

Deorbit Prep

**Mission Operations Directorate
Operations Division**

**Generic, Rev O
February 14, 2005**

NOTE

For STS-114 and subsequent flights

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas



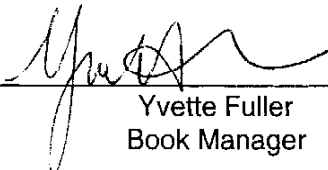
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DEORBIT PREP

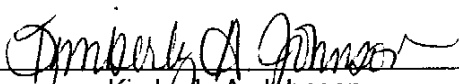
GENERIC, REVISION O
February 14, 2005

PREPARED BY:



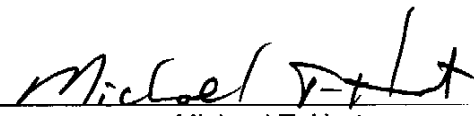
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LIST OF EFFECTIVE PAGES

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ii.....*	ALL/GEN O	2-14.....	ALL/GEN O
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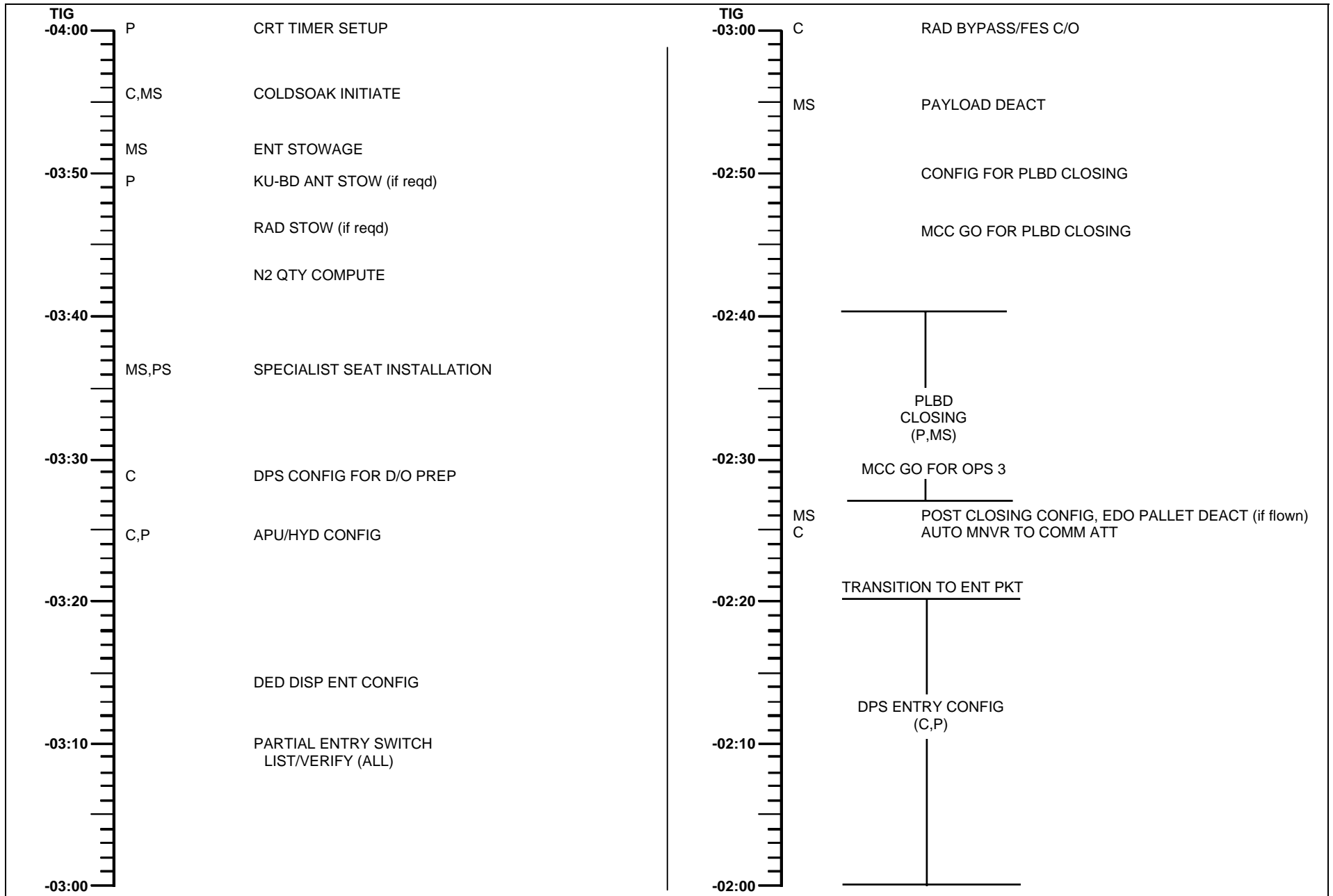
NOMINAL DEORBIT PREP PROCEDURES

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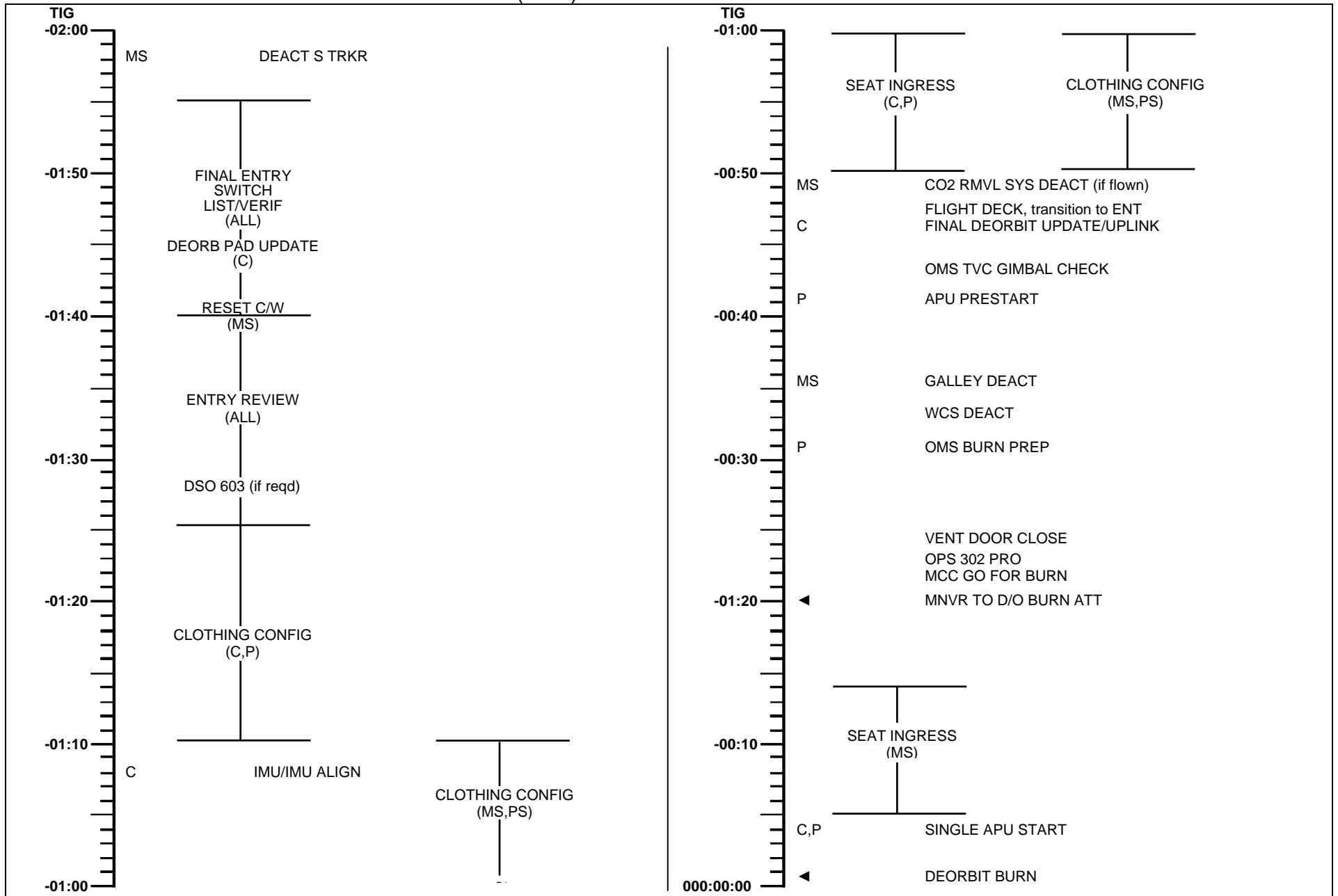
NOMINAL DEORBIT PREP OVERVIEW OF CONFIGURATION MANAGEMENT

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	1	2	3	4	5		
POWER OUTPUT MODE	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	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		
CONFIG GPC	1	2	3	4	0	2	0	0	4 (5)	0	2	0	0	4 (5)	0	3	2	3	4	0	3	2	3	4	0							
STR	1	1				1	0				1	0				1	1				1	2										
PL	2	2				2	0				2	0				2	3				2	3										
	3	3				1	0				1	0				3	4				3	4										
	4	4				2	0				2	0				4	1				4	1										
PL	1/2	1				0	4				0	4				1					1											
CRT	1	1				1	4				1	4				1	2				1	2										
	2	2				2	4				2	4				2	3				2	3										
	3	3				0	0				0	0				3	4				3	4										
	4	0				2	4				2	4				0					0											
L	1	1				0	4				0	4				0	0				0	0										
	2	2				0	0				0	0				0					0											
MM	1	1				1	4				1	4				1	2				1	2										
	2	2				2	4				2	4				2					2											
MDM	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 A V A I D S S E N S O R S	FCS	ASA	ACCEL	RGA	ADTA	IMU	RA	TACAN	UHF	MLS	AUTO	ALL ON	ALL ON	ALL ON	ALL ON	ALL ON	ALL ON	ALL ON	ALL ON	ALL ON	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										

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 (ORM OPS, EPS)

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

TIG		1: GNC UNIV PTG	2: SM SYS SUMM 1
-04:00	A5(B1) AUTO VERN RT 0.2 DB 1.0	P	<u>CRT TIMER SETUP</u> [1]
-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], 1-27 <u>ENT AIRLOCK CONFIG</u> [3A], 1-28
		P	KU-BD ANT STOW, if deployed (ORB OPS, <u>COMM/INST</u>)
-03:45			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

APU/HYD CONFIG 5

APU 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
 MDU ACCEL 4,3 (two) – ON
 AFD1 – OFF

O7 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

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

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

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

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

-03:20

UPLINK
(if reqd)
PASS SV

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

NOTE
√MCC for unaccounted-for switch
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
Do not perform an keyboard item entries
or switch throws 10 sec before and after
moding PASS GPCs to RUN or making
OPS transition requests

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

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

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

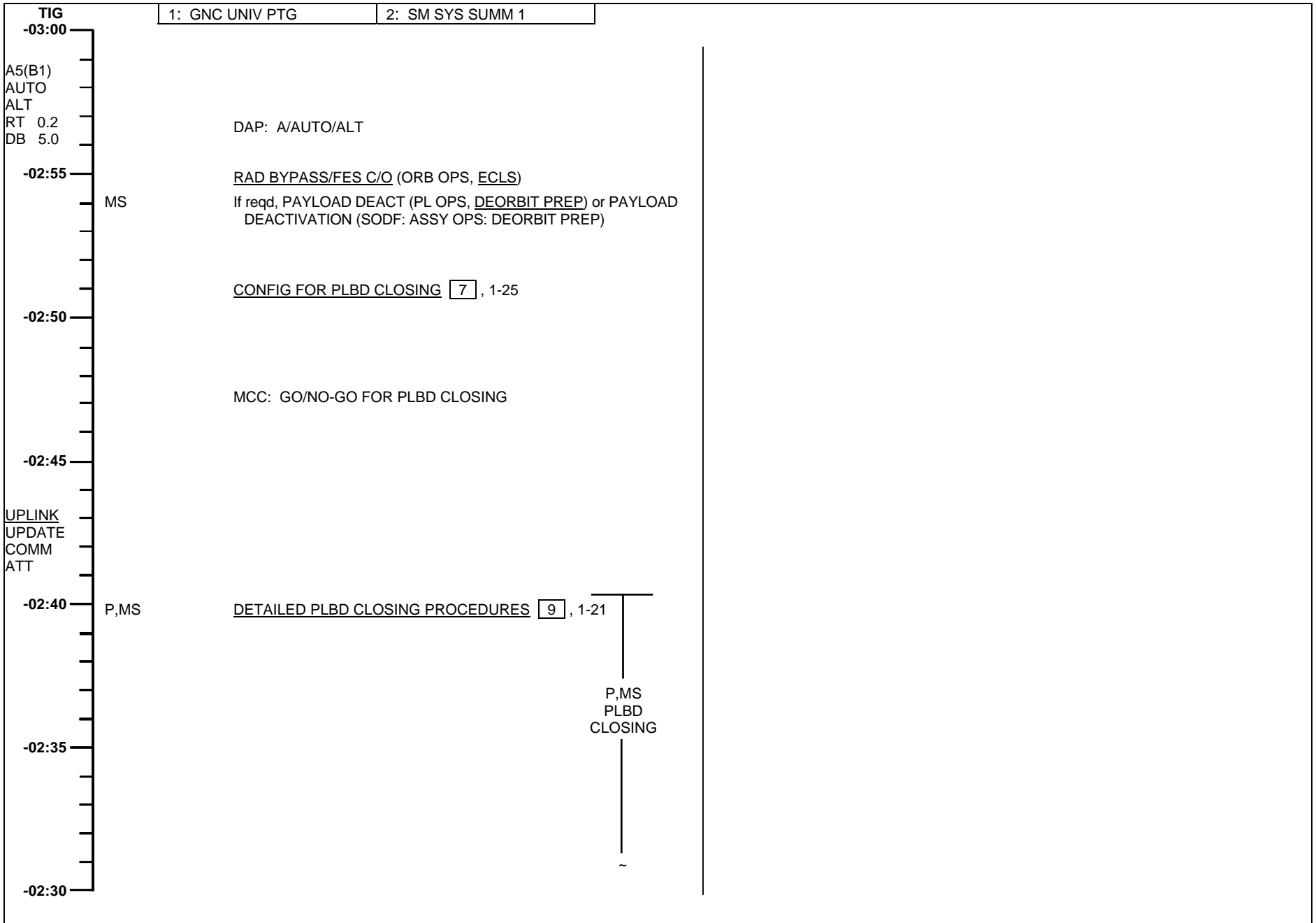
ENSURE BFS GPC CAN COMMAND AN IDP **4b**

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

C3 BFC CRT DISP – ON
SEL – 2+3

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

Block 8 deleted



DPS ENTRY CONFIG 12

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

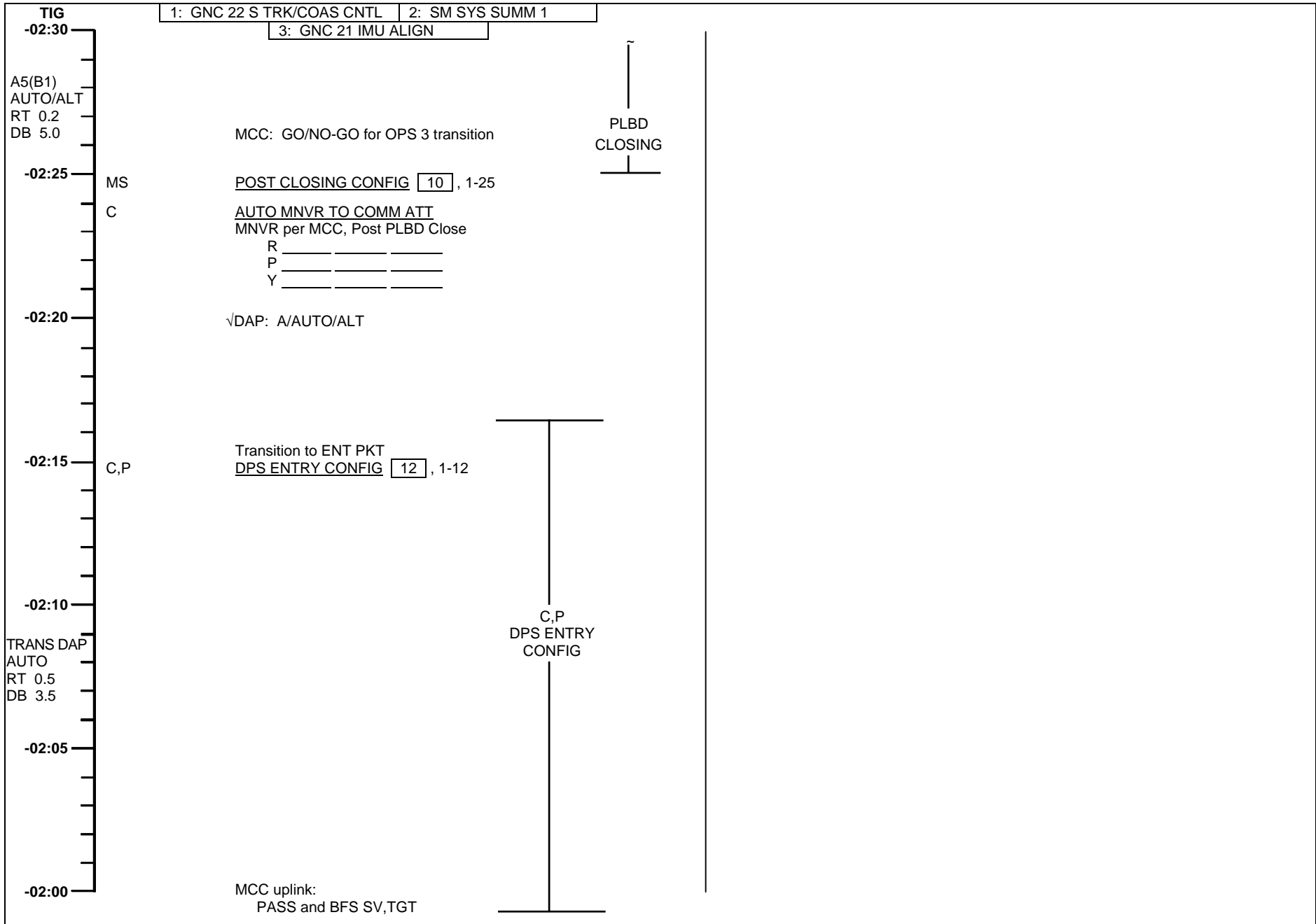
- √Att mnvr complete
- √RGA,AA,ASA,IMU (all) – ON

NOTE

Do not perform any keyboard item entries or switch throws 10 sec before and after moding PASS GPCs to RUN or making OPS transition requests

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

	Modify MC 3 per table GNC, OPS 301 PRO 1: GNC DEORB MNVR COAST	CONFIG GPC 3 12000
C3	6. TRANSITION BFS GPC TO GNC OPS 3 BFC CRT DISP – ON √SEL = 3+1 3: BFS, GNC BFS MEMORY	STR 1 1 2 2 3 1 4 2 PL 1/2 0 CRT 1 1 2 2 3 2 4 0
O6 CRT3	GPC OUTPUT 5 – B/U (tb-bp) √TFL ENA – ITEM 29 (*) BFS, GNC OPS 301 PRO 3: BFS, GNC DEORB MNVR COAST	L 1 0 2 0 MM 1 1 2 2
O6	7. TRANSITION GPC 1,2,3,4 TO GNC OPS 3 SM, OPS 000 PRO X: SM GPC MEMORY GPC OUTPUT 4 – NORM (tb-gray) MODE 3,5 (two) – RUN (tb-RUN) If no comm, sel best antenna √CONFIG – ITEM 1 +3 EXEC Modify MC 3 per table GNC OPS 301 PRO 1: GNC DEORB MNVR COAST	CONFIG GPC 3 12340 STR 1 1 2 2 3 3 4 4 PL 1/2 1 CRT 1 1 2 2 3 3 4 0
CRT3 C3	BFS, GNC OPS 000 PRO BFS, GNC OPS 301 PRO BFC CRT DISP – OFF (GPC 3 commanding IDP 3) – ON * If any IMU failed or not aligned: * 3: BFS, GNC 51 OVERRIDE * * Aff IMU – desel *	L 1 0 2 0 MM 1 1 2 2
	8. MNVR BACK TO COMM ATT	CONFIG GPC 9 12340 STR 1 1 2 2 3 3 4 4 PL 1/2 1 CRT 1 1 2 2 3 3 4 0
	9. LOAD IN TGTs 1: GNC DEORB MNVR COAST √MCC for TGT and SV UPLINK LOAD – ITEM 22 EXEC TIMER – ITEM 23 EXEC	L 1 1 2 2 MM 1 1 2 2
	10. VERIFY MC 9 TABLE (GNC) FOR POST LANDING 2: GNC 0 GPC MEMORY CONFIG – ITEM 1 +9 EXEC Modify MC 9 per table CONFIG – ITEM 1 +3 EXEC	



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 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

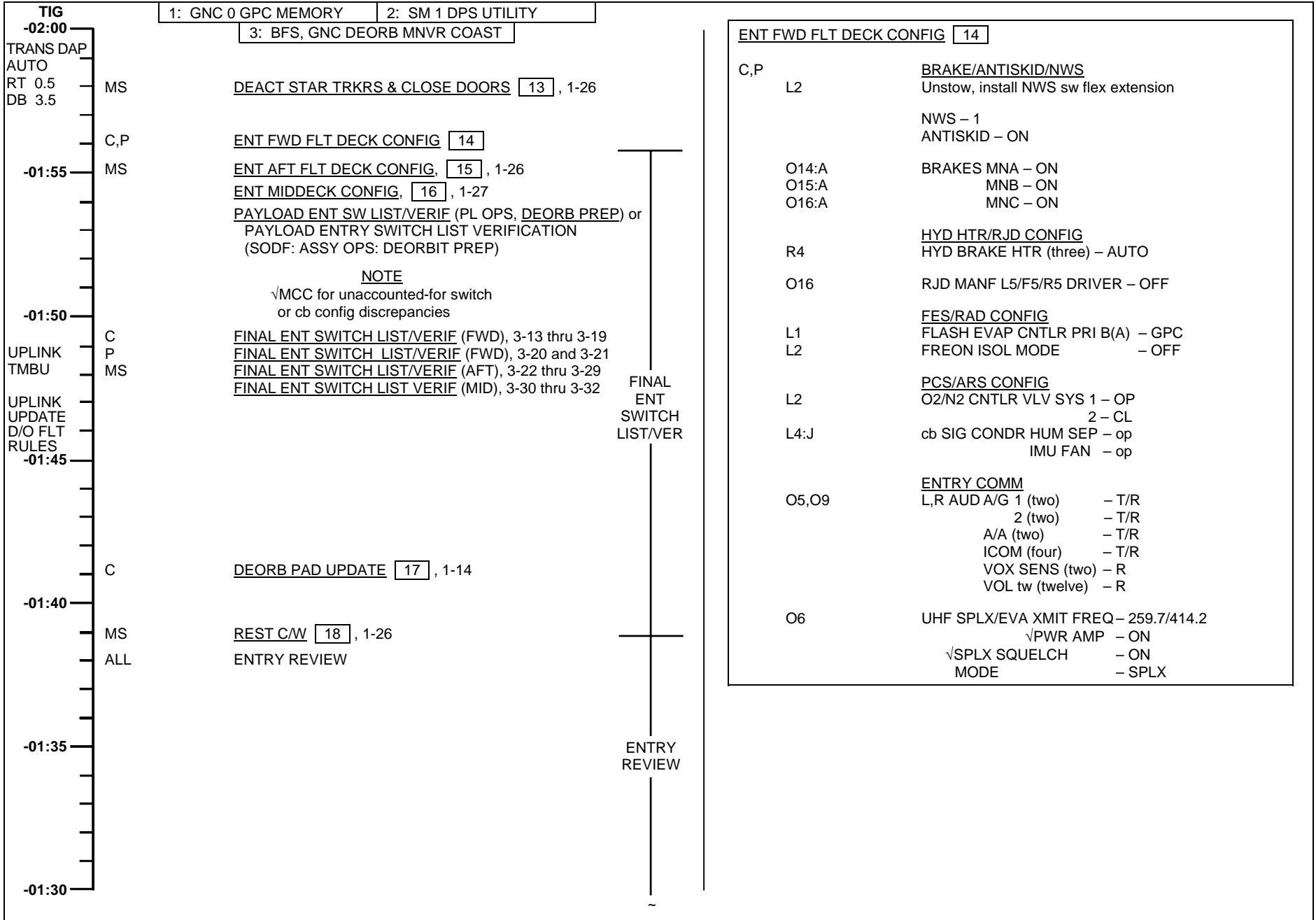
√PASS and BFS TGT per DEORBIT MNVR PAD (ENT, MNVR PADS)

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

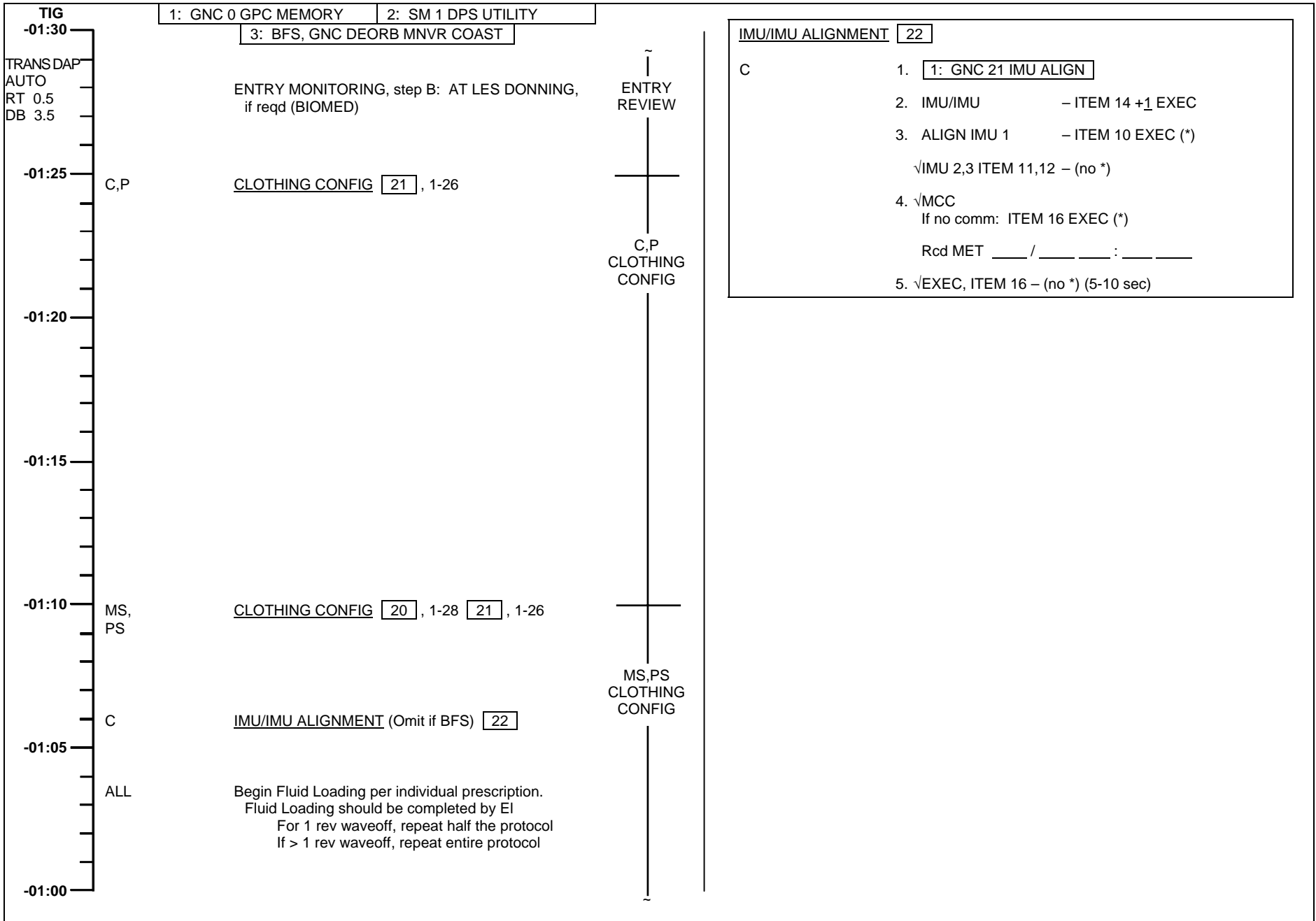
BURN ATT, HA HP

Δ VTOT

TGO



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TIG		1: GNC DEORB MNVR COAST	2: GNC DEORB MNVR COAST	
-01:00	TRANS DAP	C,P	SEAT INGRESS	MS,PS CLOTHING CONFIG
	AUTO	C,P	HUD SETUP [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	LES PRESS INTEGRITY CHECK	
		MS	AFD AUD SPKR CONFIG [28], 1-25	
		MS	WIRELESS STOW, if flown [24]	
		MS	MD AUD SPKR CONFIG [29], 1-28	
-00:50		MS	CO2 RMVL SYS DEACT, if flown [25], 1-28	
		C,P	Stow all unnecessary FDF articles FLIGHT DECK, go to ENT, <u>DEORBIT BURN</u>	
-00:45				
-00:40				
-00:35		MS	GALLEY DEACT [26], 1-27	
		MS	WCS DEACT MS [27], 1-28	
			<u>NOTE</u> WCS must be deactivated prior to EI	
-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 when closing and latching PLBD
(Ku ANT,RMS,RAD,etc)

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 1,2 (two) – DSBL *
 - * DR – STOP *
 - * Perform PASS SM GPC FAIL (ORB PKT, DPS) *
- * If BFS AUTO sequence has been interrupted by reversing *
 - * Latch/door drive direction, or if MANUAL mode has been *
 - * used at any time during the mission, use MANUAL mode *
 - * for all subsequent BFS PLBD ops *

NOTE

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

CONFIGURE FOR AUTO MODE

CRT4 1. SM, OPS X02 PRO or BFS, SM 63 PL BAY DOORS

4: SM PL BAY DOORS

R13L

- √PL BAY DR – STOP
- √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 (*)

CRT4

R13L
CRT4

4. PL BAY DR SYS 1,2 (two) – ENA
√OP/CL STATUS (ten) – OP

CLOSE PLBDs USING AUTO MODE

- * If PORT(STBD) DOOR not 'CL' within 6 sec of 'RDY': *
- * PL BAY DR – STOP *
- * √PLBD BULKHEAD LATCH GO/NO-GO DIAGRAM, 1-22 *
- * If NO-GO: Go to MAL, MECH SSR-2 (CONTINGENCY *
- * PLBD CLOSURE) *
- * If GO: PL BAY DR – CL *
- * Continue in procedure *

R13L
CRT4

5. PL BAY DR – CL
√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 ENTRY DAY NO-GO
DIAGRAM C/L LATCH EXTENDED GUIDE ROLLER
TRAJECTORY, 1-22

- * If NO-GO for PLBD CLOSE and no waveoff capability, *
- * perform MAL, MECH SSR-3 (SIMULTANEOUS PLBD CL) *
- * If waveoff OK, √MCC *

CRT4

7. PL BAY DR – CL
√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

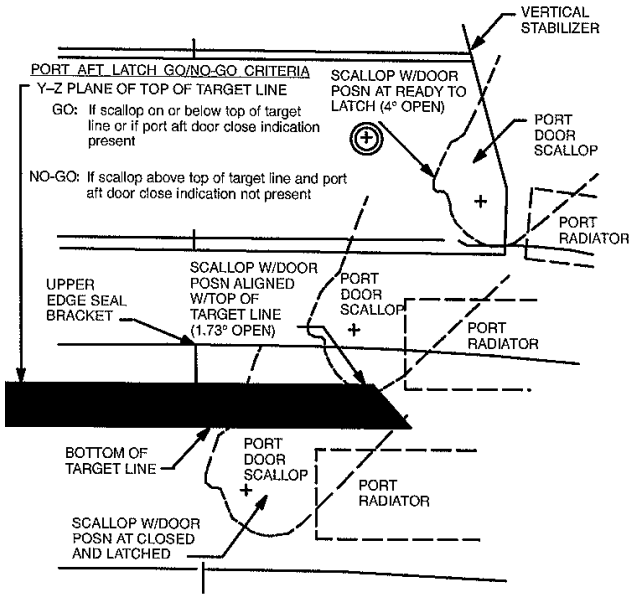
POST-PLBD CLOSING CLEANUP

CRT4

9. PL BAY DR SYS 1,2 (two) – DSBL
√OP/CL STATUS (ten) – CL
10. AC POWER OFF – ITEM 2 EXEC (*)
11. GPC/CRT 54 EXEC

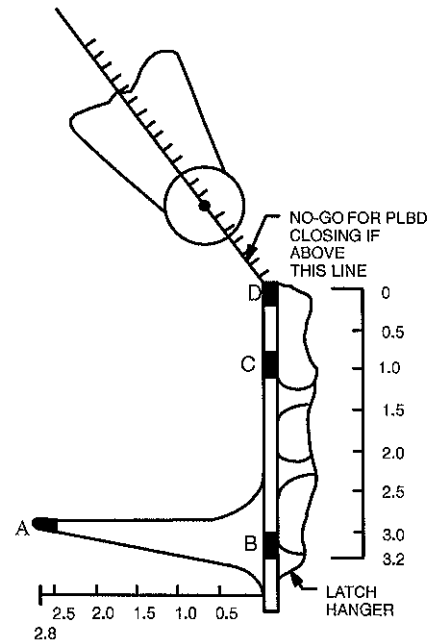
AUTO PLBD CLOSING (Cont)

**PLBD BULKHEAD LATCH GO/NO-GO DIAGRAM
(REVERSE FOR STBD DOOR)**



FUNCTION	PLBD CONROL								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

**ENTRY DAY NO-GO DIAGRAM
C/L LATCH EXTENDED GUIDE ROLLER TRAJECTORY**



MANUAL PLBD CLOSING

DETAILED PLBD CLOSING PROCEDURES

CAUTION

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

- 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 *
- R13L
- * If SM GPC fails during this operation: *
 - * PL BAY DR SYS 1,2 (two) – DSBL *
 - * PL BAY DR – STOP *
 - * Go to PASS SM GPC FAIL (ORB PKT, DPS) *
- * If BFS AUTO sequence has been interrupted by reversing *
- * Latch/door drive direction, or if MANUAL mode has been *
 - * used at any time during the mission, use MANUAL mode *
 - * for all subsequent BFS PLBD ops *

NOTE

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

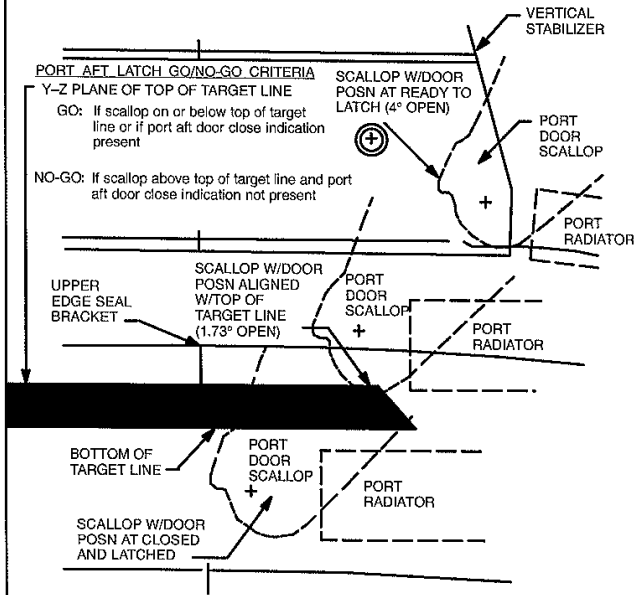
CONFIGURE FOR MANUAL MODE

- CRT4 1. SM, OPS X02 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 1,2 (two) – ENA
- CRT4 √OP/CL STATUS (ten) – OP
- CLOSE PORT DOOR, FWD & AFT LATCHES
- R13L
- * If PORT(STBD) DOOR not 'CL' within 6 sec of 'RDY': *
 - * PL BAY DR – STOP *
 - * √PLBD BULKHEAD LATCH GO/NO-GO DIAGRAM, 1-24 *
 - * If NO-GO: Go to MAL, MECH SSR-2 (CONTINGENCY *
 - * PLBD CLOSURE) *
 - * If GO: Continue in procedure *
- CRT4 4. Select Port Door – ITEM 13 EXEC (*)
- R13L 5. PL BAY DR – CL

- CRT4 √PORT DOOR – blank,RDY,CL (~63 sec)
- R13L 6. PL BAY DR – STOP
- CRT4 7. Select PORT FWD,AFT LATCHES – ITEM 11, 12 EXEC (*)
- R13L 8. PL BAY DR – CL
- CRT4 √PORT DOOR – CL
- √FWD,AFT LATCHES (two) – blank, CL (~30 sec)
- R13L 9. PL BAY DR – STOP
- CRT4 10. Deselect PORT FWD,AFT LATCHES, & DOOR – ITEM 11,12,13 EXEC (no *)
- CLOSE STBD DOOR, FWD & AFT LATCHES
- R13L 11. Select STBD DOOR – ITEM 10 EXEC (*)
- CRT4 12. PL BAY DR – CL
- √STBD DOOR – blank
13. When STBD DOOR as close as possible to PORT DOOR before contact, perform fit check:
- R13L PL BAY DR – STOP
- Determine C/L Latch clearance on ENTRY DAY NO-GO DIAGRAM C/L LATCH EXTENDED GUIDE ROLLER TRAJECTORY, 1-24
- * If NO-GO for PLBD CLOSE and no waveoff capability, *
 - * Go to MAL, MECH SSR-3 (SIMULTANEOUS PLBD CL) *
 - * If waveoff OK, √MCC *
14. PL BAY DR – CL
- 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
- √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
- CRT4 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
28. PL BAY DR SYS 1,2(two) – DSBL
- √OP/CL STATUS (ten) – CL
29. AC POWER OFF – ITEM 2 EXEC (*)
30. GPC/CRT 54 EXEC

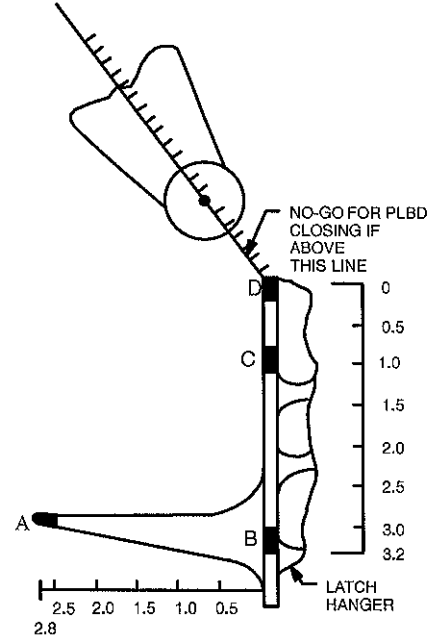
MANUAL PLBD CLOSING (Cont)

**PLBD BULKHEAD LATCH GO/NO-GO DIAGRAM
(REVERSE FOR STBD DOOR)**



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

**ENTRY DAY NO-GO DIAGRAM
C/L LATCH EXTENDED GUIDE ROLLER TRAJECTORY**



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>
3:10	<u>PARTIAL ENT SWITCH LIST/VERIF (AFT)</u>
2:55	If reqd, <u>PAYLOAD DEACT</u> , if reqd (PL OPS, <u>DEORB PREP</u>) or <u>PAYLOAD DEACTIVATION (SODF: ASSY OPS: DEORBIT PREP)</u>
2:51	<u>CONFIG FOR PLBD CLOSING</u> [7]
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], 1-26 <u>ENT AFT FLT DECK CONFIG</u> [15], 1-26
1:55	<u>PAYLOAD ENT SW LIST/VERIF (PL OPS, DEORB PREP or PAYLOAD ENTRY SWITCH LIST VERIFICATION (SODF: ASSY OPS: DEORBIT PREP))</u>
1:50	<u>FINAL ENT SWITCH LIST VERIF (AFT)</u> , 3-22 thru 3-33
1:41	<u>RESET C/W</u> [18], 1-26
1:40	<u>ENTRY REVIEW</u>
1:28	DSO 603, if reqd (BIOMED, <u>BIOMED DSOs</u>)
1:10	<u>CLOTHING CONFIG</u> [21], 1-26
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</u> (if RMS 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
	<u>SET UP LIGHTS</u>
R11L	IDP/CRT4 PWR – ON
MDU	√CRT 4 PWR – ON
A6U	√ANNUN BUS SEL – MNC
	NOTE 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 <u>ACTIVATION, OPERATION (Cue Card, 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]	
	NOTE 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 <u>DEACTIVATION (Cue Card, TV)</u> , then: Stow Flight Deck Camrs, Accessories
	<u>FOOT LOOP CONFIG</u> Tape Foot Loops in egress routes
	<u>EDO PALLET DEACT</u> , if flown (ORB OPS, <u>EPS</u>)

(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 NH	ENA/INH
MPS He REG P C L R	39	ENA
	49	ENA
	59	ENA
MANF PLO2 LH2	69	INH
	79	INH
HYD P 1 2 3	99	ENA
	109	ENA
	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

- A6L DSP
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
- A12 HYD HTR
HYD HTR (eight) – OFF
- A1L ENTRY COMM
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:
√WIRELESS VIDEO PWR – OFF
WIRELESS VIDEO HTR – OFF
- A7
- R14:C cb MNB KU ANT HTR – op
UHF EVA (two) – op
- :F √cb MN A ESS 1BC LDG GEAR ARM/DN RESET – op
- NOTE**
Review or mark cb location for ease of finding during post landing procedures
- VPU √VPU POWER – OFF
- R10 MS AUD A/G 1 – T/R
A/G 2 – T/R
A/A – T/R
ICOM (two) – T/R
VOX SENS – R
VOL tw (five) – R
XMIT/ICOM MODE – R
- L9 PS AUD PWR – AUD TONE
A/G 1 – T/R
A/G 2 – T/R
A/A – T/R
ICOM (two) – T/R
AUD VOX SENS – R
XMIT/ICOM MODE – R
VOL tw (five) – R
ICOM RECORDER OPS, if reqd (ORB OPS,
COMM/INST)
- O19 TV PWR – ON
- L10(MUX)
(VIP)
(VTR) VTR/CC PWR – ON (LED on)
PWR – ON (LED on, DATA FLOW LED flashes twice)
ON/STANDBY – PRESS (green LED on)

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], 1-28
3:35	<u>SPECIALIST SEAT INSTALLATION</u>
3:10	<u>PARTIAL ENT SWITCH LIST/VERIF (MID)</u> , 3-10 thru 3-12
1:55	<u>ENT MIDDECK CONFIG</u> [16]
1:50	<u>FINAL ENT SWITCH LIST/VERIF (MID)</u> , 3-30 thru 3-32
1:40	<u>ENTRY REVIEW</u>
1:28	DSO 603, if reqd (BIOMED, <u>BIOMED DSOs</u>)
1:10	<u>CLOTHING CONFIG</u> [20], 1-28
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], 1-28
0:50	<u>CO2 RMVL SYS DEACT</u> , if flown [25], 1-28
0:35	<u>GALLEY DEACT</u> [26]
0:33	<u>WCS DEACT</u> [27], 1-28

<u>ENT MIDDECK CONFIG</u> [16]			
	<u>ENTRY COMM</u>		
	MIDDECK SPKR AUD A/G 1		- T/R
MO42F	A/G 2		- T/R
	A/A		- T/R
	ICOM (two)		- T/R
	VOX SENS		- R
	VOL tw (five)		- R
	XMIT/ICOM MODE		- R
	<u>MIDDECK PCS</u>		
MO10W	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
MO69M	7 vlv		- R
	<u>RMS PNL LTS</u> (if RMS onboard)		
MA73C:F	cb RMS PRI Φ A		- op
	B/U Φ A		- 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>FDL 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
<u>NOTE</u>
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

- If Booster Fan flown:
- MO13Q 1. ARLK FAN A(B) – OFF
2. Remove, stow flex duct from booster fan muffler inlet and cabin middeck floor air fitting
- MA73C:G 3. cb AC1,2 ARLK TNL FAN A,B (six) – op
4. Unstow, install diffuser cap on middeck floor air fitting
5. Remove, stow flex duct from cabin middeck floor air fitting
- AW18A 6. LTG FLOOD 1(3,4) – OFF
7. Perform AIRLOCK ENTRY SWITCH LIST/VERIFICATION, 3-3
- INNER HATCH 8. Close hatch per decal
9. Equal vlv (two) – NORM, install caps
- MIDDECK FLR 10. √EMU O2 ISOL vlv – CL
- MO13Q 11. AIRLK 2 – OFF/ON
12. √ARLK 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:
17. 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, DC UTIL PWR MNA(B,C) – ON as reqd
MO30F, Cooling units – Hose Jumper Plug installed
MO52J, Pre-chill cooling units 10 min prior to seat ingress
PDB J2(3,4),
ML85E (MUP)

CO2 RMVL SYS DEACT 25

- MO51F CNTLR 2(1) MODE – STBY (hold 3 sec)
Wait 6 sec
- √CNTLR 2(1) OPER It – off
√FAIL It – on
MNC(A) – OFF
√CNTLR 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 VAC VLV – CL
(EDO WCS) √MODE – AUTO
FAN SEP SEL sw – 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
- 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
CNT – CL (tb-CL)
NOZ HTR – OFF
- √Middeck lts as reqd

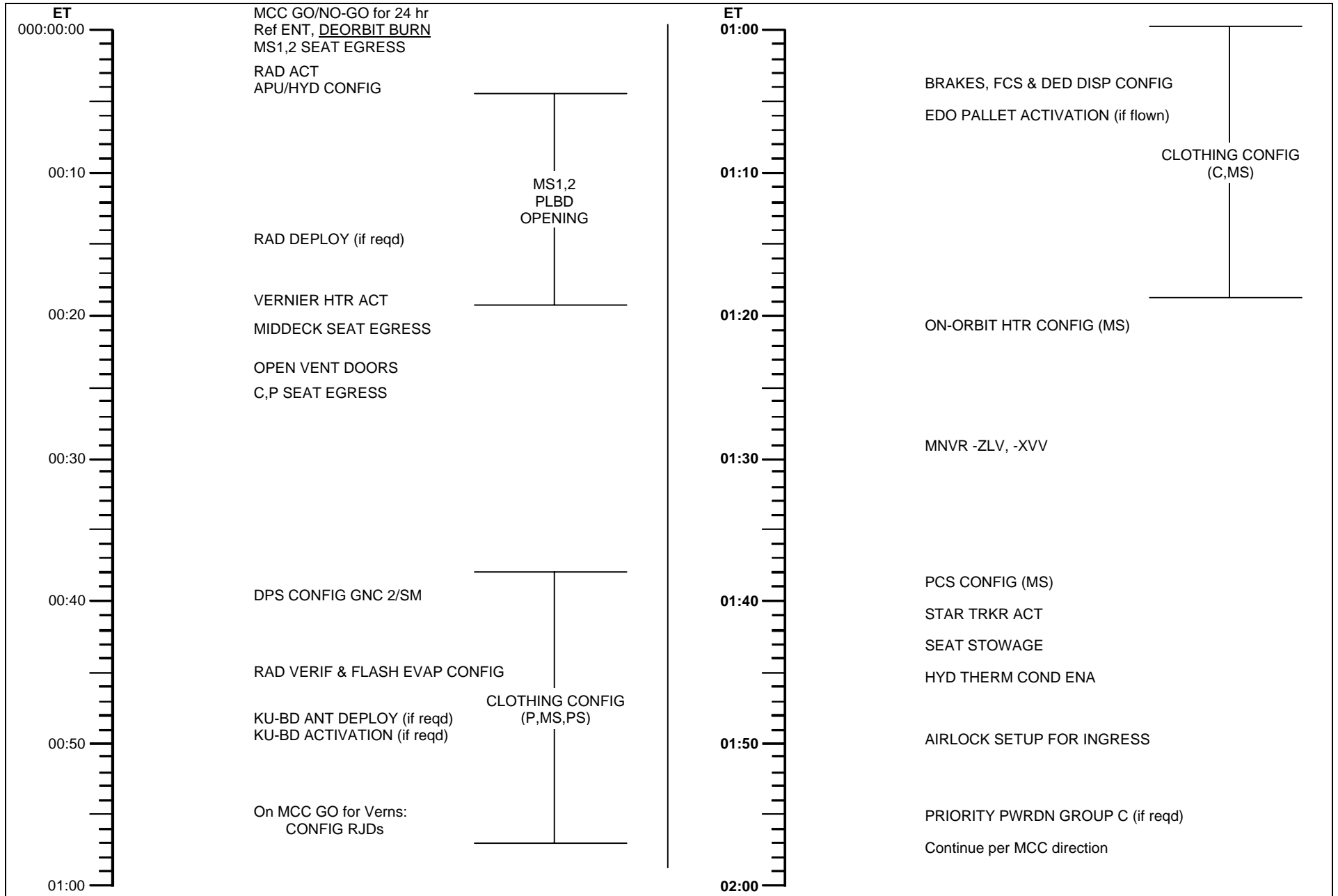
MD AUD SPKR CONFIG 29

- MO42F MIDDECK AUD SPKR PWR – OFF
MO39M 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
				L,R AUD A/G 2 (two) – RCV XMIT/ICOM MODE – PTT/VOX (recommended)
			O6	UHF MODE – OFF
00:15		MS		RAD DEPLOY, IF REQD (ORB OPS, ECLS)
		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:
		MS	MO32M	SEAT EGRESS (all middeck)
		MS	MO69M	LEH O2 vlv (two) – CL – CL
		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		FDF/COMM CONFIG MS AFT ACTIVITIES [8], 2-15

RAD ACT [2]

C L1

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

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

* If tb(s) remain in BYP or return to BYP: *

* Use alternate RAD CNTLR *

* Do not drive BYP VLV(s) manually *

* If tb(s) bp: *

* Do not select alternate RAD CNTLR *

* Do not drive BYP VLV(s) manually *

* If EVAP OUT T low or H2O ICH OUT T *

* low: *

* RAD BYP VLV MODE (two) – MAN *

* MAN SEL (two) – BYP *

* (after ~3 sec tb-BYP) *

APU/HYD CONFIG [3]

P R2

APU SHUTDOWN (EPCL, APU/HYD)

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

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

Do not perform any keyboard item entries or switch throws 10 sec before and after moding PASS GPCs to RUN or making ops transition requests

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

BFC CRT DISP – OFF

GNC, OPS 201 PRO

GNC UNIV PTG

DAP: B/AUTO/PRI

GNC 1 DPS UTILITY

√CKPT RETRV ENA – ITEM 12 EXEC (*)

BFC CRT DISP – ON

BFS, MSG RESET (√BFC It off)

BFS, GPC/CRT 04 EXEC

If single G2 GPC ops:

MAJ FUNC – PL

GPC/CRT 2/X EXEC

X: PL GPC MEMORY

CONFIG ITEM 45 +2 EXEC

GPC ITEM 46 +2 EXEC

STORE ITEM 47 EXEC

Store complete when MC = 02

√All IDPs deassigned from FD GPC

GPC MODE 2 – STBY (tb-bp)

– HALT (tb-bp)

– STBY (tb-RUN)

– HALT (tb-bp)

		DUAL G2	SINGLE G2
CONFIG GPC		2	2
		12000	10000
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

C3

C2

CRT

CRTX

O6

C3
 CRTX

- FREEZE DRY GPC 3**
 BFC CRT DISP – OFF
 MAJ FUNC – PL
 GPC/CRT 3/X EXEC
X: PL GPC MEMORY
 CONFIG – ITEM 45 +2 EXEC
 GPC – ITEM 46 +3 EXEC
 STORE – ITEM 47 EXEC
 Store complete when MC = 02 (~16 sec)
 √All IDPs deassigned from FD GPC
 GPC MODE 3 – STBY (tb-bp)
 – HALT (tb-bp)
 – STBY (tb-RUN)
 – HALT (tb-bp)

O6

CRTY

CRTX

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

MAJ FUNC – SM

GPC/CRT 4/X EXEC

X: SM GPC MEMORY

CONFIG – ITEM 1 +4 EXEC

√MC 4(5) per table

SM, OPS 201(401) PRO

X: SM ANTENNA

DAP: B/AUTO/PRI

SM 1 DPS UTILITY

UL CNTL AUTO – ITEM 35 EXEC

	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

C3

O6

P/I Locker

C2

4. **RECONFIG GPCs**

BFC CRT DISP – ON

BFS, GNC OPS 000 PRO

3: BFS, GNC GPC MEMORY

BFC CRT DISP – OFF

√All IDPs deassigned from BFS

GPC MODE 5 – STBY (tb-RUN)

(releases payload buses 1,2)
 then HALT (tb-bp)

OUTPUT4 – TERM (tb-bp)

5 – NORM (tb-bp)

Unstow and install GPC Mode Switch Guard

5. **MEDS RECONFIG**

GPC/CRT 03 EXEC

44 EXEC

IDP/CRT3 PWR – OFF

ET	1: GNC 51 OVERRIDE	2: GNC DEORB MNVR COAST	
00:30			
TRANS DAP		3: BFS, GNC DEORB MNVR COAST	
AUTO			
RT 0.5			
DB 3.5			
00:35			
	P	CLOTHING CONFIG <u>9</u> , 2-6	CLOTHING CONFIG (P,MS,PS)
	MS,PS	CLOTHING CONFIG <u>10</u> , 2-15	
00:40	C	If reqd, PAYLOAD REACT (PL OPS, <u>DEORB PREP</u>) or PAYLOAD DEACTIVATION (SODF: ASSY OPS: DEORBIT PREP)	
(A1) B1	C	DPS CONFIG TO GNC2/SM <u>11</u> , 2-6 and 2-7	
AUTO/PRI			
RT 0.5			
DB 3.0			
00:45	P	RAD VERIF & FLASH EVAP CONFIG <u>12</u>	
	MS	RMS PNL LT, TEMP MON, HTR ACT, C/W <u>13</u> , 2-16	
	C	<u>KU-BD ANT DEPLOY</u> , if reqd (ORB OPS, <u>COMM/INST</u>) <u>KU-BD ACTIVATION</u> , if reqd (ORB OPS, <u>COMM/INST</u>)	
00:50			
	MS	MIDDECK CONFIG <u>14</u> , 2-17 and 2-18	
	C,P	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)	
00:55		<u>GNC 20 DAP CONFIG</u> ITEM 10 +0.1 EXEC 11 +1.0 EXEC 22 +1 EXEC DAP: A/AUTO/ALT	
A1 (B1)			
AUTO			
VERN			
RT 0.2			
DB 1.0			
01:00			

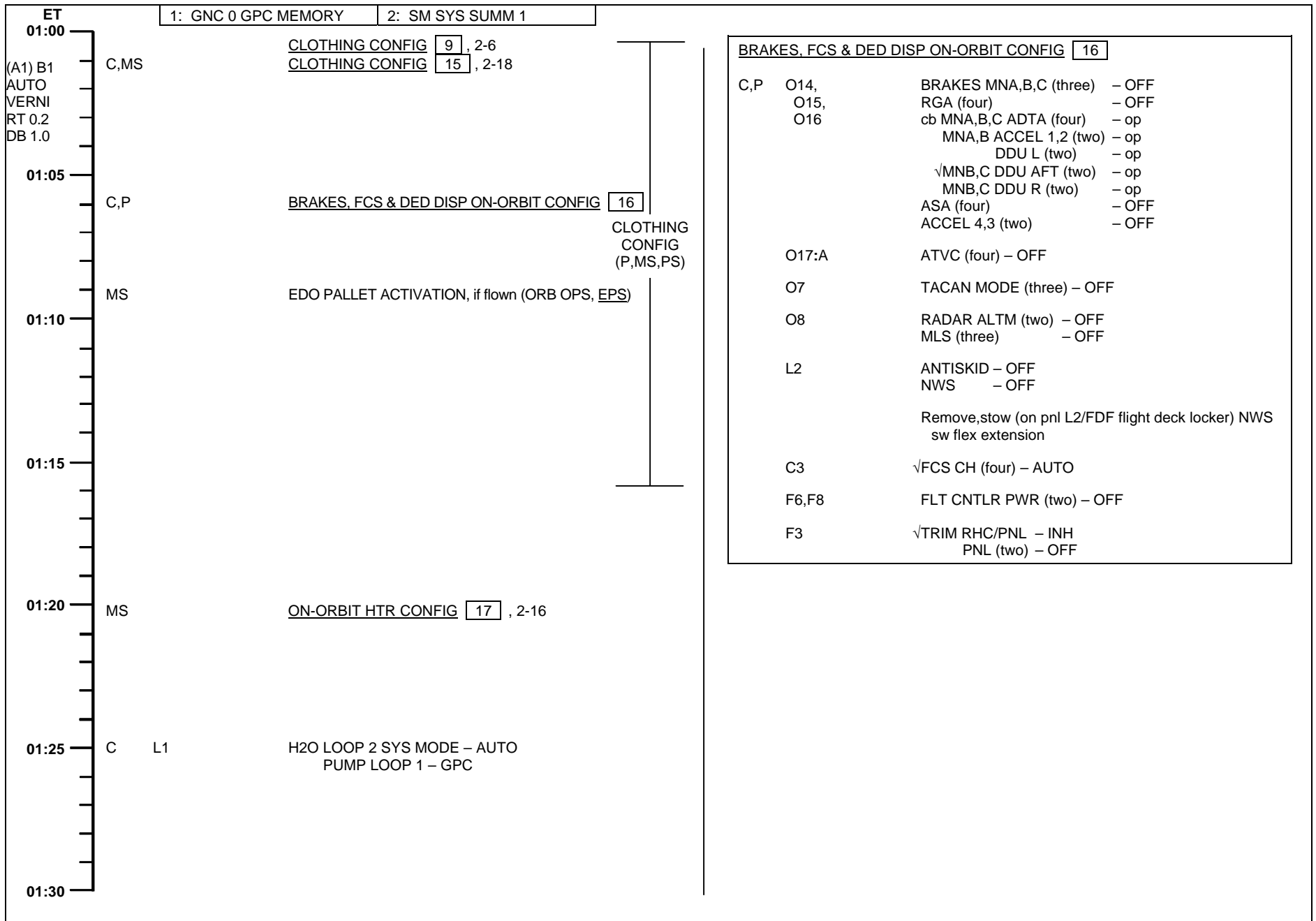
6. TFL/DFL FOR ON-ORBIT OPS
 √MCC for TFL/DFL config
 Perform LOAD PCMMU FORMAT (ORB OPS FS, COMM/INST) and LOAD PDI DECOM FORMAT (ORB OPS FS, COMM/INST)

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

RAD VERIF & FLASH EVAP CONFIG 12

L1 2: SM 88 APU/ENVIRON THERM
 CRT2 √RAD BYP VLV tb (two) – RAD FLOW
 L1 When FREON LOOP RAD OUT T < 60 degF:
 HI LOAD EVAP – OFF
 FLASH EVAP CNTLR PRI B(A) – OFF
 L2 FREON ISOL MODE – AUTO
 2: SM SYS SUMM 1

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

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

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PLBD OPENING

DETAILED PLBD OPENING PROCEDURES 5

- R13L * If no motion determined visually or 'OP/CL' *
 * not blank within 10 sec after cmd: *
 * PL BAY DR – STOP *
 * Go to MAL, MECH, 9.1a *
 * If Latch not 'OP' in single-motor time: *
 * PL BAY DR – STOP *
 * Go to MAL, MECH, 9.1d *
 * If door motion stops and not 'OP': *
 * PL BAY DR – STOP *
 * Go to MAL, MECH, 9.1f *
- O6 * If BFS GPC fails during operation: *
 * PL BAY DR SYS 1,2 (two) – DSBL *
 * PL BAY DR – STOP *
 * MDM PL 1,2 (two) – OFF *
 * GPC MODE 5 – STBY, HALT *
 * MDM PL 1,2 (two) – ON *
 * Proceed with DPS CONFIG TO GNC2/SM 11, then *
 * continue in MANUAL PLBD OPENING PROCEDURE, *
 * as reqd *
- R13L * If SM GPC fails during this operation: *
 * PL BAY DR SYS 1,2 (two) DSBL *
 * PL BAY DR – STOP *
 * Perform PASS SM GPC FAIL (ORB PKT, DPS) *
- * If BFS AUTO sequence has been interrupted by reversing *
 * latch/door drive direction, or if MANUAL has been used *
 * at any time during the mission, use MANUAL mode for *
 * all subsequent BFS PLBD ops *

NOTE

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

AUTO PLBD OPENING PROCEDURE

- MS CRTX 1. SM, OPS X02 PRO or BFS, SM 63 PL BAY DOORS
4: SM PL BAY DOORS
- R13L CRTX √PL BAY DR – STOP
 √PBD SW – STOP
 √MAN SEL (ten) – (no *)
 √PBD SW BYPASS – (no *)
- R13L CRTX 2. AC POWER ON – ITEM 1 EXEC (*)
 √AUTO MODE SEL – (no *)
- R13L CRTX 3. PL BAY DR SYS 1,2 (two) – ENA
 √OP/CL STATUS (ten) – CL
 √AOS
- OPEN C/L LATCHES 5-8 (MANUAL MODE)
- R13L CRTX 4. Select CENTER LATCHES 5-8 – ITEM 4 EXEC (*)
 5. PL BAY DR – OP
 R13L CRTX √CENTER LATCHES 5-8 – blank, OP (~20 sec)
 R13L 6. PL BAY DR – STOP

OPEN REMAINING LATCHES/DOORS (AUTO MODE)

- R13L CRTX 7. AUTO MODE SEL – ITEM 3 EXEC (*)
 8. PL BAY DR – OP
 √CENTER LATCHES 9-12 – blank, OP (~20 sec)
 √CENTER LATCHES 1-4,13-16 (two) – blank, OP (~20 sec)
 √STBD FWD,AFT LATCHES (two) – blank, OP (~30 sec)
 √DOOR – RDY, blank, OP (~63 sec)
 √PORT FWD,AFT LATCHES (two) – blank, OP (~30 sec)
 √DOOR – RDY, blank, OP (~63 sec)
- R13L 9. PL BAY DR – STOP
- POST-PLBD OPENING CLEANUP
- R13L CRTX 10. PL BAY DR SYS 1,2 (two) – DSBL
 √OP/CL STATUS (ten) – OP
11. AC POWER OFF – ITEM 2 EXEC (*)
 12. SM, OPS X01 PRO (if PASS SM)
4: SM ANTENNA
- A7U 13. After floodlights ON > 10 min:
 PL BAY FLOOD (all) – OFF

MANUAL PLBD OPENING PROCEDURE

- MS CRTX 1. SM, OPS X02 PRO or BFS, SM 63 PL BAY DOORS
4: SM PL BAY DOORS
- R13L CRTX √PL BAY DR – STOP
 √PBD SW – STOP
 √MAN SEL (ten) – (no *)
 √PBD SW BYPASS – (no *)
- R13L CRTX 2. AC POWER ON – ITEM 1 EXEC (*)
 √AUTO MODE SEL – (no *)
- R13L CRTX 3. PL BAY DR SYS 1,2 (two) – ENA
 √OP/CL STATUS (ten) – CL
 √AOS
- OPEN C/L LATCHES
- R13L CRTX 4. Select CENTER LATCHES 5-8 – ITEM 4 EXEC (*)
 5. PL BAY DR – OP
 R13L CRTX √CENTER LATCHES 5-8 – blank, OP (~20 sec)
 R13L CRTX 6. PL BAY DR – STOP
 7. Deselect CENTER LATCHES 5-8 – ITEM 4 EXEC (no *)
 8. Select CENTER LATCHES 9-12 – ITEM 5 EXEC (*)
 R13L CRTX 9. PL BAY DR – OP
 √CENTER LATCHES 9-12 – blank, OP (~20 sec)
- R13L CRTX 10. PL BAY DR – STOP
 11. Deselect CENTER LATCHES 9-12 – ITEM 5 EXEC (no *)
 12. Select CENTER LATCHES 1-4,13-16 – ITEM 6,7 EXEC (*)
- R13L CRTX 13. PL BAY DR – OP
 CENTER LATCHES 1-4,13-16 (two) – blank, OP (~20 sec)
 R13L CRTX 14. PL BAY DR – STOP
 R13L CRTX 15. Deselect CENTER LATCHES 1-4,13-16 – ITEM 6,7 EXEC (no *)

PLBD OPENING (Cont)

- OPEN STBD FWD, AFT LATCHES & DOOR**
- R13L 16. Select STBD FWD, AFT LATCHES – ITEM 8,9 EXEC (*)
 - CRTX 17. PL BAY DR – OP
 - R13L 18. √STBD FWD, AFT LATCHES (two) – blank, OP (~30 sec)
 - CRTX 19. PL BAY DR – STOP
 - R13L 20. Deselect STBD FWD, AFT LATCHES – ITEM 8,9 EXEC (*)
 - CRTX 21. Select STBD DOOR – ITEM 10 EXEC (*)
 - R13L 22. PL BAY DR – OP
 - CRTX 23. √STBD DOOR – RDY, blank, OP (~63 sec)
 - R13L 24. PL BAY DR – STOP
 - CRTX 25. Deselect STBD DOOR – ITEM 10 EXEC (*)
- OPEN PORT FWD, AFT LATCHES & DOOR**
- R13L 24. Select PORT FWD, AFT LATCHES – ITEM 11,12 EXEC (*)
 - CRTX 25. PL BAY DR – OP
 - R13L 26. √PORT FWD, AFT LATCHES (two) – blank, OP (~30 sec)
 - CRTX 27. PL BAY DR – STOP
 - R13L 28. Deselect PORT FWD, AFT LATCHES – ITEM 11,12 EXEC (no *)
 - CRTX 29. Select PORT DOOR – ITEM 13 EXEC (*)
 - R13L 30. PL BAY DR – OP
 - CRTX 31. √PORT DOOR – RDY, blank, OP (~63 sec)
 - R13L 32. PL BAY DR – STOP
 - CRTX 33. Deselect PORT DOOR – ITEM 13 EXEC (no *)

- POST-PLBD OPENING CLEANUP**
- R13L 32. PL BAY DR SYS 1,2 (two) – DSBL
 - CRTX 33. √OP/CL STATUS (ten) – OP
 - A7U 34. AC POWER OFF – ITEM 2 EXEC (*)
 - 35. SM, OPS X01 PRO (if PASS SM)
 - 4: SM ANTENNA
 - 35. After floodlights ON > 10 min:
PL BAY FLOOD (all) – OFF

FUNCTION	PLBD CONTROL								PLBD DISPLAY											
	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	2	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 DEACTIVATION (SODF: ASSY OPS: <u>DEORBIT PREP</u>)
00:47	<u>RMS PNL LT, TEMP MON, HTR ACT, 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>
A6U	<u>SET UP LIGHTS</u> 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>FDF/COMM CONFIG</u> [8]	
	<u>COMM CONFIG</u> Unstow: Headsets, Handheld Mics and/or Wireless Comm if flown If WCCS, perform STD WCCS CONFIG (ORB OPS, <u>COMM/INST</u>) or see <u>WCCS COMM PLAN</u> (Cue Card) If flight deck Handheld Mic/speaker operation:
R10	MS AUD PWR – AUD/TONE A/G 1 – T/R, tw-2 A/G 2 – RCV, tw-2 A/A – RCV, tw-2 ICOM A – T/R, tw-2 ICOM B – RCV, tw-2 XMIT/ICOM MODE – PTT/PTT
A13	OS AUD SPKR PWR – SPKR/MIC MSTR SPKR VOL – 8
A11	MS COMM CCU PWR – OFF Connect Handheld Mic to CCU MS COMM CCU PWR – ON
R6,L5	CCU PWR – OFF
A1L	S-BD PM MODE – TDRS DATA NSP CODING (two) – ON OCA SETUP (ORB OPS, <u>PGSC</u>) A/G 2 MODE OCA S-BAND MODEM (MFX) ACTIVATION (ORB OPS, <u>PGSC</u>) COLOR PRINTER UNSTOW AND ASSEMBLE (ORB OPS, <u>PGSC</u>) ICOM RECORDER OPS, if reqd (ORB OPS, <u>COMM/INST</u>)
O19	TV PWR – OFF
L1O(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]	
	Do off/stow: Harness, Boots, ACES, UCD (if not used) Remove radiation dosimeter from ACES and insert in inflight garments Do off/stow in Wet Trash (if used): UCD (clamp) Emesis Bag (unstow new bag)

(Cont next page)

Back of MS AFT DECK BACKOUT ACTIVITIES

RMS PNL LTS, TEMP MON, HTR ACT, C/W 13

MA73C:F RMS PNL LTS, TEMP MON, HTR ACT (if RMS on board)
 A8L cb RMS PRI Φ A – cl
 RMS PWR – PRI (MA tone)
 SM 94 PDRS CONTROL (MA, GPC DATA it on)

 A8U I/O ON – ITEM 5 EXEC (*)
 A8L SAFING – CANCEL (tb-bp) (\sqrt GPC DATA lt off)
 C/W PORT RMS HTR A – AUTO

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

ON-ORBIT HTR CONFIG 17

R2 BLR PWR (three) – OFF
 R4 HYD BK HTR (three) – OFF
 L1 \sqrt HI LOAD EVAP – OFF
 DUCT HTR – OFF

 If WVS installed:
 A7 WIRELESS VIDEO HTR – ON
 A12 HYD HTR RUD SPD BK B – AUTO
 \sqrt A – OFF
 BDY FLP B – AUTO
 \sqrt A – OFF
 ELEV B – AUTO
 \sqrt A – OFF
 AFT FUS B – AUTO
 \sqrt A – OFF

 A14 RCS/OMS HTR FWD RCS – B AUTO
 \sqrt L POD – A OFF
 L POD – B AUTO
 \sqrt R POD – A OFF
 R POD – B AUTO
 OMS CRSFD LINES – A OFF
 \sqrt OMS CRSFD LINES – B AUTO

 R14:C cb KU ANT HTR – cl

Block 4 deleted

Block 18 deleted

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 DEACTIVATION (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 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>
:B	cb MNC SPLY H2O GALLEY SPLY – cl
	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
	<u>WCS ACTIVATION</u>
WCS	VAC VLV – OP
(EDO WCS)	
	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 (pairflow)
	√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)

Back of MS MIDDECK BACKOUT ACTIVITIES

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

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

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

FLOODLIGHT CONFIG

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

CLOTHING CONFIG 15

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

Remove radiation dosimeter from ACES and insert in inflight garments

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

ON-ORBIT PCS 2(1) CONFIG 19

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

AIRLOCK SETUP FOR INGRESS 21

INNER	1. Equal vlv caps (two) - remove, stow
HATCH	2. √Equal vlv (two) - NORM
	3. Open hatch per decal
AW18A	4. LTG FLOOD 1(3,4) - ON (as reqd)
MO13Q	5. AIRLOCK 2 - ON/OFF
MO13Q	6. √ARLK H2O S/O vlv - OP (tb-op)
MIDDECK FLR	7. √EMU O2 ISOL vlv - CL
	8. Remove, stow diffuser cap on middeck floor air fitting (mark)
MA73C:G	9. cb AC 1,2 ARLK TNL FAN A,B (six) - cl
	10. Unstow, install flex duct from booster fan muffler inlet to cabin middeck floor air fitting
MO13Q	11. ARLK FAN A(B) - ON
	12. √Airflow at top of external airlock halo
	If Spacehab flown and reingress desired:
	13. Go to SPACEHAB INGRESS AFTER WAVEOFF (SH OPS, <u>ON-ORBIT</u> or RDM OPS, <u>ON-ORBIT</u>)
	If Spacehab not flown or reingress not desired >>
	14. Unstow flex duct from tunnel extension; install between middeck floor air fitting and airlock duct inlet

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	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

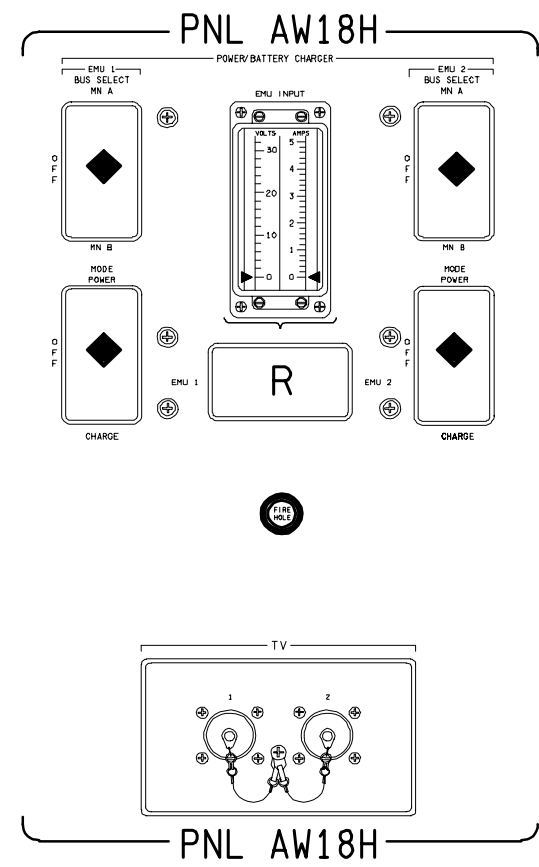
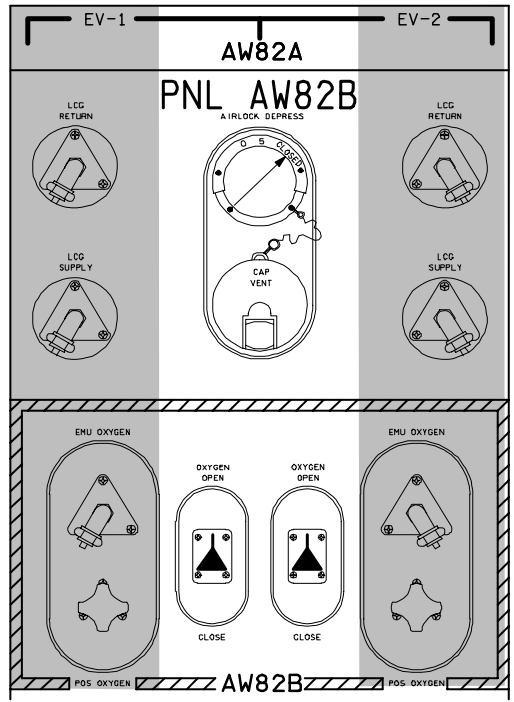
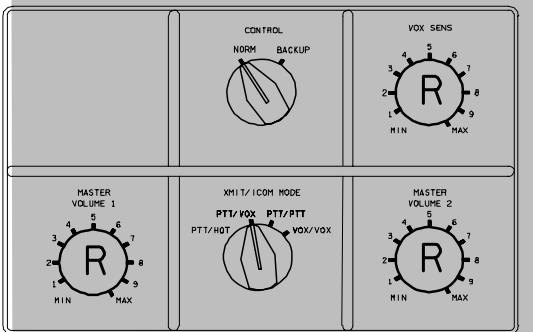
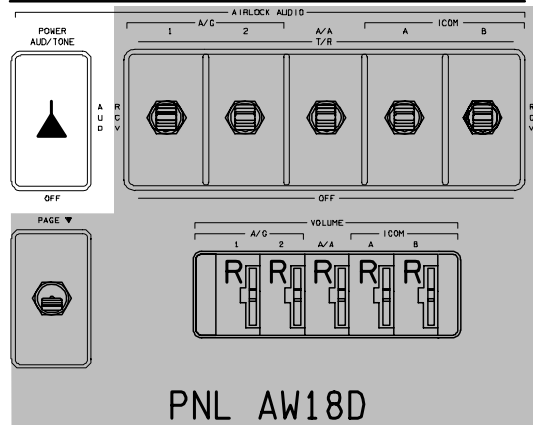
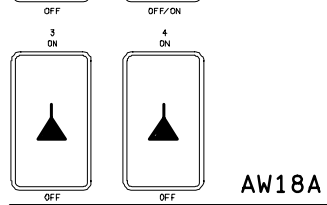
MO42F.....	3-30
MO32M.....	3-30
MO69M.....	3-30
MO51F.....	3-30

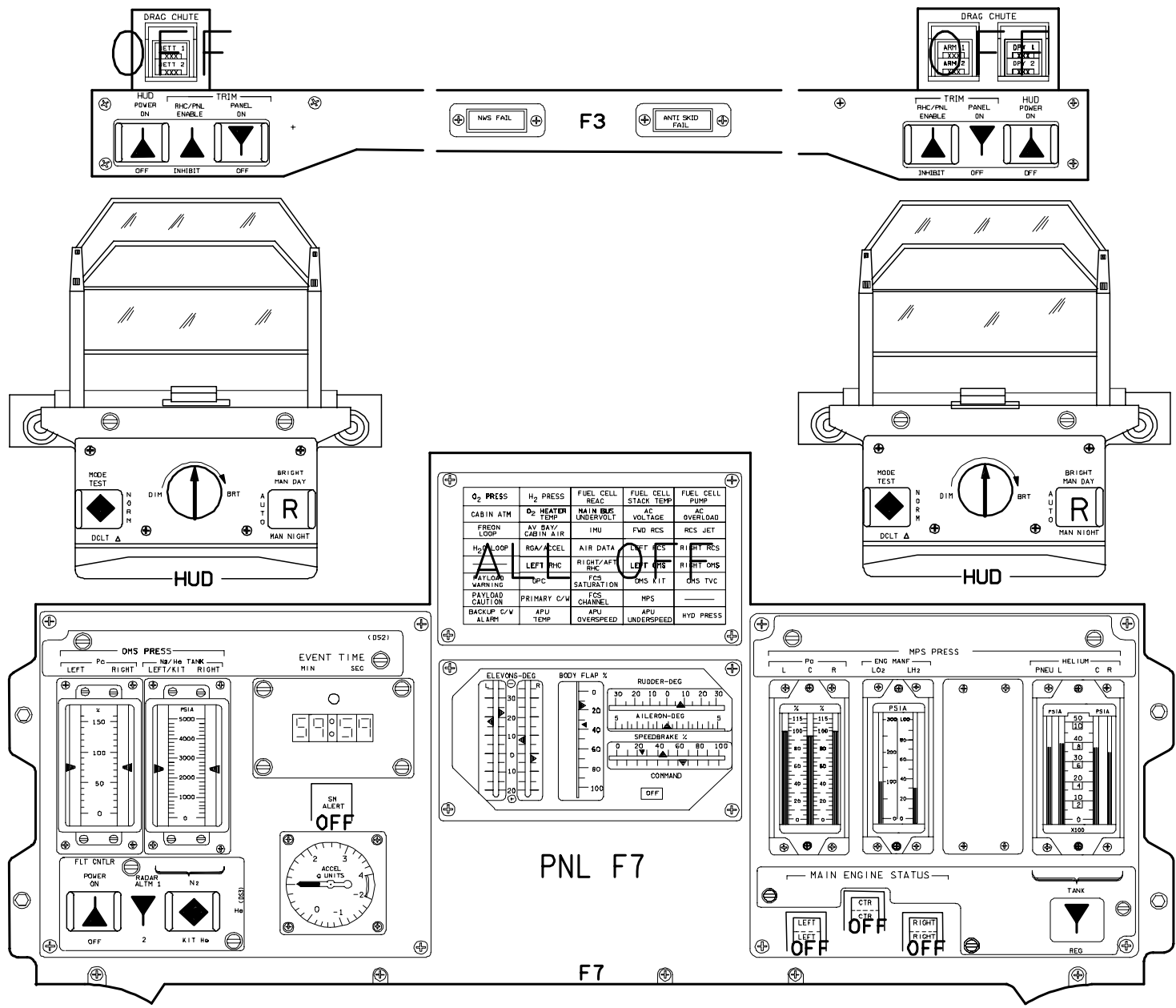
MIDDECK-AFT

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





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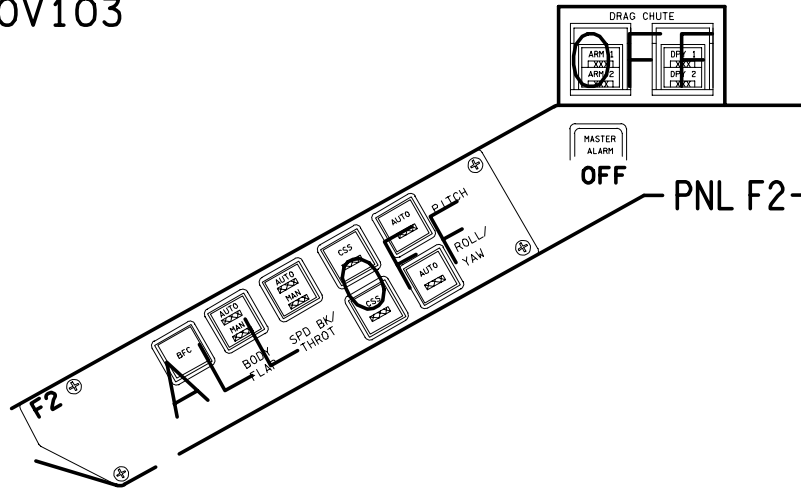
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OV103

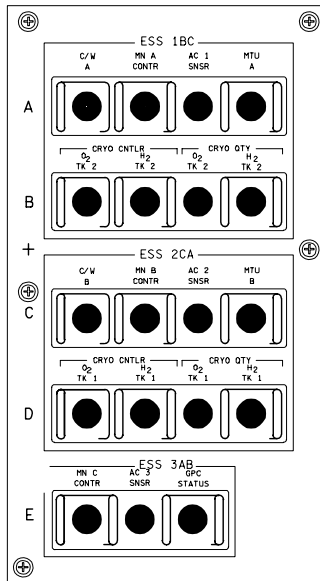
(OV103) A3-4

D/O/3/GEN O

OV103

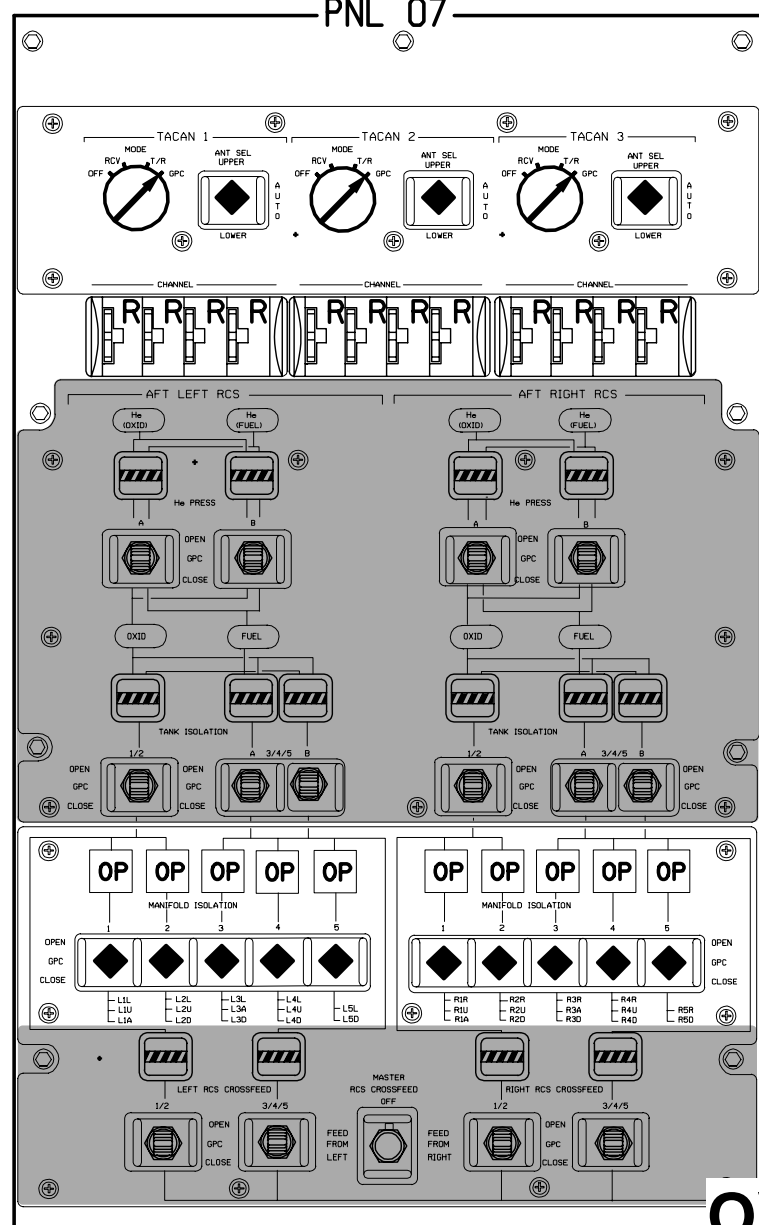


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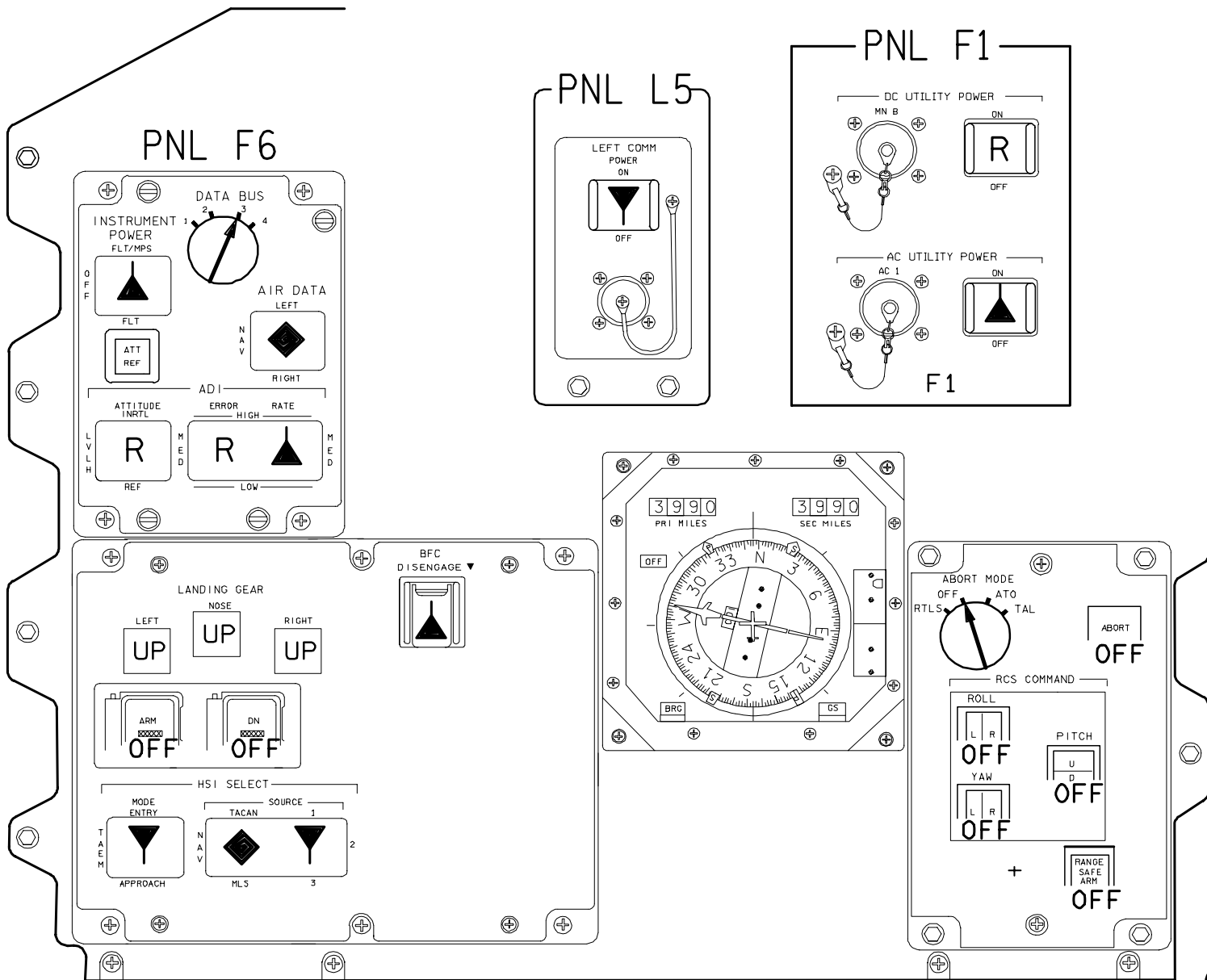


L side OVHD flood - R (MID)

PNL 07

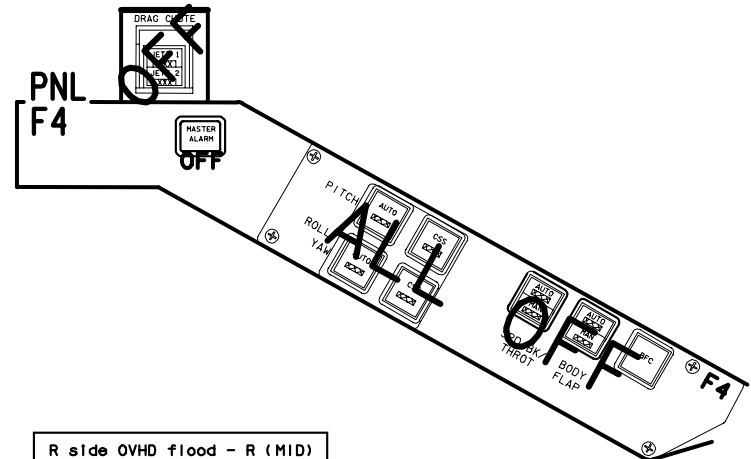
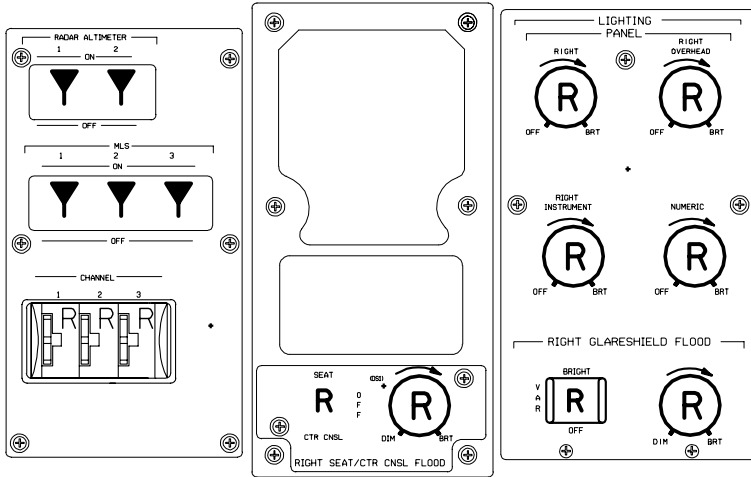


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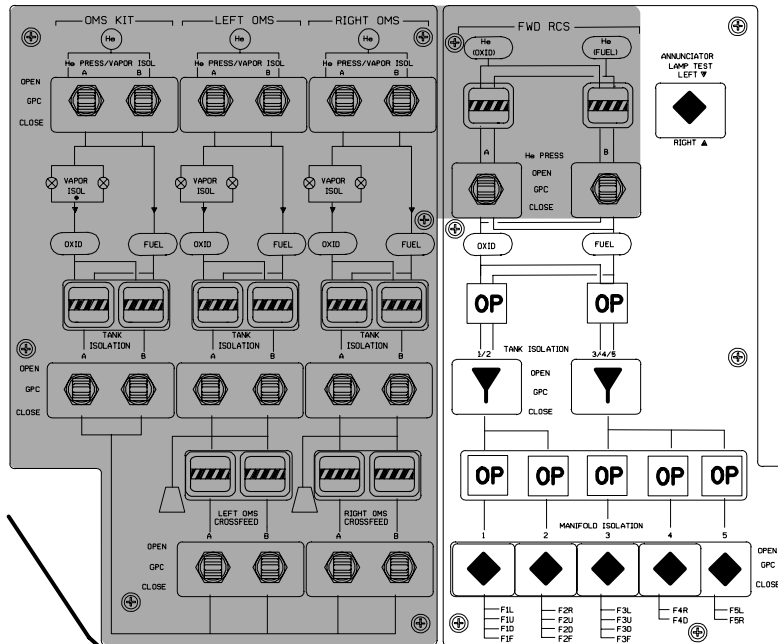


OV103

PNL 08

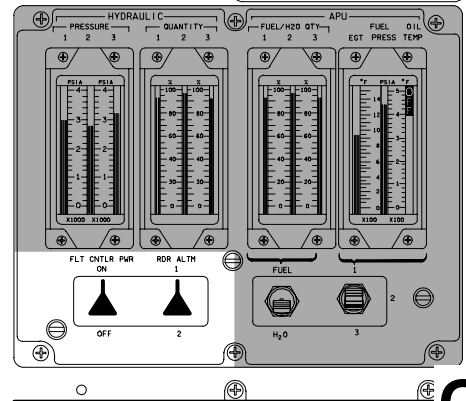
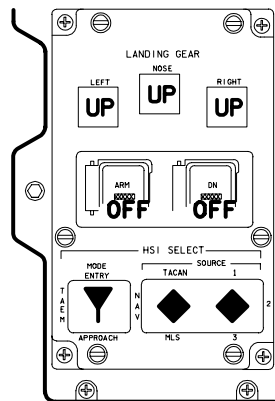
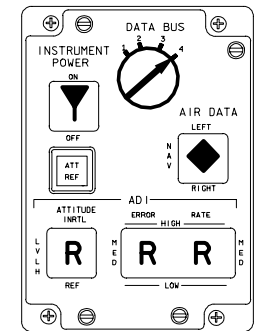


R side OVHD flood - R (MID)

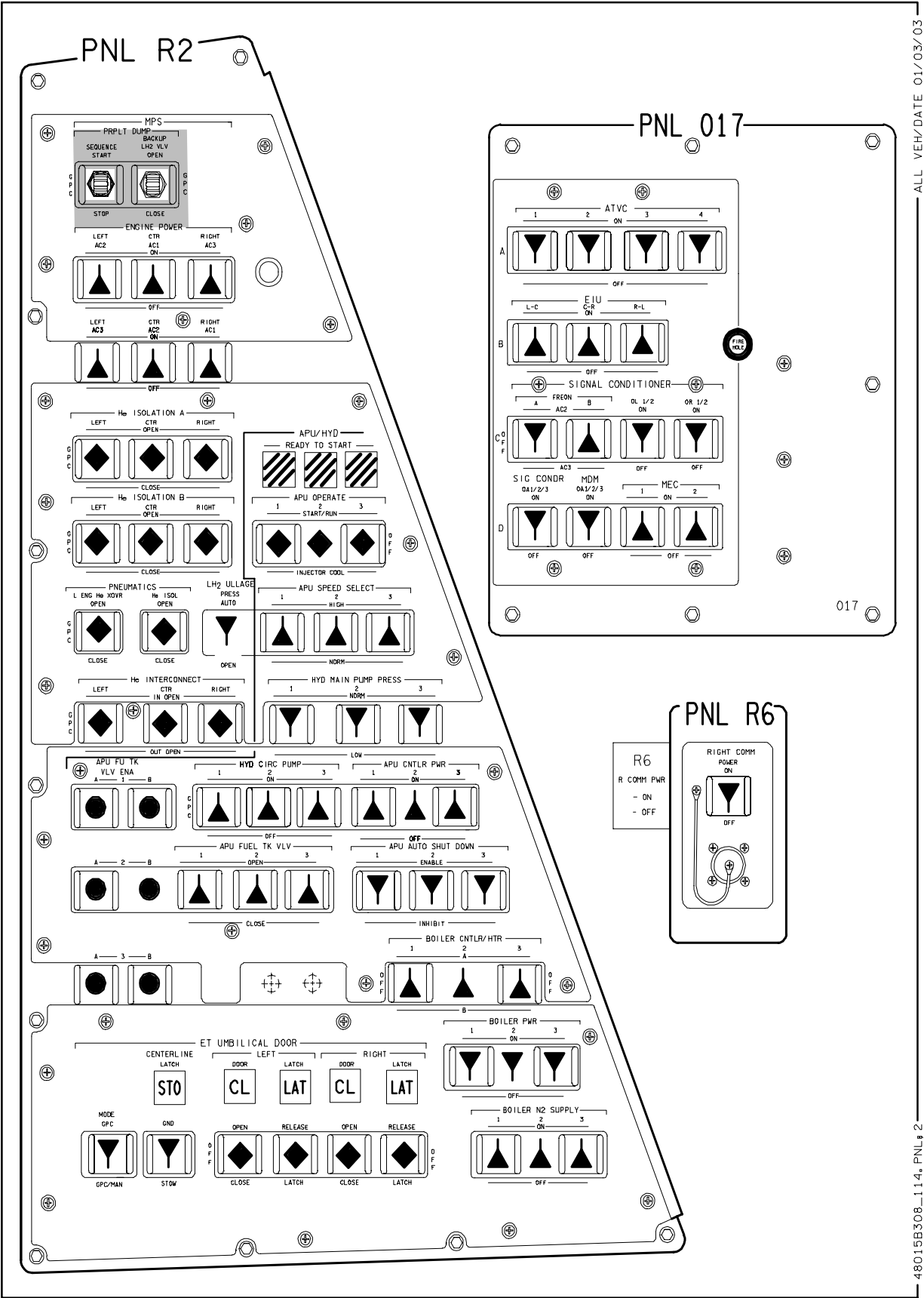


F8

PNL F8



OV103



ALL VEH/DATE 01/03/03

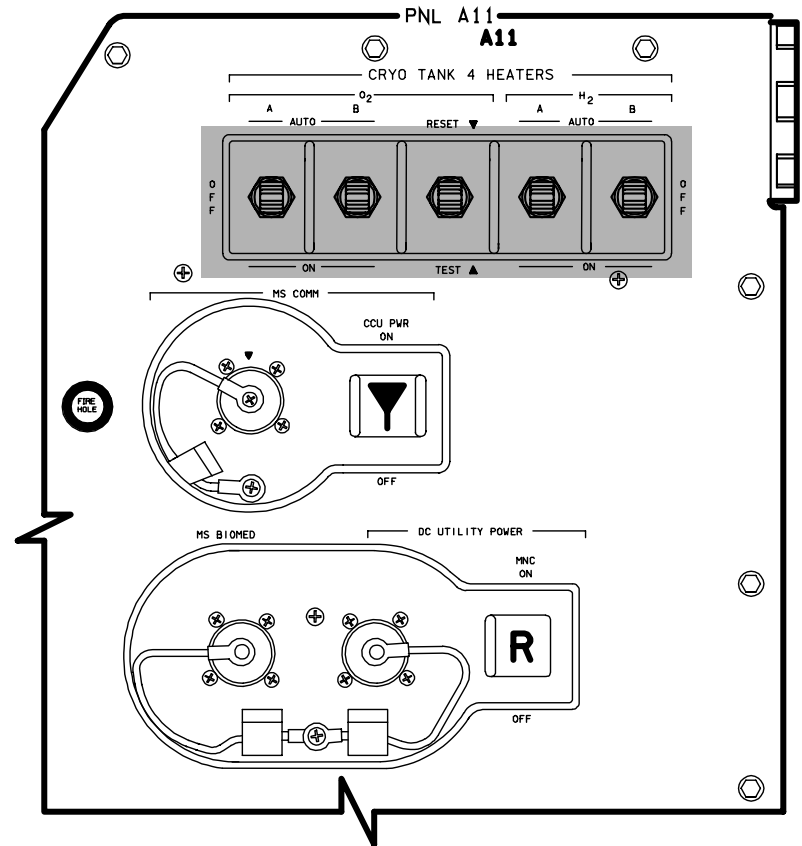
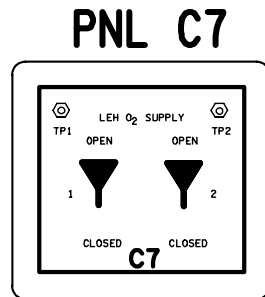
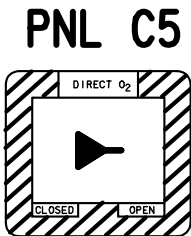
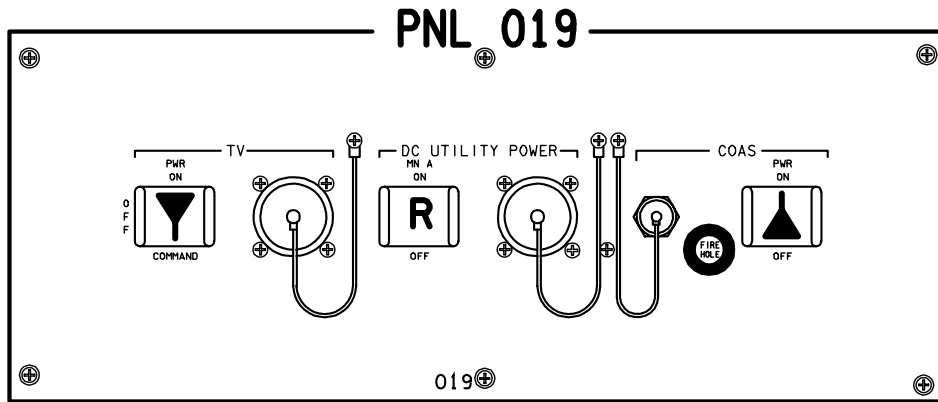
48015B308_114_PNL R 2

OV103

(OV103) A3-8

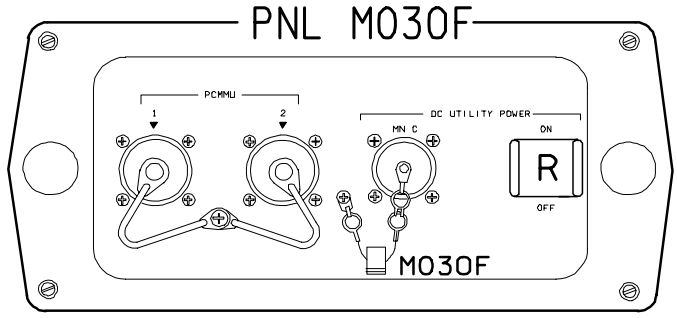
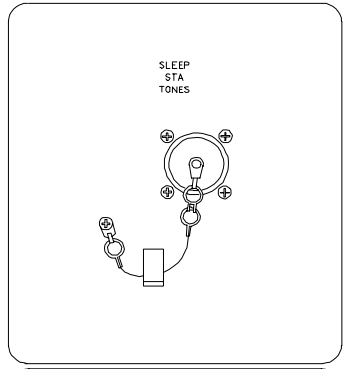
D/O/ALL/GEN O

OV103

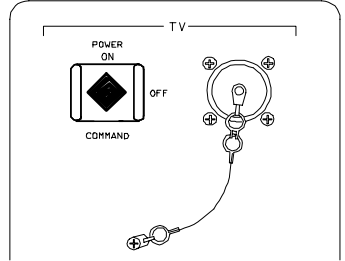


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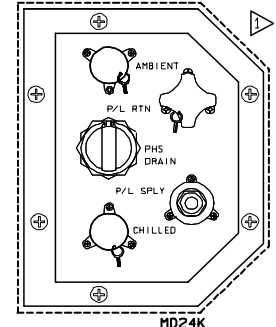
AIRLOCK HATCH
 ACTUATOR HANDLE - LATCHED
 LOCK LEVER - LOCKED
 EQUALIZATION VLV (TWO) - NORM
 -CAPS INSTALLED



PNL M058F

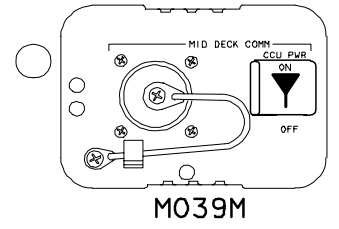


PNL MD24K

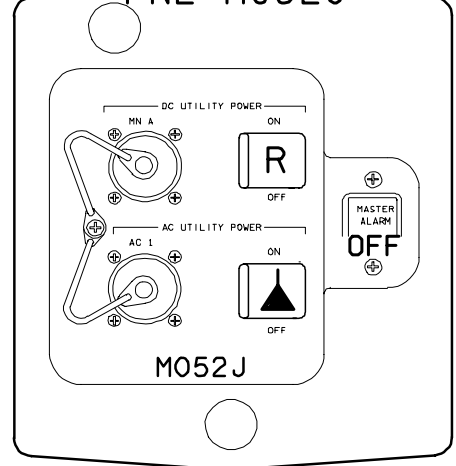


NOTE: NOT VISIBLE IF MAR FLOWN

PNL M039M



PNL M052J



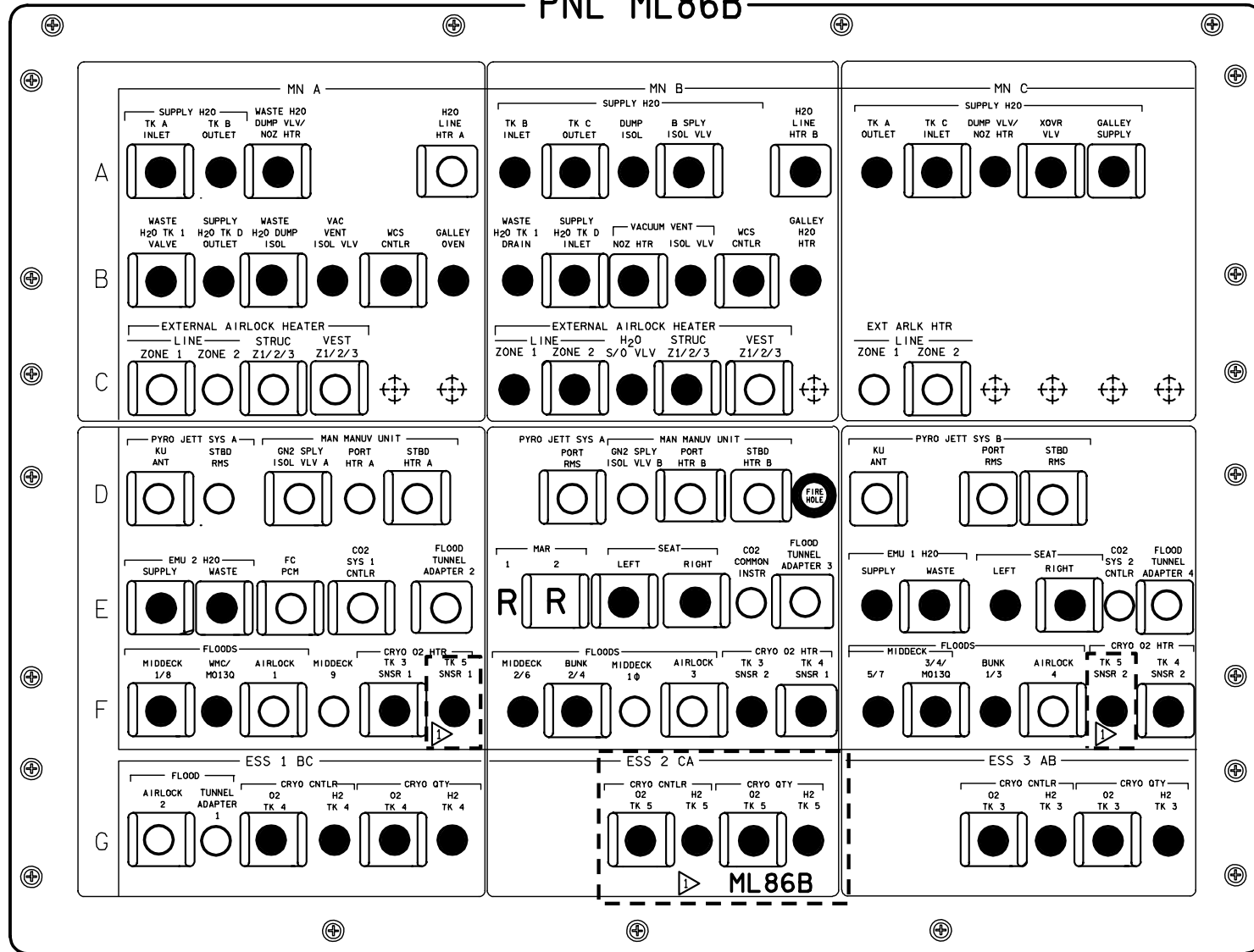
PNL MD44F

CAB TEMP CNTL ACT LINKAGE - SECONDARY ACTUATOR

OV103

OV103

PNL ML86B



NOTE: ▷ OPEN IF TK 5 NOT FLOWN

48015B311_114. PNL, 3

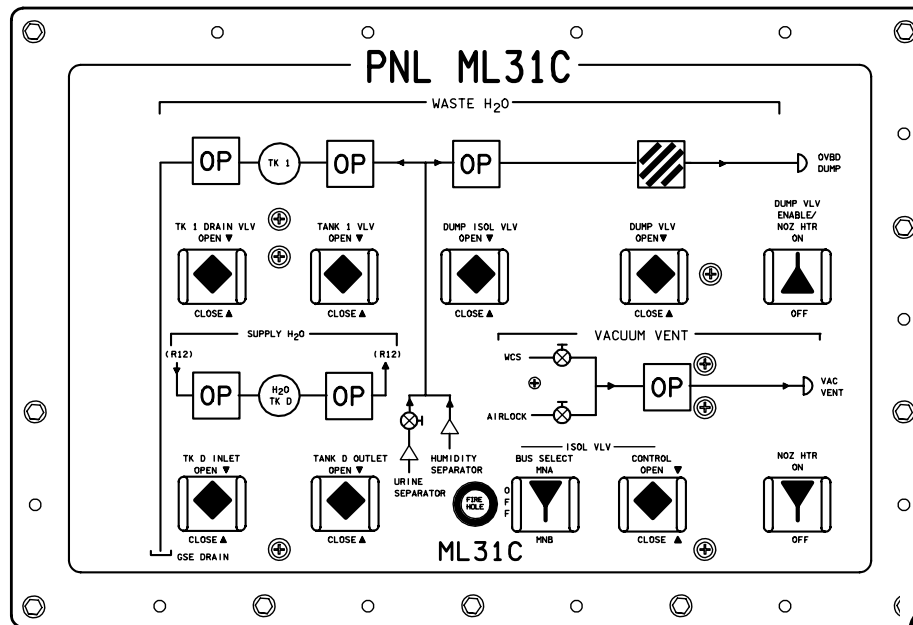
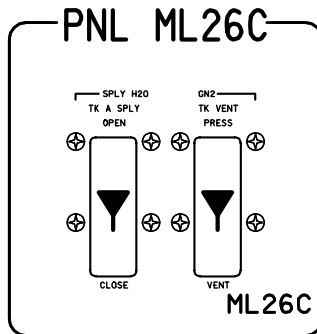
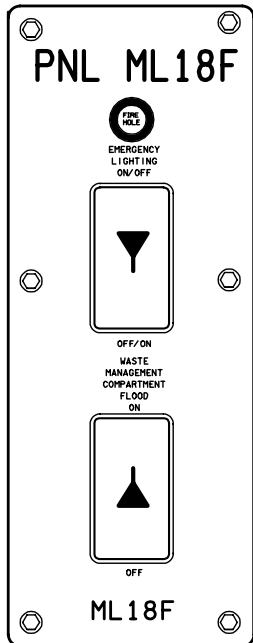
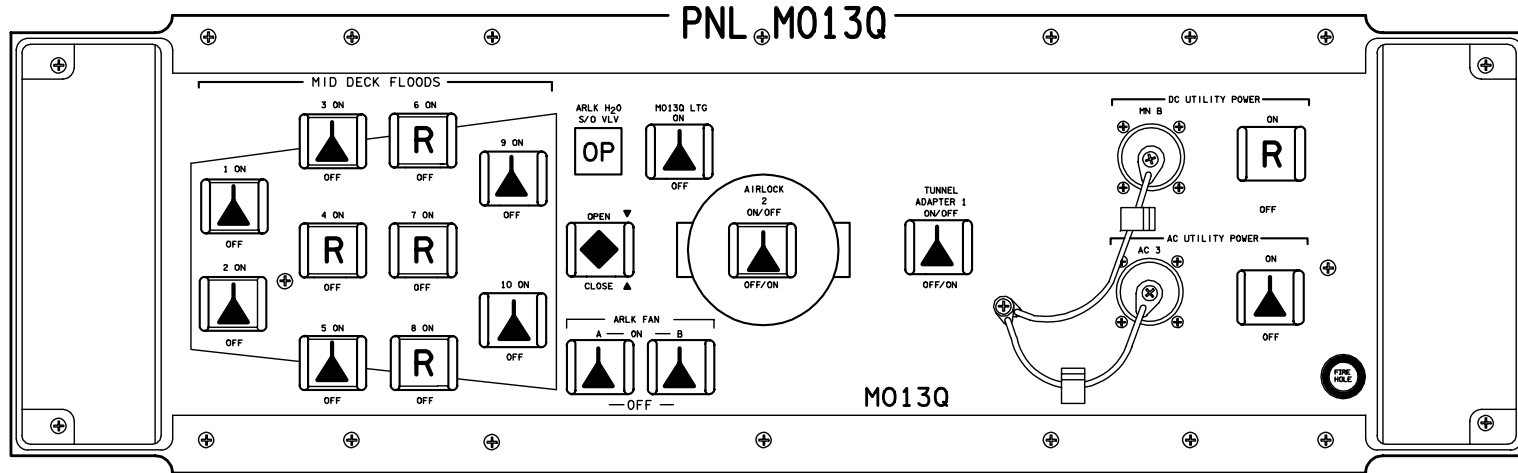
OV103/DATE 11/23/04

OV103

(OV103) A3-11

D/O/3/GEN O

OV103

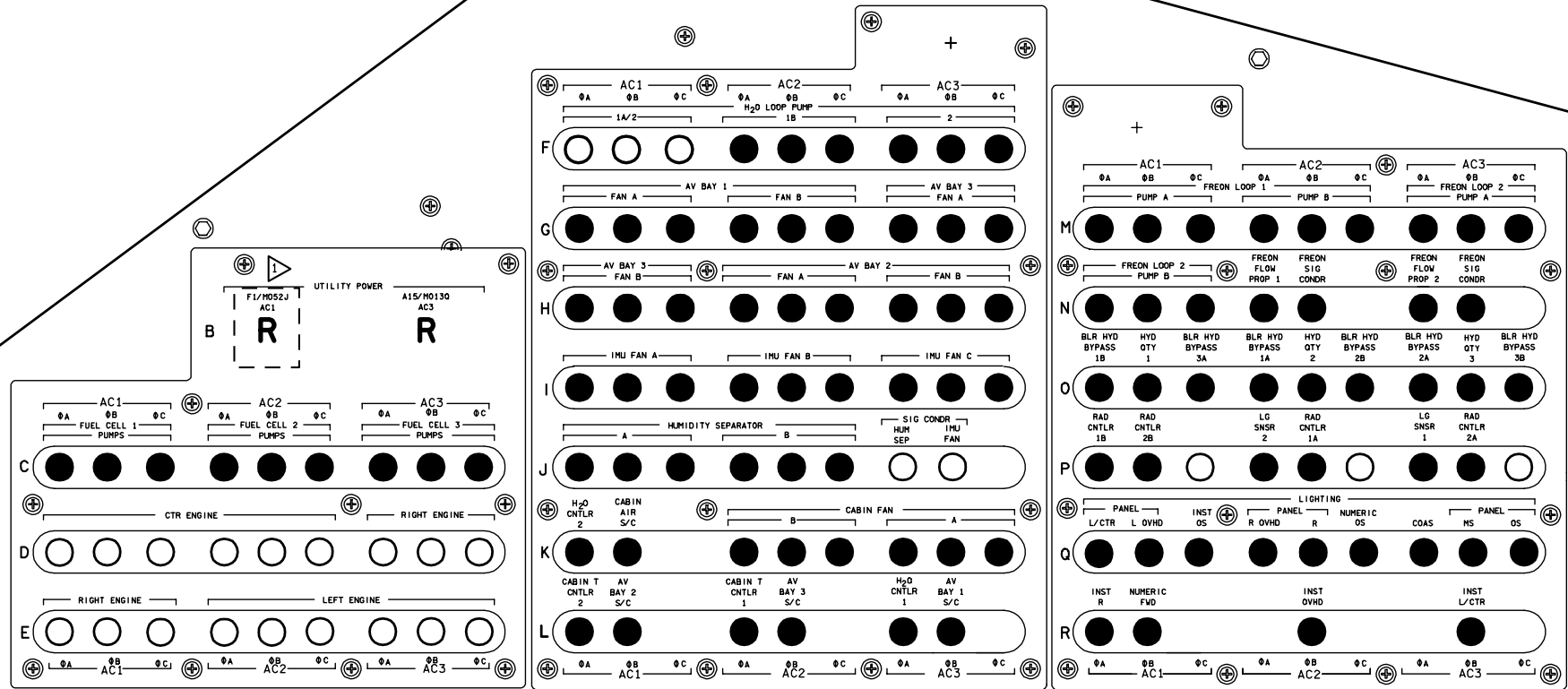


48015B312_114. PNL 2

ALL VEH/DATE 10/28/04

OV103

PNL L4



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

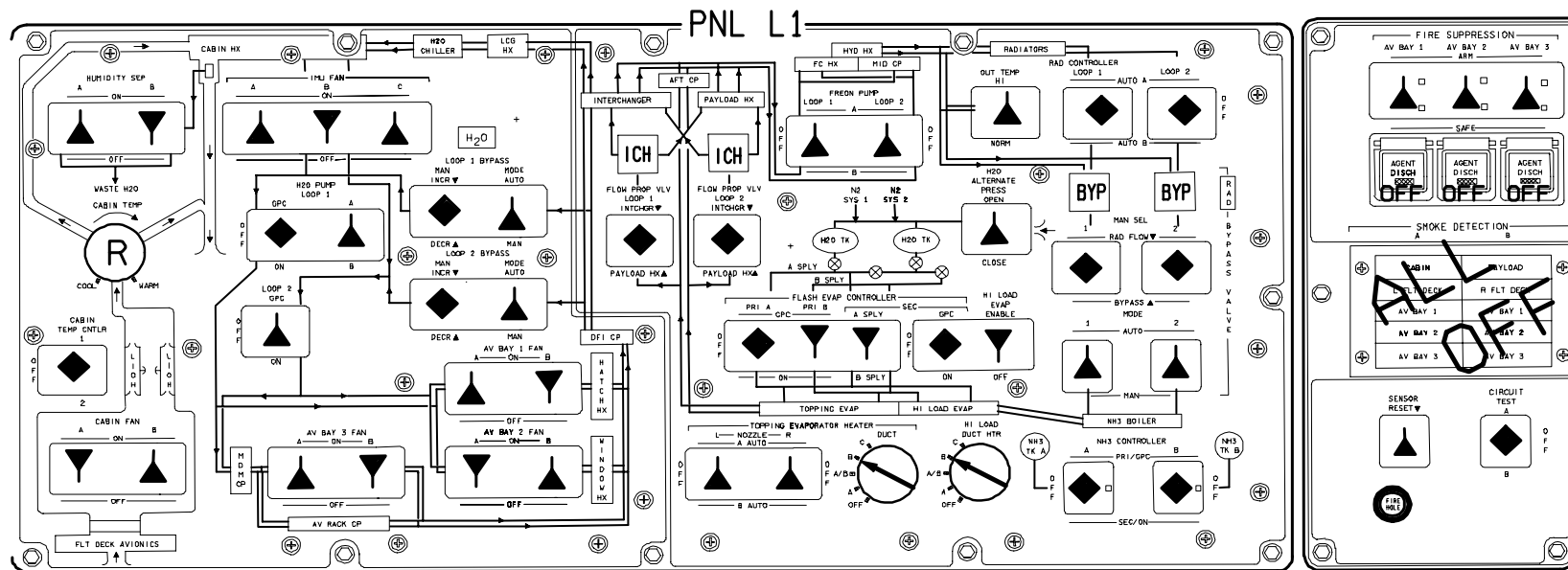
48015B313_114.PNL, 3

OV103

OV103/DATE 11/23/04

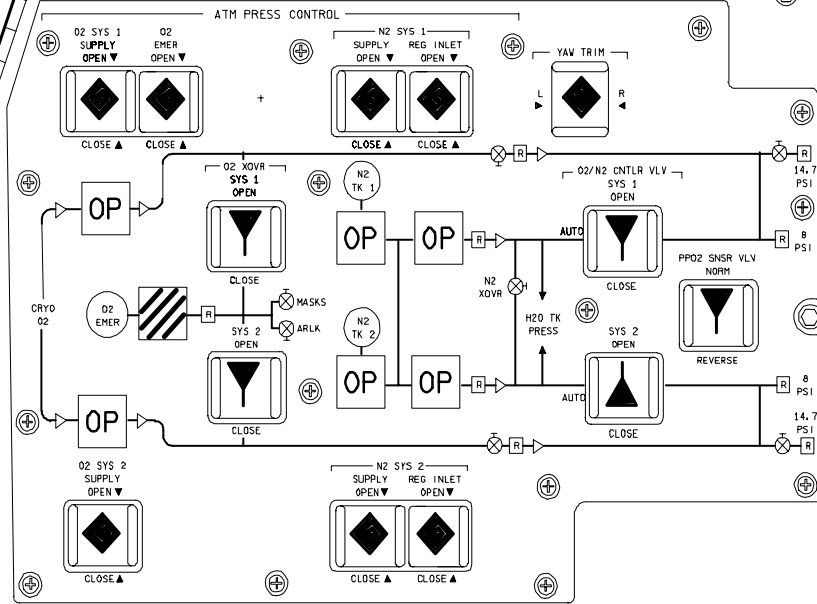
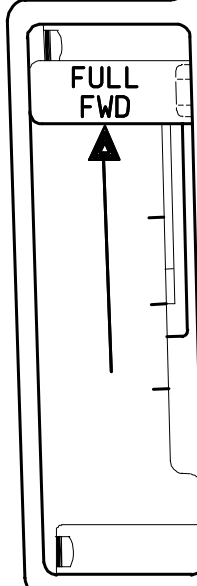
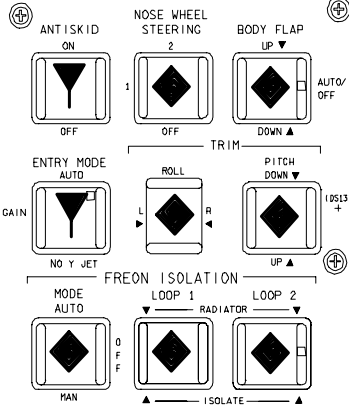
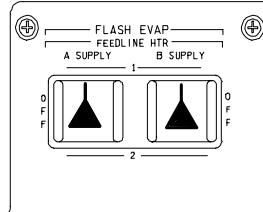
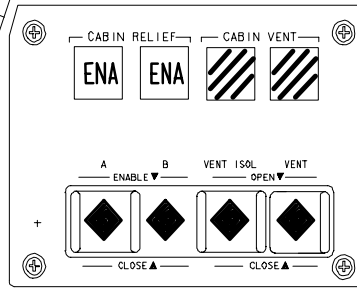
(OV103) A3-13

D/O/3/GEN O



OV103

PNL L2



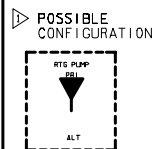
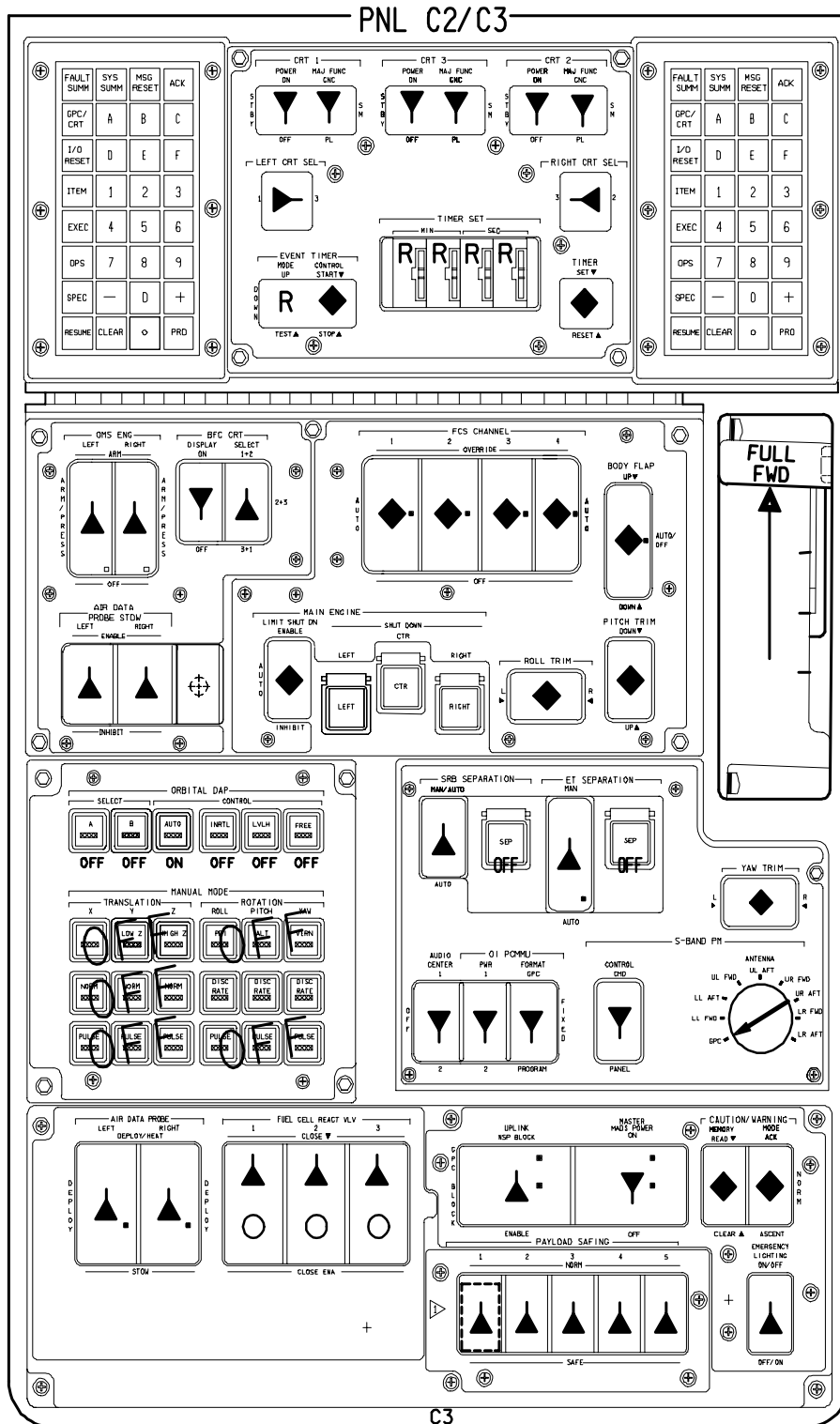
OV103/DATE 12/10/02

48015B315_114_PNL_8_1

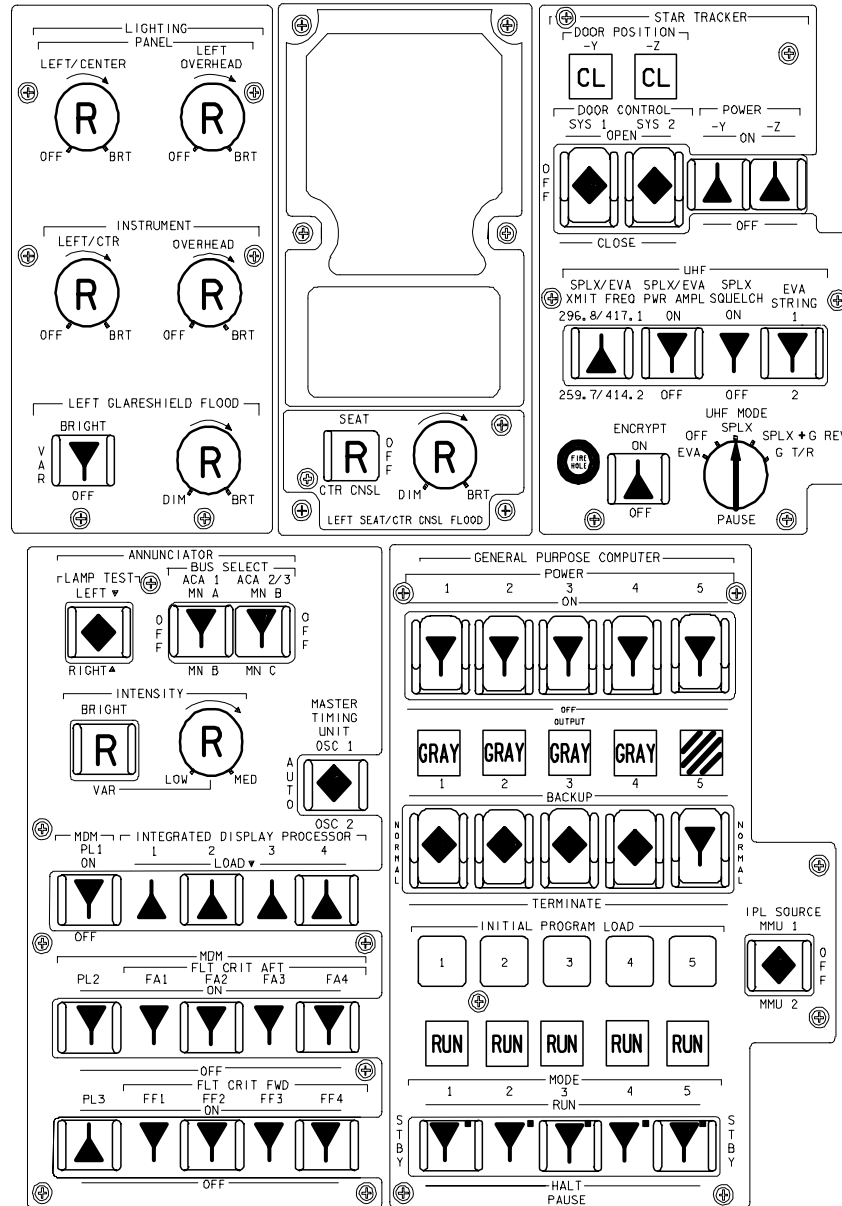
OV103

(OV103) A3-15

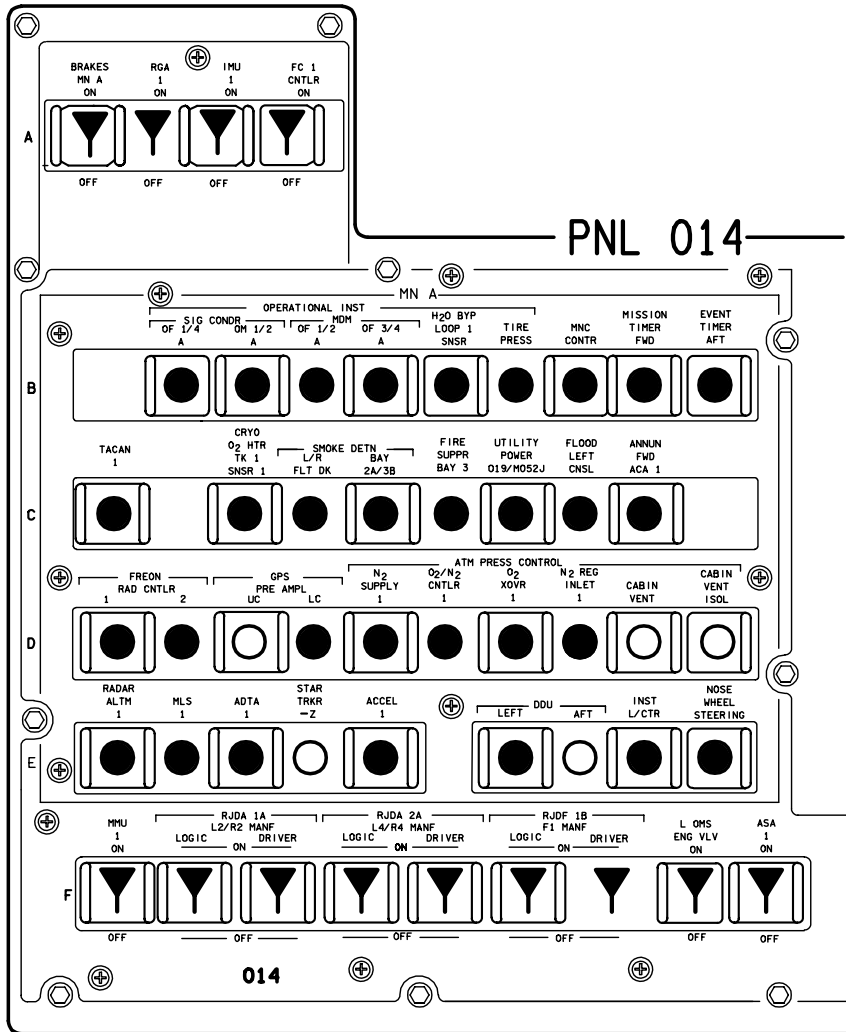
D/O/3/GEN O



PNL 06



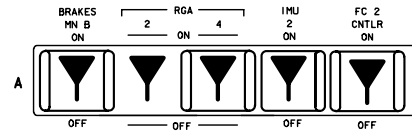
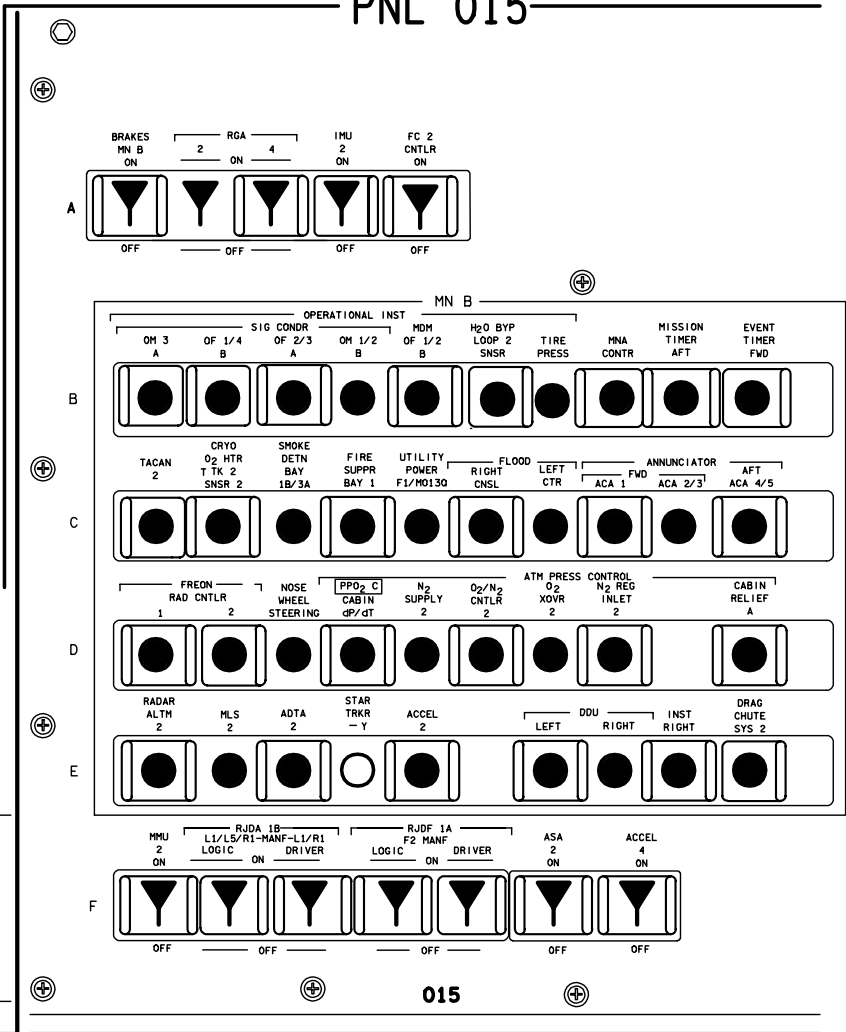
OV103



PNL 014

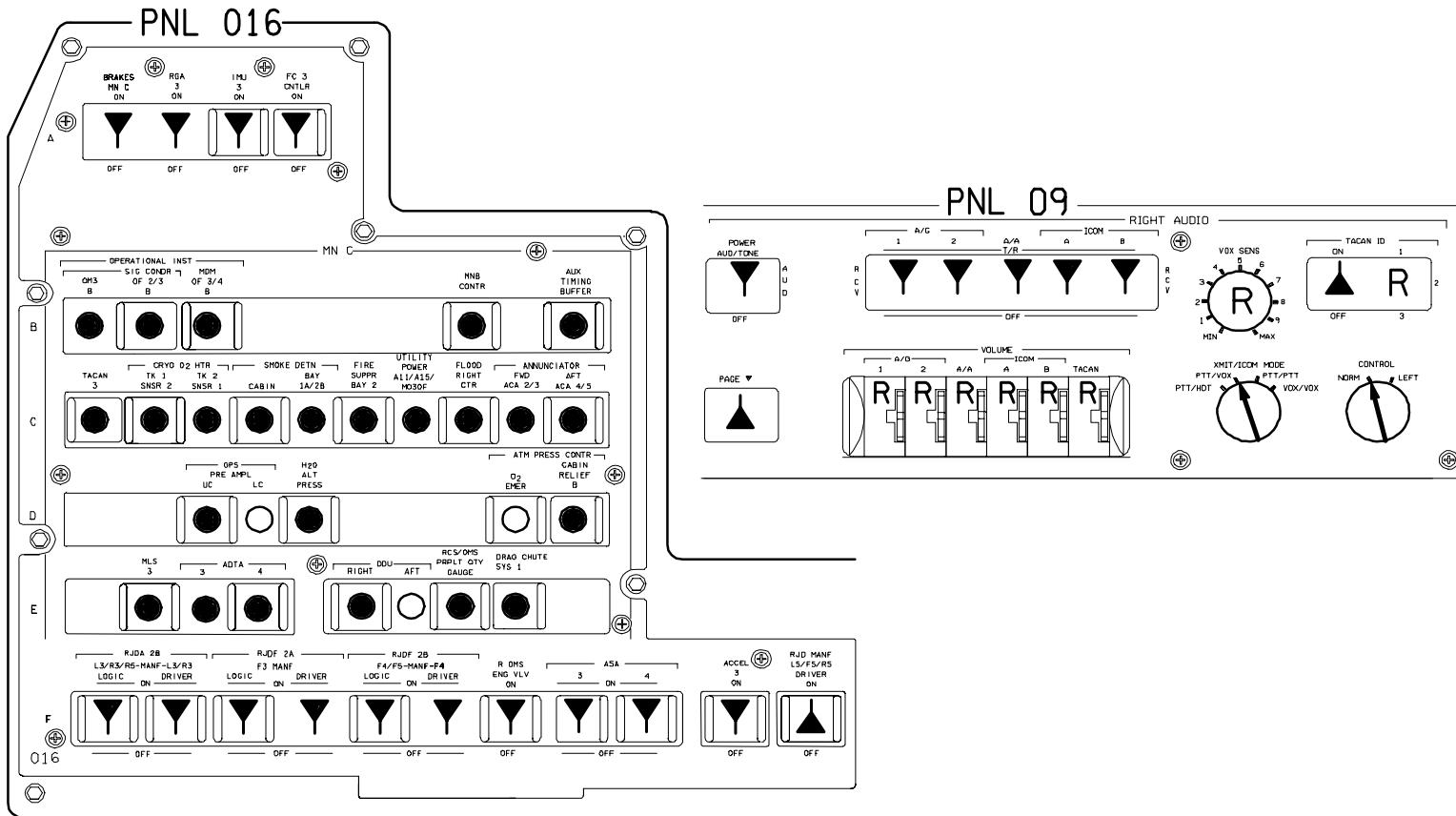
014

PNL 015



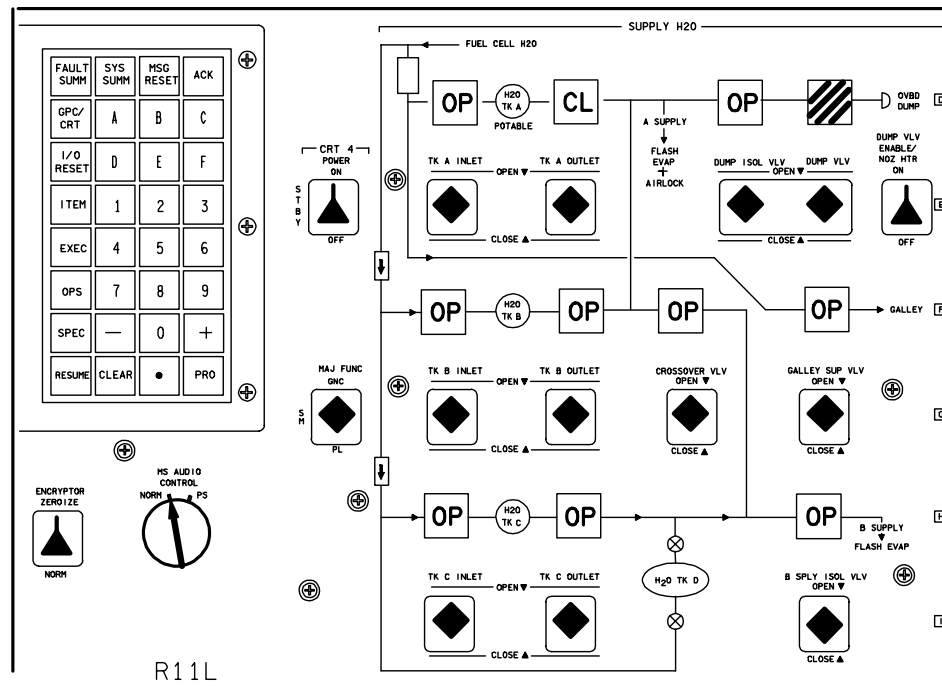
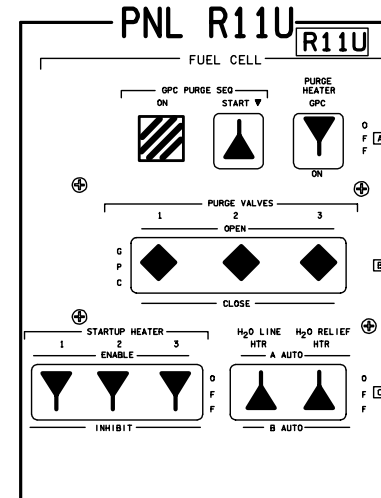
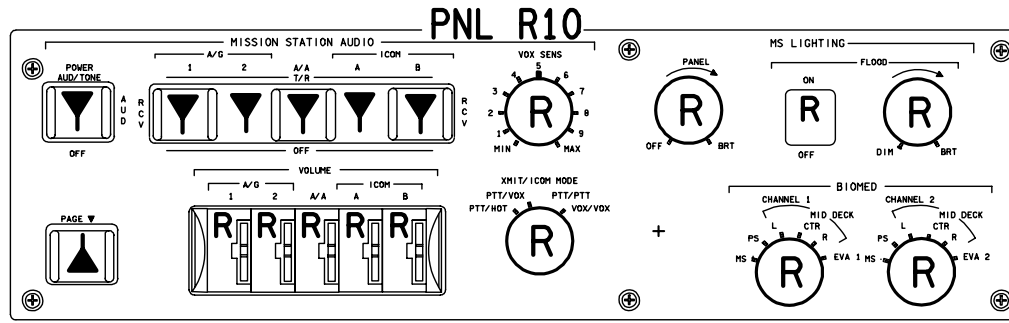
015

OV103



OV103

OV103

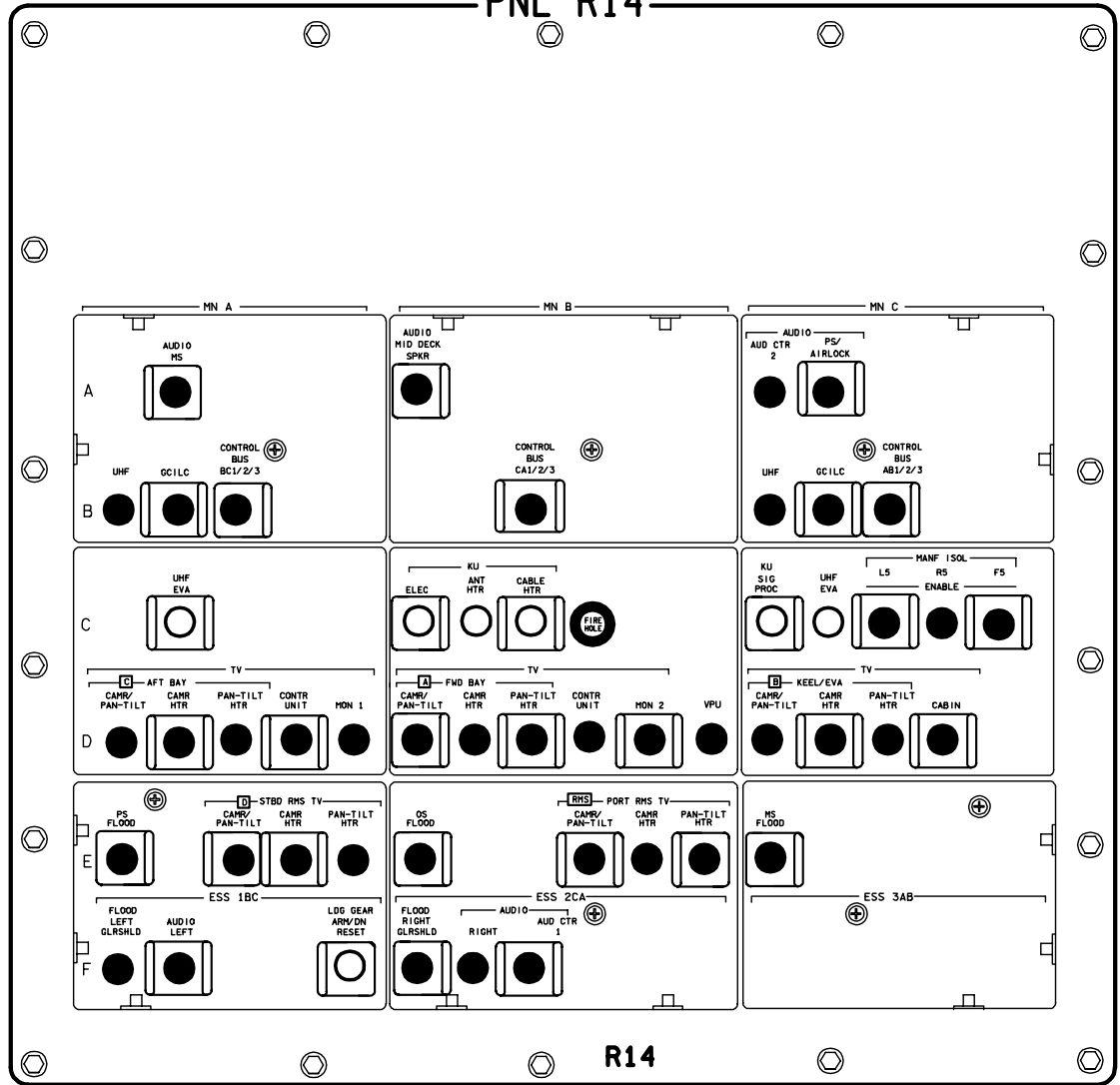
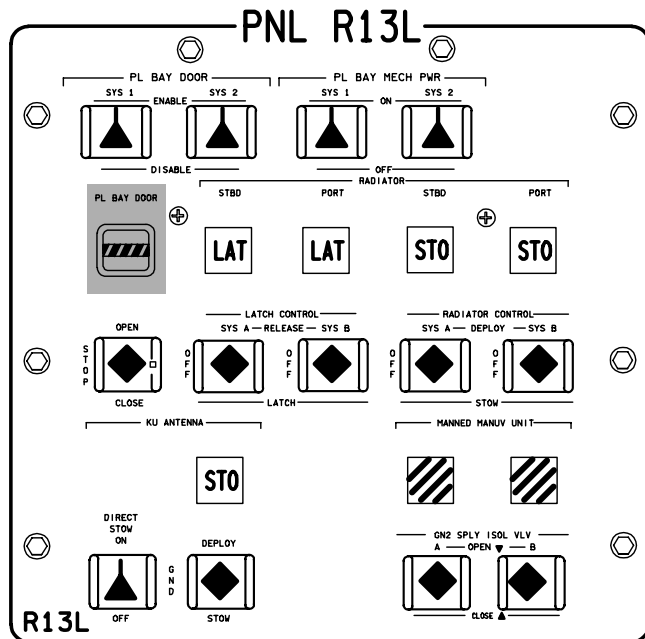


48015B322_114, PNL 5

ALL VEH/DATE 02/14/05

OV103

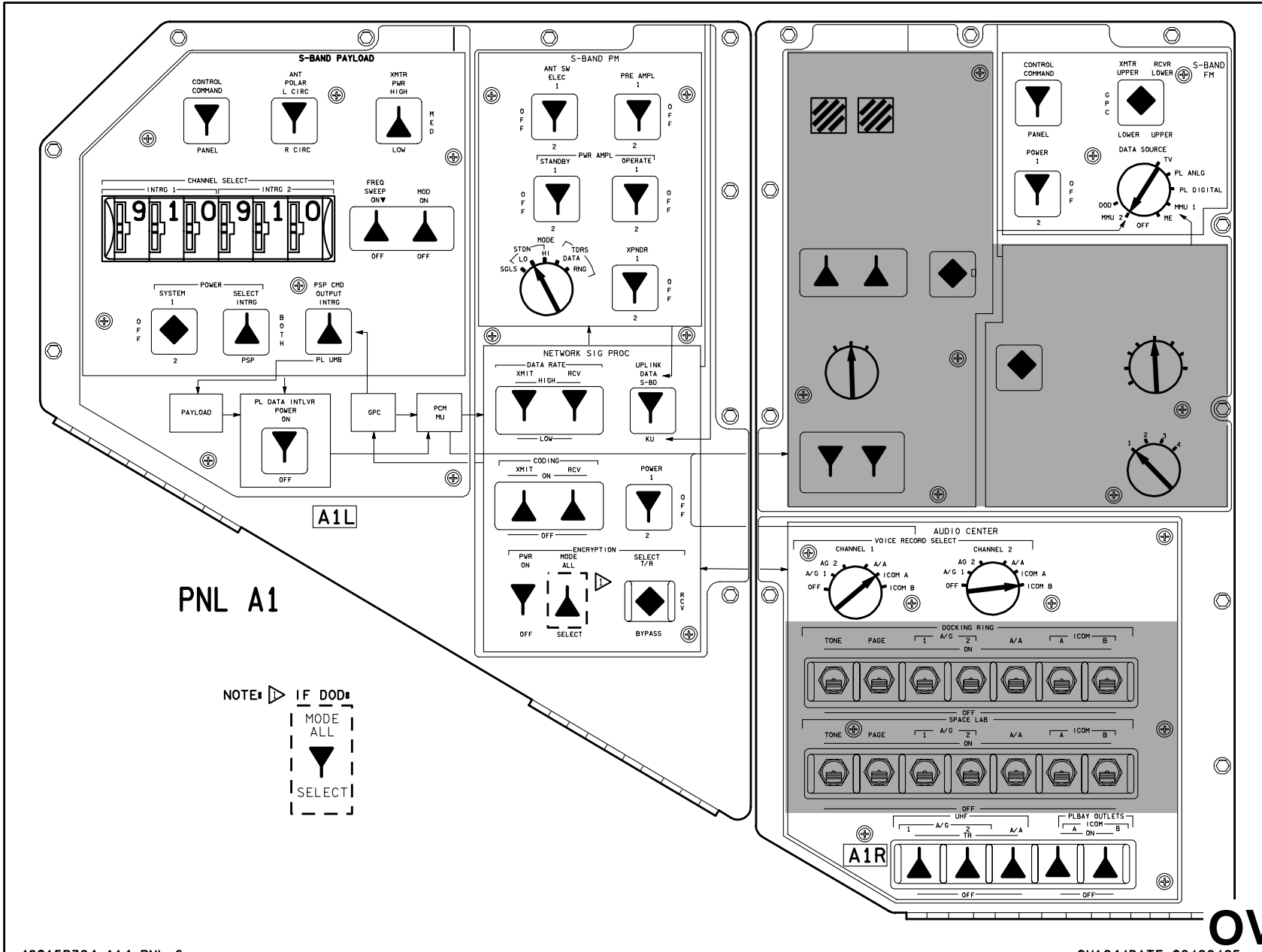
PNL R14



48015B323_114. PNL 2

OV103/DATE 11/23/04

OV103



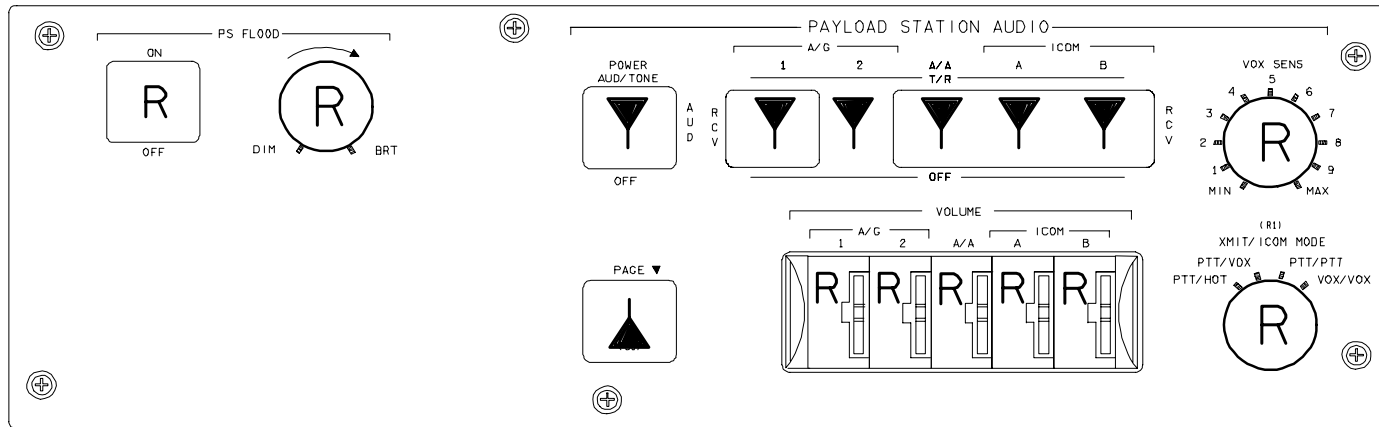
48015B324_114. PNL 6

OV104/DATE 02/09/05

OV103

OV103

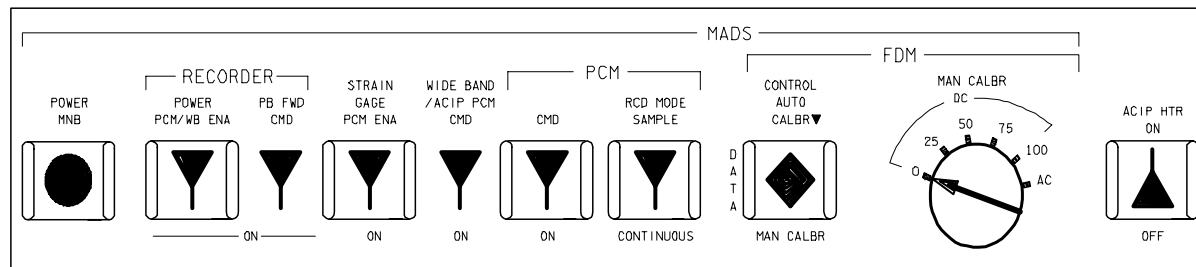
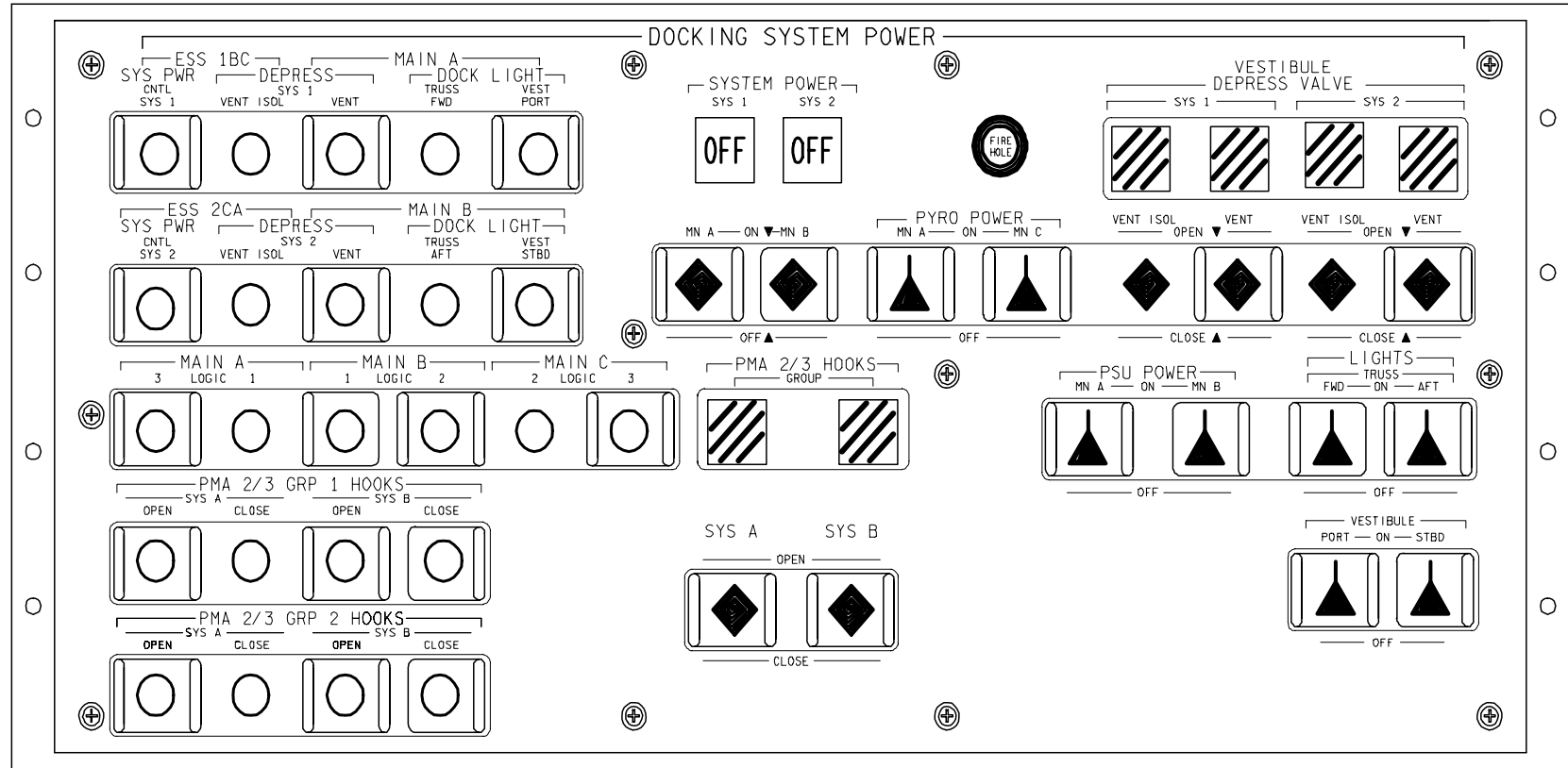
PNL L9



L9

OV103

PNL A6L



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

A_DS OFF B_DS OFF C_DS OFF

LAMP TEST

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

PNL A7L

APDS CONTROL PANEL

PYROS

A_p ON OFF B_p ON OFF C_p ON OFF

A_p OFF C_p OFF



PYRO PROTECT OFF

PYRO COMMANDS

PYRO CIRC PROT OFF PYRO CIRC PROT ON

ACT HOOKS FIRING PAS HOOKS FIRING

APDS CONTROL COMMANDS

OPEN HOOKS OPEN LATCHES

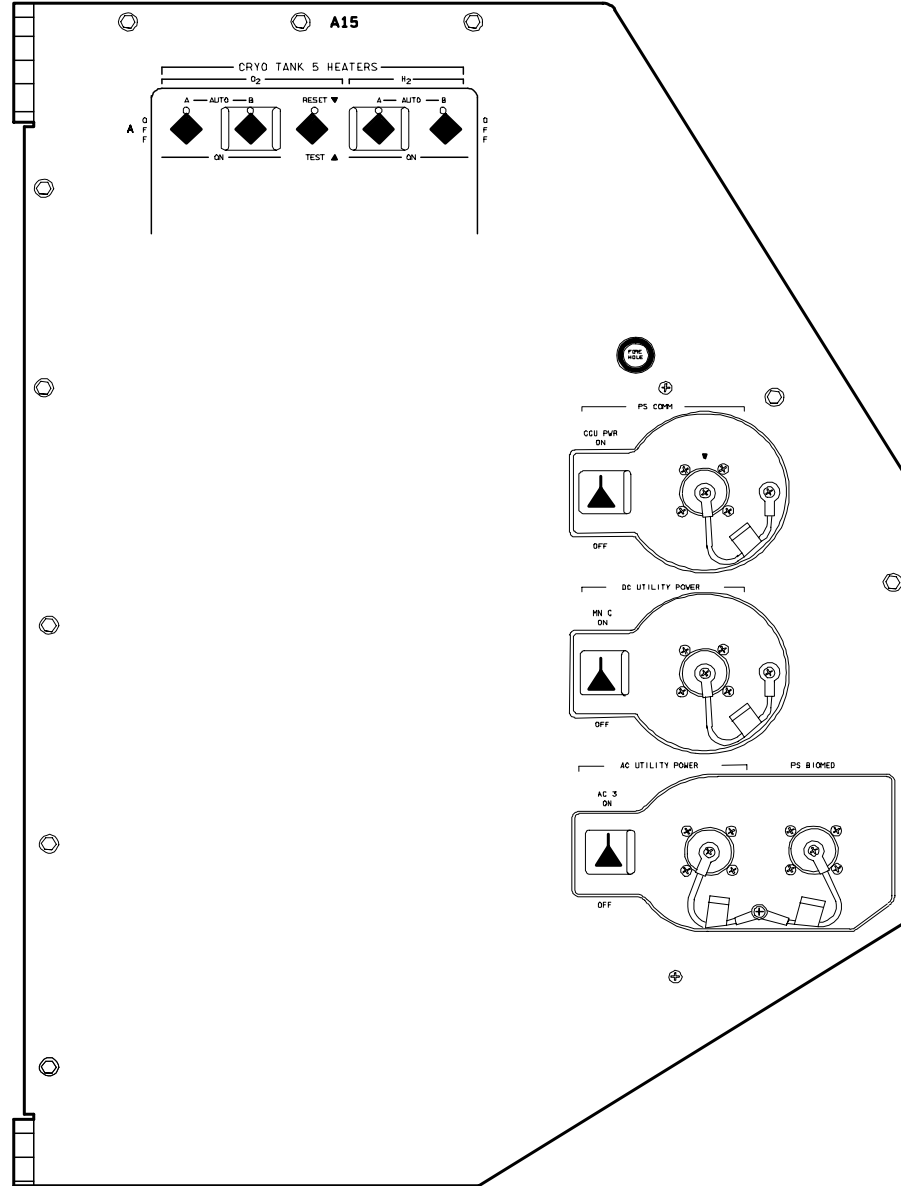
UNDOCKING

APDS CONTROL COMMANDS

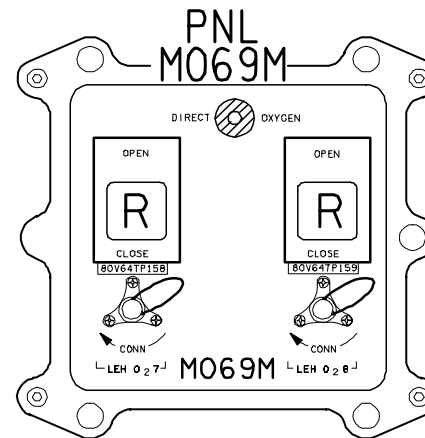
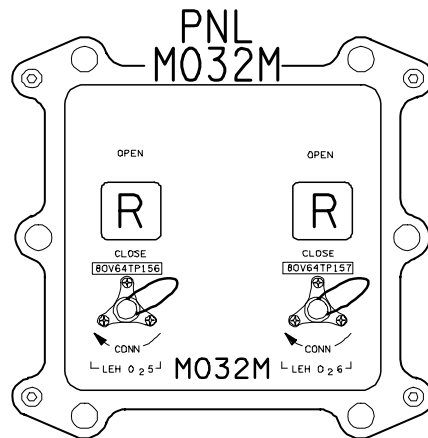
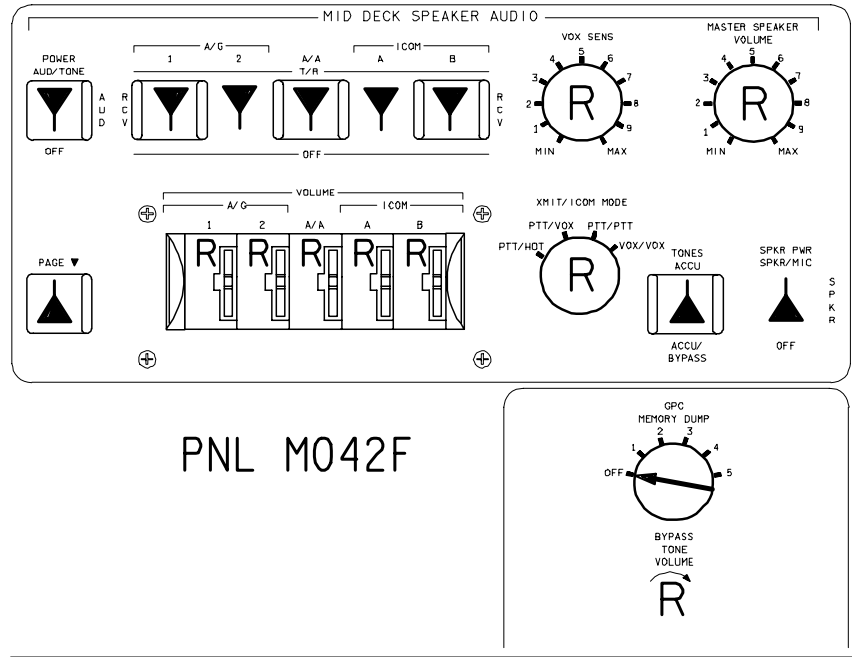
POWER ON POWER OFF RING OUT RING IN

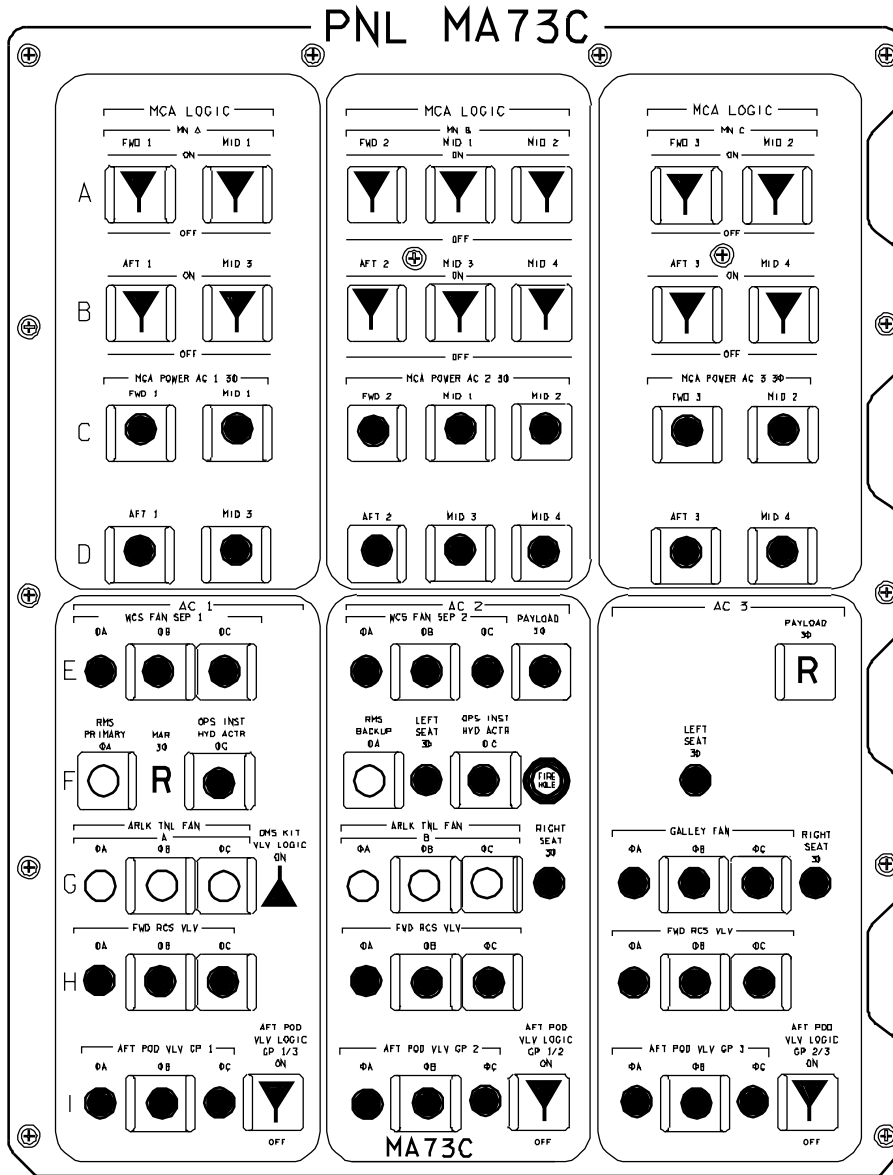
APDS CIRC PROT OFF CLOSE HOOKS CLOSE LATCHES FIXER OFF

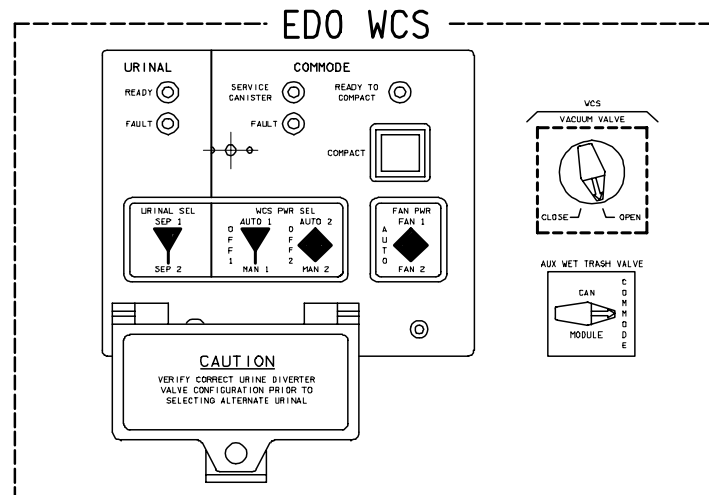
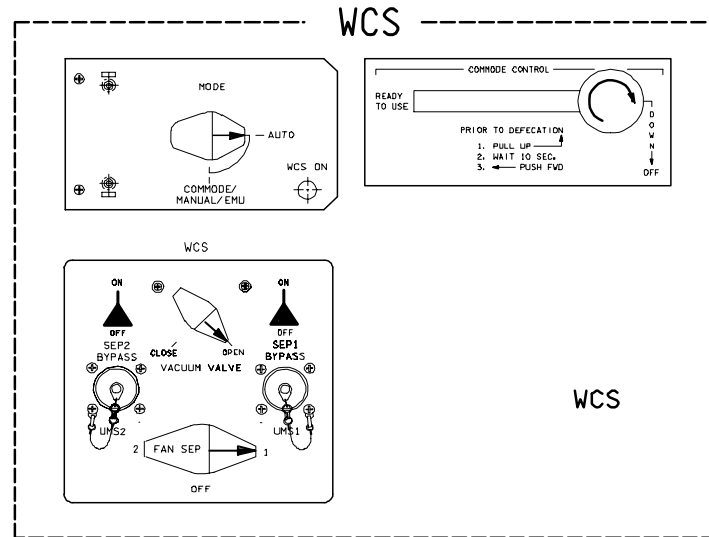
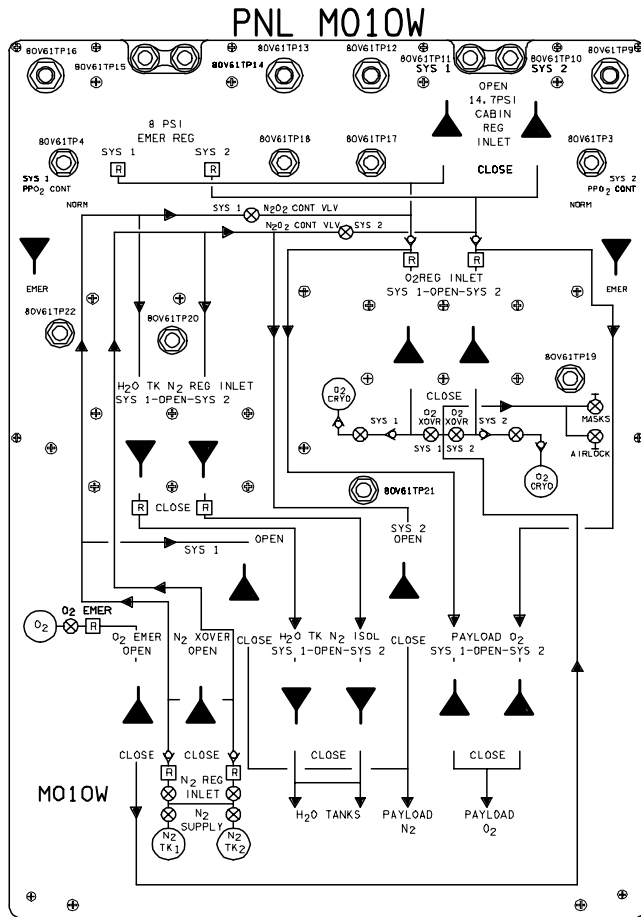
OV103

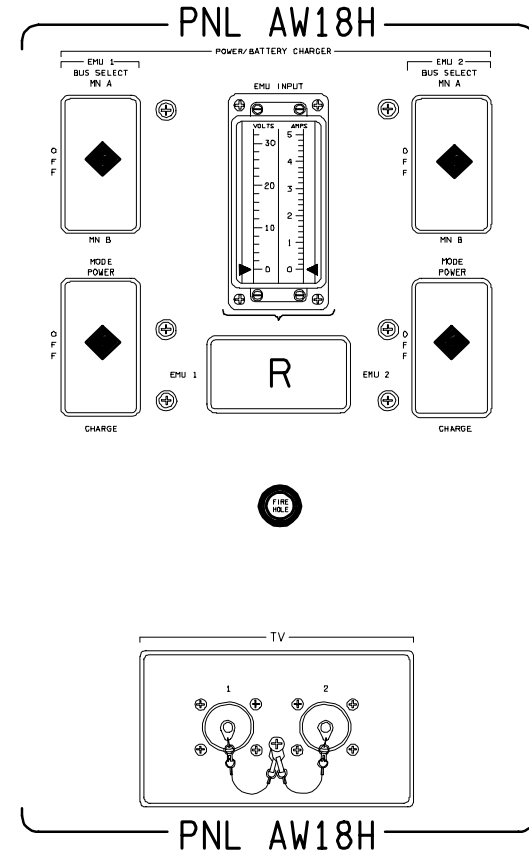
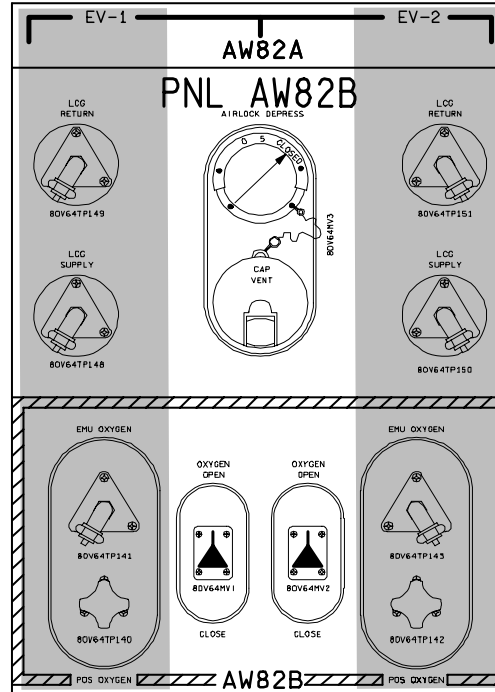
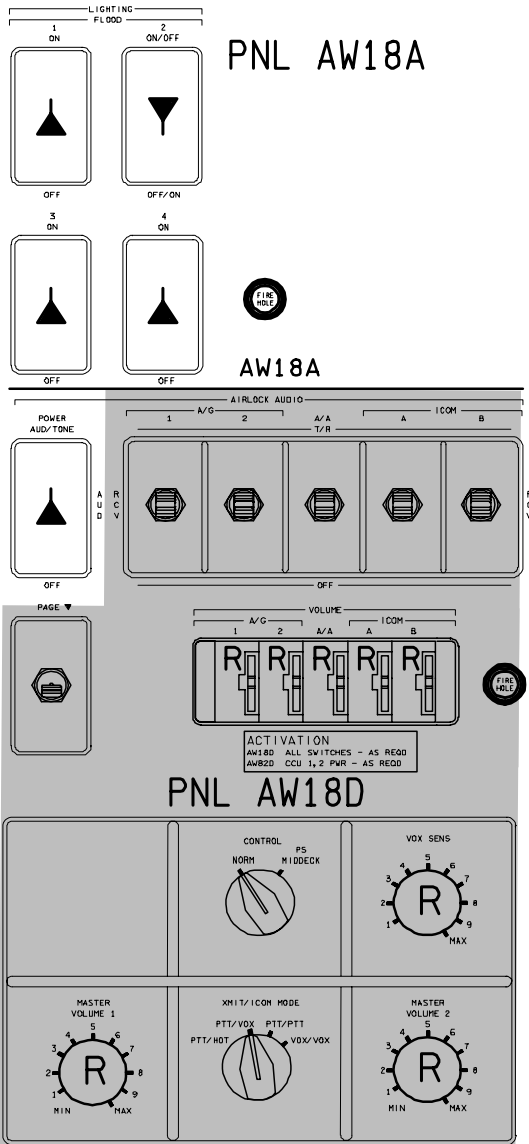


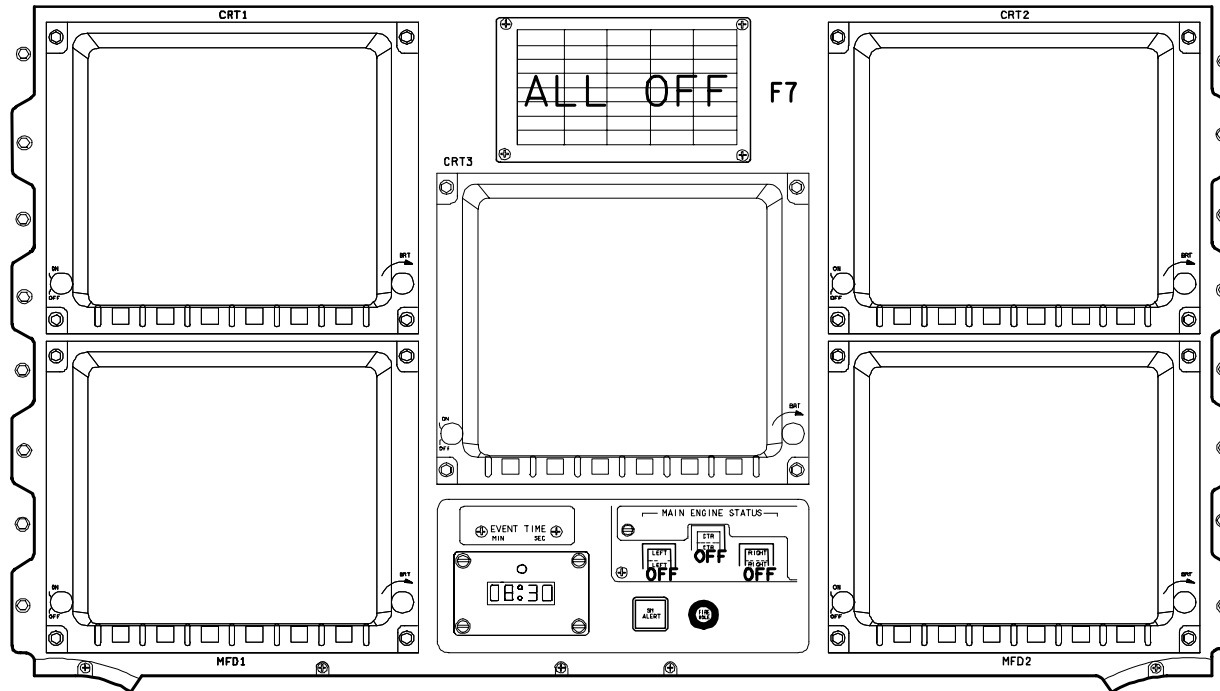
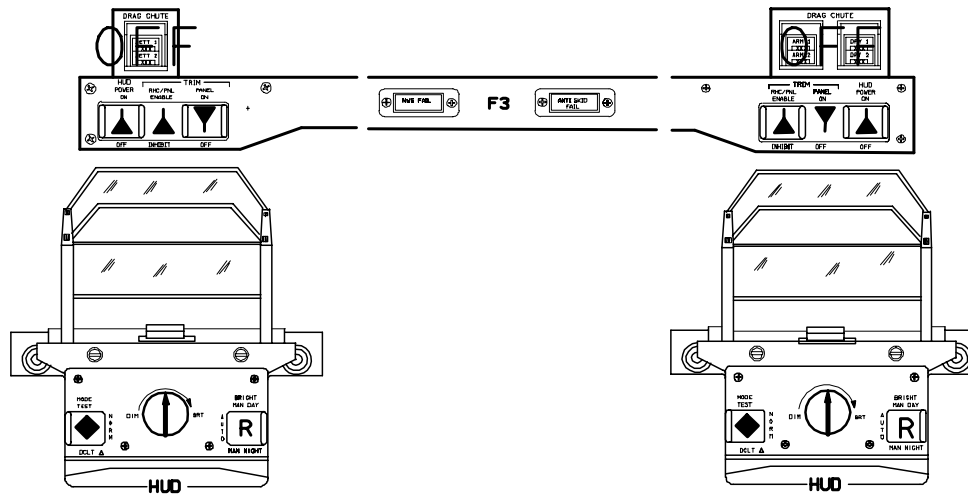
OV103



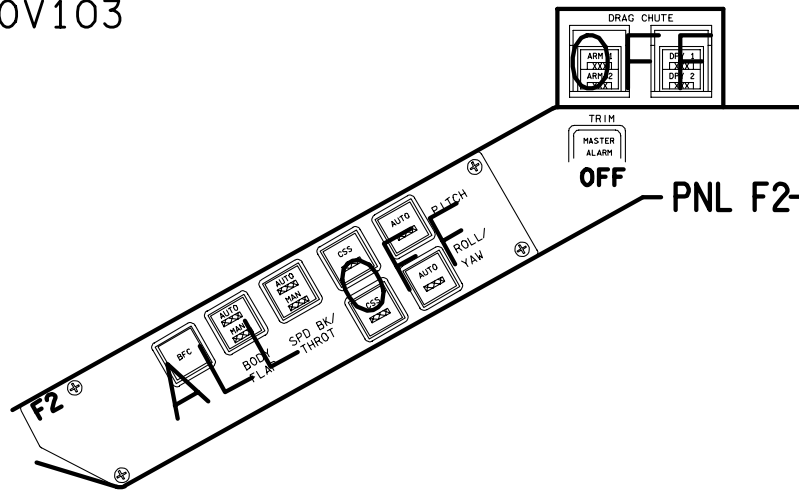




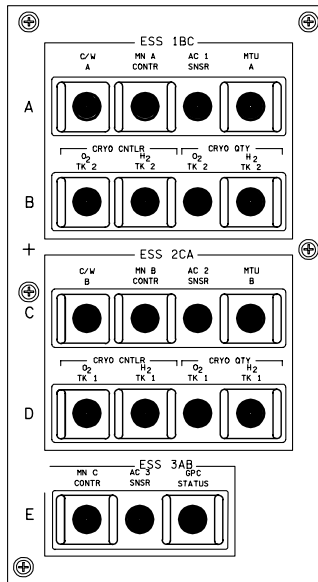




OV103

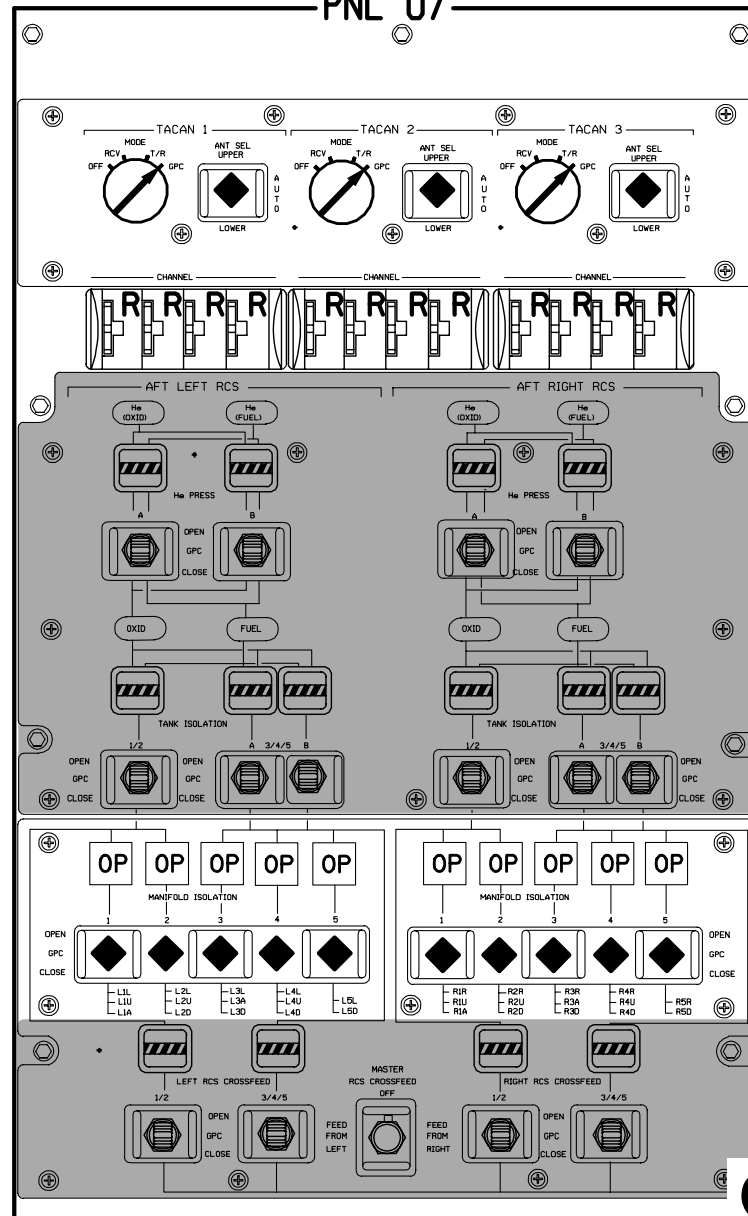


PNL 013



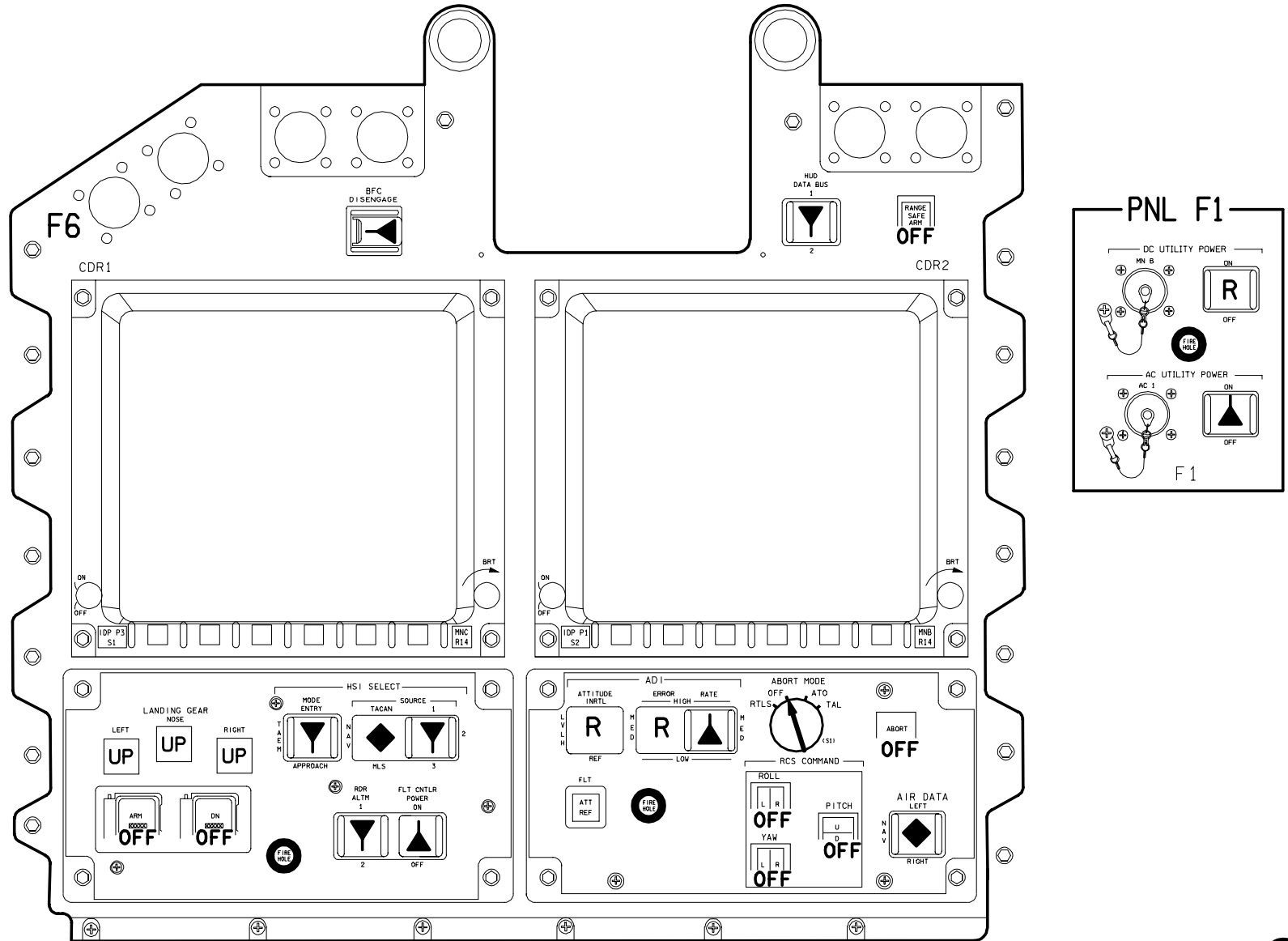
L side OVHD flood - R (MID)

PNL 07



OV104

OV104



48015C306_114. PNL 4

ALL VEH/DATE 11/29/04

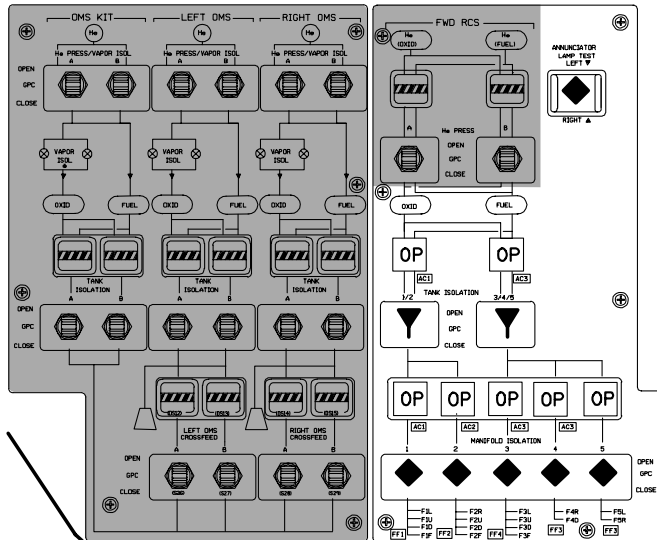
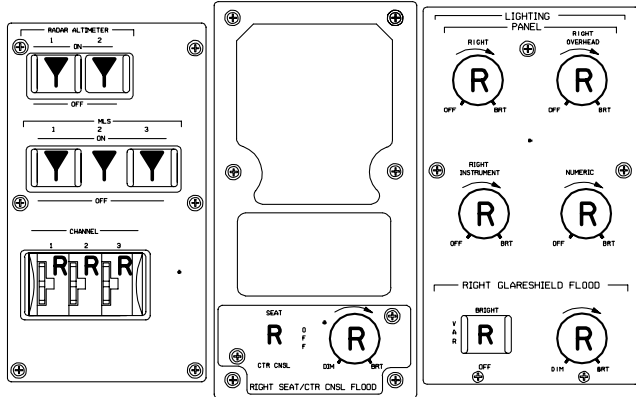
OV104

(OV104) B3-6

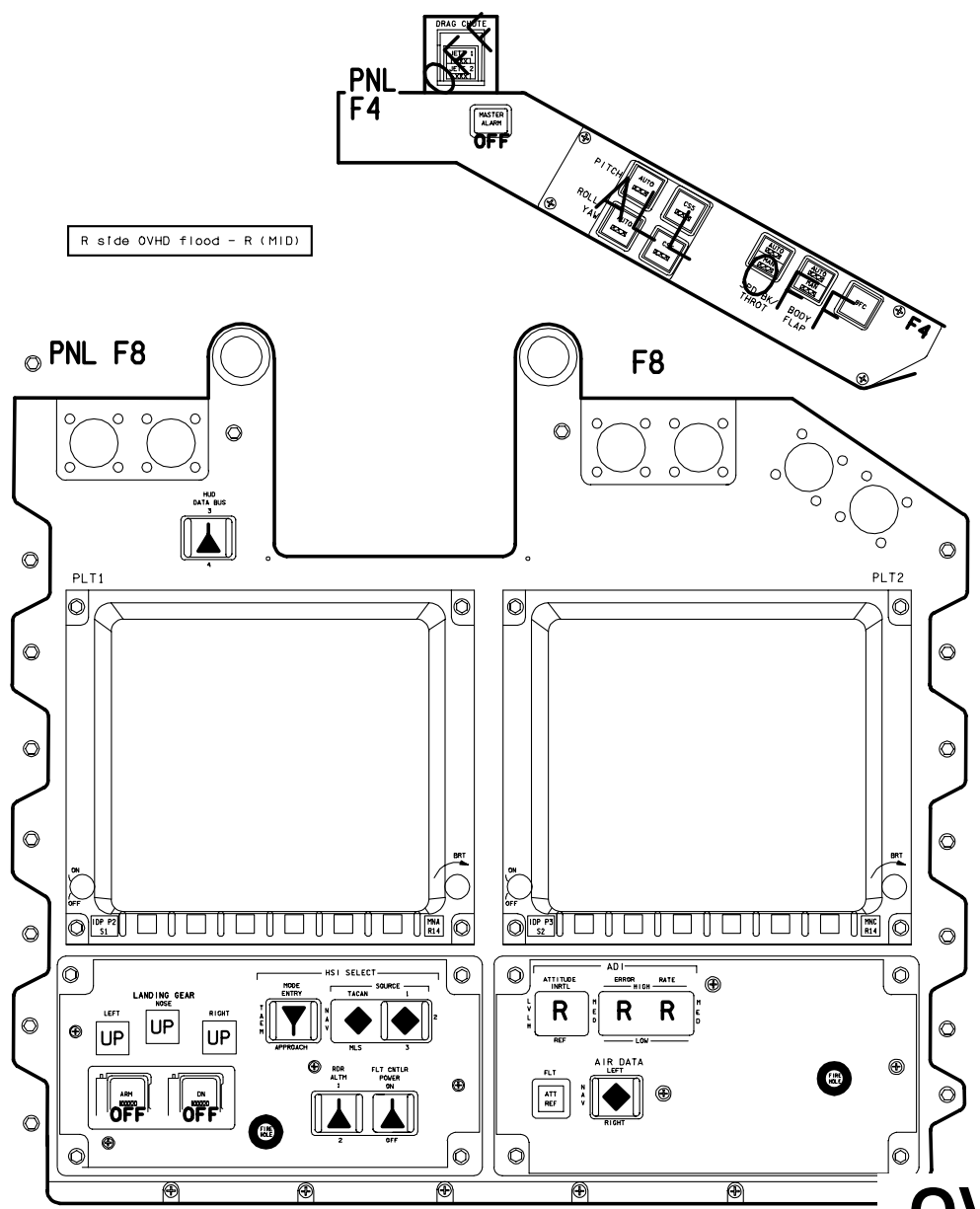
D/O/4/GEN O

OV104

PNL 08

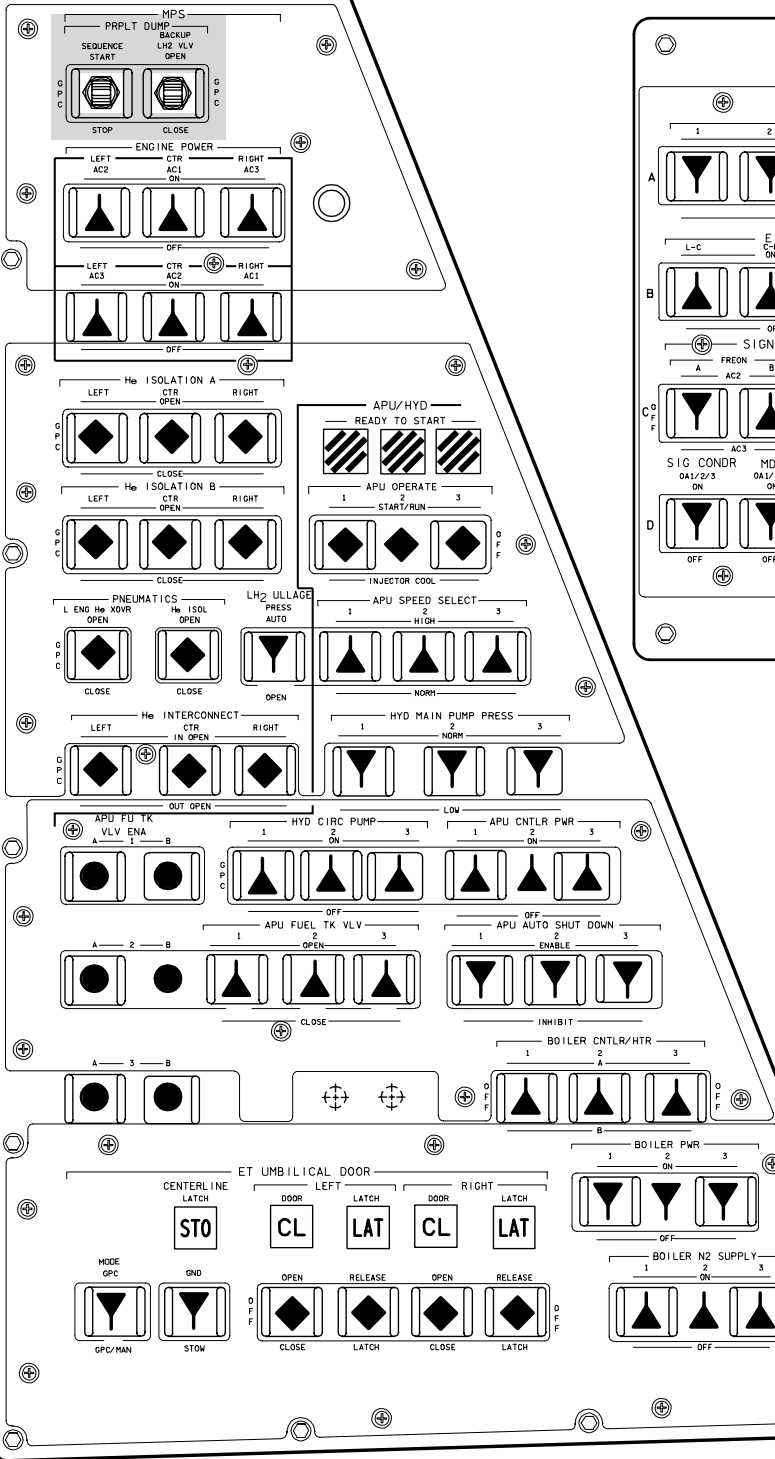


R side OVHD flood - R (MID)

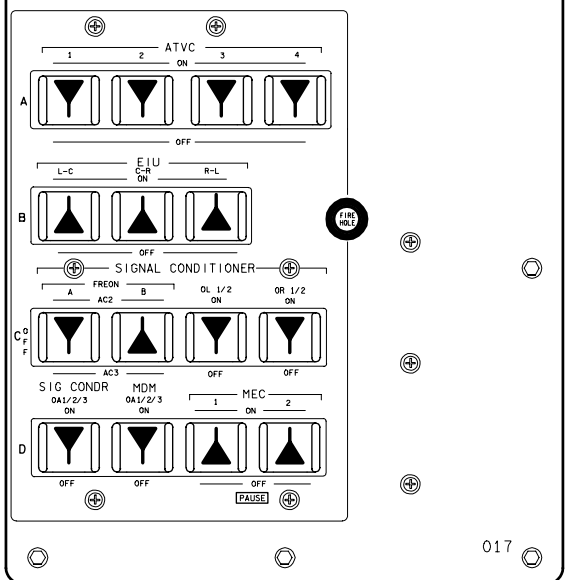


OV104

PNL R2



PNL 017



ALL VEH/DATE 11/29/04

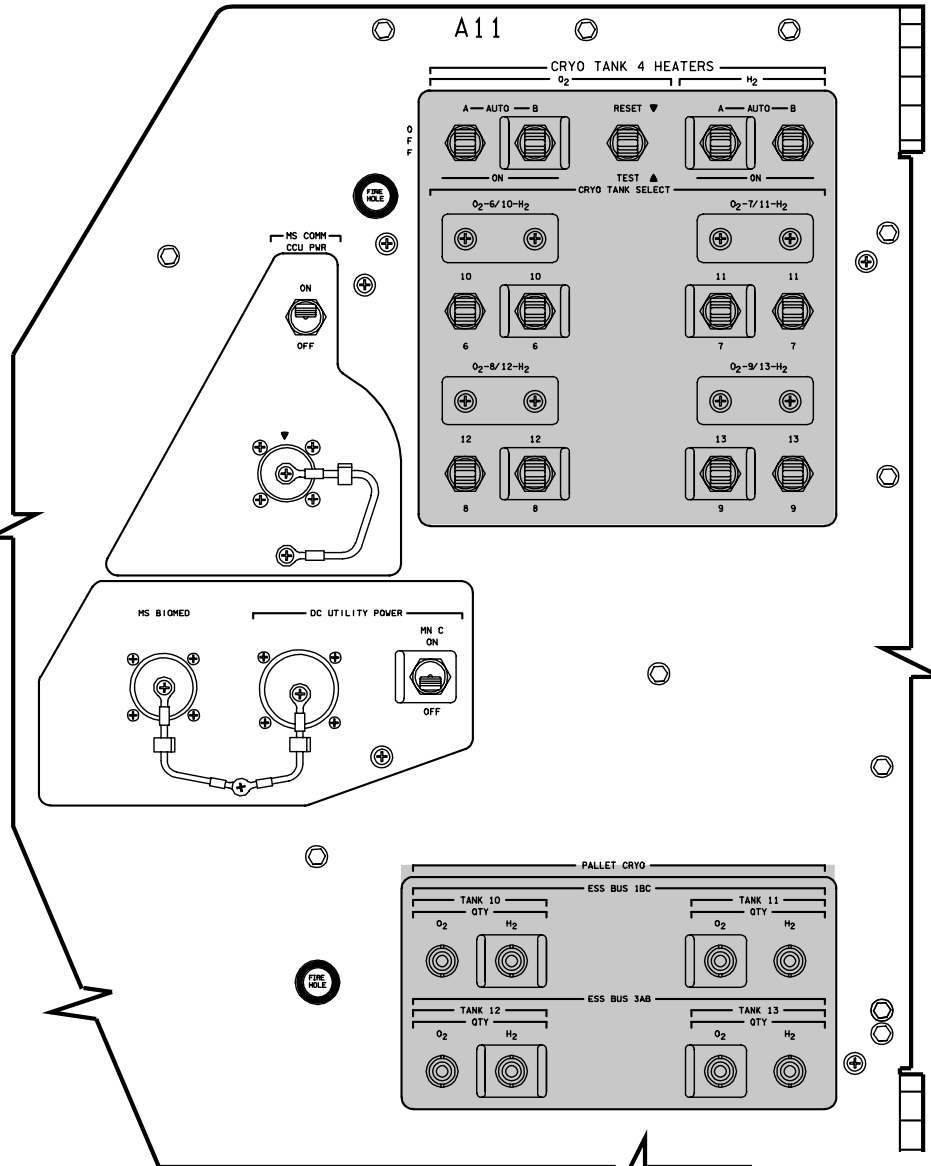
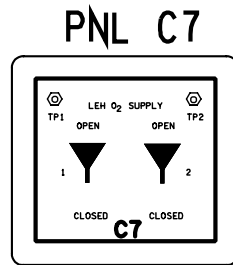
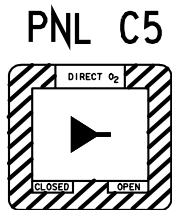
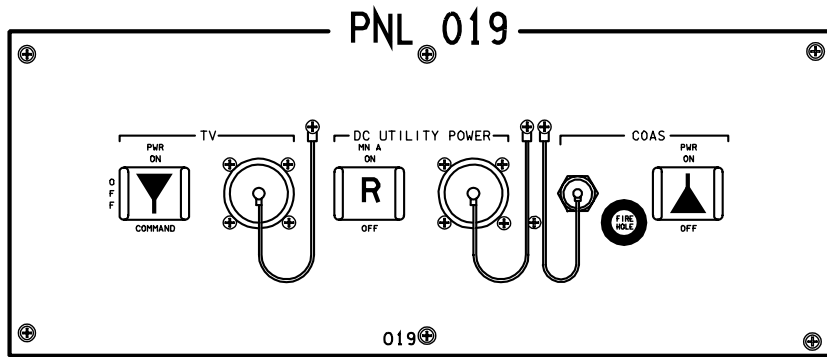
48015C308_114, PNL 5

OV104

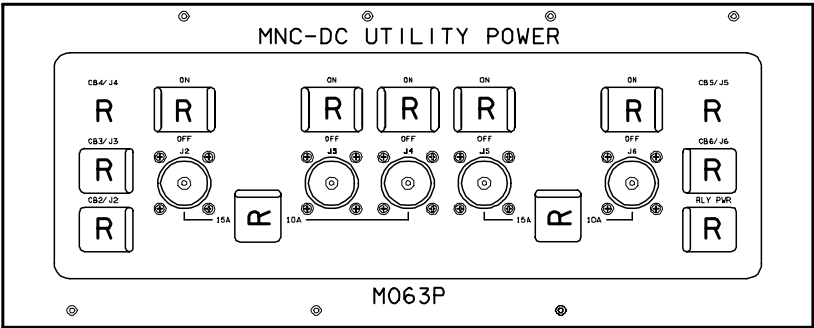
(OV104) B3-8

D/O/ALL/GEN O

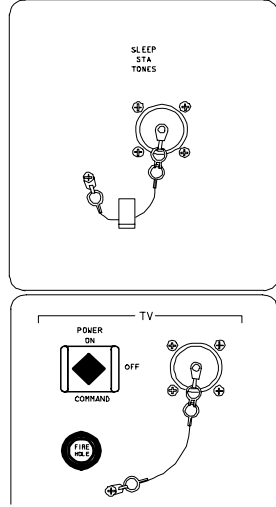
OV104



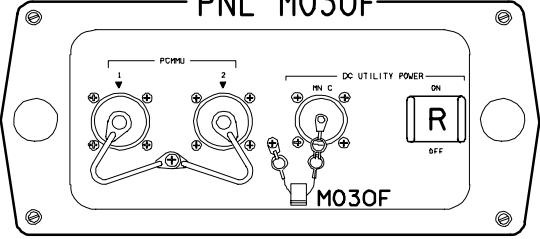
AIRLOCK HATCH
 ACTUATOR HANDLE - LATCHED
 LOCK LEVER - LOCKED
 EQUALIZATION VLV (TWO) - NORM
 -CAPS INSTALLED



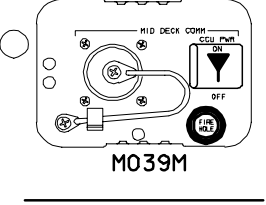
PNL M058F



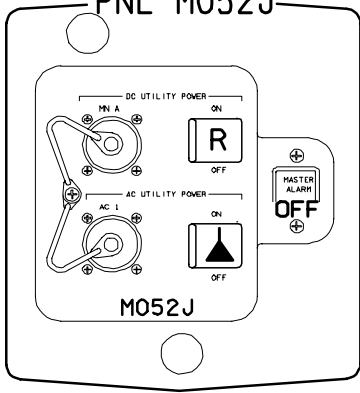
PNL M030F



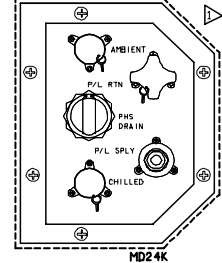
PNL M039M



PNL M052J



PNL MD24K



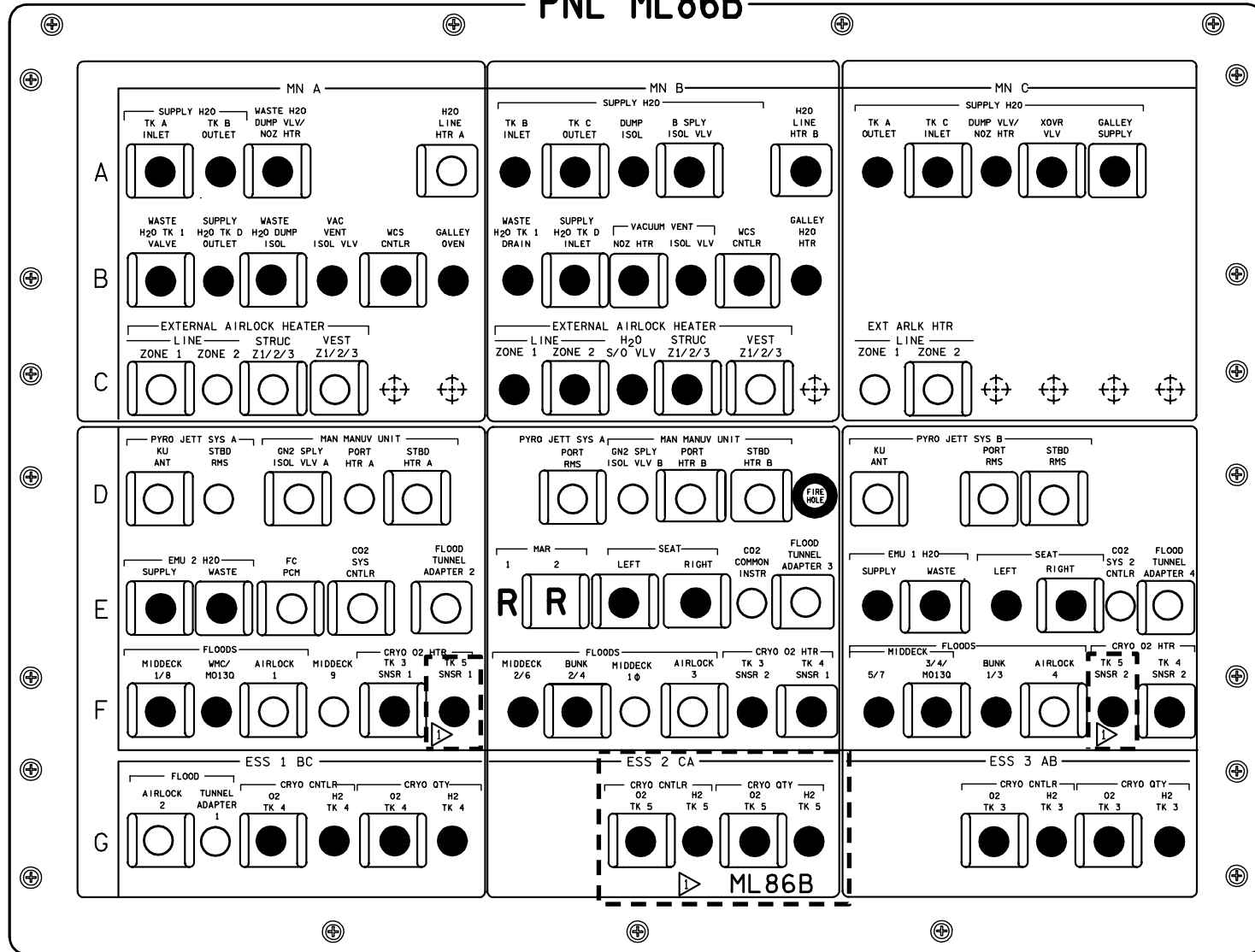
NOTE: NOT VISIBLE IF MAR FLOWN

PNL MD44F

CAB TEMP CNTL ACT LINKAGE - SECONDARY ACTUATOR

OV104

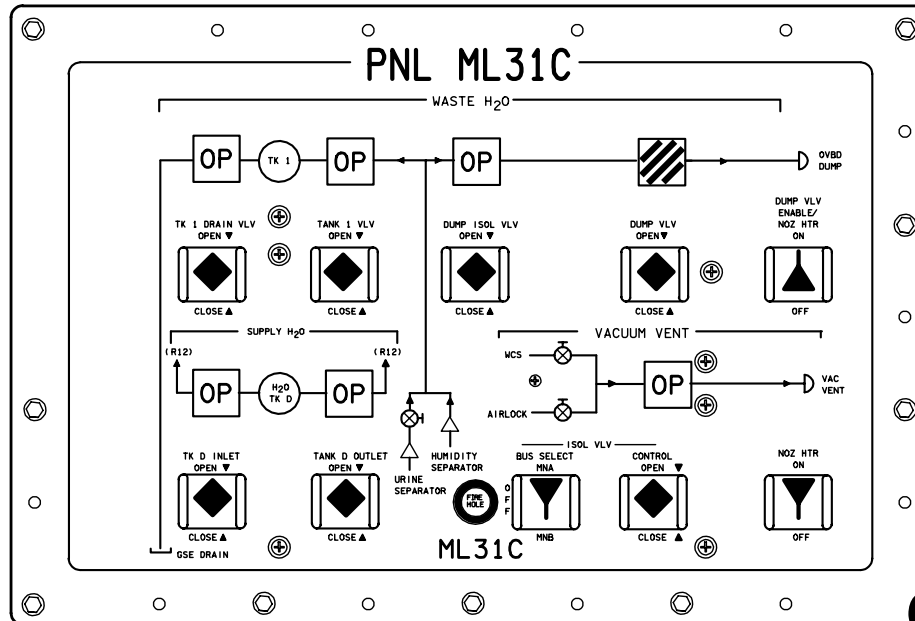
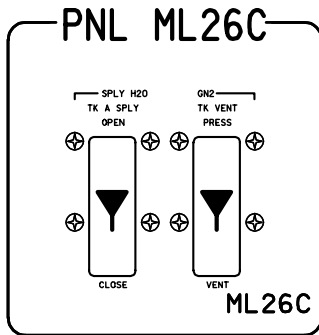
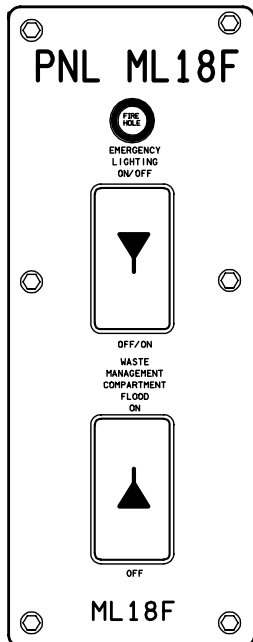
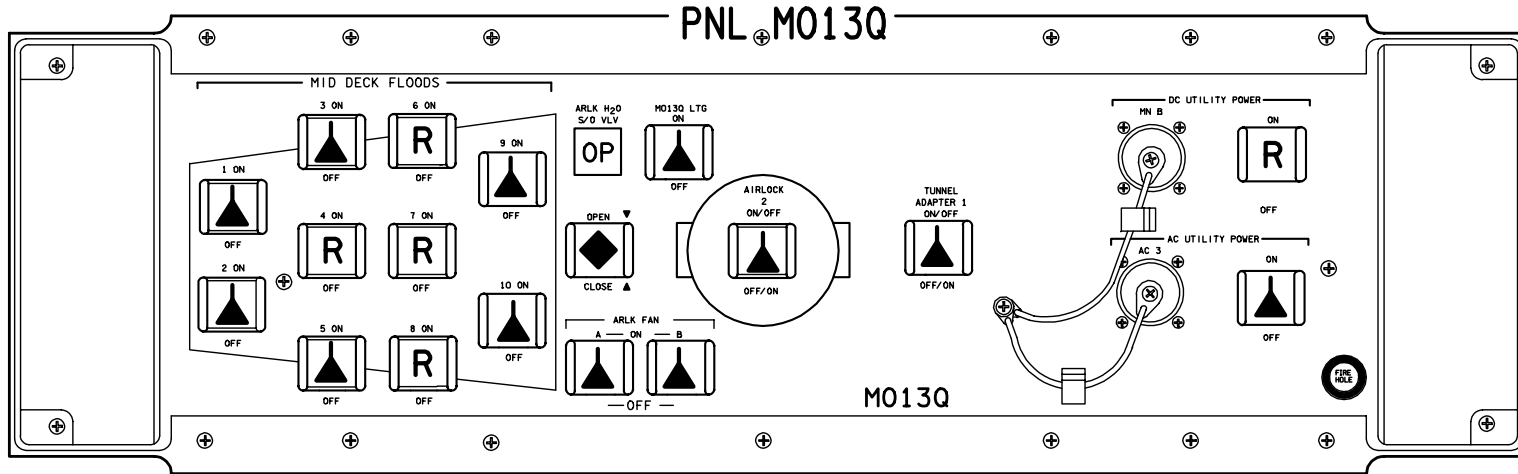
PNL ML86B



NOTE: ▷ OPEN IF TK 5 NOT FLOWN

OV104

OV104



48015C312_114. PNL 2

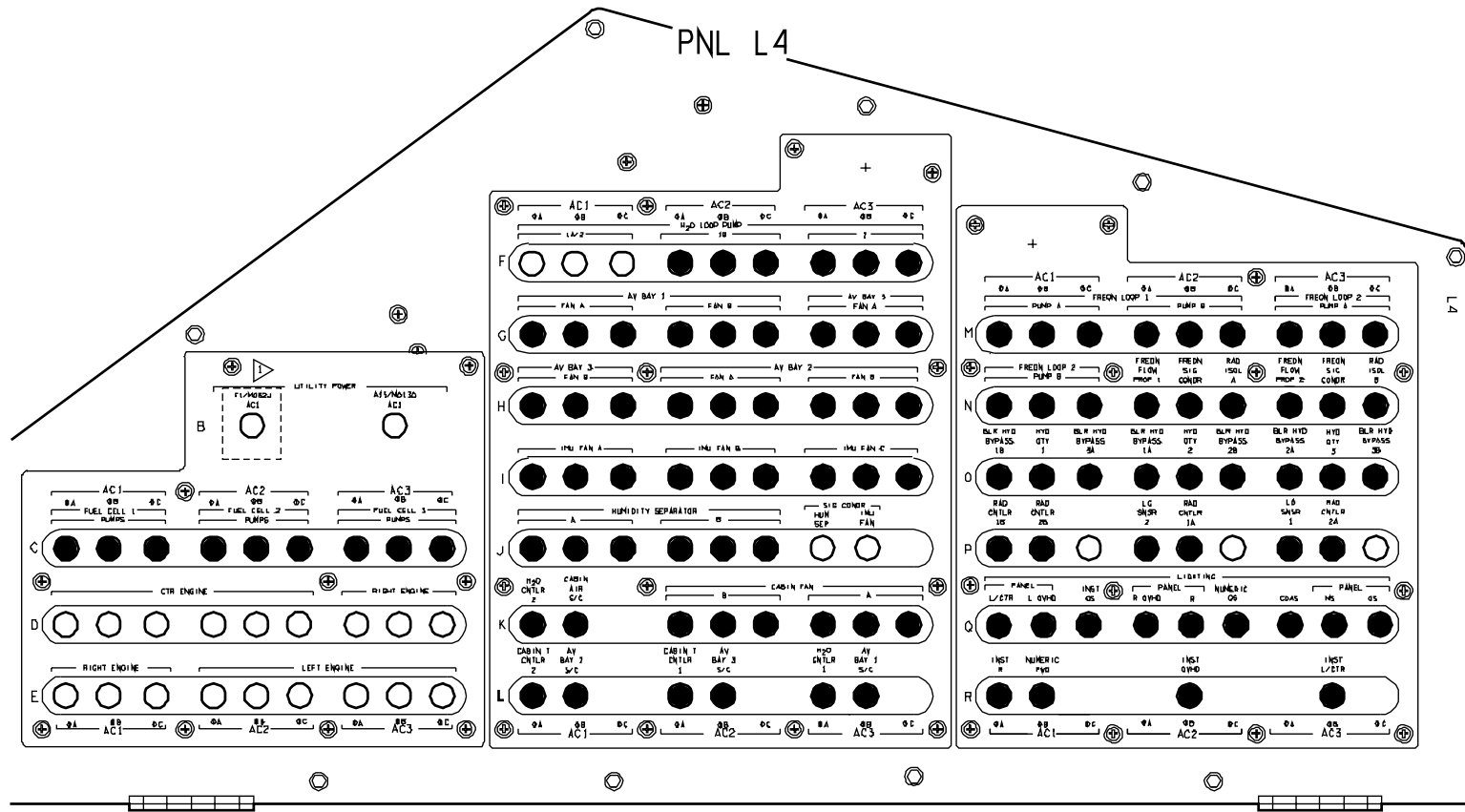
ALL VEH/DATE 10/28/04

(OV104) B3-12

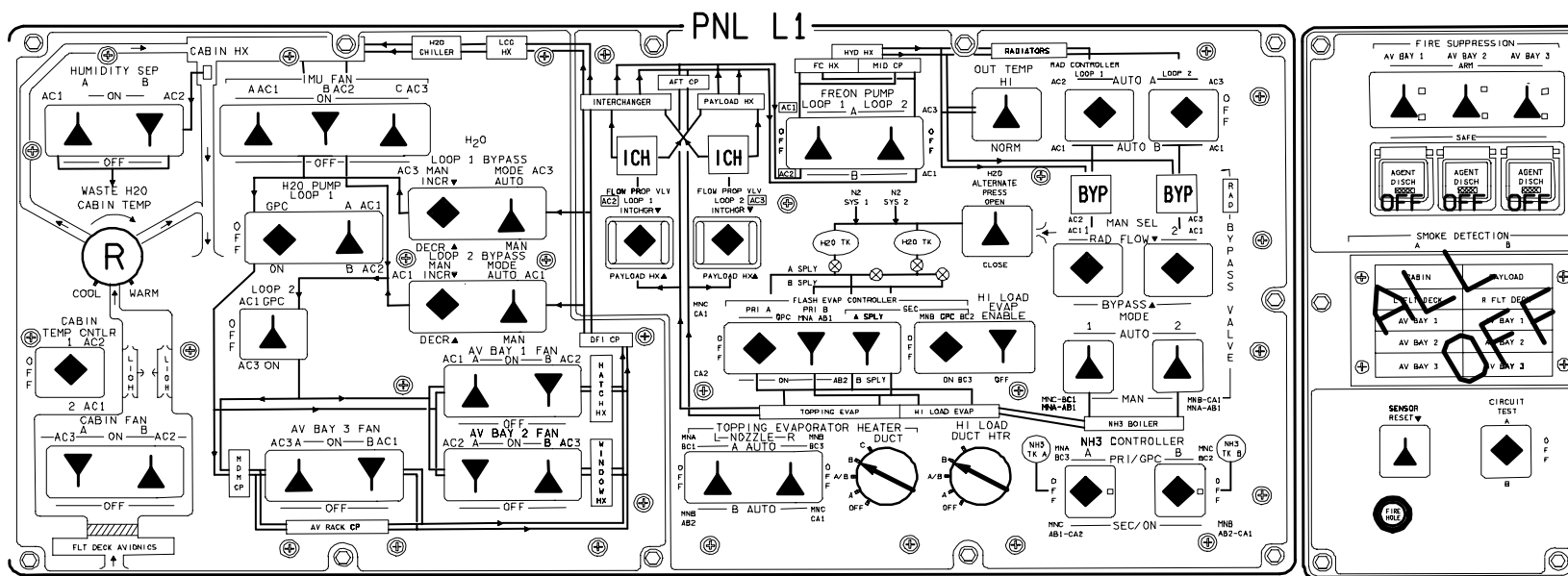
OV104

D/O/4/GEN O

OV104



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



48015C314_114, PNL; 1

ALL VEH/DATE 12/10/02

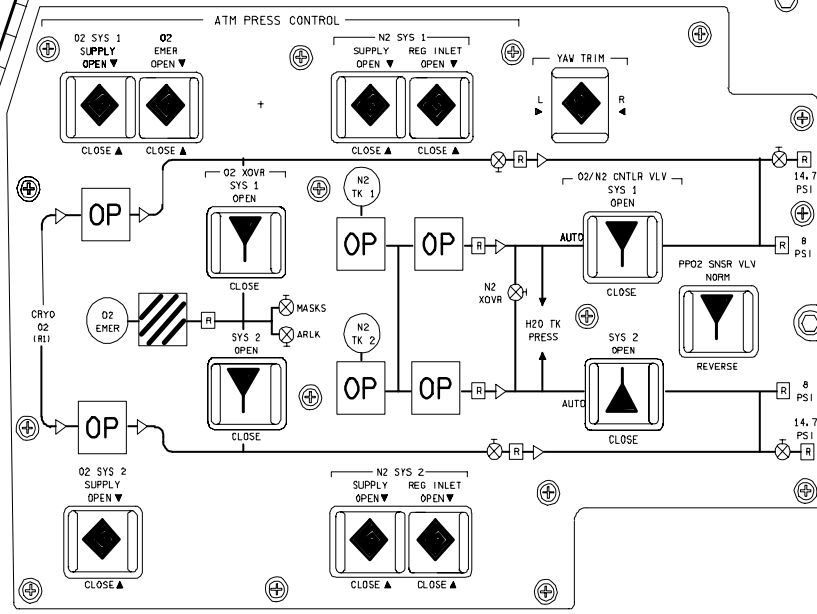
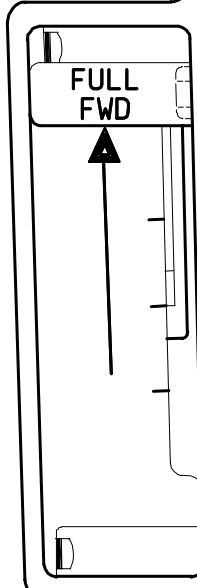
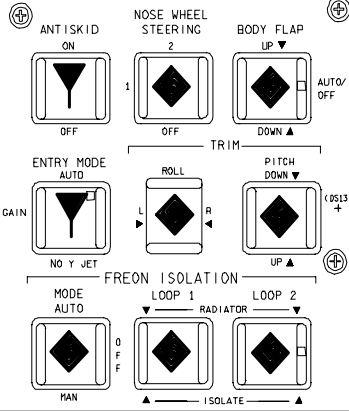
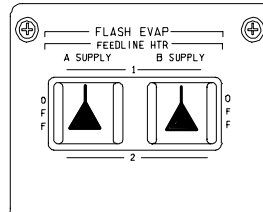
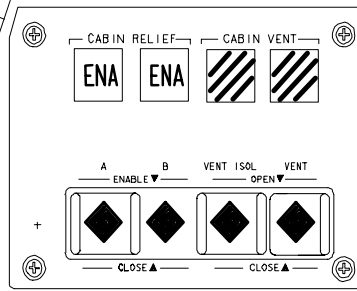
OV104

(OV104) B3-14

D/O/ALL/GEN O

OV104

PNL L2



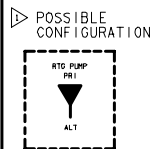
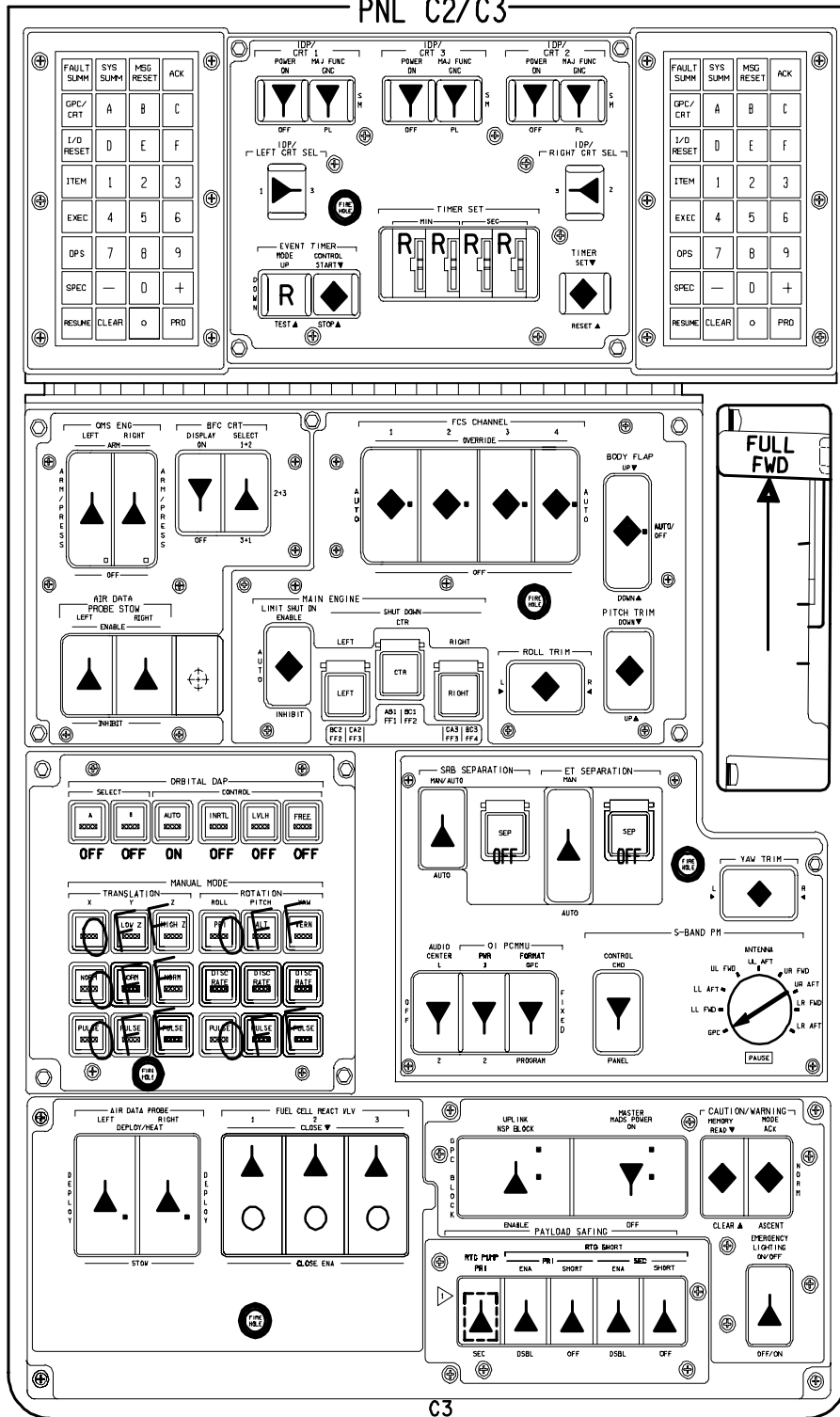
OV104/DATE 12/10/02 48015C315_114_PNL L2

OV104

(OV104) B3-15

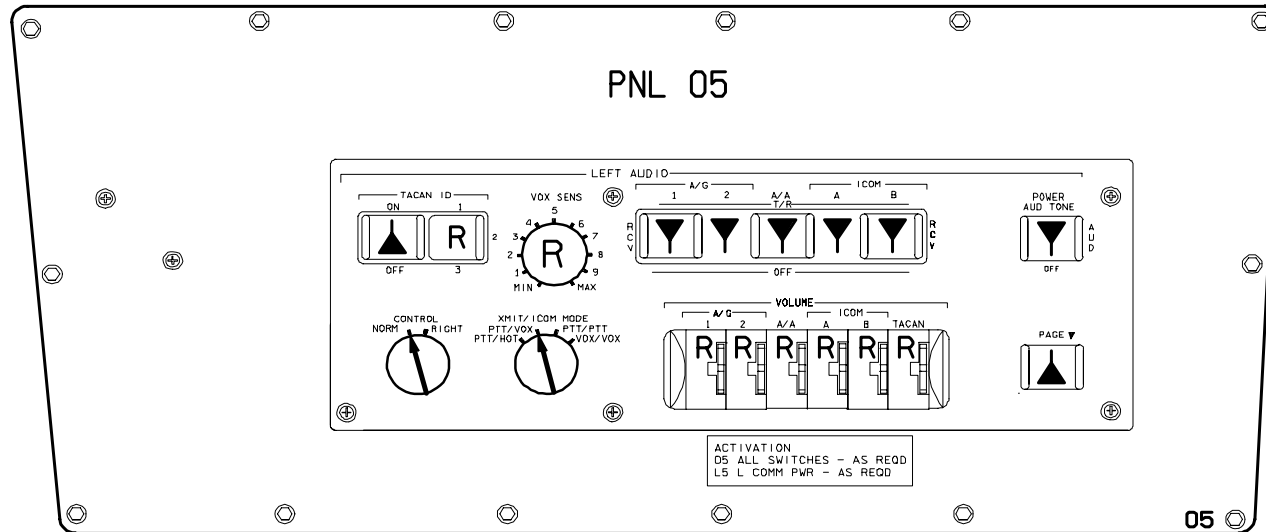
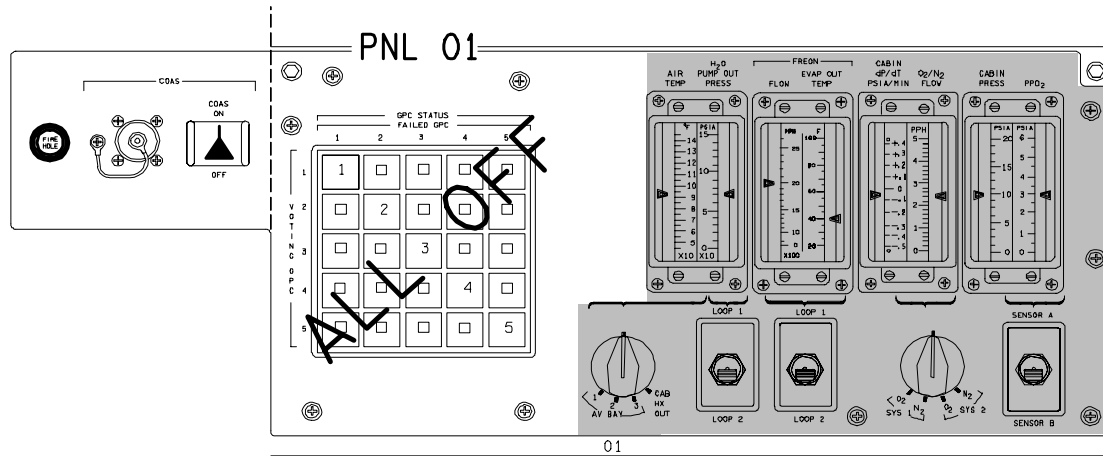
D/O/4/GEN O

PNL C2/C3



OV104/DATE 12/10/02
48015C316_11-4_PNL 1

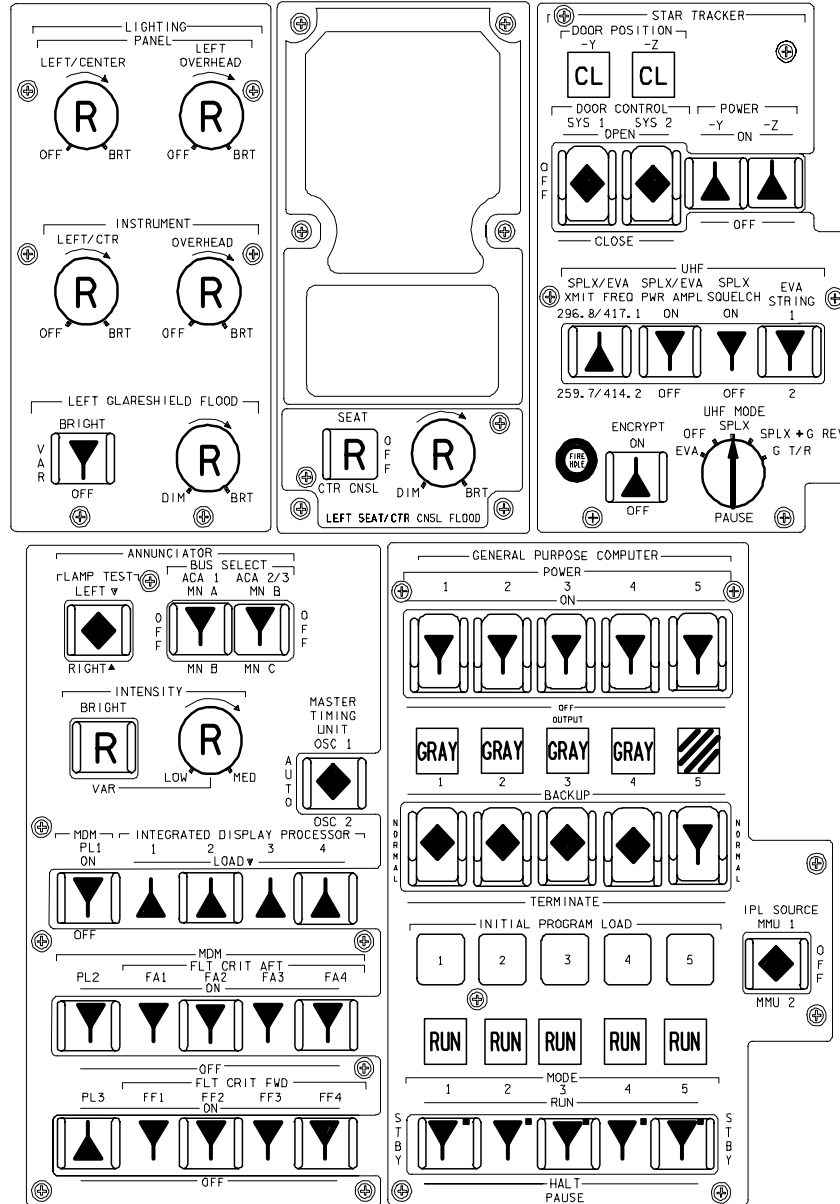
OV104



OV104

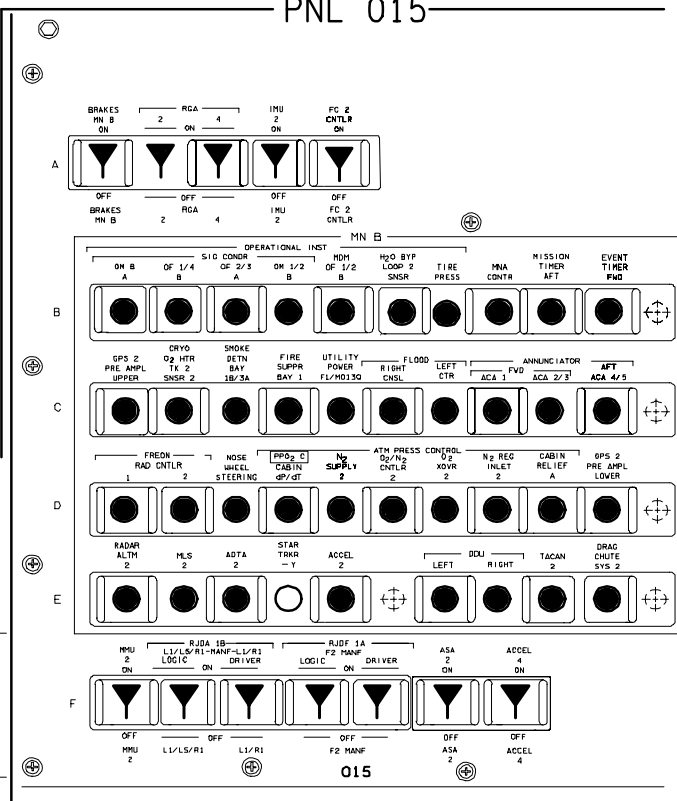
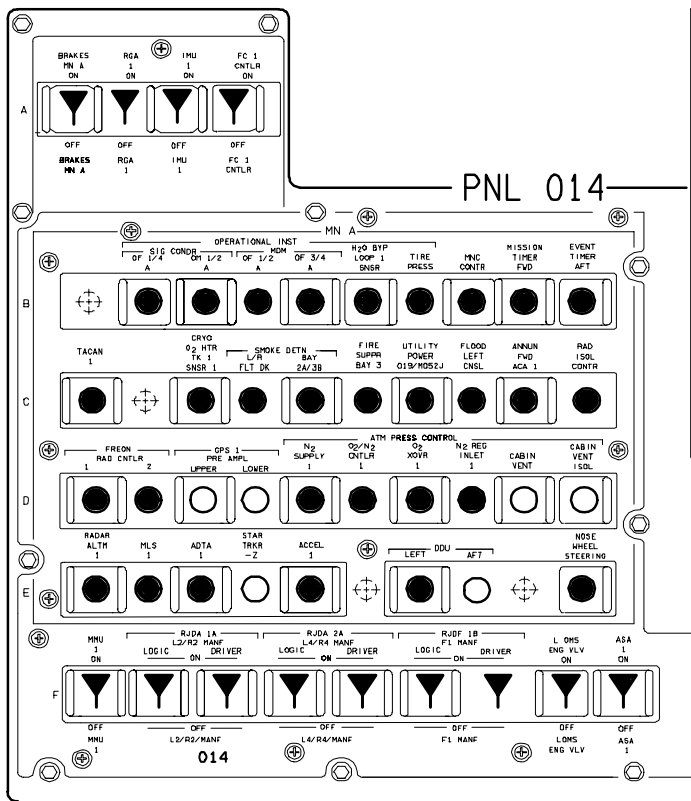
OV104

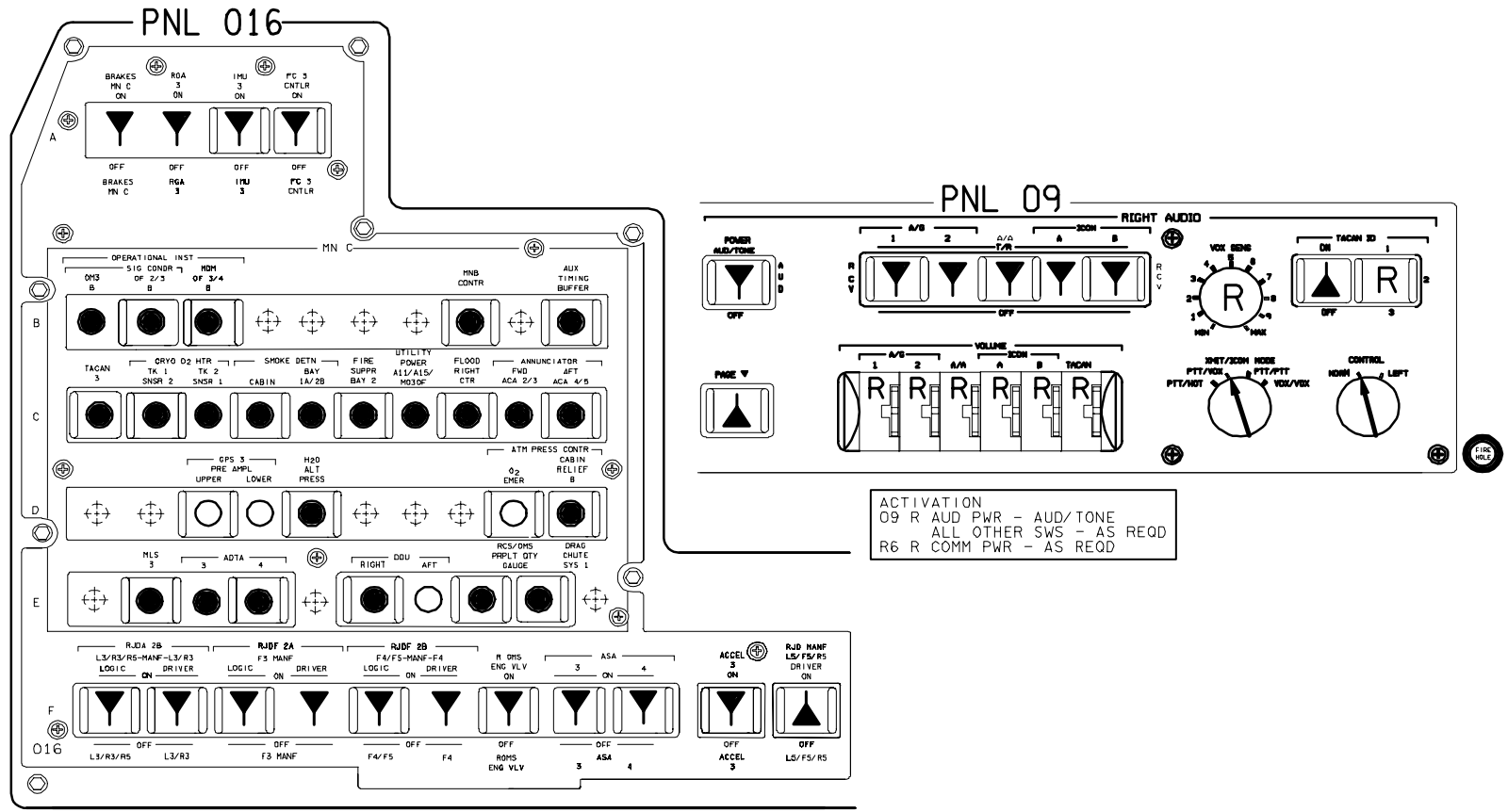
PNL 06

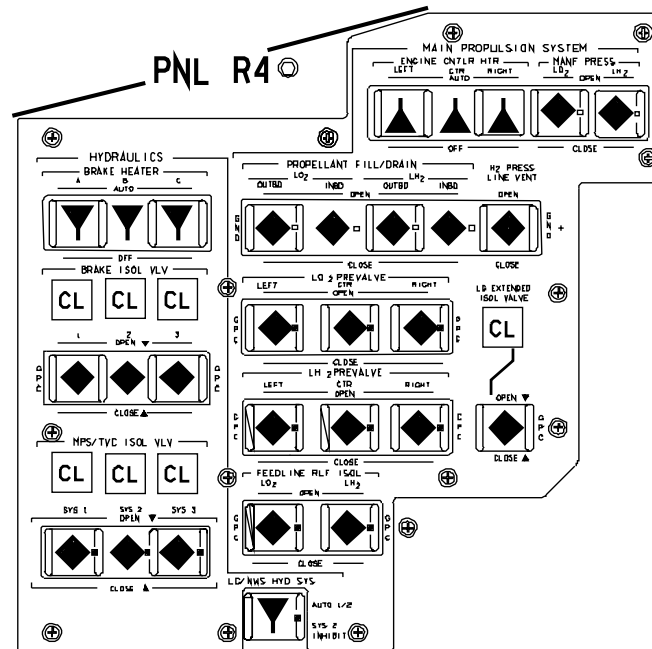
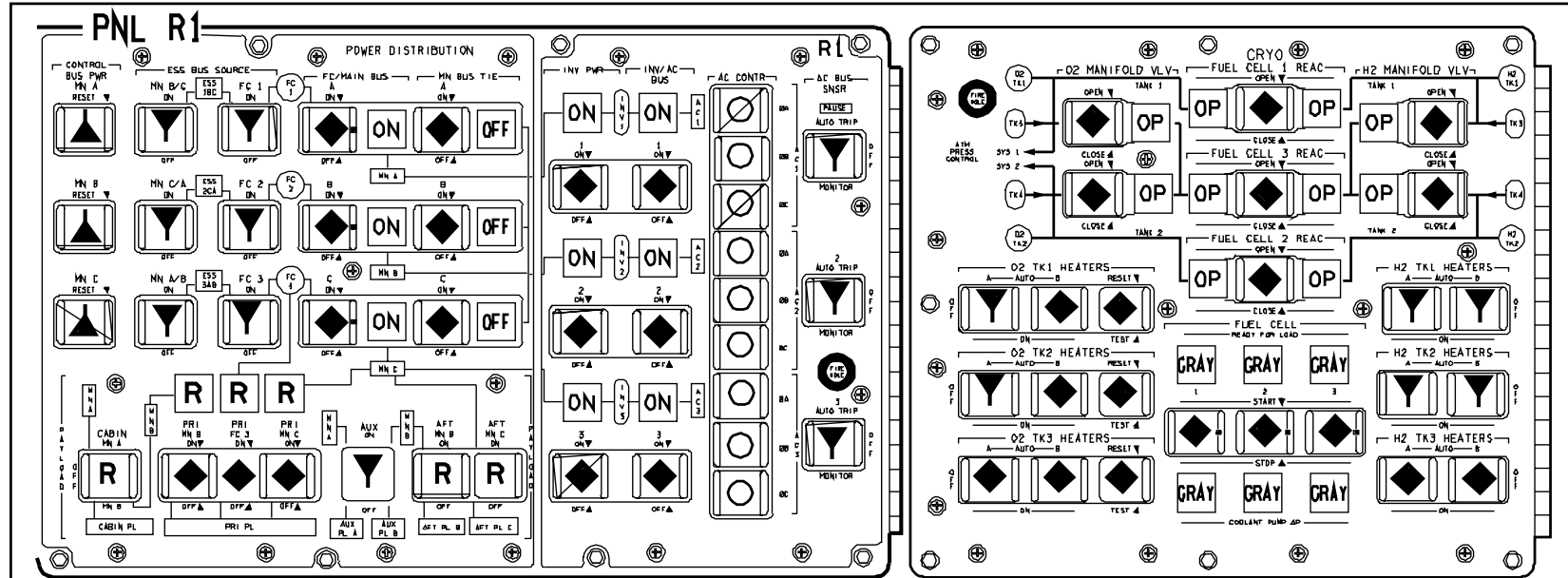


OV104

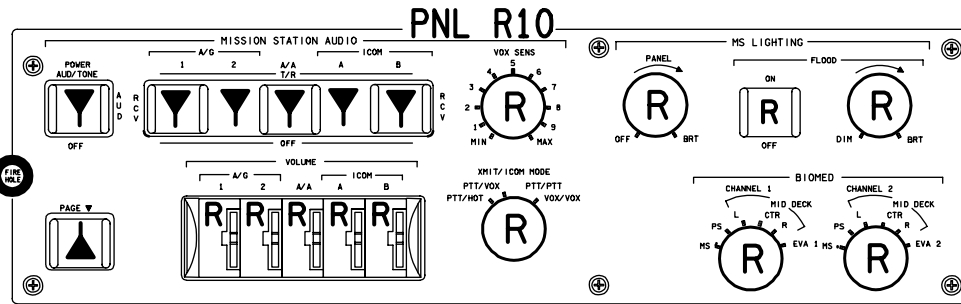
OV104



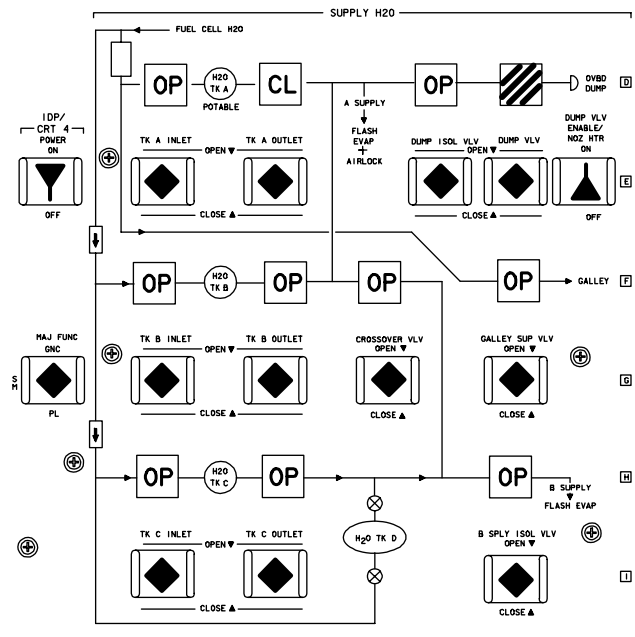
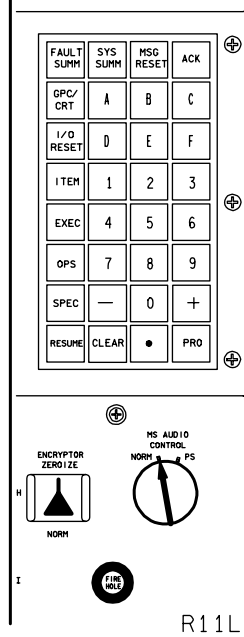
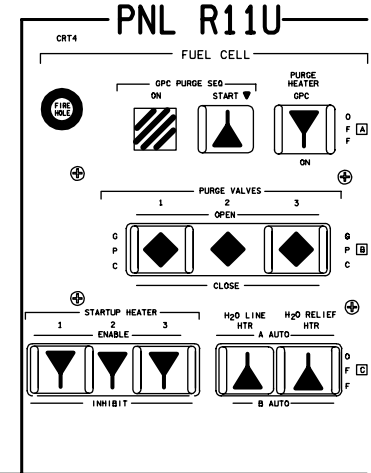




OV104



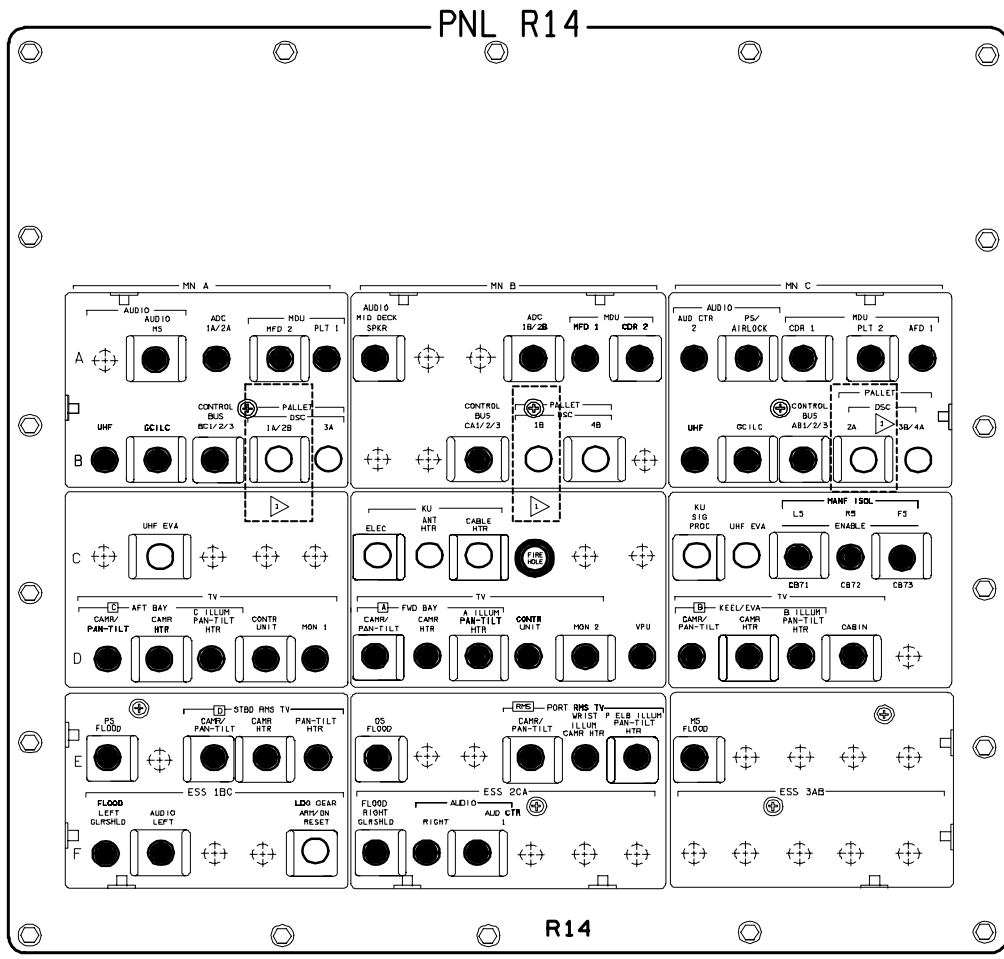
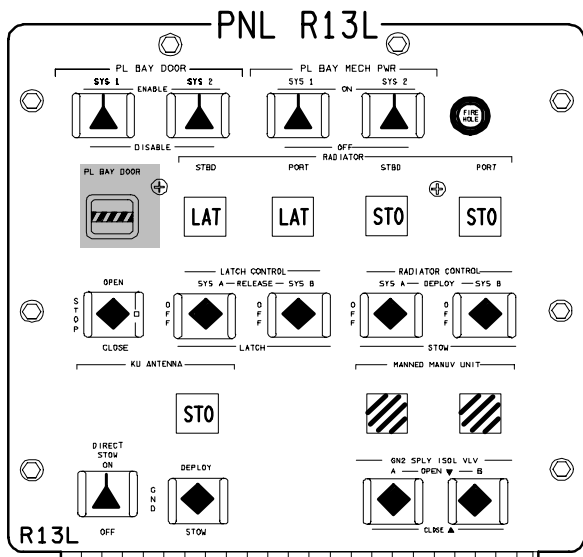
ACTIVATION
 R10 MS AUD PWR - AUD/TONE
 ALL OTHER SWS - AS REQD
 R12 MS AUD CONTL - NORM
 A11 MS COMM CCU PWR - ON



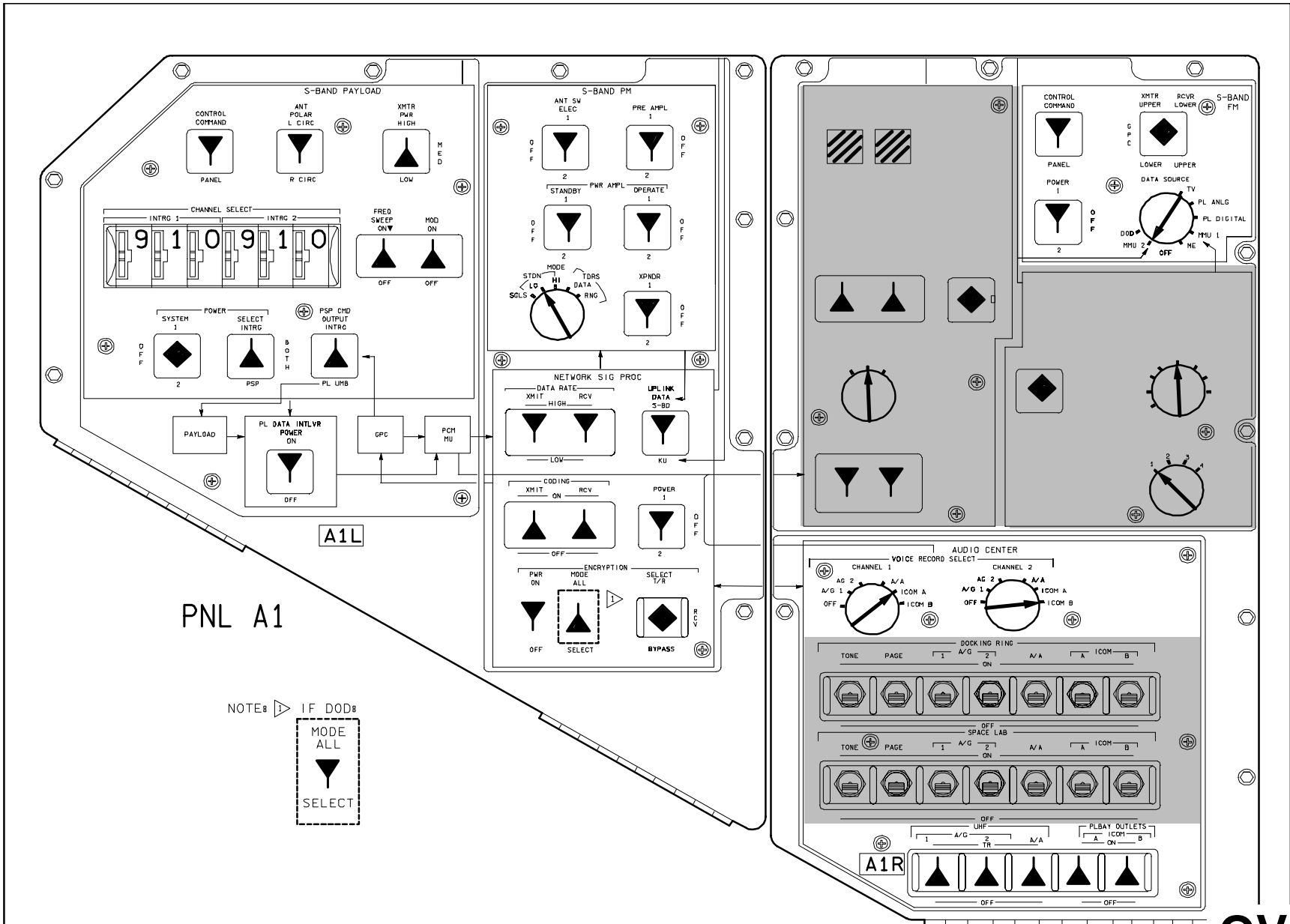
48015C322_114, PNL 5

ALL VEH/DATE 02/14/05

OV104



NOTE: ▷ CLOSED IF EDO

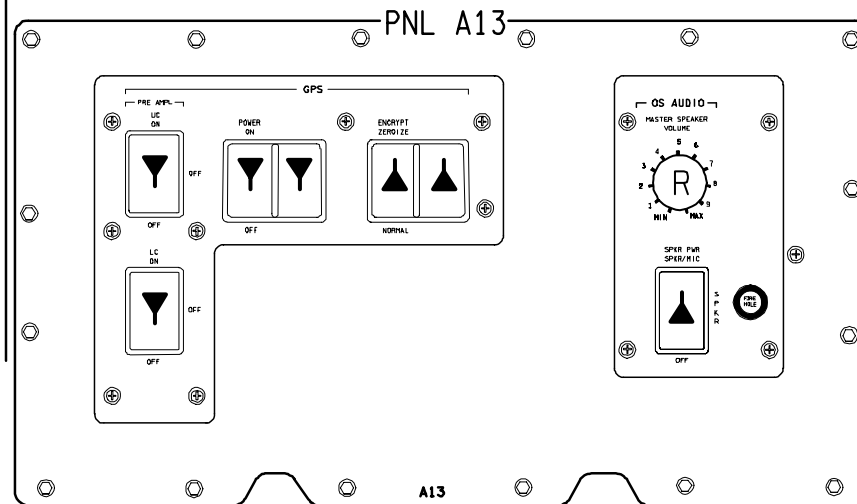
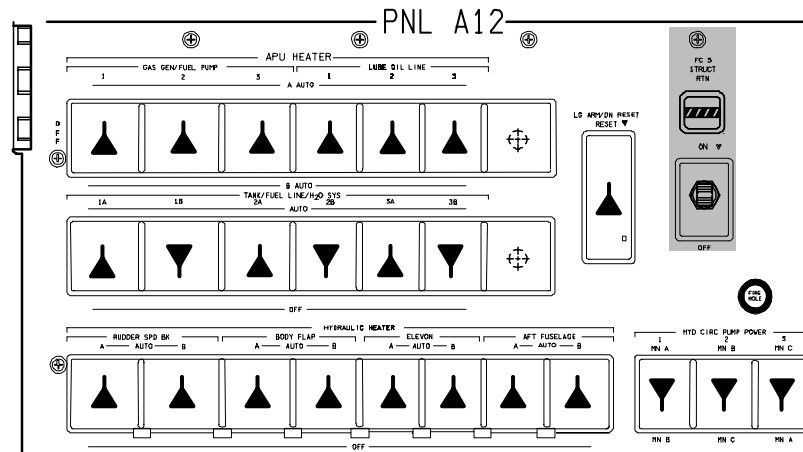
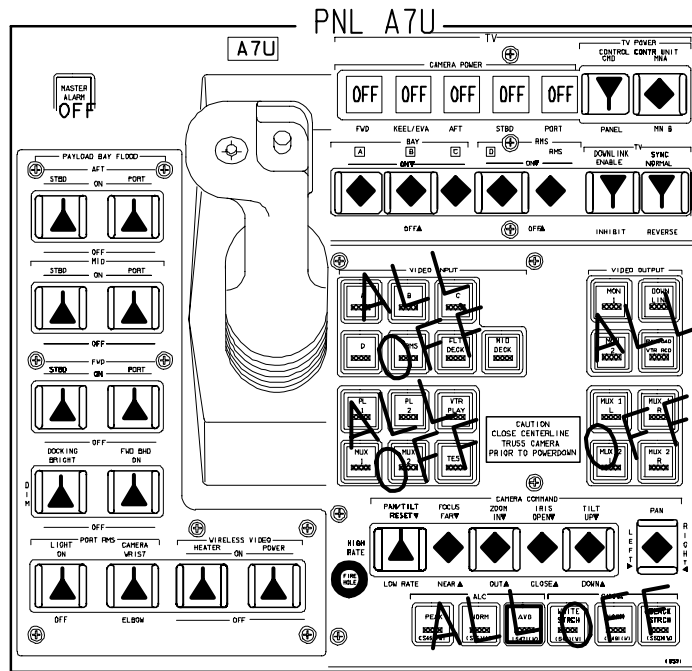


PNL A1

NOTE: IF DOD:
 MODE ALL
 SELECT

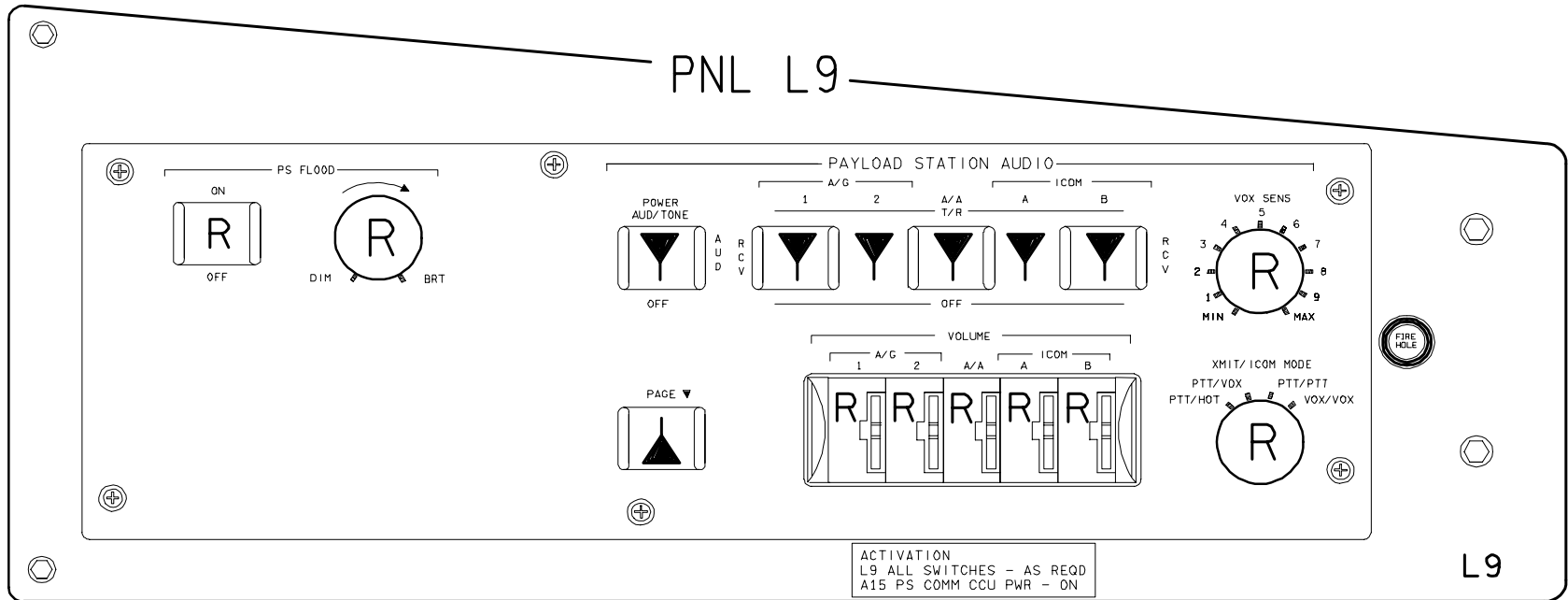
OV104

OV104



OV104

PNL L9



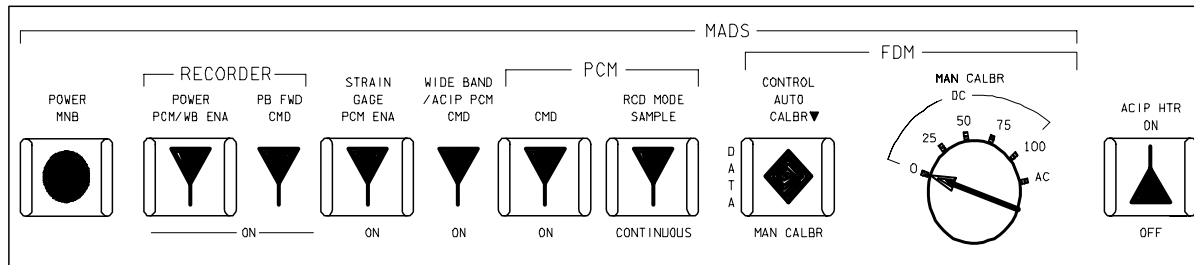
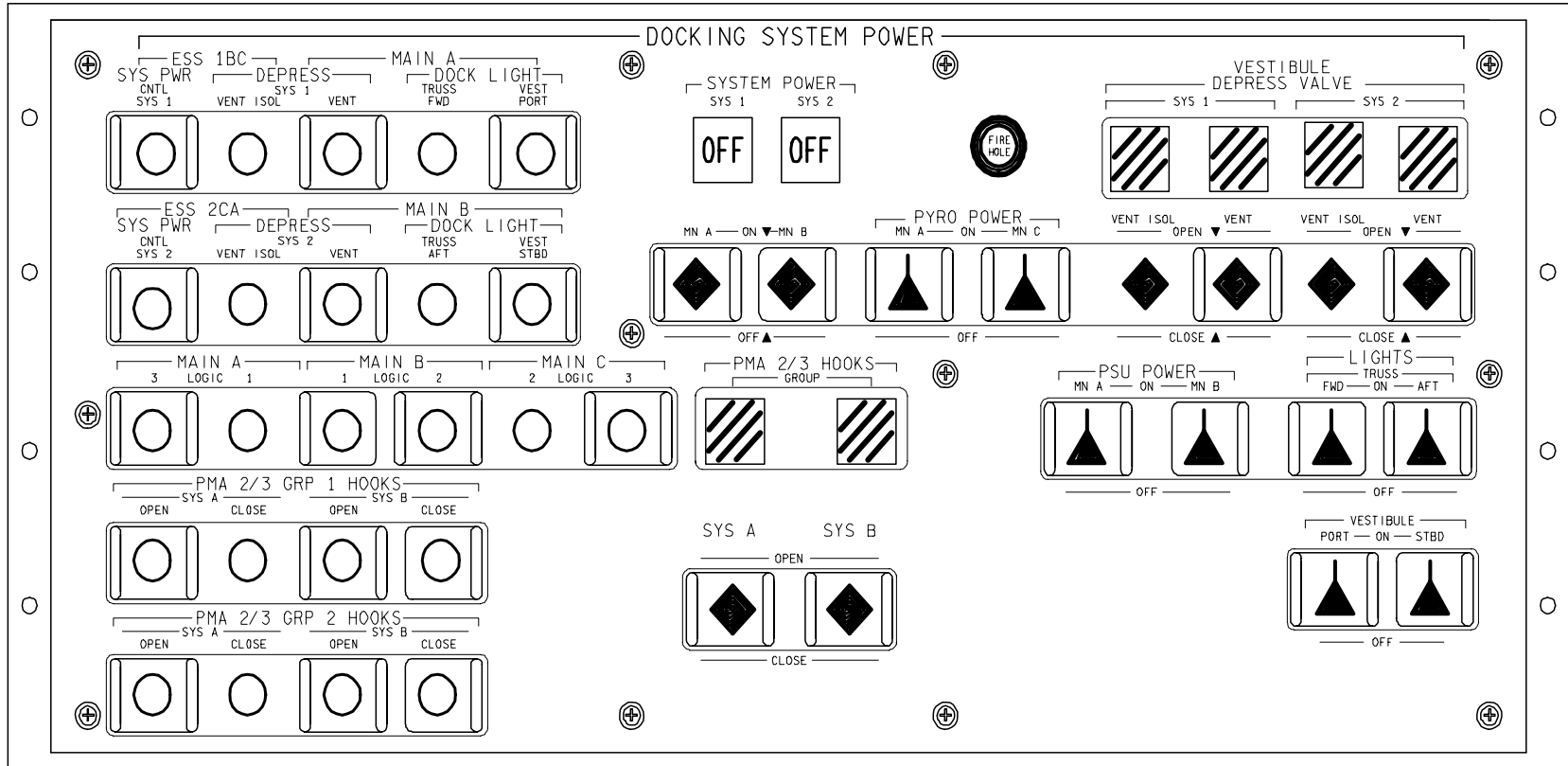
ACTIVATION
 L9 ALL SWITCHES - AS REQD
 A15 PS COMM CCU PWR - ON

L9

OV104

OV104

PNL A6L



OV104

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

A_{DS} OFF B_{DS} OFF C_{DS} OFF

LAMP TEST

STATUS

POWER	ON	INITIAL	CONTACT
APDS PROTECT	CIRCUIT OFF	CAPTURE	CAPTURE
RING	ALIGNED	RING	FORWARD POSITION
RING	INITIAL POSITION	APDS	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

ALL OFF

PYROS

A_p ON OFF B_p ON OFF C_p ON OFF

A_p OFF C_p OFF



PYRO CIRCUIT OFF

PYRO COMMANDS

PYRO CIRC PYRO CIRC
PROT OFF PROT ON

ACT HOOKS FIRING PAS HOOKS FIRING

APDS CONTROL COMMANDS

OPEN OPEN
HOOKS LATCHES
UNDOCKING

PNL A7L

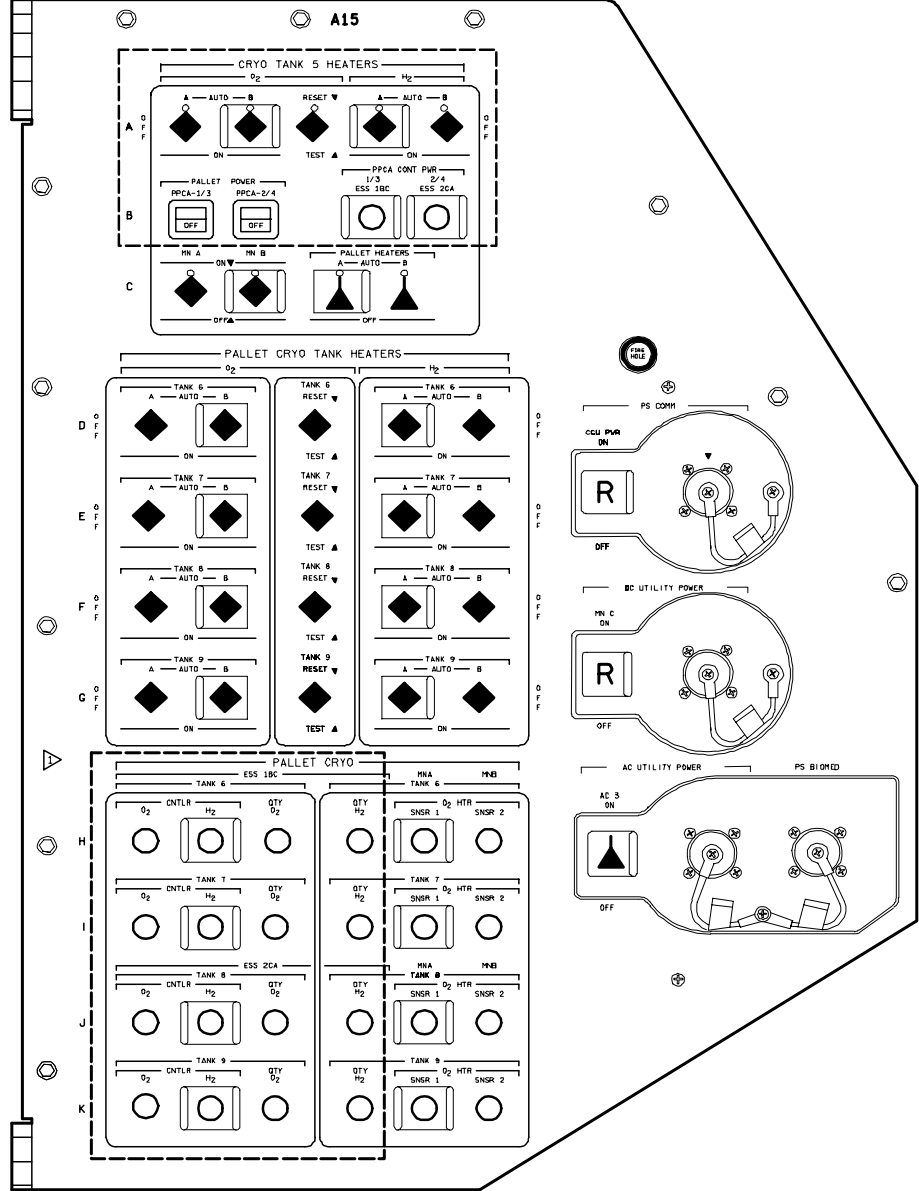
APDS CONTROL COMMANDS

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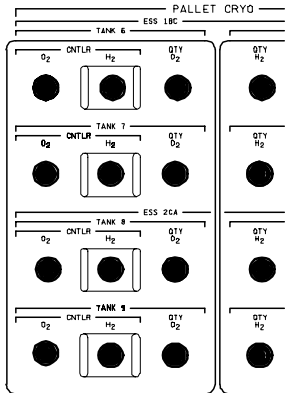
APDS CIRC PROT OFF	CLOSE HOOKS	CLOSE LATCHES	FIXER OFF
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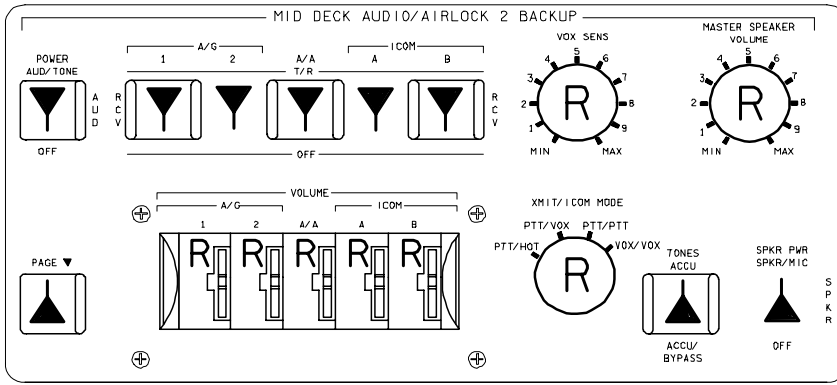
APDS CONTROL PANEL

OV104

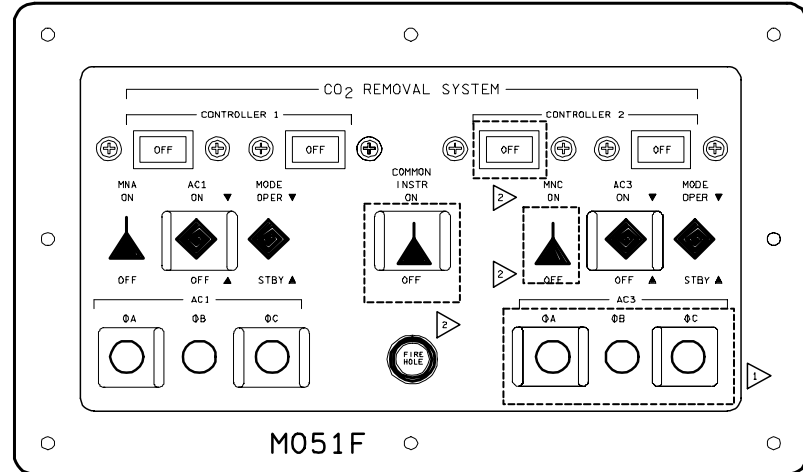
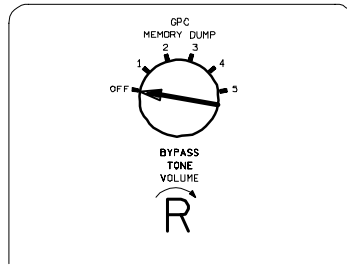


▷ cbs CLOSED FOR EDO MISSIONS

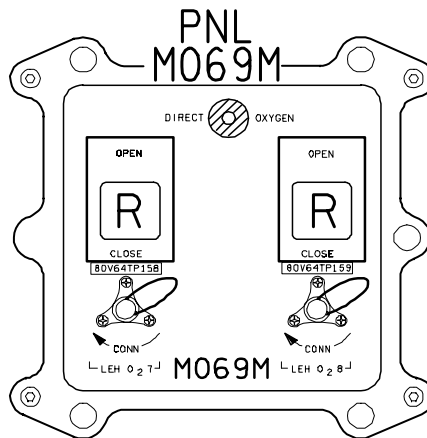
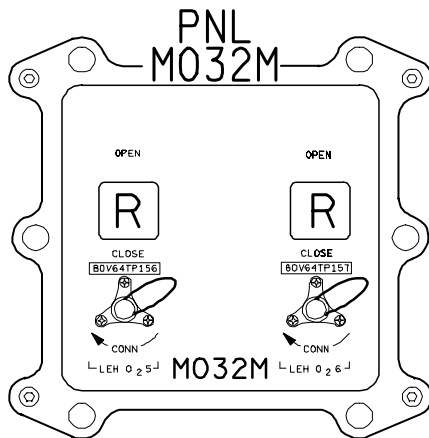




PNL M042F

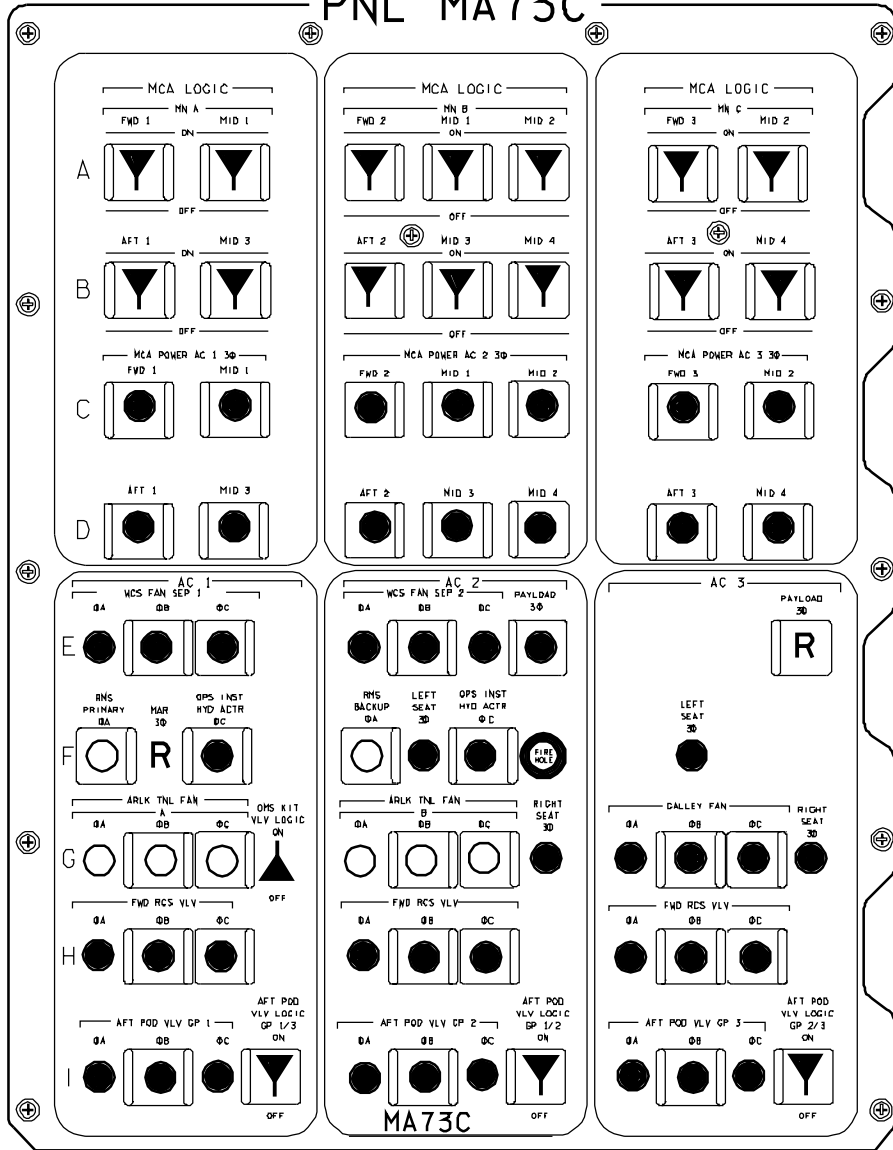


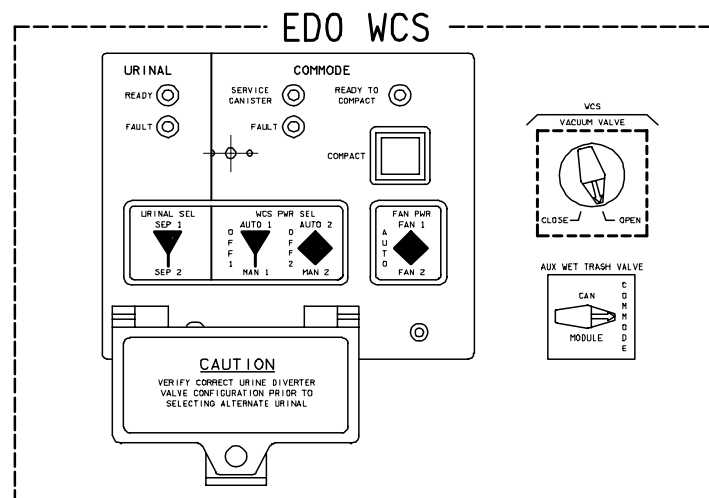
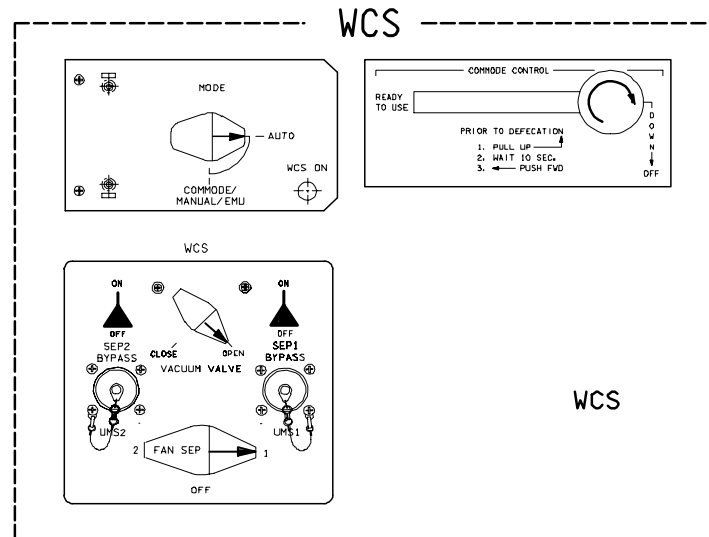
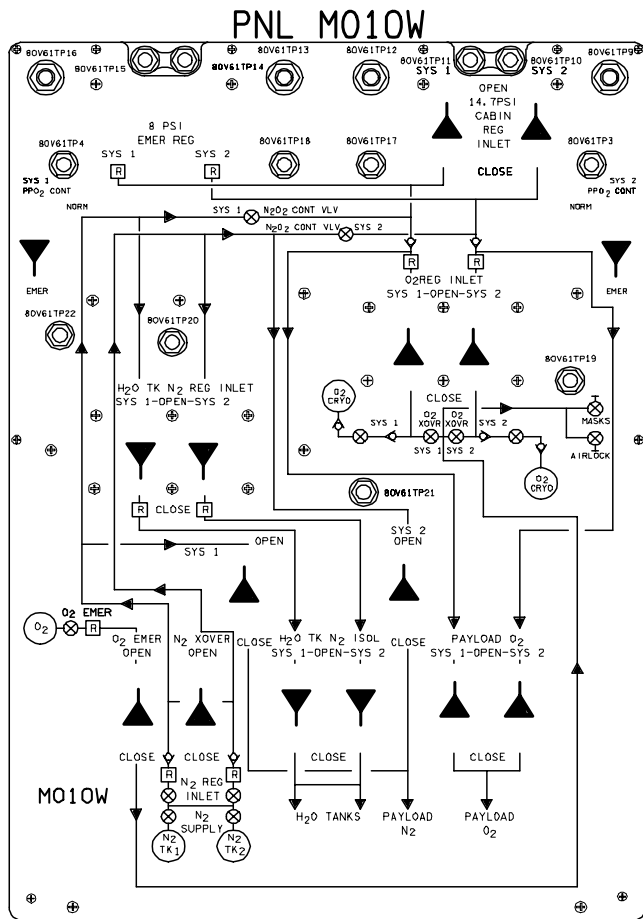
M051F

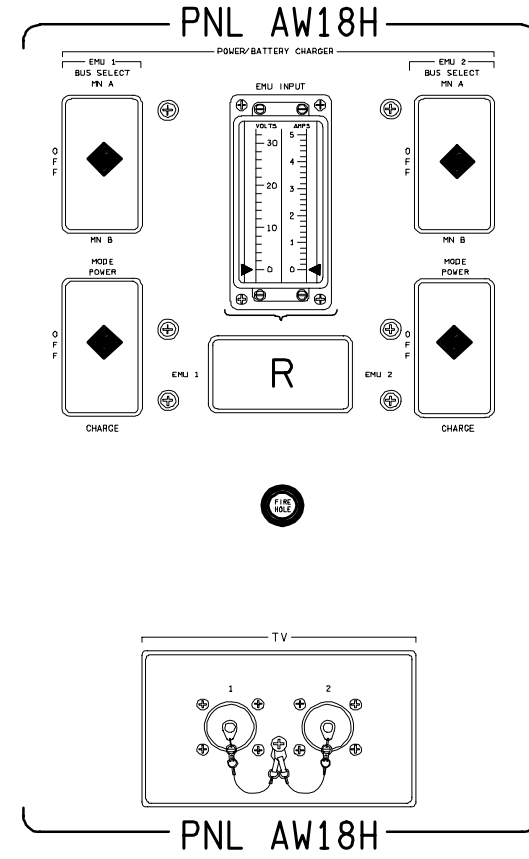
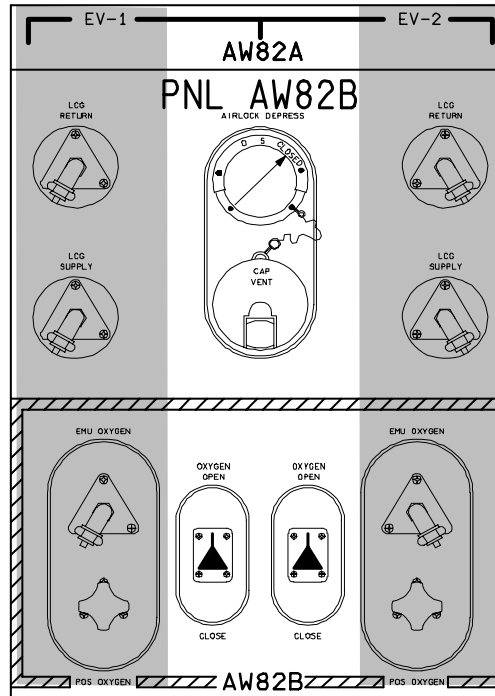
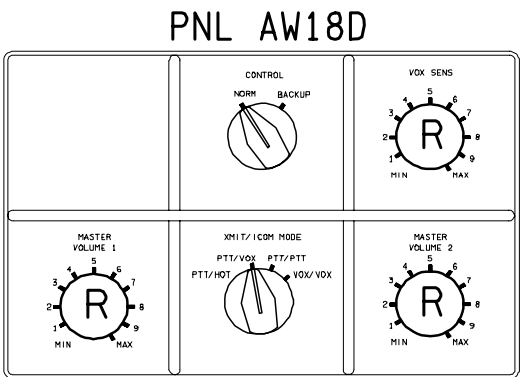
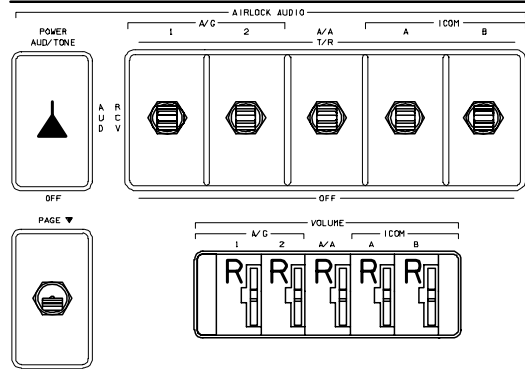
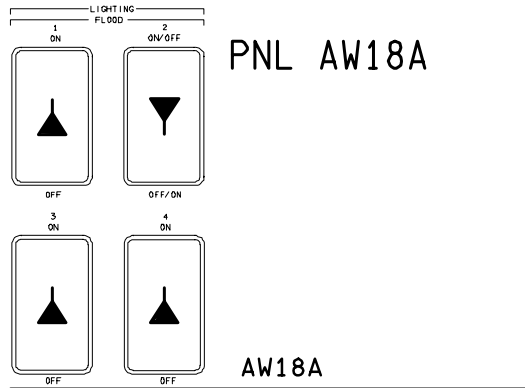


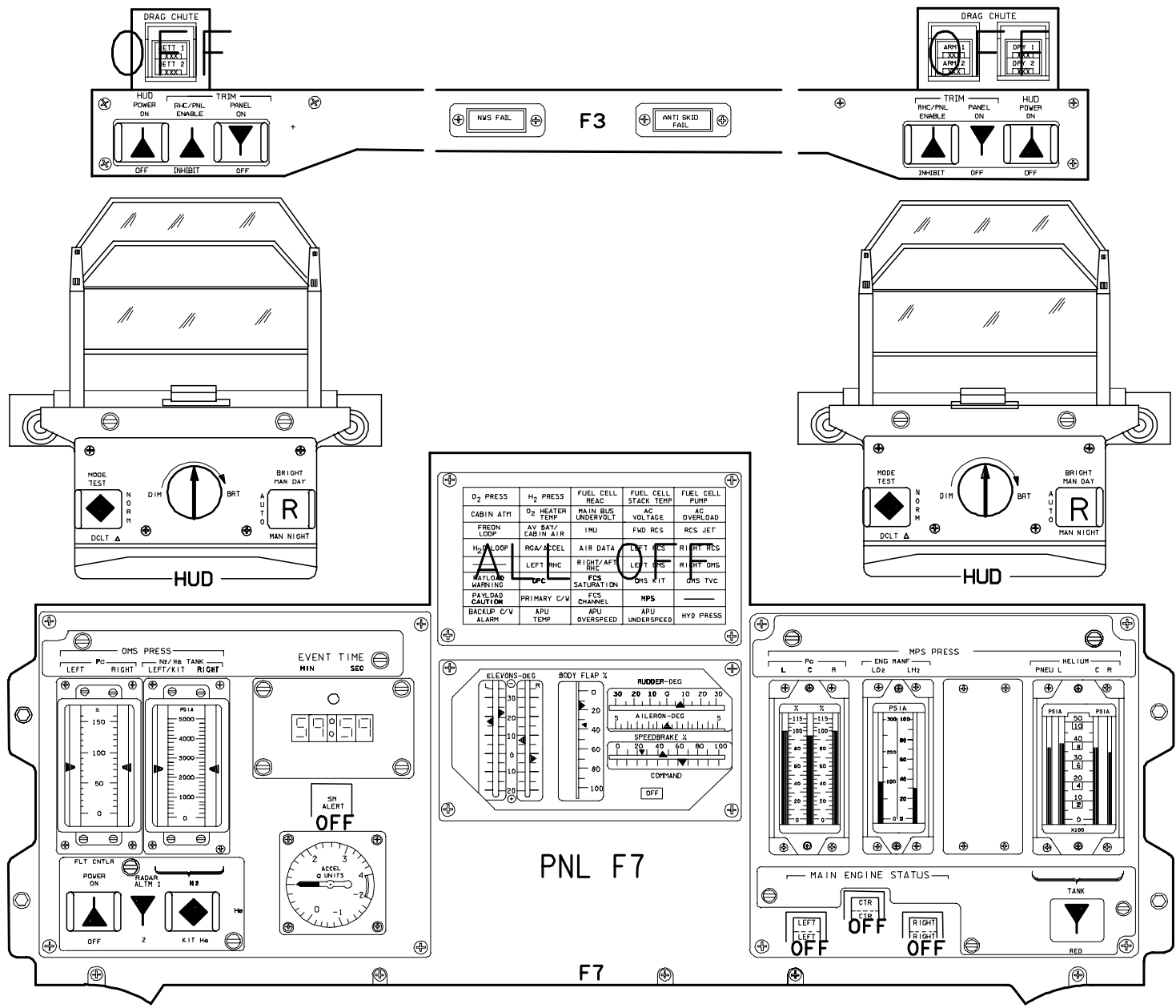
NOTES: ▷ CLOSED IF CO₂ RMVL SYS FLOWN
▷ ON IF CO₂ RMVL SYS FLOWN

PNL MA73C



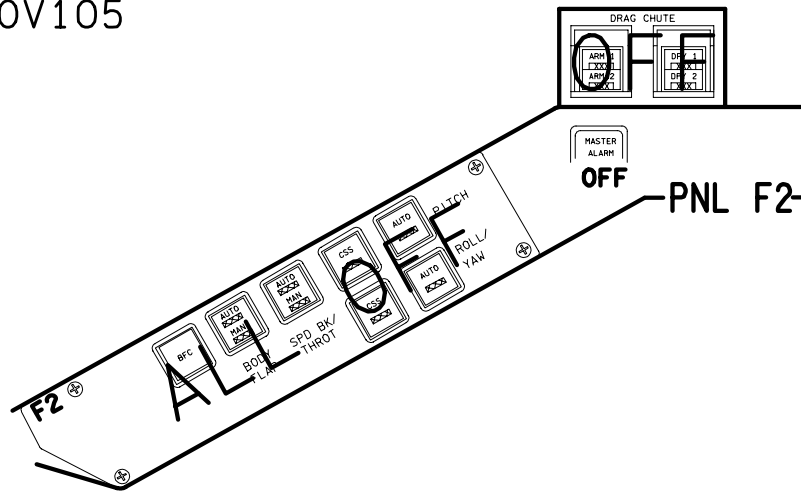




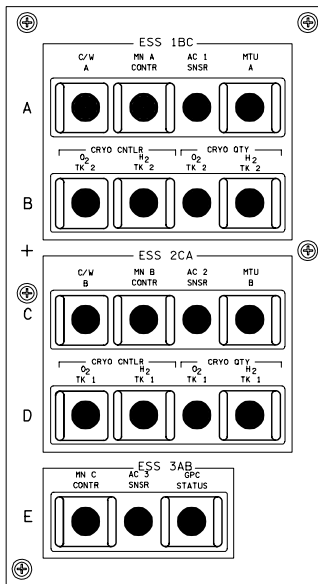


OV105

OV105

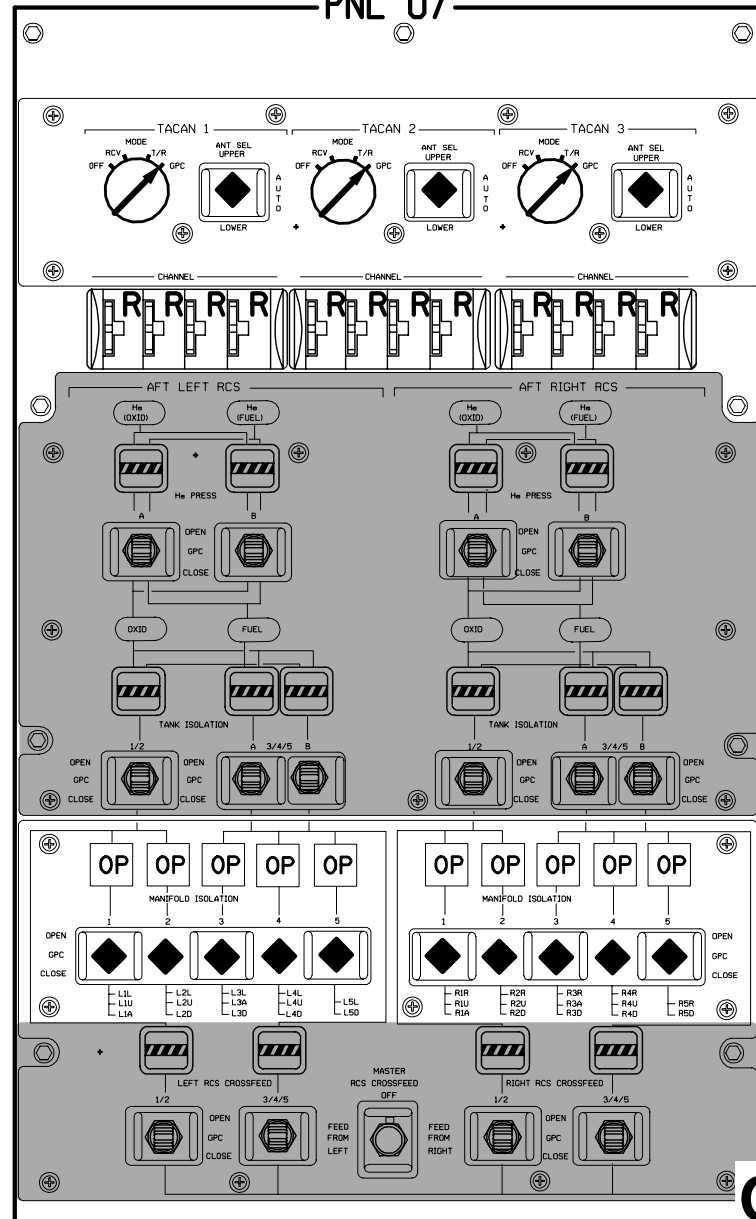


PNL 013

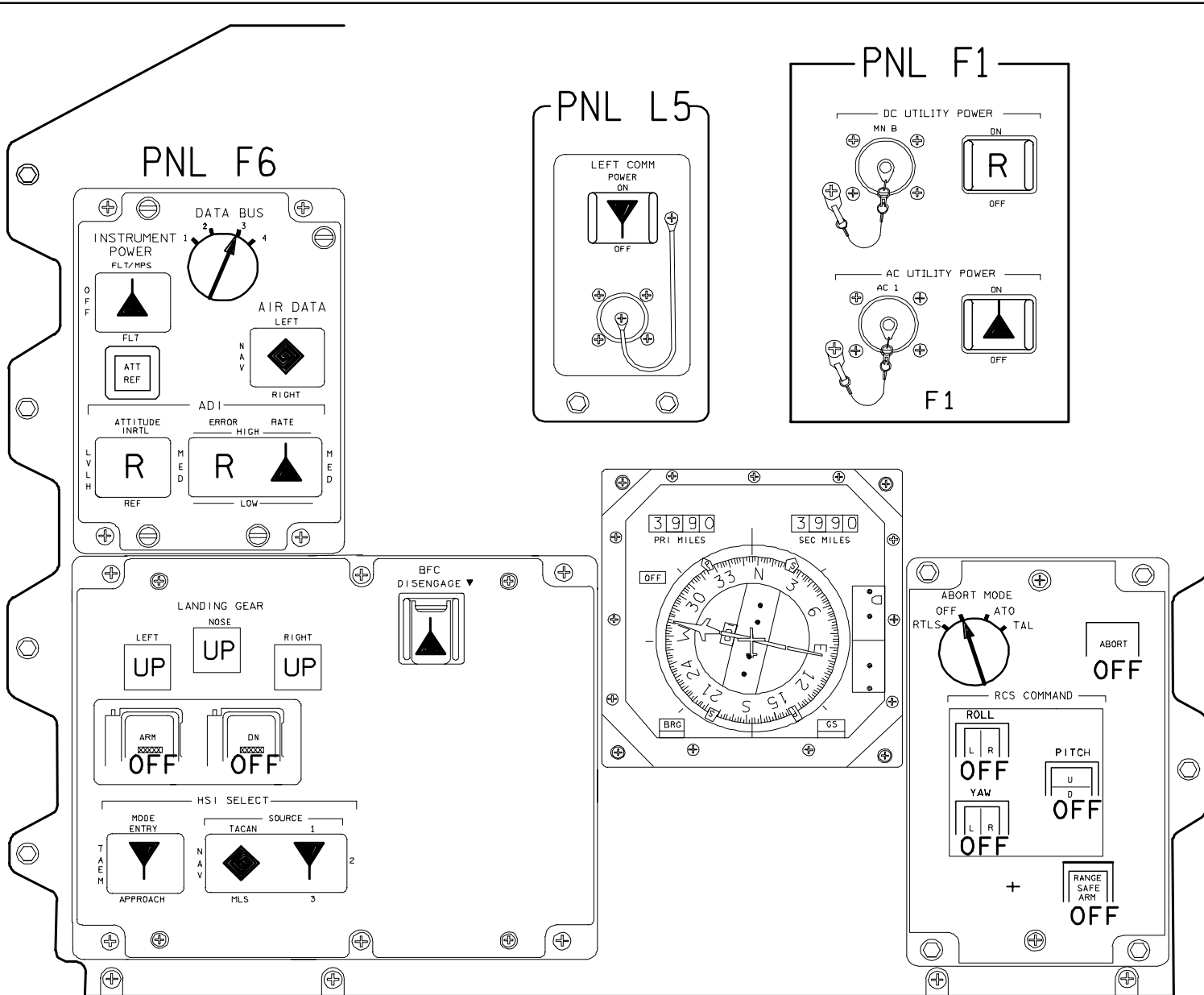


L side OVHD flood - R (MID)

PNL 07



OV105



48015D306_114. PNL 1

ALL VEH/DATE 12/10/02

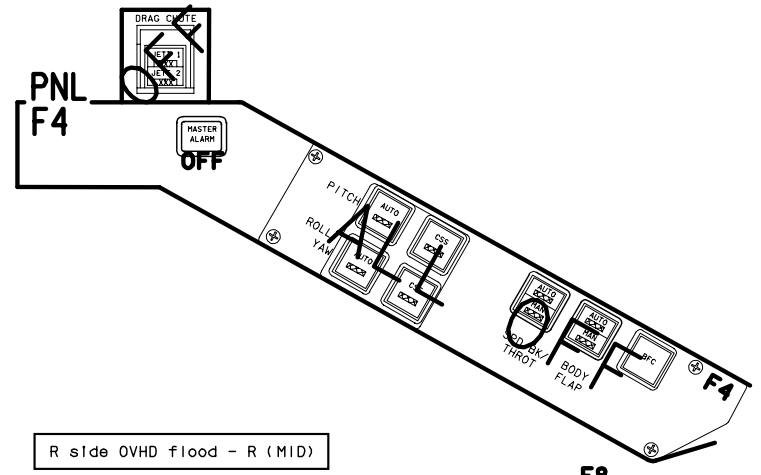
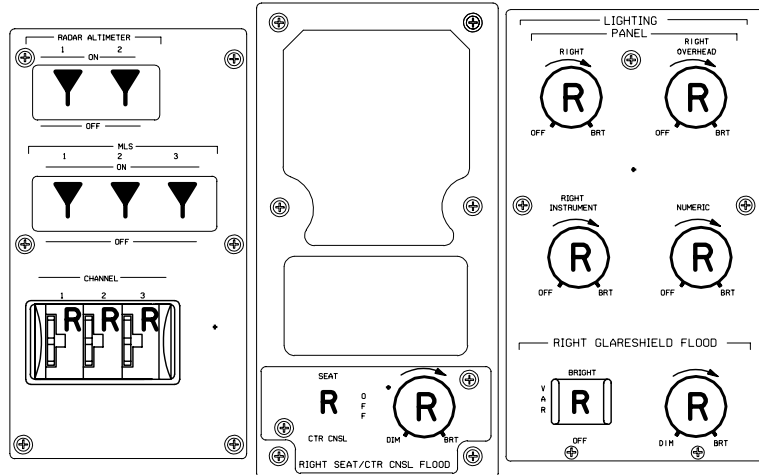
OV105

(OV105) C3-6

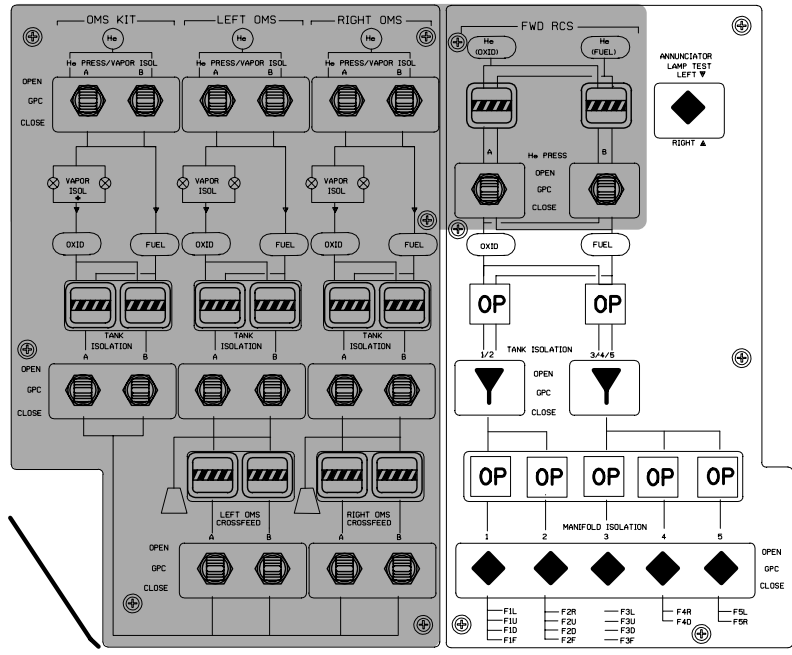
D/O/5/GEN O

OV105

PNL 08

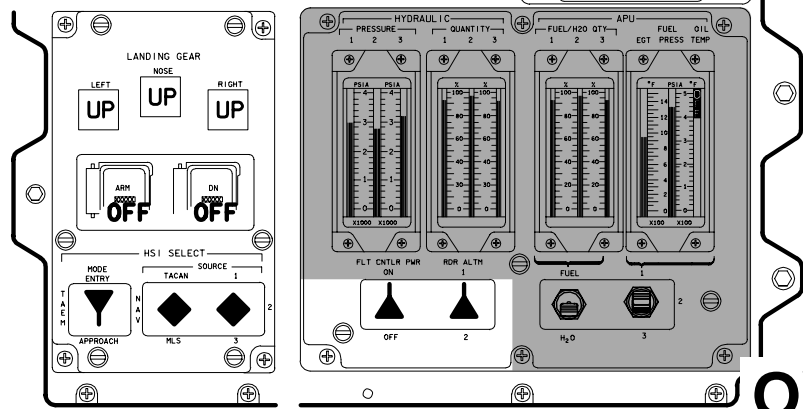
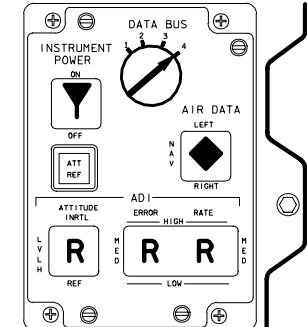


R side OVHD flood - R (MID)

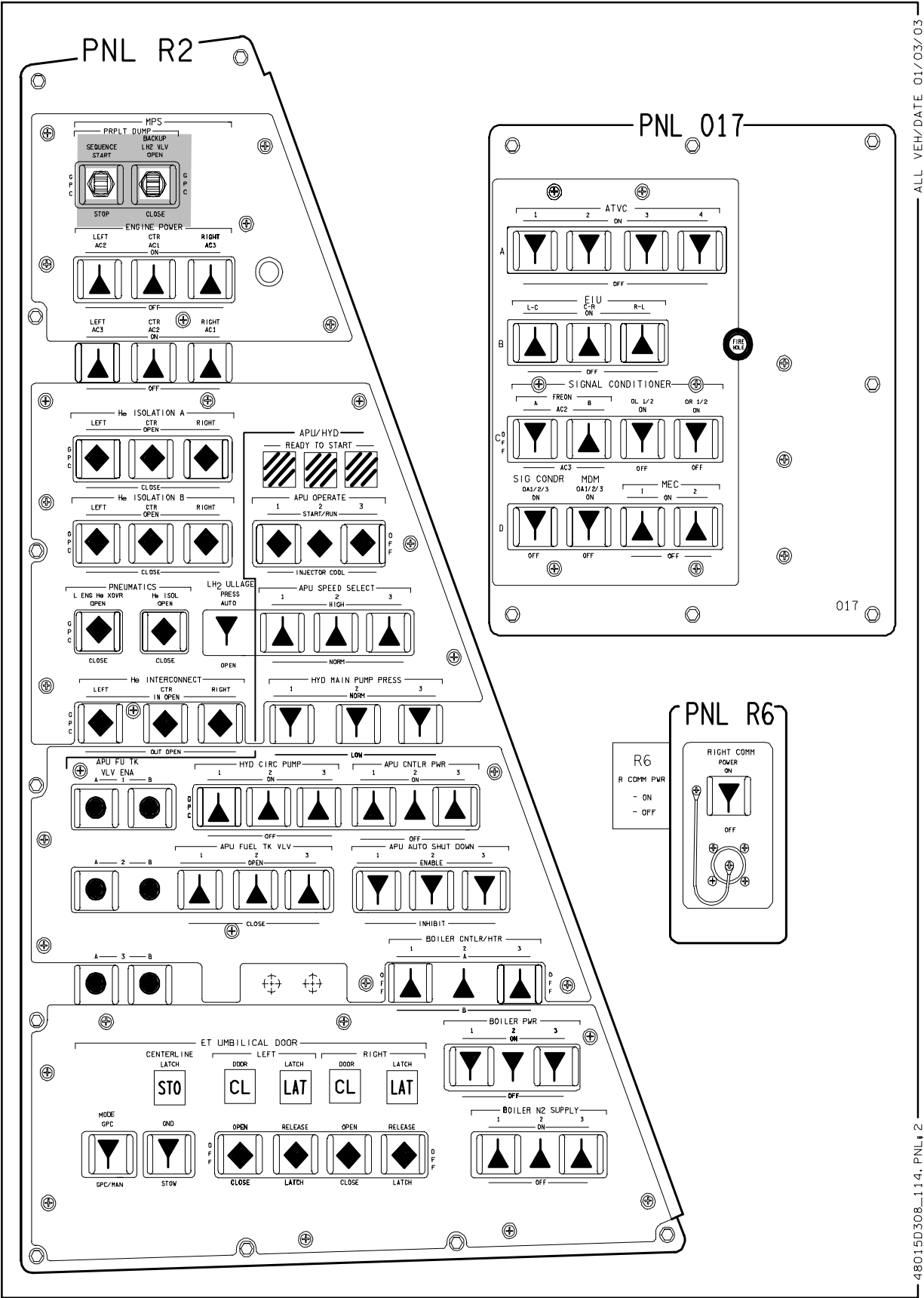


F8

PNL F8



OV105



ALL VEH/DATE 01/03/03

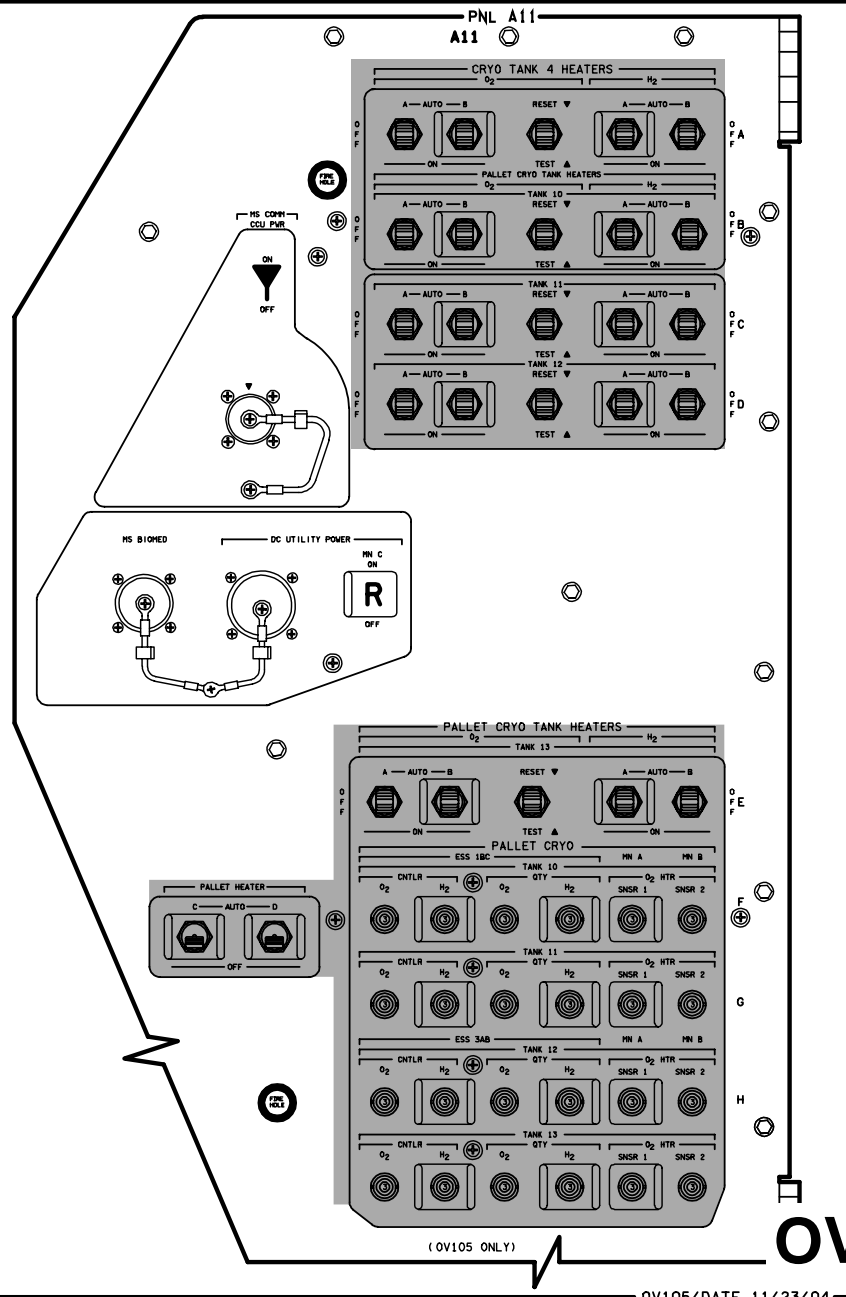
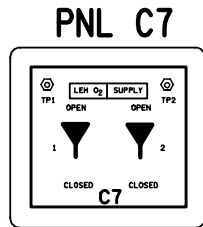
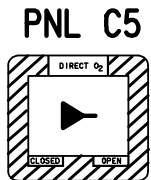
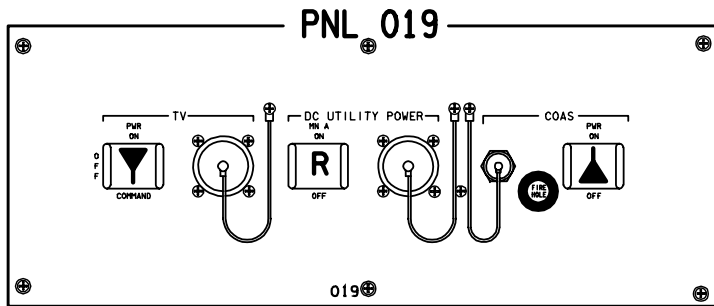
48015D308_114, PNL R 2

OV105

(OV105) C3-8

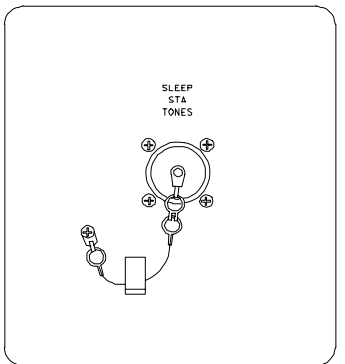
D/O/ALL/GEN O

OV105

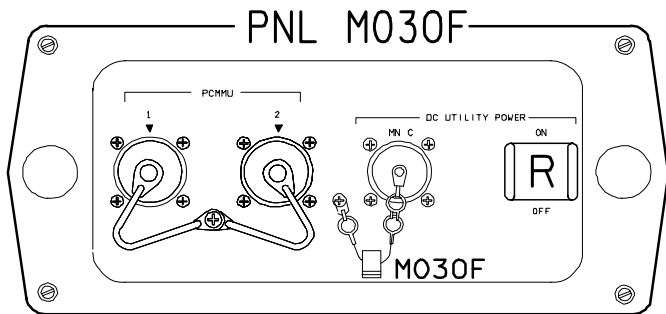
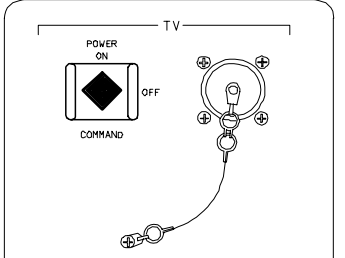


AIRLOCK HATCH

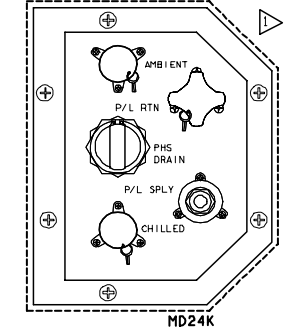
ACTUATOR HANDLE - LATCHED
 LOCK LEVER - LOCKED
 EQUALIZATION VLV (TWO) - NORM
 -CAPS INSTALLED



PNL M058F

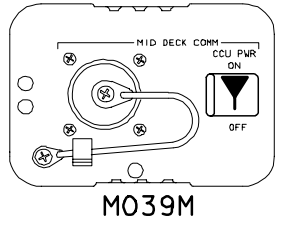


PNL MD24K

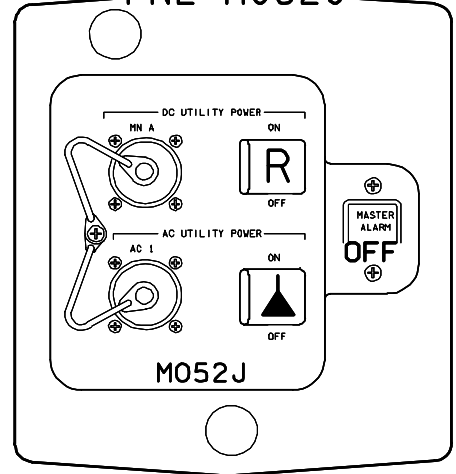


NOTE: NOT VISIBLE IF MAR FLOWN

PNL M039M



PNL M052J

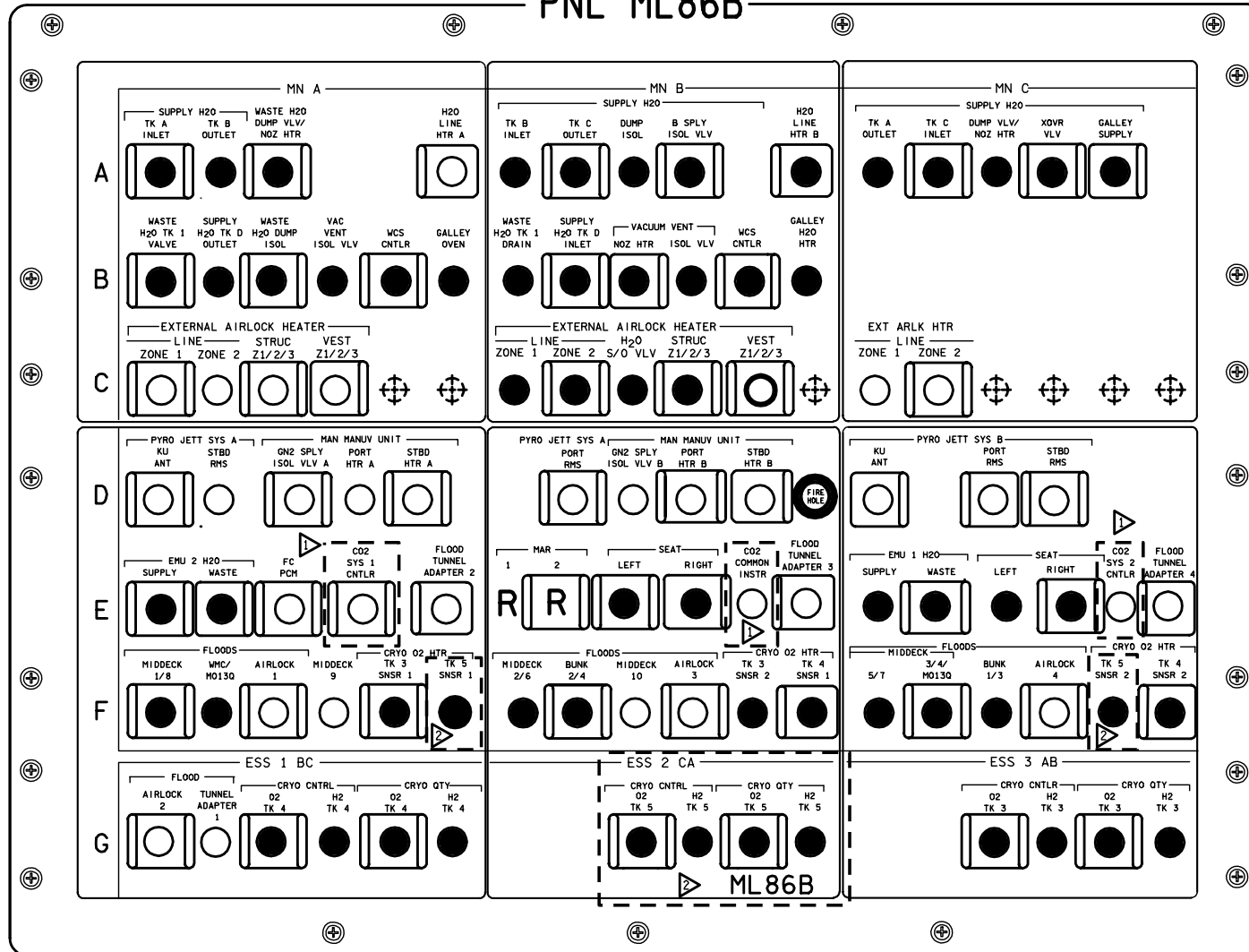


PNL MD44F

CAB TEMP CNTL ACT LINKAGE - SECONDARY ACTUATOR

OV105

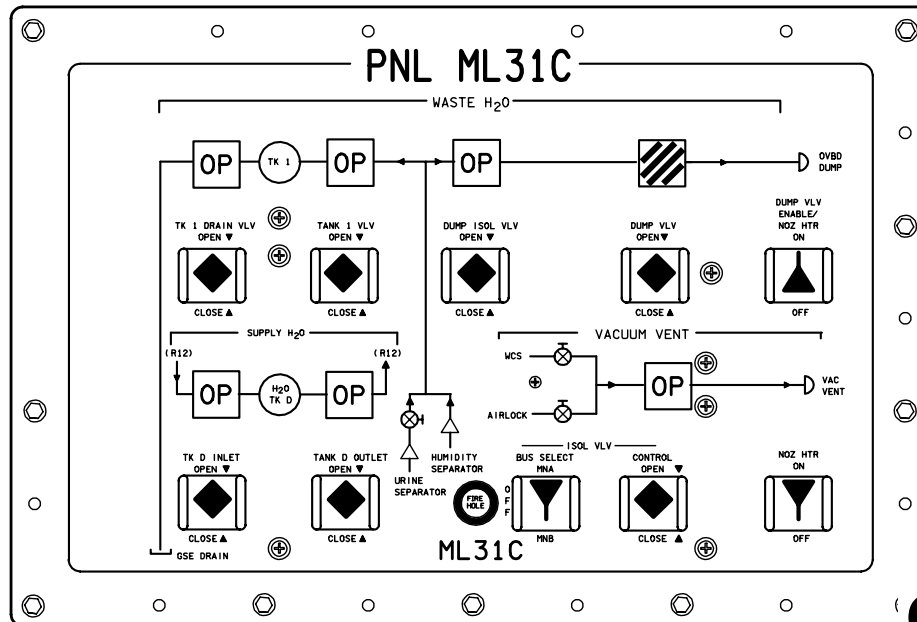
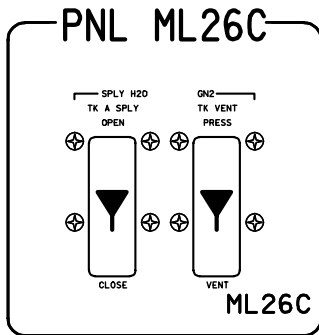
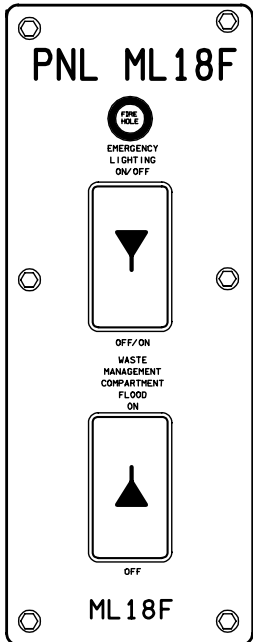
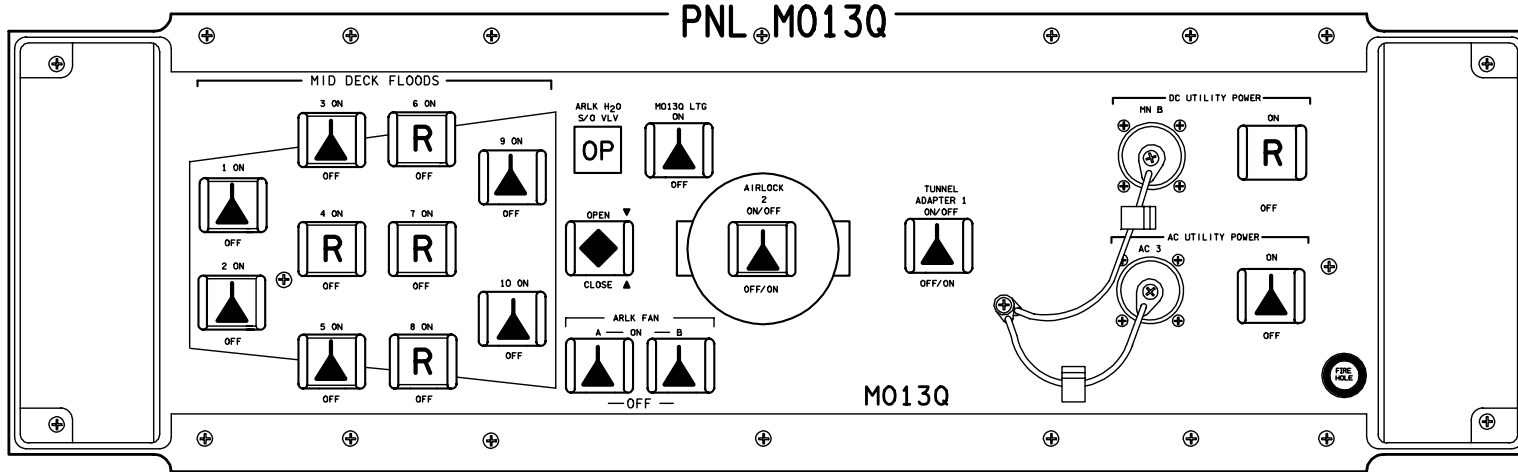
PNL ML86B



NOTES: ▷ CLOSED IF CO2 RMVL SYS FLOWN

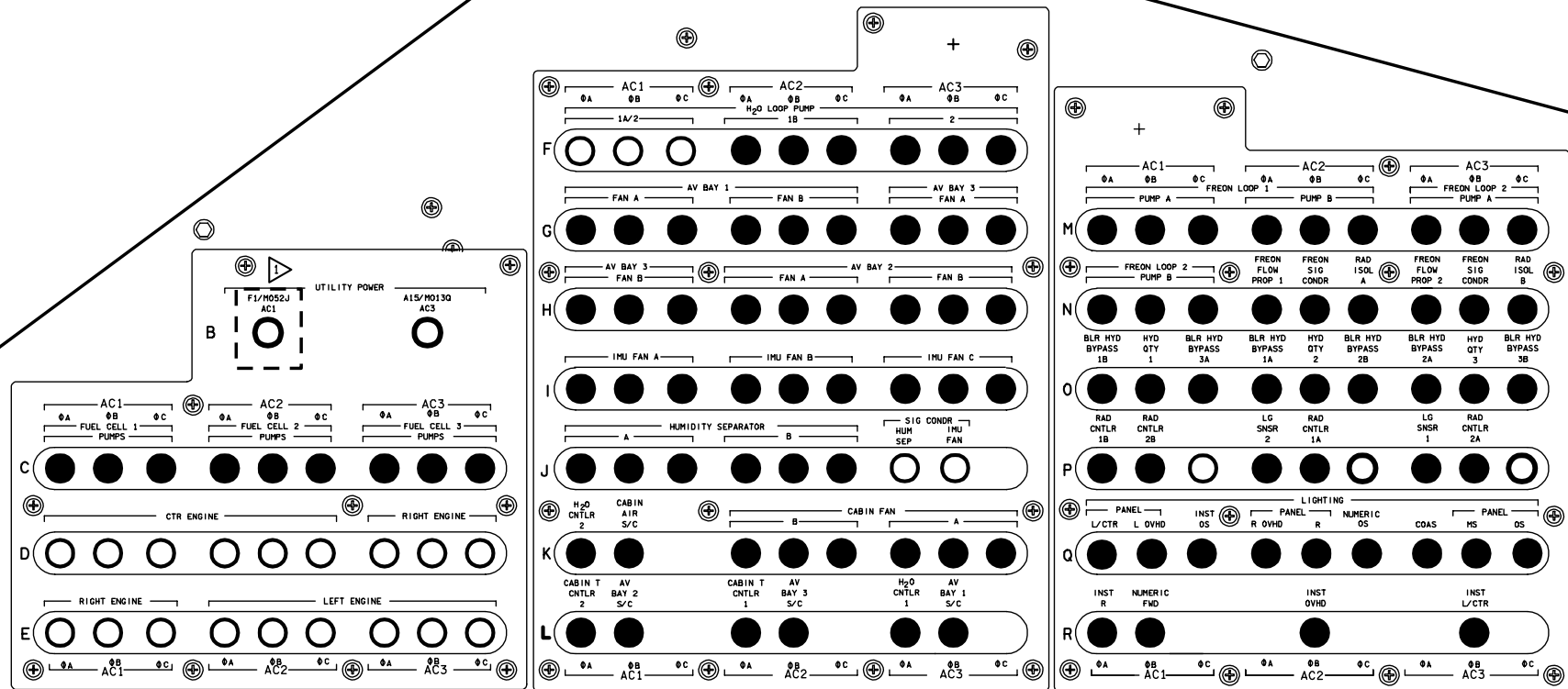
▷ OPEN IF TK 5 NOT FLOWN

OV105



OV105

PNL L4



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

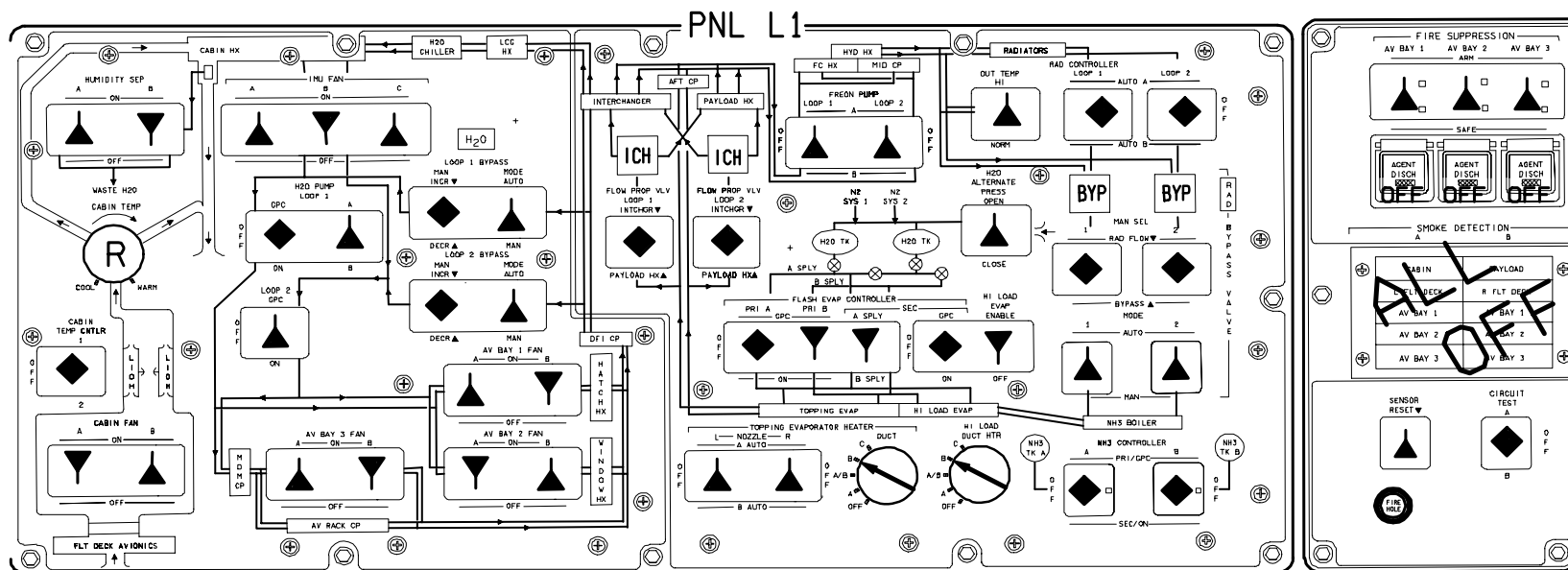
48015D313_114. PNL 3

(OV105) C3-13

OV105

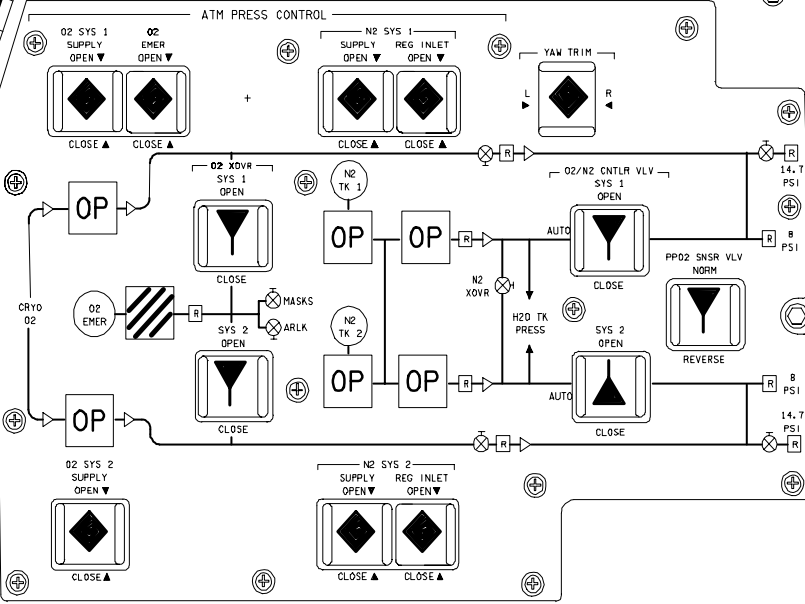
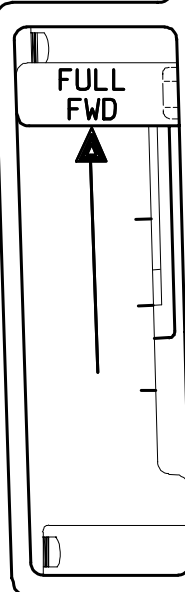
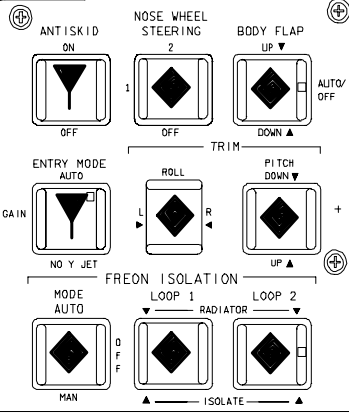
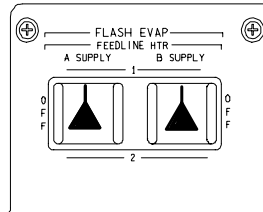
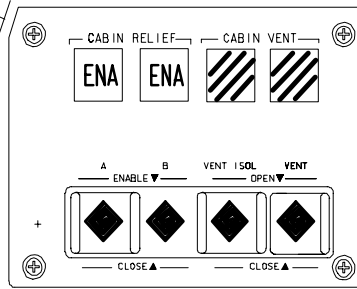
OV105/DATE 11/23/04

D/O/5/GEN O



OV105

PNL L2



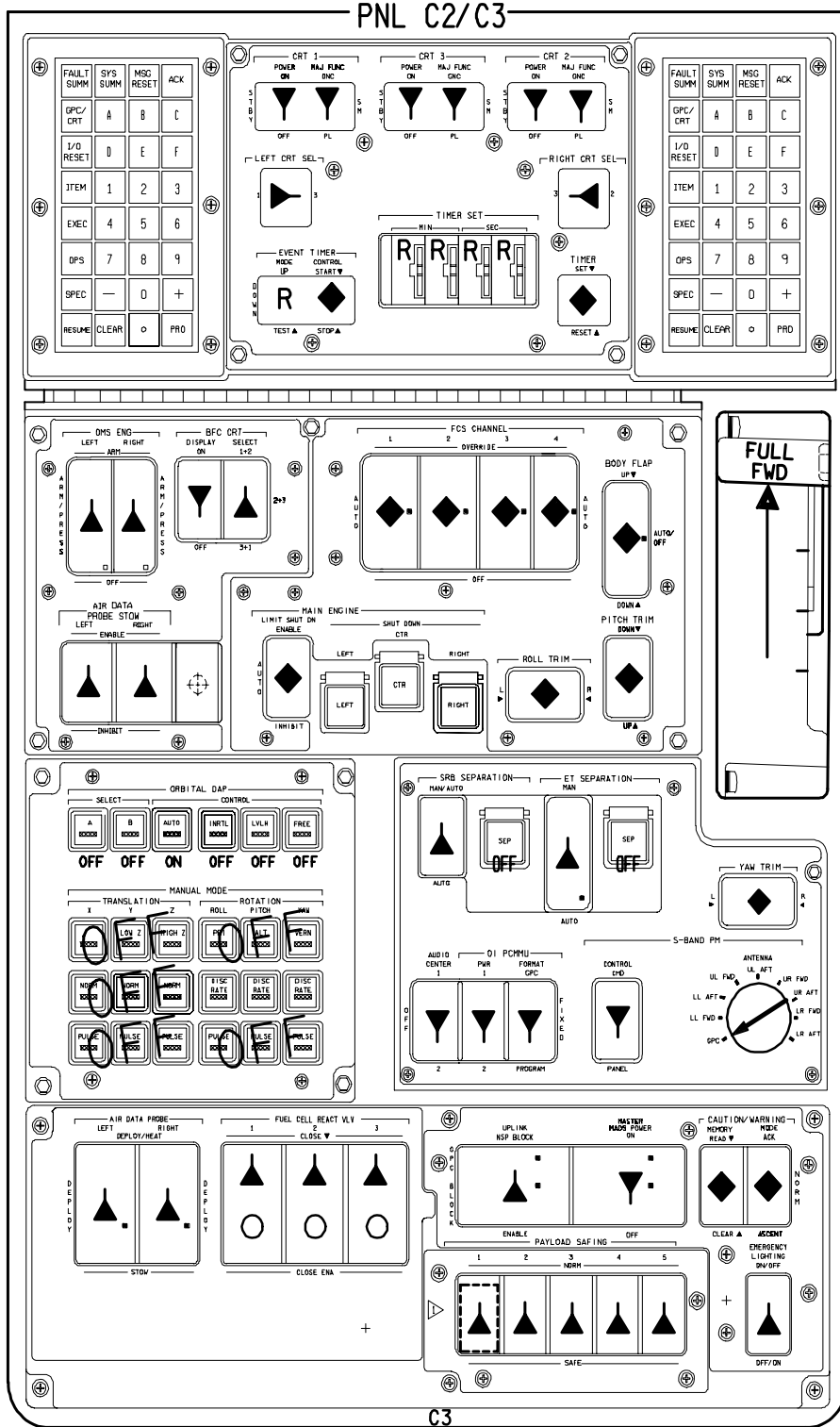
OV105/DATE 12/10/02

480150315_114_PNL_B 1

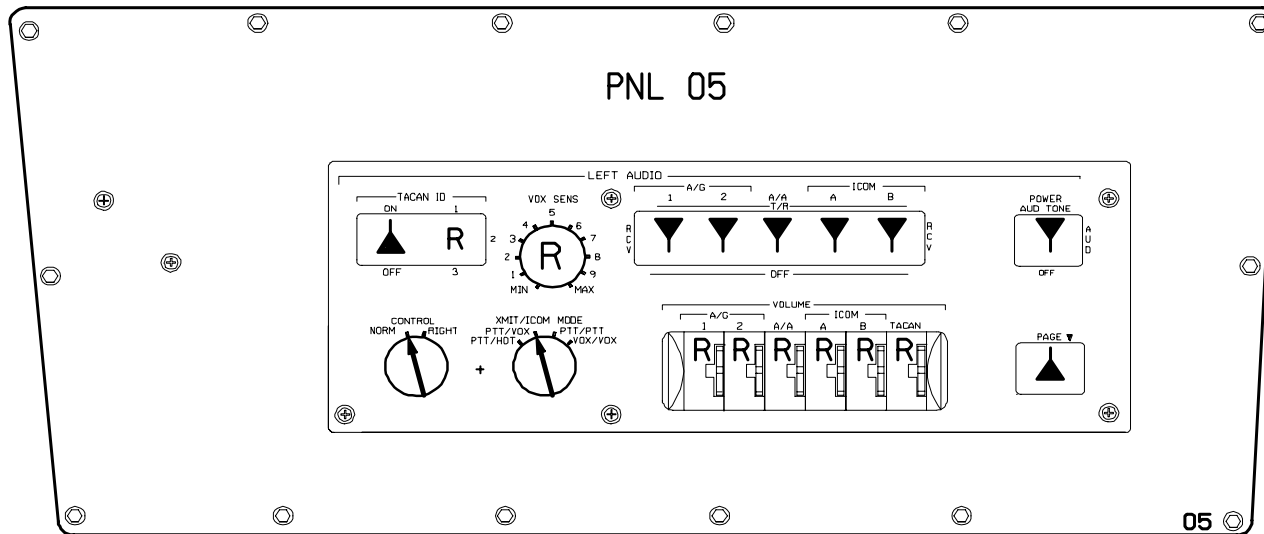
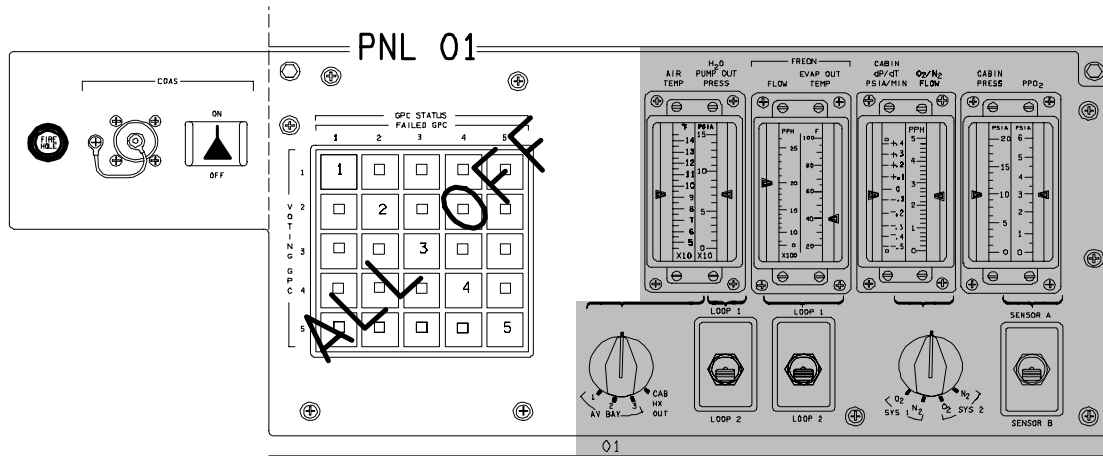
OV105

(OV105) C3-15

D/O/5/GEN O

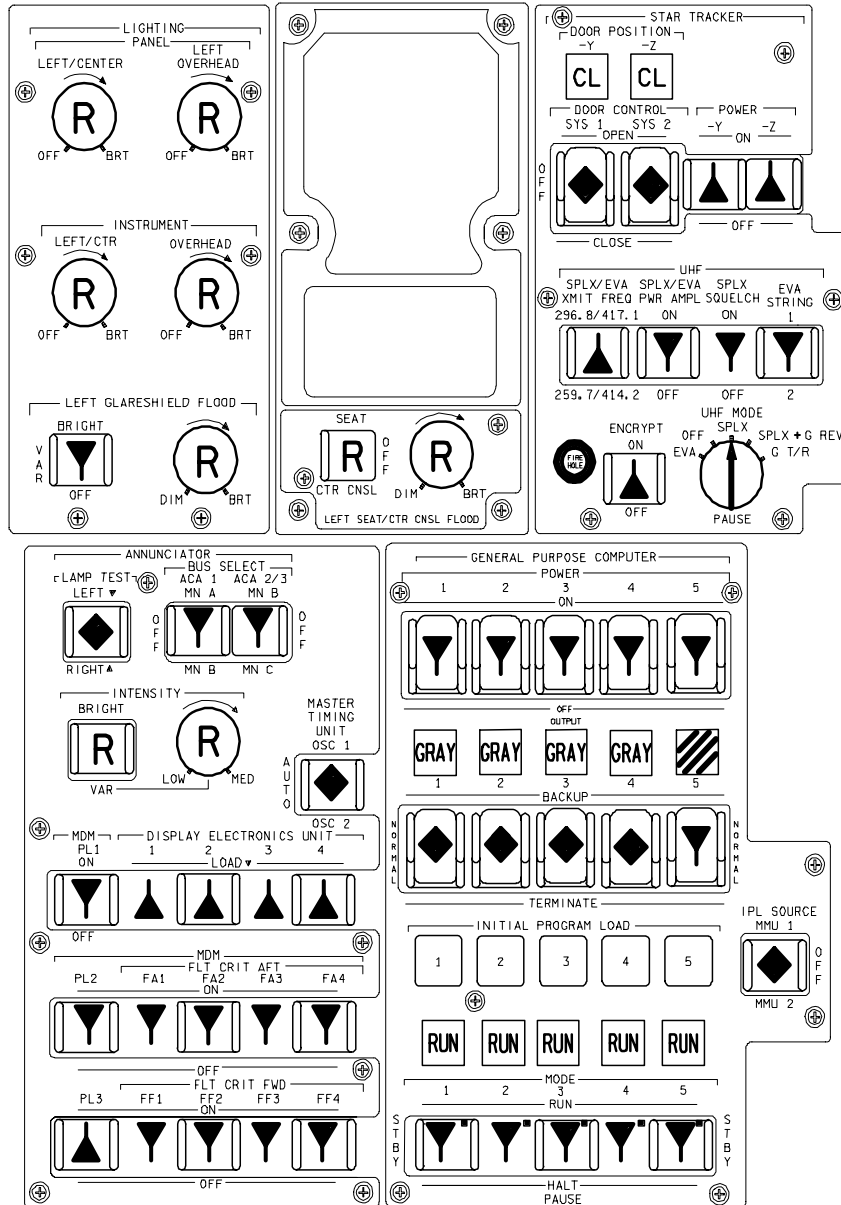


OV105



OV105

PNL 06



48015D318_114.PNL, 1

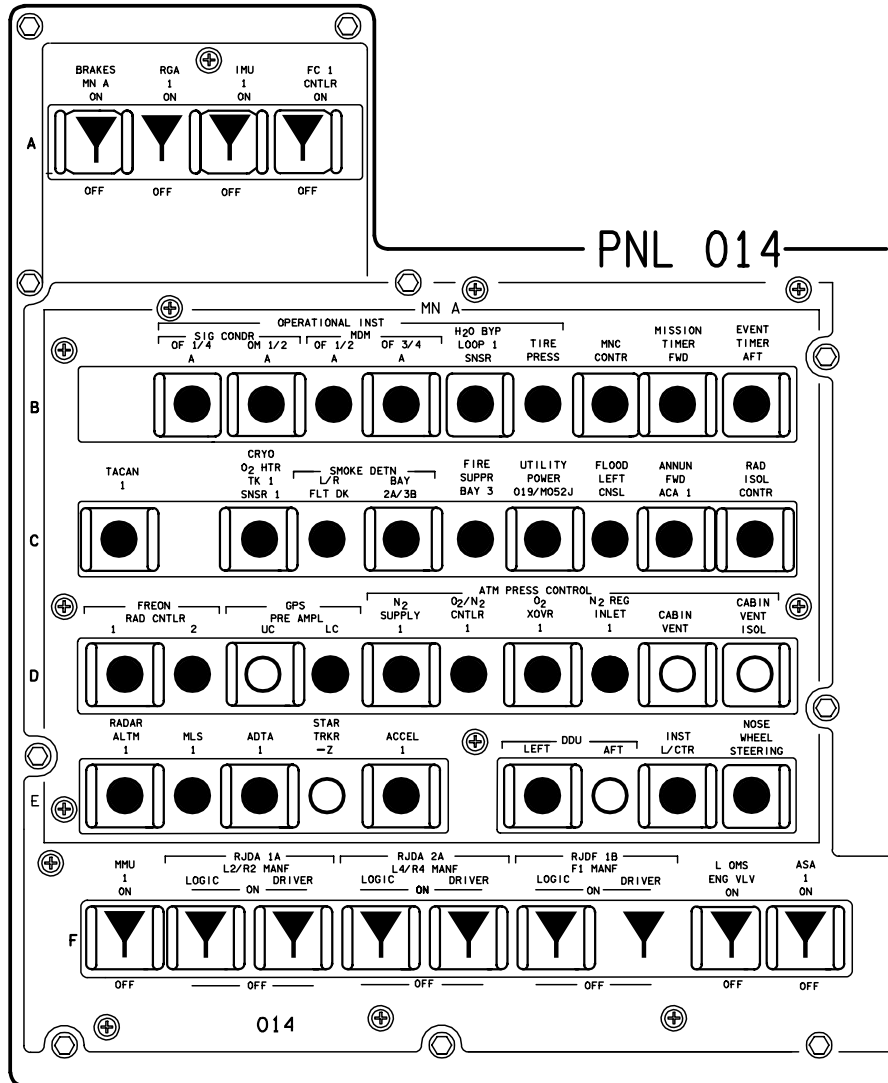
OV105

OV105/DATE 12/10/02

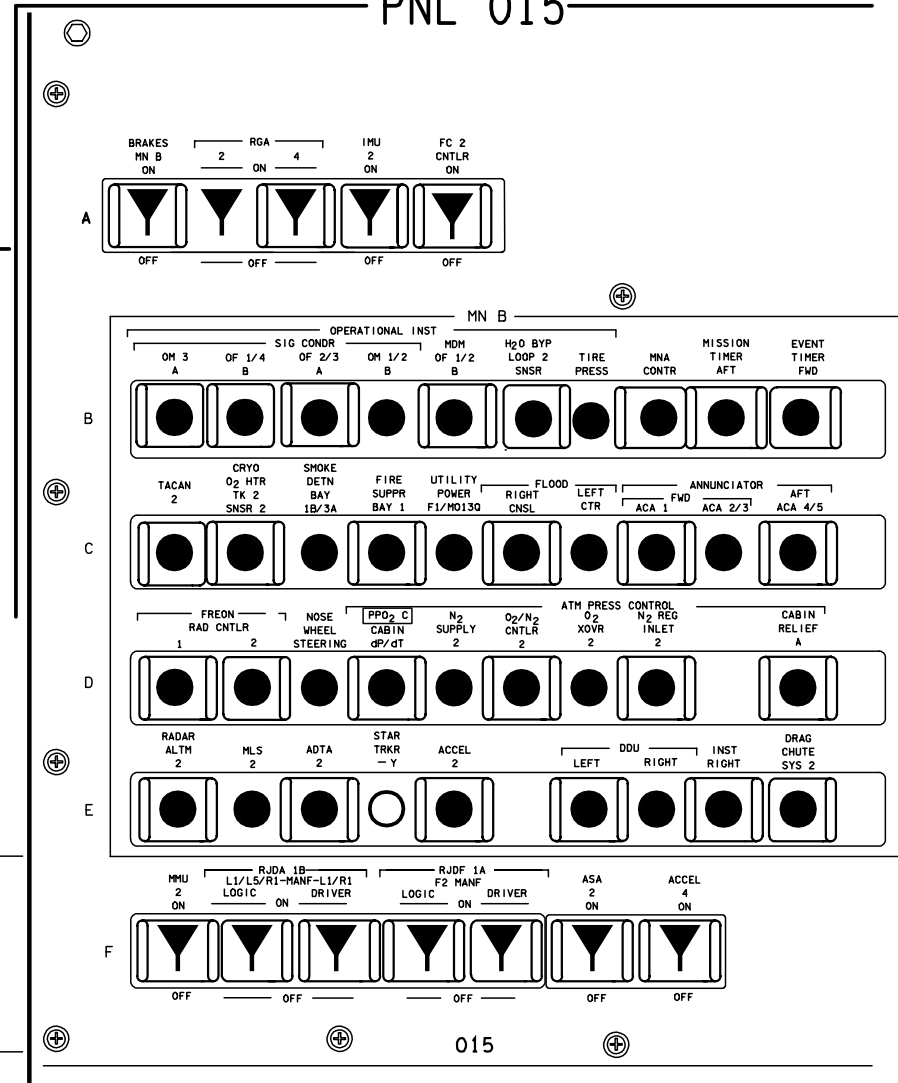
(OV105) C3-18

D/O/5/GEN O

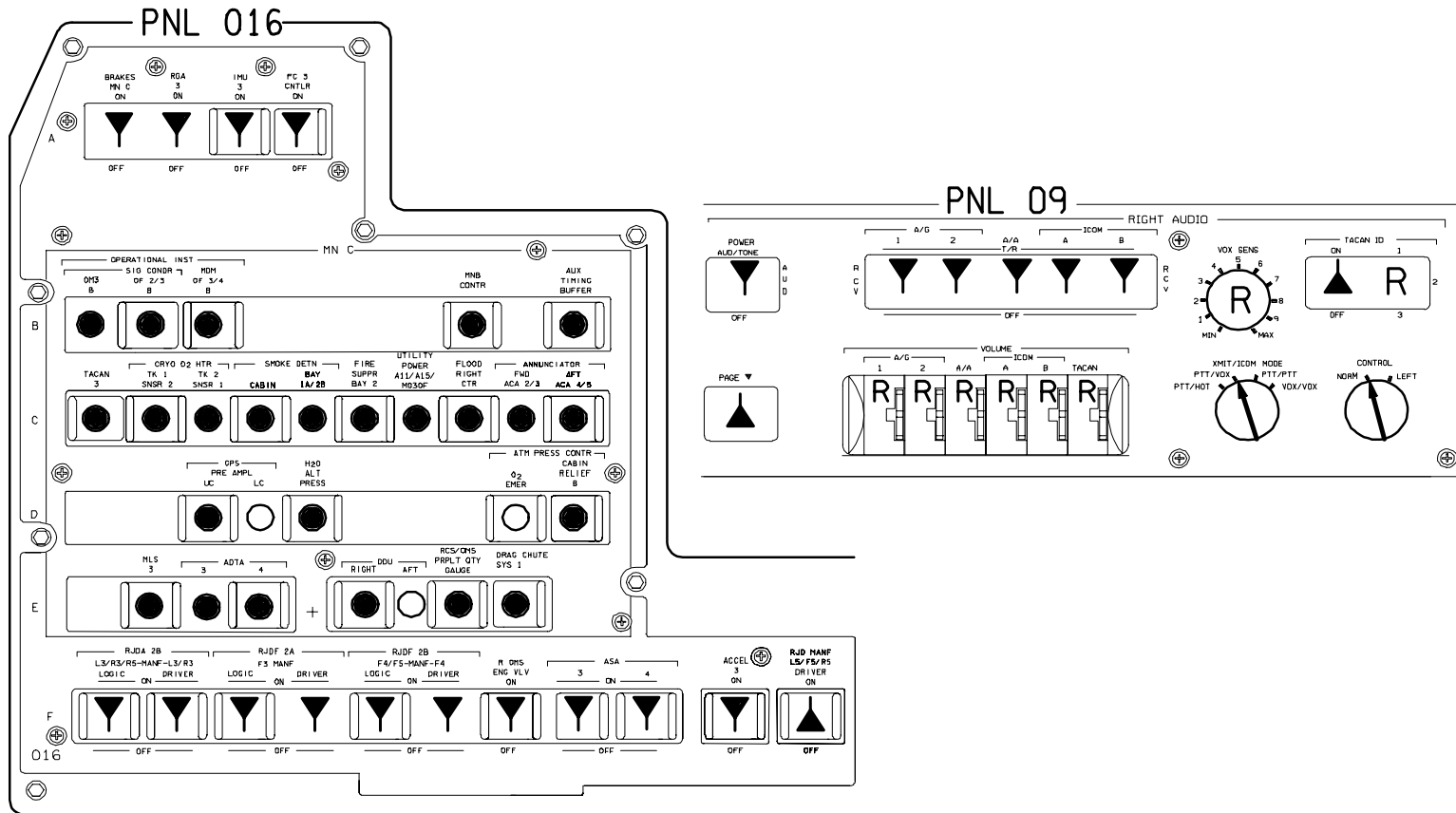
OV105



PNL 015



OV105



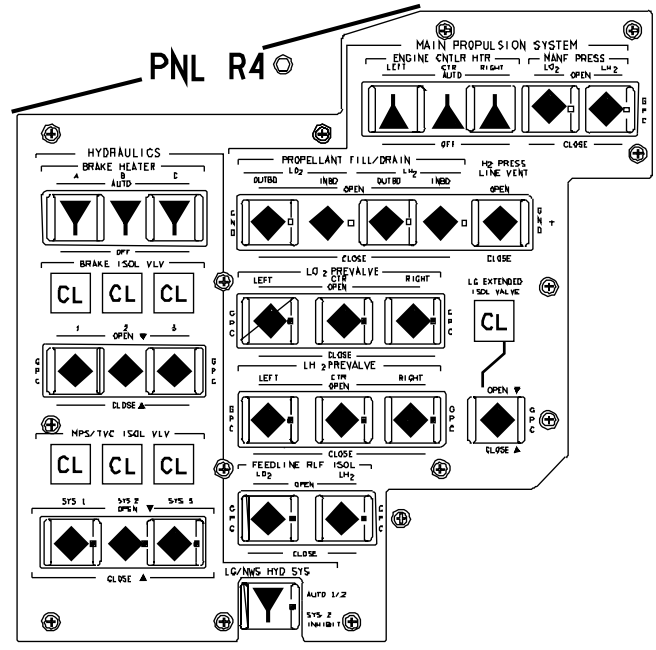
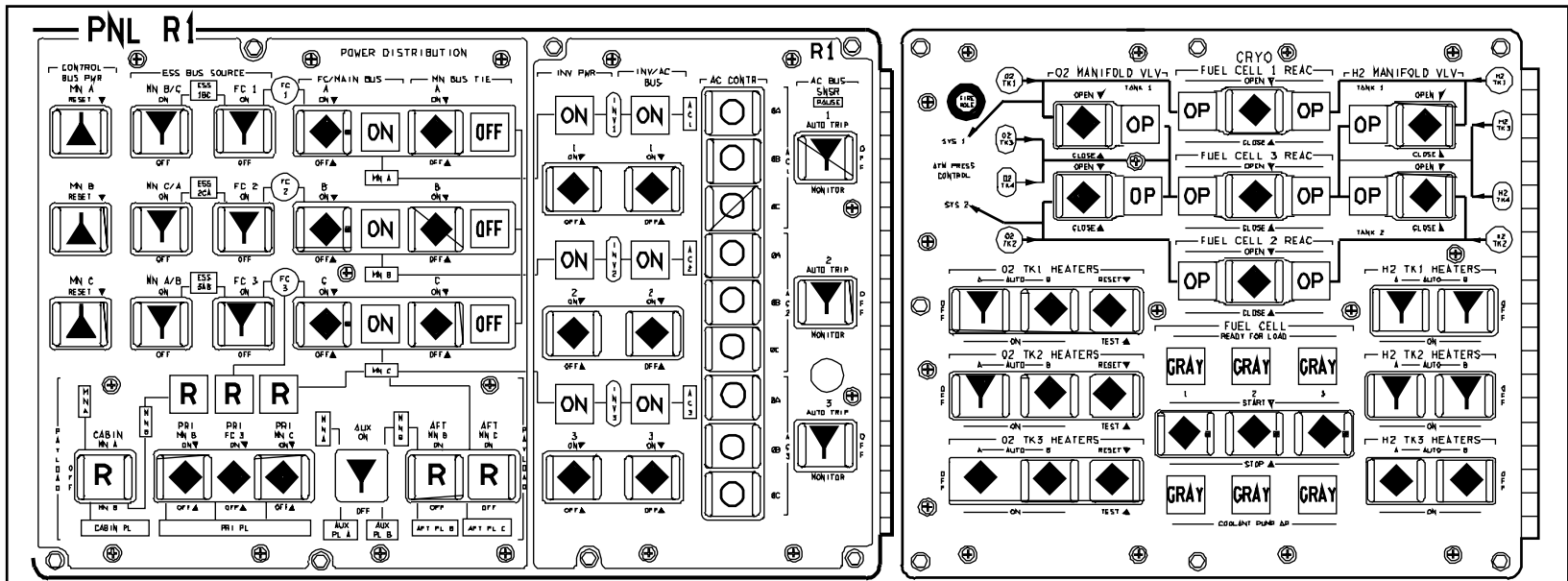
48015D320_114, PNL 1

OV105/DATE 12/10/02

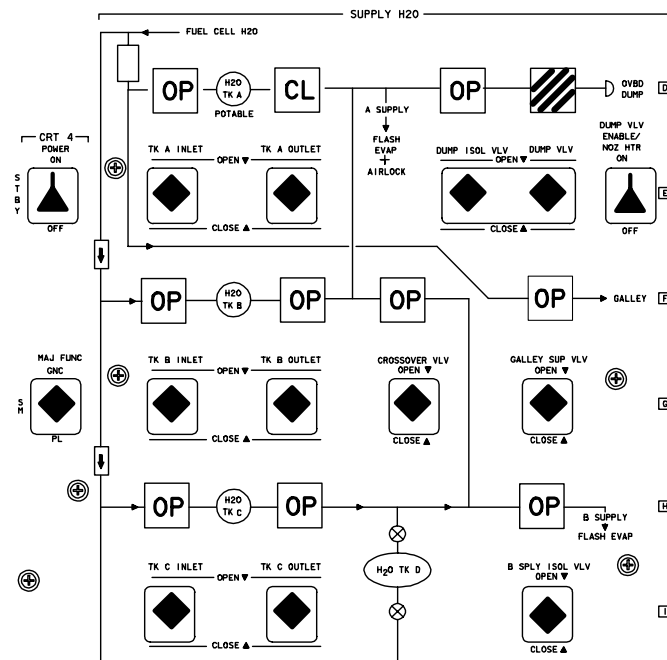
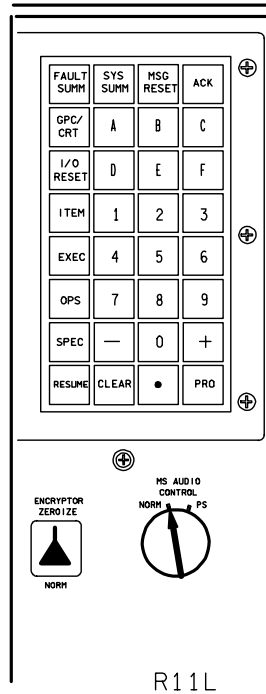
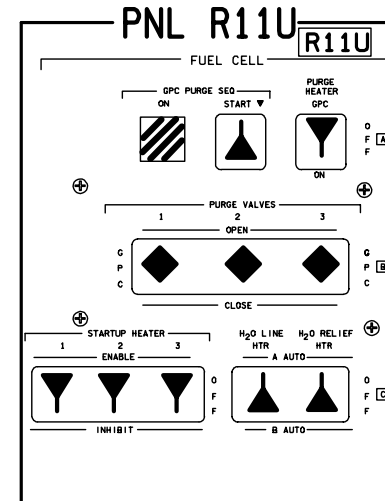
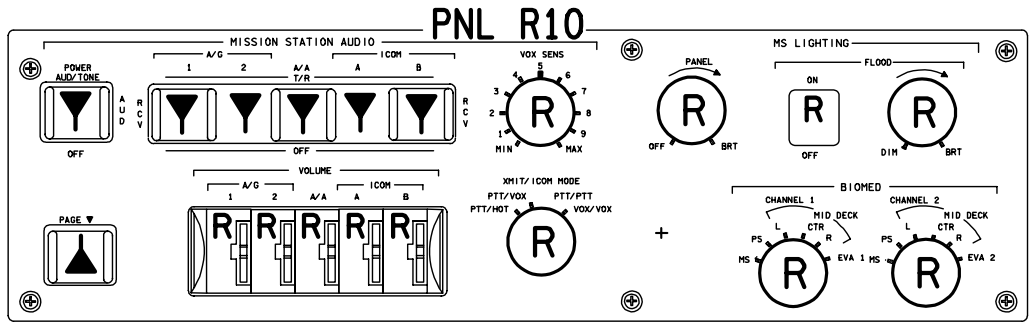
OV105

(OV105) C3-20

D/O/5/GEN O

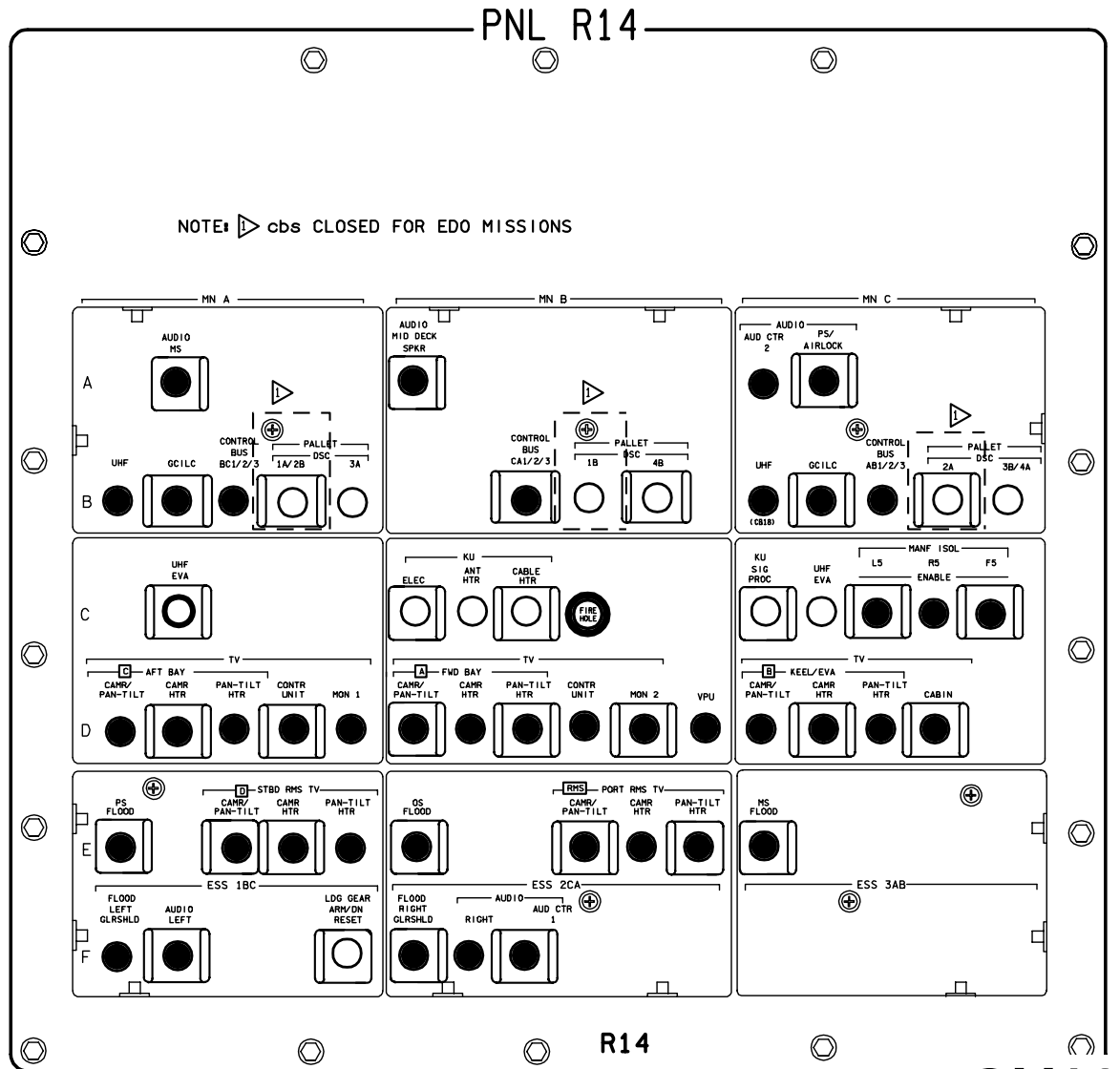
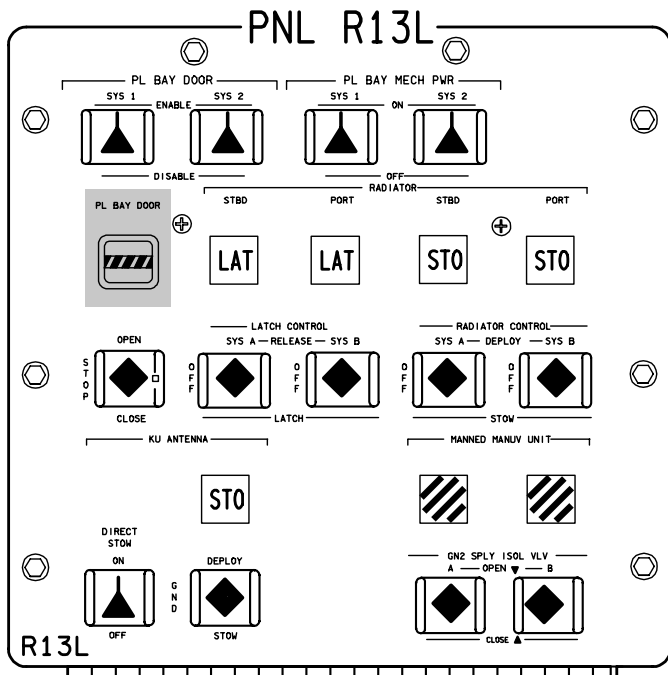


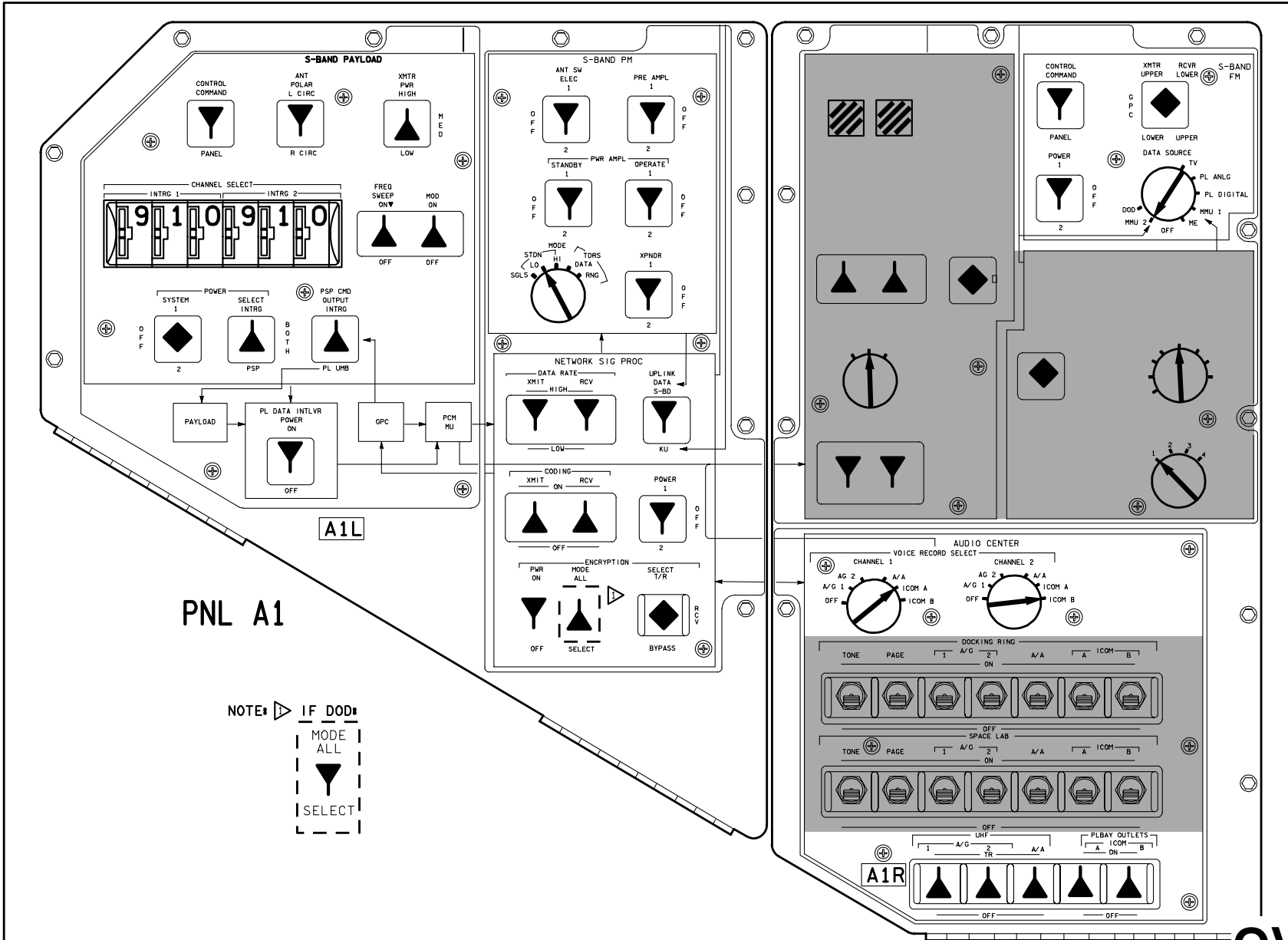
OV105



OV105

OV105





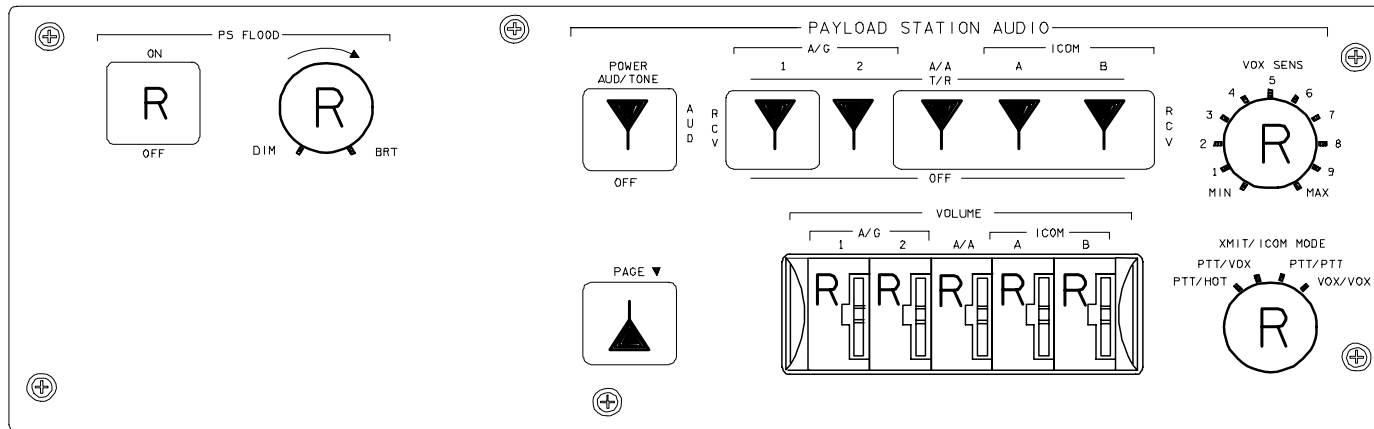
PNL A1

NOTE: IF DOD:
 MODE ALL
 SELECT

OV105

OV105

PNL L9

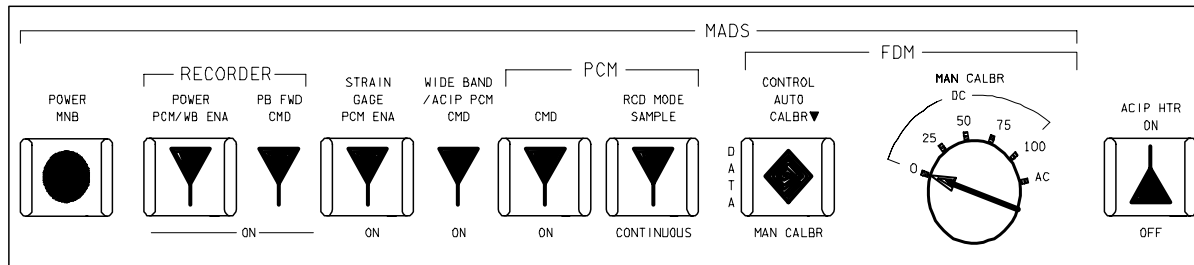
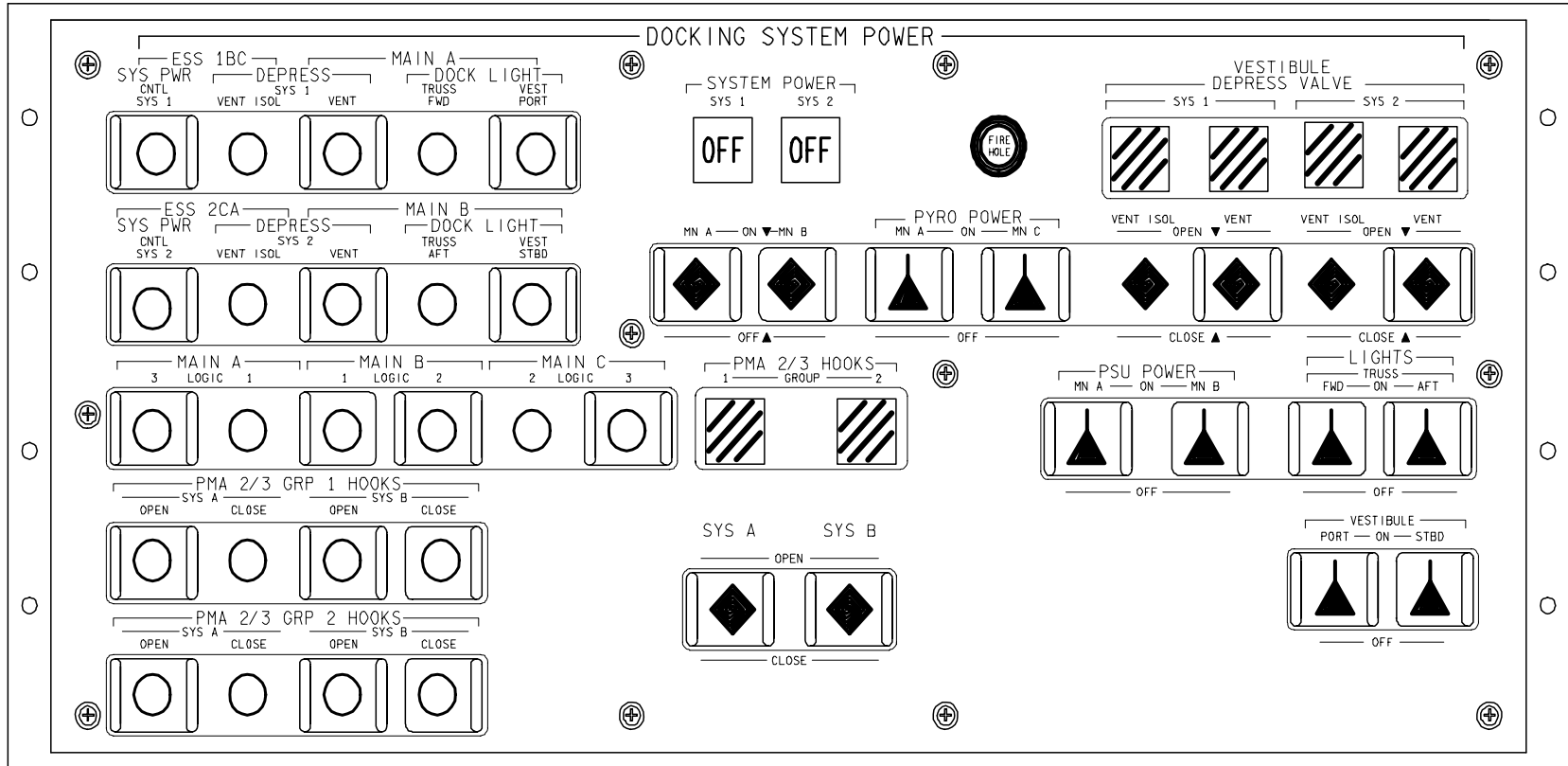


L9

OV105

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

A_p C_p

FIRE HOLE

PYRO CIRC PROT 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

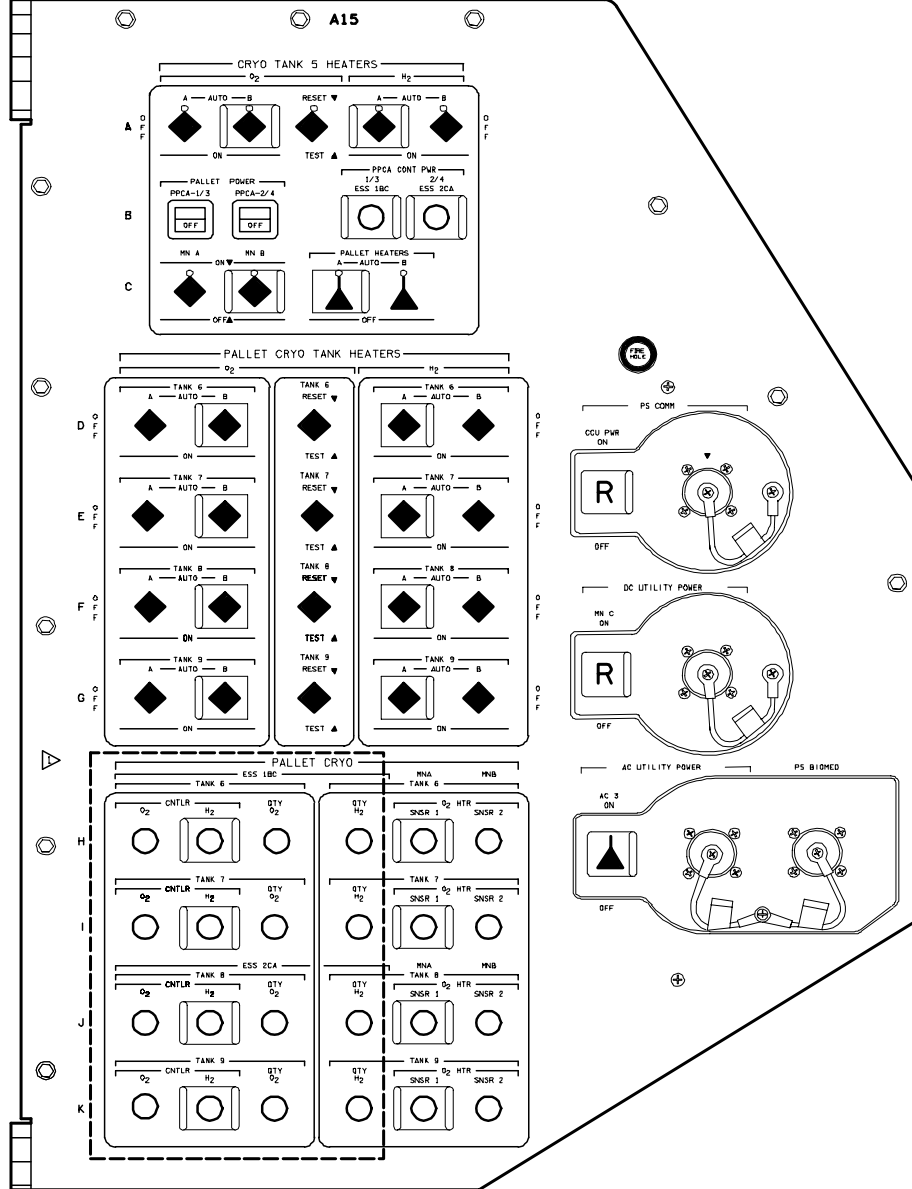
POWER ON POWER OFF RING OUT RING IN

APDS CIRC PROT OFF CLOSE HOOKS CLOSE LATCHES FIXER OFF

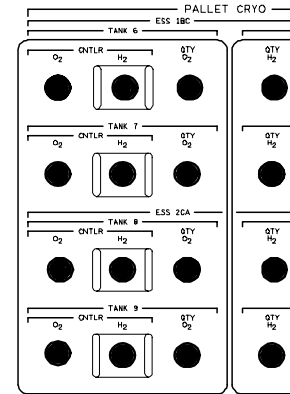
APDS CONTROL PANEL

OV105

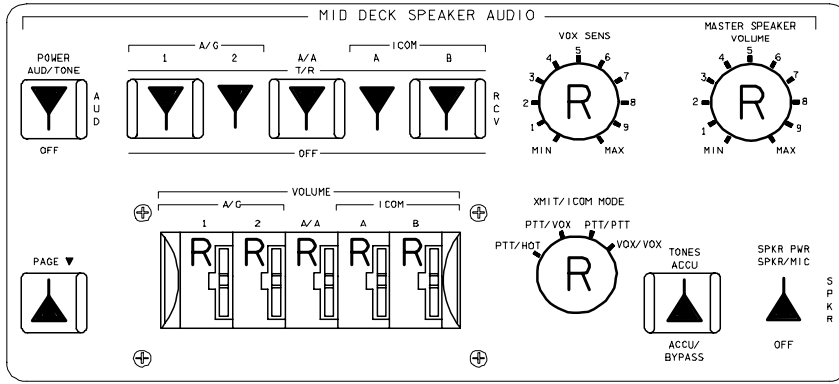
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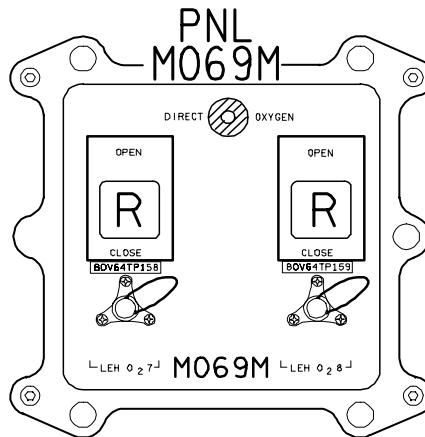
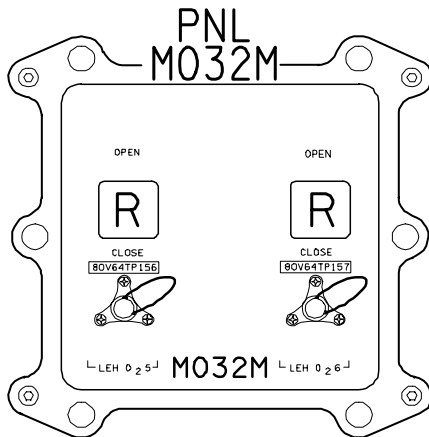
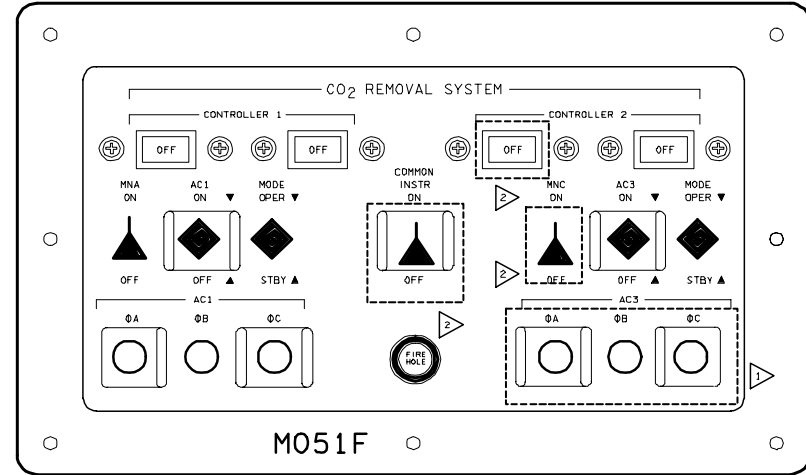
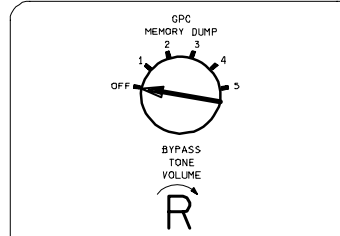
▷ cbs CLOSED FOR EDO MISSIONS



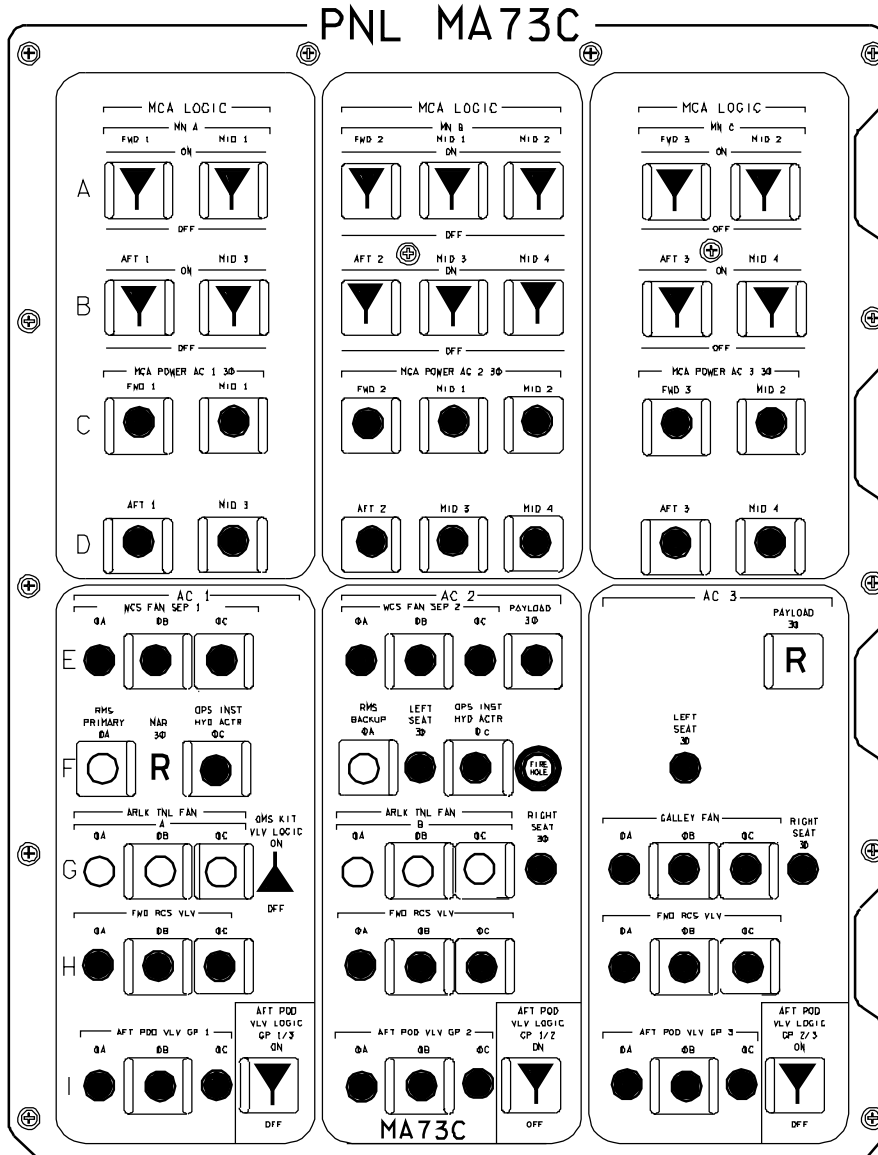
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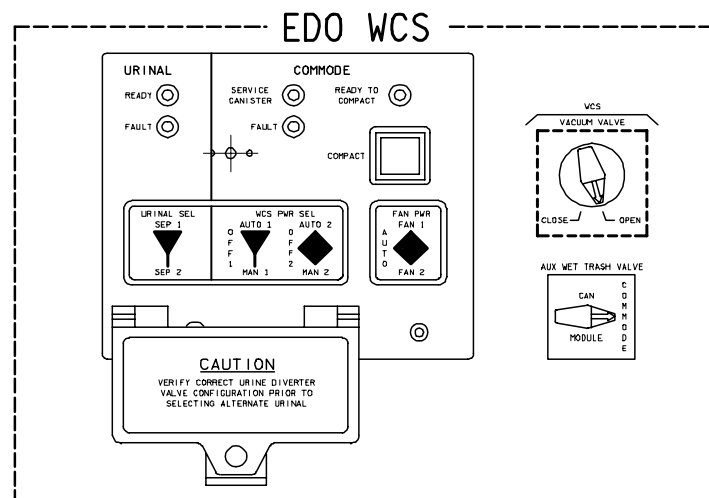
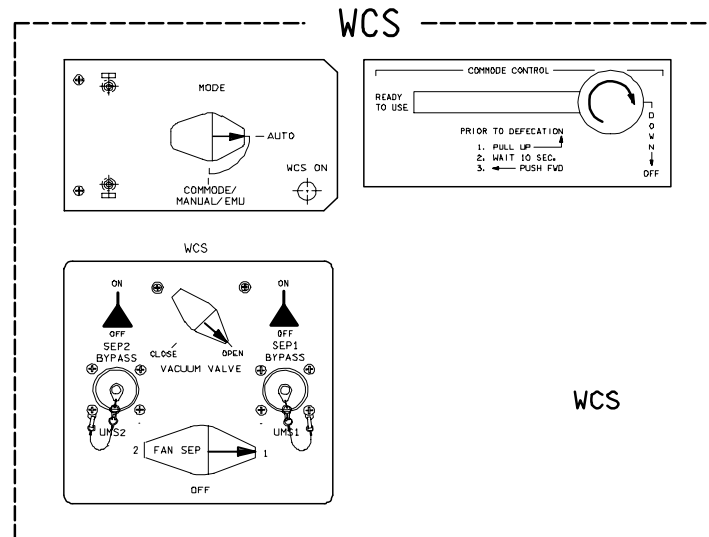
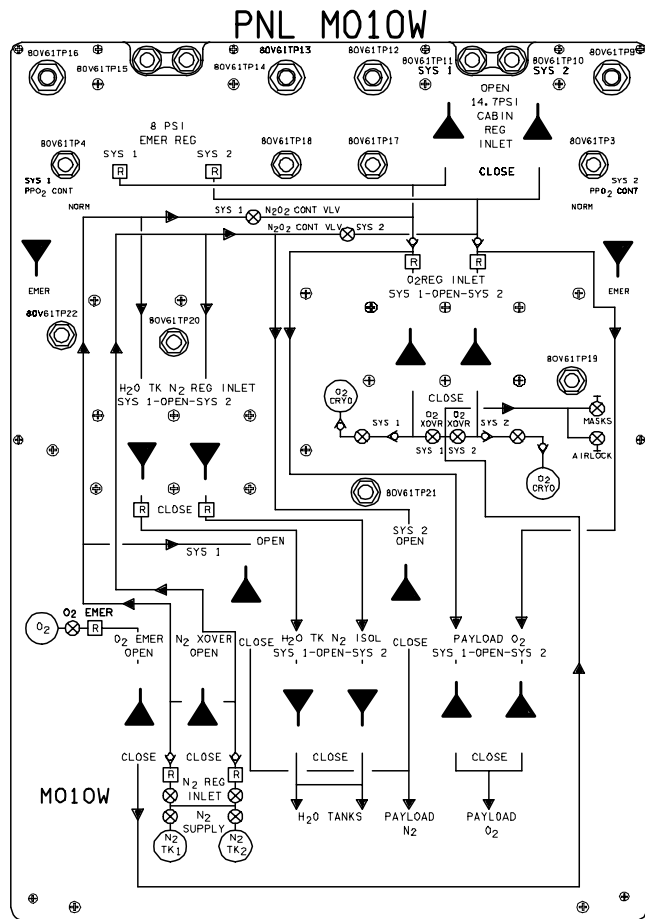


PNL M042F



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 SOURCE TACAN, MLS, NAV (slaved to CDRs) RDR ALTM
F3		R TRIM RHC/PNL
R2		HYD CIRC PUMP (three) (GPC pos only)
<u>AFT</u>	<u>MS</u>	R12U FC PURGE VLV (three) (GPC pos only)* HTR (GPC pos only)* GPC PURGE SEQ

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

CONTINGENCY DELTAS TO NOMINAL DEORBIT PREP

NOTE

Perform NOMINAL DEORBIT PREP procedure with
CONTINGENCY DELTAS for specific case

LOSS OF 2 CAB FANS 5-3

LOSS OF AV BAY AIR COOLING 5-4

8 PSI DEORBIT PREP 5-6

AV BAY FIRE 5-8

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LOSS OF 2 CAB FANS

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

1. Minimize use of IDPs,MDUs,FLT CNTLR PWR,DDUs to reduce cabin heat load and to save for use during entry
2. Minimize lighting
3. Wipe off any visible moisture with towels
4. Use IDP/CRT 4 when possible. Use one IDP/CRT with two MDUs as reqd. Use two IDP/CRTs with two MDUs for DPS ENTRY CONFIG. Save two forward IDP/CRTs with four MDUs that interface with those IDPs for entry
5. In DED DISP ENT CONFIG, do not power DDUs unless reqd. Minimize use
6. In DPS ENTRY CONFIG, skip SM CKPT except UL CNTL ENA – ITEM 36 EXEC. Skip MC9 RECONFIG
7. In CLOTHING CONFIG, prepare LESs for donning. Don QDM if cabin temp > 90 degF and discomfort occurs. If cabin temp > 95 degF and no evaporative cooling, don LES, activate O2, and close visor. Inflate Anti-G Suit as needed for circulatory support
8. ENTRY SWITCH LIST/VER will not reflect pwrdn 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

Assumes MAL, DPS, GPC FRP-7 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. In DED DISP ENT CONFIG, delay activation of affected TACANs,MLSs,AAAs,ADTAs (EQUIP COOLING MATRIX, ORB PKT, ECLS); deactivate if already activated

4. During DPS ENTRY CONFIG

a. If loss of AV BAY 3, do not activate GPC 3

b. In all cases, substitute appropriate NBAT in following activities:

TRANSITION GPC 1 & 2 TO GNC 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	2	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 GNC 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

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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 pwrnd items

7. Incorporate following pen and inks to ENT

MNVR Cue Cards:

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

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:

- Modify MC3 per table →
- MODE affected GPCs to RUN
- BFC CRT DISP – OFF
 OPS 301 PRO
 BFC CRT DISP – ON
 BFS GNC I/O RESET
- 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

Assumes LOSS OF CABIN PRESS (ORB PKT, PWRDN) accomplished

- If TIG < 4 hr: Begin NOMINAL DEORBIT PREP timeline at TIG-4 hr immediately and perform procedures as rapidly as possible with all following CONTINGENCY DELTAS except step 7
- If TIG > 4 hr: Perform steps 1, 2, 3, and 4;
At TIG-4 hr, perform NOMINAL DEORBIT PREP with all remaining CONTINGENCY DELTAS

1. Back out of PRIORITY PWRDN, as reqd (ORB PKT, PRIOR PWRDN)
2. If previous FC PURGE was not accomplished within last 6 hr: Accomplish FC PURGE (ORB OPS, EPS) anytime prior to DPS ENTRY CONFIG
3. MS accomplish CABIN CONFIG/STOW (FLIGHT PLAN) as time permits
4. Perform IMU ALIGN-S TRK (ORB OPS, GNC)
√MCC for align attitudes or use STAR PAIRS PAD (ORB OPS FS, PTG)
5. Leave shades in until SEAT INGRESS
6. Minimize IDP/MDU use until TIG-20
7. Delay blocks 4a and 4b until immediately prior to DPS ENTRY CONFIG block 12. In block 4a activate GPC 1 stringing 1212
8. Replace RAD BYPASS/FES C/O with following:
 - √DAP: A/AUTO/ALT (PRI)
 - ML86B:A √cb MNC SPLY H2O XOVR VLV – cl
 - R11L √SPLY H2O TK A OUTLET – CL (tb-CL)
XOVR VLV – OP (tb-OP)
 - L1 √HI LOAD DUCT HTR – B
EVAP – ENA
RAD BYP VLV MODE (two) – MAN
MAN SEL (two) – BYP (tb-BYP ~3 sec)
RAD CNTLR LOOP (two) – OFF
After 2.5 min:
 - O1 √FREON EVAP OUT TEMP ind: 39 ± 1 degF
 - L1 √FLOW PROP VLV LOOP 1,2 tb (two) – ICH
RAD CNTLR OUT TEMP – NORM

Cont next page

8 PSI DEORBIT PREP (Cont)

9. In DED DISP ENT CONFIG, delay activation of ADTAs, 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 (ECLS, OPCL) 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 LES, open LES O2 vlvs
 - check tabs, visors – CL, LES 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, 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 TACANs

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**

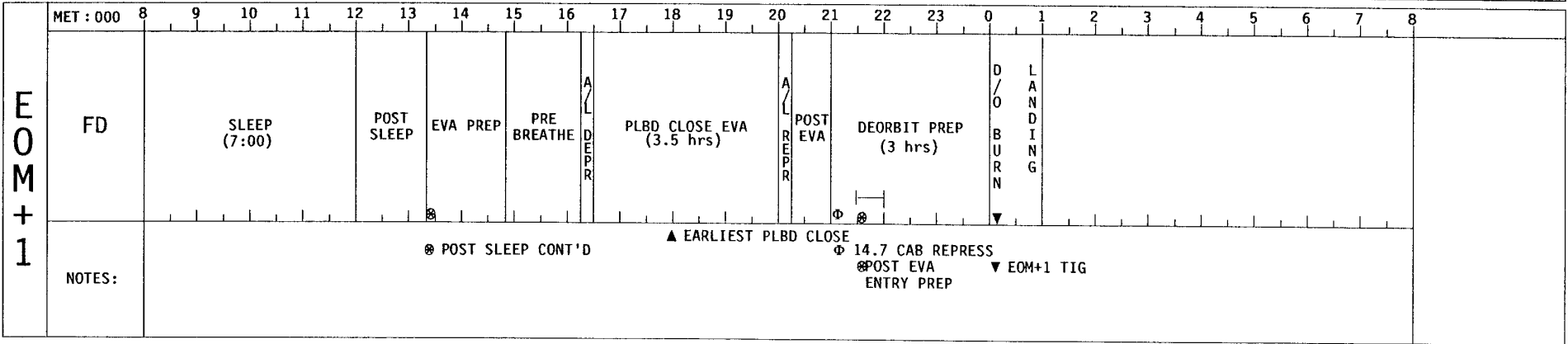
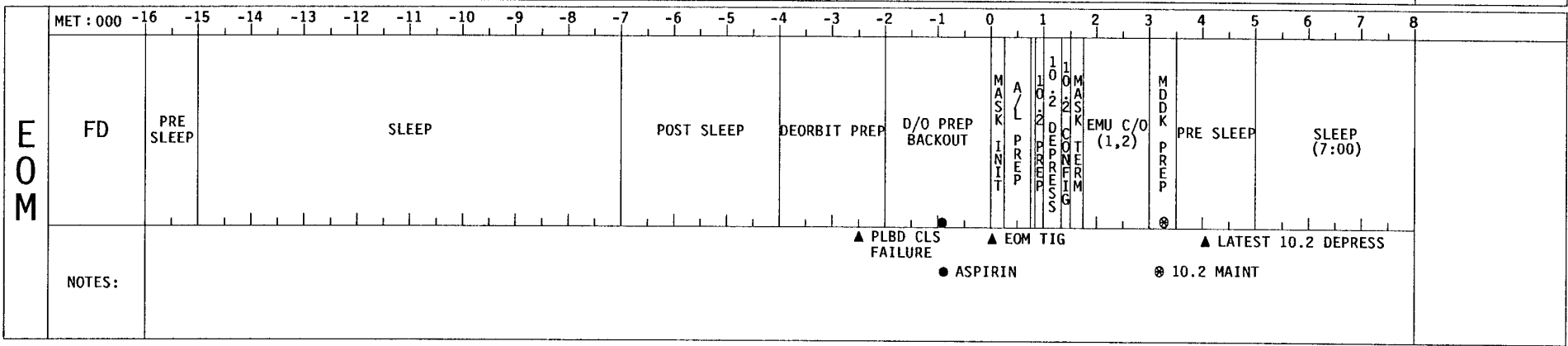
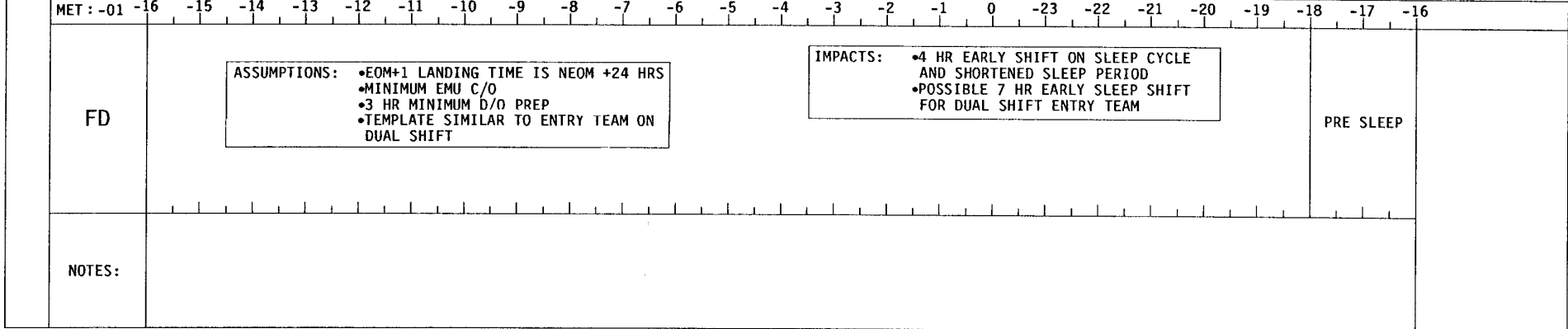
CONFIG GPC	LOSS OF		
	BAY 1	BAY 2	BAY 3
	9 02300	9 10040	9 12040
STR 1	3	1	1
2	2	4	2
3	3	1	4
4	2	4	2
PL 1/2	2	1	1
CRT 1	2	1	1
2	3	4	2
3	0	0	4
4	3	4	0
L 1	0	0	1
2	0	0	2
MM 1	2	1	1
2	3	4	2

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

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PLBD CONTINGENCY EVA TIMELINE

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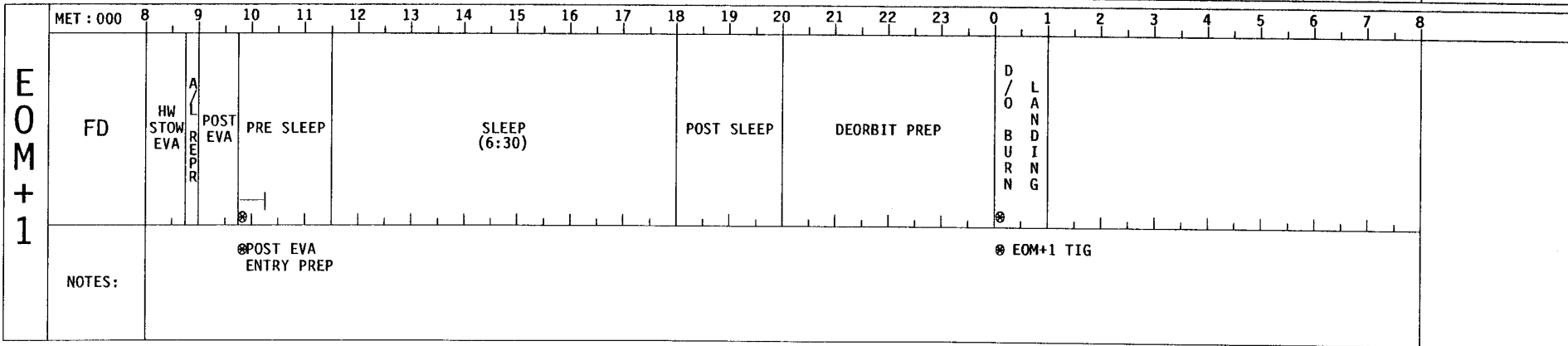
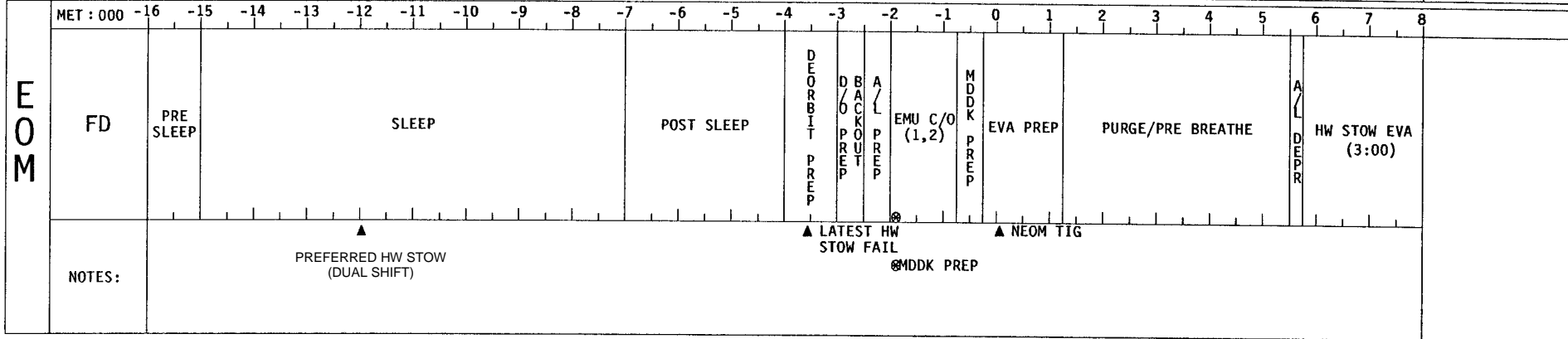
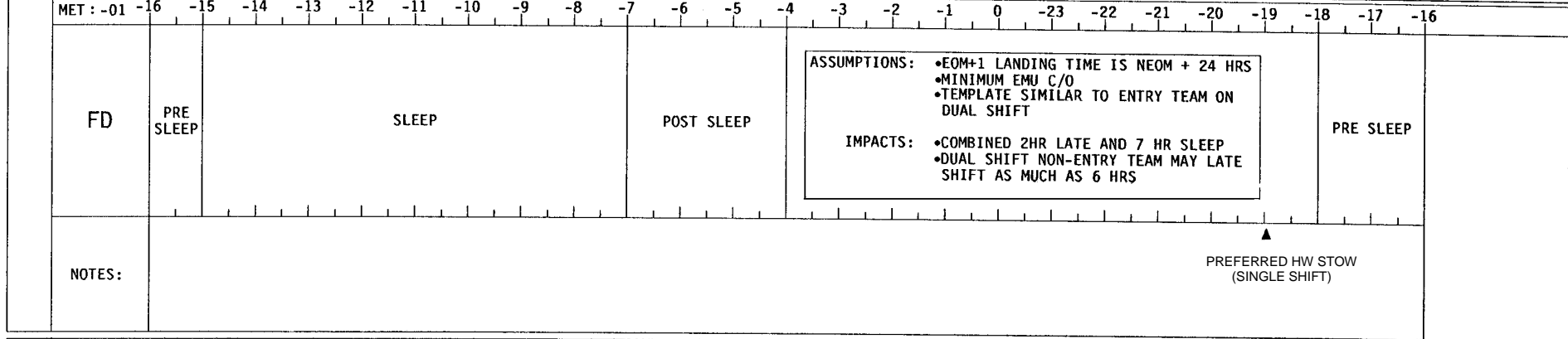


PLBD CONTINGENCY EVA NOTES

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

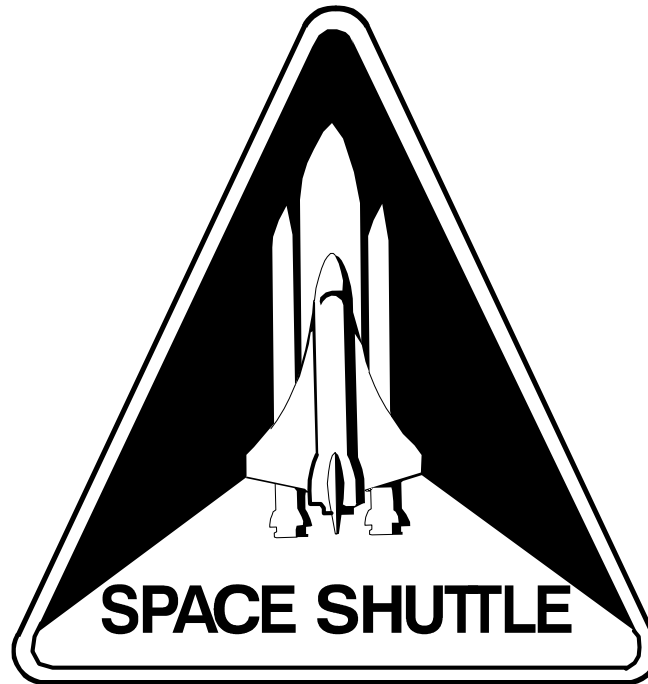
HARDWARE CONTINGENCY EVA TIMELINE

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PLBD 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



DEORBIT PREP

**STS
ALL**