

# Deorbit Prep Checklist

**Mission Operations Directorate  
Flight Design and Dynamics Division  
Final  
July 30, 2024**

National Aeronautics and  
Space Administration

Lyndon B. Johnson Space Center  
Houston, Texas



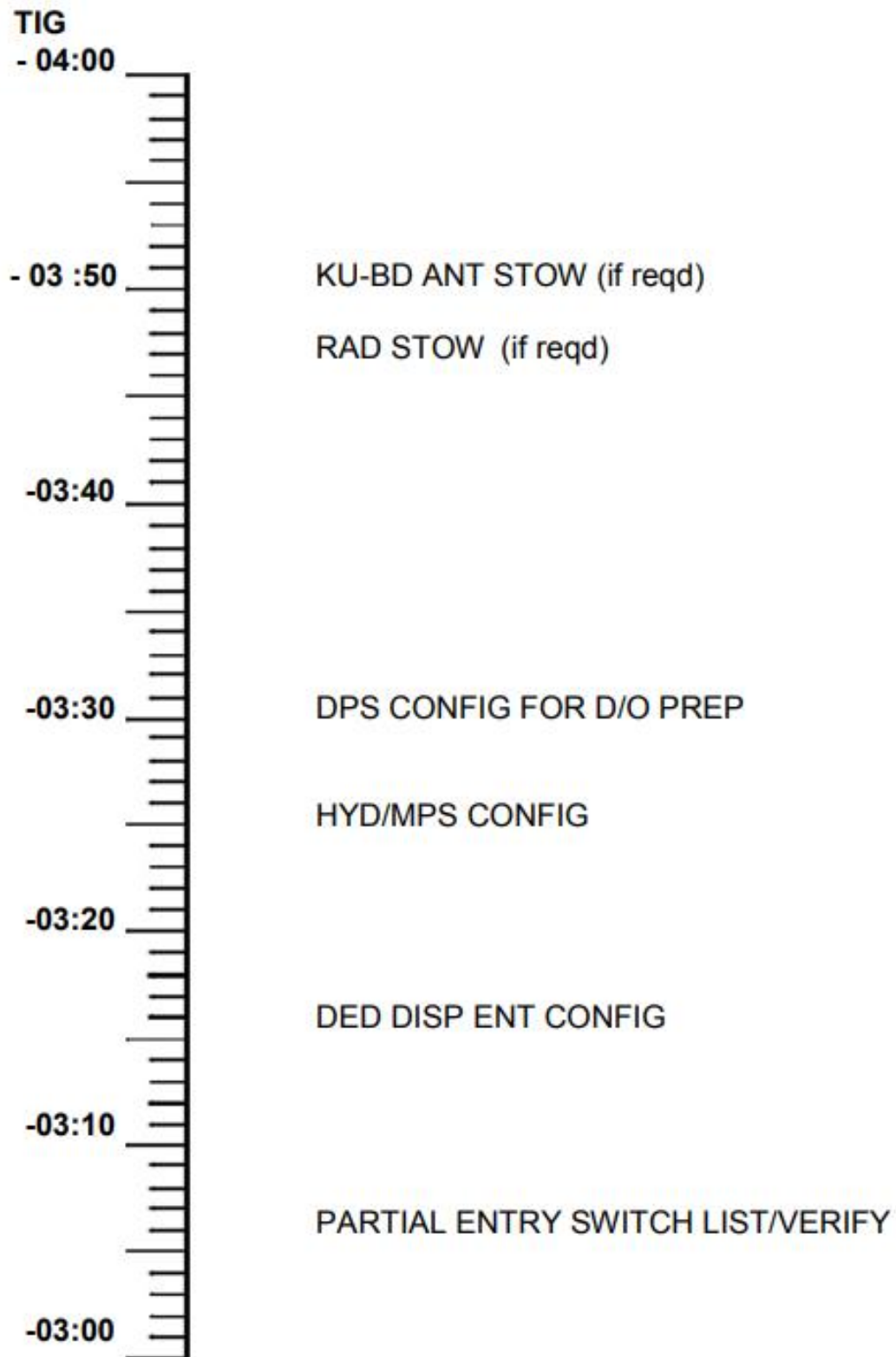
## **NOTES**

1. This Checklists is made by Johan Meza Bracamontes (Johan2011 on Orbiter Forum).
2. The Design of the Checklists Will be the same of the Original NASA Checklists as possible.
3. This Checklists is made for the Space Shuttle Vessel (SSV) Addon by GLS.
4. Deorbit Prep contains the nominal procedures from: Deorbit Burn (TIG) -04:00 to -01:00

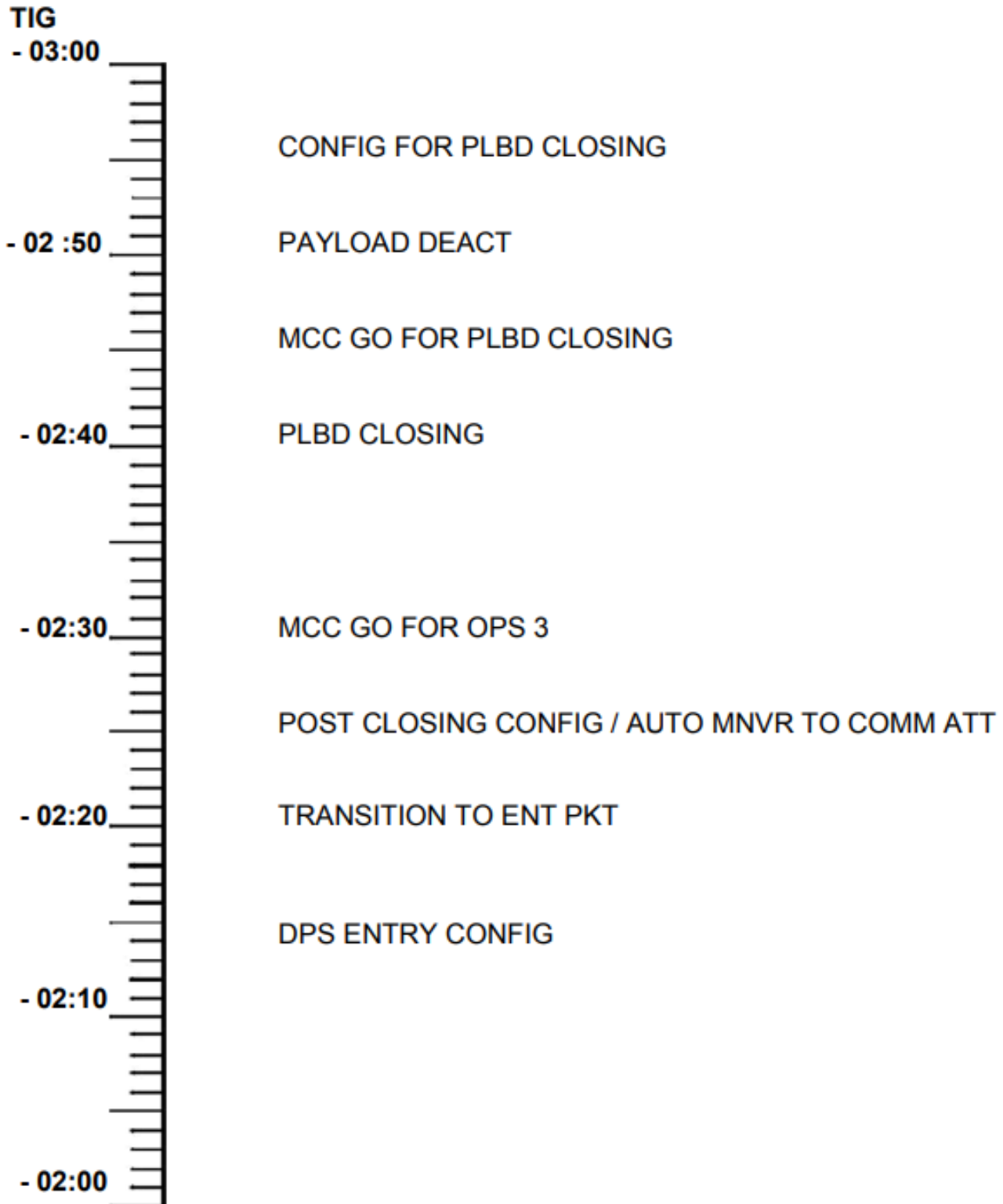
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## NOMINAL DEORBIT PREP PROCEDURES

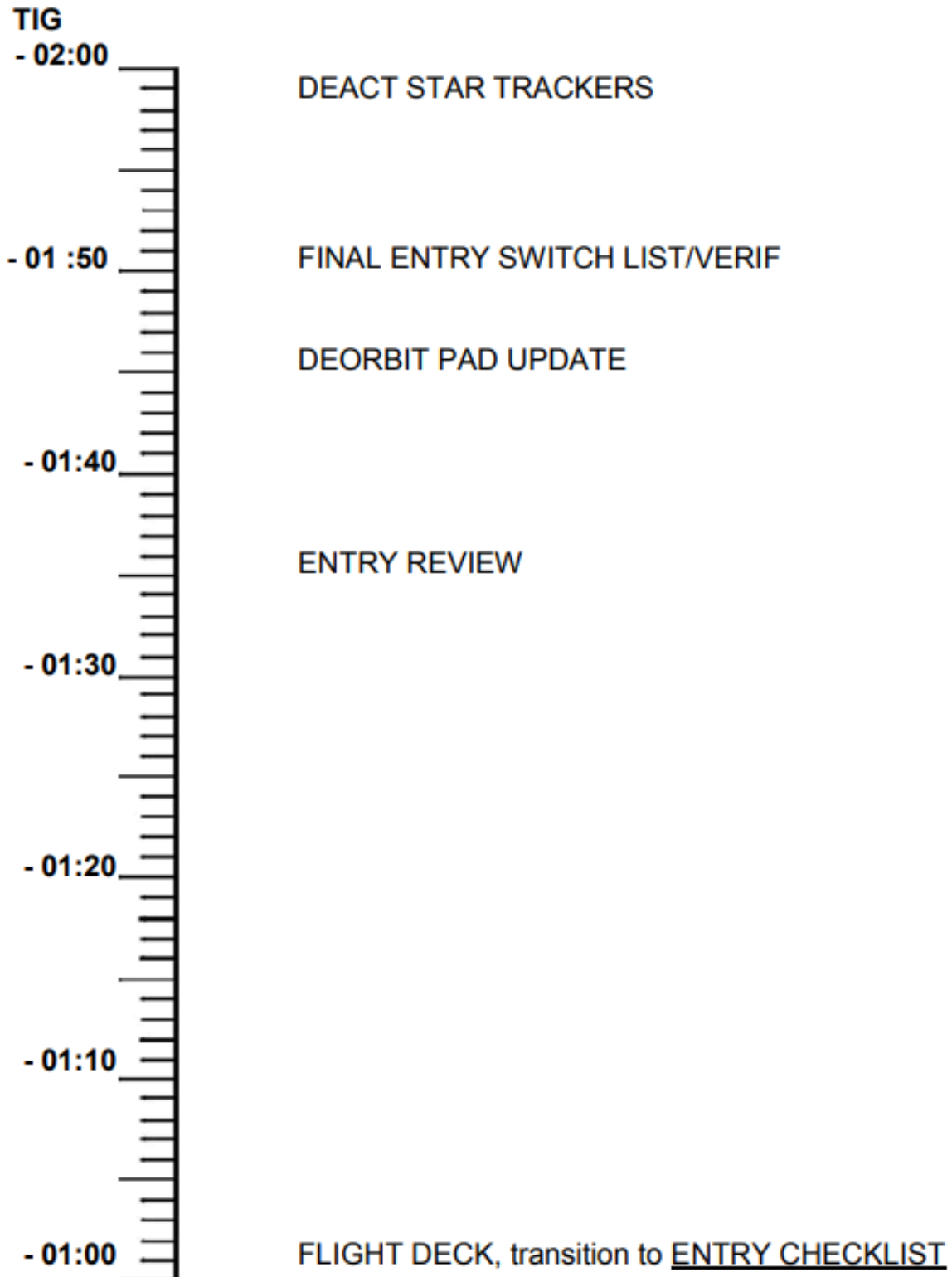
## NOMINAL DEORBIT PREP SUMMARY TIMELINE



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## NOMINAL DEORBIT PREP SUMMARY TIMELINE



Verify that following activities have been accomplished:  
FCS CHECKOUT (ORB OPS, GNC)

## RCS HOT FIRE TEST (ORB OPS, RCS)

MNVR (TRK) BIASED – XSI (FLIGHT PLAN, DETAILED TIMELINE)  
Back out of PRIORITY PWRDN as reqd (ORB PKT, PRIOR PWRDN)

-03:50

## KU-BD ANT STOW

R13L	√PL BAY MECH PWR SYS 1,2 (two)	– OFF
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A1U	√CNTL	– CMD
	√RADAR OUTPUT	– LOW
	KU BD PWR	– ON
	KUBD MODE	– RDR

## PASSIVE

CNTL – PNL  
KU BD sel – MAN

# SLEW

A2	√DIGI DIS SEL	– EL/AZ
A1U	SLEW RATE	– as reqd

A2	R/EL ind:	-27.0 ( $\pm 1^\circ$ )
A1U	SLEW AZM	– as reqd

A2 RR/AZM ind: -123.0 ( $\pm 1^\circ$ )

## LOCK GIMBALS

	DAP: VERN(FREE)	
R13L	KU ANT	– STO
A2	√R/EL ind:	-29.0 (± 1°)
	√RR/AZM ind:	-125.0 (± 1°)
	00:00 Start Event Timer	

A2 Monitor KU ANT gimbal angles for 50 sec (gimbal lock test), then:



DAP: as reqd

## **STOW DEPLOYED ASSEMBLY**

R13L    PL BAY MECH PWR SYS 1,2 (two)    – ON  
         √KU ANT tb                                – STO (~23 to 46 sec)

A1U      KU BD PWR – OFF (Expect 'BCE BYP KU' msg)

R13L    PL BAY MECH PWR SYS1,2    – OFF  
         KU ANT                                – GND

-03:45                    **RAD STOW**

### **1.STOW PANELS**

R13L    √RAD LAT CNTL SYS A,B (two)                                – OFF  
         √CNTL SYS A,B (two)    – OFF  
         √RAD,LAT PORT,STBD tb (four) match current RAD  
         config  
         PL BAY MECH PWR SYS 1,2 (two)                                – ON  
         RAD CNTL SYS A,B (two)    – STO  
         √Stowing RAD tb-bp, ~50 sec STO  
         RAD CNTL SYS A,B (two)    – OFF

If stowing RAD tb(s) not bp after 10 sec and no motion,  
or

If RAD panel(s) in transit and no motion,  
or

If stowing RAD tb(s) not STO within 100 sec and no  
motion:

RAD CNTL SYS A,B (two)    – OFF

## 2. LATCH PANELS

R13L	RAD LAT CNTL SYS A,B (two)	– LAT
	√Stowing RAD LAT tb-bp, ~30 sec, LAT	
	RAD LAT CNTL SYS A,B (two)	– OFF
	If stowing RAD LAT tb not LAT in 60 sec:	
	RAD LAT CNTL SYS A,B (two)	– OFF
	PL BAY MECH PWR SYS 1,2 (two)	– OFF

-03:30      **DPS CONFIG FOR DEORBIT PREP**

### ACTIVATE GPC 2 (if in HALT)

bp)	O6	√GPC MODE 2	– HALT (tb-
		√OUTPUT2	– NORM
		√PWR 2	– ON
		MODE 2	– STBY (tb-
RUN), RUN			

Transition GPCS 1 & 2 to OPS 2 (if GPC 2 just activated)  
Ensure BFS GPC can command an IDP

O6	√GPC PWR 5	– ON
	MODE 5	– STBY (tb-RUN)
C3	BFC CRT DISP	– ON
	SEL	– 2+3
CRT2	BFS <b>GNC SYS SUMM 2</b>	
	BFC CRT DISP	– OFF
	SEL	– 3+1

-03:25

## CCTV PWRDN

A7U	TV PWR CONTR UNIT	– OFF
	TV CAMR PWR (five)	– OFF
A3	PWR (two)	– OFF
R14	CAMR/PTU (five)	– OUT
	CAMR/HTR (five)	– OUT
	ILLUM/PTU HTR (five)	– OUT
	CONTR UNIT (three)	– OUT
	MON 1	– OUT
	MON 2	– OUT

## HYD/MPS CONFIG

### W/B STEAM VENT HTR ACT

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

### SME HYD REPRESS PREP

C3	√FCS CH (four)	– AUTO
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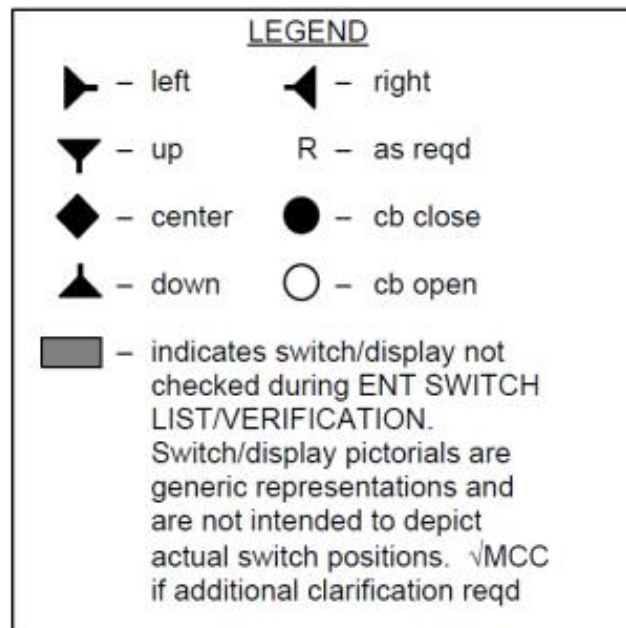
-03:15

## DED DISP ENT CONFIG

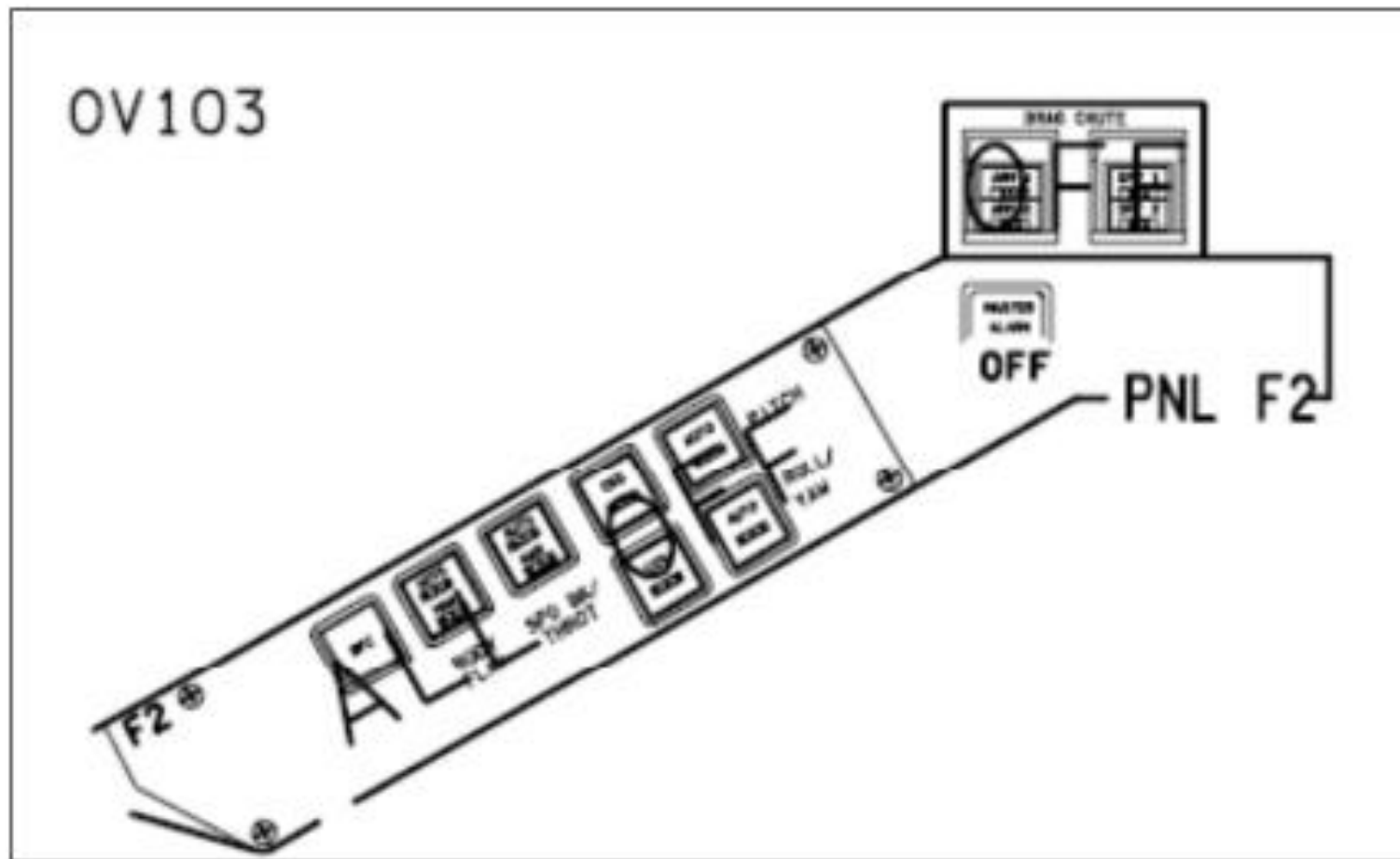
O8	RADAR ALTM (two)	– ON
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-03:05

## PARTIAL ENTRY SWITCH LIST/VERIFICATION

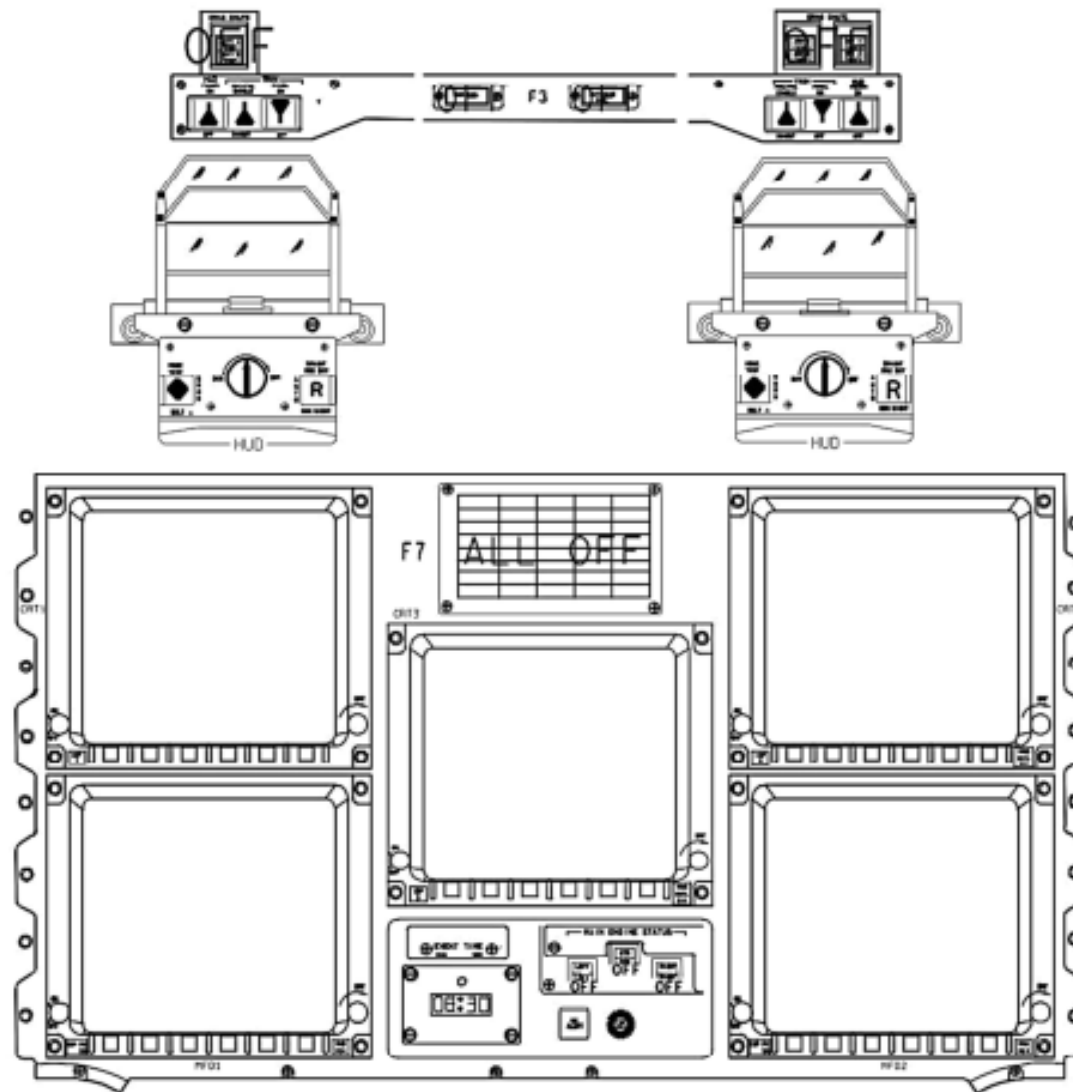


## PANEL F2



## PANEL F3/F7

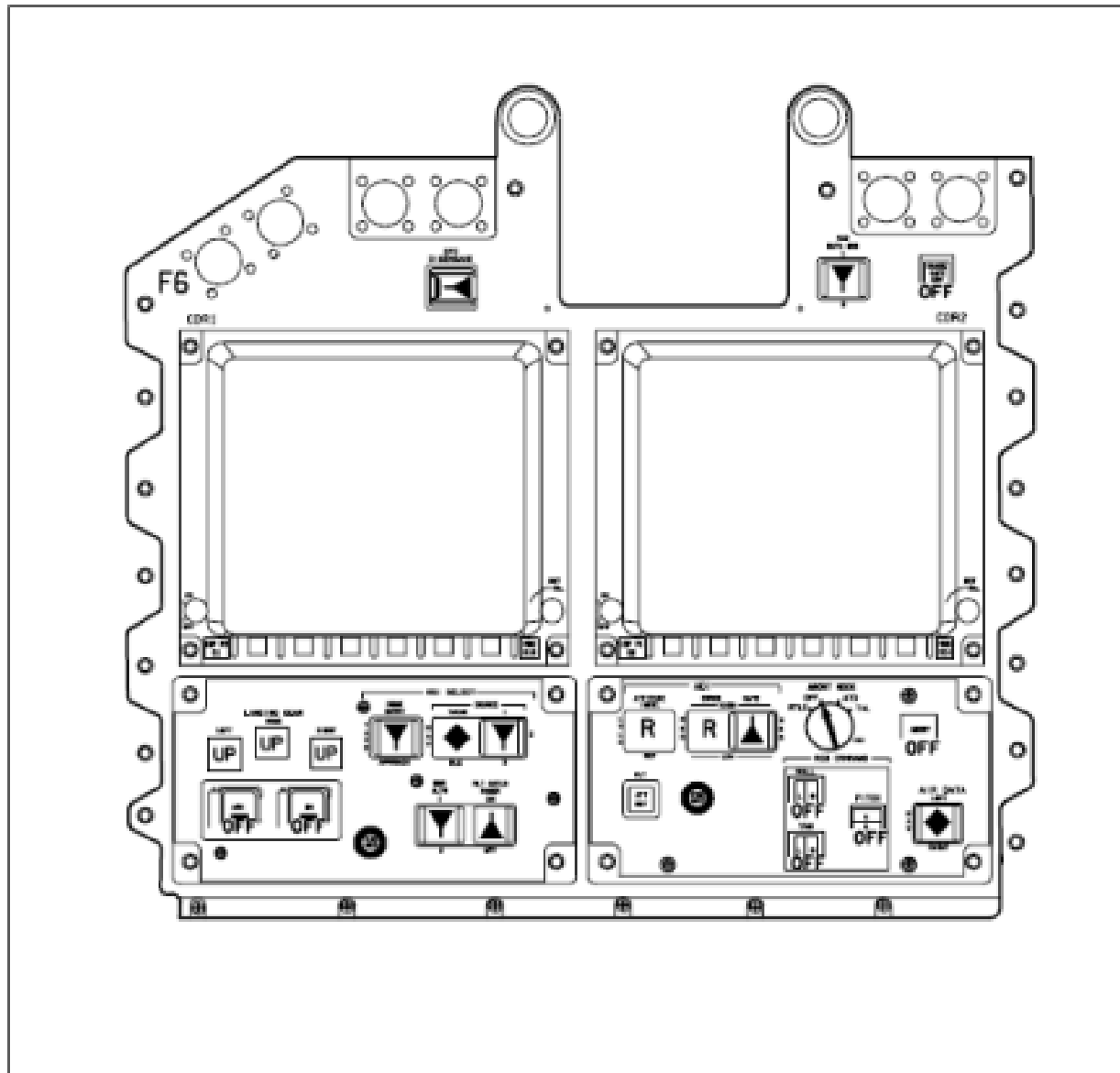
OV103



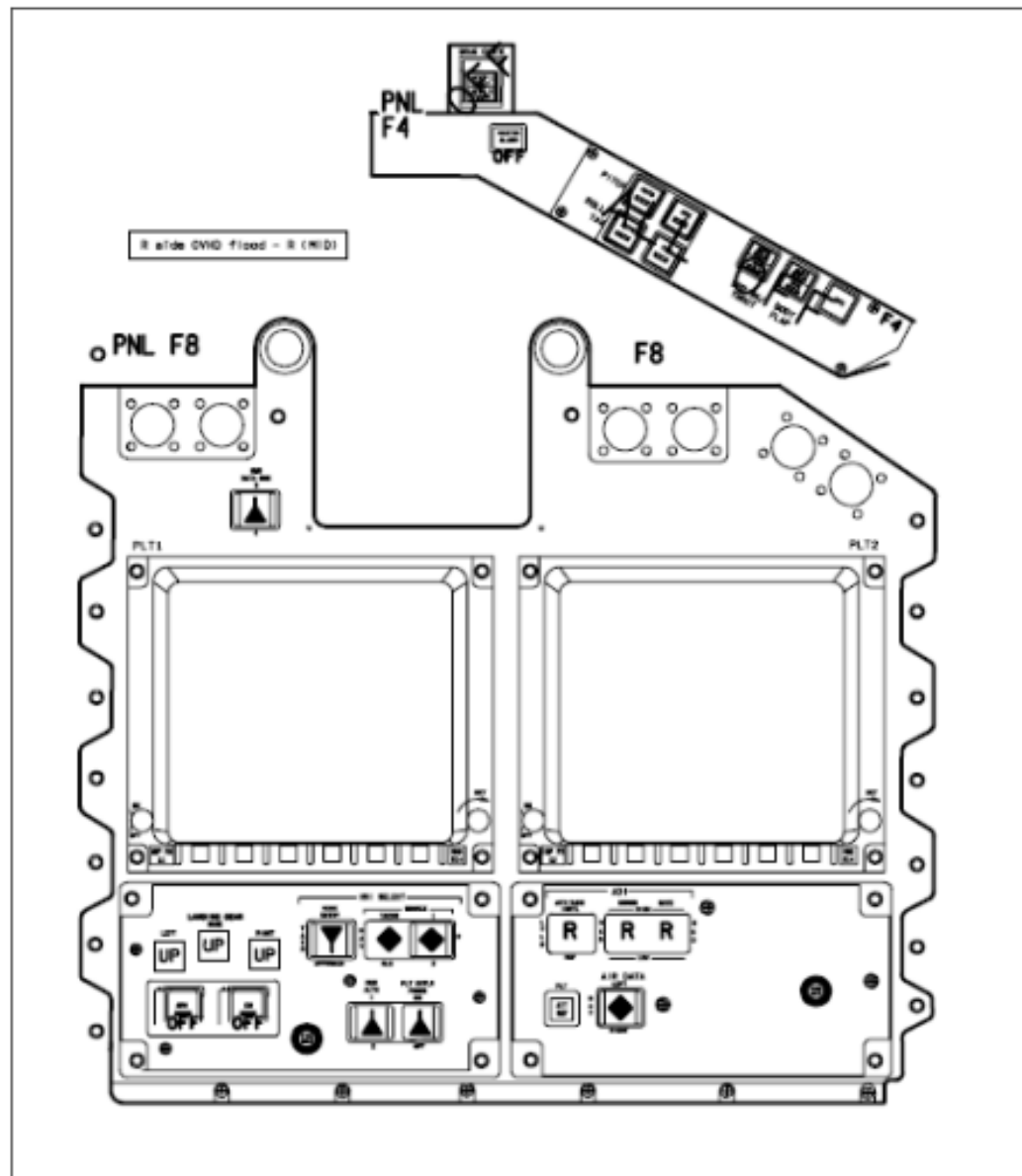
4801SE304\_114\_PNL.ppt

ALL REV/DATE 05/12/05

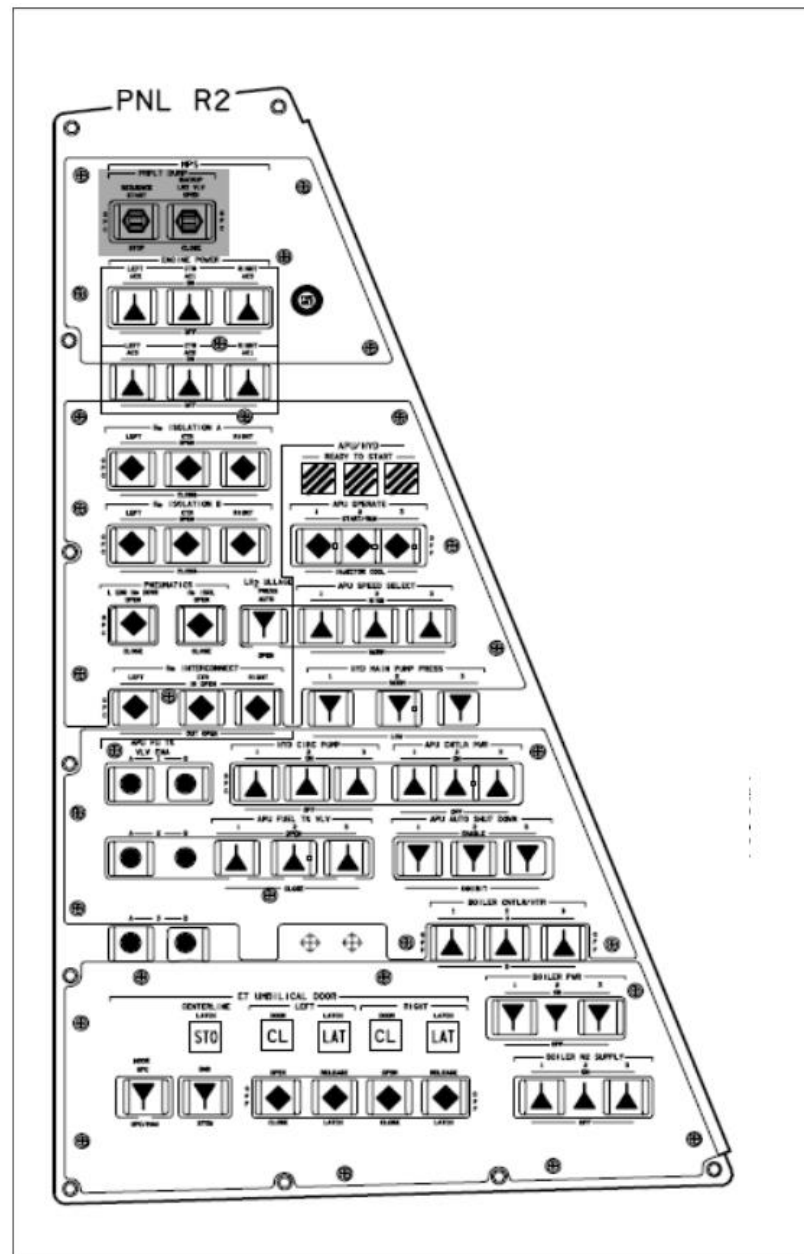
## PANEL F6



## PANEL F4/F8



## PANEL R2





-02:55

## CONFIG FOR PLBD CLOSING

CONFIG RMS/OBSS (if RMS/OBSS onboard)

1. ✓Elbow Camr in aligned position
  - Pan 90° from X-axis
  - Tilt per decal

A8L	2. RMS PWR	– OFF
	PORT RMS HTR (two)	– OFF

## SET UP LIGHTS

R11L	3. IDP/CRT4 PWR	– ON
MDU	✓CRT 4 PWR	– ON
A6U	✓ANNUN BUS SEL	– MNC
A7U	PL BAY FLOOD AFT STBD	– ON
	PL BAY FLOOD AFT PORT	– ON
	PL BAY FLOOD MID STBD	– ON
	PL BAY FLOOD MID PORT	– ON
	PL BAY FLOOD FWD STBD	– ON
	PL BAY FLOOD FWD PORT	– ON
	PL BAY FLOOD BHD	– ON

Record MET \_\_\_\_ / \_\_\_\_ : \_\_\_\_ : \_\_\_\_

-02:40

## DETAILED PLBD CLOSING PROCEDURES

### MANUAL PLBD CLOSING

CRT4	SM OPS 202 PRO (PL BAY DOORS)	
	AC PWR ON – ITEM 1 EXEC	
	AUTO MODE ON – ITEM 3 EXEC	
R13L	✓PL BAY DR	– STOP
	PL BAY DR SYS (two)	– ENA
	PL BAY DR	– CL
	When PL BAY DR tb	– CL
	PL BAY DR	– STOP
	PL BAY DR SYS (two)	– DSBL
CRT4	AC PWR OFF – ITEM 2 EXEC	

A7U      After floodlights ON > 10 min:  
PL BAY FLOOD (all)                      – OFF

-02:15

## **DPS ENTRY CONFIG**

### **1. MEDS CONFIG**

C2            IDP/CRT 3 PWR                      – ON  
F6,F7,F8    √All forward MDUs ON and selected to primary port

### **2.VERIFY GPC CONFIG**

O6      √GPC MODE 3                      – HALT (tb-bp)  
          √PWR 3                              – ON  
          √OUTPUT 1,2                      – NORM (  
          √ OUTPUT 3,5                      – NORM (tb-bp)  
          √ OUTPUT 4                      – TERM (tb-bp)  
          √MODE 1,2,4                      – RUN  
          √MODE 3                            – STBY  
          √MODE 5                            – STBY

C2            Set event timer to countdown to TIG

### **3. TRANSITION GPC 1&2 TO GNC OPS 3**

CRT1        GNC OPS 301 PRO (DEORB MNVR COAST)

### **4. TRANSITION BFS GPC TO GNC OPS 3**

C3            BFC CRT DISP                      – ON  
          √SEL =                              3+1

CRT3        BFS **GNC SYS SUMM 1**

O6            GPC OUTPUT 5 –B/U (tb bp)

CRT2        √TFL ENA – ITEM 29 (\*)

CRT3        BFS GNC OPS 301 PRO (DEORB MNVR COAST)

## **5. TRANSITION GPC 1,2,3,4 TO GNC OPS**

C3	BFC CRT DISP	– ON
	√SEL =	3+1
O6	GPC OUTPUT 4	– NORM
	GPC MODE 3,5 (two)	– RUN
C3	BFC CRT DISP	– OFF
	(GPC 3 commanding IDP 3)	
	BFC CRT DISP	– ON

## **6. MANEUVER BACK TO COMM ATT**

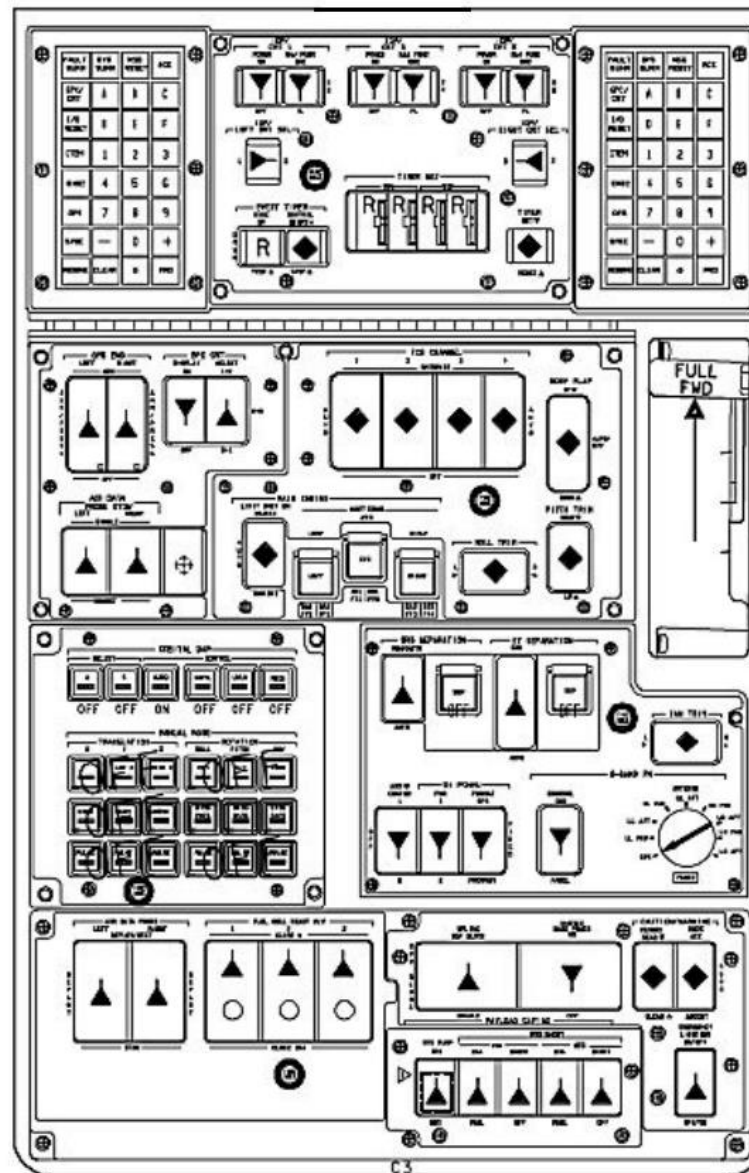
C3	DAP A/AUTO/ALT	
-02:05	Load DEORB BURN TGTS	
CRT1	√GNC OPS 301 PRO (DEORB MANVR COAST)	

## **-02:00 DEACTIVATE STAR TRACKERS**

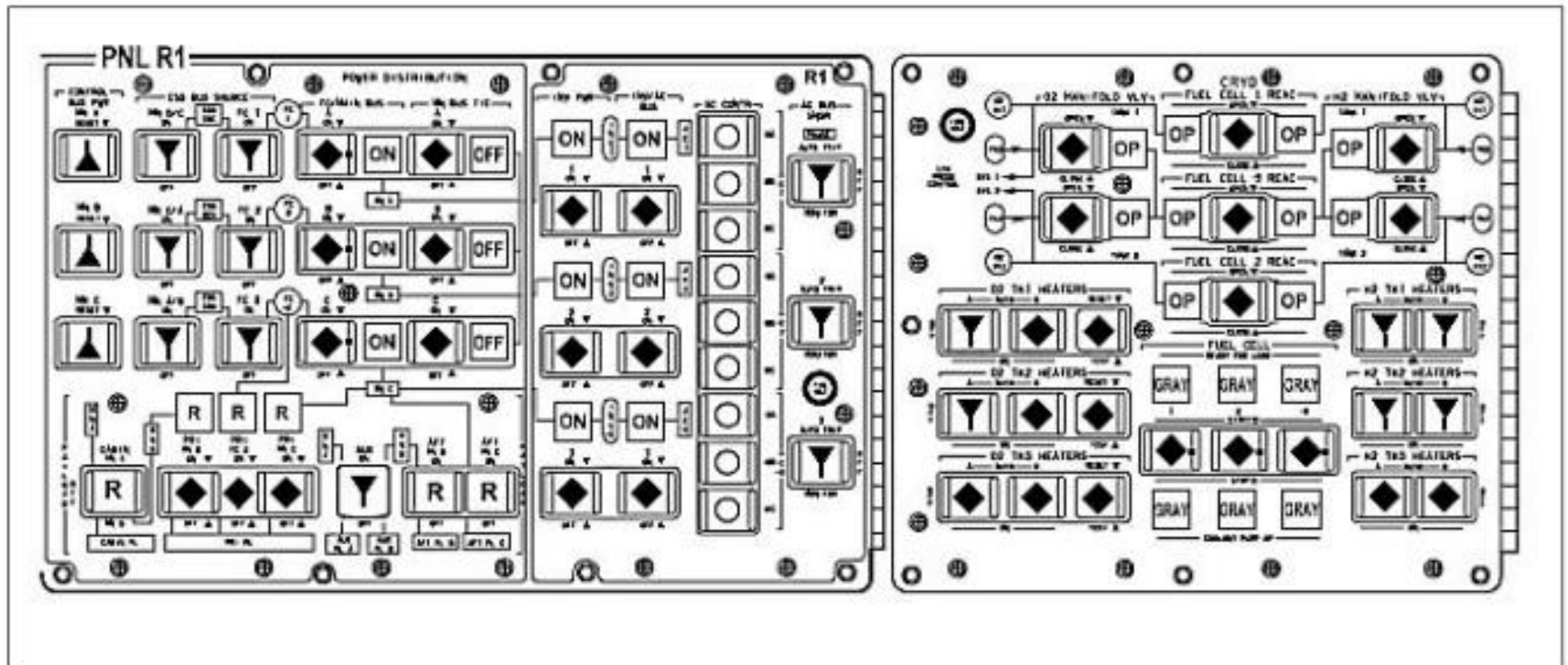
O6	STAR TRKR DR CNTL SYS (two)	– CL
	STAR TRKR DR CNTL SYS (two)	– OFF
	STAR TRKR PWR (two)	– OFF

## **-01:50 FINAL ENTRY SWITCH LIST/VERIF**

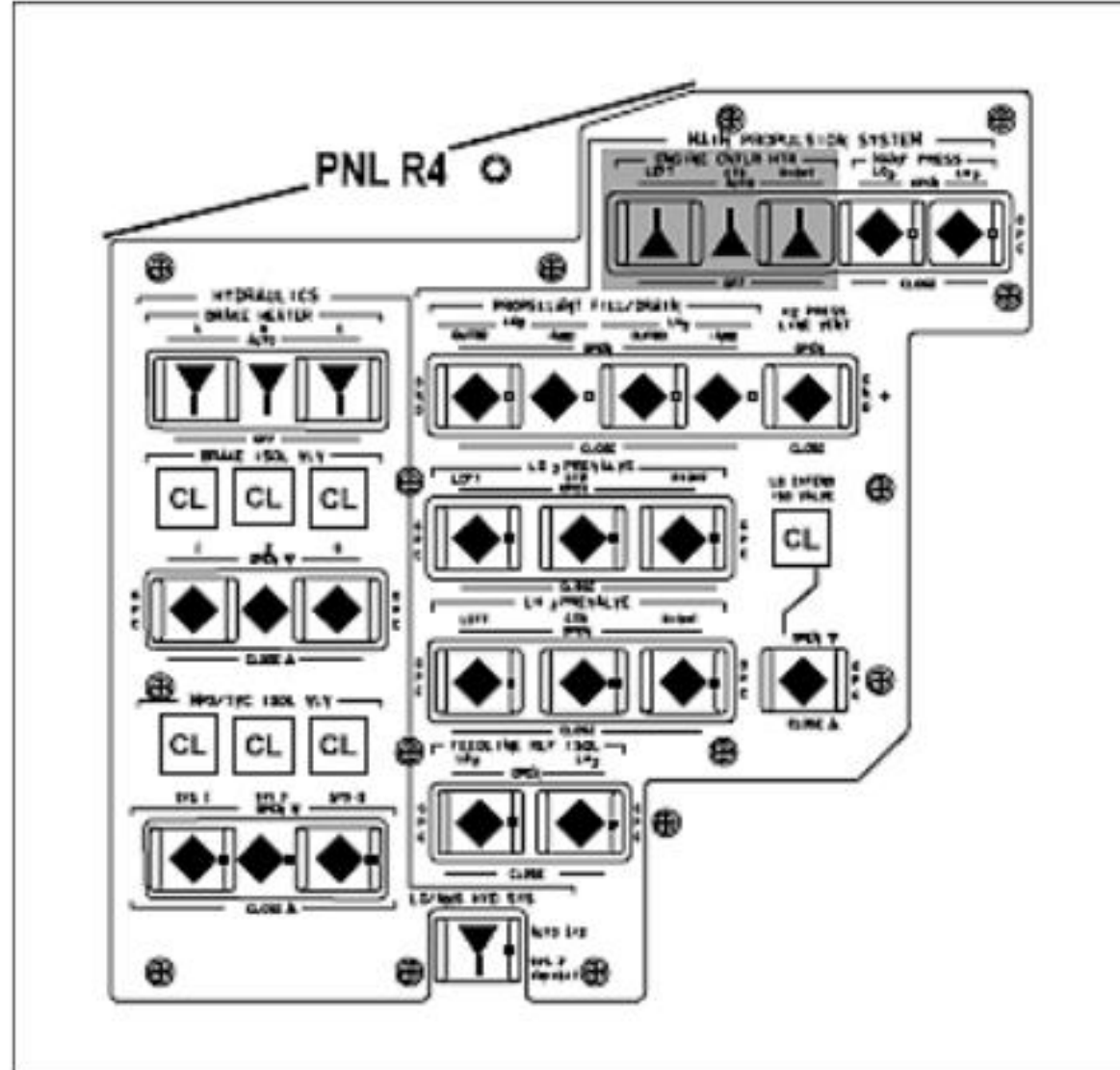
## PANEL C2/C3



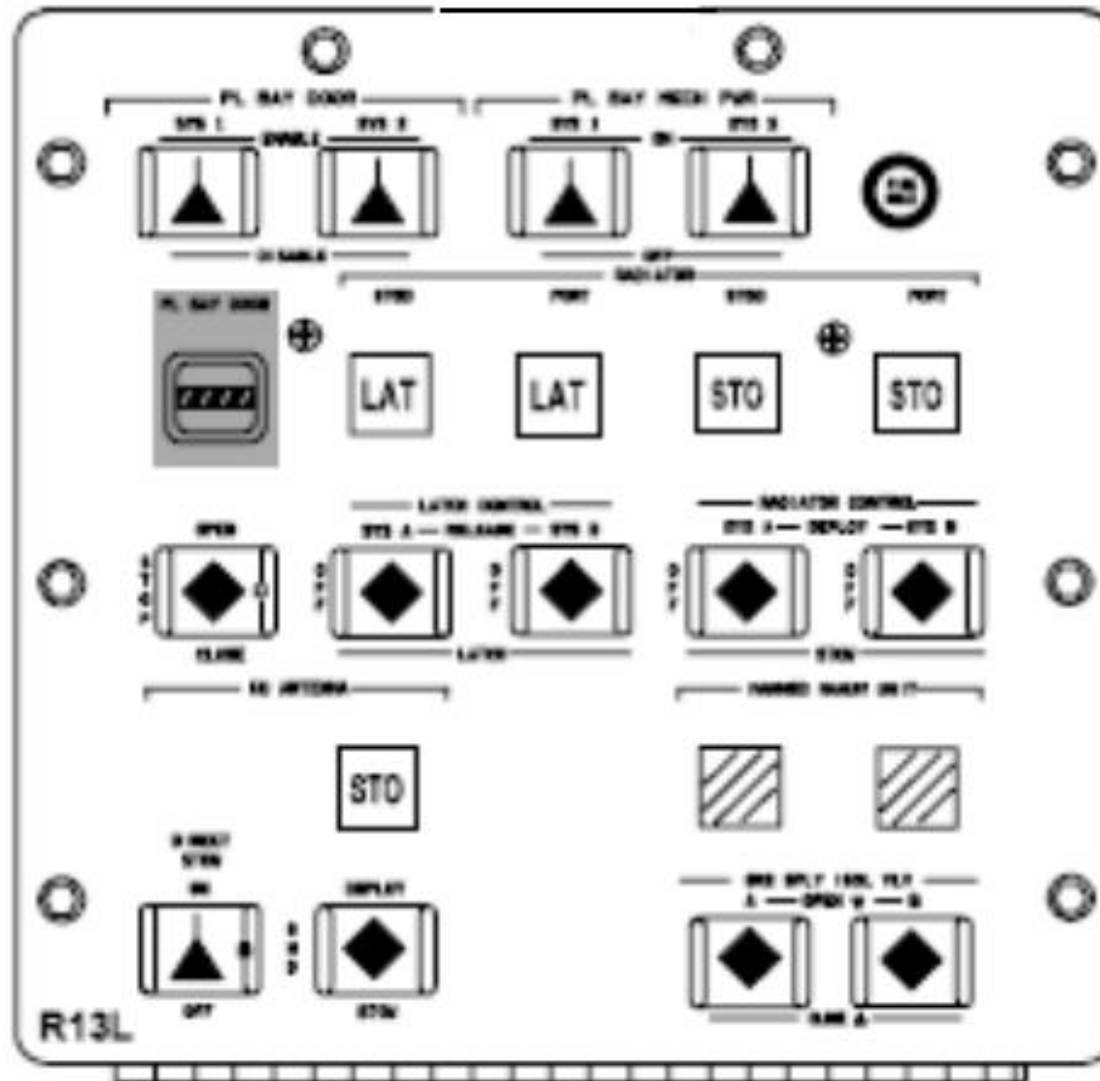
## PANEL R1



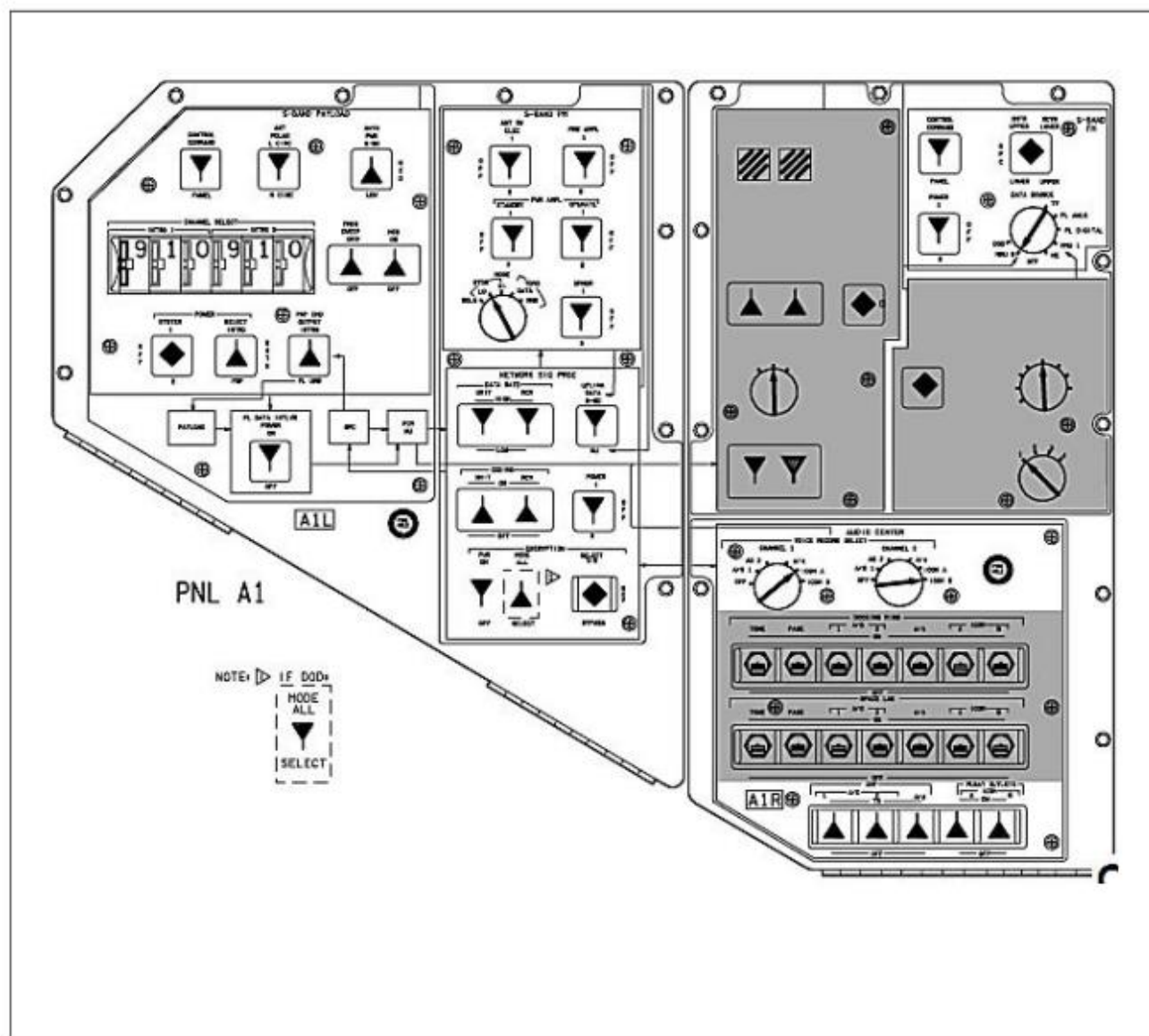
### PANEL R4



## PANEL R13L

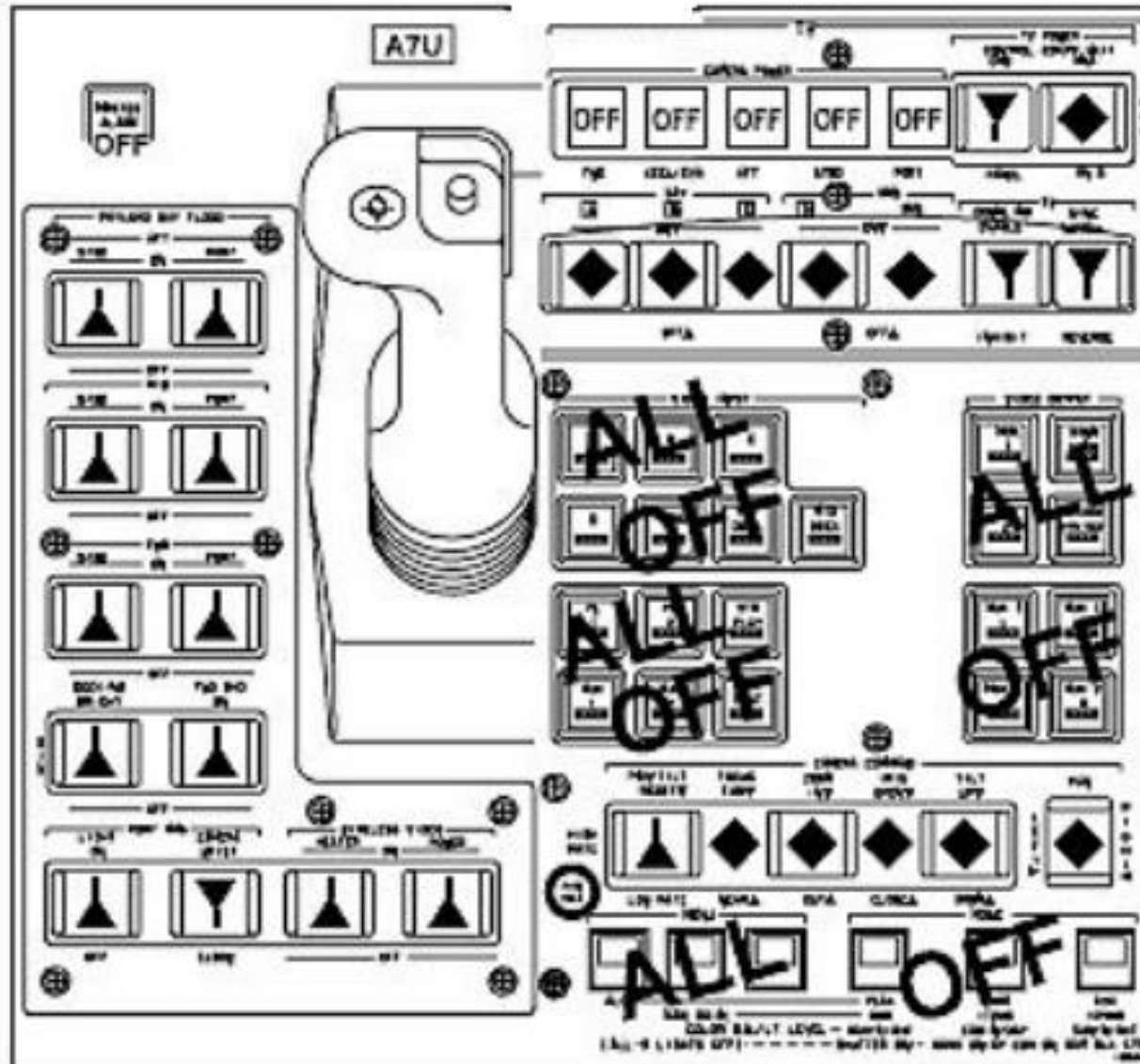


## PANEL A1





## PANEL A7U

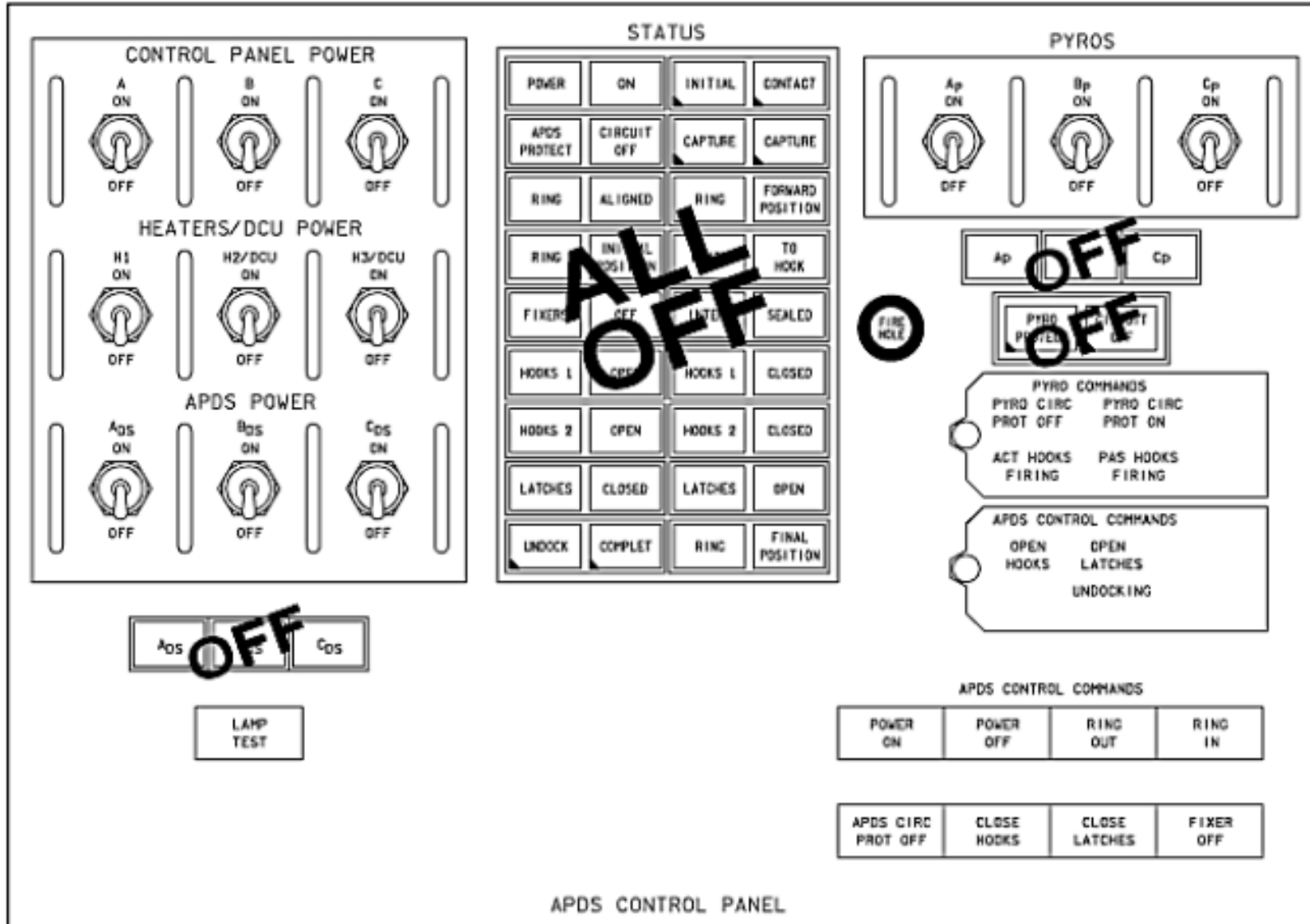


The diagram illustrates the Docking System Power panel, which includes the following components and controls:

- ESS 1BC:** Controls for SYS PWR (ON/OFF), DEPRESS (VENT ISOL, VENT), and MAIN A (TRUSS FWD, TRUSS AFT, LIGHT, VEST PORT).
- ESS 2CA:** Controls for SYS PWR (ON/OFF), DEPRESS (VENT ISOL, VENT), and MAIN B (TRUSS FWD, TRUSS AFT, LIGHT, VEST STBD).
- MAIN A/B/C LOGIC:** Three sets of logic controls for MAIN A, MAIN B, and MAIN C, each with OPEN and CLOSE positions.
- PMA 2/3 GRP 1 HOOKS:** Controls for PMA 2/3 GRP 1 HOOKS (SYS A, SYS B) with OPEN and CLOSE positions.
- PMA 2/3 GRP 2 HOOKS:** Controls for PMA 2/3 GRP 2 HOOKS (SYS A, SYS B) with OPEN and CLOSE positions.
- SYSTEM POWER:** Two OFF switches for SYS 1 and SYS 2.
- VESTIBULE DEPRESS VALVE:** Four indicators for SYS 1 and SYS 2, each with VENT ISOL and VENT positions.
- PYRO POWER:** Controls for PYRO POWER (PN A, ON, PN B, PN C) with OFF and ON positions.
- PSU POWER:** Controls for PSU POWER (PN A, ON, PN B) with OFF and ON positions.
- LIGHTS:** Controls for LIGHTS (FWD, ON, AFT) with OFF and ON positions.
- VEST ISOLE:** Controls for VEST ISOLE (PORT, ON, STBD) with OFF and ON positions.



## PANEL A7L





<h1>DEORBIT PREP CHECKLIST</h1>	<h1>STS ALL</h1>
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Flight Cover (trim bottom to expose tabs)