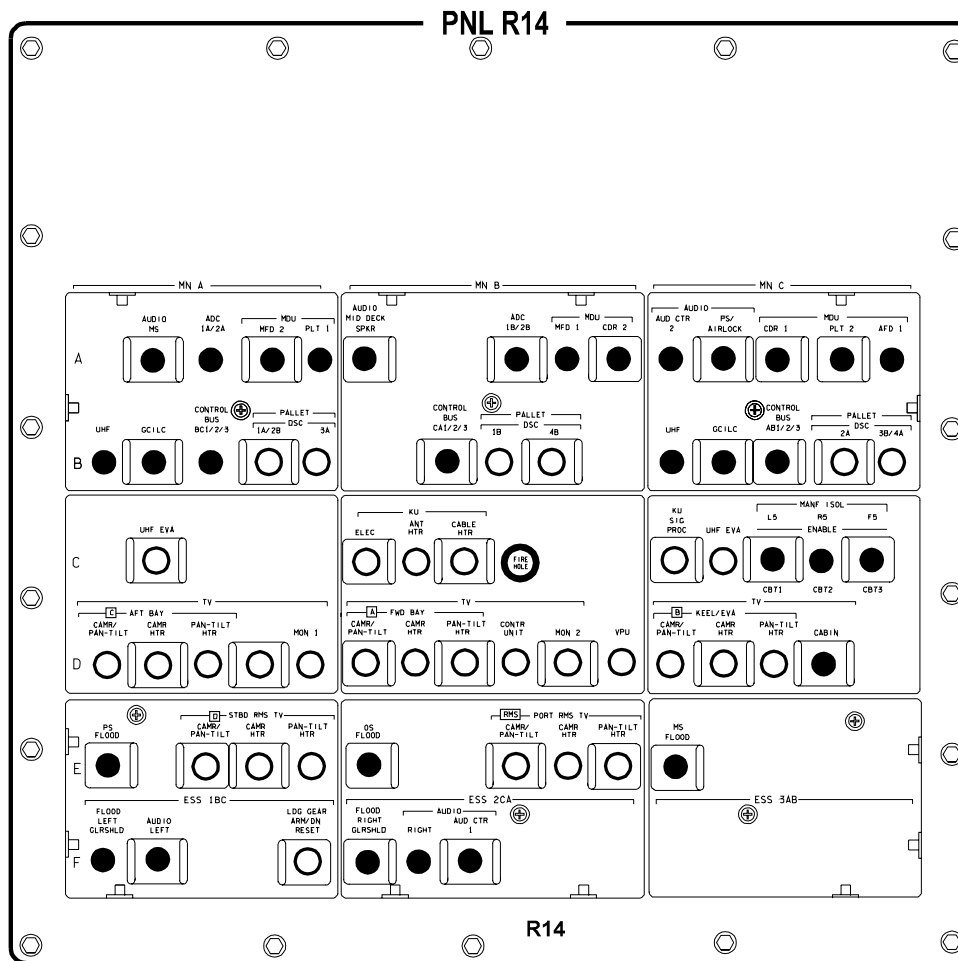
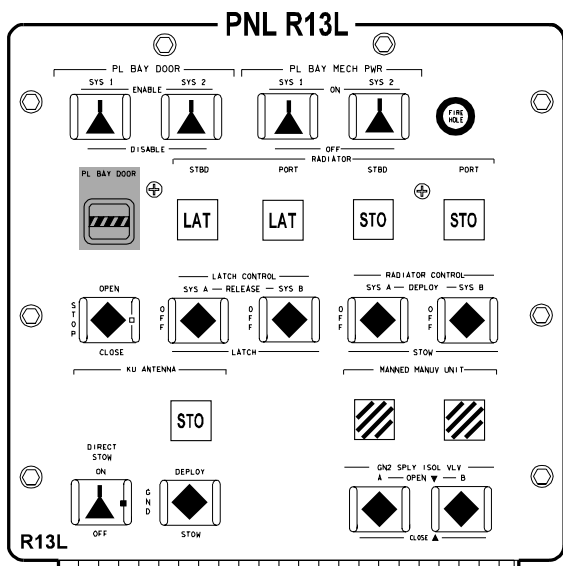
OV105

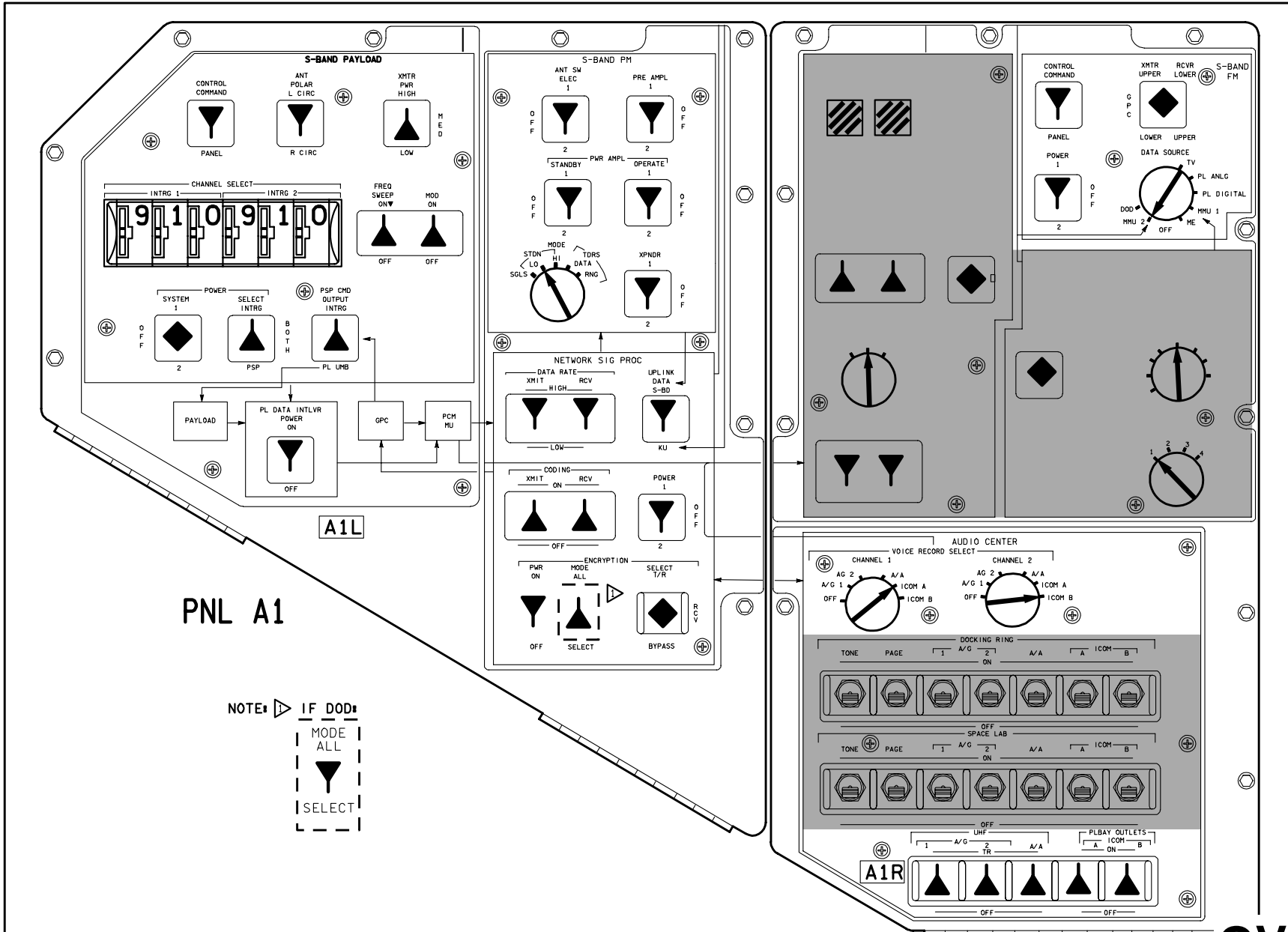


ACTIVATION
 R10 MS AUD PWR - AUD/TONE
 All other sws - as reqd
 R12 MS AUD CONTL - NORM
 A11 MS COMM CCU PWR - ON



OV105

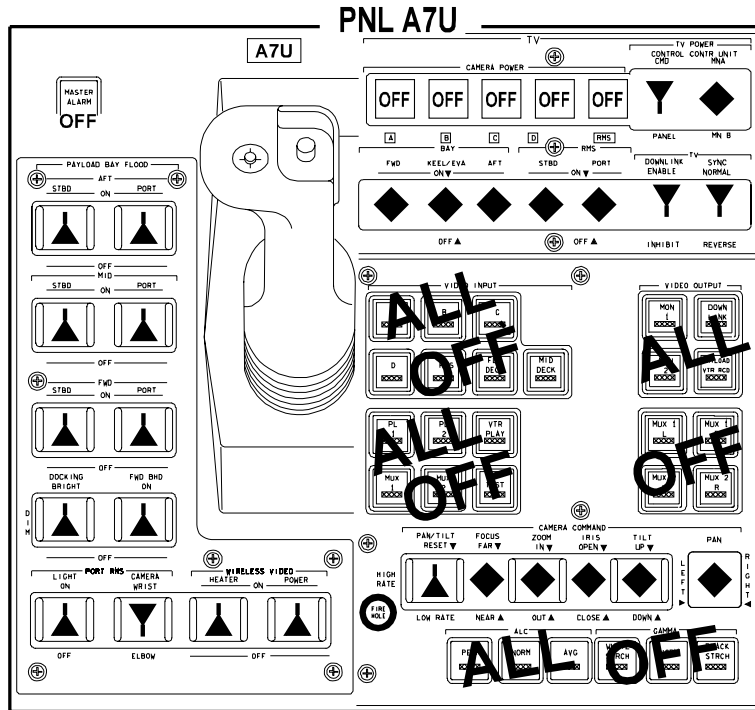




PNL A1

NOTE: IF DOD:
 MODE ALL
 SELECT

OV105



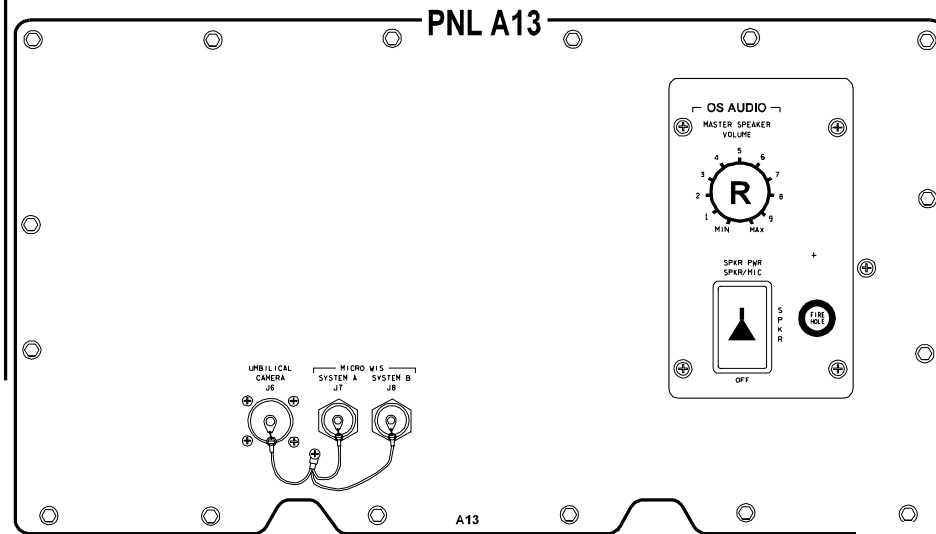
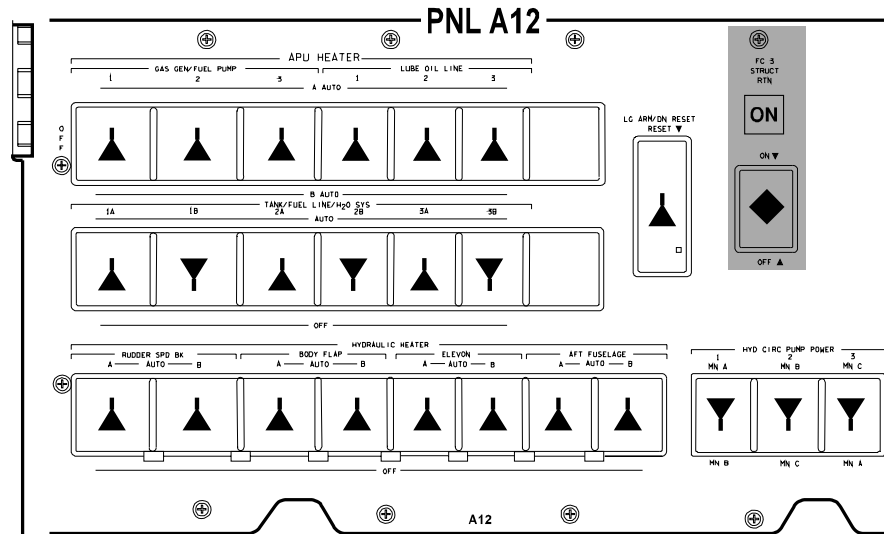
ALL OFF

ALL OFF

ALL OFF

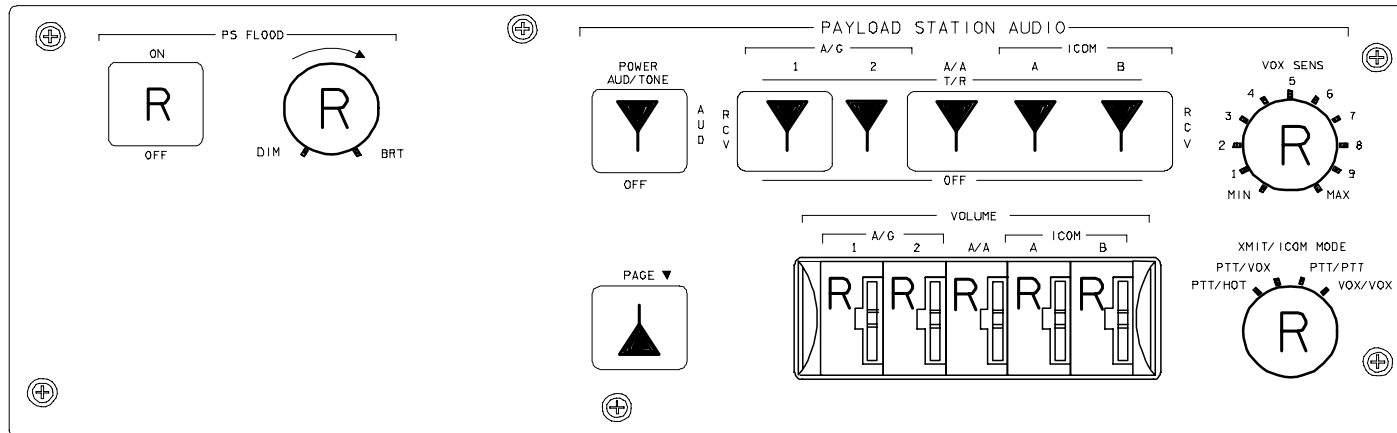
ALL OFF

ALL OFF



OV105

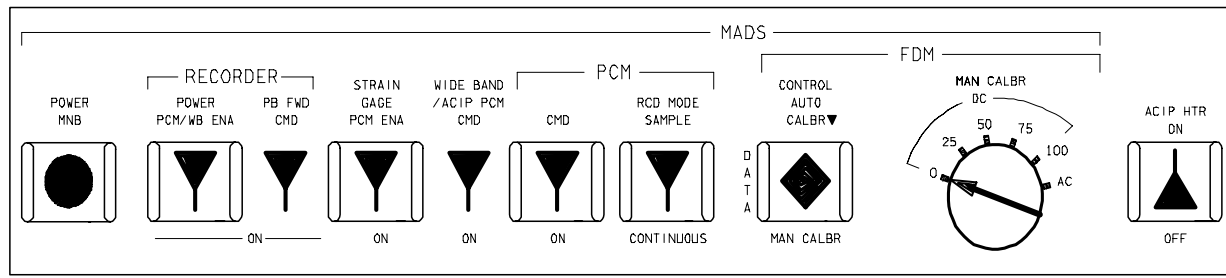
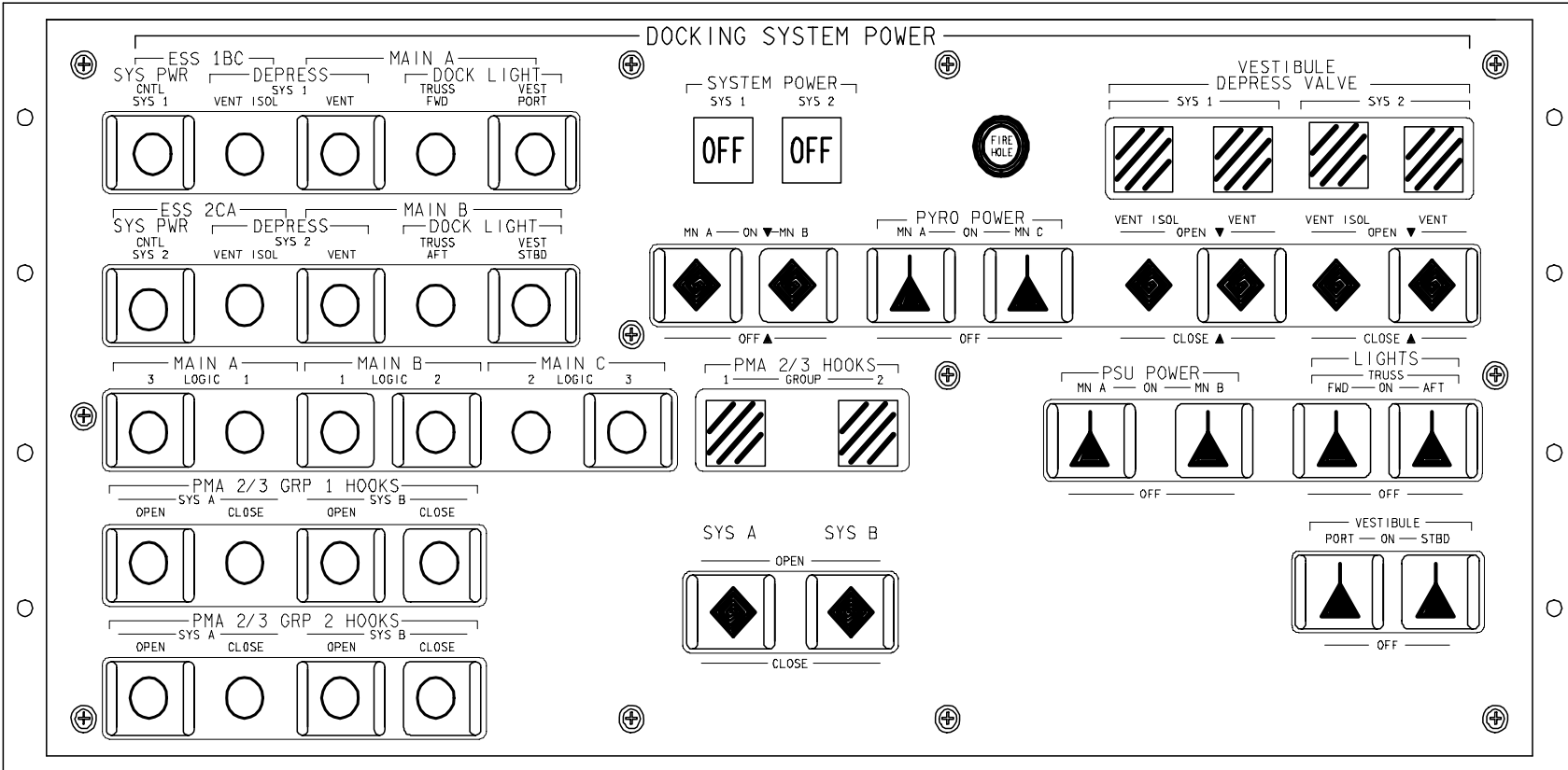
PNL L9



L9

OV105

PNL A6L



OV105

OV105

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_DS ON OFF B_DS ON OFF C_DS 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_p ON OFF B_p ON OFF C_p ON OFF

Ap OFF Cp

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_DS OFF C_DS

LAMP TEST

PNL A7L

APDS CONTROL COMMANDS

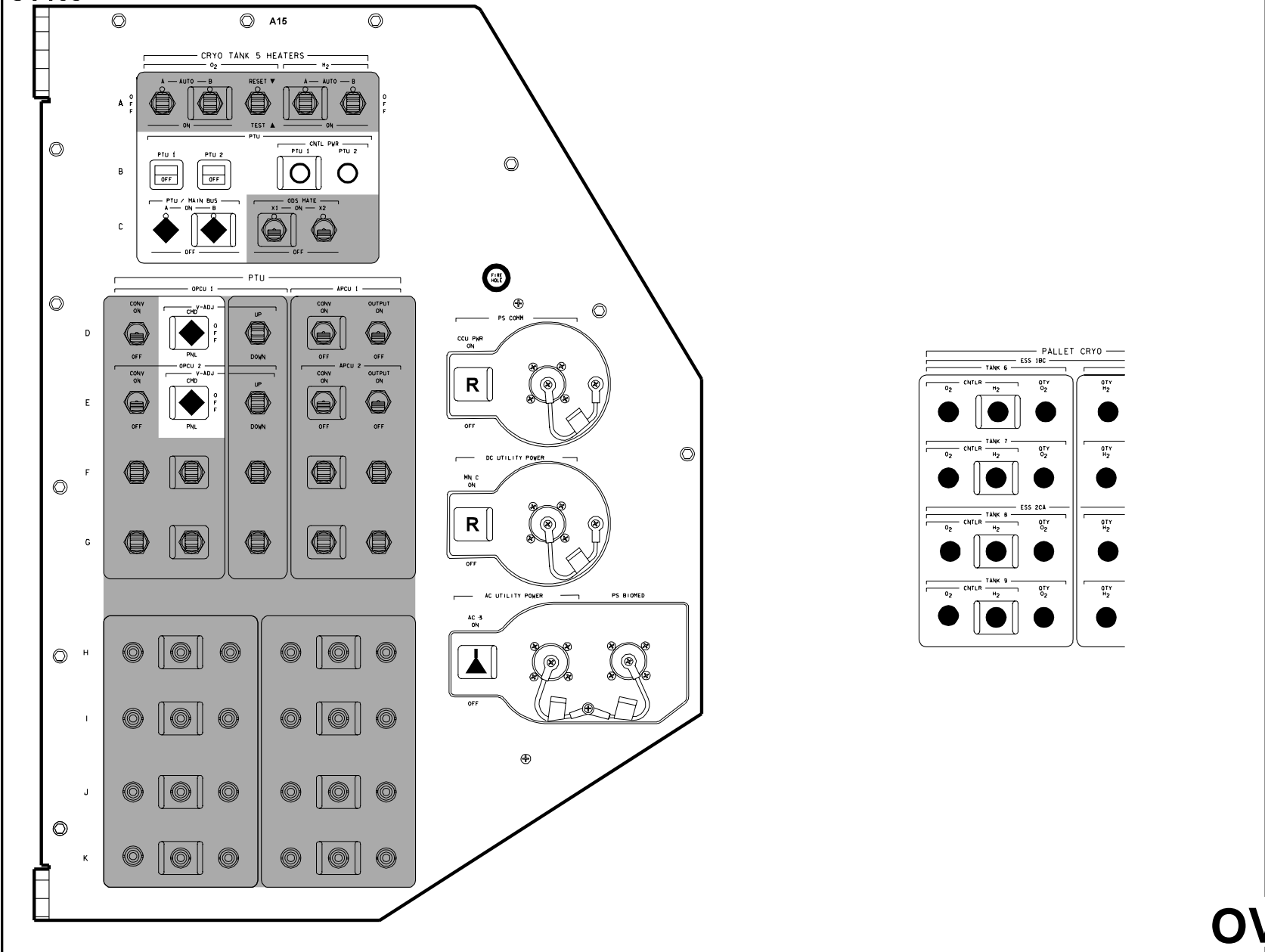
POWER ON POWER OFF RING OUT RING IN

APDS CIRC PROT OFF CLOSE HOOKS CLOSE LATCHES FIXER OFF

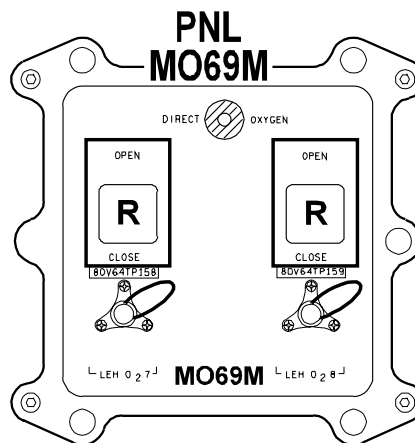
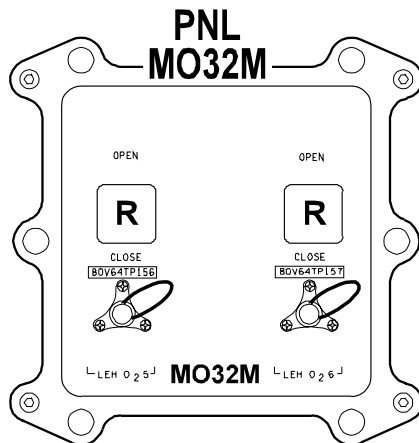
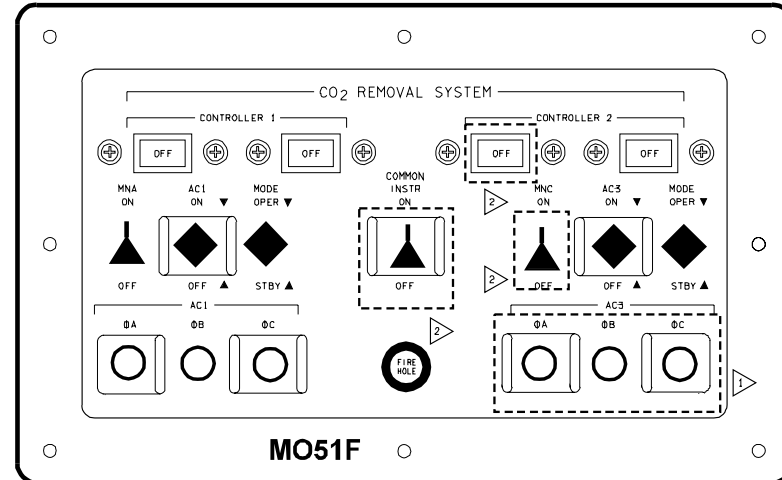
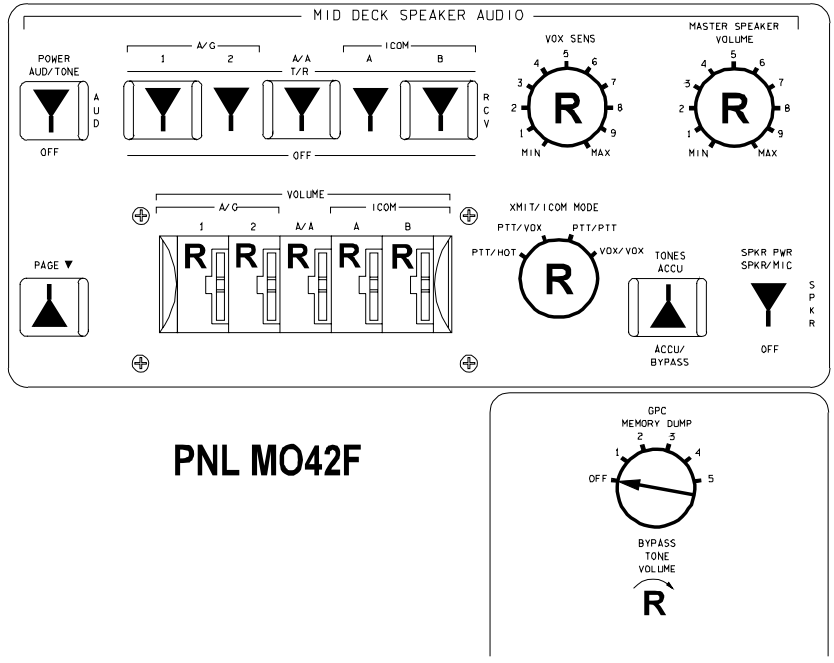
APDS CONTROL PANEL

OV105

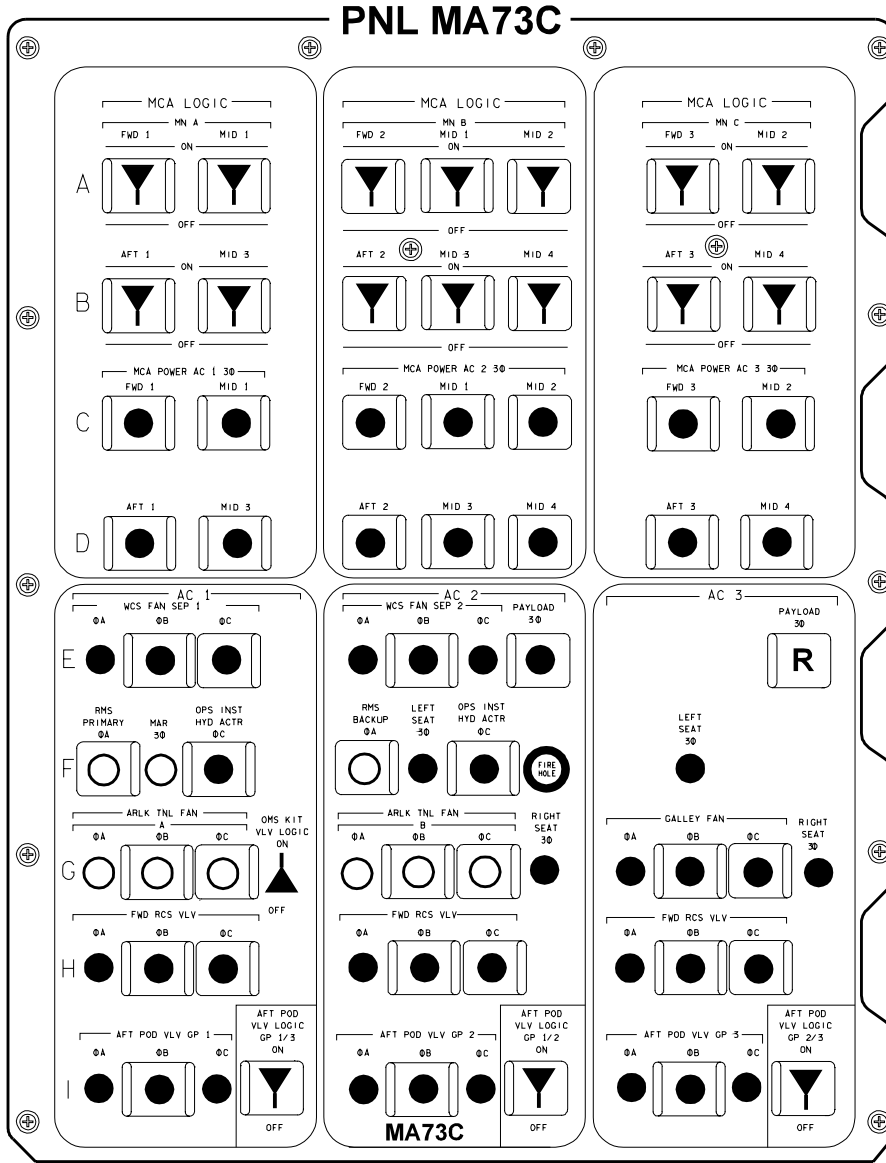
OV105

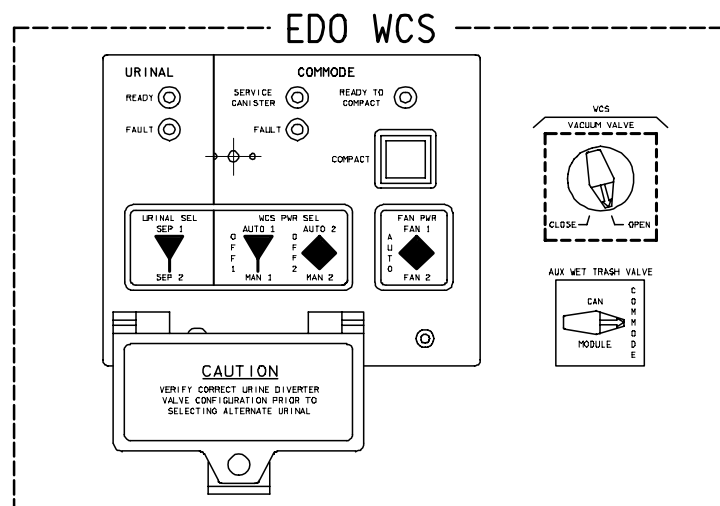
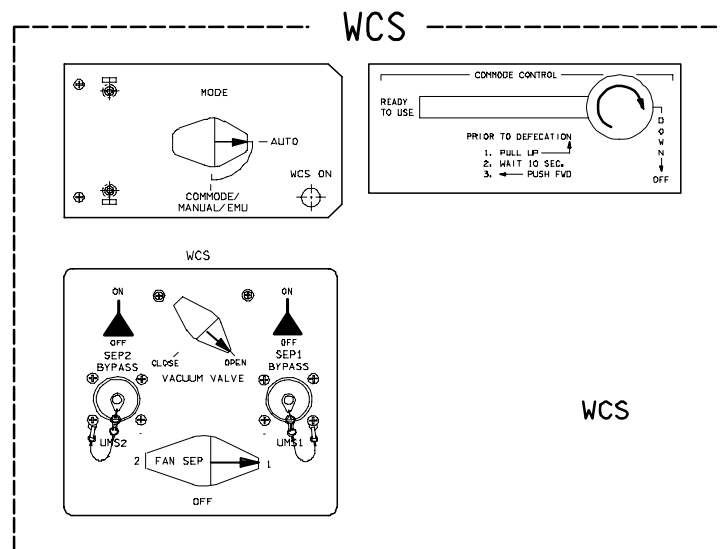
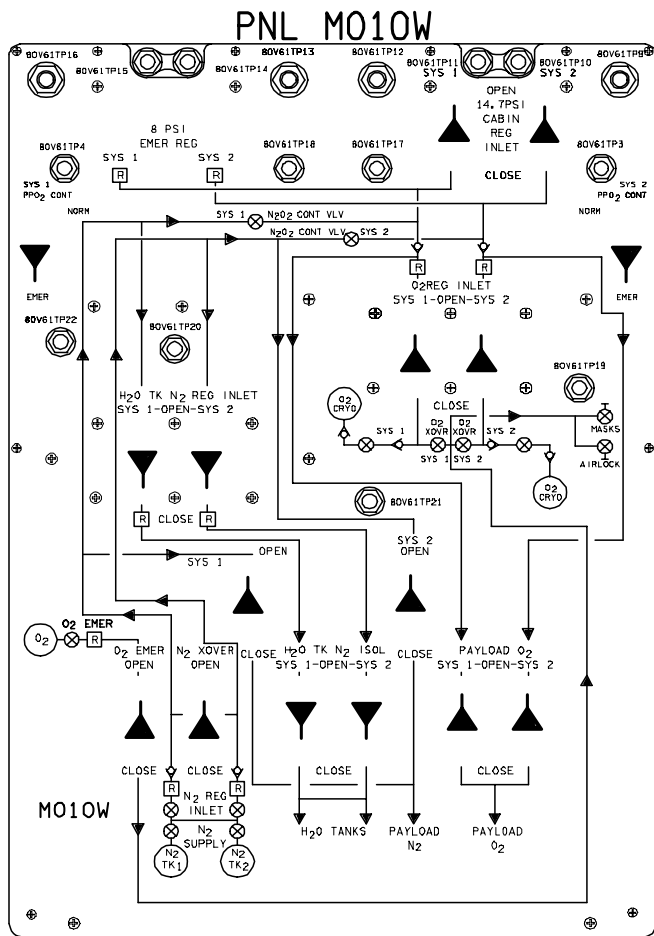


OV105



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

RIGHT SEAT

- | | | |
|-----------|------|---|
| P | F8 | AIR DATA (slaved to CDRs)
ADI ERR
RATE
ATT (slaved to CDRs)
ATT REF pb
HSI SEL MODE
HSI SEL SOURCE TACAN (OV103,4),
GPS (OV105), MLS, NAV
(slaved to CDRs) |
| F3 | | RDR ALTM
R TRIM RHC/PNL |
| R2 | | HYD CIRC PUMP (three) (GPC pos only) |
| AFT
MS | 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 pwrdrn items

7. Incorporate following pen and inks to ENT MNVR

Cue Cards:

- EI: 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 DDU's
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 DDU's
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

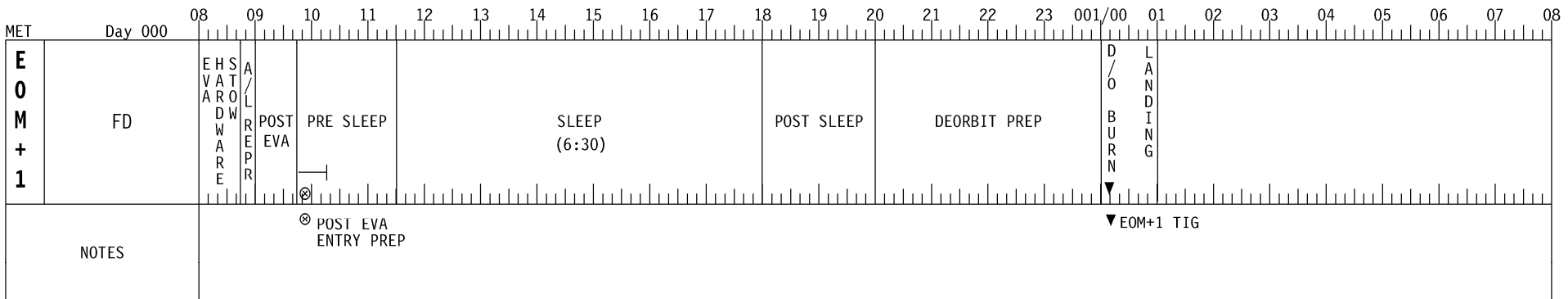
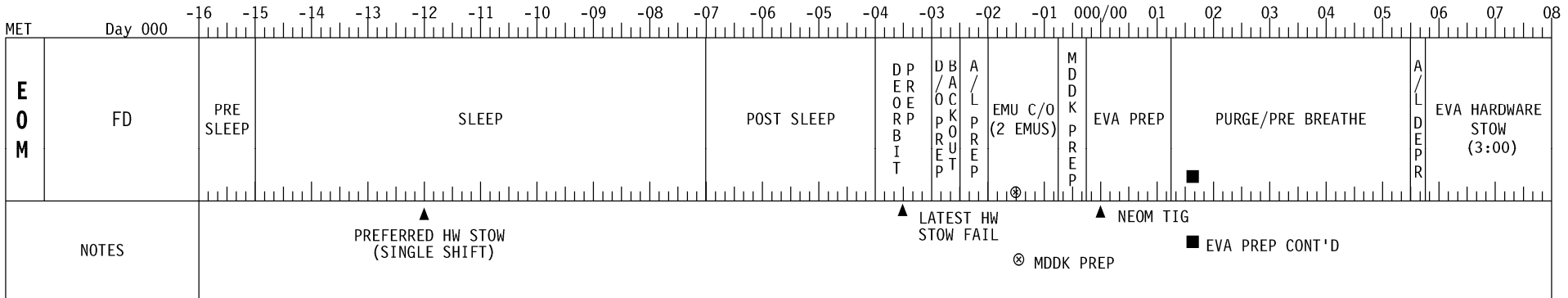
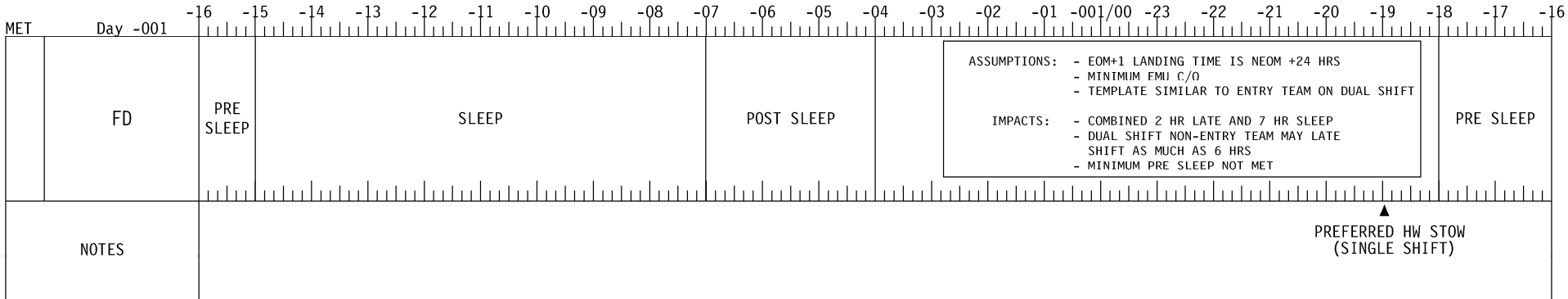
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PLBD CONTINGENCY EVA NOTES

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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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	<table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4"><u>RMS PNL LTS</u> (if RMS onboard)</td> </tr> <tr> <td>cb RMS PRI</td> <td>ΦA</td> <td></td> <td>- op</td> </tr> <tr> <td></td> <td>B/U</td> <td>ΦA</td> <td>- op</td> </tr> </table>	<u>RMS PNL LTS</u> (if RMS onboard)				cb RMS PRI	ΦA		- op		B/U	ΦA	- op																				
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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														

D/O-1a/E/E

HOOK
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D/O/ALL/GEN P, 1

TOP
BACK OF "MS MIDDECK ACTIVITIES"

ENT AIRLOCK CONFIG 3A	
MO13Q TNL EXT	1. √AIRLK FAN A(B) – OFF 2. Disconnect bypass duct from middeck floor air fitting and strap to Tunnel Extension wall
MA73C:G EXT A/L	3. cb AC1,2 ARLK TNL FAN A,B (six) – op 4. Unstow,install diffuser cap on middeck floor air fitting 5. NEG PRESS RLF vlv cover (two) – pull open to vent; push firmly to close
AW18A	6. LTG FLOOD 1(3,4) – OFF
INNER HATCH	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
MIDDECK FLR MO13Q	9. Equal vlv (two) – NORM, install caps 10. √EMU O2 ISOL vlv – CL 11. AIRLK 2 – OFF/ON
ML86B:E	12. √AIRLK H2O S/O vlv – OP (tb-op) If TNL ADAPT flow: 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 flow: 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
	<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, <u>UTIL PWR</u>)
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 25	
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 27	
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 29	
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

D/O-1b/E/D

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D/O/ALL/GEN P,2

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)
	If middeck Handheld Mic/speaker operation:
MO42F	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	<u>GALLEY ACTIVATION</u> cb MNC SPLY H2O GALLEY SPLY – cl :B cb MNA GALLEY OVEN – cl cb MNB GALLEY H2O HTR – cl
R11L:G	\SPLY H2O GALLEY SPLY VLV – OP (tb-OP)
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
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HOOK
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HOOK
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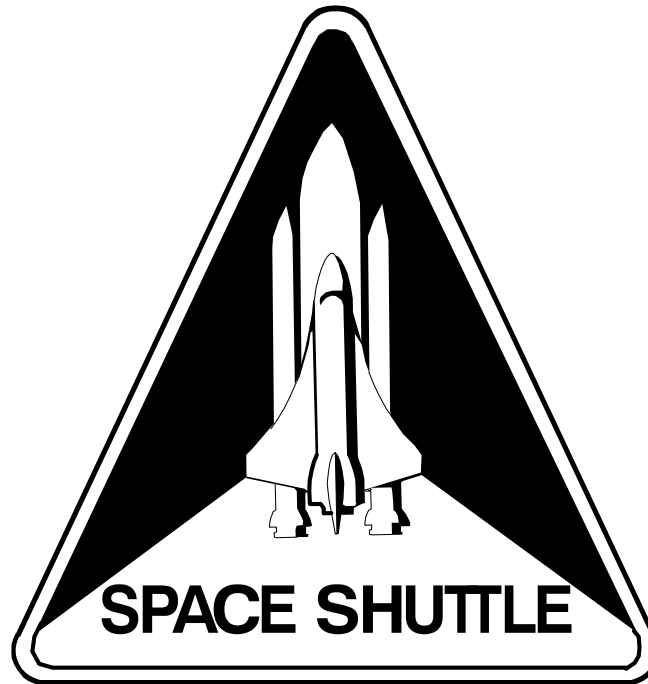
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DEORBIT PREP

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