



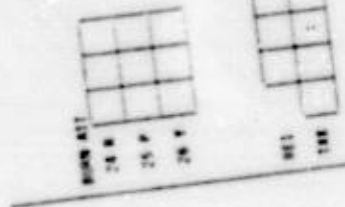
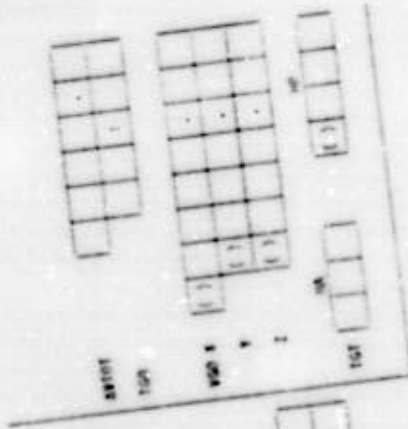
# ENTRY CHECKLIST

STS  
8

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15 02

16 00

17 01

18 0000 1 1

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065 001 4

5 14 0001

0610 1000

6 P ( )

7 17 ( )

8 09 ( )

9 01

0 010

101 PEG 4

14 01

15 07

16 07

17 07

18 0001

101 PEG 7

19 000

20 000

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24 0

25 P

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06101

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005 BIRTH 1

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3

005 SEX R

5 TV ROLL

TRAIN LOAD

6 P ( )

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8 SV ( )

9 WT

10 TSS

TOT PEG K

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15 CZ

16 OT

17 AT

18 PAPER

TOT PEG 7

19 ASK

20 BAY

21 BR2

BURN ATT

24 R

25 P

26 Y

SEL

TEE

ARTOT

TGD

VGO K

V

Z

TGT

NA

MISS PAD





PROLET AND DEL RAS

OMS PPPLT PAD

SPEED CUE

BURN CARD DEORBIT BURN (2 ENG)	OMS ENG FAIL	<input type="checkbox"/>	<input type="checkbox"/>	SL	<input type="checkbox"/>	<input type="checkbox"/>	SR
DEORBIT BURN (1 ENG)	OMS XFEED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AVTOT		
		<input type="checkbox"/>	<input type="checkbox"/>	S			
DEORBIT BURN (RCS)	OMS TK SW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AVTOT		
	OMS PPPLT LOW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AVTOT		
UNBALANCED PPPLT DEORBIT BURN	<u>BEFORE 1 POD FEED</u>						
	OMS ENG FAIL (XFEED)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SR
		<input type="checkbox"/>	<input type="checkbox"/>	SL	<input type="checkbox"/>	<input type="checkbox"/>	
	<u>DURING 1 POD FEED</u>						
	START 1 POD FEED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AVTOT		
		<input type="checkbox"/>	TK ISOLS CL				
OMS ENG FAIL (XFEED)	<input type="checkbox"/>	<input type="checkbox"/>	TK ISOLS OP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AVTOT
	<input type="checkbox"/>	<input type="checkbox"/>	TK ISOLS CL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S
	<input type="checkbox"/>				<input type="checkbox"/>		
<u>AFTER 1 POD FEED</u>							
STOP 1 POD FEED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AVTOT			
	<input type="checkbox"/>	TK ISOLS OP					
OMS ENG FAIL (XFEED)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SL	<input type="checkbox"/>	<input type="checkbox"/>	SR
DEORBIT BURN (MIXED XFEED)	<input type="checkbox"/> OMS ENG - ARM/PRESS						
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AVTOT: Feet from GOOD POD		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S	<input type="checkbox"/>	OMS He PRESS OP	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	TK ISOLS OP	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	OMS He PRESS CL	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	TK ISOLS CL	
<u>RCS COMPLETION, OMS ENG FAIL:</u>							
<input type="checkbox"/>	OMS XFEEDS OP						
	Feed from GOOD POD at	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AVTOT		
<input type="checkbox"/>	OMS He PRESS OP						
<input type="checkbox"/>	TK ISOLS OP						
<input type="checkbox"/>	XFEEDS CL						

BURN ATT: 0		0		*			
TGT	HA			HP			
SVTOT							
TGO							
PRPLT							
BURN CUE CARD:							
BMS TIC SLIP - NO EXEC - TIC *							
STOP/CONTINUE PRPLT FAIL CUES							
L BMS HP							
R BMS HP							
SAFE HP							
PRI HP							
S/O HP							
TOT APT QTY 1 (S)							
TOT APT QTY 2 (S)							
FRCS: 3AMP TO 5							
ECG at M + 3							
YCG							
[1-5 HP00]		ENTR/LANDNG					
INSTR ATT		0		0		*	
(3-25)							
HP304 PREBANK (ENT Mgr Cue Card)							
... ADS							
... LGS							
ALTM SET (3-4)							
D44							
VREL 1ST REVERSAL							
[ ]		[ ]		DET		RND	
[ ]		[ ]		[ ]		[ ]	
WINDS:		60K		/			
ENT Mgr		40K		/			
Cue Card)		30K		/			
		20K		/			
		10K		/			
		SURFACE		/			
SERIAL: 400 START SEQUENCE							
[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]							

## BURN CARD

## OMS PRPLT PAD

## XFEED CUE

SECRET BURN (2 ENG)	OMS ENG FAIL	<input type="checkbox"/>	SL	<input type="checkbox"/>	SR
DEORBIT BURN (1 ENG)	OMS XFEED	<input type="checkbox"/>		<input type="checkbox"/>	ΔVTOT
		<input type="checkbox"/>		<input type="checkbox"/>	S
DEORBIT BURN (RCS)	OMS TK SW	<input type="checkbox"/>		<input type="checkbox"/>	ΔVTOT
	OMS PRPLT LOW	<input type="checkbox"/>		<input type="checkbox"/>	ΔVTOT
UNBALANCED PRPLT DEORBIT BURN	<u>BEFORE 1 POD FEED</u>				
	OMS ENG FAIL (XFEED) ΔVTOT	<input type="checkbox"/>		<input type="checkbox"/>	
		<input type="checkbox"/>	SL	<input type="checkbox"/>	SR
	<u>DURING 1 POD FEED</u>				
	START 1 POD FEED	<input type="checkbox"/>		<input type="checkbox"/>	ΔVTOT
		<input type="checkbox"/>		<input type="checkbox"/>	TK ISOLS CL
OMS ENG FAIL (XFEED)	<input type="checkbox"/>	TK ISOLS OP	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT
		<input type="checkbox"/>		<input type="checkbox"/>	S
		<input type="checkbox"/>		<input type="checkbox"/>	
<u>AFTER 1 POD FEED</u>					
STOP 1 POD FEED	<input type="checkbox"/>		<input type="checkbox"/>	ΔVTOT	
		<input type="checkbox"/>		<input type="checkbox"/>	TK ISOLS OP
OMS ENG FAIL (XFEED)	<input type="checkbox"/>	SL	<input type="checkbox"/>	SR	
DEORBIT BURN (MIXED XFEED)	<input type="checkbox"/> OMS ENG - ARM/PRESS				
		<input type="checkbox"/>		<input type="checkbox"/>	ΔVTOT: Feed from GOOD POD
		<input type="checkbox"/>		<input type="checkbox"/>	S
		<input type="checkbox"/>		<input type="checkbox"/>	OMS He PRESS OP
		<input type="checkbox"/>		<input type="checkbox"/>	TK ISOLS OP
		<input type="checkbox"/>		<input type="checkbox"/>	OMS He PRESS CL
	<input type="checkbox"/>		<input type="checkbox"/>	TK ISOLS CL	
	RCS COMPLETION, OMS ENG FAIL:				
	<input type="checkbox"/> OMS XFEEDS OP				
	Feed from GOOD POD at	<input type="checkbox"/>		<input type="checkbox"/>	ΔVTOT
	<input type="checkbox"/> OMS He PRESS OP			<input type="checkbox"/>	
	<input type="checkbox"/> TK ISOLS OP			<input type="checkbox"/>	
	<input type="checkbox"/> XFEEDS CL			<input type="checkbox"/>	



DEORBIT BURN (2 ENG)	OMS ENG FAIL	<input type="checkbox"/>	<input type="checkbox"/>	SL	<input type="checkbox"/>	<input type="checkbox"/>	SR
DEORBIT BURN (1 ENG)	OMS XFEED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT	
		<input type="checkbox"/>	<input type="checkbox"/>	%			
DEORBIT BURN (RCS)	OMS TK SW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT	
	OMS PRPLT LOW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT	
UNBALANCED PRPLT DEORBIT BURN	<u>BEFORE 1 POD FEED</u>						
	OMS ENG FAIL (XFEED)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SL	SR
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT	
	<u>DURING 1 POD FEED</u>						
	START 1 POD FEED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT	
		<input type="checkbox"/>	TK ISOLS CL				
OMS ENG FAIL (XFEED)	<input type="checkbox"/>	TK ISOLS OP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT	
		TK ISOLS CL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	%	<input type="checkbox"/>
<u>AFTER 1 POD FEED</u>							
STOP 1 POD FEED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TK ISOLS OP	
OMS ENG FAIL (XFEED)	<input type="checkbox"/>	<input type="checkbox"/>	SL	<input type="checkbox"/>	<input type="checkbox"/>	SR	
DEORBIT BURN (MIXED XFEED)	<input type="checkbox"/> OMS ENG - ARM/PRESS						
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT: Feed from GOOD POD	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	%	
		<input type="checkbox"/>	OMS He PRESS OP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TK ISOLS OP
		<input type="checkbox"/>	OMS He PRESS CL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TK ISOLS CL
<u>RCS COMPLETION, OMS ENG FAIL:</u>							
	<input type="checkbox"/> OMS XFEEDS OP						
	Feed from GOOD POD at	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT	
	<input type="checkbox"/> OMS He PRESS OP						
	<input type="checkbox"/> TK ISOLS OP						
	<input type="checkbox"/> XFEEDS CL						





## BURN CARD

## OMS PRPLT PAD

## XFEED CUE

DEORBIT BURN (2 ENG)	OMS ENG FAIL	<input type="checkbox"/>	<input type="checkbox"/>	SL	<input type="checkbox"/>	<input type="checkbox"/>	SR
DEORBIT BURN (1 ENG)	OMS XFEED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT
		<input type="checkbox"/>	<input type="checkbox"/>				S
DEORBIT BURN (RCS)	OMS TK SW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT
	OMS PRPLT LOW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT
UNBALANCED PRPLT DEORBIT BURN	<u>BEFORE 1 POD FEED</u>						
	OMS ENG FAIL (XFEED) ΔVTOT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SL SR
	<u>DURING 1 POD FEED</u>						
	START 1 POD FEED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT
		<input type="checkbox"/>					TK ISOLS CL
	OMS ENG FAIL (XFEED)	<input type="checkbox"/>	TK ISOLS OP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT
	<input type="checkbox"/>	TK ISOLS CL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S <input type="checkbox"/>	
<u>AFTER 1 POD FEED</u>							
STOP 1 POD FEED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT	
	<input type="checkbox"/>					TK ISOLS OP	
OMS ENG FAIL (XFEED)	<input type="checkbox"/>	<input type="checkbox"/>	SL	<input type="checkbox"/>	<input type="checkbox"/>	SR	
DEORBIT BURN (MIXED XFEED)	<input type="checkbox"/> OMS ENG - ARM/PRESS						
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT: Feed from GOOD POD
		<input type="checkbox"/>					S
		<input type="checkbox"/>					OMS He PRESS OP
		<input type="checkbox"/>					TK ISOLS OP
		<input type="checkbox"/>					OMS He PRESS CL
	<input type="checkbox"/>					TK ISOLS CL	
	RCS COMPLETION, OMS ENG FAIL:						
	<input type="checkbox"/> OMS XFEEDS OP						
	Feed from GOOD POD at	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ΔVTOT
	<input type="checkbox"/> OMS He PRESS OP						
	<input type="checkbox"/> TK ISOLS OP						
	<input type="checkbox"/> XFEEDS CL						

		DC: PAD		SECURITY				
BURN ATT:	0			P		Y		
TGT	HA			HP	(	)		
AVTOT							.	
TGO							.	
PRPLT				(	)			
BURN CUE CARD:								
DMS TIC SLIP - NO EXEC > TIC *								
STOP/CONTINUE PRPLT FAIL CUES								
1 DMS HP								
2 DMS HP								
SAFE HP								
PRI HP								
S/U HP								
TOT AFT QTY 1 (N)								
TOT AFT QTY 2 (N)								
FRCS:	DAMP TO N						DE	
ECG at N =	3						.	
YCG					(	)	.	
EI-5 NR303	ENTRY/LANDING							
INRTL ATT	0			P		Y		
(3-25)								
NR304 PREBANK (ENT Hour Cue Card)								
... NOS						EI -		
... LOS						EI -		
ALTW SET (3-4)							.	
D=4				:		:		
VREL 1ST REVERSAL								
<input type="checkbox"/> L	<input type="checkbox"/> QVHD			deg	FWY			
<input type="checkbox"/> R	<input type="checkbox"/> STRT							
WINDS:	50K			/				
(ENT Hour Cue Card)	40K			/				
	30K			/				
	20K			/				
	TK			/				
	SURFACE			/				
REMARK:	APU START SEQUENCE			then				

BURN CARD	
DEORBIT BURN (2 ENG)	OMS ENG FAIL <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> SL <input type="checkbox"/> <input type="checkbox"/> SR
DEORBIT BURN (1 ENG)	OMS XFEED <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ΔVTOT <input type="checkbox"/> <input type="checkbox"/> S
	OMS TK SW <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ΔVTOT
DEORBIT BURN (RCS)	OMS TK SW <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ΔVTOT
	OMS PRPLT LOW <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ΔVTOT
UNBALANCED PRPLT DEORBIT BURN	<u>BEFORE 1 POD FEED</u> OMS ENG FAIL (XFEED) <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ΔVTOT <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> SL <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> SR
	<u>DURING 1 POD FEED</u> START 1 POD FEED <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ΔVTOT <input type="checkbox"/> TK ISOLS CL
	OMS ENG FAIL (XFEED) <input type="checkbox"/> TK ISOLS OP <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ΔVTOT TK ISOLS CL <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> S <input type="checkbox"/>
	<u>AFTER 1 POD FEED</u> STOP 1 POD FEED <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ΔVTOT <input type="checkbox"/> TK ISOLS OP
	OMS ENG FAIL (XFEED) <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> SL <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> SR
	<input type="checkbox"/> OMS ENG - ARM/PRESS
DEORBIT BURN (MIXED XFEED)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ΔVTOT: Feed from GOOD POD <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> S <input type="checkbox"/> OMS He PRESS OP <input type="checkbox"/> OMS He PRESS OP <input type="checkbox"/> OMS He PRESS CL <input type="checkbox"/> OMS He PRESS CL <input type="checkbox"/> OMS He PRESS CL
	RCS COMPLETION, OMS ENG FAIL: <input type="checkbox"/> OMS XFEEDS OP Feed from GOOD POD at <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ΔVTOT
	<input type="checkbox"/> OMS He PRESS OP <input type="checkbox"/> OMS He PRESS OP <input type="checkbox"/> OMS He PRESS CL <input type="checkbox"/> OMS He PRESS CL

		DEL PAD		SECURITY	
BURN ATT:	R		P		Y
TGT	HP		HP	( )	
AVTOT					.
TGD					.
PRPLT		( )			
BURN CUE CARD:					
SMS TIG SLIP - NO EXEC > TIG *					
STOP/CONTINUE PRPLT CUES					
L SMS HP					
R SMS HP					
SAFE HP					
PRI HP					
S/U HP					
TOT AFT QTY 1 (W)					
TOT AFT QTY 2 (W)					
FRCS: DUMP TO B					DX
RCG at N = 3					.
YCG				( )	.
(1-5) WP303		ENTRY/LANDING			
INRTL ATT	R		P		Y
(3-25)					
WP304 PRESANK (ENT Never Cue Card)				L	R
... AOS					EI -
... LOS					EI -
ALTM SET (3-4)					.
D=4			.		.
VREL 1ST REVERSAL					
(L) (R) (D) (S)			deg	R/W	
WINDS:		50K		/	
(ENT Never Cue Card)		40K		/	
		30K		/	
		20K		/	
		1K		/	
		SURFACE		/	
APU START SEQUENCE			then		

OHS PRPLT PAD

XFEED CUE

BURN CARD DEORBIT BURN (2 ENG)	OHS ENG FAIL	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	SL <input type="checkbox"/> <input type="checkbox"/>	SR	
DEORBIT BURN (1 ENG)	OHS XFEED	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	AVTOT <input type="checkbox"/>		
-----					
DEORBIT BURN (ACS)	OHS TK SW	<input type="checkbox"/> <input type="checkbox"/>	AVTOT		
-----					
BEFORE 1 POD FEED					
UNBALANCED PRPLT DEORBIT BURN	OHS ENG FAIL (XFEED)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	AVTOT	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
	-----				
	DURING 1 POD FEED				
	START 1 POD FEED	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	AVTOT		
	-----				
	OHS ENG FAIL (XFEED)	<input type="checkbox"/> TK ISOLS OP <input type="checkbox"/> TK ISOLS CL	<input type="checkbox"/> TK ISOLS CL	AVTOT <input type="checkbox"/>	
-----					
AFTER 1 POD FEED					
STOP 1 POD FEED	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	AVTOT <input type="checkbox"/> TK ISOLS OP			
-----					
OHS ENG FAIL (XFEED)	<input type="checkbox"/> <input type="checkbox"/>	SL <input type="checkbox"/> <input type="checkbox"/>	SR		
DEORBIT BURN (MIXED XFEED)	<input type="checkbox"/> OHS ENG - ARM/PRESS				
	-----				
	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	AVTOT: Feed from GOOD POD			
	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> OHS He PRESS OP <input type="checkbox"/> OHS He PRESS CL	<input type="checkbox"/> TK ISOLS OP <input type="checkbox"/> TK ISOLS CL		
-----					
RCS COMPLETION, OHS ENG FAIL:					
<input type="checkbox"/> OHS XFEEDS OP					
Feed from GOOD POD at <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> AVTOT					
<input type="checkbox"/> OHS He PRESS OP <input type="checkbox"/> TK ISOLS OP					
<input type="checkbox"/> XFEEDS CL					

		DEL PAD		SECURITY	
BURN ATT:	0				
TGT	HP			HP	( )
AVTOT					
TGO					
PRPLT				( )	
BURN CUE CARD:					
0MS TIC SLIP - NO EXEC * TIC *					
STOP/CONTINUE PRPLT FAIL CUES					
L 0MS HP					
R 0MS HP					
SAFE HP					
PRI HP					
R/O HP					
TOT AFT QTY 1 (S)					
TOT AFT QTY 2 (S)					
FRCS: OUMP TO S					
YCG at N = 3					
YCG					
E1-S WPROJ ENTRY/LANDING					
INRL ATT					
(3-25)					
WPROJ PREBANK (ENT Menu Cue Card)					
... AOS					
... LOS					
ALTM SET (3-4)					
D=4					
VREL 1ST REVERSAL					
L		DVIC		sec	
R		STR		WAY	
WINDS:					
(ENT Menu Cue Card)					
50K /					
40K /					
30K /					
20K /					
TK /					
SURFACE /					
SEWEX: APO START SEQUENCE then					



DEORBIT BURN PROCEDURES



EM COMMUNICATION COVERAGE

Normal Timeline

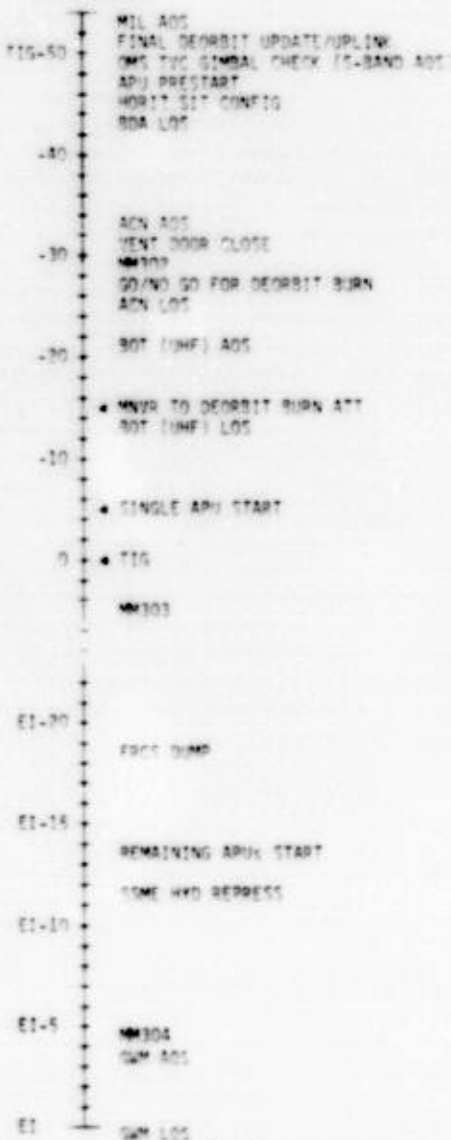
DEORBIT  
BURN



EM COMMUNICATION COVERAGE

Orignal Timeline

DEORBIT  
BURN



|1: GNC DEORB MNVR COAST |2: GNC DEORB MNVR COAST |  
|3: BFS, GNC DEORB MNVR COAST |

TIG-46

**B FINAL DEORB UPDATE/UPLINK**

MCC UPDATE:

DEL PAD  
OMS PRPLT PAD

MCC UPLINK:

PASS SV  
BFS SV  
PASS TGT  
BFS TGT  
BFS IMU GYRO/ACCEL

C CRT1 On MCC GO:  
LOAD - ITEM 22 EXEC  
TIMER - ITEM 23 EXEC

CRT1,3 ✓PASS & BFS TGTs per DEL PAD:  
BURN ATT  
ΔVTOT  
TGO  
HA HP

1: GNC DEORB MNVR COAST 2: GNC DEORB MNVR COAST  
3: BFS, GNC DEORB MNVR COAST

**C OMS TVC GIMBAL CHECK**  
(Perform during S-band AOS)

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

- \* If down arrow(s) or M's: \*
- \* Select good GMBL \*

**P APU PRE START**  
(Perform during S-band AOS)

R4 ✓HYD LG HYD ISOL VLV (three) tb - CL

- \* If tb not CL, \*
- \* R2 Affected HYD CIRC PUMP - ON \*
- \* R4 LG HYD ISOL VLV - CL \*
- \* (tb-CL) \*
- \* R2 CIRC PUMP - OFF \*

R2 ✓HYD LG RET/CIRC VLV - CL  
BLR N2 SPLY (three) - ON  
✓CNTLR (three) - ON  
✓CNTLR PWR/HTR (three) - A  
✓APU FUEL TK VLV (three) - CL  
CNTLR PWR (three) - ON  
HYD MN PUMP PRESS (three) - LO  
✓APU AUTO SHUT DN - ENA  
✓SPEED SEL (three) - NORM  
✓CNTL (three) - OFF

3: BFS, SM SYS SUMM 2

P R2 APU FUEL TK VLV (three) - OP  
✓APU/HYD RDY tb (three) - gray  
APU FUEL TK VLV (three) - CL

2: GNC 50 HORIZ SIT

3: BFS, GNC 50 HORIZ SIT

1: GNC DEORB MNRV COAST 12: GNC 50 HORIZ SIT  
 3: BFS, GNC 50 HORIZ SIT

**HORIZ SIT CONFIG**

ALTM - ITEM 9

\* 

2	9	.	1	5
---	---	---	---	---

	PASS ITEM	BFS ITEM
PTI	INH 2 ✓	-
INDEX	1 ✓	-
RWY CTR	BLANK	BLANK
RWY (DEL PAD)	✓	✓
TAEM TGT		
G&N	OVHD ✓	BLANK ✓
HSI	BLANK	BLANK
XEP	NEP 7 ✓	NEP 7 ✓
AIM	NOM 8 ✓	NOM 8 ✓
TAC	INH 20 ✓	INH 20 ✓
DRAG H	AUT 22 ✓	AUT 22 ✓
ADTA H	INH 26 ✓	INH 26 ✓
ADTA TO G&C	INH 29 ✓	AUT 28 ✓
DES any failed TACANS	✓	✓
TAC	DELTA 35 ✓	-
HUD	37 L 0 ✓	-
	38 R 0 ✓	-

- \* C If payload undeployed: \*
- \* 3: GNC 51 ENTRY CONTROLS \*
- \* ASC FCS - ITEM 32 EXEC \*
- \* \*
- \* 3: BFS, GNC 51 OVERRIDE \*
- \* ASC FCS - ITEM 15 EXEC \*

- \* If BFS engaged: \*
- \* Set HSD BFS Items to PASS Config \*

- \* If non-nominal landing site selected in PASS, \*
- \* LOAD Landing Sites in BFS \*
- \* \*
- \* \*

- \* 3: BFS, GNC 51 OVERRIDE \*
- \* ITEMS 6-8 \*
- \* ✓PRI,SEC,ALT \*

I: GNC DEORB MNVR COAST | 2: GNC DEORB MNVR COAST |  
3: BFS, GNC DEORB MNVR COAST |

.....RCS BURN PREP.....  
P 08 L,R OMS  
✓He PRESS/VAP ISOL (four) - CL  
✓TK ISOL (four) - OP (tb-OP)  
L OMS XFEED (two) - OP (tb-OP)  
✓R OMS XFEED (two) - CL (tb-CL)  
07 AFT L,R RCS  
XFEED (four) - OP (tb-OP)  
TK ISOL (six) - CL (tb-CL)  
.....

TIG-25 VENT DOOR CLOSE

NOTE

If OMS/RCS He or TK PRESS leak,  
do not perform vent door close

2: GNC SI OVERRIDE  
CRT 2 VENT DOOR CNTL CLOSE - ITEM 23 EXEC

....If BFS.....  
2: BFS, GNC SI OVERRIDE  
CRT2 VENT DOOR CNTL CLOSE - ITEM 5 EXEC  
2: BFS, GNC DEORB MNVR COAST

2: GNC DEORB MNVR COAST |

B DEORB UPDATE/UPLINK (if reqd)

MCC UPDATE:  
DEL PAD  
OMS PRPLT PAD  
MCC UPLINK:  
PASS SV  
BFS SV  
PASS TGT  
BFS TGT

1: GNC DEORB MNVR EXEC	2: GNC DEORB MNVR EXEC
3: BFS, GNC DEORB MNVR EXEC	

On MCC GO,  
 CRT1 LOAD - ITEM 22 EXEC  
 TIMER - ITEM 23 EXEC  
 CRT1,3 ✓PASS & BFS TGTs per DEL PAD:  
 BURN ATT  
 ΔVTOT  
 TGO  
 HA HP

C CRT1 **GNC. OPS 302 PRO**

**MCC/CREW GO/NO GO for DEORBIT BURN**

\* **IF NO GO for DEORBIT BURN:** \*

\* P R2 BLR N2 SPLY (three) - OFF \*

\* APU CNTLR PWR (three) - OFF \*

\* HYD MN PUMP PRESS (three) - NORM \*

\* C CRT1 GNC, OPS 301 PRO \*

.....

**IF 24 HR EXTENSION:**

P 07 AFT L,R RCS

He PRESS A (two) - GPC (tb-OP)

B (two) - CL (tb-CL)

TK ISOL (six) - OP (tb-OP)

XFEED (four) - CL (tb-CL)

08 FWD RCS

He PRESS A - GPC (tb-OP)

B - CL (tb-CL)

C6 Stow ENT PKT C/L

Unstow ORBIT PKT C/L

Terminate Deorbit Procedures,  
 go to DEORB PREP, D/O PREP  
BACKOUT, 2-1

.....

TIG-15 ▶ **MNVR to DEORBIT BURN ATT**

- C F6 FLT CNTLR PWR - ON
- B F6/F8 ✓ADI ATT (two) - INRTL  
✓ERR (two) - MED  
✓RATE (two) - MED
- C MNVR to BURN ATT  
(✓ADI ATT with CRT BURN ATT)
  
- B Copy last DEL PAD and OMS PRPLT PAD  
data on DEORBIT BURN Cue Cards
  
- F6/F8 ✓DEORBIT BURN and DEORBIT BURN  
MONITOR Cue Cards installed
  
- MS2 Stow WIRELESS HEADSETS
  
- A15 PS COMM CCU PWR - OFF  
Disconnect TPR Cable  
Connect MS2 Comm Cable  
PS COMM CCU PWR - ON
  
- MS1/MS2 SEAT INGRESS

.....  
. P 07/08 Terminate RCS/RCS XFEED or .  
. terminate OMS/RCS Interconnect .  
. unless RCS deorbit .  
.....



1: GNC DEORB MNVR EXEC | 2: GNC DEORB MNVR EXEC

3: BFS, SM SYS SUMM 2

TIG-5 ▶ P **SINGLE APU START**

R2 APU FUEL TK VLV - OP  
√APU/HYD RDY tb - gray

\* If tb - bp, start another APU \*

APU CNTL - START/RUN  
F8 √HYD PRESS ind - LO green  
R2 √RDY tb - bp

- \* If no start, \*
- \* APU CNTL - OFF \*
- \* Start another APU \*
- \* Then, \*
- \* If first two APUs did not start, \*
- \* APU CNTL (two) - START OVERRIDE/RUN \*
- \* (Wait 3:30 for APU start) \*
- \* \*
- \* If only one starts, \*
- \* shutdown unstarted APU (Cue Card) \*
- \* Then, \*
- \* If neither starts, \*
- \* APU AUTO SHUTDN - INHIBIT \*
- \* (Start in < 10 sec) \*
- \* \*
- \* If only one starts, \*
- \* shutdown unstarted APU (Cue Card) \*
- \* \*
- \* If neither starts, \*
- \* ● Do not start third APU \*
- \* ● Do not execute Deorbit Burn \*

R2 √HYD CIRC PUMP (three) - OFF

3: BFS, GNC SYS SUMM 2

C √BURN ATT +5°

B Go to DEORBIT BURN Cue Card

- **If no OMS IGNITION at TIG:**
- OMS ENG (two) - OFF
- ✓APU - SHUT DN
- \*C3 MSTR MADDS PWR - OFF
- L,R OMS
- He PRESS/VAP ISOL (four) - CL
- ✓XFEED (four) - CL
- GNC, OPS 301 PRO
- Consult with MCC at next STDN
  
- **If Burn Terminated with HP > SAFE HP:**
- ✓OMS ENG (two) - OFF
- ✓APU - SHUT DN
- \*C3 MSTR MADDS PWR - OFF
- L,R OMS
- He PRESS/VAP ISOL (four) - CL
- ✓XFEED (four) - CL
- GNC, OPS 301 PRO
- \*07 AFT L,R RCS
- He PRESS A (two) - GPC (tb-OP)
- B (two) - CL (tb-CL)
- TK ISOL (six) - OP (tb-OP)
- XFEED (four) - CL (tb-CL)
- \*08 FWD RCS
- He PRESS A - GPC (tb-OP)
- B - CL (tb-CL)
- Consult with MCC at next STDN on DEORBIT DELAY of 24 HR

POST  
BURN

**OMS/RCS POST BURN RECONFIGURATION**

- P 07 AFT L,R RCS
  - ✓He PRESS (four) - OP (tb-OP)
  - ✓TK ISOL (six) - GPC (tb-OP)
  - ✓XFEED (four) - GPC (tb-CL)
  
- 08 L,R OMS
  - He PRESS/VAP ISOL (four) - CL
  - ✓TK ISOL (four) - OP (tb-OP)

- \* If OMS PRPLT FAIL, \*
- \* Affected TK ISOL (two) - CL \*
- XFEED (four) - CL (tb-CL)

03    RCS/OMS PRESS sel    - RCS as reqd  
       PRPLT QTY sel    - RCS as reqd

- \* **UNDERBURN** \*
- \* Determine  $\Delta$ HP \*
- \* (CUR HP - TGT HP) \*

\* **PREBANK TABLE (NOMINAL) (HA = 118 nm)** \*

$\Delta$ HP	2	5	8	11	13		
PREBANK (deg)	23	46	59	70	78		
Continue to EDW							

$\Delta$ HP	14	16	18	20	25	30	35
PREBANK (deg)	45	52	60	67	83	102	133
Redesignate to NOR							
TACAN MODE (three) - T/R							
CH tw (three) - 69X							

**PREBANK TABLE**

$\Delta$ HP							
PREBANK (deg)							
Continue to EDW							

$\Delta$ HP							
PREBANK (deg)							
Redesignate to NOR							
TACAN MODE (three) - T/R							
CH tw (three) - 69X							

POS:  
 BURN

1: GNC DEORB MNVR EXEC | 2: GNC DEORB MNVR EXEC  
 3: BFS, GNC SYS SIMM 2

**POST BURN STATUS**

NOMINAL

Δ TIG

:

C CRT1 **GNC. OPS 303 PRO**

1: GNC DEORB MNVR COAST | 2: GNC DEORB MNVR COAST

C CRT1 Verify or load INRTL EI-5 MM303  
 ATT from DEL PAD:

R - ITEM 24 \*

P - ITEM 25 \*

Y - ITEM 26 \*

MNVR to EI-5 ATT

- If UNDERBURN or
- ENTRY BLOCK DATA,
- adjust attitude to
- LVLH R 001, Y 358
- and P per table at
- right

TIME to EI (min)	LVLH PITCH (deg)
20	339
	343
	347
	351
	355
15	359
	3
	7
	11
	15
10	19
	23
	27
	31
	35
5	39

1: GNC DEORB MNVR COAST	2: GNC DEORB MNVR COAST
3: BFS, GNC SYS SUMM 2	

**C OMS GIMBAL POWERDOWN (if PASS)**

CRT1 Verify gimbal positions:

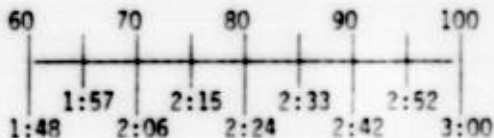
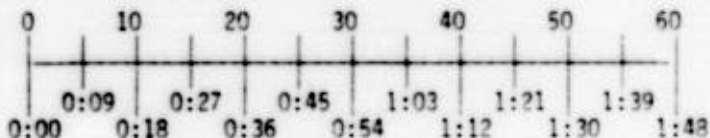
	<u>L</u>	<u>R</u>
P	+5.9	+5.9
Y	+6.4	-6.4

GMBL OFF - ITEM 32 EXEC  
 - ITEM 33 EXEC

EI-18 P **FORWARD RCS DUMP** (use for off nominal  
 X cg entry)  
 Determine FWD RCS 'DUMP TO %' (calculator,  
 cg wheel, or DEL PAD)

FOUR JET DUMP:

F RCS PRPLT TO BE DUMPED (%)

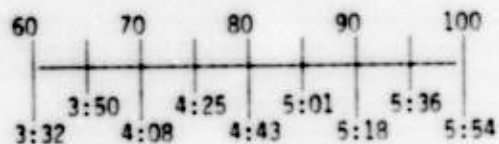
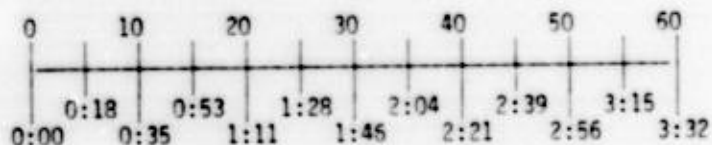


TIME FROM DUMP INITIATION (M:S)

1: GNC DEORB MNVR COAST 2: GNC DEORB MNVR COAST  
3: BFS, GNC SYS SUMM 2

TWO JET DUMP:

F RCS PRPLT TO BE DUMPED (%)



TIME FROM DUMP INITIATION (M:S)

CRT2 FWD RCS ARM - ITEM 36 EXEC  
DUMP - ITEM 37 EXEC  
(Start watch)

When required:  
OFF - ITEM 38 EXEC ✓

When dump complete:  
08 FWD RCS  
MANF ISOL (five) - CL (tb-CL) ✓

**ENTRY SW CHECK**

C L2 ✓CAB RELIEF A,B - ENA (tb-ENA)  
 ✓ANTISKID - ON  
 ✓NWS - OFF  
 ✓ENTRY MODE - AUTO

**3: GNC 51 OVERRIDE**

✓ENTRY R MODE - AUTO  
 B L2/C3 ✓SPD BK - RET  
 P C3 ✓SRB SEP - AUTO  
 ✓ET SEP - AUTO  
 B F6/F8 ✓AIR DATA - NAV  
 ADI ERR - MED  
 RATE - MED  
 ✓HSI SEL MODE - ENTRY  
 C F6 ✓SOURCE (two) - NAV, 1  
 P F8 ✓SOURCE (two) - NAV, 2  
 B F3 ✓TRIM RHC/PNL (two) - INH  
 ✓PNL (two) - ON  
 C F7 ✓RADAR ALTM - 1  
 P F8 - 2  
 08 ✓RADAR ALTM (two) - ON  
 ✓MLS (three) - ON (PASS)  
 ✓MLS CH (three) - 8 (EDW22, NOR17,  
 KSC15)  
 - 6 (EDW17, KSC33)  
 07 ✓TACAN MODE (three) - T/R  
 ✓ANT SEL (three) - AUTO  
 ✓TACAN CH (three) - \*\*\*\*:

SITE: EDW	STA: EDW	****:	111X
HNL	HNL		100X
KAD	KAD		057X
KSC	TTS		059Y
NOR	SNG		069X
NOR REDES	SNG		069X
ROTA	AOG		023X
DAKAR	YOF		068X

1: GNC DEORB MNVR COAST	2: GNC DEORB MNVR COAST
3: BFS, GNC SYS SUMM 2	
3: BFS, SM SYS SUMM 2	

EI-13

**REMAINING APUs START**

(If no APU OVERSPEED or UNDERSPEED C/W lights, APU AUTO SHUT DN - ENA)

R2 APU FUEL TK VLV (two) - DP  
 ✓APU/HYD RDY tb (two) - gray  
 \* If tb - bp, attempt normal start \*

F8 APU CNTL (two) - START/RUN  
 ✓HYD PRESS ind (two) - LO green  
 R2 ✓RDY tb (two) - bp

- \* If APU did not start normally, \*
- \* APU CNTL - START ORIDE/RUN \*
- \* (Wait 3:30 for APU start) \*
- \* If no APU start: \*
- \* APU AUTO SHUT DN - INH \*
- \* If OIL OUT P < 25 and OIL OUT \*
- \* TEMP not increasing after APU \*
- \* start or no start: \*
- \* APU CNTL - OFF \*
- \* FUEL TK VLV - CL \*

- \* If less than three APUs running: \*
- \* ✓Good HYD MN PUMP PRESS - LO \*
- \* until EI-6, then perform SSME \*
- \* HYD REPRESS, 3-30, at EI-6, \*
- \* and delete HYD FLUID THERMAL \*
- \* CONDITIONING, 3-30 \*

HYD MN PUMP PRESS (three) - NORM  
 PRESS ind (three) - HI green



1: GNC DEORB MNVR COAST    2: GNC DEORB MNVR COAST  
3: BFS, SM SYS SUMM 2

**P SSME HYD REPRESS**

- R2    ✓HYD MN PUMP PRESS (three) - NORM  
      MPS He ISOL B CTR,R (two) - OP
- R4    HYD MPS/TVC ISOL VLV SYS 2 - OP (MA) |  
      wait 10 sec - CL  
      HYD MPS/TVC ISOL VLV SYS 3 - OP (MA) |  
      wait 10 sec - CL
- \* If HYD SYS 2 or SYS 3 failed, \*
  - \* cycle SYS 1 \*
- R2    MPS He ISOL B CTR,R (two) - CL

**EI-11 ▶ P HYD FLUID THERMAL CONDITIONING (MCC Cell)**

- CRT2    SURF DRIVE ON - ITEM 39 EXEC  
      Start TIMER
- SPI    Observe AEROSURFACES CYCLING  
      ELEV        033 to 018 deg  
      RUD        R5 to L5 deg  
      SPD BK     15 to 10 %  
      BDY FLP    93.6 to 3.5 %
- When SURF DRIVE ON (5 min),  
CRT2    SURF DRIVE OFF - ITEM 40 EXEC

1: GNC DEORB MNVR COAST 2: GNC DEORB MNVR COAST  
3: BFS, SM THERMAL

**BURN REPORT** (from 3-25)

**STATE VECTOR CHANGE** (if reqd)

2: GNC 50 HORIZ SIT  
3: BFS, GNC 50 HORIZ SIT

CRT2  $\Delta T$  - ITEM 18 ( ) .

LOAD - ITEM 16 EXEC  
....Wait 8 sec (min)....  
CRT3 PASS/BFS SV XFER - ITEM 17 EXEC  
LOAD - ITEM 16 EXEC

**NOTE**

Wait at least 8 sec before  
additional ITEM 17 EXEC

**PIN REMOVAL**

- C Remove, stow in pocket:  
Panel Jettison T-Handle Pin
- B Stow DEORBIT BURN and DEORBIT BURN  
MONITOR Cards  
✓ENTRY Cue Cards installed
- \* If 8 psi cabin entry, \*
  - \* ALL ✓LEH visor down \*

**G SUIT INFLATION**

ALL Load - 1.5 (3 turns CW) (if reqd)

1: GNC DEORB MNVR COAST | 2: GNC DEORB MNVR COAST |  
3: BFS, SM THERMAL |

### GPC CONFIG

- \* If 3 PASS GPC configuration, \*
- \* FCS CH 4 - OFF \*

2: BFS, GNC DEORB MNVR COAST |  
3: GNC DEORB MNVR COAST |

EI-6

Go to ENTRY MANEUVERS Cue Cards

POST LANDING PROCEDURES

- \* LOSS OF COMM
- \* In the event of a loss of comm, the following
- \* hand signals will be utilized to indicate
- \* onboard status to the convoy:

NOTE

- \* Before declaring a loss of comm, attempt
- \* to contact the Convoy on 282.8 using the
- \* Handheld Radio located in R3F

- \* One thumb up - crew OK
- \* Two thumbs up - OMS/RCS Safing complete
- \* Full open hand - APU shutdown complete
- \* Two thumbs down from convoy - Emergency
- pwrdn and
- egress

- \* EXPEDITED POWERDOWN
- \* Accomplish for:
  - \* ● Loss of all comm, including hand signals,
  - \* with convoy elements
  - \* ● Loss of telemetry and onboard systems
  - \* monitoring visibility
  - \* ● A nonisolatable OMS, RCS, or APU fuel leak
- \* ET UMBILICAL DOOR OPENING, 5-5
- \* OMS/RCS SAFING, 5-4, 5-5
- \* GPC DEACTIVATION, 5-10
- \* EMERGENCY POWERDOWN, Cue Card
- \* 'MODE 5' POST LANDING EGRESS, Cue Card

### POST LANDING

00:00

After Orbiter stops:

- C ESTABLISH COMM WITH CONVOY 1 REPORT  
'WHEELS STOP' EMERG LTS - ON
- L2 SPD BK - RET
- P R2  $\sqrt$ APU AUTO SHUT DN - ENA
- C Install Panel Jettison T-Handle Pin
- F7 Flight CNTLR PWR - OFF
- B F3 HUD Pwr (two) - OFF
- P C3 MSTR MADS PWR - OFF (MCC call  
or CLS)
- B W1/W6 CAMRS (two) - OFF
- ~~MS~~ Reference ~~MS~~ Payload Postlanding-  
SW list, TBD

doff LEW

down LWMS

GNC 2 - 19

*(Handwritten signature)*

**CDR****NOTE**

CDR activities are now on  
even numbered pages and PLT  
activities on odd numbered  
pages

**RCS, OMS SAFING (RJDs)**

MSZ  
help

C3    ✓OMS ENG (two)    - OFF  
014    RJD DRIVER (nine) - OFF  
015    LOGIC (eight)    - OFF  
016    OMS ENG VLV (two) - OFF

FLT REPORT TO CONVOY 1 'RJDs OFF'

**DEACT AIR DATA PROBE HTRS**

C3    ✓AIR DATA PROBE (two) - DEPLOY

↖

Ck with PLT. REPORT TO MCC 'OMS/RCS  
SAFING COMPLETE'  
FLT REPORT TO CONVOY 1 'OMS/RCS SAFING  
COMPLETE'

PLT

**ET UMBILICAL DOOR OPENING**

REPORT TO MCC 'ET UMBILICAL DOORS ARE  
COMING OPEN'

R2 ET UMB DR  
MODE - GPC/MAN  
L,R LAT (two) - REL (tb-bp)  
After 6 sec, L,R LAT tb - REL  
L,R LAT (two) - OFF (tb-REL)  
L,R DR (two) - OP (tb-bp)  
After 15 sec, L,R DR - OFF (tb-bp)  
MODE - GPC

**RCS, OMS SAFING (VALVES)**

07 AFT L,R RCS  
✓MANF ISOL (ten) - OP (tb-OP)  
TK ISOL (six) - OP (tb-OP)  
✓He PRESS (four) - OP (tb-OP)  
XFEED (four) - CL (tb-CL)  
✓MSTR RCS XFEED - OFF

08 L,R OMS  
✓He PRESS/VAP ISOL (four) - CL  
✓TK ISOL (four) - OP (tb-OP)  
L OMS XFEED (two) - OP (tb-OP)  
✓R OMS XFEED (two) - CL (tb-CL)

FWD RCS

If RTLS (MANFs OP): No Action

If MANFs CL:

✓He PRESS (two) - OP (tb-OP)

✓TK ISOL (two) - OP (tb-OP)

✓FWD FU & OX MANF PRESS

If all FWD MANF PRESS > 150:

MANF ISOL (five) - OP (tb-OP)

If any FWD MANF PRESS < 150:

Affected MANFs - CL (tb-CL)

Good MANFs (four) - OP

tell  
CDR



1: GNC VERT SIT 2	2: BFS, GNC VERT SIT 2
3: GNC SYS SUMM 1	

**CDR**

**NH3 ACT** (On MCC Call or when EVAP OUT  
T HIGH C&W)

L1 NH3 CNTLR A(B) - PRI/GPC

- \* If EVAP OUT T LOW, DURING NH3 OPS: \*
- \* FREON PUMP LOOP (two) - OFF \*
- \* \*
- \* NH3 CNTLR A(B) - OFF \*
- \* FREON PUMP LOOP 1 - A \*
- \* Wait one min, then \*
- \* FREON PUMP LOOP 2 - A \*
- \* NH3 CNTLR B(A) - PRI/GPC \*

**PLT**

**HYDRAULIC LOAD TEST (ON MCC CALL)**

NOTE

A minimum of two operating hyd systems is required for this test

- F4 ✓BDY FLP pb - MAN
- F8 ✓FLT CNTLR PWR - ON

NOTE

If only two systems are operating, do not depressurize either hyd pump

- R2 HYD MN PUMP PRESS 1 - LO (MA)

- C3 Run Full Load Test  
 BDY FLP - TRAIL  
 RHC - Forward ctr  
 Rudder full left

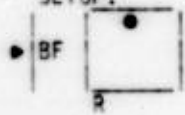
When set, do following simultaneously:  
 BDY FLP - UP (to 6% limit)  
 RHC - move to aft ctr  
 Rudder full right

- RHC - release
- Rudder - neutral
- BDY FLP - reset to TRAIL

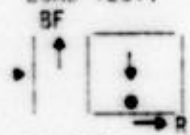
- R2 HYD MN PUMP PRESS 1 - NORM  
 3 - LO (MA)

- C3 Repeat Load Test
- R2 HYD MN PUMP PRESS 3 - NORM

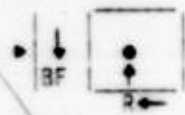
SETUP:



LOAD TEST:



RELEASE:



1: GNC VERT SIT 2      2: BFS, GNC VERT SIT 2  
 3: GNC SYS SUMM 1

**CDR**

**MCC REPORT GO/NO GO FOR DPS TRANSITION**

**DPS TRANSITION - GNC 9 (IF PASS)**

3: GNC 0 GPC MEMORY

Verify:

CONFIG	9				
GPC	1	2	3	4	0
STR 1				1	
2				2	
3				3	
4				4	
PL 1/2				1	
CRT 1				1	
2				2	
3				3	
4				0	
L 1				1	
2				2	
MM 1				1	
2				2	

CRT3 **GNC. OPS 901 PRO**

✓BFC CRT DISP - ON

**BFS. GNC. OPS 000 PRO**

2: BFS, GNC BFS MEMORY

**PCS DEACTIVATION**

L2    02 SUPPLY VLVS (two)    - CL (tb-CL)  
 N2 SUPPLY VLVS (two)    - CL (tb-CL)  
 N2 REG INLET VLVS (two) - CL (tb-CL)

1: GNC VERT SIT 2	2: BFS, GNC VERT SIT 2
3: GNC SYS SUMM 1	

**PLT**

**SET BDY FLP**

C3 BDY FLP - TRAIL

- \* If Bdy Flp RM msg has occurred, \*
- \* do not perform SSME REPOSITIONING \*

→ WAIT FOR OPS 9

**SSME REPOSITIONING (IF PASS and OPS 9)**

3: GNC 105 TCS CONTROL

R2 MPS He ISOL B L,CTR,R (three) - OP  
R4 HYD MPS/TVC ISOL VLV SYS  
(three) - OP (tb-OP)  
CRT3 CLEAR MSG - ITEM 8 EXEC  
SELECT ID - ITEM 1 +X X (08 KSC  
else 02) EXEC  
NAME 'VFB YY' (F3 KSC else 84)  
(-60 sec)  
MM READ - ITEM 2 EXEC  
(Modes 1,0,2 (2 KSC else 3) in  
order, sequence run time -2 min)  
After 'VFB YY' (F3 KSC else 84)  
COMPLETE' msg:  
Proceed with APU/HYD SHUTDOWN

1: GNC, VERT SIT 2	2: BFS, GNC BFS MEMORY
3: GNC 105 TCS CONTROL	

**CDR**

MCC REPORT 'GO/NO GO FOR EXTENDED PWR UP'

if GO, pg 5-14

NOTE

If NO GO for EXTEND PWR UP  
tab, go to GPC DEACT (below).

If CLS, perform GPC DEACT,  
then go to CLS P/LDG tab

**GPC DEACT**

(After Vent Door Purge Position)

06 GPC MODE 1,2,3,4,5 (five) - STBY  
(tb-bp)  
- HALT

1: GNC, VERY SIT 2	2: BFS, GNC BFS MEMORY
3: GNC 105 YCS CONTROL	

**PLT**

**APU/HYD SHUTDOWN**

- ✓SSME REPOS complete (if PASS)
- R2 MPS He ISOL B L,CTR,R (three) - OP
- R4 HYD MPS/TVC ISOL VLV SYS  
(three) - OP (tb-OP)
- R2 APU CNTL (three) - OFF  
FUEL TK VLV (three) - CL  
CNTLR PWR (three) - OFF
- R2 BLR CNTLR (three) - OFF  
N2 SUPPLY (three) - OFF
- MPS He ISOL B L,CTR,R (three) - CL

REPORT TO MCC 'APU/HYD SHUTDOWN'  
FLT REPORT TO CONVOY 1 'APU/HYD SHUTDOWN'

**VENT DOOR PURGE POSITIONING (PASS)**

- CRT3 CLEAR MSG - ITEM 8 EXEC
- SELECT ID - ITEM 1 + 0 3 EXEC
- ✓NAME 'VF889' (-60 sec)
- MM READ - ITEM 2 EXEC
- After 'VF889 - ENTERING 30 MIN DELAY'
- msg, CANCEL - ITEM 5 EXEC

if GO, pg 5-15

NOTE

If CLS, after GPC DEACT,  
go to CLS P/LDG tab

NOTE

If NO GO for EXTEND PWR UP  
tab, proceed to 5-13

1: OFF

2: OFF

3: OFF

**C. MS. PS**

**HATCH OPENING (Convoy)**

**SEAT EGRESS**

- C L5 L COMM PWR - OFF  
Pull G SUIT controller clip  
(if inflated)  
Disconnect:  
LAP BELT  
G SUIT Hose (at controller)  
BIOMED Cable  
Doff LEH  
Egress seat

- MS, A11, COMM CCU PWR - OFF  
PS A15,  
M039M

Descend to middeck and unstow  
'Return to Houston' Bags

- C GIVE PLT GO FOR VEHICLE POWERDOWN

**ORBITER UNAIDED EGRESS**

Egress Orbiter

1: OFF

2: OFF

3: OFF

EXTEND  
PWR UP

PLT

### SEAT DISCONNECT

- R6 R COMM PWR - OFF  
Pull G SUIT controller clip  
(if inflated)  
Disconnect:  
LAP BELT  
G SUIT Hose (at controller)  
Doff LEH

→ **VEHICLE PWRDN (On GO from CDR)**

NOTE

All vehicle lighting will  
be lost at powerdown

### VEHICLE PWRDN

- R1 FC/MN BUS (three) - OFF  
ESS BUS SOURCE FC (three) - OFF

### ORBITER UNAIDED EGRESS

Egress seat  
Descend to middeck, egress  
Orbiter

### MCC TO LRD HANDOVER (at Crew egress)



1: GNC, VERT SIT 2	2: BFS, GNC BFS MEMORY
3: GNC 105 YCS CONTROL	

CDR

**SYSTEM DEACT FOR EXTENDED PWR UP**

CRT3 | 3: GNC 0 GPC MEMORY |

CONFIG	9
GPC	10000
SYR 1	1
2	1
3	1
4	1
PL 1/2	1
CRY 1	1
2	1
3	1
4	0
L 1	1
2	1
NM 1	1
2	1

**OPS 901 PRO****GPC 2, 3, 4 PWRDN**

06 GPC MODE 2,3,4 (three) - STBY  
 (tb-bp)  
 - HALT  
 PWR (three) - OFF  
 LTG (five) - OFF  
 C2 CRT ● PWR (one) - OFF

1

**DEACTIVATE LEFT FWD SWITCHES**

L2 ANTISKID - OFF  
 ✓NWS - OFF  
 C3 ✓FCS CH (four) - AUTO  
 F6 INST PWR - OFF  
 F3 ✓TRIM RHC - INH  
 PNL - OFF

1: OFF	2: BFS, GNC BFS MEMORY
3: GNC 105 TCS CONTROL	

**C. MS, PS**

Inform MS2 to proceed with MS post landing activities, 5-18

**SYSTEM DEACT FOR EXTENDED PWR UP**

**SEAT EGRESS**

C L5 L COMM PWR - OFF  
 Pull G SUIT controller clip  
 (if inflated)  
 Disconnect:  
 LAP BELT  
 G SUIT Hose (at controller)  
 BIOMED Cable  
 Doff LEH  
 Egress seat

MS, A11, COMM CCU PWR - OFF  
 PS A15,  
 M039M

Descend to middeck and unstow  
'Return to Houston' Bags

**ORBITER UNAIDED EGRESS**

Egress Orbiter

1: OFF	2: BFS,
3: GNC 105 TCS CONTROL	

**PLT**

**SYSTEM DEACT FOR EXT**

**SEAT EGRESS** (wh  
Ground Support Per  
comm at PS station

R6 R COMM PWR  
 Pull G SUIT  
 (if inflat  
 Disconnect:  
 LAP BELT  
 G SUIT H  
 Doff LEH  
 Egress ser

**ORBITER UNAIDED**

Descend t  
Orbiter

**MCC TO LRD HA**  
or completion  
procedure, 5-

1: OFF

2: BFS, GNC BFS MEMORY

3: GNC 105 YCS CONTROL

PLT

~~SYSTEM DEACT FOR EXTENDED PWR UP~~

MS EXT  
PWR UP

2: BFS, SM SYS SIMM 2

**SEAT EGRESS** (when desired after  
Ground Support Personnel establishes  
comm at PS station)

- R6 R COMM PWR - OFF  
Pull G SUIT controller clip  
(if inflated)  
Disconnect:  
LAP BELT  
G SUIT Hose (at controller)  
Doff LEH  
Egress seat

**ORBITER UNAIDED EGRESS**

Descend to middeck, egress  
Orbiter

**MCC TO LRD HANDOVER** (at Crew egress  
or completion of integrated post ldg  
procedure, 5-19, whichever is last)

1: OFF  
2: BFS, SM SYS SUMM 2  
3: GNC 105 YCS CONTROL

MS

**MS SYSTEM DEACT FOR EXTENDED PWR UP**

MS EXT  
PWR UP

**MS2 LRU DEACTIVATION**

014 BRAKES (three) - OFF ✓  
015 RGA (four) - OFF ✓  
016 IMU (three) - OFF ✓  
cb ADTA (four) - op ✓  
cb/sw ACCEL (four) - op/OFF ✓  
cb DDU (six) - op ✓  
cb MNA NWS - op ✓  
  
07 TACAN MODE (three) - OFF ✓  
08 RADAR ALTM (two) - OFF ✓  
MLS (three) - OFF ✓

C L1 IMU FAN (three) - OFF

**APU HEATER DEACTIVATION**

(After APU/HVD SHUTDOWN)

A12 APU HTR  
TK/FU LINE H2O SYS (six) - OFF ✓  
GAS GEN/FUEL PUMP (three) - OFF ✓  
LUBE OIL LINE (three) - OFF ✓

**RCS/OMS HEATERS PWRDN**

A14 OMS CRSPD LINE A,B (two) - OFF ✓

**EXP DEACT**

P R1 PL PRI MNC - OFF ✓

MS2 INFORM CDR POST LDG PROCEDURE COMPLETE

GSP

**INTEGRATED POST LANDING PROCEDURES  
FOR EXTENDED PWR UP**

GSP 1

A15      Connect Comm (PS)  
            PS Comm CCU PWR - ON

GSP 1

Comm ck with MCC

GSP to  
MCC

REPORT WHEN CREW READY TO EGRESS

GSP to  
MCC

REPORT POST LANDING PROCEDURE COMPLETE

GSP EXT  
PWR UP

1: OFF	2: BFS, SM SYS SUMM 2
3: GNC 105 TCS CONTROL	

**CDR**

**SYSTEM DEACT FOR EXTENDED PWR UP**

**NH3 DEACT** (On Ground Call if Cooling Cart Available)

NOTE

The following procedure may be performed by the CDR prior to seat egress

GSP EXT  
PWR UP

AFTER CONVOY 1 REPORTS TO FLT 'GROUND COOLING ACTIVATED':  
ON MCC or NTD CALL, PERFORM NH3 DEACTIVATION

L1 NH3 CNTLR A(B) - OFF

- If EVAP OUT T LOW, AFTER NH3
- TERMINATION:
- FREON PUMP LOOP (two) - OFF
- 
- NH3 CNTLR A(B) - PRI/GPC
- FREON PUMP LOOP 1 - A
- Wait 1 min, then
- FREON PUMP LOOP 2 - A
- 
- 
- NOTE
- The ammonia system in use must
- be used to depletion (~8 min)
- 
- 
- When EVAP OUT T HI:
- NH3 CNTLR (two) - OFF
-



1: OFF

2: OFF

3: OFF

C. MS. PS

**CLS PWRDN AND EGRESS  
SEAT EGRESS**

MS.  
PS

Pull G SUIT controller clip  
(if inflated)  
Disconnect:  
LAP BELT  
BIOMED Cable  
Orbiter O2 Hose from PEAP

Unstow, don PEAP  
Egress seat

All.  
A15,  
MO39M

COMM CCU PWR - OFF

CLS  
P/LDIG

C L5

Disconnect COMM Cable (at HIU)  
L COMM PWR - OFF  
Pull G SUIT controller clip  
(if inflated)  
Disconnect:  
LAP BELT  
G SUIT Hose (at controller)  
COMM Cable (at HIU)  
Egress seat  
Disconnect from PEAP:  
Orbiter O2 Hose  
G SUIT Hose  
Unstow, don PEAP  
Descend to middeck and unstow  
'Return to Houston' Bags

**ORBITER UNAIDED EGRESS**

ALL

Activate PEAP

C

Open hatch, give PLT GO for  
vehicle pwrdn, deploy egress bar  
Lower 'Return to Houston'  
Bags to ground  
Descend to ground



1: OFF	2: OFF
3: OFF	

**PLT**

**CLS PWRDN AND EGRESS**

**SEAT EGRESS**

- R6 R COMM PWR - OFF
- Pull G SUIT controller clip (if inflated)
- Disconnect:
  - LAP BELT
  - G SUIT Hose (at controller)
  - COMM CABLE (at HIU)
- Egress seat
- Disconnect from PEAP:
  - Orbiter O2 Hose
  - G SUIT Hose
- Unstow, don PEAP

**VEHICLE PWRDN**

(On GO from CDR)

NOTE

All vehicle Tighting will be lost at powerdown

- R1 FC/MN BUS (three) - OFF
- ESS BUS SOURCE FC (three) - OFF

Descend to middeck

**ORBITER UNAIDED EGRESS**

- ALL Activate PEAP
- Descend to ground

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1-ORBIT LATE DEORBIT PROCEDURES

1-ORB  
LATE

Refer to DEORBIT BURN FLIGHT RULES  
Cue Card for failures that require  
1-orbit delay

1: GNC DEORB MNVR COAST | 2: GNC DEORB MNVR COAST  
3: BFS, GNC DEORB MNVR COAST

TRANS B These procedures assume:  
DAP 1. All DEORB PREP completed  
2. DEORBIT BURN completed up to but  
not including SINGLE APU START,  
3-10. If activities not complete,  
do them during troubleshooting  
time

P C3 MSTR MADS PWR - OFF  
R2 ✓APU/HYD SHUTDOWN COMPLETE  
✓HYD MN PUMP PRESS (three) - NORM

C MCC UPDATE:  
DEL PAD  
PRPLT PAD  
MCC UPLINK:  
PASS TGT  
BFS TGT

C CRT2 **GNC. OPS 302 PRO**  
**FINAL DEORB UPDATE/UPLINK**

C MCC UPDATE:  
DEL PAD  
PRPLT PAD  
MCC UPLINK:  
PASS SV  
BFS SV  
PASS TGT  
BFS TGT  
BFS IMU GYRO/ACCEL  
On MCC GO,

CRT1 LOAD - ITEM 22 EXEC  
ST CRT TMR - ITEM 23 EXEC

CRT ✓PASS & BFS TGTS per DEL PAD:  
1,3 BURN ATT  
ΔVTOT  
TGO  
HA HP

1-ORR  
LATE

1: GNC DEORB MNVR EXEC    2: GNC DEORB MNVR EXEC  
3: BFS, GNC DEORB MNVR EXEC

**TIG-10 ▶ MNVR TO 1-ORBIT LATE DEORB ATT**

C F7/F8 ✓FLT CNTLR PWR (two) - ON  
B F6/F8 ✓ADI ATT (two) - INRTL  
          ✓ERR (two) - MED  
          ✓RATE (two) - MED

C MNVR to BURN ATT  
(✓ADI ATT with CRT BURN ATT)

B Copy last DEL PAD and OMS PRPLT PAD  
data on DEORBIT BURN Cue Cards

F6/F8 ✓DEORBIT BURN and DEORBIT BURN  
MONITOR Cue Cards installed

3: BFS, SM SYS SIMM 2

R2 HYD MN PUMP PRESS (three) - LO

Return to DEORBIT BURN, SINGLE APU  
START, 3-10

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## LOSS OF FLASH EVAPORATOR SYSTEM DEORBIT BURN

SUMMARY

This is a stand alone section. It joins the nominal ENTRY MANEUVERS Cue Cards at  $\bar{q} = 10$

All activities are tagged to the Event of TIG regardless if TIG is slipped or if TIG is one orbit late. AOS/LOS times are not included

- TIG-40 Freon Loop 1 off 20 min prior to PORT PLBD closing
- TIG-25 Activate 1 Hyd Circ Pump for a heat sink
- TIG-24 No OMS TVC GIMBAL CHECK. DPS config for GPC 1,3, and 5
- TIG-20 Close PORT PLBD
- TIG-19 Mnvr to Deorbit Burn Att
- TIG-11 Freon Loop 1 back on. Freon Loop 2 off so STBD PLBD will be cool at closing
- TIG-7 Close STBD PLBD. APU start delayed to EI-5. Turn on 2nd CRT
- TIG-5 Switch Hyd Circ Pumps
- TIG The Ground will supply targets (TIG, #) that will minimize freefall. One OMS downmoding is maintained but RCS downmoding is not
- TIG+5 (EI-16 if 7 min slip) Freon Loop 2 back on (two loop flow). Switch Hyd Circ Pumps
- EI-12 Fwd RCS dump may be reqd
- EI-5 FCS CHs to ORIDE. Circ Pumps off. PLT's Instr on. Start APUs
- EI-2 OPS 304 PRO
- EI Activate NH3 Controller
- $\bar{q} = 10$  Go to Nominal ENTRY MANEUVERS Cue Cards, with following P&I changes already made:
- V = 15K Activate two TACANS, one RA
- V = 9k Bypass Rads (when heat sink used up)

LOSS OF  
FCS D/O

1: OFF

2: OFF

3: GNC DEORB MNVR COAST

- B Use two CRTs to verify TGTs, return to one ASAP, CRT 3 preferred

1: GNC DEORB MNVR COAST

3: BFS, GNC DEORB MNVR COAST

**B FINAL DEORB UPDATE/UPLINK**

MCC UPDATE:

DEL PAD

OMS PRPLT PAD

MCC UPLINK:

PASS SV

BFS SV

PASS TGT

BFS TGT

BFS IMU GYRO/ACCEL

On MCC GO,

- C CRT1 LOAD - ITEM 22 EXEC  
TIMER - ITEM 23 EXEC

CRT1,3 ✓PASS & BFS TGTs per DEL PAD:

BURN ATT

$\Delta$ VTOT

TGD

HA HP

TIG-40 C L1 FREON LOOP 1 - OFF

LOSS OF  
FES D/O



1: OFF

2: OFF

3: GNC DEORB MNVR COAST

## C OMS BURN PREP

CRT2 OMS ENG TRIMS

2 ENG BURN:

TRIM LOAD L,R - ITEM 6 +0.0  
-5.7 +5.7 EXEC

..1 ENG BURN.....  
 . TRIM P - ITEM 6 +0.0 EXEC .  
 . Good eng Y, .  
 . L - ITEM 7 +5.2 EXEC .  
 . R - ITEM 8 -5.2 EXEC .  
 .....

P 08

L,R OMS

✓He PRESS/VAP ISOL (four) - CL

✓TK ISOL (four) - OP (tb-OP)

✓XFEED (four) - CL (tb-CL)

FWD RCS

He PRESS (two) - OP (tb-OP)

07

AFT L,R RCS

He PRESS (four) - OP (tb-OP)

TK ISOL (six) - GPC (tb-OP)

XFEED (four) - GPC (tb-CL)

✓MSTR RCS XFEED - OFF

..... RCS BURN PREP .....

P 08

L,R OMS

✓He PRESS/VAP ISOL (four) - CL .

✓TK ISOL (four) - OP (tb-OP) .

L OMS XFEED (two) - OP (tb-OP) .

✓R OMS XFEED (two) - CL (tb-CL) .

07

AFT L,R RCS

XFEED (four) - OP (tb-OP) .

TK ISOL (six) - CL (tb-CL) .  
 .....

1: OFF	2: OFF
3: GNC DEORB MNVR COAST	

**MCC/CREW GO/NO GO for DEORBIT BURN**

TIG-25 • **ACTIVATE HYD CIRC PUMP**

P R2 HYD CIRC PUMP 1 - ON

TIG-24 • **NO FES DPS ENTRY CONFIG**

1. ACTIVATE GPC 3

C 06 GPC PWR 3 - ON  
 ✓OUTPUT 3 - NORM  
 MODE 3 - STBY (tb-bp), then  
 - RUN (tb-RUN)

2. REASSIGN GPC 1 & TRANSITION GPC 3 TO OPS 3

CRT3 3: GNC 0 GPC MEMORY  
 CONFIG - ITEM 1 + 3 EXEC

Modify MC3 per Table

Config	3
GPC	10300
STR 1	1
2	3
3	3
4	1
PL 1/2	1
CRT 1	1
2	3
3	3
4	0
L 1	0
2	0
MM 1	1
2	3

1: OFF 2: OFF

3: GNC DEORB MNVR COAST

**GNC OPS 301 PRO (DAP)**

C3

3: GNC DEORB MNVR COAST

BFC CRT DISP - ON

3: BFS, DEORB MNVR COAST

CRT 3 BFS, GNC I/O RESET EXEC

B Use two CRTs from now on

1: GNC DEORB MNVR COAST

3: BFS, DEORB MNVR COAST

**VENT DOOR CLOSE**

**NOTE**

If OMS/RCS He or TK PRESS leak,  
do not perform this procedure

1: GNC S1 OVERRIDE

CRT2 VENT DOOR CNTL CL - ITEM 23 EXEC

1: GNC DEORB MNVR COAST

...If BFS.....  
:  
: 3: BFS, GNC S1 OVERRIDE :  
: CRT2 VENT DOOR CL - ITEM 5 EXEC :  
:.....

C CRT1 **GNC OPS 302 PRO**

1: GNC DEORB MNVR EXEC 2: OFF

3: BFS, GNC DEORB MNVR EXEC

**TIG-20 ► CLOSE PORT PL BAY DOOR**

3: BFS, SM 63 PL BAY DOOR

- ✓PBD SW - STOP
- AC PWR ON - ITEM 1 EXEC
- ✓OP/CL STATUS (ten) - OP
- PBD SW BYP - ITEM 14 EXEC

1: GNC DEORB MNVR EXEC 2: OFF  
3: BFS, GNC DEORB MNVR EXEC

CLOSE PORT DOOR TO 'CL'

- If no 'CL', verify PORT(STBD) •
- AFT DOOR CL MICRO - sw STAT •
- is a '1' or port door scallop •
- is on or below top of target •
- If verified, continue normal •
- PLBD close •
- If not verified, go to •
- DEORB PREP, CONTINGENCY •
- PLBD CLOSURE •

CLOSE PORT FWD/AFT LATCH GROUPS  
& DOOR

PBD SW BYP - ITEM 16 (STOP) EXEC  
AC PWR OFF - ITEM 2 EXEC

**TIG-19 • MNVR to DEORBIT BURN ATT**

- B F7/F8 FLT CNTLR PWR (two) - ON  
F6/F8 ✓ADI ATT (two) - INRTL  
      ✓ERR (two) - MED  
      ✓RATE (two) - MED
- C CRT1 MNVR to BURN ATT  
(✓ADI ATT with CRT BURN ATT)

TIG-17 B Copy last DEL PAD and OMS PRPLT  
PAD data on DEORBIT BURN Cue Card

F6/F8 ✓DEORBIT BURN and DEORBIT BURN  
MONITOR Cue Cards installed

- MS2 Stow WIRELESS HEADSETS
- A15 PS COMM CCU PWR - OFF  
Disconnect TPR Cable  
Connect MS2 Comm Cable  
PS COMM CCU PWR - ON

MS1,MS2 SEAT INGRESS

1: GNC DEORB MNVR EXEC	2: OFF
3: BFS, GNC DEORB MNVR EXEC	

### TIG-11 SWITCH LOOPS

- C L1 FREON PUMP LOOP 1 - A  
2 - OFF  
Set Event Timer to count down 16 min  
When 16 min elapsed, perform TWO  
LOOP FLOW/SWITCH CIRC PUMPS, 7-12

### TIG-7 • CLOSE STBD PL BAY DOOR

P C3 BFC CRT DISP - ON  
3: BFS, SM 63 PL BAY DOORS

- ✓ PBD SW - STOP
- AC PWR ON - ITEM 1 EXEC
- ✓ PORT DOOR, LATCHES (three) - CL
- PBD SW BYP - ITEM 14 EXEC

CLOSE STBD DOOR TO 'RDY'  
CLOSE STBD FWD/AFT LATCH GROUPS  
& DOOR

CLOSE c1 LATCH GROUPS  
(1-4 & 13-16, then 5-8 & 9-12)

PBD SW BYP - ITEM 16 (STOP) EXEC  
AC PWR OFF - ITEM 2 EXEC  
Ref DEORB PREP, NOMINAL DEORBIT PREP.  
DETAILED PLBD CLOSING PROCEDURES,  
3-24, if reqd

#### NOTE

- If stbd door does not close
- properly, open stbd door.
- pwr down GPC 3, use one CRT.
- turn off circ pump; go to
- 1-ORBIT LATE DEORBIT, 6-1.
- and return to these proce-
- dures at TIG-24 or call MCC
- on Deorbit Delay of 24 hr

1: GNC DEORB MNVR EXEC 2: OFF

3: SM 63 PL BAY DOORS

3: BFS, GNC SYS SUMM 2

TIG-5 • P R2 HYD CIRC PUMP 1 - OFF  
PUMP 2 - ON

.....  
.P 07/08 Terminate RCS/RCS XFEED or  
. terminate OMS/RCS Interconnect  
. unless RCS Deorbit  
.....

C ✓BURN ATT + 50  
B Go to DEORBIT BURN Cue Card

- **If no OMS IGNITION at TIG:** \*
- OMS ENG (two) - OFF \*
- ✓APUs - SHUT DN \*
- GNC, OPS 301 PRO \*
- Consult with MCC at next STDN \*
  
- **If Burn terminated with HP - SAFE HP:** \*
- ✓OMS ENG (two) - OFF \*
- GNC, OPS 301 PRO \*
- 07 AFT L,R RCS \*
- He PRESS A (two) - GPC (tb-OP) \*
- B (two) - CL (tb-CL) \*
- TK ISOL (six) - OP (tb-OP) \*
- XFEED (four) - CL (tb-CL) \*
- 08 FWD RCS \*
- He PRESS A - GPC (tb-OP) \*
- B - CL (tb-CL) \*
- Consult with MCC at next STDN on \*
- DEORBIT DELAY of 24 HR \*

1: GNC DEORB MNVR EXEC 2: OFF

3: BFS, GNC SYS SUMM 2

### OMS/RCS POST BURN RECONFIGURATION

- P 07 AFT L,R RCS  
✓He PRESS (four) - OP (tb-OP)  
✓TK ISOL (six) - GPC (tb-OP)  
✓XFEED (four) - GPC (tb-CL)
- 03 RCS/OMS PRESS sel - RCS as reqd  
PRPLT QTY sel - RCS as reqd
- 08 L,R OMS  
He PRESS/VAP ISOL (four) - CL  
✓TK ISOL (four) - OP (tb-OP)
- If OMS PRPLT FAIL. •
  - ✓affected TK ISOL (two) - CL •
- F8 XFEED (four) - CL (tb-CL)  
FLT CNTLR PWR - OFF
- **UNDERBURN** •
  - •
  - Determine  $\Delta$ HP •
  - (CUR HP - TGT HP) •
  - If  $\Delta$ HP > 2: •
  - Use PREBANK TABLE •

I: GNC DEORB MNVR EXEC 2: OFF

3: BFS, GNC SYS SUMM 2

• **PREBANK TABLE (NOMINAL) HA = 118 nm** •

$\Delta$ HP	2	5	8	11	13		
PREBANK (deg)	23	46	59	70	78		
Continue to EDW							

$\Delta$ HP	14	16	18	20	25	30	35
PREBANK (deg)	45	52	60	67	83	102	133
Redesignate to NOR							
TACAN MODE (three) - T/R							
CH tw (three) - 69X							

**PREBANK TABLE**

$\Delta$ HP							
PREBANK (deg)							
Continue to EDW							

$\Delta$ HP							
PREBANK (deg)							
Redesignate to NOR							
TACAN MODE (three) - T/R							
CH tw (three) - 69X							

• Record UNDERBURN prebank on 7-19 •

**POST BURN STATUS**

NOMINAL

$\Delta$  TIG

	:		
--	---	--	--

C CRT1

**GNC OPS 303 PRO**

I: GNC DEORB MNVR COAST



1: GNC DEORB MNVR COAST	2: OFF
3: BFS, GNC SYS SUMM 2	

C CRT1 Verify or load INRTL EI-2 MM303 ATT  
from DEL PAD:

R - ITEM 24	+	<table border="1"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>										<table border="1"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>									
P - ITEM 25	+	<table border="1"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>										<table border="1"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>									
Y - ITEM 26	+	<table border="1"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>										<table border="1"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>									

CRT1 MNVR to EI-2 ATT

- If UNDERBURN, ignore INRTL ATT ERR •
- needles and Mnvr to LVLH R 001, •
- Y 358 and P per table below •

TIME to EI (min)	LVLH PITCH (deg)
20	327
	331
	335
	339
	343
15	347
	351
	355
	359
	3
10	7
	11
	15
	19
	23
5	27
	31
	35
2	39

1: GNC DEORB MNVR COAST 2: OFF

3: BFS, GNC SYS SUMM 2

## TWO LOOP FLOW/SWITCH CIRC PUMPS

EVENT ► C L1 FREON PUMP LOOP 2 - A  
TIMER P R2 HYD CIRC PUMP 2 - OFF  
ZERO PUMP 3 - ON

### C OMS GIMBAL PWRDN (if PASS)

Verify gimbal positions:

	L	R
P	+5.9	+5.9
Y	+6.4	-6.4

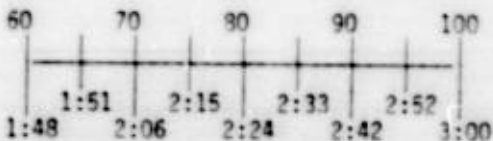
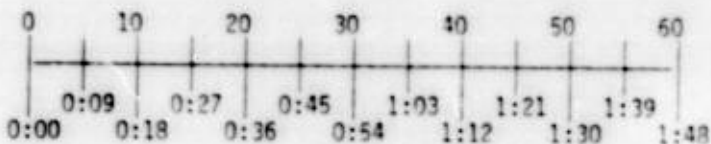
CRT1 GMBL OFF - ITEM 32 EXEC  
- ITEM 33 EXEC

EI-12 ► P **FORWARD RCS DUMP** (use for off-nominal  
X cg entry)

Determine FWD RCS 'DUMP TO %' (calculator,  
cg wheel, or DEL PAD)

### FOUR JET DUMP:

F RCS PRPLT TO BE DUMPED (%)

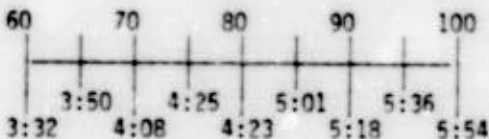
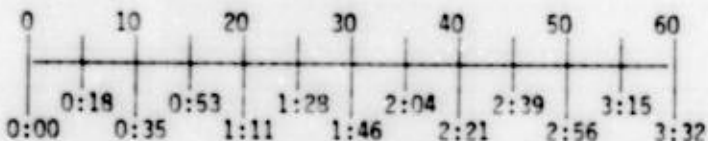


TIME FROM DUMP INITIATION (M:S)

1: GNC DEORB MNRV COAST	2: OFF
3: BFS, GNC SYS SUMM 2	

TWO JET DUMP:

F RCS PRPLT TO BE DUMPED (%)



TIME FROM DUMP INITIATION (M:S)

CRT2 F RCS ARM - ITEM 36 EXEC  
DUMP - ITEM 37 EXEC  
(Start watch)  
When required:  
OFF - ITEM 38 EXEC

When dump complete:  
08 FWD RCS  
MANF ISOL (five) - CL (tb-CL)

1: GNC DEORB MNVR COAST	2: OFF
3: BFS, GNC SYS SUMM 2	

### ENTRY SW CHECK

- P 07    ✓TACAN MODE (three)    - OFF  
           ✓ANT SEL (three)    - AUTO  
           ✓TACAN CH (three)    - \*\*\*\*\*
- SITE: EDW    STA: EDW \*\*\*\*\*: 111X  
                   HNL            HNL            100X  
                   KAD            KAD            057X  
                   KSC            TTS            059Y  
                   NOR            SNG            069X  
                   NOR REDES    SNG            069X  
                   ROTA            AOG            023X  
                   DAKAR          YOF            068X
- 08    ✓RADAR ALTM (two)    - OFF  
           ✓MLS (three)        - OFF
- C L2    ✓CAB RELIEF A,B    - ENA (tb-ENA)  
           ✓ANTISKID            - ON  
           ✓NWS                - OFF  
           ✓ENTRY MODE        - AUTO
- |                    |
|--------------------|
| 3: GNC 51 OVERRIDE |
|--------------------|
- ✓ENTRY R MODE SW - AUTO
- B L2/C3 ✓SPD BK    - RET
- P C3    ✓SRB SEP    - AUTO  
           ✓ET SEP    - AUTO
- B F6/F8 ✓AIR DATA - NAV  
           ADI ERR    - MED  
           RATE       - MED  
           ✓HSI SEL MODE - ENTRY
- C F6            ✓SOURCE (two) - NAV, 1
- P F8            ✓SOURCE (two) - NAV, 2
- B F3    ✓TRIM RHC/PNL (two) - INH  
           ✓PNL (two)        - ON
- C F6    ✓RAUJAR ALTM - 1
- P FR            ALTM - 1 (due to pwrdown)



1: GNC 50 HORIZ SIT | 2: OFF  
3: BFS, GNC 50 HORIZ SIT

- C If payload undeployed: •
- | 3: GNC 53 ENTRY CONTROLS | •
- ASC FCS - ITEM 32 EXEC •
- | 3: BFS, GNC 51 OVERRIDE | •
- ASC FCS - ITEM 15 EXEC •

- If BFS engaged: •
- Set HSD BFS ITEMS to PASS Config •
- Any failed TACANs: leave OFF at •
- V = 15K activation time •

- If IMU has failed: •
- | 2: GNC 51 OVERRIDE | •
- | 3: BFS, GNC 51 OVERRIDE | •
- DES any failed IMUs in BFS •

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

C  
B

Remove, stow in pocket:  
Panel Jettison T-Handle Pin  
Stow DEORBIT BURN and DEORBIT BURN  
MONITOR Cards

• ENTRY MANEUVERS Cue Cards installed

- If 8 psi cabin pressure entry, •
- ALL ✓LEH visor down •

### G SUIT INFLATION

ALL Load - 1.5 (3 turns CW) (if reqd) |

### FCS. INST PWR ON/CIRC PUMPS OFF

P C3 ▶ ASAP within 3 sec:  
FCS CH 4,3,2,1 (four) - ORIDE

R2 HYD CIRC PUMP 3 - OFF  
✓PUMP 1,2 (two) - OFF

F8 INST PWR - ON

### EI-6 ▶ APU PRE START

R4 ✓HYD LG HYD ISOL VLV (three) tb - CL

- \* If tb not CL, \*
- \* R2 Affected HYD CIRC PUMP - ON \*
- \* R4 LG HYD ISOL VLV - CL \*
- \* (tb-CL) \*
- \* R2 CIRC PUMP - OFF \*

R4 ✓HYD LG RET/CIRC VLV - CL

R2 BLR N2 SPLV (three) - ON  
✓CNTLR (three) - ON  
✓CNTLR PWR/HTR (three) - A  
✓APU FUEL TK VLV (three) - CL  
CNTLR PWR (three) - ON  
HYD MN PUMP PRESS (three) - LO  
✓APU AUTO SHUT DN - ENA  
✓SPEED SEL (three) - NORM  
✓CNTL (three) - OFF

EI-5

### APU START

- P R2 APU FUEL TK VLV (three) - OP  
✓APU/HYD RDY tb (three) - gray
- If tb - bp, attempt normal
  - start

- F8 APU CNTL 1 - START/RUN  
R2 ✓HYD PRESS 1 ind - LO green  
✓APU/HYD RDY 1 tb - bp
- If no start,
  - APU CNTL - OFF
  - Start other APUs

- F8 HYD MN PUMP PRESS 1 - NORM  
✓PRESS 1 ind - HI green

Repeat for APU 2, then APU 3

- If APU did not start normally,
- APU CNTL - START ORIDE/RUN
- (Wait 3:30 for APU start)
- If no APU start:
- APU AUTO SHUT DN - INH
- If OIL OUT P < 25 and OIL OUT
- TEMP not increasing after APU
- start or no start:
- APU CNTL - OFF
- FUEL TK VLV - CL

- R2 ✓HYD CIRC PUMP (three) - OFF

- If only one APU running:
- Just prior to transition
- Good HYD MN PUMP PRESS - NORM
- APU SPEED SEL - HI



1: GNC DEORB MNVR COAST 2: OFF  
3: BFS, SM SYS SUMM 2

### PRE EI CHECKLIST

EI-2                    ✓ADI ATT - LVLH  
                         Mnvr to R 001, P 039, Y 358  
C CRT1                **GNC. OPS 304 PRO**

1: GNC ENTRY TRAJ 1  
3: BFS, GNC ENTRY TRAJ 1

ADI    ✓ENTRY ATT (R 000, P 040, Y 000)  
F2     ✓SPDBK/THROT pb - AUTO  
         ✓PITCH pb        - AUTO (PASS)  
         ✓ROLL/YAW pb     - AUTO (PASS)  
                              (CSS if PREBANK)  
         ✓BDY FLP pb     - AUTO (PASS)

\* PREBANK                                          \*  
\* (DEL PAD)                    \*  
\* or                            \*  
\* If UNDERBURN - Adjust Roll, 7-10 \*  
\*                                \*  
\*                                                      \*  
\*                                \*  
\*                                \*  
\* Roll toward PRI BRG Pointer at    \*  
\* 10/sec                        \*

1: GNC ENTRY TRAJ I	2: OFF
3: BFS, GNC ENTRY TRAJ I	

P OB FWD RCS  
MANF ISOL (five) - CL (tb-CL)  
√He PRESS (two) - OP (tb-OP)

h = 400K

**EI NH3 ACT**

C NH3 CNTLR A(B) - PRI/GPC

\* If Prebank reqd: √Roll \*

$\dot{q}$  = 0.5

√Auto elevon trim

$\dot{q}$  = 2

√Elevons active

B

Use 2 INST, FLT CNTLR PWR from  
now on

√P&I Accomplished

At V = 15K: Activate two TACANS,  
one RA

At V = 9K: Bypass Rads

$\dot{q}$  = 10

Roll jets inactive

Go to ENTRY MANEUVERS Cue Cards,

$\dot{q}$  = 10