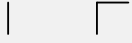


YERO PROCEDURES

YEAR END ROLL OVER (YERO)  
RECOVERY PROCEDURES..... FS 11-2

YERO



YERO

## YEAR END ROLL OVER (YERO) RECOVERY PROCEDURES

### NOTE

- (a) Steps 1 and 2 actions are performed prior to occurrence of the actual year-end
- (b) Forcing the GPCs to internal time avoids a nuisance alarm during crew sleep at the moment of YERO
- (c) After YERO, onboard CRT clocks continue to count up to day 366 GMT and 365 MET
- (d) The MTU time adjustment will cause the MTU GMT and MET accumulators to roll-over to 001/00:00:00 GMT and to 000/00:00:00 MET -MET at the YERO event. MTU GMT rolls over to 001/00:00:00 GMT.
- ~~(e) Do not pause between steps 7 and 8. A delay greater than 10 minutes will require a state vector update~~

Merknad [L1]: Added 365 MET note

Merknad [L2]: Note was misleading before. Updated to be more accurate. The time adjustment is more for MET and its not the time adjustment that makes GMT roll over as previously infered

### 1. ADJUST MTU MET TO RESET AT YERO

#### NOTE

- (a) Required 'MET Δ' update value equals launch GMT minus 1 days
- (b) MCC will voice up desired 'MET Δ' update values; MCC will confirm results following MTU update

MET Δ: days ('ddd') \_\_\_\_\_  
 hours ('hh') \_\_\_\_\_  
 minutes ('mm') \_\_\_\_\_  
 sec ('ss.sss') \_\_\_\_\_

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FS 9-3

ORB OPS/133/BAS 1

| └

CRT

GNC 2 TIME

MET Δ – ITEM 28 +d d d +h h +m m EXEC

MET Δ – ITEM 31 +s s s s EXEC

UPDATE – ITEM 32 EXEC (may take up to 2 min)

NOTE

Following the MTU 'MET update' any new PASS fault message will reflect new MET time-tag

If YERO to occur during crew sleep:

2. FORCE GPCs TO INTERNAL TIME

CRT

GNC 2 TIME

TRY – ITEM 37 EXEC

NOTE

Following actions are not to be performed until after occurrence of the actual year-end rollover event and on MCC GO (May take up to an hour from year-end rollover)

**Merknad [L3]:** Added to NOTE to state that this requires an MCC GO and may take up to an hour after YERO occurs.

**Formatert tabell**

C3

3. CONFIGURE ORBITER FOR YERO

DAP: FREE

VERN

If docked:

O14:F,

√Pri RJD LOGIC, DRIVER (sixteen) – OFF

O15:F,

If undocked:

O16:F

√Pri RJD LOGIC, DRIVER (sixteen) – ON

√RJD MANF L5/F5/R5 DRIVER – ON

C2

IDP/CRT3 PWR – ON

√1 PWR – ON

√2 PWR – ON

R11L

√4 PWR – ON

Cont next page

FS 9-4

ORB OPS/133/BAS 1

4. COMM RECONFIGURATION
- A1U KU BD PWR – STBY  
CNTL – PNL,CMD  
C3 KU BD PWR – ON  
√OI PCMMU FORMAT – GPC
- Maintain manual S-BD antenna during DPS recovery:  
Select best antenna, F9 meter > 300
5. If required, perform PL/DPS RECONFIG, Secure [PL SYS(PL OPS) (SODF: ASSY OPS)], time permitting, then:
6. If RMS active:  
A8U √BRAKES – ON
- NOTE**  
Do not pause between steps 7 and 8. A delay greater than 10 minutes will require a state vector update
7. CONFIGURE FOR OPS 3 TRANSITION
- O14, RGA (four) – ON  
O15, cb ADTA (four) – cl  
O16, ASA (four) – ON  
O8, MLS (three) – ON
- C3 √FCS CH (four) – AUTO
- CRT SM 62 PCMMU/PL COMM  
SEL FXD – ITEM 1 EXEC

**Merknad [L4]:** Moved Note (e) from beginning of procedure to right before the applicable step. This will allow the crew to have it handy right before they dive down to configure the GPCs and getting to OPS 3.

**Formatert tabell**

**Formatert:** Skrift: Ikke Fet, Skriftfarge: Automatisk

**Formatert:** Skrift: Ikke Fet, Skriftfarge: Automatisk

Cont next page

FS 9-5

ORB OPS/133/BAS 1

C2  
CRT

Desired IDP/CRT1(2,3) MAJ FUNC – GNC

GNC 0 GPC MEMORY

CONFIG – ITEM 1 +3 EXEC

Assign MC 3 →

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

O14,O15:F  
O6

MMU (two) – ON  
GPC MODE 4 – STBY (tb-bp)  
1 – STBY (tb-bp)  
1 – RUN (tb-run)

√GPC1 takes three forward IDPs  
If not √MCC

Formatert: step:1:ind:0

CRT

8. G3 OPS TRANSITION

GNC 1 DPS UTILITY

ENABLE G3 ARCHIVE – ITEM 49 EXEC  
RESUME

GNC, OPS 301 PRO

Formatert: step:1:ind:0, Innrykk:  
Venstre: 1,9 cm, Hengende: 0,16 cm,  
Ingen sideskift før, Ikke juster avstand  
mellom asiatick og latinsk tekst

C3

If docked:  
DAP: INRTL/PULSE/PULSE/PULSE  
If undocked:  
DAP: INRTL

9. CONFIGURE GPC 4 AS SM GPC

NOTE

~~OPS transitions neither add nor remove  
IDP/CRTs from PASS set based upon  
CRT NBAT. However, PASS will  
redistribute active CRTs based on new  
NBAT provided IDPs are powered on~~

Merknad [L5]: Deleted NOTE. This  
note is not useful to the crew especially  
as we provide the actions for the crew  
to get IDP interface to the SM.

O6  
CRT

GPC MODE 4 – RUN (tb-run)  
IDP/CRTX : MAJ FUNC – SM  
GPC/CRT – 4/X EXEC

Cont next page

**SM 1 DPS UTILITY**

Disable checkpoint retrieve:

√CKPT RETRV ENA – ITEM 12 (no \*)

SM, OPS 201 PRO

√SM ANTENNA display driven by GPC 4

If RMS PWR – PRI (re-establish MCIU I/O):

10. **SM 94 PDRS CONTROL** (MA, GPC DATA It on)

I/O ON – ITEM 5 EXEC (\*) (GPC DATA It off)

SAFING – CANCEL (tb-bp if arm desel)

A8U

Formatert: step:2:no#

**11. ACTIVE BFS FOR YERO RECOVERY**

O6 √GPC PWR 5 – ON

MODE – STBY (tb-RUN)

C2 BFS CRT DISP – ON

SEL – 3+1

Formatert: step:2:no#, Innrykk:  
Venstre: 0 cm, Hengende: 1,75 cm

Formatert: step:2:no#, Innrykk:  
Venstre: 0 cm, Hengende: 1,75 cm,  
Ingen sideskift før, Ikke juster avstand  
mellom asiatisk og latinsk tekst,  
Tabulatorstopp: 2,54 cm, Left

**12. BFS OPS 0 YERO UPLINKS**

√MCC for manual antennas

**NOTE**

The 'RNP Matrix Time' load must be uplinked to the BFS while it is in pre-deorbit OPS 000 and tracking the PASS. However, the uplinked data will not be incorporated by the BFS until it is PRO'd to OPS 3

UPLINK PRIORITY	MCC	UPLINK COMMAND LOAD DESCRIPTION
1	GPO	RNP MATRIX TIME

Wait for MCC 'GO', then continue

Cont next page

FS 9-7

ORB OPS/133/BAS 1

CRT3 13. BFS OPS 3 YERO UPLINKS  
BFS, GNC OPS 301 PRO

UPLINK PRIORITY	MCC	UPLINK COMMAND LOAD DESCRIPTION
1	GPO	GPS SOP TIME ADJUSTMENT
2	FDO	DUMMY PEG TARGETS
3	INCO	TDRS STATE VECTORS
4 (if reqd)	GPO	ORBITER STATE VECTOR
5 (if reqd)	GNC	IMU GYRO BIAS
6 (if reqd)	GNC	IMU ACCEL BIAS
7 (if reqd)	GNC	IMU ACCEL SCALE FACTOR

Wait for MCC 'GO', then continue

CRT3 BFS, DEORB MNVR COAST  
LOAD – ITEM 22 EXEC

Wait for MCC 'GO', then continue:

CRT3 O6 C2 —14. SECURE BFS  
BFS, GNC OPS 000 PRO  
GPC MODE 5 – HALT  
BFS CRT DISP – OFF

15. IDP RECONFIG  
~~IDP/CRT3 PWR – OFF~~

FS 9-8

ORB OPS/133/BAS 1

Formatert: step:1:ind:0, Ingen sideskift før

Formatert: step:1:ind:0, Innrykk:  
Hengende: 1 cm, Ingen sideskift før,  
Ikke juster avstand mellom asiatick og  
latinsk tekst, Tabulatorstopp: 2,22 cm,  
Left + 2,54 cm, Left



CRT

GPC/CRT 0/3 EXEC  
4/4 EXEC

IDP/CRT3 PWR - OFF

Merknad [L6]: Moved this step after the IDP deassignment to preclude a FSW Message.

CRT

16. LOAD PCMMU FORMAT  
SM 62 PCMMU/PL COMM

FORMAT:

SEL FXD - ITEM 1 EXEC (\*)

SEL ID - ITEM 3 +X X X EXEC

√SM COMM BUF - RDY

LOAD - ITEM 4 EXEC

√LOAD, ITEM 4 - RUN, CPLT, then:

SEL PGM - ITEM 2 EXEC (\*)

RESUME

C3

17. G2 TRANSITION

DAP: FREE pb - push and hold

\_\_\_\_\_ during OPS transition

Assign MC 2 →

GNC, OPS 201 PRO

√DAP FREE

If Undocked

| Pause ~30 sec (DAP settling)

| DAP: as reqd

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

Cont next page

- CRT
18. RE-ESTABLISH SM OPERATIONAL CONFIG  
SM 1 DPS UTILITY  
CKPT RETRV ENA – ITEM 12 EXEC (\*)  
√UL CNTL ~~ENAAUTO, ITEM 36~~ ITEM 35 – (\*)

**Formatert:** Innrykk: Venstre: 1,75 cm, Ikke juster avstand mellom asiatick og latinsk tekst

**Merknad [L7]:** Changed UL CNTL ENA -ITEM 36 to UL CNTL AUTO-ITEM 35. This is what we want to end up in so that we are in a good secure config command wise. Post Insertion leaves us in UL CNTL AUTO.

**NOTE**

MCC will complete comm reconfig, including loading low-rate TFL, TDRS vectors, and any required site reconfigurations

- C3
- Wait for MCC 'GO' to reselect auto antenna control:  
S-BD PM ANT sel – GPC

- CRT
19. If required, perform PL/DPS RECONFIG, Recovery [PL SYS(PL OPS) (SODF: ASSY OPS)], then:
20. CLEAN UP JET CONFIG (if reqd)  
GNC 23 RCS  
JET RESET – ITEM 45 EXEC  
Reset all FAIL OFF jets  
JET RESET – ITEM 45 EXEC  
√ MCC for additional jet reconfiguration
21. Perform G2 SET EXPANSION (DPS) (TRIPLE G2)
22. Perform G2 SET CONTRACTION (DPS) (SINGLE G2)
23. DAP RECONFIG (Only If Docked)  
SPEC 20 DAP CONFIG  
Config DAP A, B to A12, B12  
XJET ROT ENA – ITEM 7 EXEC  
DAP: VERN  
DAP: LO Z
- C3
- GNC, UNIV PTG  
Reload attitude per timeline
24. CONFIGURATION CLEANUP

Cont next page

O15:F           MMU 2           – OFF  
O14,            RGA (four)       – OFF  
O15,            cb ADTA (four) – op  
O16             ASA (four)       – OFF  
O8              MLS (three)      – OFF

18. RE-ESTABLISH SM OPERATIONAL CONFIGURATION

- ← **Formatert:** Normal, Tabulatorstopp: Ikke på 5,21 cm
- ← **Formatert:** Normal, Tabulatorstopp: 2,72 cm, Left + Ikke på 5,21 cm
- ← **Formatert:** Normal, Tabulatorstopp: 2,72 cm, Left
- ← **Formatert:** Normal
- ← **Formatert:** Normal, Ingen sideskift før
- ← **Formatert:** Normal, Tabulatorstopp: Ikke på 5,21 cm