

CDR



**POST INSERTION**

**PDP**

**STS**

**1**

**SEAT EGRESS**

- GLOVES - doff, stow**
- LAP BELT, SHOULDER HARNESS - disconnect**
- COMM PWR - OFF**
- Disconnect O2 HOSES**
- COMM CABLE, Restraint Strap**
- HELMET - stow**
- Disconnect BIOMED CABLE**
- SPURS**
- VENT HOSE**
- SEAT KIT STRAPS**
- DROGUE GUN COVER - install**

DATE 03/02/81

6-1

## SEAT INGRESS

DROGUE GUN COVER - stow  
Ingress seat, connect SEAT KIT STRAPS  
VENT HOSE\*  
SPURS  
BIOMED CABLE\*

G SUIT VLV - OFF\*

HELMET, GLOVES\* - remove, stow bag

Connect COMM CABLE, Restraint Strap  
O2 HOSES, safety clips

COMM PWR - OFF

Doff, stow COMM EQUIP

COMM PWR - SUIT (down)

LAP BELT - connect over O2 hoses

HELMET - don, ✓comm

SHOULDER HARNESS - connect over O2 hoses, Comm Cable

✓Head movement, adjust Helmet Tiedown Strap

✓PRESS CNTL - OP\*

GLOVES - don\*

VISOR - down & locked, ✓O2 flow

Suit Pressure Integrity Check\*

### CAUTION

Pressurizing > 1 min  
can damage suit fans

Hold breath, ✓no face dam flow

PRESS CNTL - CL, ✓leaks  
- OP

\*Omit when neck  
ring worn



DATE 03/02/81

POST INSERTION PROCEDURES



STS 1 NOMINAL SUMMARY

| GMT : 105      | 11               | 12               | 13    | 14      | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   |
|----------------|------------------|------------------|-------|---------|------|------|------|------|------|------|------|------|
| MET : 000      | 1                | 2                | 3     | 4       | 5    | 6    | 7    | 8    | 9    | 10   | 11   |      |
| CDR            | LAUNCH MEC/DMS 1 | PLBD MON         | TESTS | ORBITER | MEAL | MEAL | MEAL | MEAL | MEAL | MEAL | MEAL | MEAL |
| PLT            | LAUNCH MEC/DMS 2 | PLBD LAT/DR TEST | SOUL  | ORBITER | MEAL | MEAL | MEAL | MEAL | MEAL | MEAL | MEAL | MEAL |
| DAY/NIGHT      |                  |                  |       |         |      |      |      |      |      |      |      |      |
| ORBIT          |                  |                  |       |         |      |      |      |      |      |      |      |      |
| GSTON COVERAGE |                  |                  |       |         |      |      |      |      |      |      |      |      |
| OPS            |                  |                  |       |         |      |      |      |      |      |      |      |      |
| TRACKING       |                  |                  |       |         |      |      |      |      |      |      |      |      |
| DEORB EDW      |                  |                  |       |         |      |      |      |      |      |      |      |      |
| OPT MOR        |                  |                  |       |         |      |      |      |      |      |      |      |      |
| KSC            |                  |                  |       |         |      |      |      |      |      |      |      |      |
| DEORB ROT      |                  |                  |       |         |      |      |      |      |      |      |      |      |
| OPT AIC        |                  |                  |       |         |      |      |      |      |      |      |      |      |
| KAD            |                  |                  |       |         |      |      |      |      |      |      |      |      |
| ATTITUDE       |                  |                  |       |         |      |      |      |      |      |      |      |      |
| MANEUVERS      |                  |                  |       |         |      |      |      |      |      |      |      |      |
| TV             |                  |                  |       |         |      |      |      |      |      |      |      |      |
| VTR            |                  |                  |       |         |      |      |      |      |      |      |      |      |

- ACUSTIC BLKNT INS
- INSTALLATION
- SOLID SCRB SAMPLING
- INITIALIZATION
- ALIGN TO ENTRY REFERRATS
- TERMINATION
- FOOD WARMER ACT

DATE 03/02/81



CONFIG GPCs FOR ORBITAL OPS (BFS NOT ENGAGED) ①

P REASSIGN FD GPC (#3) STRING (#3) TO GPC 2 IN MC 1

(GNC 0 GPC MEMORY)  
 CONFIG - ITEM 1 +1 EXEC  
 Modify MC 1 per Table

GNC OPS 106 PRO  
 (GPC MEMORY)

| CONFIG GPC | 1 | 2 | 3 | 4 |
|------------|---|---|---|---|
| STR 1      | 1 | 2 | 2 | 2 |
| STR 2      | 2 | 2 | 2 | 2 |
| STR 3      | 3 | 2 | 2 | 2 |
| STR 4      | 4 | 4 | 4 | 4 |
| PL 1/2     | 1 | 1 | 1 | 1 |
| CRT 1      | 1 | 2 | 2 | 2 |
| CRT 2      | 2 | 2 | 2 | 2 |
| CRT 3      | 3 | 2 | 2 | 2 |
| CRT 4      | 4 | 2 | 2 | 2 |
| MM 1       | 1 | 1 | 1 | 1 |
| MM 2       | 2 | 2 | 2 | 2 |

REASSIGN ALL STRINGS TO FD GPC (#3) IN MC 3

CONFIG - ITEM 1 +3 EXEC  
 Modify MC 3 per Table

MODE FD GPC (#3) TO OPS 0

06 GPC MODE 3 - STBY (tb-bp), RUN (tb-RUN)

LOAD MC 3 INTO FD GPC (#3)

CRTX PL, GPC/CRT 3X EXEC

(X: GPC MEMORY)

CONFIG - ITEM 45 +3 EXEC

GPC - ITEM 46 +3 EXEC

STORE - ITEM 47 EXEC

Store complete when MC = 03 (~ 12 sec)

| CONFIG GPC | 3 | 00300 |
|------------|---|-------|
| STR 1      | 3 | 3     |
| STR 2      | 3 | 3     |
| STR 3      | 3 | 3     |
| STR 4      | 3 | 3     |
| PL 1/2     | 0 | 0     |
| CRT 1      | 3 | 3     |
| CRT 2      | 3 | 3     |
| CRT 3      | 3 | 3     |
| CRT 4      | 3 | 3     |
| MM 1       | 3 | 3     |
| MM 2       | 3 | 3     |

- \* If no MC = 03 after 2 min:
- \* Cycle power on MMU 1 & 2, wait 1 min
- \* Retry GPC 3 FREEZE DRY
- \* If FD not successful:
- \* Restrting 1 & 4 to GPC 1
- \* 2 & 3 to GPC 4
- \* Try GPC 2 FREEZE DRY
- \* If FD still not successful:
- \* Both MMUs failed. Set up ASAP for OPS 3 overlay,
- \* perform MALF, DPS, SSR-21
- \* If FD successful:
- \* Perform CONFIG GPC FOR ORBITAL OPS (BFS NOT ENGAGED)
- \* AND ONE GPC FAILED, 1-27, step 6



M E T  
DAY 000

TRANS  
DAP  
RT 1.0  
DB 3.5

Ref ASC C/L for activities from 00:00 - 00:52 MET

| CONFIG  | 1       | 2   | 3       | 4  |
|---------|---------|-----|---------|----|
| OPS     | 61,66   | 62  | 63      | S2 |
| GPC SEL | 1,2,3,4 | 1,2 | 1,2,3,4 | 4  |
| STR     | 1       | 2   | 2       | 0  |
|         | 2       | 3   | 3       | 0  |
|         | 4       | 4   | 1       | 4  |
| PL 1/2  | 1       | 0   | 1       | 4  |
| CRT     | 1       | 1   | 1       | 4  |
|         | 2       | 2   | 2       | 4  |
|         | 3       | 3   | 3       | 4  |
|         | 4       | 0   | 0       | 0  |
| MM      | 1       | 1   | 1       | 4  |
|         | 2       | 2   | 2       | 4  |

| TRANSLATION | A       | B        |
|-------------|---------|----------|
| PULSE       | 1 0.1   | 16 0.02  |
| ROTATION    |         |          |
| DISC RATE   | 2 0.2   | 17 0.5   |
| VERN        | 3 0.2   | 18 0.2   |
| PULSE       | 4 0.1   | 19 0.04  |
| VERN        | 5 0.01  | 20 0.002 |
| COMP        | 6 .0    | 21 .0    |
| DEADBAND    | 7 .0    | 22 .0    |
| ATT         | 8 10.0  | 23 1.0   |
|             | 9 10.0  | 24 1.0   |
| RATE        | 10 10.0 | 25 1.0   |
|             | 11 0.2  | 26 0.2   |
|             | 12 .02  | 27 .02   |

1: GNC OMS 2 MNVR COAST | 2: GNC OMS 2 MNVR COAST |  
3: BFS, SYS SUMM 2 |

L4:B,Q,R All chs closed  
P CONFIG GPCs FOR ORBITAL OPS (BFS NOT ENGAGED) (1)  
If one PASS GPC failed go to CONFIG GPCs FOR ORBITAL OPS (BFS NOT ENGAGED) AND ONE GPC FAILED, 1-27  
If two PASS GPCs failed go to CONFIG GPCs FOR ORBITAL OPS (BFS NOT ENGAGED) AND TWO GPCs FAILED, 1-29  
If BFS engaged go to MALF, DPS, GPC FRP 9  
If AV BAY FAN failed go to CONFIG GPCs FOR ORBITAL OPS FOR AV BAY FAN FAILURE, 1-31  
C SEAT EGRESS, 6-1

A MAN  
NORM  
RT 0.2  
DB 10

01:00

SECURE BFS

CRT3 BFS, GNC, OPS 000 PRO  
3: BFS, BFS MEMORY |  
C3 BFC CRT DISP - OFF

TRANSITION TO GNC OPS 2

C3 UPLK BLK - NONE  
[GNC 0 GPC MEMORY]  
CONFIG - ITEM 1 +2 EXEC  
Verify MC 2 per Table

GNC, OPS 201 PRO  
[GNC ORBIT]

TRANSITION TO SM OPS 2

C3 O1 PCMMU FORMAT - PGM  
SM, GPC/CRT 4X EXEC  
[X: GPC MEMORY]  
CONFIG - ITEM 1 +4 EXEC  
Verify MC 4 per Table

SM, OPS 201 PRO  
[SM ANTENNA]

[SM 1 DPS UTILITY]  
UL CNTL AUTO - ITEM 35 EXEC  
GPC/LDB - ITEM 11 EXEC  
[SM ANTENNA]

RECONFIG GPCs

O6 GPC MODE 5 - STBY (tb-RUN)  
OUTPUT 5 - NORM (tb-bp)  
OUTPUT 4 - TERM (tb-bp)  
MODE 3 - STBY (tb-bp)

RECONFIG CRTs

GPC/CRT 03 EXEC  
GPC/CRT 24 EXEC  
GPC/CRT 44 EXEC  
CRT3 PWR - OFF

LOAD ORBIT TEL

[SM 62 PCMMU/PL COMM]  
O1 PCMMU FORMAT - GPC

CRT FORMAT:  
FXD - ITEM 1 EXEC (\*)  
SEL ID - ITEM 3 +3 EXEC  
LOAD - ITEM 4 EXEC  
- /RUN, CPLT  
PGM - ITEM 2 EXEC  
[SM ANTENNA]

C3 DFI RCDR/PCM - HI SAMP  
/C/W MODE - NORM

| CONFIG | 2     |
|--------|-------|
| GPC    | 12000 |
| STR    | 1     |
|        | 2     |
|        | 2     |
|        | 1     |
|        | 0     |
| PL 1/2 | 1     |
| CRT    | 2     |
|        | 2     |
|        | 2     |
| MM     | 1     |
|        | 1     |
|        | 2     |

| CONFIG | 4     |
|--------|-------|
| GPC    | 00040 |
| STR    | 0     |
|        | 0     |
|        | 0     |
|        | 0     |
| PL 1/2 | 4     |
| CRT    | 4     |
|        | 4     |
|        | 4     |
| MM     | 1     |
|        | 4     |
|        | 4     |

AFT STATION CONFIGURATION (CDR) (1)

NOTE  
These switches need to be accomplished immediately after seat egress

- 014:D cb MVA CAB VENT (two) - op
- ML26C SPLY H2O TK A PRESS CNTL vlv - PRESS
- A14 RCS/QMS HTR FWD RCS
  - L POD (two) - A AUTO, B OFF
  - R POD (two) - A AUTO, B OFF
- QMS CRSF D LINES (two) - A AUTO, B OFF
- FWD, AFT RCS JETS (ten) - AUTO
- A16 Unstow/temp stow:
  - Vent hose Extensions (two)
  - Data Card Kit 3 on L11
  - 70mm Camr w/80mm Lens & Mag CH 01 (yellow) on front of VTR

Deploy ORBIT PKT C/L (2)

- A17 Unstow/temp stow:
  - VTR cassettes (two) on VTR
- Configure suit ventilation

- A15 Don comm equip
  - ✓PS COMM CCU PHR - OFF
  - Connect Comm Cable to outlet
  - PS COMM CCU PHR - ON

- L9 PAYLOAD STATION AUDIO:
  - ✓PHR - AUD/TONE
  - ✓A/G (two) - T/R
  - ✓A/A - T/R
  - ✓ICOM A - T/R
  - B - as reqd
  - VOX SENS - as reqd
  - VOL tw (five) - as reqd
  - XMIT/ICOM MODE - PTT/HOT

- A11 S-BD PM PRE AMPL - OFF
- PHR AMPL STBY - OFF
- OPER - OFF

MODE - STDN LO (rotary)

- A18 S-BD FM DATA SOURCE - OPS RCDR (rotary)
- R15:A A11 cbs closed
- :D A11 cbs closed except:
  - cb MMC TV KEEL/EVA (three) - op
- :E A11 cbs closed except:
  - cb MNB PORT RMS TV (three) - op

- R12U FC H2O LINE HTR - A AUTO
- R12L CRT4 PHR - ON
- SPLY H2O XOVRR VLV - OP (tb-OP)
- R11L:E DFI MB ASC PHR - OFF
- MSN PHR - OFF
- :G PCM PRESS XDCRS - OFF

- 017:A ATVC (four) - OFF
- :B EIU (three) - OFF
- :D MEC 1 - OFF, wait 2 sec, then 2 - OFF

- 016:E cb MNC DDU AFT - c1
- 014:E cb MNA DDU AFT - c1
- :F RJDA 1A L2/R2 DRIVER - OFF
- 2A L4/R4 DRIVER - OFF
- RJDF 1B F1 DRIVER - OFF
- RJDF 1A F2 DRIVER - OFF

- 015:F

AFT STATION CONFIGURATION (PLT) (2)

Configure suit ventilation  
Don comm equip

- A11 ✓MS COMM CCU PHR - OFF
- Connect Comm Cable to outlet
- MS COMM CCU PHR - ON

- R10 MISSION STATION AUDIO:
  - ✓PHR - AUD/TONE
  - A/G (two) - T/R
  - A/A - T/R
  - ICOM A - T/R
  - B - as reqd
  - VOX SENS - as reqd
  - VOL tw (five) - as reqd
  - XMIT/ICOM MODE - PTT/HOT

1: GNC ORBIT 3: OFF 2: SM ANTENNA

P AUTO MNVR TO PLBD OPENING ATTITUDE (-ZLV, Y-POP)

CRTI BODY VECTOR: P +9 0  
Y + 0  
0 + 0

After MCC GO to use Vernier RCS,  
DAP: B/AUTO/VERN  
(01:05) Initiate LVLH

C AFT STATION CONFIGURATION (CDR) ①  
SEAT EGRESS, 6-1  
P AFT STATION CONFIGURATION (PLT) ②

| RAD/PLBD OPS NO GO FOR FOLLOWING FAILURES |                                       |
|---|---------------------------------------|
| OMS/RCS                                   | GNC<br>ECLS/EPS                       |
| 2 OMS Enggs                               | 2 INUs Either Evap                    |
| OMS Prop Leak                             | 2 RGAS 1 H2O or Freon Lp              |
| Aft RCS He or Prop Leak                   | 2 of 4 Av Bay 1&2 Fans Either Cab Fan |
| 2 GPCs                                    | 2 Av Bay 3 Fans                       |
| Either PL MDM                             | 2 COMM Any O2 or H2 Tk                |
| 2 FF or FA MDMs                           | 2 ACCUS 2 Supply/Waste Tks            |
| 2 Fwd CRTs                                | 2 FCs                                 |
| 2 MDMs                                    | Any MN or AC Bus                      |
|   | Either Rad Flow                       |
|   | Go to COAS CAL ② 1-11                 |

RAD ACT  
C 01 ✓FREON EVAP OUT TEMP ind - 380-410  
L1 RAD BYP VLV MODE (two) - AUTO  
CNTRLR LOOP (two) - AUTO A  
Wait ~ 90 sec:  
✓RAD BYP VLV (two) tb - RAD  
\* If RAD BYP VLV 1(2) tb still BYP: \*  
\* LI RAD CNTRLR LOOP 1(2) - AUTO B \*

C CONFIGURE PLBDs FOR OPERATION (FTO 151-1&2) ③  
If two GPCs failed, config for PLBD OPS using BFS

NOTE

Detailed procedures for PLBD OPS are on 1-21, 22, & 23 if reqd

CRT4 SM, OPS 202 PRO

R13L ✓PL BAY DR - STOP  
AC POWER ON - ITEM 1 EXEC

P OPEN/CLOSE EACH LATCH GROUP, Time & Record (1-9)  
(70mm/01 PAD, 1-9, after each latch group opening, 8 exp)

CONFIGURE PLBDs FOR OPERATION (FTO 151-1&2) 3

C Remove aft window filters (W9 & W10), stow behind Trash Bag

SET UP LIGHTS, CAMRS, MON & VTR

C AIR AUD CTR PL BAY OUTLETS ICOM A - ON  
A6U ANNUN BUS SEL - MNC  
A7U PL BAY FLOOD AFT/FWD (four) - ON (~ 3 min to full bright)  
FWD BHD - ON (~ 3 min to full bright)

NOTE

P1 Bay Floods do not immediately re-illuminate if turned OFF/ON (~ 2-5 min delay)

Photograph PLBD c/1 (70mm/01 PAD, 1-9, 2 exp)  
Use TV Cue Card and powerup FWD, AFT, RMS Camrs, MON & VTR  
Record all PLBD OPS continuously on VTR

CAUTION

If SM GPC fails during any PLBD test:

- 06 MDM PL1,2 (two) - OFF
- GPC MODE 4 - STBY, HALT
- MDM PL1,2 (two) - ON
- Reload SM into GPC 2
- Perform MALF, DPS, SSR-5 and DPS, SSR-7

When opening/closing any PLBD latch group:

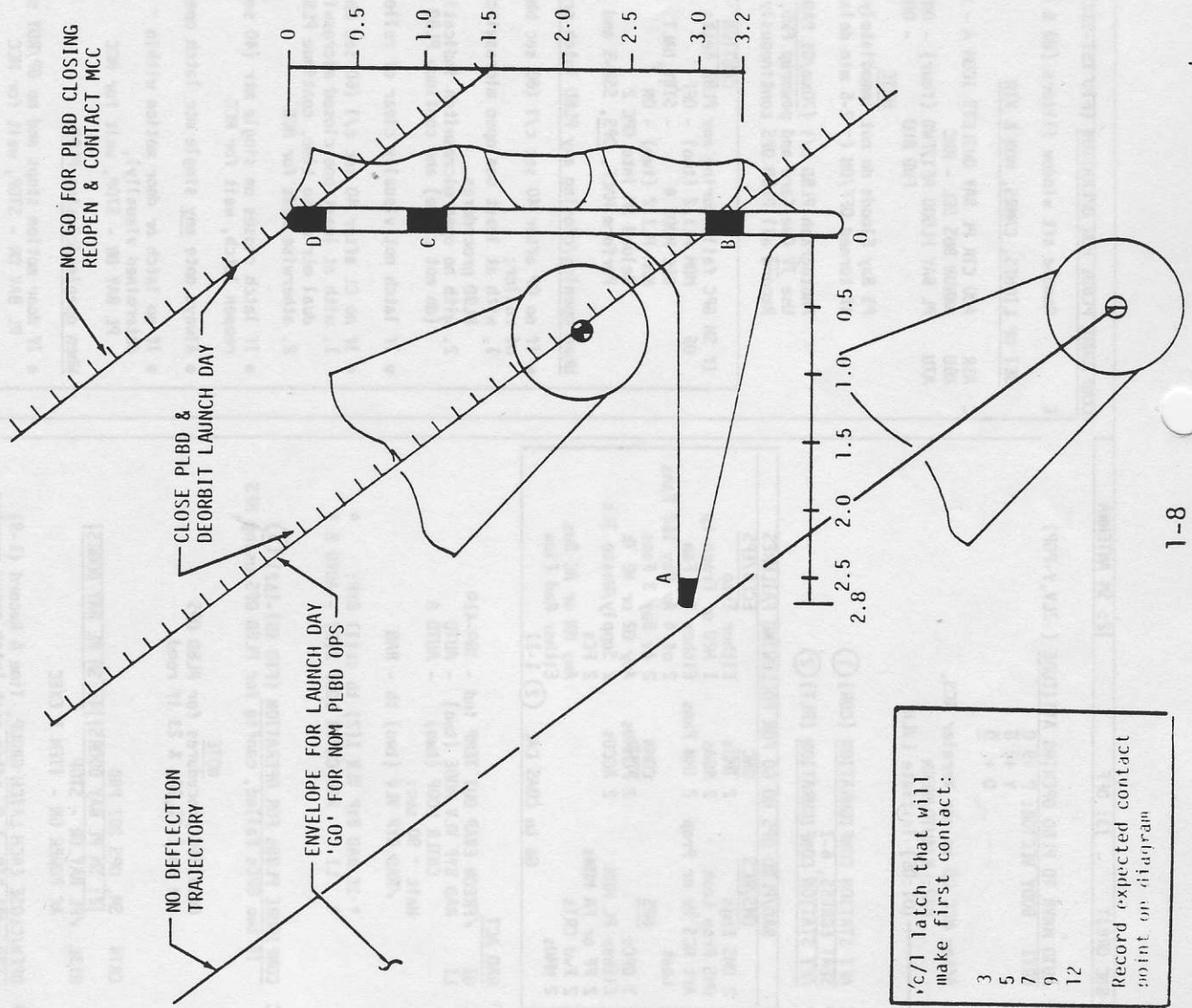
- If no OP after 40 sec c/1 (60 sec bhd) and latch visually clear of roller:
  1. with at least one open microswitch indication, continue PLBD procedures
  2. with no open microswitch indication, leave latch open (do not close) and continue PLBD procedures
- If latch not visually clear of roller, wait for MCC
- If no CL after 40 sec c/1 (60 sec bhd) and latch visually closed;
  1. with at least one closed microswitch indication occurring at dual mtr close time, continue PLBD procedures
  2. otherwise wait for MCC
- If latch closes on single mtr (40 sec c/1, 60 sec bhd), do not reopen latch, wait for MCC
- Always note any single mtr latch operations
- If no latch or door motion within ~ 10 sec after cmd, (no motion determined visually),  
PL BAY DR - STOP, wait for MCC

When opening/closing PLBD:

- If door motion stops and no OP/RDY status,  
PL BAY DR - STOP, wait for MCC
- If door closes on single mtr (~ 120 sec), do not reopen PLBD, wait for MCC
- For failed open latches, do not attempt to close unless an Entry capability is available



LAUNCH DAY NO GO CRITERIA DIAGRAM  
C/L LATCH EXTENDED GUIDE ROLLER TRAJECTORY



✓c/l latch that will make first contact:  
 3  
 5  
 7  
 9  
 12

Record expected contact point on diagram

1: GMC ORBIT 2: SH PL BAY DOORS 4: SH PL BAY DOORS

M E T  
 DAY 000  
 01:30  
 B AUTO  
 VERN  
 RT 0.2  
 DB 1.0  
 UPLINK  
 RCS QTY  
 01:35  
 UPLINK  
 VARIABLE  
 PARAM(DAP)  
 01:40  
 01:45  
 01:50  
 UPLINK  
 ORBITTER SV  
 01:55  
 TMBU  
 (IF REQD)  
 02:00

C SET UP FOR VARIABLE PARAM UPLK (DAP)  
 1: GMC 1 DPS UTILITY

B OPEN c/1 LATCH GROUPS 5-8 & 9-12 (70mm/01), 5  
 then 1-4 & 13-16 (70mm/01) 4

B OPEN RIGHT FWD/AFT LATCH GROUPS (70mm/01)

B OPEN RIGHT DOOR (70mm/01), Time & Record 0:55

B CLOSE RIGHT DOOR TO PROXIMITY OF CLOSED POSITION  
 (Verify 2 motor closing)

NOTE  
 Alternately START & STOP PLBD until near closed.  
 Determine c/1 latch that will make first contact.  
 Record this latch # & its expected contact point  
 on NO GO DIAGRAM (1-8)

B CLOSE RIGHT DOOR TO 'RDY' (if not already at 'RDY')  
 (70mm/01)

B CLOSE RIGHT FWD/AFT LATCH GROUPS & DOOR (70mm/01)

B CLOSE c/1 LATCH GROUPS 1-4 & 13-16 (70mm/01),  
 then 5-8 & 9-12 (70mm/01)

B OPEN c/1 & RIGHT FWD/AFT LATCH GROUPS 5-8 & 9-12  
 (70mm/01), then 1-4 & 13-16 (70mm/01),  
 then RIGHT FWD & AFT (70mm/01)

| FUNCTION  | PLBD cb FUNCTIONS |                            | CNTL BUS FUNCTIONS |       |
|-----------|-------------------|----------------------------|--------------------|-------|
|           | MCA MTR 1/MDM     | MAY3C: C&D<br>AC MTR 2/MDM | MTR 1              | MTR 2 |
| LATCH 5-8 | AC3MID2/1         | AC3MID2/2                  | AB 3               | CA 3  |
| 9-12      | AC1MID1/1         | AC3MID4/2                  | AB 3               | CA 3  |
| 1-4       | AC1MID3/1         | AC3MID2/1                  | AB 3               | CA 3  |
| 13-16     | AC3MID4/2         | AC2MID2/1                  | CA 3               | BC 3  |
| R FWD     | AC1MID1/1         | AC2MID4/2                  | AB 3               | BC 3  |
| R AFT     | AC3MID4/2         | AC2MID2/1                  | CA 3               | BC 3  |
| R DOOR    | AC1MID1/1         | AC2MID4/2                  | AB 3               | BC 3  |
| L FWD     | AC1MID1/1         | AC2MID4/2                  | AB 3               | BC 3  |
| L AFT     | AC1MID3/1         | AC3MID2/2                  | AB 3               | CA 3  |
| L DOOR    | AC3MID4/2         | AC2MID2/1                  | CA 3               | BC 3  |

| LATCH GROUP | PLBD LATCH GROUP TEST TIME TABLE |            |
|-------------|----------------------------------|------------|
|             | OPEN TIME                        | CLOSE TIME |
| 5-8         | 19                               | 19         |
| 9-12        | 20                               | 19         |
| 1-4         | 19                               | 20         |
| 13-16       | 20                               | 19         |
| R FWD       | 27                               | 27         |
| R AFT       | 26                               | 26         |
| L FWD       | 26                               | 27         |
| L AFT       | 26                               | 26         |

70mm/01 PAD  
 SUBJ: c/1 Def1 vs Latch Config  
 LENS: 80mm  
 FOCUS: ~ 20 ft  
 APERTURE/SHUTTER SPEED:  
 MAG: CH 01 (yellow)

| CONDITION                  | APERTURE | SHUTTER SPEED |
|----------------------------|----------|---------------|
| Both doors closed or night | F/4      | 1/60          |
| Sunlit PLB                 | F/22     | 1/500         |

**RAD DEPLOYMENT & VERIFICATION (FTO 151-03) ①**

P R13L ✓RAD LAT CNTL SYS (two) - OFF (tb-LAT)  
 ✓CNTL SYS (two) - OFF (tb-STO)

PL BAY MECH PMR SYS (two) - ON  
 RAD LAT CNTL SYS (two) - REL (concurrently), start timer  
 -/(tb-bp ~ 25 sec, REL)  
 - OFF

Record elapsed time STBD 24, PORT 24

RAD CNTL SYS (two) - DPY (concurrently), start timer  
 ✓/(tb-bp ~ 40 sec, DPY)

RAD CNTL SYS (two) - OFF

Record elapsed time STBD 38, PORT 38

\* If either rad deploys in > 40 sec or tb-bp after  
 10 sec, stow and latch rads  
 \* Redeploy only good rad (Stbd or Port)  
 \* (Requires opening MAY3C:C & D MCA LOGIC POWER AC cbs)

|        | STBD RAD cbs                  | PORT RAD cbs                  |
|--------|-------------------------------|-------------------------------|
| DPY:   | AC1M1D3<br>AC3M1D2            | AC1M1D1<br>AC3M1D4            |
| LATCH: | AC1M1D3<br>AC2M1D2<br>AC3M1D2 | AC1M1D1<br>AC2M1D4<br>AC3M1D4 |

PL BAY MECH PMR SYS (two) - OFF

R12U FC PURGE HTR - ON  
 A7U PL BAY FLOOD (all) - OFF  
 TV CAMR PMR BAY (three) - OFF (tb-OFF)  
 PMR CNTL - PNL  
 CONTR UNIT - OFF  
 CNTL - CMD

A3 MON 1,2 (two) PMR - OFF  
 L12 VTR pb - STOP, wait 5 sec, then  
 PMR - OFF

A17 Stow VTR Cassette  
 I: SM 88 APU/ENVIRON THERM

**NOTE**

Controller out temps will not drop to their  
 normal operating range (< 60°) until ~ 15 min  
 after radiators are deployed

L1 ✓RAD BYP VLV tb (two) - RAD  
 CRTI When FREON LOOP CNTLR OUT T < 60 deg:  
 L1 HI LOAD EVAP - OFF

I: GNC ORBIT



1: GNC 1 DPS UTILITY | 2: SM PL BAY DOORS | 4: SM PL BAY DOORS

M E T  
DAY 000  
02:00  
B AUTO  
VERN  
RT 0.2  
DB 1.0  
02:05  
02:10  
02:15  
02:20  
B MAN  
VERN  
RT 0.2  
DB 1.0  
02:25  
02:30

B OPEN RIGHT DOOR (2nd time) (70mm/01)  
Time & Record \_\_\_\_\_

B OPEN LEFT FMD/AFT LATCH GROUPS (70mm/01)

B OPEN LEFT DOOR, Time & Record \_\_\_\_\_

B CLOSE LEFT DOOR TO 'RDY' (70mm/01)  
Time & Record \_\_\_\_\_

B CLOSE LEFT FMD/AFT LATCH GROUPS & DOOR (70mm/01)

C AUTO MNVR TO COAS CAL ATT/S TRKR ACTIVATION  
INRTL ATT: R 3 3 1.3  
P 2 1 3.3  
Y I 9.4

DAP: B/AUTO/VERN  
(02:10) Initiate MNVR  
06 STAR TRKR PMR (two) - ON  
GNC, I/O RESET EXEC

B OPEN LEFT FMD/AFT LATCH GROUPS (70mm/01)

B OPEN LEFT DOOR (2nd time), Time & Record \_\_\_\_\_  
CRY4 AC POWER OFF - ITEM 2 EXEC  
SM, OPS 201 PRO

12: SM ANTENNA | 4: SM ANTENNA

P RAD DEPLOYMENT & VERIFICATION (FTO 151-03) ①

1: GNC ORBIT

C COAS CAL (FTO 173-01) ②

1: GNC 22 S TRK/COAS CNTL

COAS CAL (FTO 173-01) ②

C SET UP COAS

A17 Unstow COAS and Fwd Adapter Brkt, mount FWD, plug in (01)  
COAS CAL PREP

CHANGE DAP: ROT COMP VERN - .003

1: GNC 22 S TRK/COAS CNTL  
REQD TD - ITEM 21 +2 0 EXEC ARCTURUS (02:20-03:05)  
✓ POS +X - ITEM 22  
CAL MODE - ITEM 26 EXEC

If +X COAS with PRCS:

1: GNC 23 RCS  
CRY RCS FMD - ITEM 1 EXEC (\*)  
JET DES F1U - ITEM 11 EXEC (\*)  
F2U - ITEM 19 EXEC (\*)  
F3U - ITEM 27 EXEC (\*)

TAKE STAR MARK

DAP: As reqd  
DAP ROT: PULSE/PULSE/PULSE  
FLT CNTLR PMR - ON  
Mnvr to position star at COAS center  
When star centered:  
ATT REF pb - push  
Repeat mark as reqd to obtain Δ BIAS consistency

CALIBRATE COAS

CRT1 Record CAL +X Δ BIAS  
UPDATE - ITEM 28 EXEC  
✓ Δ BIAS goes to zero  
Repeat 'Take Star Mark'  
✓ Δ BIAS < .1 2.

\* If not:  
\* Redo 'Calibrate COAS' up to two times \*

DES - ITEM 27 EXEC

CHANGE DAP: ROT COMP VERN - .000

F6 FLT CNTLR PMR - OFF  
DAP: B/AUTO/VERN  
01 COAS - OFF

If +X COAS with PRCS:

1: GNC 23 RCS  
CRY RCS FMD - ITEM 1 EXEC (\*)  
JET DES F1U - ITEM 11 EXEC (no \*)  
F2U - ITEM 19 EXEC (no \*)  
F3U - ITEM 27 EXEC (no \*)

23  
10  
010



M E T  
 DAY 000  
 02:30  
 B MAN  
 VERN  
 RT 0.2  
 DB 1.0

02:35

02:40

02:45

02:50

02:55

03:00

B AUTO  
 NORM  
 RT 0.5  
 DB 1.0

B AUTO  
 VERN  
 RT 0.2  
 DB 1.0

B AUTO  
 NORM  
 RT 0.5  
 DB 1.0

B AUTO  
 VERN  
 RT 0.2  
 DB 1.0

B AUTO  
 NORM  
 RT 0.5  
 DB 1.0

B AUTO  
 VERN  
 RT 0.2  
 DB 1.0

C STAR TRKR SELF TEST/DOOR OPEN ①

P AUTO MNVR TO SINGLE IMU STAR ALIGN ATT ②

C SINGLE IMU STAR ALIGN (FTO 173-07)

P RESET C/W ③

C DUAL IMU STAR ALIGN

NOTE

If reqd, go to DETAILED IMU/STAR TRKR OPS, 1-24, 1-25 or

ONE STAR TRKR -Y(-Z) STAR DATA ACQUISITION, 1-26

Record data in SINGLE IMU STAR ALIGN LOG

Torque IMU with largest single ANG ΔX, ΔY, ΔZ

ANG ERR <.090

\* If >.090: Retake star data (alternate pad). Do not \*

\* clear Star Table & select best pair

ANG ΔX, ΔY, ΔZ for two IMUs <.120

\* If >.120: Clear Star Table & retake star data \*

REQD ID: -Y +5 1, ATRIA (02:16-02:57)

-Z +2 2, ALTAIR (02:35-03:20)

ANG DIF: 84.0

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

ANG 1

ΔX (+) : 06

ΔY (+) : 23

ΔZ (+) : 83

EXECUTE TIME 2:39:31 IMU 3

REQD ID: -Y +5 1, -Z +2 2, 84.0

-Y ΔANG +07, -Z ΔANG +08, 02:41:11

ANG ERR .02

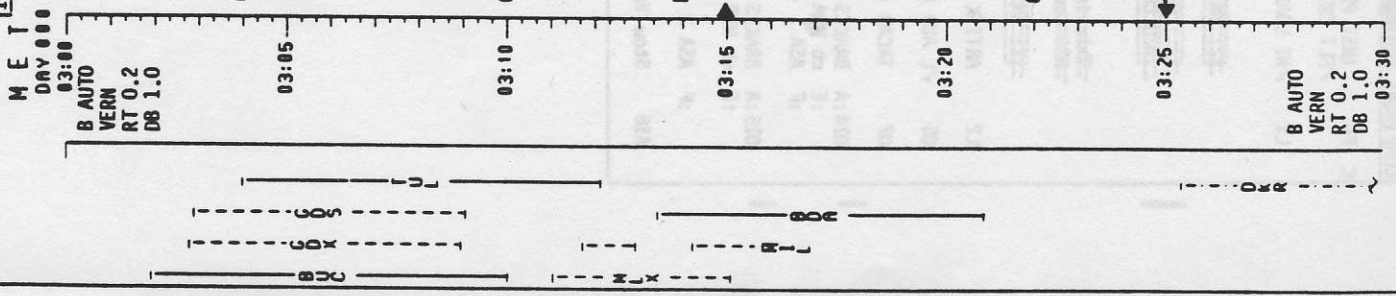




CX-227  
over the status  
frame 16 status

1: GMC 21 IMU ALIGN 2: SM ANTENNA 4: GMC 22 S TRK/COAS CNTL

12:57:44 - ZLV-YPOP



**C DUAL IMU STAR ALIGN VERIF**  
Retake star data using star pair last used  
/ANG ERR < .090  
/ANG ΔX, ΔY, ΔZ ≤ .10 (torqued IMUs)  
If not, go to:  
ANG ΔX, ΔY, ΔZ > .10 ①, then record  
data in DUAL IMU STAR ALIGN VERIF LOG

**C POST S TRK/IMU RECONFIG**  
06 STAR TRKR PMR -Z - OFF  
1: GMC ORBIT 2: SM SYS SUMM 1

**P FUEL CELL AUTO PURGE TEST**  
R12U ✓FC PURGE VLVS (three) - GPC  
HTR - GPC  
GPC PURGE SEQ - START, hold 3 sec after tb-gray  
When purge sequence starts, verify:  
CRT4 FC FLOW O2 (three) - incr/decr 2.2 lb/hr  
H2 (three) - incr/decr 0.6 lb/hr  
R12L CRT4 PMR - OFF  
4: SM 88 CRYO/FUEL CELLS

**C AUTO MNVR TO -ZLV, Y-POP ATTITUDE (FTO 174-08)**  
MCC & CREW GO/NO GO FOR ORBIT OPS  
BODY VECTOR: P +9 0  
Y + 0  
0 + 0  
(03:25) Initiate LVLH

ANG ΔX, ΔY, ΔZ > .10 ①  
\* If > .10:  
\* Torque IMU  
\* Redo DUAL IMU STAR ALIGN VERIF using alternate pad  
\* INRTL ATT (pad)  
\* Initiate MNVR  
\* \* \* \* \*  
**ALTERNATE DUAL IMU STAR ALIGN VERIF PAD**  
ID: -Y + 1 3. RIGEL (03:16-04:02) R 8 4.5  
-Z + 3 8. NAVI (02:51-03:37) P 3 5 5 6  
ANG DIF: 85.2 Y 3 3 4.2  
\* \* \* \* \*

**DUAL IMU STAR ALIGN VERIF LOG**  
REQD ID: -Y 26 .-Z 1 4 91.4  
-Y Δ ANG + .06 .-Z Δ ANG .  
ANG ERR 0 .-Z Δ ANG .  
ANG IMU 1 IMU 2  
ΔX { } : .01 { } : .01  
ΔY { } : .01 { } : .01  
ΔZ { } : .01 { } : .01

**CONFIGURE CONTROLS FOR ON-ORBIT (COR) ①**

C F6 INST PMR - OFF  
 ✓FLT CNTLR PMR - OFF

L1 ✓HI LOAD EVAP - OFF  
 DUCT HTR - OFF

~~2- SW BT SW TABLE MOUNT~~  
~~PARAMETER NAME SW INTENSITY~~  
~~H2O LOOP PUMP OUT P 100120001 INHIBIT~~

~~NOTE~~  
~~Beis inhibits the B/H-GAN for~~  
~~H2O Loop 1 Pump Out Press~~

~~2- SW SYS SUMM~~

L2 ANTISKID - OFF

O5 ✓L AUD A/A - T/R

O7 TACAN (three) MODE - OFF

O14:A BRAKES MNA - OFF  
 :E cb MNA ADTA 1 - op  
 :F ASA 1 - OFF

O15:A BRAKES MNB - OFF  
 :E cb MNB ADTA 2 - op  
 DDU R - op  
 :F ASA 2 - OFF

A16 Stow Vent Hbse Extension

**CONFIGURE CONTROLS FOR ON-ORBIT (PLY) ②**

P F8 INST PMR - OFF  
 ✓FLT CNTLR PMR - OFF

O8 RADAR ALTM (two) - OFF

O9 ✓R AUD A/A - T/R

O16:A BRAKES MNC - OFF  
 :E cb MNC ADTA 3,4 (two) - op  
 DDU R - op  
 :F ASA 3,4 (two) - OFF

R11U:C ACIP HTR - ON

R12L SPLY H2O XOVR VLV - CL (tb-CL)

C9 SEAT 02 vlv - CL

Suit Fan (two) - off

A16 Stow Vent Hbse Extension

ML86B:A A11 cbs closed except:  
 cb MNB H2O LINE HTR B - op  
 :B A11 cbs closed except:  
 cb MNA GALLEY OVEN - op  
 cb MNB GALLEY H2O HTR - op  
 :E A11 cbs closed  
 :F A11 cbs closed except:  
 cb MNA CRYO 02 HTR TK3 SNSR 1 - op  
 MNB CRYO 02 HTR TK3 SNSR 2 - op  
 TK4 SNSR 1 - op  
 TK4 SNSR 2 - op  
 :G A11 cbs open except:  
 cb ESS IBC LTG AIRLK 2 - c1

MA73C:E A11 cbs closed except:  
 cb AC2,3 PL 30 (two) - op



1:1 GMC ORBIT 2: SH SYS SUMM 1 4: OFF

M E T  
 DAY 000  
 03:30  
 B AUTO  
 VERN  
 RT 0.2  
 DB 1.0

B CONFIGURE CONTROLS FOR ON-ORBIT (1) (2)

B SUIT DOFFING Cue Card (in suit pocket)

SUIT DOFFING

C TELEPRINTER ACTIVATION (3)

P VAC VENT, FDF & DOSIMETER CONFIG (FSO S134-01) (3)

C -ZLV TEST, VRCS, 0.10 DB (FTO 174-08)  
 CHANGE DAP B: DB ATT R,P,Y - 0.10 DB  
 (04:00) DAP: A/AUTO/VERN; DAP: B/AUTO/VERN

TELEPRINTER ACTIVATION (3)

MF57M Unstow: Gray Tape  
 MA9L Teleprinter Cables  
 MA9F ✓PMR OFF, connect cables  
 Route cables to Pnl A11 thru stbd intercheck access  
 All MS COMM CCU PMR - OFF  
 ✓DC UTIL PMR MNC - OFF  
 Connect cables  
 DC UTIL PMR MNC - ON  
 09 R AUD A/G 2 - RCV  
 05 L AUD A/G 2 - RCV  
 L9 PS AUD A/G 2 - RCV  
 A13 OS AUD A/G 2 - RCV  
 R10 MS AUD PMR - AUD  
 ✓A/G 1 - OFF  
 A/G 2 - T/R  
 ✓A/A - OFF  
 ICOM (two) - OFF  
 VOL A/G 2 tw - 9  
 ✓XMIT/ICOM MODE - PTT/PTT  
 Restrain cable and secure excess w/gray tape  
 M042F MIDDECK SPKR AUD PMR - AUD/TONE  
 A/G 2 - RCV  
 SPKR PMR - SPKR/MIC  
 M058F MIDDECK CCU AUD A/G 2 - RCV  
 MA9F Open locket door, inspect paper for tears,  
 jamming, etc.  
 ✓Press roller tight against drive roller  
 ✓HI PMR MODE - AUTO  
 PMR - ON  
 ✓PMR lt on  
 ✓Printer operates ~ 10 sec  
 ✓HI PMR MODE lt on ~ 80 sec, then off  
 Close locker door

VAC VENT, FDF & DOSIMETER CONFIG (FSO S134-01) (4)

P ML31C VAC VENT ISOL VLV CNTL - OP (tb-OP)  
 NOZ HTR - ON  
 MF28E Unstow, deploy:  
 MD/FDF (fwd end DFI)  
 MD Dosimeters (3)  
 1 (front of Air lock)  
 2 (behind DFI)  
 3 (above Side Hatch)  
 FD/FDF (below L5, above R6)  
 Map Kit (L13)  
 FD Dosimeters (3)  
 4 (fwd of OS flood)  
 5 (above L10)  
 6 (above R11)  
 ✓Two Dosimeters in pouch  
 Stow LDG SITE CHARTS (from L FD/FDF)  
 Stow Helmet Bag R5 containing:  
 Ascent Cue Cards  
 ASC C/L (2)  
 ASC PKT C/L (2)  
 Remote Switching Cord



1: GNC ORBIT 2: SM SYS SUMM 1 4: OFF

M E T  
DAY 000

C ANNUNCIATOR C/M LAMP TEST  
(ORBIT OPS C/L, EPS, 2-2)

B AUTO  
VERN  
RT 0.2  
DB 0.1

MIDDECK CONFIGURATION ①

**MIDDECK CONFIGURATION ①**

MCS  
VAC VLV - OP  
Foot restraint - down & locked  
✓EMESIS/FECES - FECES

MF28H  
MF14H  
MF43E

Unstow, install:  
Personal Hygiene Kit - PLT (hatch)  
- CDR (hatch)  
Fecal/Emesis Bag (IVA Trousers)  
If Suit Fecal/Emesis Bag used, stow new Bag (Suit Bag)  
Towel Restraints (8, MMC door)  
Mirror (2, MMC door, wall)  
Facial Tissue dispensers (2, pocket)  
Met Wipe Dispenser (next to Toilet Tissue)  
MCS Wipes/Cleaner (aft MMC wall)  
Trash Bag/Liner (wall aft of Window Shade Bag)  
Towels (2), Washcloths (4) (MMC door)

C CONFIGURE CABIN TEMP CNTL  
ST Pin Bag - Unstow CAB TEMP CNTL BYP vlv linkage  
MD44F CAB TEMP CNTL vlv - Remove pin from FULL COOL  
position, install linkage and hook to PRI  
ACTUATOR  
L1 CAB TEMP CNTLR - 1

C FIRE/SMOKE DETECT/SUPPRESS TEST  
(ORBIT OPS C/L, EPS, 2-5)

C PCS 1(2) ON-ORBIT ACTIVATION/RECONFIG  
(ORBIT OPS C/L, ECLS, 3-5)

P After MCC Go:  
R2 APU FUEL PUMP/VLV COOL B - OFF  
CNTLR PMR (three) - OFF

C L&R Stow POST INSERTION PDP (1 each)  
FD/FDF

Go to CAP, FLT DAY 1, 2-1





### DETAILED PLBD OPS PROCEDURES

If two GPCs failed, configure for PLBD OPS using BFS

#### CAUTION

If SM GPC fails during any PLBD test:

- 06 MDM P1.1, 2 (two) - OFF
- GPC MODE 4 - STBY, HALT
- MDM P1.1, 2 (two) - ON
- Reload SM into GPC 2
- Perform MALF, DPS, SSR-5, and DPS, SSR-7

When opening/closing any PLBD latch group:

- If no OP after 40 sec c/l (60 sec bhd) and latch visually clear of roller:
  1. With at least one open microswitch indication, continue PLBD procedures
  2. With no open microswitch indication, leave latch open (do not close) and continue PLBD procedures
- If latch not visually clear of roller, wait for MCC
- If no CL after 40 sec c/l (60 sec bhd) and latch visually closed:
  1. With at least one closed microswitch indication occurring at dual mtr close time, continue PLBD procedures
  2. Otherwise wait for MCC
- If latch closes on single mtr (40 sec c/l, 60 sec bhd), do not reopen latch, wait for MCC
- Always note any single mtr latch operations
- If no latch or door motion within ~ 10 sec after cmd (no motion determined visually):
  - PL BAY DR - STOP, wait for MCC

When opening/closing PLBD:

- If door motion stops and no OP/RDY status:
  - PL BAY DR - STOP, wait for MCC
- If door closes on single mtr (~ 120 sec), do not reopen PLBD, wait for MCC
- For failed open latches, do not attempt to close unless an Entry capability is available

#### SET UP LIGHTS, CAMRS, MON, & VTR

- C AIR AUD CTR PL BAY OUTLETS ICOM A - ON
- A6U ANNUN BUS SEL - MNC
- A7U PL BAY FLOOD AFT/FWD (four) - ON (~ 3 min to full bright)  
FWD BHD - ON (~ 3 min to full bright)  
NOTE  
PL BAY FLOODs do not immediately re-illuminate if turned OFF/ON (~ 2-5 min delay)

- A7U TV PMR CNTL - PNL
- CONTR UNIT - MNA
- CNTL - CMD
- CAMR PMR BAY FWD, AFT, RMS STBD (three) - ON (tb-ON)
- ✓DNLK - ENA
- ✓SYNC - NORM

- A3 ✓MON 1 & 2 SOURCE - PNL
- ✓MODE - NORM
- ✓SCAN - NORM
- ✓DATA - ON
- ✓SYNC - EXT
- ✓X-HAIR - ON
- PHR - ON

- A7U VID OUT pb - MON 1
- IN pb - TEST
- Adjust Monitor 1 test pattern (contrast/brightness)
- VID OUT pb - MON 2
- IN pb - TEST
- Adjust Monitor 2 test pattern (contrast/brightness)
- VID IN pb - FWD BAY, AFT BAY, RMS STBD
- Adjust CAMR CMD controls: CAMR CMD ALC pb - PEAK for each camr

- L12 VTR PMR - ON
- ✓NO VIDEO It - off
- ✓EOT It - off
- ✓TAPE POSITION ind is zero
- Record all PLBD OPS continuously on VTR
- Change cassette every 30 min

OPEN/CLOSE EACH LATCH GROUP, Time & Record (1-9)

- CRT4 SM, OPS 202 PRO
- R13L ✓PL BAY DR - STOP
- AC POWER ON - ITEM 1 EXEC
- Complete the following sequence for each latch group:  
(70mm/01 PAD, 1-9, after each latch group opening, 8 exp)

- ✓A11 MAN SEL ITEM numbers deselected
- Select LATCHES 5-8
- PL BAY DR - OP (start timer)
- ✓LATCHES 5-8 - blank (~ 20 sec), OP (Record time, 1-9)
- PL BAY DR - CL (start timer)
- ✓LATCHES 5-8 - blank (~ 20 sec), CL (Record time, 1-9)
- PL BAY DR - STOP
- Deselect LATCHES 5-8
- Repeat for remaining latch groups

OPEN c/l LATCH GROUPS

- ✓A11 MAN SEL ITEM numbers deselected
- Select LATCHES 5-8 & 9-12
- PL BAY DR - OP

Cont 1-22 L Column

Cont from 1-21 R Column  
✓LATCHES 5-8 & 9-12 (two) - blank (~ 20 sec), OP  
PL BAY DR - STOP (70mm/01)  
Deselect LATCHES 5-8 & 9-12  
Select LATCHES 1-4 & 13-16  
PL BAY DR - OP

✓LATCHES 1-4 & 13-16 (two) - blank (~ 20 sec), OP  
PL BAY DR - STOP (70mm/01)  
Deselect LATCHES 1-4 & 13-16

OPEN RIGHT FWD/AFT LATCH GROUPS

Select R FWD & AFT LATCHES  
PL BAY DR - OP

✓R FWD & AFT LATCHES (two) - blank (~ 30 sec), OP  
PL BAY DR - STOP (70mm/01)  
Deselect R FWD & AFT LATCHES

OPEN RIGHT DOOR, Time & Record (1-9)

Select R DOOR  
PL BAY DR - OP (start timer)

✓R DOOR - RDY, blank (~ 60 sec), OP (Record time \_\_\_\_\_)  
PL BAY DR - STOP (70mm/01)

CLOSE RIGHT DOOR TO PROXIMITY OF CLOSED POSITION  
(Verify 2 motor closing)

PL BAY DR - CL (start timer)

NOTE

Alternately START & STOP PLBD until near closed.  
Determine c/1 latch that will make first contact.  
Record this latch # & its expected contact point  
on NO GO DIAGRAM (1-8)

CLOSE RIGHT DOOR TO 'RDY' (if not already at 'RDY') (70mm/01)

CLOSE RIGHT FWD/AFT LATCH GROUPS & DOOR

Select R FWD & AFT LATCHES  
PL BAY DR - CL

✓R DOOR - RDY, CL  
✓R FWD & AFT LATCHES (two) - blank (~ 30 sec), CL  
PL BAY DR - STOP (70mm/01)  
Deselect R FWD & AFT LATCHES & R DOOR

CLOSE c/1 LATCH GROUPS

Select LATCHES 1-4 & 13-16  
PL BAY DR - CL

✓LATCHES 1-4 & 13-16 (two) - blank (~ 20 sec), CL  
PL BAY DR - STOP (70mm/01)

Deselect LATCHES 1-4 & 13-16  
Select LATCHES 5-8 & 9-12  
PL BAY DR - CL

✓LATCHES 5-8 & 9-12 (two) - blank (~ 20 sec), CL  
PL BAY DR - STOP (70mm/01)

OPEN c/1 & RIGHT FWD/AFT LATCH GROUPS

✓A11 MAN SEL ITEM numbers deselected except  
LATCHES 5-8 & 9-12

PL BAY DR - OP

✓LATCHES 5-8 & 9-12 (two) - blank (~ 20 sec), OP  
Deselect LATCHES 5-8 & 9-12  
Select LATCHES 1-4 & 13-16  
PL BAY DR - OP

✓LATCHES 1-4 & 13-16 (two) - blank (~ 20 sec), OP  
PL BAY DR - STOP (70mm/01)  
Deselect LATCHES 1-4 & 13-16  
Select R FWD & AFT LATCHES  
PL BAY DR - OP

✓R FWD & AFT LATCHES (two) - blank (~ 30 sec), OP  
PL BAY DR - STOP (70mm/01)  
Deselect R FWD & AFT LATCHES

OPEN RIGHT DOOR (2nd time), Time & Record

Select R DOOR

PL BAY DR - OP (start timer)

✓R DOOR - RDY, blank (~ 60 sec), OP (Record time \_\_\_\_\_)  
PL BAY DR - STOP (70mm/01)  
Deselect R DOOR

OPEN LEFT FWD/AFT LATCH GROUPS

Select L FWD & AFT LATCHES  
PL BAY DR - OP

✓L FWD & AFT LATCHES (two) - blank (~ 30 sec), OP  
PL BAY DR - STOP (70mm/01)  
Deselect L FWD & AFT LATCHES

OPEN LEFT DOOR, Time & Record

Select L DOOR

PL BAY DR - OP (start timer)

✓L DOOR - RDY, blank (~ 60 sec), OP (Record time \_\_\_\_\_)  
PL BAY DR - STOP

CLOSE LEFT DOOR TO 'RDY', Time & Record

PL BAY DR - CL (start timer)

✓L DOOR - blank  
When L DOOR - RDY (~ 60 sec),  
PL BAY DR - STOP (Record time \_\_\_\_\_) (70mm/01)

Cont 1-23 L Column



Cont from 1-22 R Column

CLOSE LEFT FWD/AFT LATCH GROUPS & DOOR

Select L FWD & AFT LATCHES  
PL BAY DR - CL

✓L DOOR - RDY, CL  
✓L FWD & AFT LATCHES (two) - blank (~ 30 sec), CL  
PL BAY DR - STOP (70mm/01)  
Deselect L DOOR

OPEN LEFT FWD/AFT LATCH GROUPS

PL BAY DR - OP

✓L FWD & AFT LATCHES (two) - blank (~ 30 sec), - OP  
PL BAY DR - STOP  
Deselect L FWD & AFT LATCHES (70mm/01)

OPEN LEFT DOOR (2nd time), Time & Record

Select L DOOR  
PL BAY DR - OP (start timer)

✓L DOOR - RDY - blank (~ 60 sec), OP (Record time \_\_\_\_\_)

PL BAY DR - STOP

Deselect L DOOR

AC POWER OFF - ITEM 2 EXEC

SM OPS 201 PRO

14: SM ANTENNA

CRT4

DETAILED IMU/STAR TRKR OPS (FTO 173-07)

SINGLE IMU STAR ALIGN

C CRT /STAR TRK -Y, -Z SHUTTER (two) - OP

\* If CL, MAN OP - ITEM 15,16 EXEC \*

/Star Table clear

/REQD ID ITEM 11,12 (two) - 0

SINGLE IMU STAR ALIGN PAD

```

ID -Y: +5 1, ATRIA (02:16-02:57) (-Y: + - - - -) (R - - -)
-Z: +2 2, ALTAIR (02:35-03:20) (-Z: + - - - -) (P - - -)
ANG DIF: 84.0 (ANG DIF: - - -) (Y - - -)

```

STAR TRK - ITEM 3,4 EXEC

- \* If no (or erroneous) entry in S TABLE after 3 minutes:
- \*/Attitude correct
- Retake star data using alternate pad
- TERM/IDLE - ITEM 9,10 EXEC (\*)
- INRTL ATT (pad)
- Initiate MNVR

ALTERNATE SINGLE IMU STAR ALIGN PAD

```

ID -Y: +2 8, ALMA'IR (02:20-03:10) R 2 4.8
-Z: +4 3, RASALHAGUE (02:29-03:14) P 1 9 0.9
ANG DIF: 85.0 Y 3 I 3.0

```

- \* Select star pair with smallest ANG ERR
- SEL - ITEMS 17(18,19)(\*)

Record Δ ANG (1-13)

/S TABLE TRK ID (two) - pad ID

/ANG ERR ≤ .09 (Record 1-13)

- \* If > .09:
- Use ONE S TRKR procedure (1-26, step 2) if self test failed, or retake star data (alternate pad).
- Do not clear Star Table & select best pair

1: GNC 21 IMU ALIGN

/ALIGN - ENA

/STAR ALIGN - (\*)

/ANG ΔX,ΔY,ΔZ for two IMUs < Table value (Record 1-13)

| MAX ANG ΔX,ΔY,ΔZ vs | MET           |
|---------------------|---------------|
| 0.120               | 02:15 - 03:15 |
| 0.130               | 03:15 - 04:00 |
| 0.140               | 04:00 - 04:45 |

- \* If > Table value:
- Use ONE S TRK procedure (1-26, step 2) if self test failed, or retake star data (clear Star Table)
- If still > Table value, S TRK with largest Δ ANG bad, use ONE S TRK procedure & wait for MCC if still > Table value

Torque IMU with largest single ANG ΔX,ΔY or ΔZ  
 ALIGN IMU - ITEM 10(11,12) EXEC  
 EXEC - ITEM 17 EXEC (\*) (Record execute time 1-13)  
 when EXEC - blank, proceed

AUTO MNVR TO DUAL IMU STAR ALIGN ATTITUDE

```

CRT1 INRTL ATT: R 6 1.2
P 2 1 0.6
Y 3 1 7.8

```

DAP: B/AUTO/NORM

Initiate MNVR

When mnvr complete, DAP: B/AUTO/VERN

DUAL IMU STAR ALIGN

14: S TRK/COAS CNTL

/Star Table clear

STAR TRK - ITEM 3,4 EXEC

DUAL IMU STAR ALIGN PAD

```

ID: -Y: +2 6, FOMALHAUT (02:37-03:27) (-Y: + - - - -) (R - - -)
-Z: +1 4, VEGA (02:36-03:22) (-Z: + - - - -) (P - - -)
ANG DIF: 91.4 (ANG DIF: - - -) (Y - - -)

```

Record Δ ANG (two) (1-13)

/S TABLE TRK ID (two) - pad ID

/ANG ERR ≤ .09 (Record 1-13)

- \* If > .09:
- Retake star data (alternate pad). Do not clear Star Table & select best pair

Cont 1-25 L Column

Cont from 1-24 R Column

I: GNC 21 IMU ALIGN

C CRTI ✓ALIGN - ENA  
 ✓STAR ALIGN - (\*)  
 ✓Specified (torqued) IMU ANG ΔX,ΔY,ΔZ < .10 (Record 1-13)

\* If > .10, torque IMU:  
 \* ALIGN IMU - ITEM 10(11,12) EXEC  
 \* EXEC - ITEM 17 EXEC (\*) (Record execute time 1-13)  
 \* When EXEC - blank, Redo DUAL IMU STAR ALIGN, 1-24, using alternate pad  
 \* ✓TERM/TDLE - ITEM 9,10 EXEC (\*)  
 \* IMRTL ATT (pad)  
 \* Initiate MNVR

ALTERNATE DUAL IMU STAR ALIGN PAD

|    |    |    |   |          |               |   |   |   |   |
|----|----|----|---|----------|---------------|---|---|---|---|
| ID | -Y | +5 | 4 | DIPDA    | (03:01-03:41) | R | 5 | 9 | 4 |
|    | -Z | +1 | 8 | CAPELLA  | (03:07-03:48) | P | 3 | 0 | 7 |
|    |    |    |   | ANG DIF: | 88.7          | Y | 3 | 3 | 4 |
|    |    |    |   |          |               |   |   |   | 6 |

\* If still > .10:  
 \* Do not torque IMU, wait for MCC

Torque remaining IMUs if ANG ΔX,ΔY,ΔZ < Table value (1-23)  
 for either IMU, otherwise wait for MCC  
 Record ANG ΔX,ΔY,ΔZ (1-13)  
 ALIGN IMU - ITEMS 10, 11, or 12 EXEC  
 EXEC - ITEM 17 EXEC (\*) (Record execute time 1-13)  
 When EXEC - blank, proceed

DUAL IMU STAR ALIGN VERIFICATION

CRT ✓Star Table clear  
 Use star IDs last used  
 STAR TRK ITEM 3,4 EXEC  
 Record Δ ANG (two) (1-15)  
 ✓S TABLE TRK ID (two) - desired ID  
 ✓ANG ERR - ≤ .09 (Record 1-15)

\* If > .09:  
 \* Retake star data (alternate pad). Do not \*  
 \* clear Star Table & select best pair \*

CRTI ✓ALIGN - ENA  
 ✓STAR ALIGN - (\*)  
 ✓Specified (torqued) IMU ANG ΔX,ΔY,ΔZ < .10 (Record 1-15)

\* If > .10:  
 \* Torque IMU  
 \* Redo DUAL IMU STAR ALIGN VERIF using alternate pad  
 \* TERM/TDLE - ITEM 9,10 EXEC (\*)  
 \* IMRTL ATT (pad)  
 \* Initiate MNVR

ALTERNATE DUAL IMU STAR ALIGN VERIF PAD

|    |    |    |   |          |               |   |   |   |   |
|----|----|----|---|----------|---------------|---|---|---|---|
| ID | -Y | +1 | 3 | RIGEL    | (03:16-04:02) | R | 8 | 4 | 5 |
|    | -Z | +3 | 8 | NAVT     | (02:51-03:37) | P | 3 | 5 | 5 |
|    |    |    |   | ANG DIF: | 85.2          | Y | 3 | 3 | 4 |
|    |    |    |   |          |               |   |   |   | 2 |

\* If still > .10:  
 \* Do not torque IMU, wait for MCC

POST-COAS/S TRK/IMU VERIF RECONFIG

06 STAR TRKR PMR -Z - OFF

I: GNC ORBIT

I: SN SYS SUMM I



ONE STAR TRKR -Y(-Z) STAR DATA ACQUISITION

Record Star data on this page, IMU data on 1-13

1. 1st STAR DATA ACQUISITION

- ✓STAR TRK -Y(-Z) SHUTTER - OP
- \* If CL, MAN OP - ITEM 15(16) EXEC \*
- ✓Star Table clear
- ✓REQD ID ITEM 11(12) - 0
- STAR TRK - ITEM 3(4) EXEC
- Record Δ ANG
- ✓S TABLE TRK ID - pad ID
- S TRK CNTL -Y,-Z TERM/IDLE - ITEM 9,10 EXEC

2. AUTO MNVR TO PLACE OTHER STAR IN -Y(-Z) S TRKR  
IMRVL ATT (Pad)  
Initiate MNVR

3. 2nd STAR DATA ACQUISITION

- Do not clear Star Table
- ✓REQD ID ITEM 11(12) - 0
- STAR TRK - ITEM 3(4) EXEC
- Record Δ ANG
- ✓S TABLE TRK ID - pad ID
- ✓ANG ERR < .09
- \* If > .09:
- \* Retake star data (alternate pad). Do not \*
- \* clear Star Table & select best pair \*

ONE STAR TRKR STAR DATA LOG

SINGLE IMU ALIGN

Good S.T. Δ ANG (1st Star \_\_\_) \_\_\_

Good S.T. Δ ANG (2nd Star \_\_\_) \_\_\_

ANG ERR \_\_\_

DUAL IMU ALIGN

Good S.T. Δ ANG (1st Star \_\_\_) \_\_\_

Good S.T. Δ ANG (2nd Star \_\_\_) \_\_\_

ANG ERR \_\_\_

DUAL IMU ALIGN VERIFICATION

Good S.T. Δ ANG (1st Star \_\_\_) \_\_\_

Good S.T. Δ ANG (2nd Star \_\_\_) \_\_\_

ANG ERR \_\_\_

SINGLE IMU STAR ALIGN PAD

DUAL S TRKR 2nd ATTITUDE  
ALIGNMENT (Single S TRKR)  
-Z: 5.1 -Y: 2.2

ID -Y: +5.1, ATRIA (02:16-02:57)  
-Z: +2.2, ALTATR (02:35-03:20)  
ANG DIF: 84.0

R 1 2.4 2 8 9.3 9 5.9  
P 2 0 8.6 1 9 4.8 2 1 5.5  
Y 5.0 9.8 1 7.8

ALTERNATE SINGLE IMU STAR ALIGN PAD

DUAL S TRKR 2nd ATTITUDE  
ALIGNMENT (Single S TRKR)  
-Z: 2.8 -Y: 4.3

ID -Y: +2.8, AL MA'IR (02:20-03:10)  
-Z: +4.3, RASALHAGUE (02:29-03:14)  
ANG DIF: 85.0

R 2 4.8 2 8 5.4 1 1 2.5  
P 1 9 0.9 1 7 1.2 1 9 4.7  
Y 3 1 3.0 3 1 6.6 3 2 7.3

DUAL IMU STAR ALIGN PAD

DUAL S TRKR 2nd ATTITUDE  
ALIGNMENT (Single S TRKR)  
-Z: 2.6 -Y: 1.4

ID -Y: +2.6, FOMALHAUT (02:37-03:27)  
-Z: +1.4, VEGA (02:36-03:22)  
ANG DIF: 91.4

R 6 1.2 3 1 8.0 1 4 5.5  
P 2 4 0.6 2 1 9.8 2 3 3.3  
Y 3 1 7.8 3 1 2.6 3 3 1.7

ALTERNATE DUAL IMU STAR ALIGN PAD

DUAL S TRKR 2nd ATTITUDE  
ALIGNMENT (Single S TRKR)  
-Z: 5.4 -Y: 1.8

ID -Y: +5.4, DIPHDA (03:01-03:41)  
-Z: +1.8, CAPELLA (03:07-03:48)  
ANG DIF: 88.7

R 5 9.4 3 4 0.1 1 5 2.3  
P 3 0 7.9 2 9 2.7 2 9 9.3  
Y 3 4.6 2 7.1 4 8.0

ALTERNATE DUAL IMU STAR ALIGN VERIF PAD

DUAL S TRKR 2nd ATTITUDE  
ALIGNMENT (Single S TRKR)  
-Z: 1.3 -Y: 3.8

ID -Y: +1.3, RIGEL (03:16-04:02)  
-Z: +3.8, NAVI (02:51-03:37)  
ANG DIF: 85.2

R 8 4.5 3 5 3.4 1 6 5.9  
P 3 5 5.6 3 4 4.7 3 4 4.4  
Y 3 3 4.2 3 2 3.3 3 4 4.5

**CONFIG GPCs FOR ORBITAL OPS (BFS NOT ENGAGED) AND ONE GPC FAILED**

**P 1. REASSIGN FD GPC STRING TO ANOTHER GPC IN MC 1**

[GNC 0 GPC MEMORY]  
 CONFIG - ITEM 1 +1 EXEC  
 Modify MC 1 per Table

GNC OPS 106 PRO  
 [GPC MEMORY]

GPC 1 FAIL

|        |         |
|--------|---------|
| CONFIG | 1       |
| GPC    | 02340   |
| STR    | 1 2 4 4 |
|        | 2 4 4 4 |
|        | 3 4 4 4 |
|        | 4 2 4 2 |
| PL 1/2 | 1       |
| CRT    | 1 2 4 4 |
|        | 2 4 2 2 |
|        | 3 2 2 2 |
|        | 4 0 0 0 |
| MM     | 1 2 2 4 |
|        | 2 4     |

GPC 2 FAIL

|        |         |
|--------|---------|
| CONFIG | 1       |
| GPC    | 10340   |
| STR    | 1 2 4 4 |
|        | 2 4 4 4 |
|        | 3 4 4 4 |
|        | 4 1 1 1 |
| PL 1/2 | 1       |
| CRT    | 1 2 4 4 |
|        | 2 4 4 4 |
|        | 3 1 1 1 |
|        | 4 0 0 0 |
| MM     | 1 1 1 4 |
|        | 2 4     |

GPC 3 FAIL

|        |         |
|--------|---------|
| CONFIG | 1       |
| GPC    | 12040   |
| STR    | 1 2 4 4 |
|        | 2 4 4 4 |
|        | 3 3 4 4 |
|        | 4 1 1 1 |
| PL 1/2 | 1       |
| CRT    | 1 2 4 4 |
|        | 2 4 4 4 |
|        | 3 1 1 1 |
|        | 4 0 0 0 |
| MM     | 1 1 1 4 |
|        | 2 4     |

GPC 4 FAIL

|        |         |
|--------|---------|
| CONFIG | 1       |
| GPC    | 12300   |
| STR    | 1 2 2 2 |
|        | 2 2 2 2 |
|        | 3 3 3 3 |
|        | 4 4 4 4 |
| PL 1/2 | 1       |
| CRT    | 1 2 2 2 |
|        | 2 2 3 3 |
|        | 3 1 1 1 |
|        | 4 0 0 0 |
| MM     | 1 1 1 2 |
|        | 2 2     |

**2. REASSIGN ALL STRINGS TO FD GPC IN MC 3**

CONFIG - ITEM 1 +3 EXEC  
 Modify MC 3 per Table

CONFIG 3

|        |         |
|--------|---------|
| GPC    | 00300   |
| STR    | 1 3 3 3 |
|        | 2 3 3 3 |
|        | 3 3 3 3 |
|        | 4 3 3 3 |
| PL 1/2 | 0       |
| CRT    | 1 3 3 3 |
|        | 2 3 3 3 |
|        | 3 3 3 3 |
|        | 4 0 0 0 |
| MM     | 1 3 3 3 |
|        | 2 3     |

**3. MODE FD GPC TO OPS 0**

06 GPC MODE (FD) - STBY (tb-bp), RUN (tb-RUN)

**4. LOAD MC 3 INTO FD GPC**

CRTX PL, GPC/CRT FD GPC/X EXEC

[X: GPC MEMORY]

CONFIG - ITEM 45 +3 EXEC

GPC - ITEM 46 + (FD GPC) EXEC

STORE - ITEM 47 EXEC

Store complete when MC = 03 (~ 12 sec)

\* If no MC = 03 after 2 min:

\* Cycle power on MMU 1 & 2, wait 1 min

\* Retry GPC FREEZE DRY using above table

\* If FD not successful:

\* Restricting all strings to lowest ID (PASS) GPC

\* Try to FREEZE DRY other GPC

\* If FD still not successful:

\* Both MMUs failed. Set up ASAP for OPS 3 overlay,

perform MALF, DPS, SSR-21

\* If FD successful:

\* Perform CONFIG GPCs FOR ORBITAL OPS (BFS NOT ENGAGED)

\* AND TWO GPCs FAILED, 1-29, step 6

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

\* \* \* \* \*

CONFIG 2

|        |         |
|--------|---------|
| GPC    | 02000   |
| STR    | 1 2 2 2 |
|        | 2 2 2 2 |
|        | 3 2 2 2 |
|        | 4 2 2 2 |
| PL 1/2 | 0       |
| CRT    | 1 2 2 2 |
|        | 2 2 2 2 |
|        | 3 2 2 2 |
|        | 4 0 0 0 |
| MM     | 1 2 2 2 |
|        | 2 2     |

CONFIG 2

|        |         |
|--------|---------|
| GPC    | 10000   |
| STR    | 1 2 1 1 |
|        | 2 1 1 1 |
|        | 3 1 1 1 |
|        | 4 1 1 1 |
| PL 1/2 | 0       |
| CRT    | 1 1 1 1 |
|        | 2 1 1 1 |
|        | 3 1 1 1 |
|        | 4 0 0 0 |
| MM     | 1 1 1 1 |
|        | 2 1     |

CONFIG 2

|        |         |
|--------|---------|
| GPC    | 10000   |
| STR    | 1 2 1 1 |
|        | 2 1 1 1 |
|        | 3 1 1 1 |
|        | 4 1 1 1 |
| PL 1/2 | 0       |
| CRT    | 1 1 1 1 |
|        | 2 1 1 1 |
|        | 3 1 1 1 |
|        | 4 0 0 0 |
| MM     | 1 1 1 1 |
|        | 2 1     |

CONFIG 2

|        |         |
|--------|---------|
| GPC    | 10000   |
| STR    | 1 2 1 1 |
|        | 2 1 1 1 |
|        | 3 1 1 1 |
|        | 4 1 1 1 |
| PL 1/2 | 0       |
| CRT    | 1 1 1 1 |
|        | 2 1 1 1 |
|        | 3 1 1 1 |
|        | 4 0 0 0 |
| MM     | 1 1 1 1 |
|        | 2 1     |

**5. SECURE BFS**

CRT3 BFS, GNC, OPS 000 PRO

[3: BFS, BFS MEMORY]

C3 BFC CRT DISP - OFF

**6. TRANSITION TO GNC OPS 2**

C3 UPLK BLK - NONE

[GNC 0 GPC MEMORY]

CONFIG - ITEM 1+2 EXEC

Modify MC 2 per Table

GNC, OPS 201 PRO

[GNC ORBIT]

7. TRANSITION TO SM OPS 2

C3  
 CRTX 01 POMU FORMAT - PGM  
 SM GPC/CRT SM GPC/4 EXEC  
 (X: GPC MEMORY)  
 CONFIG - ITEM 1+4 EXEC  
 Modify MC 4 per Table

SM OPS 201 PRO  
 (SM ANTENNA)

(SM I DPS UTILITY)  
 UL CRTL AUTO - ITEM 35 EXEC  
 GPC/LDR - ITEM 11 EXEC  
 (SM ANTENNA)

8. RECONFIG GPCs

06 GPC MODE 5 - STBY (tb-RUN)  
 OUTPUT 5 - NORM (tb-bp)  
 OUTPUT (SM GPC) - TERM (tb-bp)  
 MODE (FD GPC) - STBY (tb-bp)

9. RECONFIG CRTs

C2 GPC/CRT 03 EXEC  
 GPC/CRT GNC GPC/4 EXEC  
 GPC/CRT SM GPC/4 EXEC  
 CRT3 PHR - OFF

10. LOAD ORBIT TFL

C3 (SM 62 POMU/PL CORR)  
 01 POMU FORMAT - GPC  
 FORMAT:  
 FXD - ITEM 1 EXEC (\*)  
 SEL ID - ITEM 3 +3 EXEC  
 LOAD - ITEM 4 EXEC  
 -/RUN, CPLT  
 PGM - ITEM 2 EXEC  
 (SM ANTENNA)

C3 DF1 RCGR PCM - HI SAMP  
 /C/N MODE - NORM

| CONFIG |       | 4 |
|--------|-------|---|
| GPC    | 02000 |   |
| STR 1  | 0     |   |
| STR 2  | 0     |   |
| STR 3  | 0     |   |
| STR 4  | 0     |   |
| PL 1/2 | 2     |   |
| CRT 1  | 2     |   |
| CRT 2  | 2     |   |
| CRT 3  | 2     |   |
| CRT 4  | 0     |   |
| MM 1   | 2     |   |
| MM 2   | 2     |   |

| CONFIG |       | 4 |
|--------|-------|---|
| GPC    | 00040 |   |
| STR 1  | 0     |   |
| STR 2  | 0     |   |
| STR 3  | 0     |   |
| STR 4  | 0     |   |
| PL 1/2 | 4     |   |
| CRT 1  | 4     |   |
| CRT 2  | 4     |   |
| CRT 3  | 4     |   |
| CRT 4  | 0     |   |
| MM 1   | 4     |   |
| MM 2   | 4     |   |

| CONFIG |       | 4 |
|--------|-------|---|
| GPC    | 00040 |   |
| STR 1  | 0     |   |
| STR 2  | 0     |   |
| STR 3  | 0     |   |
| STR 4  | 0     |   |
| PL 1/2 | 4     |   |
| CRT 1  | 4     |   |
| CRT 2  | 4     |   |
| CRT 3  | 4     |   |
| CRT 4  | 0     |   |
| MM 1   | 4     |   |
| MM 2   | 4     |   |

| CONFIG |       | 4 |
|--------|-------|---|
| GPC    | 00040 |   |
| STR 1  | 0     |   |
| STR 2  | 0     |   |
| STR 3  | 0     |   |
| STR 4  | 0     |   |
| PL 1/2 | 4     |   |
| CRT 1  | 4     |   |
| CRT 2  | 4     |   |
| CRT 3  | 4     |   |
| CRT 4  | 0     |   |
| MM 1   | 4     |   |
| MM 2   | 4     |   |



**CONFIG GPCs FOR ORBITAL OPS (BFS NOT ENGAGED) AND TWO GPCs FAILED**

**P 1. REASSIGN STRINGS IN MC 1**

[GNC 0 GPC MEMORY]  
 CONFIG - ITEM 1 +1 EXEC  
 Modify MC 1 per Table

GNC OPS 106 PRO  
 [GPC MEMORY]

**2. REASSIGN ALL STRINGS TO FD GPC IN MC 3**

CONFIG - ITEM 1 +3 EXEC  
 Modify MC 3 per Table

**3. MODE FD GPC TO OPS 0**

06 GPC MODE (FD) - STBY (tb-bp)  
 RUN (tb-RUN)

**4. LOAD MC 3 INTO FD GPC**

CRTX PL, GPC/CRT FDF GPC/X EXEC

[X: GPC MEMORY]

CONFIG - ITEM 45 +3 EXEC

GPC - ITEM 46 + (FD GPC) EXEC

STORE - ITEM 47 EXEC

Store complete when MC = 03 (~12 sec)

\* If no MC = 03 after 2 min:

\* Cycle power on MMU 1 & 2, wait 1 min

\* Retry GPC FREEZE DRY using above table

\* If FD not successful:

\* Both MMUs failed. Set up ASAP for OPS 3

\* overlay, perform MALF, DPS, SSR-21

**5. SECURE BFS**

CRT3 BFS, GNC, OPS 000 PRO

[3: BFS, BFS MEMORY]

C3 BFC CRT DISP - OFF

**6. TRANSITION TO GNC OPS 2**

[GNC 0 GPC MEMORY]  
 CONFIG - ITEM 1 +2 EXEC  
 Modify MC 2 per Table

GNC OPS 201 PRO  
 [GNC ORBIT]

**7. RECONFIG GPCs**

06 GPC OUTPUT 5 - NORM (tb-bp)  
 MODE (FD GPC) - STBY (tb-bp)

**8. RECONFIG CRTs**

GPC/CRT 03 EXEC

GPC/CRT 54 EXEC

Cont 1-30

| GPC 384 FAIL |   |
|--------------|---|
| CONFIG GPC   | 1 |
| STR          | 1 |
| PL           | 1 |
| CRT          | 1 |
| MM           | 1 |

| GPC 284 FAIL |   |
|--------------|---|
| CONFIG GPC   | 1 |
| STR          | 1 |
| PL           | 1 |
| CRT          | 1 |
| MM           | 1 |

| GPC 283 FAIL |   |
|--------------|---|
| CONFIG GPC   | 1 |
| STR          | 1 |
| PL           | 1 |
| CRT          | 1 |
| MM           | 1 |

| GPC 184 FAIL |   |
|--------------|---|
| CONFIG GPC   | 1 |
| STR          | 2 |
| PL           | 2 |
| CRT          | 2 |
| MM           | 2 |

| GPC 183 FAIL |   |
|--------------|---|
| CONFIG GPC   | 1 |
| STR          | 2 |
| PL           | 2 |
| CRT          | 2 |
| MM           | 2 |

| GPC 182 FAIL |   |
|--------------|---|
| CONFIG GPC   | 1 |
| STR          | 4 |
| PL           | 4 |
| CRT          | 4 |
| MM           | 4 |

| GPC 300    |   |
|------------|---|
| CONFIG GPC | 3 |
| STR        | 2 |
| PL         | 2 |
| CRT        | 2 |
| MM         | 2 |

| GPC 00300  |   |
|------------|---|
| CONFIG GPC | 3 |
| STR        | 3 |
| PL         | 3 |
| CRT        | 3 |
| MM         | 3 |

| GPC 00040  |   |
|------------|---|
| CONFIG GPC | 3 |
| STR        | 4 |
| PL         | 4 |
| CRT        | 4 |
| MM         | 4 |

| GPC 00300  |   |
|------------|---|
| CONFIG GPC | 3 |
| STR        | 3 |
| PL         | 3 |
| CRT        | 3 |
| MM         | 3 |

| GPC 00040  |   |
|------------|---|
| CONFIG GPC | 3 |
| STR        | 4 |
| PL         | 4 |
| CRT        | 4 |
| MM         | 4 |

| GPC 00300  |   |
|------------|---|
| CONFIG GPC | 3 |
| STR        | 3 |
| PL         | 3 |
| CRT        | 3 |
| MM         | 3 |

| GPC 10000  |   |
|------------|---|
| CONFIG GPC | 2 |
| STR        | 1 |
| PL         | 1 |
| CRT        | 1 |
| MM         | 1 |

| GPC 10000  |   |
|------------|---|
| CONFIG GPC | 2 |
| STR        | 1 |
| PL         | 1 |
| CRT        | 1 |
| MM         | 1 |

| GPC 10000  |   |
|------------|---|
| CONFIG GPC | 2 |
| STR        | 1 |
| PL         | 1 |
| CRT        | 1 |
| MM         | 1 |

| GPC 02000  |   |
|------------|---|
| CONFIG GPC | 2 |
| STR        | 2 |
| PL         | 2 |
| CRT        | 2 |
| MM         | 2 |

| GPC 02000  |   |
|------------|---|
| CONFIG GPC | 2 |
| STR        | 2 |
| PL         | 2 |
| CRT        | 2 |
| MM         | 2 |

| GPC 00040  |   |
|------------|---|
| CONFIG GPC | 2 |
| STR        | 4 |
| PL         | 4 |
| CRT        | 4 |
| MM         | 4 |



**CONFIG GPCs FOR ORBITAL OPS FOR AV BAY FAN FAILURE**

B PREPARE GPC X FOR FD OPERATION AV BAY 1 - GPC 4  
 2 - GPC 2  
 3 - GPC 3

06 ✓GPC X MODE - HLT (tb-bp)  
 ✓OUTPUT - NORM (tb-gray)  
 PWR - ON  
 MODE - STBY, RUN (tb-RUN)

P REASSIGN ALL STRINGS TO FD GPC IN MC 3

[GNC 0 GPC MEMORY]  
 Config - ITEM 1 +3 EXEC  
 Modify MC 3 per Table

LOAD MC 3 INTO FD GPC

CRTX PL, GPC/CRT FD GPC/X EXEC  
 [X: GPC MEMORY]  
 CONFIG - ITEM 45 +3 EXEC  
 GPC - ITEM 46 + (FD GPC) EXEC  
 STORE - ITEM 47 EXEC  
 Store complete when MC = 03 (~ 12 sec)

DEACTIVATE FD GPC

06 GPC X MODE - STBY, HLT (tb-bp)  
 ✓OUTPUT - NORM  
 PWR - OFF

\* If the FD GPC is activated later, the GPC/LDB option \*  
 \* must be selected via SM or R/M

SECURE BFS

CRT3 BFS, GNC, OPS 000 PRO  
 [3: BFS, BFS MEMORY]

C3 BFC CRT DTSP - OFF

TRANSITION TO GNC OPS 2

C3 UPLK BLK - NONE  
 [GNC 0 GPC MEMORY]  
 CONFIG - ITEM 1 +2 EXEC  
 Modify MC 2 per Table

GNC, OPS 201 PRO  
 [GNC ORBIT]

| AV BAY 1 |     | AV BAY 2 |     | AV BAY 3 |     |
|----------|-----|----------|-----|----------|-----|
| CONFIG   | GPC | CONFIG   | GPC | CONFIG   | GPC |
| STR 1    | 4   | STR 1    | 2   | STR 1    | 3   |
| STR 2    | 4   | STR 2    | 2   | STR 2    | 3   |
| STR 3    | 4   | STR 3    | 2   | STR 3    | 3   |
| STR 4    | 4   | STR 4    | 2   | STR 4    | 3   |
| PL 1/2   | 0   | PL 1/2   | 0   | PL 1/2   | 0   |
| CRT 1    | 4   | CRT 1    | 2   | CRT 1    | 3   |
| CRT 2    | 4   | CRT 2    | 2   | CRT 2    | 3   |
| CRT 3    | 4   | CRT 3    | 2   | CRT 3    | 3   |
| CRT 4    | 0   | CRT 4    | 0   | CRT 4    | 0   |
| MM 1     | 4   | MM 1     | 2   | MM 1     | 3   |
| MM 2     | 4   | MM 2     | 2   | MM 2     | 3   |

| AV BAY 1 |     | AV BAY 2 |     | AV BAY 3 |     |
|----------|-----|----------|-----|----------|-----|
| CONFIG   | GPC | CONFIG   | GPC | CONFIG   | GPC |
| STR 1    | 2   | STR 1    | 3   | STR 1    | 1   |
| STR 2    | 2   | STR 2    | 3   | STR 2    | 2   |
| STR 3    | 2   | STR 3    | 3   | STR 3    | 2   |
| STR 4    | 2   | STR 4    | 3   | STR 4    | 1   |
| PL 1/2   | 0   | PL 1/2   | 0   | PL 1/2   | 0   |
| CRT 1    | 2   | CRT 1    | 3   | CRT 1    | 1   |
| CRT 2    | 2   | CRT 2    | 3   | CRT 2    | 2   |
| CRT 3    | 2   | CRT 3    | 3   | CRT 3    | 2   |
| CRT 4    | 0   | CRT 4    | 0   | CRT 4    | 0   |
| MM 1     | 2   | MM 1     | 3   | MM 1     | 1   |
| MM 2     | 2   | MM 2     | 3   | MM 2     | 2   |

Cont 1-32



TRANSITION TO SH OPS 2

01 PGMU FORMAT - PGM  
 SH GPC/CRT SH GPC/X EXEC  
 IX: GPC MEMORY  
 CONFIG - ITEM 1 +4 EXEC  
 Modify MC 4 per. Table

SH OPS 201 PRO  
 SH ANTENNA

SH DPS UTILITY  
 UC CNTL AUTO - ITEM 35 EXEC

| AV BAY 1 |     | AV BAY 2 |     | AV BAY 3 |     |
|----------|-----|----------|-----|----------|-----|
| CONFIG   | GPC | CONFIG   | GPC | CONFIG   | GPC |
| 00300    | 4   | 00040    | 4   | 00040    | 4   |
| STR 1    | 0   | STR 1    | 0   | STR 1    | 0   |
| STR 2    | 0   | STR 2    | 0   | STR 2    | 0   |
| STR 3    | 0   | STR 3    | 0   | STR 3    | 0   |
| STR 4    | 0   | STR 4    | 0   | STR 4    | 0   |
| PL 1/2   | 3   | PL 1/2   | 4   | PL 1/2   | 4   |
| CRT 1    | 3   | CRT 1    | 4   | CRT 1    | 4   |
| CRT 2    | 3   | CRT 2    | 4   | CRT 2    | 4   |
| CRT 3    | 3   | CRT 3    | 4   | CRT 3    | 4   |
| CRT 4    | 0   | CRT 4    | 0   | CRT 4    | 0   |
| MM 1     | 3   | MM 1     | 4   | MM 1     | 4   |
| MM 2     | 3   | MM 2     | 4   | MM 2     | 4   |

RECONFIG GPCs

06 GPC OUTPUT 1 - NORM (tb-bp)  
 MODE 1 - STBY, HALT (tb-bp)  
 PHR 1 - OFF  
 OUTPUT 5 - NORM (tb-bp)  
 MODE 5 - STBY (tb-RUN)  
 OUTPUT (SH GPC) - TERM (tb-bp)  
 /MODE (FD GPC) - HALT (tb-bp)  
 /PHR (FD GPC) - OFF

AV BAY 1  
 GPC OUTPUT 5 - NORM (tb-bp)  
 MODE 5 - STBY, HALT (tb-bp)  
 PHR 5 - OFF  
 OUTPUT (SH GPC) - TERM (tb-bp)  
 /MODE (FD GPC) - HALT (tb-bp)  
 /PHR (FD GPC) - OFF

AV BAY 2  
 GPC OUTPUT 5 - NORM (tb-bp)  
 MODE 5 - STBY, HALT (tb-bp)  
 PHR 5 - OFF  
 OUTPUT (SH GPC) - TERM (tb-bp)  
 /MODE (FD GPC) - HALT (tb-bp)  
 /PHR (FD GPC) - OFF

RECONFIG CRTs

C2 GPC/CRT 03 EXEC  
 GNC GPC/A EXEC  
 SH GPC/A EXEC  
 CRT3 PHR - OFF

LOAD ORBIT TEL

C2 SH 62 PGMU/PL CORR  
 01 PGMU FORMAT - GPC  
 FORMAT:  
 FXD - ITEM 1 EXEC (+)  
 SEL ID - ITEM 3 +3 EXEC  
 LOAD - ITEM 4 EXEC  
 -/RUN,CPLT  
 PGM - ITEM 2 EXEC  
 SH ANTENNA

C3 DFI RCDR PCM - HI SAMP  
 /C/W MODE - NORM

MOVE BFS TO GPC 1 (AV BAY 2 only)

Perform MALF, DPS, SSR-11 (GPC IPL-BFS)

DATE 03/02/81

ATO POST INSERTION PROCEDURES

2-1





ATO POST INSERTION

Because of an 18 min late OMS 2 burn, the nominal Post Insertion activities are performed 18 min later

| MET   | Changes to the Nominal Post Insertion Deorbit Prep  |
|-------|---|
| 02:43 | Change <u>SINGLE IMU STAR ALIGN REQD</u> IDs to stars given in <u>ALTERNATE SINGLE IMU STAR ALIGN PAD, 1-26</u>   |
| 02:50 | Change <u>AUTO MNVR TO DUAL IMU STAR ALIGN ATT R,P,Y</u> to values under <u>ALTERNATE DUAL IMU STAR ALIGN PAD, 1-26</u>   |
| 02:55 | Change <u>DUAL IMU STAR ALIGN REQD</u> IDs to stars given in <u>ALTERNATE DUAL IMU STAR ALIGN PAD, 1-26</u>   |
| 03:04 | Change <u>DUAL IMU STAR ALIGN VERIF REQD</u> IDs to stars given in <u>ALTERNATE DUAL IMU STAR ALIGN PAD, 1-26</u>   |
| 03:20 | MCC & CREW GO/NO GO FOR ORBIT OPS will occur (~ 3 min earlier) before <u>DUAL IMU STAR ALIGN VERIF</u> and <u>FUEL CELL AUTO PURGE</u> tests. Both of these activities must be verified onboard by crew prior to SUIT DOFFING |
| 04:45 | MCC GO is reqd (over MLX/BDA) for DPS TRANSITION OPS 2 to OPS 3 to support ATO 3 and 4 burns  |

to zmbolr v10 7 9ug v pmlr  
MCC 00 12 1504 (0ML M'X'BDW) LOV D62 JBYW21110M D62-S TO D62 2

TO 2M11 DUKELING  
DOIV OL CUSSE SCRIATIES MMEI PE MCLJLEQ CUPOROLQ PL CLEM DLJOL  
MCL06 DRTV IMI 21M6 V'ICM AEBLE MUG ENET CEFF VMLD 6RGE FFEF2  
MCC 8 CMEN GOVMO GO LOE D621/ D62 M11 OCCN. (- 2 M11 M11.116.)

TO V'IEBIVLE DRTV IMI 21M6 V'ICM DVO' 1-58  
CMADE DRTV IMI 21M6 V'ICM AEBLE BECO 102 TO 219.2 D'ABU

TO V'IEBIVLE DRTV IMI 21M6 V'ICM DVO' 1-58  
CMADE DRTV IMI 21M6 V'ICM AEBLE BECO 102 TO 219.2 D'ABU

This Page Intentionally Blank

MUGOL V'IEBIVLE DRTV IMI 21M6 V'ICM DVO' 1-58  
CMADE V'OLO MAM 10 DRTV IMI 21M6 V'ICM VLI B' M' A TO A31022

TO V'IEBIVLE 21M6E IMI 21M6 V'ICM DVO' 1-58  
CMADE 21M6E IMI 21M6 V'ICM BECO 102 TO 219.2 D'ABU

CMADE TO THE HANJUL BOZT JOCOLLOW COM-PIT B'LB

OLE D6210M69 10 M11 1416L  
D621022 04 TO 16 M11 1416 D62 S PMLA' THE MUGOL' BOZT JOCOLLOW SCRIATIES

M111222M1 1204 014

