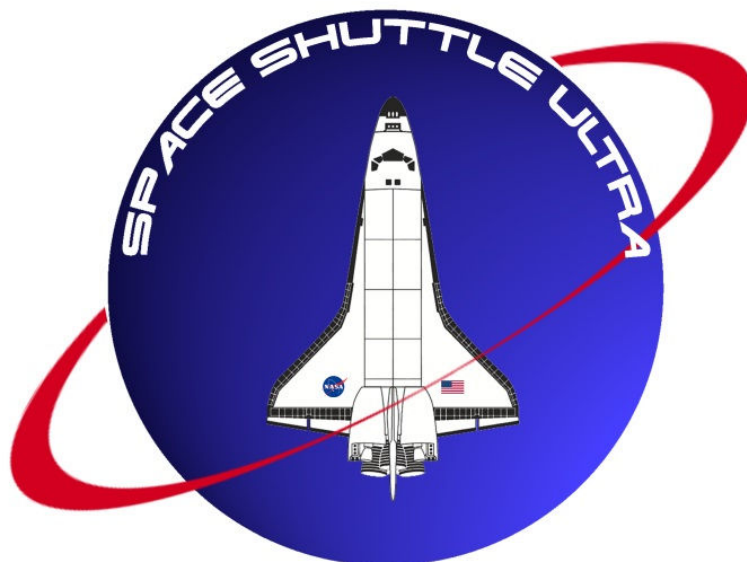


# Deorbit Prep Checklist

**Generic**  
**Rev 1.0**  
**Sep 2017**



**Space Shuttle Ultra 4.2**  
**Orbiter 2010-2016**

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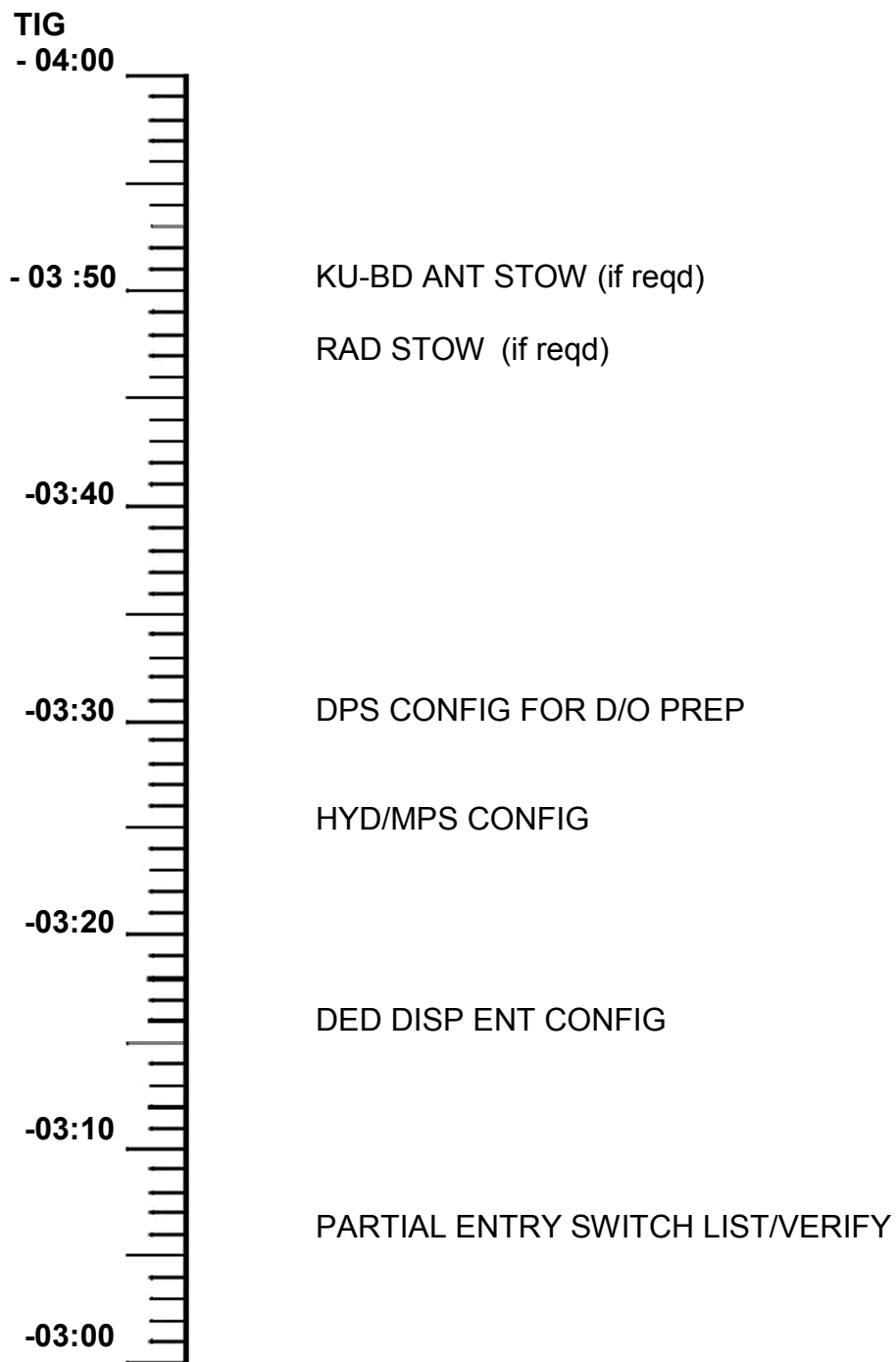
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### NOTE

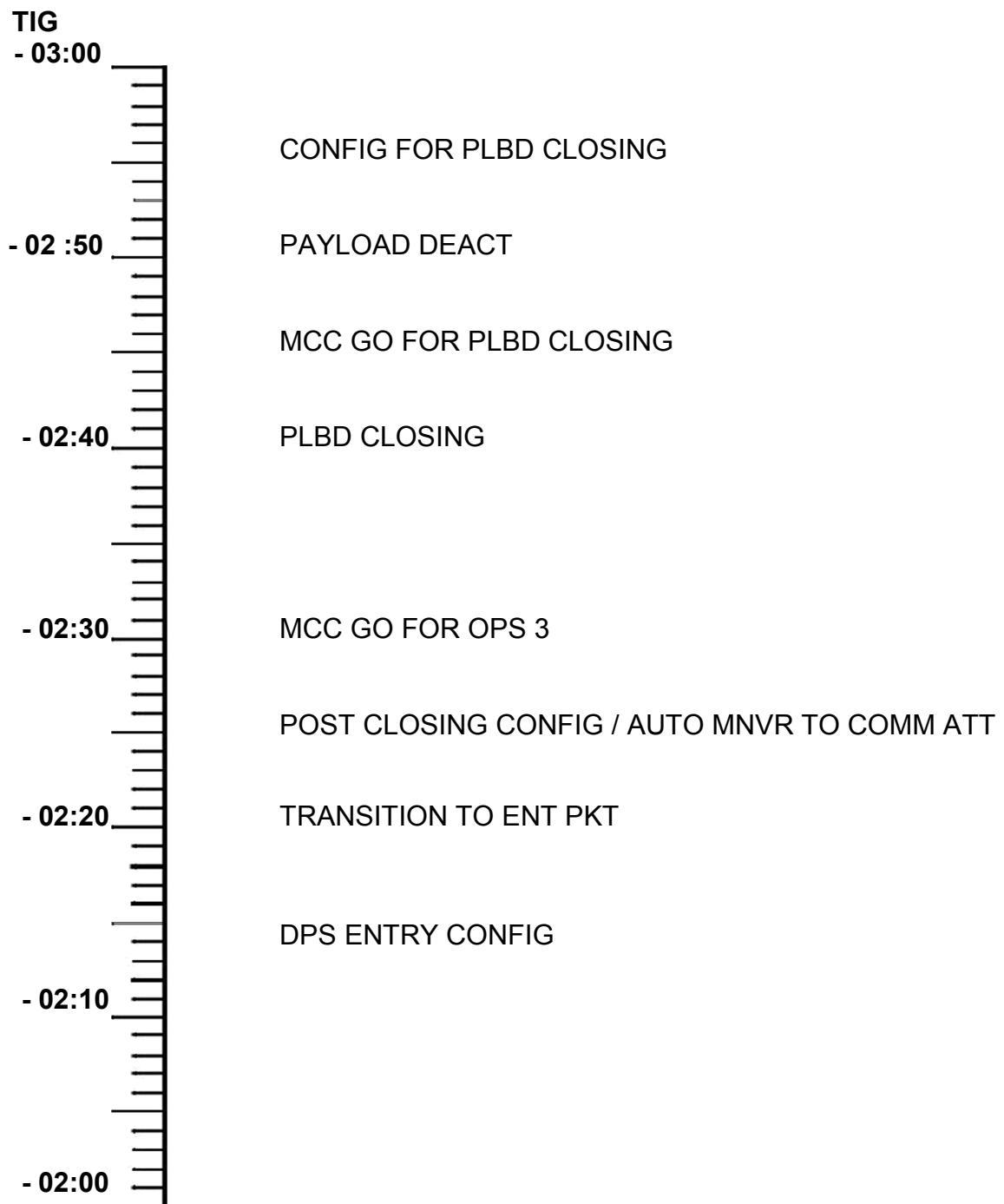
Deorbit Prep contains the nominal procedures from:  
Deorbit Burn (TIG) -04:00 to -01:00

## NOMINAL DEORBIT PREP PROCEDURES

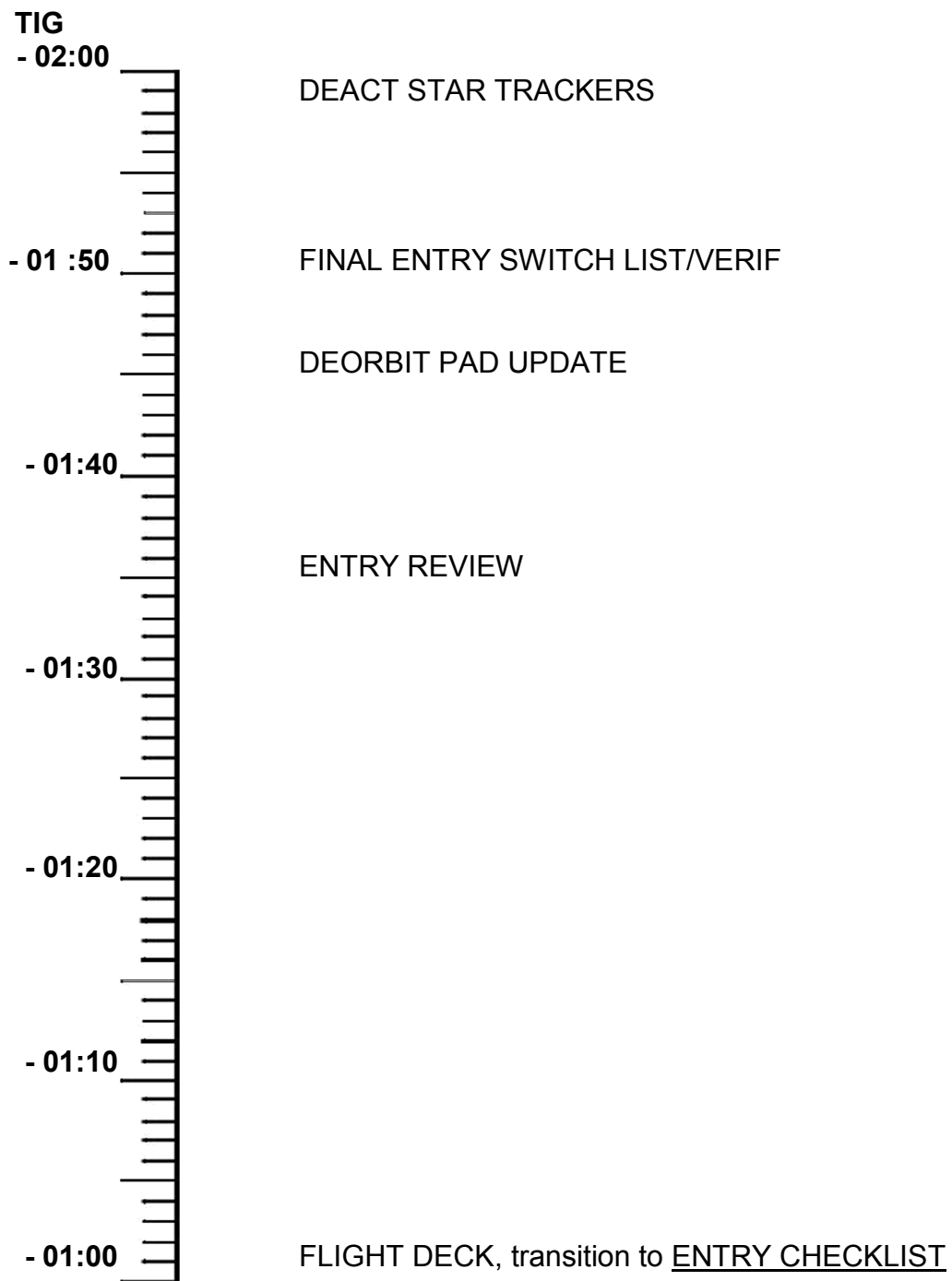
## NOMINAL DEORBIT PREP SUMMARY TIMELINE



## NOMINAL DEORBIT PREP SUMMARY TIMELINE (Cont)



## NOMINAL DEORBIT PREP SUMMARY TIMELINE (Cont)



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

**CAUTION**

If OBSS cradled, OBSS must be stowed prior to KU-band antenna stow to prevent antenna/OBSS contact

R13L	√PL BAY MECH PWR SYS 1,2 (two)	– OFF
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 (± 1°)
A1U	SLEW AZM	– as reqd
A2	RR/AZM ind:	-123.0 (± 1°)

## LOCK GIMBALS

### NOTE

KU ANT sw must remain in STOW until  
STOW DEPLOYED ASSEMBLY complete

DAP: VERN(FREE)

R13L KU ANT – STO

A2  $\sqrt{R/EL}$  ind:  $-29.0 (\pm 1^\circ)$   
 $\sqrt{RR/AZM}$  ind:  $-125.0 (\pm 1^\circ)$

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  
 $\sqrt{KU}$  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 – GN

-03:45 RAD STOW

### 1.STOW PANELS

R13L  $\sqrt{RAD}$  LAT CNTL SYS A,B (two) – OFF  
 $\sqrt{CNTL}$  SYS A,B (two) – OFF  
 $\sqrt{RAD,LAT}$  PORT,STBD tb (four) match current RAD  
config  
PL BAY MECH PWR SYS 1,2 (two) – ON  
RAD CNTL SYS A,B (two) – STO  
 $\sqrt{Stowing}$  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

### NOTE

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

## ACTIVATE GPC 2 (if in HALT)

O6 √GPC MODE 2 – HALT (tb-bp)  
√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   GNC SYS SUMM 2  
                           BFC CRT DISP – OFF  
                           SEL – 3+1

-03:25       HYD/MPS CONFIG

W/B STEAM VENT HTR ACT

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

<p style="text-align: center;"><u>NOTE</u>  HTR reqd to be on 2 hr</p>
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SME HYD REPRESS PREP

C3                   √FCS CH (four) – AUTO

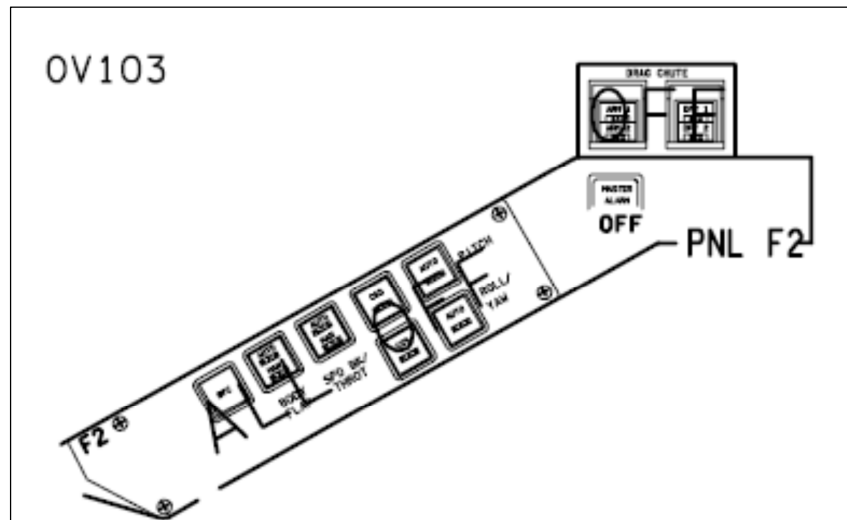
-03:15       DED DISP ENT CONFIG

O8                   RADAR ALTM (two) – ON

-03:05       PARTIAL ENTRY SWITCH LIST/VERIFICATION

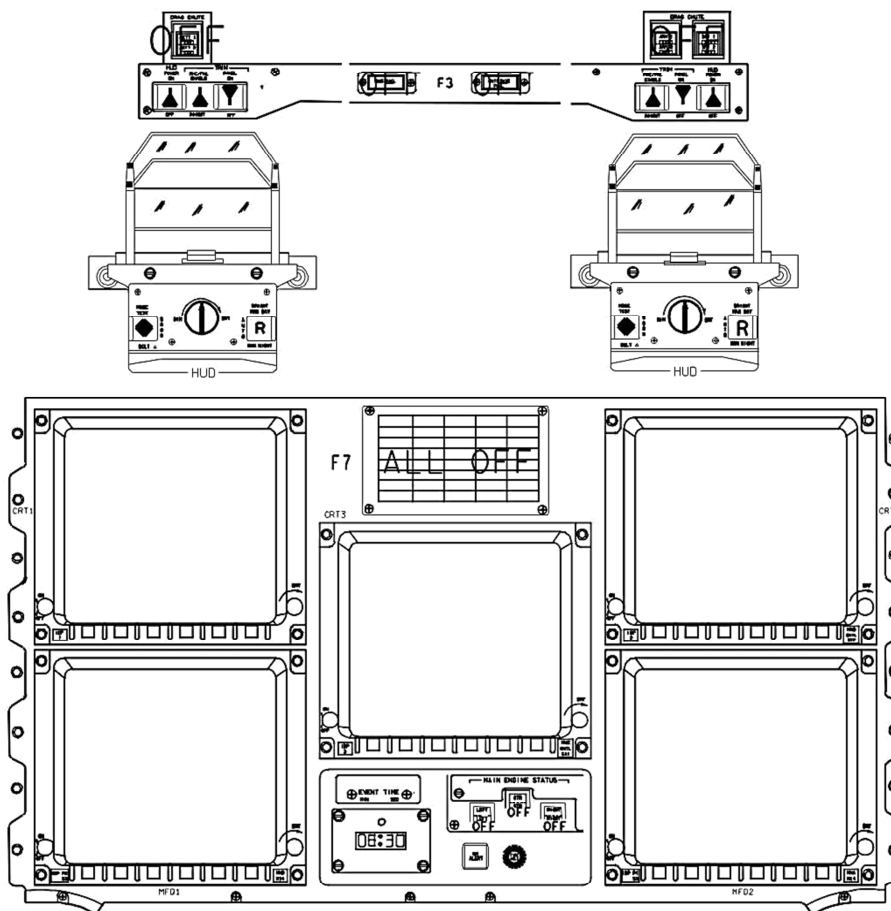
<u>LEGEND</u>	
 – left	 – right
 – up	R – as reqd
 – center	 – cb close
 – down	 – cb open
 – indicates switch/display not checked during ENT SWITCH LIST/VERIFICATION. Switch/display pictorials are generic representations and are not intended to depict actual switch positions. √MCC if additional clarification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

## PANEL F2



## PANEL F3/F7

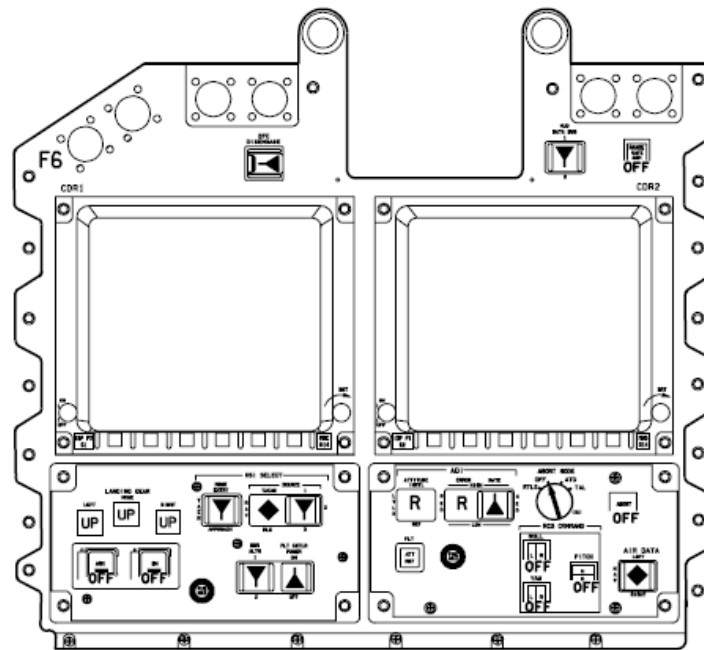
OV103



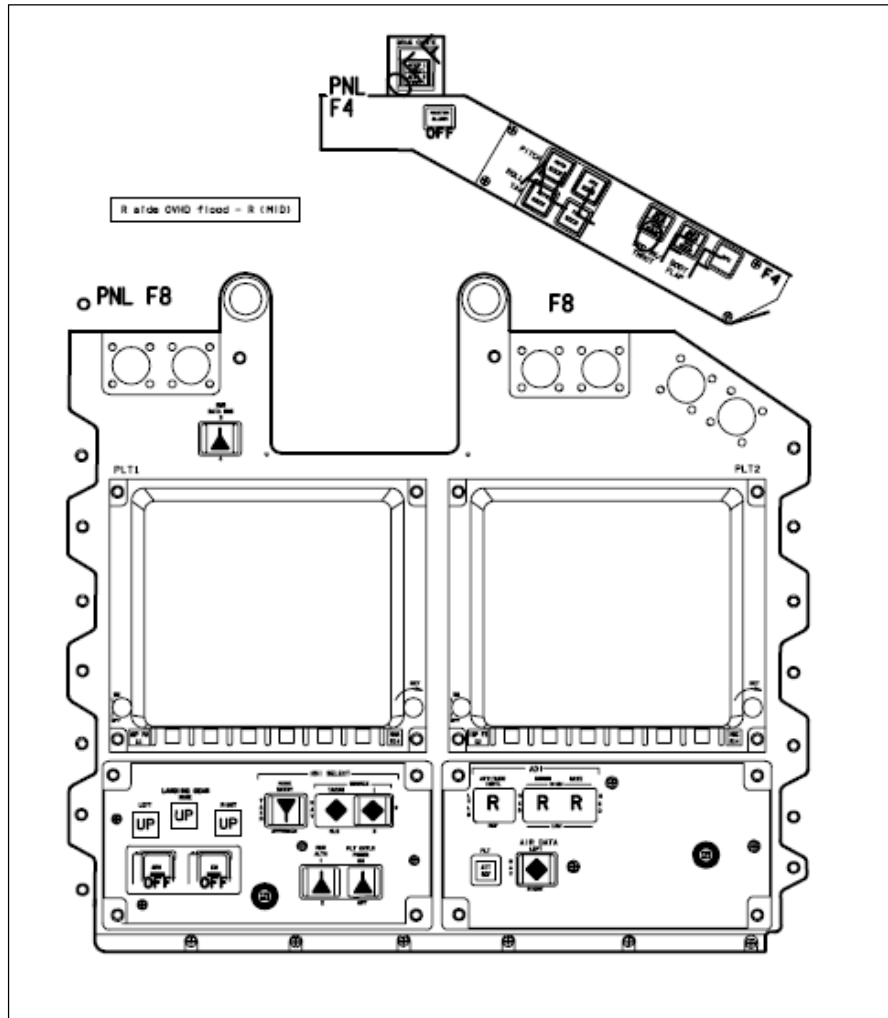
4801SE304\_114\_PNL F3

ALL VIEW/DATE 05/12/05

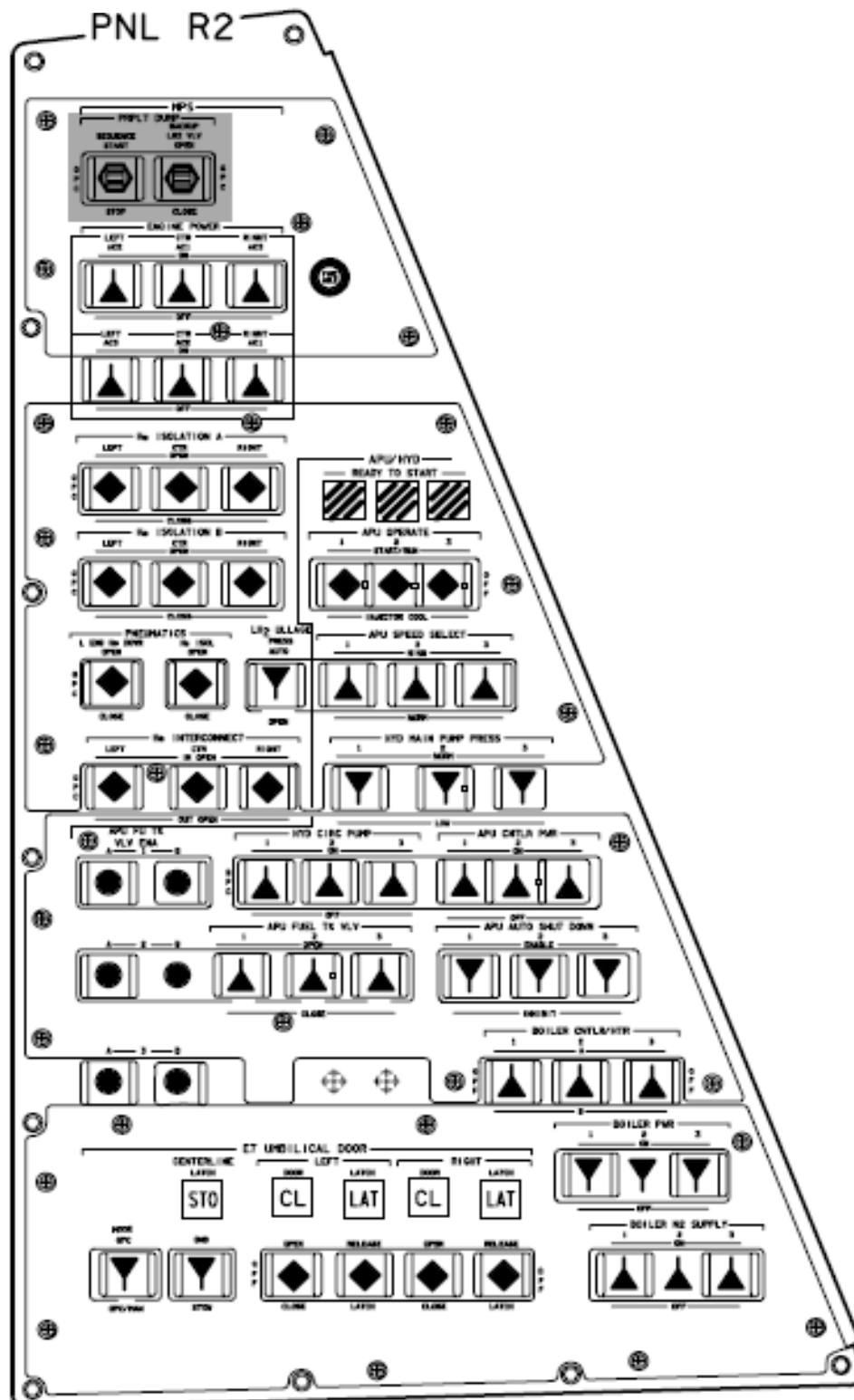
## PNL F6



## PNL 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

NOTE

Minimum operating time for PLB  
Floodlights: 10 min ~3 min to full bright

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

### **CAUTION**

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

Use MANUAL mode if MANUAL mode has already been used during mission

### MANUAL PLBD CLOSING

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

### **NOTE**

PLB Floodlights must be off for minimum of 10 min UNBLOCKED, 16 min BLOCKED prior to reuse

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

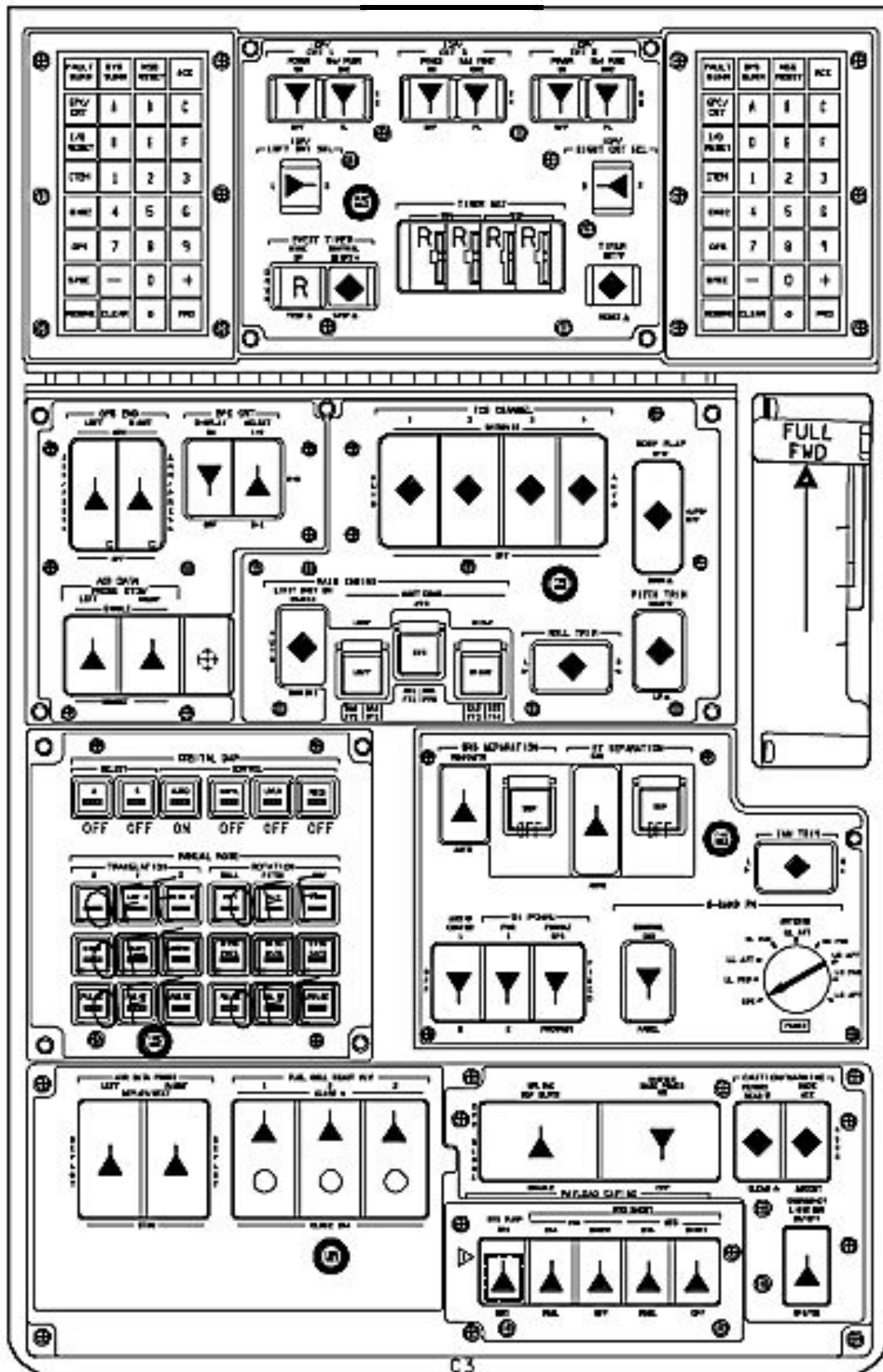
CRT1 √GNC OPS 301 PRO (DEORB MANVR COAST)

-02:00 DEACTIVATE STAR TRACKERS

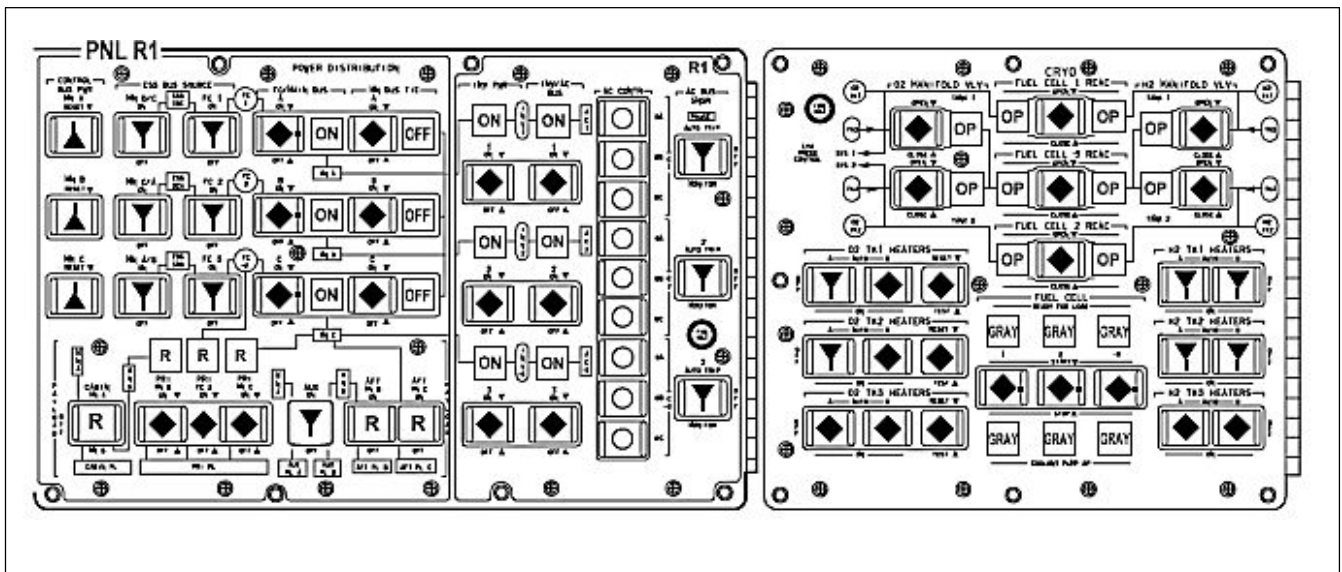
O6 STAR TRKR DR CNTL SYS (two) – CL  
STAR TRKR DR CNTL SYS (two) – OFF

-01:50 FINAL ENTRY SWITCH LIST/VERIF

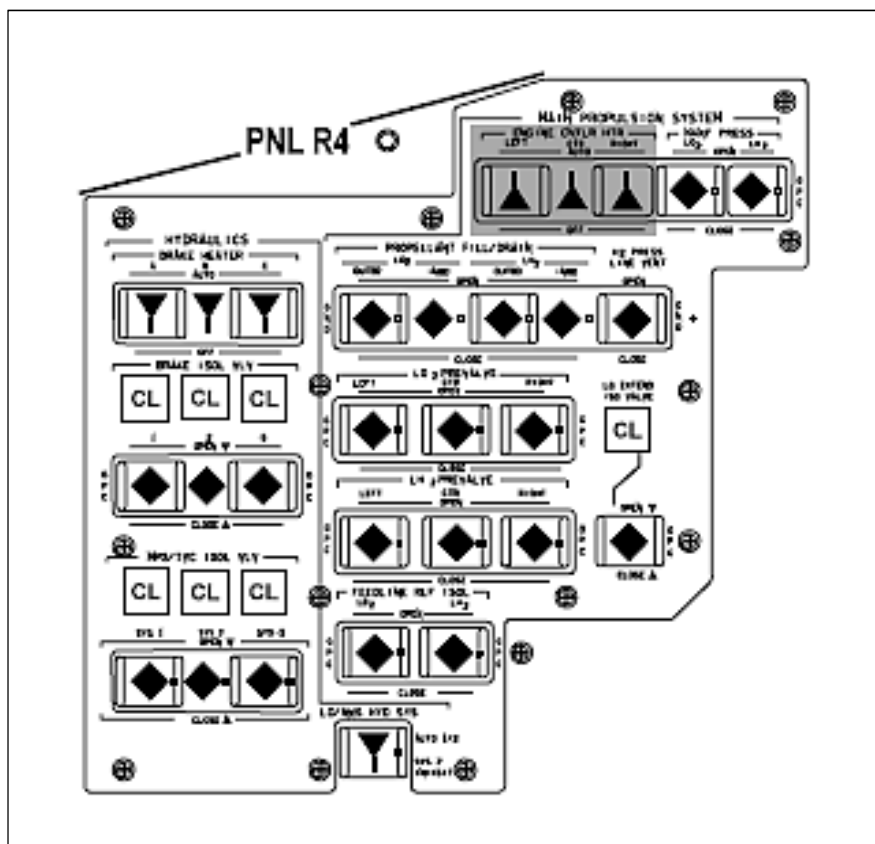
# PANEL C2/C3



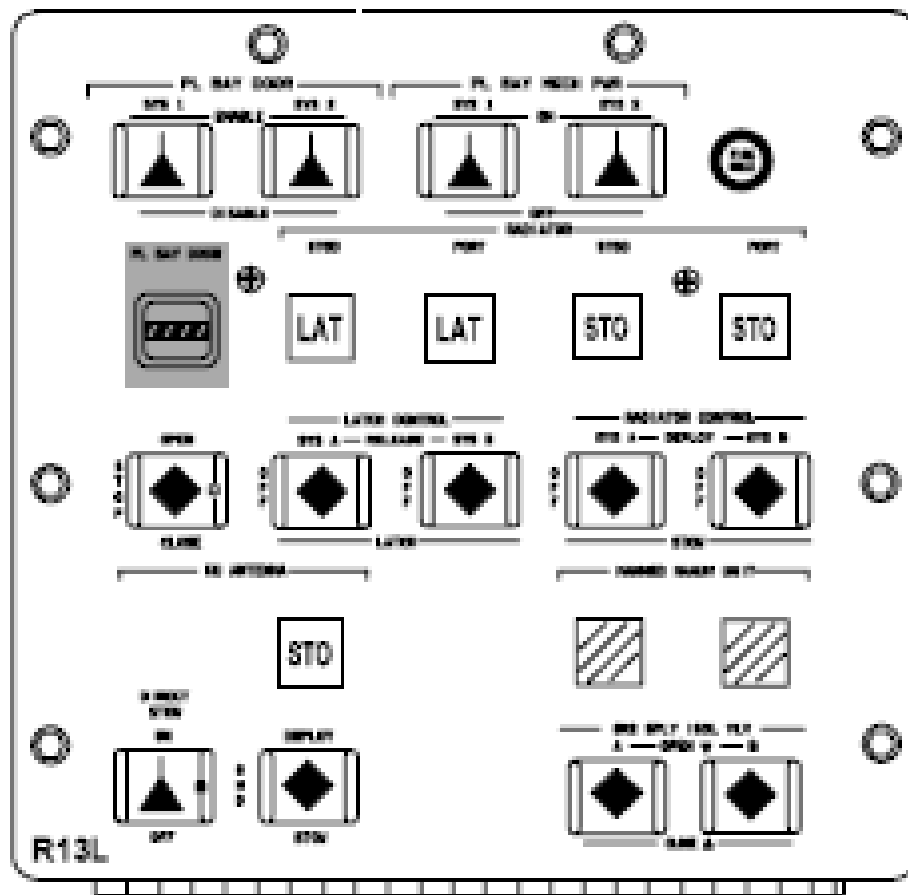
## PANEL R1



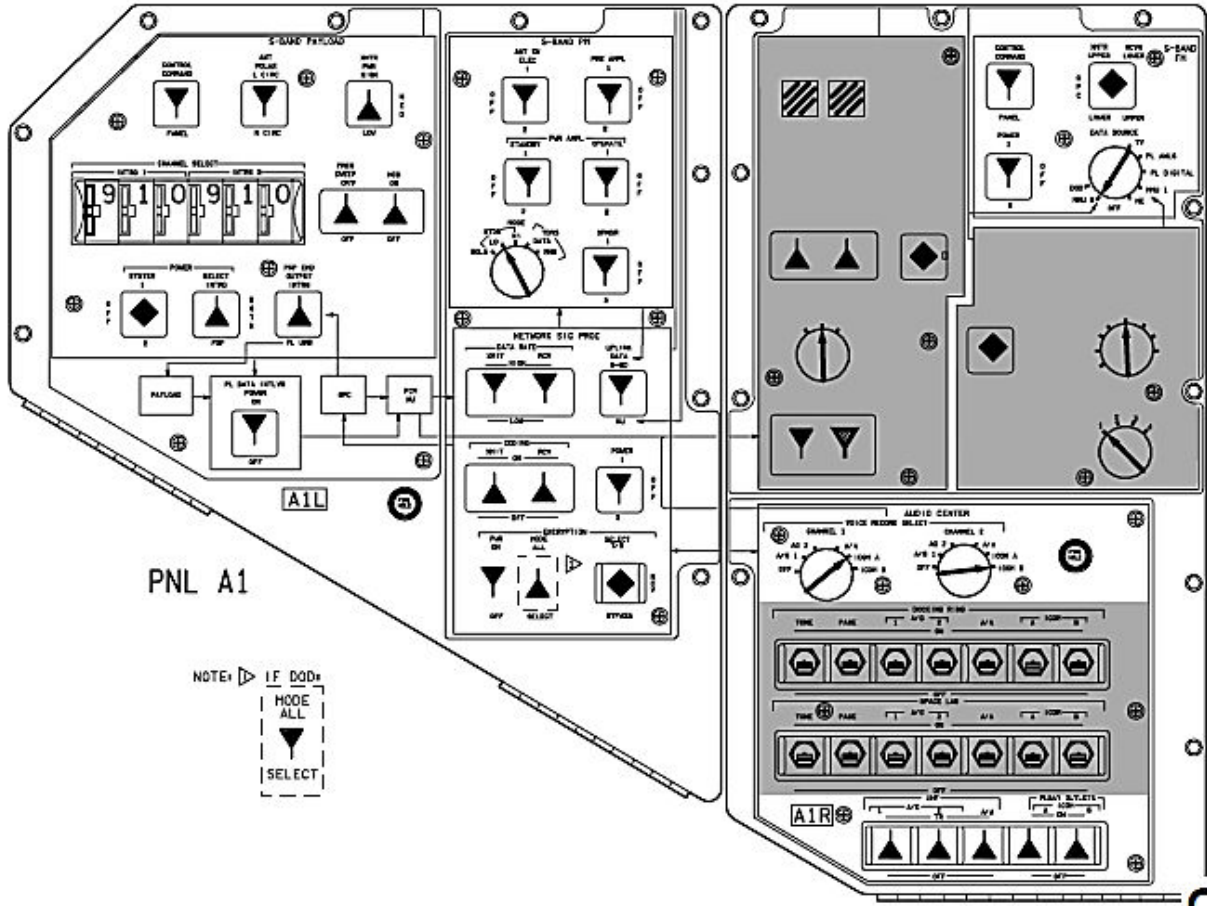
## PANEL R4



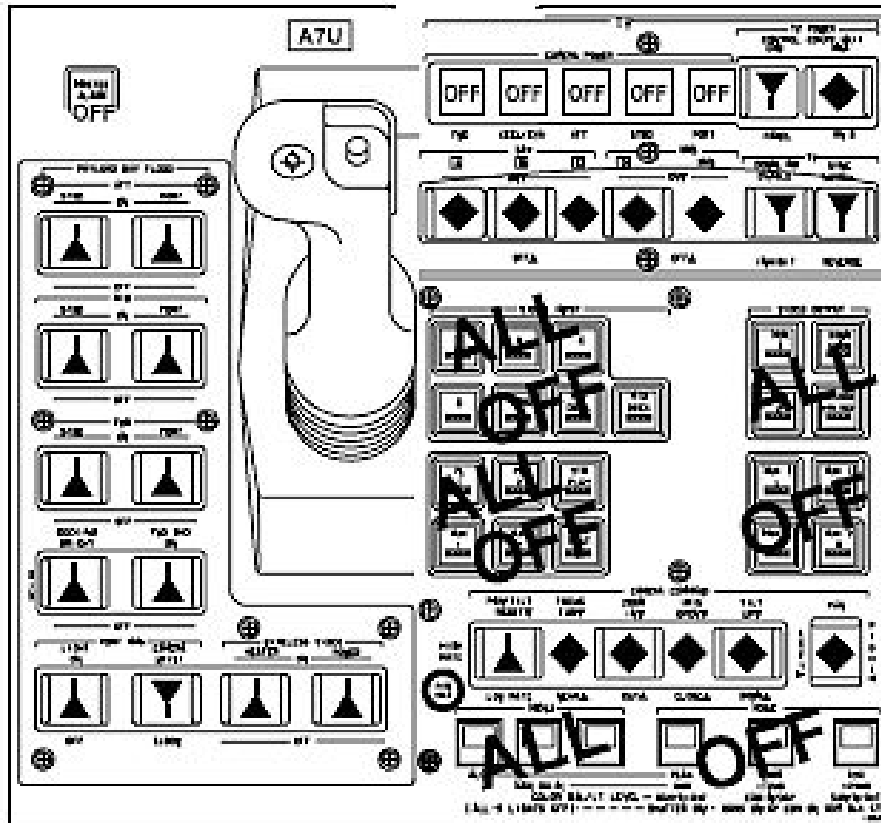
# PANEL R13L



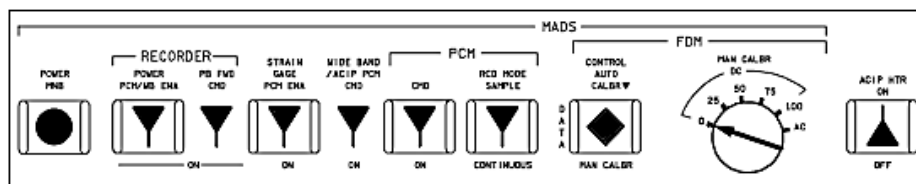
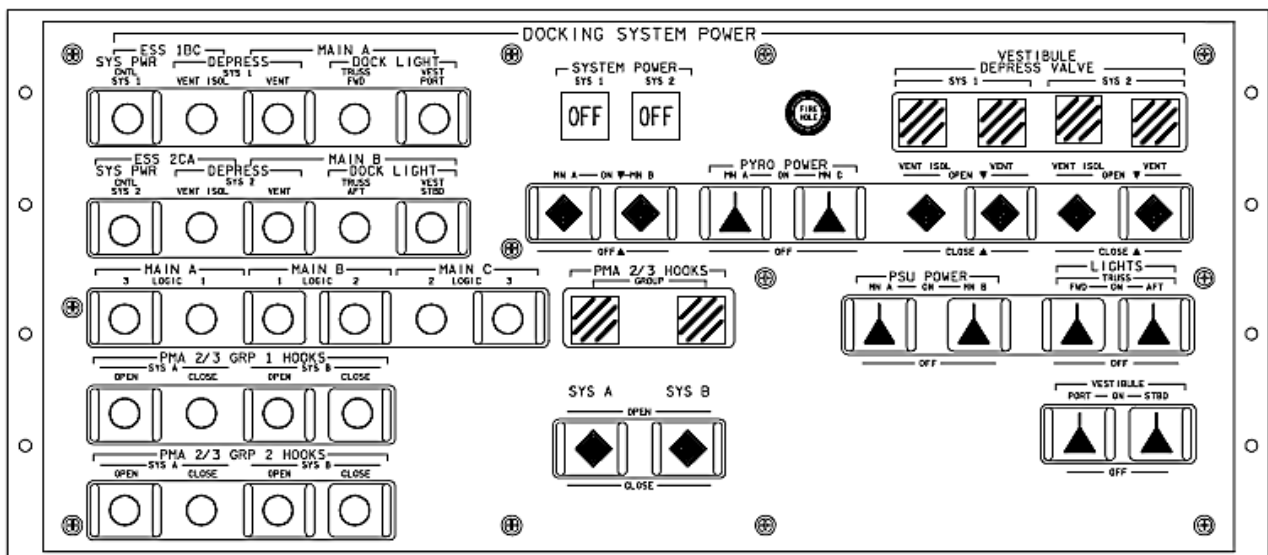
## PANEL A1



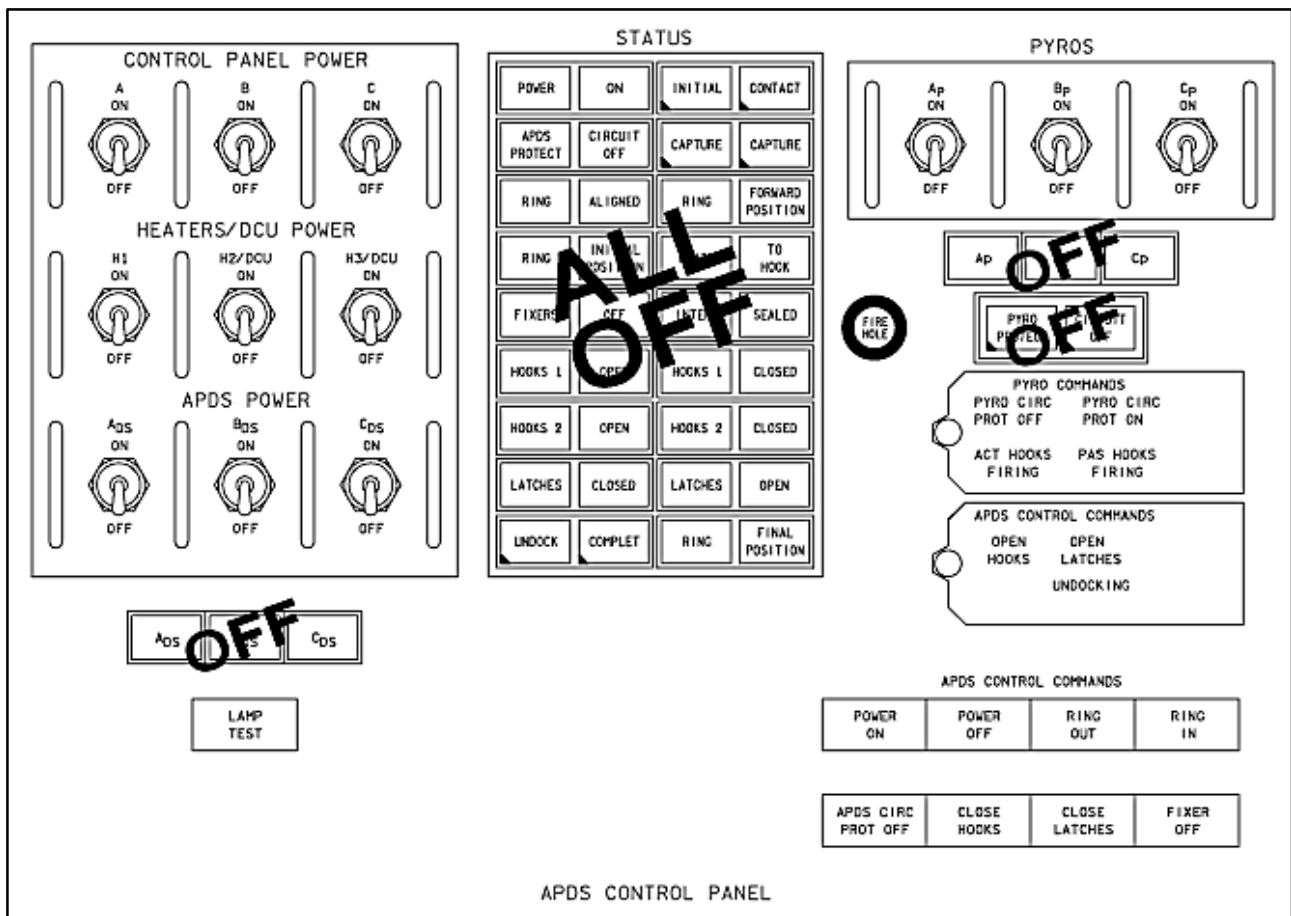
## PANEL A7U



## PANEL A6L



## PANEL A7L





<b>DEORBIT PREP CHECKLIST</b>
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<b>STS ALL</b>
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