



ORBIT OPS CHECKLIST

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APU/HYDRAULICS

APU/HYD

HYD THERM COND - ENA.....	1-2
HYD THERM COND - TERM.....	1-2
HYD ISOL VALVE REPOSITIONING.....	1-2

HYD THERM COND - ENA

- A12 ✓HYD CIRC PUMP PWR 1 - MNA
 2 - MNB
 3 - MNC

NOTE

If HYD RSVR QTY decr > 10%,
 close associated LG ISOL VLV

- R2 HYD CIRC PUMP 2 - ON
 R4 LG HYD ISOL VLV 2 - OP (tb-OP)
 R2 CIRC PUMP 2 - GPC
 R4 HYD CIRC PUMP 3 - ON
 R4 LG HYD ISOL VLV 3 - OP (tb-OP)
 R2 CIRC PUMP 3 - GPC
 CIRC PUMP 1 - GPC

HYD THERM COND - TERM

- R2 HYD CIRC PUMP 1,2,3 - OFF
 CIRC PUMP 2 - ON
 R4 LG HYD ISOL VLV 2 - CL (tb-CL)
 R2 CIRC PUMP 2 - OFF
 R4 HYD CIRC PUMP 3 - ON
 R4 LG HYD ISOL VLV 3 - CL (tb-CL)
 R2 CIRC PUMP 3 - OFF

HYD ISOL VALVE REPOSITIONING

NOTE

HYD LG ISOL VLV 1 should
 not be opened on-orbit

- R2 HYD CIRC PUMP X - ON
 R4 LG HYD ISOL VLV X - OP(CL) (tb-OP(CL))
 or
 MPS/TVC ISOL VLV X - OP(CL) (tb-OP(CL))
 R2 CIRC PUMP X - OFF

COMM/INST

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COMM/
INST

RCD DATA ONLY (SLEEP)

C3 ✓S-BD PM CNTL - CMD

|SM 7 OPS UTILITY|

CRT RTC (RCDR VOICE 1/2 - OFF via GCIL A(B))

ITEM 13 +7 1 0 9 0 1 F F EXEC
(710A 01FF)

CMD - ITEM 14 EXEC

ITEM 13 +7 9 0 9 0 0 5 D EXEC
(790A 005D)

CMD - ITEM 14 EXEC

RTC (OPS RCDR 1(2) RCD SERIAL 128)

ITEM 13 +A 0 8 9 F F F F EXEC
(A08A FFFF)

CMD - ITEM 14 EXEC

ITEM 13 +A 8 8 9 8 6 1 0 EXEC
(A88A 8610)

CMD - ITEM 14 EXEC

|SM 76 COMM/RCDR|✓NSP RCDR INPUT - DATA
✓OPS RCORS 1(2) MODE - RCD A
 ✓TAPE - RUNCOMM/
INST

CRT When warmup complete,
 SELF TEST - ITEM 7 EXEC (*)

A1U When SELF TEST complete (-3 min),
 ✓KU SCAN WARN tb - gray
 ✓TRACK tb - gray
 ✓SEARCH tb - gray

A2 ✓RANGE/ELEVATION - +888.8

 If RANGE/ELEVATION - +333.3, contact MCC

CRT SELF TEST - ITEM 7 EXEC (no *)

KU-BD ANT CABLE POSITIONING

NOTE

Perform this procedure
 when not tracking

A1U KU CNTL - PNL
 KU - AUTO TRACK
 SLEW RATE - FAST

A2 DIGI-DIS SEL - EL/AZ

A1U SLEW ELEV - as reqd:
 A2 RANGE/ELEVATION - 0(±5°)

A1U SLEW AZM - as reqd:
 A2 RANGE RATE/AZM - 0(±5°)

A1U SLEW ELEV - UP (hold for 14 sec)

 If not stowing antenna,
 SLEW RATE - SLOW
 KU - GPC
 KU CNTL - CMD

KU-BD ANT STOW

NOTE

Use exterior scene from PHOTO/TV
C/L, TV, TV06 to monitor KU-BD
ANT motion

- C3 ✓DAP - VERN
R13L ✓PL BAY MECH PWR SYS 1,2 (two) - OFF
A1U ✓KU PWR - ON
A2 ✓DIGI-DIS SEL - EL/AZ
- A1U Perform KU-BD ANT CABLE POSITIONING then:
 SLEW RATE - as reqd
- A2 SLEW ELEV - as reqd:
 RANGE/ELEVATION - $-27.0(\pm 1^{\circ})$
- A1U SLEW AZM - as reqd:
A2 RANGE RATE/AZM - $-123.0(\pm 1^{\circ})$
- A1U KU - MAN SLEW
 SLEW RATE - SLOW
- R13L KU ANT - STOW
 Wait 50 sec
- A2 ✓RANGE/ELEVATION - $-29.0(\pm 1^{\circ})$
 ✓RANGE RATE/AZM - $-125.0(\pm 1^{\circ})$
- R13L PL BAY MECH PWR SYS 1,2 (two) - ON
 If KU ANT - tb NOT bp,
 Go to MALF, MECH, 9.5c
- A1U When KU ANT tb - STO (-23-46 sec),
R13L KU PWR - OFF
 KU ANT - GND
- If no STO, Go to MALF, MECH, 9.5b
 PL BAY MECH PWR SYS 1,2 (two) - OFF

KU-BD MANUAL ACQUISITION (COMM)

1 SETUP

A2 ✓DIGI-DIS SEL - EL/AZ
A1U KU - AUTO TRACK
 ✓PWR - ON
 MODE - COMM
A1U ✓SIG PROC HDR - TV
 ✓LDR - OPS RCDR
 CNTL - PNL
 ✓SIG STRENGTH sel - KU
 SLEW RATE - as reqd
 ✓KU SCAN WARN tb - bp
 ✓TRACK tb - bp
 ✓SEARCH tb - bp

2 ANTENNA STEERING

NOTE

ANT will not LOCK/TRACK
when slewing in FAST RATE

CRT |SM ANTENNA|

A1U,CRT Use SLEW AZM and SLEW ELEV sw as required
 to position LOS pointer (□) over target
 on CRT

CRT When ANT EL, AZ CMD angles are within
 5° of ANT EL, AZ ACT angles,

A1U KU SEARCH - SEARCH
 ✓tb - gray
 When SIG STRENGTH > 1.0 and
 KU TRACK tb - gray (< 3 min),
 ✓KU SCAN WARN tb - bp
 ✓SEARCH tb - bp

.. IF NO TRACK IN 3 MIN.....
. Repeat step 2 once .
. If still no track, contact MCC .
.....
KU CNTL - CMD

KU-BD ANT JETTISON

NOTE

Jettison between sunrise
and noon if possible

AUTO MNVR TO -XLV

CRT |GNC UNIV PPG|
✓START TIME at least 15 min prior to
sunrise
✓TGT ID +2
BODY VECT +2
OM +0
START TRK - ITEM 19 EXEC (CUR *)
A6U DAP: A/AUTO/VERN

CONFIGURE KU FOR JETTISON

R15 cb MNB KU ELEC - op
ANT HTR - op
CABLE HTR - op
A10 ✓XU PWR - OFF
A14 ✓ANT ARM - SAFE
✓JETT - SAFE
MLB68:D cb MNA PYRO JETT SYS A KU ANT - c1
cb MNC PYRO JETT SYS B KU ANT - c1

CONFIGURE CCTVs TO MONITOR JETTISON

CCTV MON 1 - A
2 - B
Point CCTVs as reqd
Put new tape in VTR

A6U FLT CNTLR PWR - ON
A7U ✓Lighting - as reqd
When in attitude, then
CRT |GNC 33 REL NAV|
AVG G ON - ITEM 1 EXEC (*)

SUNRISE DAMP RATES

A6U DAP ROT: DISC/DISC/DISC
TRANS: PULSE/PULSE/NORM

If VERN jets avail
| DAP: A/MAN/VERN
If VERN jets not avail
DAP: B/MAN/NORM

Wait until rates damped, then
VTR pb - PLAY, RCD (simo)
DAP ROT: PULSE/PULSE/PULSE
DAP: A/MAN/NORM
✓SENSE - as reqd

NOTE

After JETT, initiate opening rate ASAP. Minimize other THC/RHC inputs

JETT KU ANTENNA

A14 PYRO KU ANT ARM - ARM

Wait 7 sec, then
PYRO KU ANT JETT - JETT ..

WHEN JETTISON COMPLETE, TRANSLATE AWAY

JETT+ Start EVENT TIMER
0:01 THC +Z, 2 sec (1 ft/sec)
(-X sense: THC dn)
(-Z sense: THC out)
DAP ROT: DISC/DISC/DISC

2:00 SECOND SEP BURN
SENSE - as reqd
THC +Z, 2 sec (1 ft/sec)
(-X sense: THC dn)
(-Z sense: THC out)

Maintain visual contact with KU ANT in
OVHD window using RHC

When KU ANT no longer visible, then

CLEANUP

R11 VTR pb - STOP

CRT |GNC 33 REL NAV|
AVG G ON - ITEM 1 EXEC (no *)

|GNC UNIV PTG|
√TGT ID +2
BODY VECT +3
√OM +0
START TRK - ITEM 19 EXEC (CUR *)

A6U DAP: A/AUTO/VERN
FLT CNTLR PWR - OFF

A7U √Lighting - as reqd

A14 PYRO KU ANT JETT - SAFE
ARM - SAFE

MLB68:D cb MNA PYRO JETT SYS A KU ANT - op
cb MNC PYRO JETT SYS B KU ANT - op

KU-BD ANT DEPLOY

R13L PL BAY MECH PWR SYS 1,2 (two) - ON
KU ANT - DPY

If KU ANT - tb NOT bp,
Go to MALF, MECH, 9.5c

When KU ANT tb - DPY (-23-46 sec),
KU ANT - GND

If no DPY, Go to MALF, MECH, 9.5a

PL BAY MECH PWR SYS 1,2 (two) - OFF

POST-SLEEP AUD CONFIG

A1R AUD CTR VOICE RCD SEL CH 1 - ICOM A
 CH 2 - ICOM B

A13 OS AUD SPKR PWR - OFF

 If TPR reqd,
 All AUD PNLs except
 TPR - A/G 2 - RCV, tw - R

R10 If not OV102,
 MS AUD ICOM A,B (two) - R, tw - R
 XMIT/ICOM MODE - R
 (If Duty Crewman,
 AUD PWR - AUD/TONE)

A13 If OV102,
 OS AUD A/G 2 - RCV (If TPR reqd)
 ICOM A,B (two) - R, tw - R
 XMIT/ICOM MODE - R

O6 ✓LINE MODE - as reqd

 WCCUs, LEG UNIT - ON
 AUD PNL PWR - AUD/TONE

ND42F MIDDECK SPKR AUD PWR - OFF
 A/G 2 - RCV
 ICOM A,B (two) - R
 XMIT/ICOM MODE - R
 (If Duty Crewman,
 AUD PWR - AUD/TONE)

PRE-SLEEP AUD CONFIG

TPR config (if reqd):

✓XX AUD PWR - AUD
 A/G 2 - T/R, tw - 9
 All other LOOPS - OFF
 XX AUD XMIT/ICOM MODE - PTT/PTT

✓TPR AUD Cable conn to XX CCU outlet
 ✓TPR PWR Cable conn to XX DC UTIL PWR &
 PWR - ON
 All other AUD PNLs config for A/G 2 - OFF

A1R AUD CTR VOICE RCD SEL CH 1,2 - OFF

If not OV102,

R10 MS AUD PWR - AUD/TONE
 A/G 1 - T/R
 A/G 2 - OFF
 A/A - T/R
 ICOM A,B (two) - OFF
 VOL tw's - R
 XMIT/ICOM MODE - PTT/PTT

If OV102,

A13 OS AUD PWR - AUD/TONE
 A/G 1 - T/R
 A/G 2 - OFF
 A/A - T/R
 ICOM A,B (two) - OFF
 VOL tw's - R
 XMIT/ICOM MODE - PTT/PTT
 SPKR PWR - SPKR/MIC
 MSTR SPKR VOL - R

O6 LHF MODE - as reqd

All MCCUs LEG UNIT - OFF
 AUD PNL PWR - OFF

MD42F	MIDDECK SPKR AUD PWR	- AUD/TONE
	A/G 1	- T/R
	A/G 2	- OFF
	A/A	- T/R
	ICOM A,B (two)	- OFF
	VOL tw's	- R
	XMIT/ICOM MODE	- PTT/PTT
	TONES	- ACCU/BYP
	SPKR PWR	- SPKR/MIC

SPKR BOX CHECKOUT

MIDDECK SPKR AUD PWR - AUD
 Set off alert tone and adjust Bypass Tone volume as reqd
 CRT PWR (CRT left in STBY) - ON (then)-STBY
 MIDDECK SPKR AUD PWR - OFF
 Perform comm check using flt deck SPKR/MIC
 MIDDECK SPKR AUD PWR - AUD/TONE

A13 OS AUD SPKR PWR - OFF
 Perform comm check using middeck SPKR/MIC
 OS AUD SPKR PWR - SPKR/MIC

DUTY CREWMAN

R10 If not OV102,
 MS AUD PWR - AUD

A13 If OV102,
 OS AUD PWR - AUD
 MD42F MIDDECK SPKR AUD PWR - AUD
 TONES - ACCU

MD58F Conn CCU/HDST to sleep sta tones connector - set off tone

✓Receipt via HDST, Duty Crewman monitor for tones

NOTE
 Duty crewman will hear tones only

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CREW SYSTEMS

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CABIN CONFIG/STOW..... 3-5
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SAS
SAS
CREW

PRE-SLEEP ACTIVITY

FLIGHT DECK ACTIVITY LIST

- 1 IMU ALIGNMENT:
Mvr to IMU Align Att as scheduled per CAI
Perform GNC, IMU ALIGN - S TRK, then:
Return to CAP ATT

NOTE

Do not perform Fuel cell purge or
water dumps during IMU alignment

- CREW
SYS
- CRT
- 2 EPS, FUEL CELL PURGE - AUTO
ECLS, SUPPLY WATER DUMP ~~Photo~~ H₂O Dump
 - 3 I²CNECT RETURN (ORBIT PKT, RCS)
 - 4 ✓ CRT MAJ FUNC - one SM, one GNC
 - 5 CRT TIMER FOR WAKE UP
 - 6 ALERT TONE DURATION
 - 7 POWERDOWN:
CRTs (one STBY, three OFF)
✓ PWR OFF:
TV MON
TV CAMERAS
TV PWR CONTR UNIT
TV PWR
VTR
PLR LIGHTS
DDUs (one ON, if reqd)
 - 8 COMM/INST, KU-BD ANT CABLE POSITIONING
 - 9 WINDOW SHADES/FILTERS
 - 10 LIGHTING
 - 11 Primary RJD DRIVER (eight) - OFF
- 014:F,
015:F,
016:F

RTY LITE - ON

MIDDECK ACTIVITY LIST

- CDR,
PLT
- 1 MEAL PREP (Cue Card):
MEAL
 - 2 HOUSEKEEPING
 - 3 WCS cleaning and URINAL SCREEN INSPECTION/
REPLACEMENT (URINE COLLECTION Cue Card)
 - 4 Change wireless headset battery packs
If FDI, mark with tape

NOTE

If all fresh batteries have been used, reinstall FDI batteries

- MD44F
- 5 MISSION NOTES (MICROCASSETTE RCDR, Cue Card)
 - 6 SET UP EQUIPMENT FOR NEXT DAY'S ACTIVITIES
 - 7 CAB TEMP CNTL (FULL HEAT or as reqd)
 - 8 ✓PWR OFF:
FOOD WARMER
TV PWR
 - 9 MED DATA REPORT (MICROCASSETTE RCDR,
Cue Card)
 - 10 COMM/INST, PRE-SLEEP AID CONFIG
 - 11 CO2 ABSORBER REPLACEMENT (Cue Card)
(If 5 crewmen, do fast)
 - 12 LIGHTING

POST-SLEEP ACTIVITY

MIDDECK ACTIVITY LIST

- 1 LIGHTING
- 2 CO2 ABSORBER REPLACEMENT (Cue Card)
(If 5 crewmen, do first)
- 3 MESSAGE REVIEW
- 4 COMM/INST, POST-SLEEP AHD CONFIG
- MD44F 5 CAB TEMP CNTL (FULL COOL or as reqd)
- 6 MEAL PREP (Cue Card): MEAL
- 7 HOUSEKEEPING
- MS1, 8 Change wireless headset battery packs
MS2 If FDI, mark with tape
RAV LIFE - OFF
NOTE
If all fresh batteries have been used, reinstall FDI batteries

FLIGHT DECK ACTIVITY LIST

- 1 LIGHTING
- 2 WINDOW SHADES/FILTERS
- 3 COMM/INST, KU-BD ANT CABLE POSITIONING
- 4 CRTs (three on)
- 5 ALERT TONE DURATION
- 014:F 6 Perform I'CONNECT L(R) OMS to RCS,
015:F ORBIT PKT, RCS, then:
016:F Primary RJD DRIVER (eight) - ON
- 7 IMU ALIGNMENT:
Mnvr to IMU Align Att as scheduled per CAP
Perform GNC, IMU ALIGN - S TRK, then:
Return to CAP ATT

NOTE
Do not perform fuel cell purge or water dumps during IMU Alignment
- 8 EPS, FUEL CELL PURGE - AUTO
ECLS, SUPPLY WATER DUMP ~~Photo H₂O Dump~~
- 9 If FD2: ECLS, CRYO 02 TK HTR SNSR CK

CABIN CONFIG/STOW

1 AIR SAMPLE

Fill Air Sample Bottle,

Rcd Time ___/___:___

2 FDI CONFIG

Unstow, install:

ENTRY & DEORBIT BURN Cue Cards

ENT C/L

ENT PKT

MS ENT and ENT PKT C/L

✓Available for Entry:

DEORB PREP

OMS/RCS SLIDE RULE (Cue Card)

LIG SITE CHARTS

Handheld Radio

3 MISC STOW

Stow Trash

Stow all Middeck/Flight Deck hardware

except:

Food Warmer/Trays

Wet Trash Bags/Manifold

Personal Hygiene Articles

35mm, 70mm Cameras

Sleeping Bags

Wireless Headsets

GAS Encoders

VTR Cassette (in VTR)

✓Modular lockers, floor compartments secure

✓Window shades/Filters stowed as reqd

✓A/L HATCH secure, locked

RADIATION INSTRUMENTATION LOG

LOCATION # 256	NO. TYPE	07:00:00/ READING	07:05:00/ READING	07:10:00/ READING	07:15:00/ READING	07:20:00/ READING	07:25:00/ READING
1	0-200 WELLTRAD						
2	0-200 WELLTRAD						
3	0-100 RAD						
4	0-200 WELLTRAD						
5	0-200 WELLTRAD						
6	0-200 WELLTRAD						
7	0-200 WELLTRAD						
8	0-200 WELLTRAD						
9	0-200 WELLTRAD						
10	0-200 WELLTRAD						
11	0-200 WELLTRAD						
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97	0-200 WELLTRAD						
98	0-200 WELLTRAD						
99	0-200 WELLTRAD						
100	0-200 WELLTRAD						

DPS

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DPS

SINGLE G2 GPC OPS

- 1 FORM SINGLE G2 GPC SET
 If MM202: GNC, OPS 201 PRO
 |GNC 0 GPC MEMORY|
 CRT CONFIG - ITEM 1 +2 EXEC
 Assign MC 2 per table ----->
 ✓DOWNLIST GPC, ITEM 44 - 1
 GNC, OPS 201 PRO (✓DAP)
- 2 FREEZE DRY GPC 2 (G2 FD)
- 06 GPC MODE 2 - STBY (tb-bp),
 then HALT
 PWR 2 - OFF

CONFIG	2
GPC	10000
STR 1	1
2	1
3	1
4	1
PL 1/2	0
CRT 1	1
2	1
3	0
4	1
L 1	0
2	0
MM 1	1
2	1

- 3 CONFIGURE DAP FOR VRCS
- 016:F ✓RJD L5/F5/R5 DRIVER - ON
 C3 DAP: A/AUTO/VERN

- 4 CONFIGURE STAR TRACKERS
- CRT |GNC 22 S TRK/COAS CNTL|
 S TRK -Y, -Z: STAR TRK - ITEM 3,4 EXEC (*)
 |GNC 21 INU ALIGN|
 RESUME

- 5 CLEAR SOFTWARE FAIL VOTES

ON MCC GO **
 |GNC 0 GPC MEMORY|
 ITEM 48 EXEC
 |SM 0 GPC MEMORY|
 ITEM 48 EXEC

ECLS

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ECLS

SUPPLY WATER DUMP

NOTE

If PASS SM avail, monitor temps and QTY, otherwise monitor dump time

Crew may reset SM alert limits to annunciate end of dump if desired

If TK A to be dumped, set TK B QTY LL to -10 to preclude nuisance alarm

PARAMETER NAME	SOFTWARE ID	SM ALERT	
		LOW	HIGH
H2O SUPPLY QTY A	0620410	25.0	
B	0620420	10.0	
C	0620548	75.0	99.0

1 DUMP PREP

- R12L If only TKS A&B to be dumped
| ✓ SPLY H2O XOVR VLV tb - CL
- If TK C(D) to be dumped
SPLY H2O TK A,B OUTLET (two) - CL (tb-CL)
Close SPLY H2O TK C,D OUTLET and INLET
vlvs except on tanks to be dumped:
SPLY H2O TKC OUTLET - CL (tb-CL)
INLET - CL (tb-CL)
- ML31C TKD OUTLET - CL (tb-CL)
INLET - CL (tb-CL)
- R12L SPLY H2O XOVR VLV - OP (tb-OP)

ECLS

CABIN TEMP CONTROL - SM 88 APU/ENVIRON THERM

	CREW ACTION	Δ TEMP OF EXPECTED
	Contact MCC	
	Pwrdn air cooled equip/install window shades-----	
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">↑ To COOL CABIN</div> <div style="margin-bottom: 10px;">↑ To HEAT CABIN</div> <div style="margin-bottom: 10px;">Normal Control Method</div> <div style="margin-bottom: 10px;">↓</div> </div>	(L1) FLOW PROP VLV LOOP 2 - ICH-----	1 to 9 of
	(L1) FLOW PROP VLV LOOP 1 - ICH-----	1 of
	(MD44F) CAB TEMP CNTLR vlv - FULL COOL-----	4 of
	(MD44F) CAB TEMP CNTLR vlv - 2/3 COOL-----	6 of
	(MD44F) CAB TEMP CNTLR vlv - 1/3 COOL-----	4 of
	(MD44F) CAB TEMP CNTLR vlv - FULL HEAT-----	4 of
	(L1) H2O LOOP 2 BYP MAN - DECR until H2O LOOP 2 ICH FLOW MAX-----	8 of
	(C2) Pwrup one or two CRTs as required-----	5 of
	(L1) H2O PUMP LOOP 1 - ON, B----- H2O LOOP 1,2 BYP MAN - DECR until H2O LOOP 1,2 ICH FLOW MAX-----	
	(L1) FLASH EVAP CNTLR PRI A,B - OFF SEC - OFF-----	
Contact MCC		

ECLSS REDUNDANT COMPONENT C/O

NOTE

Throughout checkout, ignore alerts
and note any discrepancies

ISS 66 ENVIRONMENT

L1 HUMIDITY SEP B - OFF
A - ON

CRT ✓HUMID SEP A - (no '4')

L1 HUMIDITY SEP A - OFF
B - ON

IMU FAN B - OFF
A - ON

CRT ✓IMU FAN ΔP - -4.43

L1 IMU FAN A - OFF
C - ON

CRT ✓IMU FAN ΔP - -4.43

L1 IMU FAN C - OFF
R - ON

CAB FAN B - OFF
A - ON

CRT ✓CABIN FAN ΔP - -4.5 (-0.23 OV102)

L1 CAB FAN A - OFF
B - ON

AV BAY 1 FAN B - OFF
A - ON

2 FAN A - OFF
B - ON

3 FAN B - OFF
A - ON

CRT ✓AV BAY FAN ΔP 1 - -3.1 (-0.16 OV102)
2 - -3.4 (-0.12 OV102)
3 - -4.5 (-0.15 OV102)

L1 AV BAY 1 FAN A - OFF
B - ON

2 FAN B - OFF
A - ON

3 FAN A - OFF
B - ON

SM 88 APU/ENVIRON THERM

L1 FREON PUMP LOOP 1,2 (two) - B
If FLOW PROP VLV LOOP 1,2 tb (two) - ICH
| ✓FREON LOOP FREON FLOW > 2000
L1 If FLOW PROP VLV LOOP 1,2 tb (two) - PL HX
CRT ✓FREON LOOP FREON FLOW > 1350

L1 FREON PUMP LOOP 1,2 (two) - A
H2O PUMP LOOP 1 (two) - ON, A
CRT ✓H2O LOOP 1 ICH FLOW > 900
L1 ✓H2O LOOP 1 BYP MODE - MAN
MAN - INCR (hold 10 sec)
CRT ✓H2O LOOP 1 ICH FLOW - decreasing
L1 ✓H2O LOOP 1 BYP MAN - DECR (until ICH FLOW
-950)
H2O PUMP LOOP 1 (two) - GPC, B
✓H2O LOOP 2 BYP MODE - MAN
MAN - INCR (hold 10 sec)
CRT ✓H2O LOOP 2 ICH FLOW - decreasing
L1 H2O LOOP 2 BYP MAN - DECR (until ICH FLOW
-950)

MANUAL CABIN ATMOSPHERE MANAGEMENT

SET UP

- L2 O2/N2 CNTLR VLV SYS 1 - OP
SYS 2 - CL
- C7 ✓LEH O2 1 vlv - OP
2 vlv - OP
Unstow O2 Bleed Orifice Assembly
- ND32M ✓LEH O2 5 vlv - CL

Insert O2 Bleed Orifice Assembly into
LEH O2 5 QD
LEH O2 5 vlv - OP

SET CBM LIMITS

C/W CH	PARAMETER NAME	SW ID	HIGH C/W VDC/EU	ENA INH
34	PP02 A	0612511	3.40/3.40	
44	PP02 B	0612513	3.40/3.40	
54	N2 FLOW SYS 1	0612553		INH
24	O2 FLOW SYS 2	0612205		INH

ND10W 14.7 CAB REG INLET SYS 2 vlv - OP
CBM ALARM 'CABIN ATM' and/or B/U CBM '566 CABIN PP02'

ND10W 14.7 CAB REG INLET SYS 2 vlv - CL
1 vlv - OP

When N2 FLOW SYS 1 < 1.0,
14.7 CAB REG INLET SYS 1 vlv - CL

If prior to sleep,
14.7 CAB REG INLET SYS 1,2 vlv (two) - CL

RESET CBM LIMITS

C/W CH	PARAMETER NAME	SW ID	HIGH C/W VDC/EU	ENA INH
34	PP02 A	0612511	3.60/3.60	
44	PP02 B	0612513	3.60/3.60	
54	N2 FLOW SYS 1	0612553		ENA
24	O2 FLOW SYS 2	0612205		ENA

RAD BYPASS/FES C/O

- CRT 1 BNC 20 DAP CONFIG - Config DAP to B1
C3 DAP: R/AUTO/NORM
- R12L 2 SPLY H2O XOVR VLV - OP (tb-OP)
- L1 3 FLASH EVAP CNTLR PRI A - OFF
 ✓PRI B - OFF
 SEC (two) - A SPLY, ON
 ✓HI LOAD DUCT HTR - B
 EVAP - ENA
- 4 RAD BYP VLV MODE (two) - MAN
 MAN SEL (two) - BYP
 (tb-BYP -3 sec)
 RAD CNTLR LOOP (two) - OFF
 After 2.5 min,
01 ✓FREON EVAP OUT TEMP ind - $62^{\circ} \pm 2^{\circ}$ F
- L1 5 HI LOAD EVAP - OFF
 After 2.5 min,
01 ✓FREON EVAP OUT TEMP ind - $62^{\circ} \pm 2^{\circ}$ F
- L1 6 HI LOAD EVAP - ENA
- 7 FLASH EVAP CNTLR PRI B - ON
 SEC (two) - A SPLY, OFF
01 After 2.5 min,
 ✓FREON EVAP OUT TEMP ind - $39^{\circ} \pm 1^{\circ}$ F
- L1 8 ✓FLOW PROP VLV LOOP 1,2 (two) tb - ICH

RAD STOW/DEPLOY

1. STOW RADIATORS

R13L ✓RAD LAT CNTL SYS (two) - OFF (tb-REL)
 ✓CNTL SYS (two) - OFF (tb-OPY)

PL BAY MECH PWR SYS (two) - ON
RAD CNTL SYS (two) - STOW (concurrently)
 ✓(tb-bp -40 sec, ST0)
 - OFF

- * If tb not bp after 10 sec or if tb not ST0 *
- * in 40 sec & no motion determined visually: *
- * R13L RAD CNTL SYS (two) - OFF *
- * Go to MALF, MECH, 9.2b or 9.2d (Stbd) or *
- * MECH, 9.2f or 9.2h (Port) *

RAD LAT CNTL SYS (two) - LAT (concurrently)
 (tb-bp -25 sec, LAT)
 - OFF

PL BAY MECH PWR SYS (two) - OFF

SINGLE RAD OPS

(Open MA73C:C&D MCA LOGIC PWR AC cbs for failed RAD)

<u>STBD RAD cbs</u>	<u>PORT RAD cbs</u>
AC1MID3	AC1MID1
AC2MID2	AC2MID4
AC3MID2	AC3MID4

2 DEPLOY RADIATORS

R13L

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

Zero Timer

PL BAY MECH PWR SYS (two) - ON

RAD LAT CNTL SYS (two) - REL (concurrently),
start Timer
✓(tb-bp -25 sec, REL)

RAD LAT CNTL SYS (two) - OFF

RAD CNTL SYS (two) - DPY (concurrently)
✓(tb-bp -40 sec, DPY)
- OFF

- * If either RAD deploys in > 40 sec, *
- * stop and consult MCC *
- * If either RAD tb not bp after 10 *
- * sec, stow and latch RADs *
- * Redeploy only good RAD (ref table *
- * pg 5-12) *

Verify Stbd & Port RAD Panels are deployed &
stabilized

PL BAY MECH PWR SYS (two) - OFF

CRYO O2 TK HTR SNSR CK

S68 CRYO/FUEL CELLS

R1 O2 TK1,2,3 HTRS (three) - TEST
CRYO TK4 HTR O2(TK4/5) - TEST

CRT ✓HTR CUR SNSR 1A,B,2A,B (four) - '+'
for each tk

If any '+' is not present, Rcd applicable
cb status (op/cl) as follows:

014:C	cb	MNA	CRYO	O2	HTR	TK1	SNSR	1	-	_____
015:C	cb	MNB	CRYO	O2	HTR	TK2	SNSR	2	-	_____
016:C	cb	MNC	CRYO	O2	HTR	TK1	SNSR	2	-	_____
						TK2	SNSR	1	-	_____
ML86B:F	cb	MNA	CRYO	O2	HTR	TK3	SNSR	1	-	_____
		MNB	CRYO	O2	HTR	TK3	SNSR	2	-	_____
						TK4	SNSR	1	-	_____
		MNC	CRYO	O2	HTR	TK4	SNSR	2	-	_____

R1 O2 TK1,2,3 HTRS (three) - RESET
A11 CRYO TK4 HTR O2(TK4/5) - RESET

Report results to MCC

EPS

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FUEL CELL PURGE - MANUAL.....	6-8

EPS

LAMP & FIRE SUPPR TEST

BROKE DETECTION

CABIN	PAYLOAD
1 FLT DECK	2 FLT DECK
AV BAY 1	AV BAY 1
AV BAY 2	AV BAY 2
AV BAY 3	AV BAY 3

C/W PANEL

O ₂ PRESS	H ₂ PRESS	FUEL CELL REAC	FUEL CELL STACK TEMP	FUEL CELL ALARM
CABIN ATM	O ₂ HEATER TEMP	MAIN BUS UNDERVOLT	DC VOLTAGE	AC OVERLOAD
FREON LOOP	AV BAY CABIN AIR	IMU	FWD RCS	A/C SET
H ₂ O LOOP	HGA ACCEL	AIR DATA	LEFT RCS	RIGHT RCS
	LEFT RMC	RIGHT ATT RMC	LEFT OMS	RIGHT OMS
PAYLOAD WARNING	GPC	ECS SATURATION	OMS KIT	OMS TVC
PAYLOAD CAUTION	PRIMARY C/B	ECS CHANNEL	MPS	
BACKUP A ALARM	APU TEMP	APU OVERSPEED	APU UNDER SPEED	APU PRESS

C/W

2 FIRE/SMOKE DETECT/SUPPRESS TEST

NOTE

If any SMOKE DETN ^{1t} fails to illum (ex PAYLOAD), open and close associated cb (Pnl 014,015 or 016) and repeat test on that CKT allowing 60 sec

L1

SMOKE DETN CKT TEST - A
✓FIRE SUPPR AV BAY (three) pb - lts on
✓(in 15-25 sec):
SMOKE DETN A lts (five) - on
Siren - on
MSTR ALARM 1t - on

F2

MSTR ALARM pb - off

L1

SMOKE DETN CKT TEST - OFF
SNSR - RESET
✓Above lights and siren - off

SMOKE DETN CKT TEST - B
✓FIRE SUPPR AV BAY (three) pb - lts on
✓(in 15-25 sec):
SMOKE DETN B lts (four) - on (PL 1t off)
Siren - on
MSTR ALARM 1t - on

F2

MSTR ALARM pb - off

L1

SMOKE DETN CKT TEST - OFF
SNSR - RESET
✓Above lights and siren - off

SM SYS SUPP I

CRT

Verify:

SMOKE	1/A	2/B
AV BAY 1	-.1 to +.5	-.1 to +.5
2	-.1 to +.5	-.1 to +.5
3	-.1 to +.5	-.1 to +.5

* If limits exceeded, contact MCC *

HEATER RECONFIG - Config B (Config A)

L1 TOP EVAP HTR NOZ (two) - B AUTO(A AUTO)
 DUCT - B(A)

L2 FLASH EVAP FDLN HTR A,B SPLY (two) - 2(1)

A12 APU HTR GAS GEN/FUEL PUMP (three) - B AUTO
 (A AUTO)

LUBE OIL LINE (three) - B AUTO
 (A AUTO)

TK/FU LINE/H2O SYS 1B,2B,3B - AUTO
 (OFF)

1A,2A,3A - OFF
 (AUTO)

HYD HTR RUD SPD BK A - OFF(AUTO)
 B - AUTO(OFF)

BDY FLP A - OFF(OFF)
 B - OFF(OFF)

ELEV A - OFF(AUTO)
 B - AUTO(OFF)

AFT FUS A - OFF(AUTO)
 B - AUTO(OFF)

A14 RCS/QMS HTR FWD RCS - B AUTO(A AUTO)
 L POD - OFF(A AUTO)
 - B AUTO(OFF)

R POD - OFF(A AUTO)
 - B AUTO(OFF)

QMS CRSPD LINES - OFF(A AUTO)
 - B AUTO(OFF)

R12U FC H2O LINE HTR - B AUTO(A AUTO)
 RELIEF HTR - B AUTO(A AUTO)

ML868:A cb MNA H2O LINE HTR A - op(c1)
 cb MNB H2O LINE HTR B - c1(op)

FUEL CELL PURGE - AUTO, SM 2

NOTE

The FC auto purge capability exists only in SM OPS 2

CAUTION

Do not purge an FC if:
any FC AMPS > 350 or
FC Shutdown
Do not initiate auto
purge within:
1.5 hr of OPS 3 transition
or
3 hr of deorbit

R12U

FC PURGE VLV (three) - GPC
HTR - GPC
GPC PURGE SEQ - START
(After tb-gray, hold 3 sec)

FUEL CELL PURGE - MANUAL

1 TURN ON PURGE HEATERS

R12U FC PURGE HTR - ON

CRT SM 68 CRYO/FUEL CELLS
✓PURGE LN O2 T > 69
 ✓H2 T1 > 79
 ✓T2 > 40
Or, wait at least 15 min

2 MANUAL PURGE SEQUENCE

NOTE
Fuel cells must be purged
separately

CAUTION
Do not purge an FC if:
any FC AMPS > 350 or
FC Shutdown

CRT FC 1(2,3) FLOW O2 - note
 H2 - note

R12U FC PURGE VLV 1(2,3) - OP

CRT ✓FC 1(2,3) FLOW O2 - increase -2.2 (max)
 ✓H2 - increase -0.6 (max)

R12U Wait 2 min, then
FC PURGE VLV 1(2,3) - CL, then GPC

CRT ✓FC 1(2,3) FLOW O2 - decr -2.2 (max)
 ✓H2 - decr -0.6 (max)

Repeat step 2 for FCs 2 and 3
Wait at least 30 min, then continue

3 TURN OFF PURGE HEATERS

R12U FC PURGE HTR - OFF, then GPC

IMU ALIGN - S TRK.....	7-2
IMU ALIGN - ROLL S TRK.....	7-4
S TRK SELF-TEST.....	7-6
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UMICRON SPECIFICATION.....	7-27

IMU ALIGN - S TRK, GNC 201, 301

1 COLLECT STAR DATA

√DAP: A/AUTO/VERN

CRT

GNC 22 S TRK/COAS CNTL
√S TRK -Y,-Z: REQD ID, ITEM 11,12 - 0
STATUS - (no BITE)
SHUTTER - OP

- * IF SHUTTER - CL: *
- * √Att,MET - correct *
- * MAN OP - ITEM 15(16) EXEC (*) *

√S TABLE CLR, ITEM 20 - (no unwanted data)
STAR TRK - ITEM 3,4 EXEC (*)

2 VERIFY STAR DATA

√S TABLE: TRK ID 1,2 - (correct #s)
ANG ERR 1 - < .08, Rcd ___
SEL, ITEM 17,18 - (*)

- * If no data after 3 min or bad data: *
- * √Att,stars,MET - correct *
- * √Rot Rate - < .50/sec *
- * √S TRK -Y,-Z: TRK ID - (correct #s) *
- * ΔANG - < 1.0 *
- * If preceding checks are good: *
- * Perform S TRK SELF-TEST then, *
- * If both STATUS - ST FAIL: *
- * | Inform MCC before proceeding *
- * If both STATUS - ST PASS: *
- * | Repeat step 1 at new att, stars *
- * If one STATUS - ST PASS: *
- * √TERM/IDLE, ITEM 9(10) - (*) *
- * STAR TRK, GOOD S TRK - ITEM 3(4) EXEC (*) *
- * S TABLE CLR - ITEM 20 EXEC *
- * √S TABLE: TRK ID 1 - (correct #) *
- * TERM/IDLE, GOOD S TRK - ITEM 9(10) EXEC (*) *
- * Mvr to 2nd att, star *
- * STAR TRK, GOOD S TRK - ITEM 3(4) EXEC (*) *
- * Repeat step 2 with good S TRK only *

GNC

FCS CHECKOUT**✓ TACAN DTO****DISPLAY/DPS CONFIG**

- 014, RGA (four) - ON
015, cb MNA,B,C ADTA (four) - c1
016 cb MNA,B ACCEL 1,2 (two) - c1
cb MNA,C DDU AFT (two) - op
cb MNB,C DDU R (two) - c1
ASA (four) - ON
ACCEL 3,4 (two) - ON
- 08 RADAR ALTM (two) - ON
MLS (three) - ON
- F6 INST PWR - FLT
F8 INST PWR - ON
F3 TRIM PNL (two) - ON
HUD PWR (two) - ON
HSI: ✓off flag - not visible
- F8 ADI: ✓Error needles & Rate pointers -
visible
- C3 ✓FCS CH (four) - AUTO
✓ TACAN DTO - FS 2-4
Perform DPS, G2 TO G8 TRANSITION; then

ON-ORBIT FCS CHECKOUT, PART 1

NOTE

Only one APU will be used for the FCS C/O. Selection of APU will be made real time and MCC will provide APU number

NOTE

Continue FCS C/O for APU alarms except as follows:

If MB REG PRESS '+':
R2 BLR N2 SPLY - OFF

If OIL OUT P < 25 & GBX P < 5, shut down APU

If APU OVERSPEED or APU UNDERSPEED
Confirmed overspeed or if APU has shutdown

or

If APU TEMP
Overtemp confirmed by SM APU B/U EGT:
Affected APU CNTL - OFF
FUEL TK VLV - CL

NOTE

Any previously failed actuator channel should be bypassed via ITEM 21 on FCS/DED DIS C/O display prior to APU start (See DPS DICT, GNC, OPS GB for ITEM ENTRY values)

1 FCS C/O PREP

C2 Set EVENT TIMER to 00:00, count UP
DAP: A/AUTO/WORN

3 AFT RHC

CRT Deselect A RHC:
 RHC A DES - ITEM 13,14,15 EXEC (*)
 A RHC - deflect to hardstop in each axis
✓RHC A: R,P - > 92%
 Y - > 88%

- * During RHC test, *
- * One xdcr failure - reselect good *
- * xdcrs only *
- * Multi RHC failures - reselect good *
- * xdcr & AGU FLT CNTLR PWR - OFF *

 Reselect RHC CHs:
 RHC A DES - ITEM 13,14,15 EXEC (no *)

4 RECONFIG TO NOMINAL

AGU FLT CNTLR PWR - OFF
014:E AFT DDU PWR - as reqd
016:E

OMICRON SPECIFICATION

1 DETERMINE REFERENCE ATTITUDE

Designated body axis pointed toward target (P). Y body axis in same plane as negative angular momentum vector (-h) and P.

2 DETERMINE DESIRED ATTITUDE

Rotate clockwise around P (right hand rule) to desired attitude.

OMICRON = angle of rotation around P from reference attitude to desired attitude.

NOTE

If P = + Y body axis, use -Z body axis for reference attitude

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MPS

MPS INERT..... 8-2

MPS INERT

1 INITIALIZATION

R2 MPS PNEU He ISOL - OP
R4 MPS FILL/DRAIN LO2,LH2 OUTBD (two) - CL
 Wait ten sec:
 LO2,LH2 OUTBD (two) - OP
After 30 min, continue

2 TERMINATION

R4 MPS FILL/DRAIN LO2,LH2 OUTBD (two) - CL
 Wait ten sec:
 LO2,LH2 OUTBD (two) - GND
R2 MPS PNEU He ISOL - CL

ON-ORBIT OMS BURN..... 9-2

OMS

ON-ORBIT OMS BURN

1 OMS BURN PREP

C6 Install OMS 2/ORBIT OMS BURNS Cue Cards
(two) and OMS BURN MONITOR Cue Cards
(two) (F6, F8)

If OPS 2

CRT

1: GNC 20 DAP CONFIG	- √DAP Config A1,B1
1: GNC UNIV PYG	
STOP - ITEM 21 EXEC (+)	
GNC, OPS 202 PRO	
1: GNC ORBIT MNVR EXEC	
2: GNC SYS SUMM 2	

If OPS 3

GNC, OPS 302 PRO	
1: GNC DEORB MNVR EXEC	
3: BFS, GNC SYS SUMM 2	

F7 √OMS PRESS He TK L(R) > 750 psia
√N2 TK L(R) > 523 psia

WARNING
If OMS PRESS not within limits, do not execute on-orbit burn

2 GIMBAL CHECK

CRT1 Perform SEC L,R then PRI L,R GMBL CK

- * If down arrow(s) or Ms: *
- * Select good GMBL *

3 LOAD TGT DATA

Load TGT DATA per Burn Pad

LOAD - ITEM 22 EXEC

TIMER - ITEM 23 EXEC

✓BURN DATA per Burn Pad

C3 DAP: If OPS 2, B/AUTO/VERN

If OPS 3, AUTO

CRT1 MNVR - ITEM 27 EXEC (*)

4 PERFORM OMS BURN

TIG-4 If 1 ENG BURN

If Xfeed Burn

Perform OMS XFEED Cue Card,
appropriate crossfeed

If No Xfeed or Mid-Burn Xfeed

OB ✓L,R OMS TK ISOL (four) - OP (tb-OP)

✓XFEED (four) - CL (tb-CL)

If 2 ENG BURN

✓L,R OMS TK ISOL (four) - OP (tb-OP)

✓XFEED (four) - CL (tb-CL)

F6/F7/F8 FLT CNTRLR PWR (two) - ON

Perform OMS 2/ORBIT OMS BURNS

Cue Card, then**

5 OMS POST BURN RECONFIGURATION

CRT1 Perform SEC L,R then PRI L,R GMBL CK
F6/F7/F8 FLT CNTLR PWR (two) - OFF
08 L,R OMS He PRESS/VAP ISOL (four) - CL
XFEED (four) - CL (tb-CL)
TK ISOL (four) - OP (tb-OP)

.....IF OPS 2.....

.C3 DAP: B/MAN/VERN :
. DAP ROT: DISC/DISC/DISC :
.CRT GNC, OPS 201 PRO (✓DAP) :
.....

6 CONFIGURE STAR TRACKERS

CRT |GNC 22 S TRK/COAS CNTL|
S TRK -Y,-Z: STAR TRK - ITEM 3,4 EXEC (*)
|GNC 21 IMU ALIGN|
RESUME

RCS

RCS HOT FIRE TEST.....	10-2
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0.4 DEG/SEC PTC.....	10-8
ON-ORBIT RCS BURN.....	10-9
LOSS OF VERNIERS.....	10-21
RECOVERY OF VERNIERS.....	10-21

RCS

RCS HOT FIRE TEST

1 CONFIGURE FOR JET TEST

C3

DAP ROT: DISC/DISC/DISC

DAP: A/MAN/VERN

GNC 20 DAP CONFIG - Config DAP to A3

2 PERFORM RCS JET TEST

NOTE

If failed RCS JET detected,
complete RCS JET TEST, then
go to MALF, RCS, 10.1a

Monitor CRT for JET FAIL messages
Monitor ADI rates to verify jet on
or jet fail

C3

DAP ROT: PULSE/PULSE/PULSE

TRANS: PULSE/PULSE/PULSE

DAP: A/MAN/NORM

F6

ADI RATE - LO

F6/F7

FLT CNTLR PWR - ON

THC +X, 1 PULSE (fires jets R3A,L3A)

-X, 1 PULSE (fires jets F1F,F2F)

CRT

GNC 23 RCS

RCS FWD - ITEM 1 EXEC (*)

JET DES F1F - ITEM 15 EXEC (*)

F2F - ITEM 23 EXEC (*)

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COMM/INST

COMM/
INST

LOAD PDI DECOM FORMAT..... FS 1-2
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LOAD PDI DECOM FORMAT

SM 52 PCMMU/PL COMM

- 1 PDI:
 CRT ✓ I/O RESET - ITEM 8 (*)
 SEL DECOM - ITEM 9 +X EXEC
 SEL FMT - ITEM 10 ~~X~~ X X EXEC
 LOAD - ITEM 11 EXEC
- 2 If LOAD - CPLT
 SEL INPUT - ITEM 12 +Y EXEC
 LOAD - ITEM 13 EXEC
 Continue steps 1 and 2 for additional
 DECOMS/FPM
- 3 If LOAD - FAIL & ERR MSG - 'I/O ERR MMU 1(2)'
 Go to MALF, DPS, 5.2a >>
- 4 If LOAD - FAIL and first load attempt
 Repeat step 1
- 5 If LOAD - FAIL and subsequent load attempt
 ALL PL DATA INTLVR PWR - OFF, then ON
 CRT ✓ ERR MSG - 'S62 BCE BYP PL'
 - 'S62 BCE BYP PDI'
- PDI:
 I/O RESET - ITEM 8 EXEC (*)
 Repeat step 1 for all of config (XXX)

I/O RESET PCM - ITEM 5 EXEC (*)

CONFIG	DECOM	INPUT	FMT
130 (ORB PRIME)	1	✓ 1	7
	2	0	0
	3	0	0
	4	0	0
	5	0	1
131	1	0	0
	2	✓ 1	7
	3	0	0
	4	0	0
	5	0	1

LOAD PCMMU FORMAT

- C3 1 OI PCMMU FORMAT - GPC
- CRT 2 SM 62 PCMMU/PL COMM
 FORMAT:
 FXD - ITEM 1 EXEC (*)
 SEL ID - ITEM 3 +X X X EXEC
- 3 ✓SM COMM BUF - RDY
 LOAD - ITEM 4 EXEC
 ✓LOAD, ITEM 4 - RUN, CPLT
- 4 If LOAD - CPLT
 | Repeat steps 2 and 3 for 2nd ID
- 5 If LOAD - FAIL & ERR MSG - 'I/O ERR MMU 1(2)'
 | Go to MALF, DPS, 5.2a >>
- 6 If LOAD - FAIL and first load attempt
 | Repeat steps 2 and 3 for FAIL ID
- 7 If LOAD - FAIL and subsequent load attempt
- C3 OI PCMMU PWR - 2(1)
 ✓ERR MSG - 'I/O ERR PCM'
 - 'I/O ERR DL'
- CRT I/O RESET PCM - ITEM 5 EXEC (*)
 Repeat steps 2 and 3
- 8 When final LOAD - CPLT
 PGM - ITEM 2 EXEC (*)

PHASE/DOWNLIST/OPS	FORMAT ID	CONFIG
	64 / 128	NO
ORB/G2 ORB BURN/G2,S2	103 / 161	13
ORB/PL PRIME/G2,S2	114 / 179	130
ORB/PL BU/G2,S2	114 / 178	131
FCS CKOIJ/G8,S2	104 / 162	19
ENTRV/G3,BFS	105 / 164	28
GPC/G2,S2,DUMP or OPS 0	-- / 163	30
GPC/MMU C/O/G2,S2,P9	-- / 163	32

NOTE

LDR TFL may affect PCMMU BITE. If PCMMU or SM 2 GPC has been switched since last TFL, ID 64 and 128 will not reflect current state

1 ROLL MANEUVERS

Config DAP: B1/AUTO/NORM

CRT

|GNC UNIV PTG|

BODY VECT - ITEM 14 +1 EXEC

At TDRS AOS,

ROT - ITEM 20 EXEC (CUR - *)

Note MET (Start of roll) _____/_____:_____:_____

Add 24 min to MET and enter as,

START TIME - ITEM 1+ _____ + _____ + _____ + _____ EXEC

BODY VECT - ITEM 14 +2 EXEC

ROT - ITEM 20 EXEC (FUT - *)

After 48 min from Start of roll,

STOP - ITEM 21 EXEC

Reconfig to CAP DAP

2 PITCH MANEUVERS

Config DAP: B1/AUTO/NORM

CRT

|GNC UNIV PTG|

BODY VECT - ITEM 14 +5 EXEC

P - ITEM 15 +0 0 0 EXEC

Y - ITEM 16 +0 9 0 EXEC

At TDRS AOS,

ROT - ITEM 20 EXEC (CUR - *)

Note MET (Start of pitch) _____/_____:_____:_____

*Some flashing
no entry req.*

Add 24 min to MET and enter as,

START TIME - ITEM 1+ _____ + _____ + _____ + _____ EXEC

Y - ITEM 16 +2 7 0 EXEC

ROT - ITEM 20 EXEC (FUT - *)

After 48 min from Start of pitch,

STOP - ITEM 21 EXEC

Reconfig to CAP DAP

BACKUP STAR PAIRS PAD.....	FS 2-2
BACKUP STAR PAIRS.....	FS 2-3
ADTA MEMORY READ TABLE.....	FS 2-4
TACAN NAV.....	FS 2-4

GNC

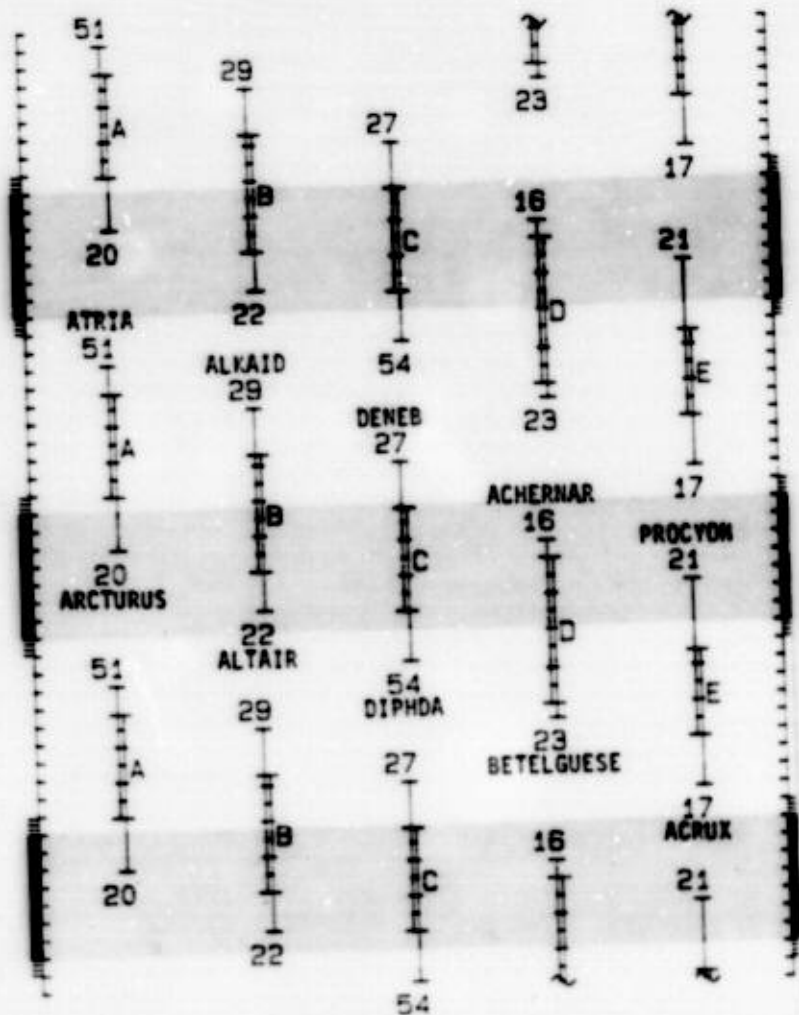
BACKUP STAR PAIRS PAD

PAIR NUM SEP	ATT SET 1				ATT SET 2			
	DUAL 5 TRK		SINGLE 5 TRK		DUAL 5 TRK		SINGLE 5 TRK	
	-Z	-Y	-Z	-Y	-Z	-Y	-Z	-Y
A	R + 21.3 P + 133.3 -Z 51 -Y 20 V + 338.8	R + 287.2 P + 117.9 -Z 51 -Y 20 V + 343.	R + 111.7 P + 137. -Z 51 -Y 20 V + 253.6	R + 254.7 P + 296.7 -Z 20 -Y 51 V + 22.6	R + 161.9 P + 309.1 -Z 20 -Y 51 V + 22.6	R + 342.5 P + 306.2 -Z 20 -Y 51 V + 1.3		
B	R + 173.2 P + 33.7 -Z 27 -Y 29 V + 50.9	R + 77.8 P + 48.6 -Z 29 -Y 22 V + 40.6	R + 267.8 P + 20.6 -Z 29 -Y 22 V + 39.6	R + 102.1 P + 227.1 -Z 29 -Y 22 V + 324.1	R + 16. P + 218.4 -Z 22 -Y 29 V + 317.8	R + 177.5 P + 202.6 -Z 22 -Y 29 V + 330.2		
C	R + 73. P + 279.7 -Z 27 -Y 54 V + 322.1	R + 337.6 P + 263.6 -Z 54 -Y 27 V + 313.6	R + 152.8 P + 270.3 -Z 27 -Y 27 V + 334.3	R + 212.7 P + 77.5 -Z 54 -Y 27 V + 46.1	R + 114.3 P + 97.4 -Z 27 -Y 27 V + 42.5	R + 298.2 P + 76.1 -Z 27 -Y 54 V + 15.3		
D	R + 253.1 P + 161.8 -Z 16 -Y 23 V + 331.8	R + 173.4 P + 173.3 -Z 23 -Y 16 V + 341.8	R + 343.5 P + 172.6 -Z 16 -Y 16 V + 320.8	R + 11.2 P + 354.8 -Z 23 -Y 16 V + 19.	R + 292.3 P + 343.7 -Z 16 -Y 23 V + 23.5	R + 97.2 P + 6. -Z 23 -Y 23 V + 31.8		
E	R + 268.4 P + 195. -Z 17 -Y 21 V + 24.5	R + 177. P + 205.3 -Z 21 -Y 17 V + 36.3	R + 350.5 P + 206.8 -Z 21 -Y 17 V + 14.9	R + 10.8 P + 31. -Z 21 -Y 21 V + 324.3	R + 276.2 P + 15.3 -Z 17 -Y 21 V + 330.9	R + 100.3 P + 37.9 -Z 21 -Y 21 V + 337.7		

Data Applicable 08/29/83 - 09/05/83
 CHANNEL B TRK NUM MINOR OPT
 TGT ID = 11-60 MW STAR 0
 BODY VECTOR = 5

	-Z 5 TRK	-Y 5 TRK
P	87.7	0
V	258.0	260.6

BACKUP STAR PAIRS



Data Applicable 08/29/83 - 09/05/83

FS 2-3

STS-8/FIN A,1

ADTA MEMORY READ TABLE

GNC O GPC MEMORY

DATA - ITEM 20 EXEC (*)
HEX - ITEM 27 EXEC (*)
ADD ID - ITEM 28 + _ _ _ _ _ (see below)

ADTA 1 BITE	<u>0</u>	<u>3</u>	<u>6</u>	<u>4</u>	<u>2</u>
ADTA 2 BITE	<u>0</u>	<u>3</u>	<u>6</u>	<u>A</u>	<u>2</u>
ADTA 3 BITE	<u>0</u>	<u>3</u>	<u>7</u>	<u>0</u>	<u>2</u>
ADTA 4 BITE	<u>0</u>	<u>3</u>	<u>7</u>	<u>6</u>	<u>2</u>

(RELEASE FO 8 02 00)

If data in actual column (last 3 char) is
not equal to -FDC, -FFB, or -FFC,
deselect failed ADTA

TACAN NAV (DTO 0771)

1 INITIATION

07 TACAN 1,2,3 MODE (three) - T/R
ANT SEL (three) - UPPER

NOTE

System warmup takes -2 min

Perform DPS, G2 to G8 TRANSITION, then

Use table to select TACAN CHANNEL
at the proper MET

2 TERMINATION

TACAN 1,2,3 MODE (three) - OFF
ANT SEL (three) - AUTO

Go to DPS, G8 to G2 TRANSITION

NET	TACAN			AREA/NOTES
	1	2	3	
	CH	CH	CH	
1/04:13:00	095X	095X	095X	INDONESIA
1/04:22:00	054	082	023	PACIFIC IS
1/04:35:00	093	093	093	
1/04:50:00	106	106	106	MEXICO
1/04:58:00	112		094	CENT. AMERICA
1/05:07:00			102	SO. AMERICA
1/05:20:00	104	092	116	AFRICA
1/05:36:00	057	057	057	CHAGOS IS
1/05:47:00	110	110	110	SINGAPORE
1/05:55:00	023	023	023	TAIWAN
1/06:00:20	035	035	035	PACIFIC IS
1/06:04:30	023	023	023	
1/06:10:00	093	093	093	
1/06:14:30	100	124	073	HAWAII
1/06:42:00	058	058	058	SO. AMERICA
1/06:48:50	093	077	077	
1/07:00:00	092	108	116	AFRICA
1/07:05:30	108			
1/07:24:00	109	105	093	THAILAND
1/07:31:20	102	057	101	TAIWAN
1/07:34:20			102	JAPAN/KADENA
1/07:37:10	035	035	035	PACIFIC IS
1/07:40:30	023	023	023	
1/07:45:00	093	093	093	
1/07:51:00	100	073	073	HAWAII
1/07:53:50		116	116	
1/08:00:00				GO TO STEP 2
3/21:49:00	078X	078X	078X	AUSTRALIA
3/21:55:00	088	108	108	
3/22:24:00	025	069	025	CONUS
3/22:29:50	020			
3/22:30:10			022	
3/22:31:00		056		
3/22:32:40			042	
3/22:35:20	018	018		GRAND TURK
3/22:48:00	096	090	085	AFRICA
3/23:00:00	112	082	058	
3/23:10:00				GO TO STEP 2

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MISC

TAIL GLOW EXPERIMENT.....	FS 3-2
EOIM ACTIVATION.....	FS 3-3
EOIM DEACTIVATION.....	FS 3-3
HRM-III OPS.....	FS 3-4
PRM OPS.....	FS 3-9
HEAT PIPE.....	FS 3-10

MISC

TAIL GLOW EXPERIMENT

Record experiment start time from MCC,
MET ___/___:___:___

Change DAP B to B1

DAP ROT: PULSE/PULSE/PULSE

A6 ✓SENSE - -X

(B) 30 sec before start time,
DAP: B1/MAN/VERN

At start time begin photo sequence,

35mm
8 sec
4 sec
1 sec
1/4 sec
1/15 sec

(A) Set SHUTTER SPEED to 2 sec

NOTE

To record jet firing, fire jet
an instant after shutter opening

Make background exposure
Count down to shutter opening, AFT RHC +P
(tail up, fires one LSD, RSD VRCS pulse)
Wait 30 sec

Make background exposure
Count down to shutter opening, AFT RHC -P
(tail dn, fires one F5L, F5R VRCS pulse)

CRT

GNC 23 RCS

RCS FWD - ITEM 1 EXEC (*)

JET DES F5L - ITEM 39 EXEC (*)

F5R - ITEM 41 EXEC (*)

DAP: B1/MAN/VERN

MISC

30 sec after last exposure,
 Make background exposure
 Count down to shutter opening,
 AFT RHC +Y (fires one R5R VRCS pulse)
 Wait 30 sec

Make background exposure
 Count down to shutter opening,
 AFT RHC -Y (fires one L5L VRCS pulse)

CRT JET DES F5L - ITEM 39 EXEC (no *)
 F5R - ITEM 41 EXEC (no *)

★
 Reconfig to CAP DAP

EOIM ACTIVATION

L12 EOIM HTR - ON
 UV EXP - ON
 GRID - ON

EOIM DEACTIVATION

L12 EOIM HTR - OFF
 UV EXP - OFF
 GRID - OFF

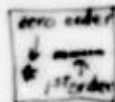
- Repeat A → end (no moon)
- Repeat B → A (no moon)
- Star Photos with Grating (Shopping list pg 3-90)

- Bright star

ID _____

Att _____

(SWT) _____



- no exhibit
- main rise on

Approx Comp L

A/L _____

u/D _____

- Photo Sequence

8 sec

2 sec

★ sec

1/2 sec

1/2 sec

- Reconfig DAP

Extra data takes - 1 or 2/day
- SAA if possible

HRM-III OPS

1 ACTIVATION & CHECKOUT

Unstow HRM

Set Rotary sw - CR (✓Display - 3888)

- If display flashes, is blank, or shows
- other than 3888, turn OFF; replace, mark,
- and stow used battery and repeat step 1

Set BKG RST - MANUAL, then release
Press and hold HV Button for 20 sec
(✓Display > 4000)

- If not > 4000 after -20 sec,
- release HV Button and repeat

Release HV (display now shows counts/sec)
Set DELTA SELECT sw - 90
BKG RST - MANUAL, then release

2 INITIALIZATION

Set Rotary sw - A (✓Display - 8888)

BKG RST - MANUAL, then release

Rcd NET on HRM DATA PAD and report to MCC

Set BKG RST - AUTO (✓Display counts up from 0)

Restow HRM

3 DATA RECORDING

I-J hr after step 2, unstow HRM (✓Display - 0105)

Set BKG RST - ctr

Rotary sw - B (✓Display - 8888)

DELTA SELECT sw - 06 or as reqd

BKG RST - MANUAL, then release

(✓Display 0 1)

BKG RST - AUTO

Note channel number (after -2 sec Display shows counts/sec)

Rcd counts/sec on HRM DATA PAD (after -2 sec Display shows next channel number)

Rcd counts/sec for remaining 104 channels

Set Rotary sw - OFF

Restow HRM

GLOW EXPERIMENT

NOTES

Setup In 1/2 hr. if luck ~ 30 min

Focus: 20 ft or less is a real focus of infinity

Alignment: zero-order tail (faint, but sharp) should be on left side of frame.

This means camera will be pointed slightly to the right (to particular)

Don't put first order spectrum (broad image) exactly in center of frame

Use solar view sunglasses to illuminate tail.

— 20000000

ADDITIONAL OBJECTIVES (with list):

After Tail Glow (Day 1)

Point camera away from tail and body to get clear view of sky.
Get star plates (with grating) 8 sec, 2 sec, 1/2 sec, 1/4 sec, 1/8 sec

Preferable to have bright star(s) in field of view

Note direction camera is pointing with respect to orbiter

These photos can be taken at low altitude (open plates cannot)

Altitude must should not be in field of view

After RMS Glow (Day 5)

1. Point camera to 00274 pallet. Check focus if possible, otherwise use
solar. RMS glow (10 ft.) Take some exposure sequence as RMS glow

2. Point camera at RMS pads. Focus out to 20 ft (or). (Some exposures
sequence as RMS glow possible to take at 10 ft. altitude)

3. Photographs of starfields (down at orbiter) without grating 8, 2, 1/2, 1/4, 1/8.

4. Attach grating; focus 20 ft, reprint as far tail glow.

80000000: tail orbiter 90° (ok for all sec)

In own altitude, repeat tail glow plates

4a. If roll maneuver not possible:

Attach grating; orient "top" towards either side; focus 20 ft

reprint to get top of RMS pad in bottom of frame (open orbit)

(First order spectrum of glow from top of RMS pads)

follow rest of Tail Glow procedure.

Thanks! Good Luck - Good Flight

R E S U L T S

1 2 3 4 5 6 7 8 9 10 11 12

CHANNEL	COUNTS/SEC	CHANNEL	COUNTS/SEC	CHANNEL	COUNTS/SEC	CHANNEL	COUNTS/SEC	CHANNEL	COUNTS/SEC	CHANNEL	COUNTS/SEC
0 - 1	0 - 27	0 - 83	0 - 64	0 - 85	0 - 64	0 - 85	0 - 64	0 - 85	0 - 64	0 - 85	0 - 64
0 - 2	0 - 23	0 - 84	0 - 65	0 - 86	0 - 65	0 - 86	0 - 65	0 - 86	0 - 65	0 - 86	0 - 65
0 - 3	0 - 24	0 - 45	0 - 66	0 - 87	0 - 66	0 - 87	0 - 66	0 - 87	0 - 66	0 - 87	0 - 66
0 - 4	0 - 25	0 - 86	0 - 67	0 - 88	0 - 67	0 - 88	0 - 67	0 - 88	0 - 67	0 - 88	0 - 67
0 - 5	0 - 26	0 - 47	0 - 68	0 - 89	0 - 68	0 - 89	0 - 68	0 - 89	0 - 68	0 - 89	0 - 68
0 - 6	0 - 27	0 - 48	0 - 69	0 - 90	0 - 69	0 - 90	0 - 69	0 - 90	0 - 69	0 - 90	0 - 69
0 - 7	0 - 28	0 - 49	0 - 70	0 - 91	0 - 70	0 - 91	0 - 70	0 - 91	0 - 70	0 - 91	0 - 70
0 - 8	0 - 29	0 - 50	0 - 71	0 - 92	0 - 71	0 - 92	0 - 71	0 - 92	0 - 71	0 - 92	0 - 71
0 - 9	0 - 30	0 - 51	0 - 72	0 - 93	0 - 72	0 - 93	0 - 72	0 - 93	0 - 72	0 - 93	0 - 72
0 - 10	0 - 31	0 - 52	0 - 73	0 - 94	0 - 73	0 - 94	0 - 73	0 - 94	0 - 73	0 - 94	0 - 73
0 - 11	0 - 32	0 - 53	0 - 74	0 - 95	0 - 74	0 - 95	0 - 74	0 - 95	0 - 74	0 - 95	0 - 74
0 - 12	0 - 33	0 - 54	0 - 75	0 - 96	0 - 75	0 - 96	0 - 75	0 - 96	0 - 75	0 - 96	0 - 75
0 - 13	0 - 34	0 - 55	0 - 76	0 - 97	0 - 76	0 - 97	0 - 76	0 - 97	0 - 76	0 - 97	0 - 76
0 - 14	0 - 35	0 - 56	0 - 77	0 - 98	0 - 77	0 - 98	0 - 77	0 - 98	0 - 77	0 - 98	0 - 77
0 - 15	0 - 36	0 - 57	0 - 78	0 - 99	0 - 78	0 - 99	0 - 78	0 - 99	0 - 78	0 - 99	0 - 78
0 - 16	0 - 37	0 - 58	0 - 79	0 - 100	0 - 79	0 - 100	0 - 79	0 - 100	0 - 79	0 - 100	0 - 79
0 - 17	0 - 38	0 - 59	0 - 80	0 - 101	0 - 80	0 - 101	0 - 80	0 - 101	0 - 80	0 - 101	0 - 80
0 - 18	0 - 39	0 - 60	0 - 81	0 - 102	0 - 81	0 - 102	0 - 81	0 - 102	0 - 81	0 - 102	0 - 81
0 - 19	0 - 40	0 - 61	0 - 82	0 - 103	0 - 82	0 - 103	0 - 82	0 - 103	0 - 82	0 - 103	0 - 82
0 - 20	0 - 41	0 - 62	0 - 83	0 - 104	0 - 83	0 - 104	0 - 83	0 - 104	0 - 83	0 - 104	0 - 83
0 - 21	0 - 42	0 - 63	0 - 84	0 - 105	0 - 84	0 - 105	0 - 84	0 - 105	0 - 84	0 - 105	0 - 84

M E M I R P A S S

CHANNL	COUNTS/SEC	CHANNL	COUNTS/SEC	CHANNL	COUNTS/SEC	CHANNL	COUNTS/SEC	CHANNL	COUNTS/SEC	CHANNL	COUNTS/SEC
0-1	0.22	0-2	0.23	0-3	0.24	0-4	0.25	0-5	0.26	0-6	0.27
0-7	0.28	0-8	0.29	0-9	0.30	0-10	0.31	0-11	0.32	0-12	0.33
0-13	0.34	0-14	0.35	0-15	0.36	0-16	0.37	0-17	0.38	0-18	0.39
0-19	0.40	0-20	0.41	0-21	0.42	0-22	0.43	0-23	0.44	0-24	0.45
0-25	0.46	0-26	0.47	0-27	0.48	0-28	0.49	0-29	0.50	0-30	0.51
0-31	0.52	0-32	0.53	0-33	0.54	0-34	0.55	0-35	0.56	0-36	0.57
0-37	0.58	0-38	0.59	0-39	0.60	0-40	0.61	0-41	0.62	0-42	0.63
0-43	0.64	0-44	0.65	0-45	0.66	0-46	0.67	0-47	0.68	0-48	0.69
0-49	0.70	0-50	0.71	0-51	0.72	0-52	0.73	0-53	0.74	0-54	0.75
0-55	0.76	0-56	0.77	0-57	0.78	0-58	0.79	0-59	0.80	0-60	0.81
0-61	0.82	0-62	0.83	0-63	0.84	0-64	0.85	0-65	0.86	0-66	0.87
0-67	0.88	0-68	0.89	0-69	0.90	0-70	0.91	0-71	0.92	0-72	0.93
0-73	0.94	0-74	0.95	0-75	0.96	0-76	0.97	0-77	0.98	0-78	0.99
0-79	1.00	0-80	1.01	0-81	1.02	0-82	1.03	0-83	1.04	0-84	1.05

MEM DATA PAGES

CHANNEL	FRAMTS/SEC	CANAL	FRAMTS/SEC	CANAL	FRAMTS/SEC	CANAL	FRAMTS/SEC	CANAL	FRAMTS/SEC	CANAL	FRAMTS/SEC	
0-1		0-22		0-43		0-64		0-84		0-84		0-85
0-2		0-23		0-44		0-65		0-85		0-85		0-86
0-3		0-24		0-45		0-66		0-86		0-86		0-87
0-4		0-25		0-46		0-67		0-87		0-87		0-88
0-5		0-26		0-47		0-68		0-88		0-88		0-89
0-6		0-27		0-48		0-69		0-89		0-89		0-90
0-7		0-28		0-49		0-70		0-90		0-90		0-91
0-8		0-29		0-50		0-71		0-91		0-91		0-92
0-9		0-30		0-51		0-72		0-92		0-92		0-93
0-10		0-31		0-52		0-73		0-93		0-93		0-94
0-11		0-32		0-53		0-74		0-94		0-94		0-95
0-12		0-33		0-54		0-75		0-95		0-95		0-96
0-13		0-34		0-55		0-76		0-96		0-96		0-97
0-14		0-35		0-56		0-77		0-97		0-97		0-98
0-15		0-36		0-57		0-78		0-98		0-98		0-99
0-16		0-37		0-58		0-79		0-99		0-99		0-100
0-17		0-38		0-59		0-80		0-100		0-100		0-101
0-18		0-39		0-60		0-81		0-101		0-101		0-102
0-19		0-40		0-61		0-82		0-102		0-102		0-103
0-20		0-41		0-62		0-83		0-103		0-103		0-104
0-21		0-42		0-63		0-84		0-104		0-104		0-105

PRM OPS

1 ACTIVATION & CHECKOUT

Unstow PRM

If second operation, replace, mark, and stow used battery

Set Rotary sw - HRS

ON/OFF sw - ON

✓ Display counts down from 9999 and record MET on PRM DATA PAD when Display = 0.00

- If display shows a colon or is
- blank, set ON/OFF sw - OFF;
- replace, mark, and stow used
- battery and repeat step 1

Report MET to MCC

Restow PRM (leave ON)

2 DATA RECORDING

8-18 hrs after step 1, unstow PRM

Set rotary switch to appropriate positions and record display outputs on PRM DATA PAD

Set ON/OFF sw - OFF

Stow PRM

PRM DATA PAD

0.00 MET		___/___ : ___ : ___	___/___ : ___ : ___
HRS	___	___	___
CNTS	___	E ()	___
RAD	___	E ()	___
REM	___	E ()	___

HEAT PIPE

- 1 Verify PHOTO/TV C/L, 35mm PHOTO DATA,
35mm/04, HEAT PIPE, step 6

NOTE

F/stop - 11 (day), 2.8 (nite)
For night photos, ✓PLB lrg config:
A7U PL BAY FLOODS - all OFF except
FWD BKHD

- L12
- 2 cb HEAT PIPE SW PWR - c1
HEAT PIPE HTR 75W - ON
 - 3 Rcd MET (___/___ : ___)
Start a timer
 - 4 Intervalometer PWR - ON
 - 5 Record observations on ICOM Recorder for
10 min
 - 6 After 10 min,
Intervalometer PWR - OFF

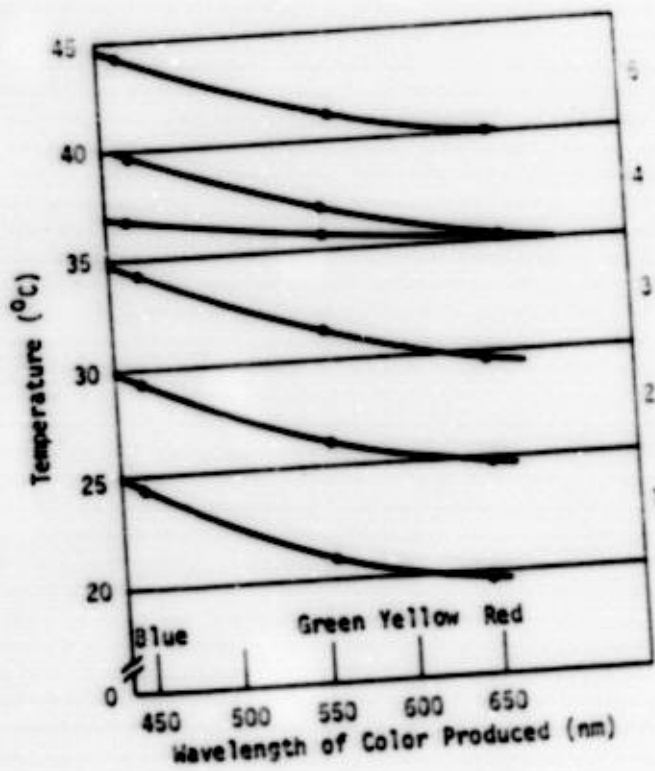
- * If after 10 min condenser tapes remain
- * black and evaporator tapes rapidly
- * passed through their colors,
- * (Heat Pipe has failed)
- * HEAT PIPE HTR 75W - OFF
- * Confirm evaporator cooldown, visually
- * record observations on ICOM Recorder
- * HEAT PIPE HTR 25W - ON
- * Repeat steps 3 thru 9
- * If both evaporator and condenser tapes
- * respond but go completely through the
- * color bands and go black,
- * (Heat Pipe is working but above 45° C)

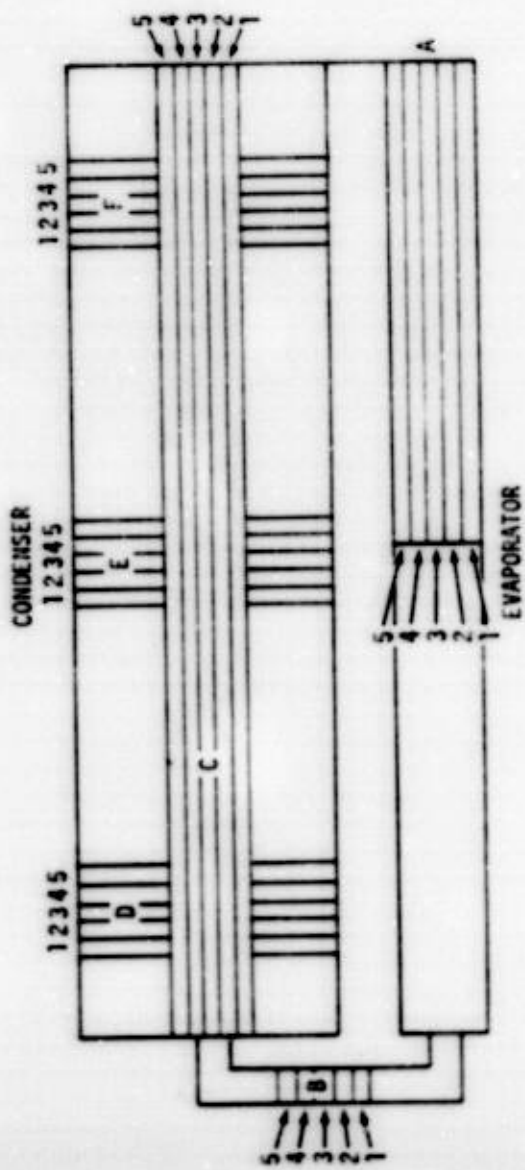
- HEAT PIPE HTR 75W - OFF
- 25W - ON
- Repeat steps 3 thru 9
-
- If all the tape remains black,
- HEAT PIPE HTR 25W - ON
- Repeat steps 3 thru 9
-
- If all the tape remains black and both
- heaters are on,
- HEAT PIPE HTR 75W - OFF
- 25W - OFF
- Change out film if reqd
-
- Wait 30 minutes,
- Repeat steps 2 thru 9

7 Intervalometer
 INTERVAL TIMING - 6 min
 PWR - ON

8 After 1 hr 50 min,
 Intervalometer PWR - OFF

9 HEAT PIPE HTR 75 WATT - OFF
 25 WATT - OFF
 cb HEAT PIPE SW PWR - OFF





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GAS (GET AWAY SPECIAL)

GROUP A..... FS 4-2
GROUP B..... FS 4-2
GROUP C..... FS 4-2
NORMAL OPERATION..... FS 4-3
ANOMALIES..... FS 4-4
EMERGENCY SHUTDOWN OPERATION..... FS 4-4

PAYLOAD	RELAYS
GAS #1 = G346	00
GAS #2 = G348	03
GAS #3 = G475	06 07
GAS #4 = G347	NONE

ACTIVITYNET**GROUP A**

GAS #1 Relay 00 - LATENT to HOT ___/___:___

GAS #2 Relay 03 - LATENT to HOT ___/___:___

GAS #3 Relay 06 - LATENT to HOT ___/___:___
 07 - LATENT to HOT ___/___:___NOTE

Wait at least 30 seconds then,

Relay 07 - HOT to LATENT ___/___:___

GROUP B

GAS #3 Relay 06 - HOT to LATENT ___/___:___

GROUP C

GAS #1 Relay 00 - HOT to LATENT ___/___:___

GAS #2 Relay 03 - HOT to LATENT ___/___:___

NORMAL OPERATION

GAS UNSTOW/SETUP - Unstow GAS encoder
from locker, connect cable to SSP (L12U)

RELAY nm, X to Y

Enter <CLR> or <CLR> <CLR>
(<CLR> <CLR> back lights the display)
√Display: A -- A or A.--.A

- * If blank, change encoder *
- * or replace battery *

Enter <nm>
√Display: A nm A, then A nm X
(X is the current relay state L or H)

- * If display A nm - : *
- * √encoder plugged into SSP *
- * √nm a valid relay *

Enter <O/S>
√Display: P nm Y
(Y is proposed opposite state H or L)

Enter <E>
√Display: Y nm Y

- * If not, repeat procedure *
- * If still no go, repeat with : *
- * other encoder *

GAS STOW - Unplug encoder from SSP, stow
in locker

ANOMALIES

Colon appears between n and m (battery low)

Use other encoder or change battery:

Insert pen into hole on back of controller, slide off enclosure back

Replace battery (stored with spare encoder)

EMERGENCY SHUTDOWN OPERATION

(If no time to change individual relays to LATENT)

Enter <CLR>

✓Display: A -- A

Enter <99>

✓Display: A 99 A (blinking), then P 99 L

Enter <E>

✓Display: L 99 L (this should set all relays to L)

Enter <E>

✓Display: incrementing 00, 01, etc., until - nm - (relay nm not resident)

Enter <E> until all relays for this flight checked

- * If H nm H displayed, relay nm did *
- * not reset to L. Note number of *
- * relay and attempt to reset indivi- *
- * dually at end of shutdown *
- * Enter <E> to check remainder of *
- * relays *

SECTION 2
GAS EXPERIMENTS, STS-8

The STS-8 GAS experiments consist of four canisters, as follows:

Canister #1: GAS payload No. G346

USER: Goddard Space Flight Center

PAYLOAD BAY LOCATION: Bay 2, forward location, starboard side

EXPERIMENT: Determine effects of cosmic rays on integrated circuits.

Canister #2: GAS Payload No. E348

USER: Goddard Space Flight Center

PAYLOAD BAY LOCATION: Bay 2, forward location, port side

EXPERIMENT: Contamination monitor package

Canister 3: GAS Payload No. G475

USER: Asahi Shinun Company (Morning Sun Newspaper Company)

PAYLOAD BAY LOCATION: Bay 2, aft location, port side

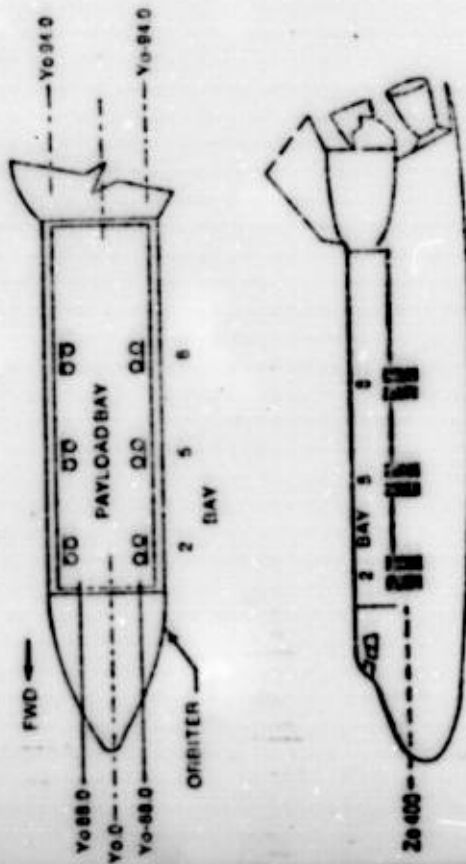
EXPERIMENTS: Crystal growth of artificial snow in weightlessness

Canister #4: GAS Payload No. G367

USER: Goddard Space Flight Center/Naval Research Laboratory

PAYLOAD BAY LOCATION: Bay 2, aft location, starboard side

EXPERIMENTS: Measure the effect of Shuttle bay environment on ultraviolet sensitive film.



GAS NO	EXP NO	BAY
1	G346	7 FWD STBD
2	G348	2 FWD PORT
3	G475	2 AFT PORT
4	G347	2 AFT STBD
		5 FWD STBD
		5 AFT STBD
		5 FWD PORT
		5 AFT PORT
		8 FWD STBD
		8 AFT STBD
		8 FWD PORT
		8 AFT PORT
POSTAL COVERS		

FIGURE 1-1.- GAS CANISTER LOCATION PLAN, STS-8