ENTRY CHECKLIST

STS 8

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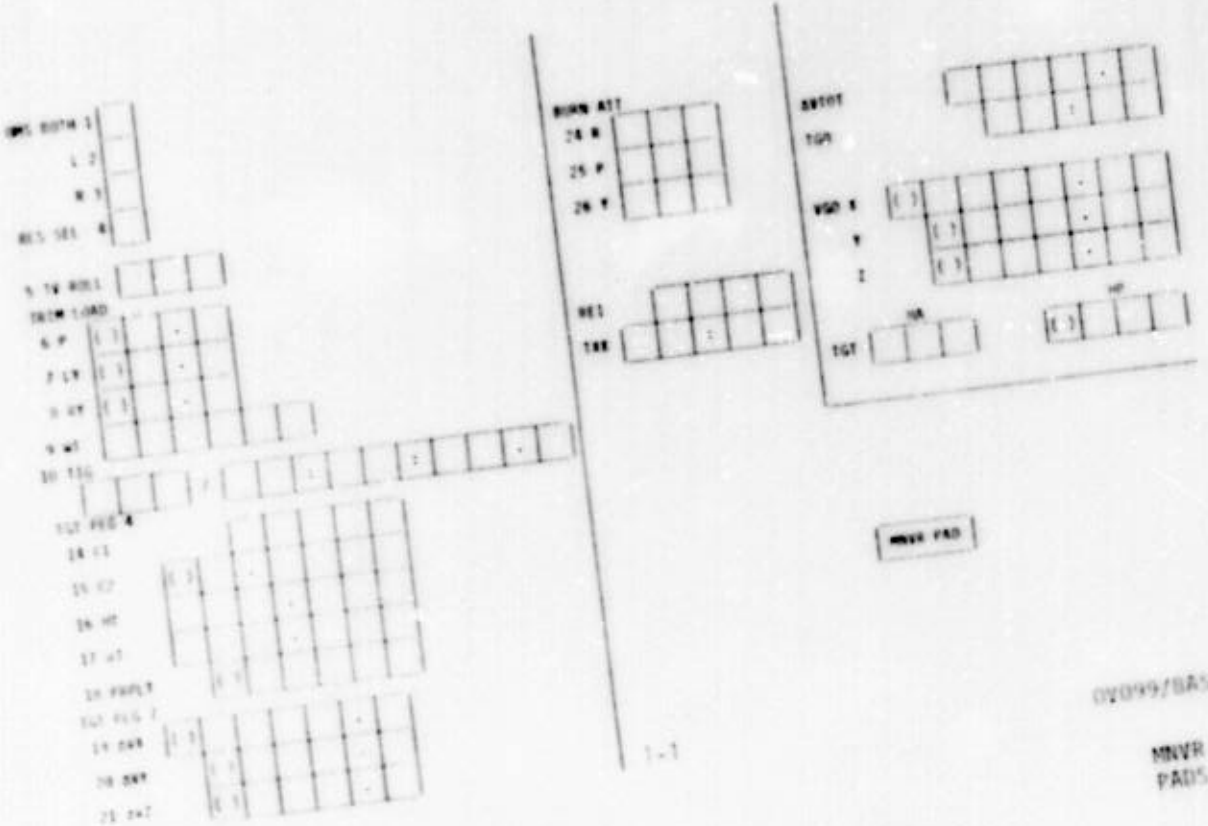
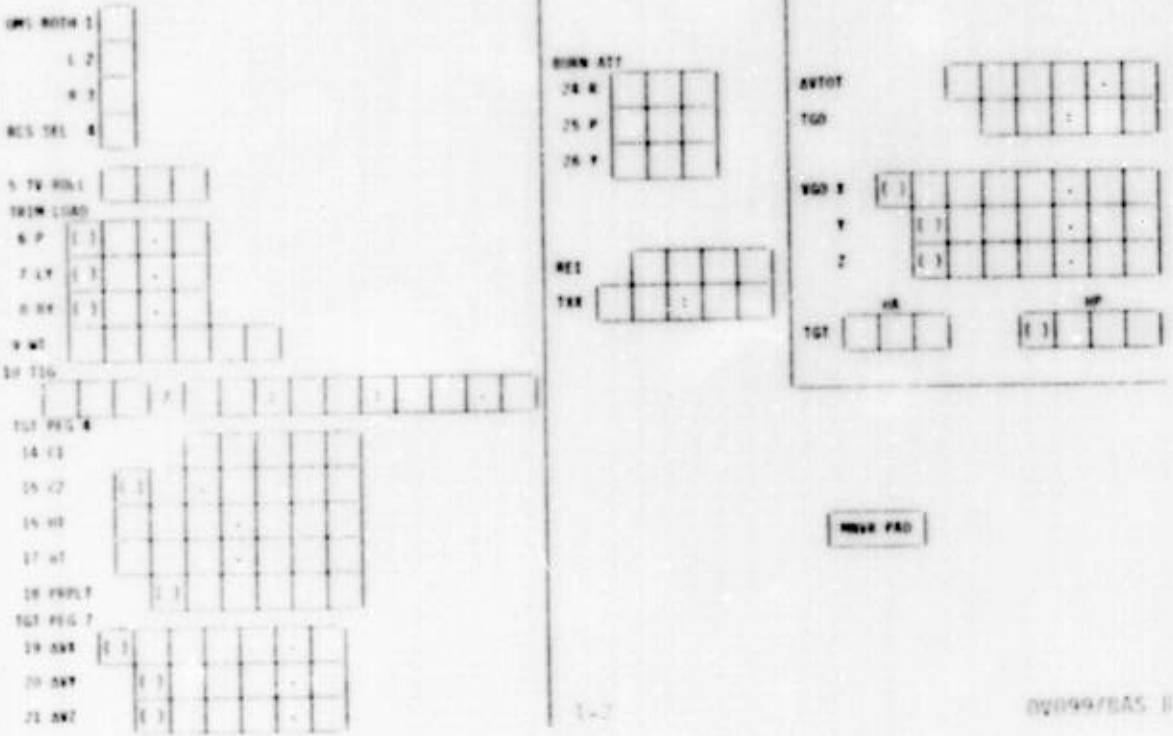


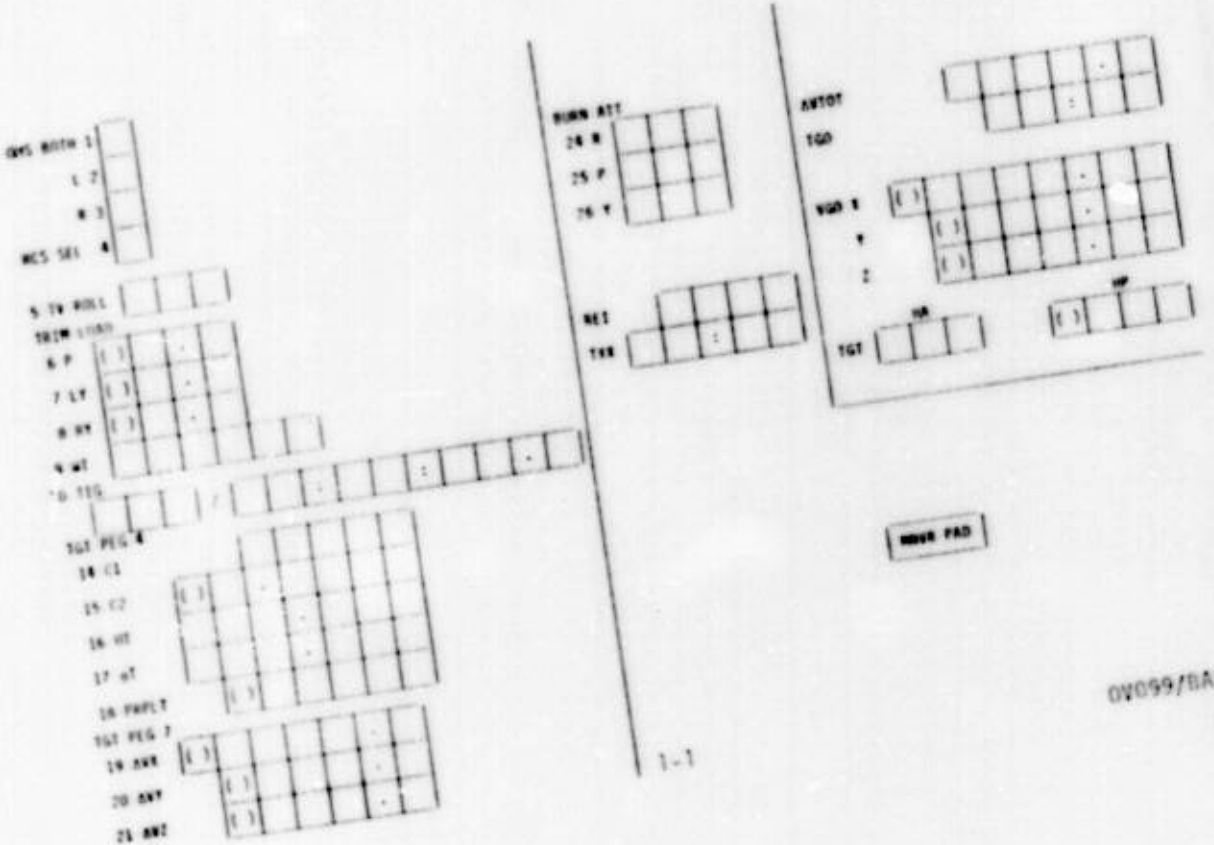
02099/BAS B

1-1

MNVR
PADS

MNVR
PADS





GMS BOTH 1
L 2
R 3
RCS SEL 4

5 TV ROLL
TRIM LOAD
6 P
7 LY
8 RY
9 WT
10 TIG

TGT PEG 4
14 C1
15 C2
16 HT
17 WT
18 PRPLT

TGT PEG 7
19 ΔVX
20 ΔVY
21 ΔVZ

BURN ATT
24 R
25 P
26 Y

REI
TVX

ΔVTOT
TGO

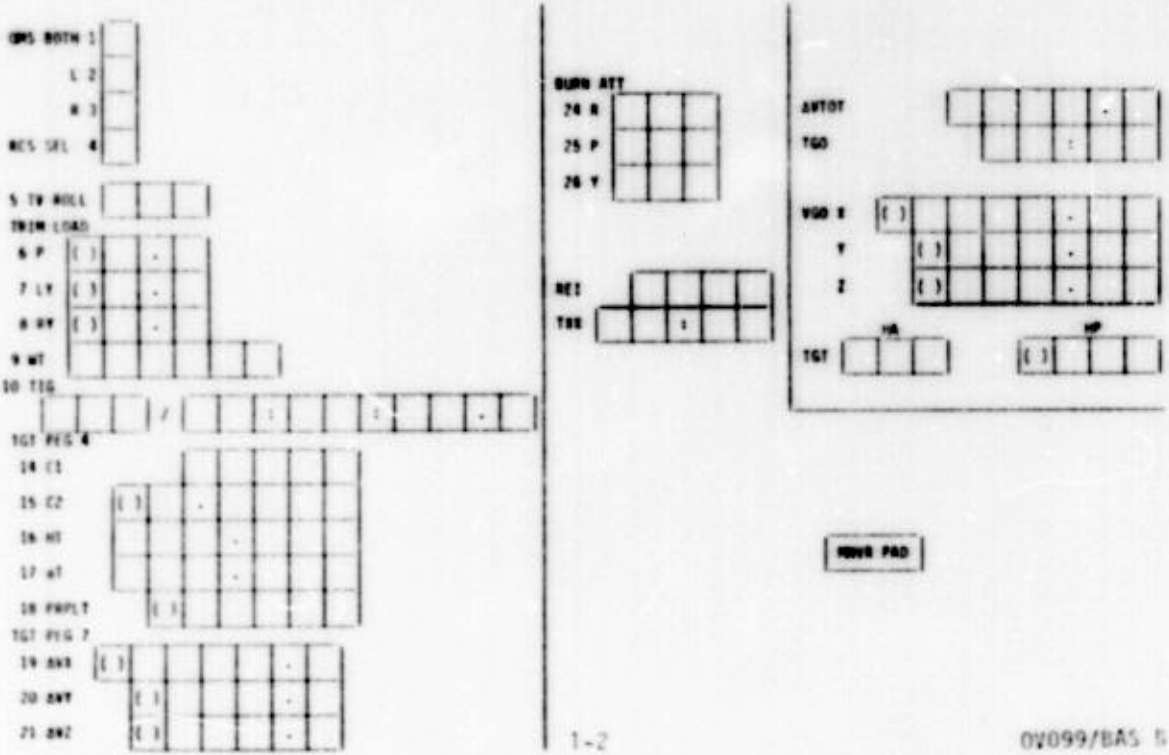
VGO X
Y
Z

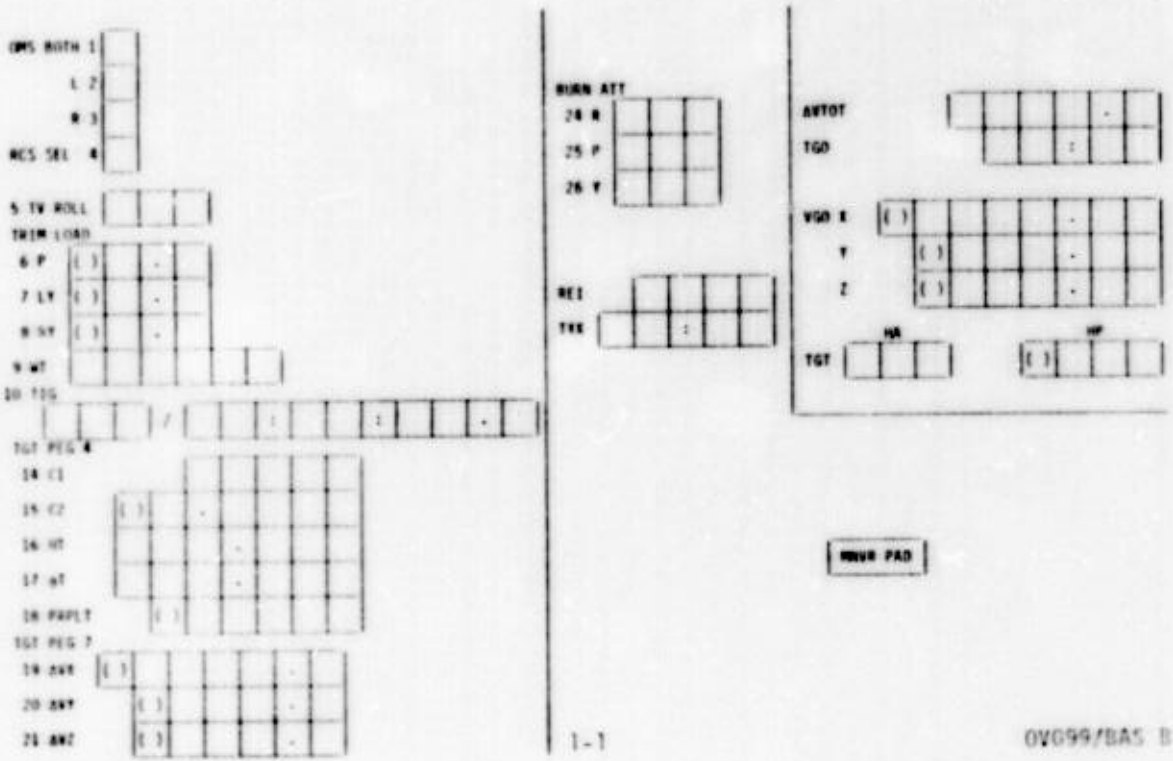
TGT

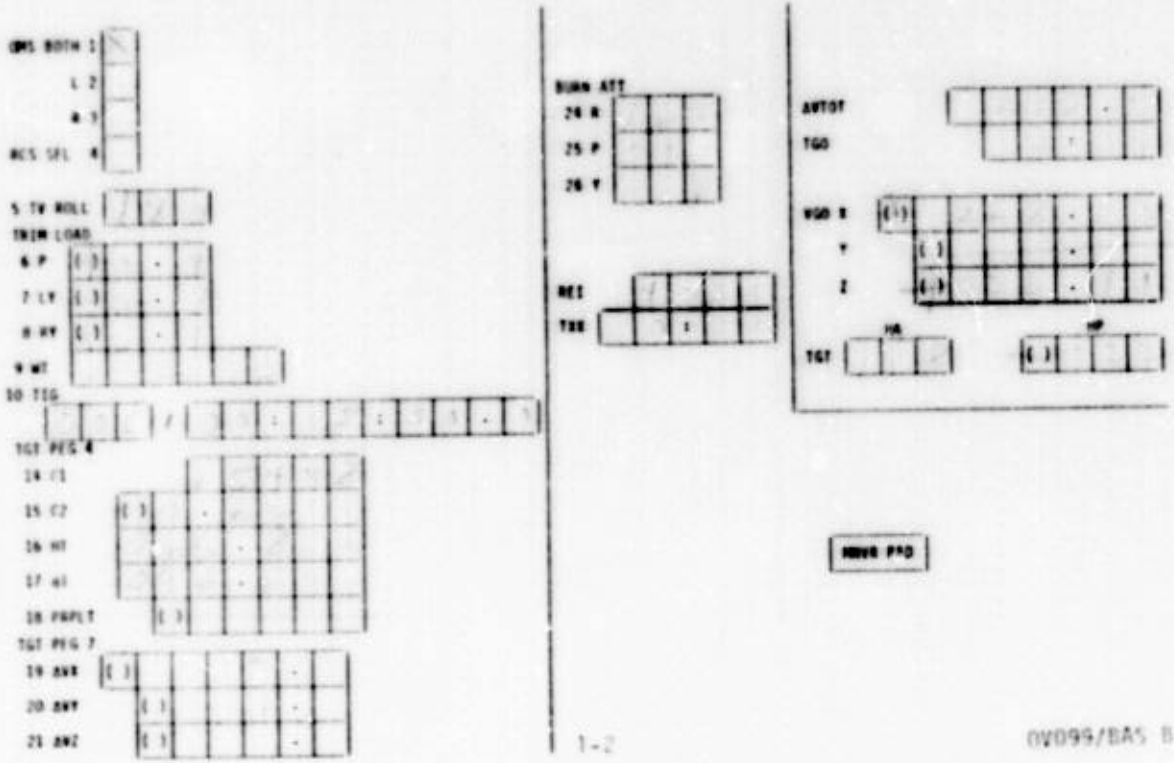
MOVE PAD

1-1

OV099/BAS B


QMS BOTH 1
L 2
R 3
RCS SEL 4
5 TV ROLL
TRIM LOAD
6 P
7 LY
8 RY
9 WT
10 TIG
TGT PEG 4
14 C1
15 C2
16 HT
17 aT
18 PRPLT
TGT PEG 7
19 ΔVX
20 ΔVY
21 ΔVZ
BURN ATT
24 R
25 P
26 Y
REI
TXX
ΔVTOT
TGO
VGO X
Y
Z
HA
HP
TGT
POWER PAD


OMS BOTH 1
L 2
R 3
RCS SEL 4
5 TV ROLL
TRIM LOAD
6 P
7 LY
8 NY
9 WT
10 TIG
TGT PEG 6
14 C1
15 C2
16 HT
17 WT
18 PAPLT
TGT PEG 7
19 ΔVX
20 ΔVY
21 ΔVZ
BURN ATT
24 R
25 P
26 Y
REI
TYE
ΔVTOT
TGO
VGO X
Y
Z
TGT
HA
HP
MNVR PAD
1-1
OVG99/BAS B



OMS BOTH 1
L 2
R 3
RCS SEL 4
5 TV ROLL
TRIM LOAD
6 P
7 LY
8 RY
9 WT
10 TIG
TGT PEG 4
14 C1
15 C2
16 HT
17 a1
18 PRPLT
TGT PEG 7
19 ΔVX
20 ΔVY
21 ΔVZ
BURN ATT
24 R
25 P
26 Y
REI
TXX
ΔVTOT
TGO
VGO X
Y
Z
TGT
HA
HP
NOUN PAD

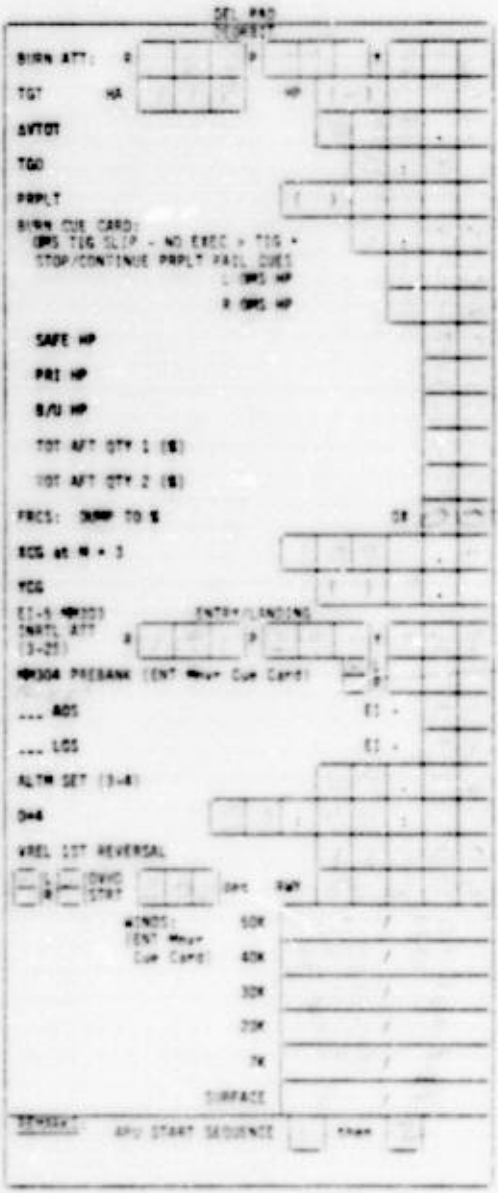
PRPLT/
DEL

OMS PRPLT AND DEL RADS

PRPLT/
DEL

OMS PRPLT PAD

BURN CARD	XFEED CUE
DEORBIT BURN (2 ENG)	OMS ENG FAIL ☐☐ %L ☐☐ %R
DEORBIT BURN (1 ENG)	OMS XFEED ☐☐☐ ΔVTOT ☐☐ %
	OMS TK SW ☐☐☐ ΔVTOT
DEORBIT BURN (RCS)	OMS TK SW ☐☐☐ ΔVTOT OMS PRPLT LOW ☐☐☐ ΔVTOT
UNBALANCED PRPLT DEORBIT BURN	BEFORE 1 POD FEED OMS ENG FAIL (XFEED) ΔVTOT ☐☐☐ ☐☐☐ %L ☐☐☐ %R
	DURING 1 POD FEED START 1 POD FEED ☐☐☐ ΔVTOT ☐ TK ISOLS CL OMS ENG FAIL (XFEED) ☐ TK ISOLS OP ☐ TK ISOLS CL ☐☐☐ ΔVTOT ☐☐ % ☐
	AFTER 1 POD FEED STOP 1 POD FEED ☐☐☐ ΔVTOT ☐ TK ISOLS OP OMS ENG FAIL (XFEED) ☐☐ %L ☐☐ %R
DEORBIT BURN (MIXED XFEED)	☐ OMS ENG - ARM/PRESS
	☐☐☐ ΔVTOT: Feed from GOOD POD ☐☐☐ % ☐ OMS He PRESS OP TK ISOLS OP ☐ OMS He PRESS CL TK ISOLS CL
	RCS COMPLETION, OMS ENG FAIL: ☐ OMS XFEEDS OP Feed from GOOD POD at ☐☐☐ ΔVTOT ☐ OMS He PRESS OP TK ISOLS OP ☐ XFEEDS CL



DEL PAD
DESCRIPT

BURN ATT: R P Y

TGT HA HP

ΔVTOT

TGO

PRPLT

BURN CUE CARD:
OMS TIG SLIP - NO EXEC > TIG +
STOP/CONTINUE PRPLT FAIL CUES
L OMS HP
R OMS HP

SAFE HP

PRI HP

B/U HP

TOT AFT QTY 1 (%)

TOT AFT QTY 2 (%)

FRCS: DUMP TO % OR

XCG at M = 3

YCG

EI-5 MM303 ENTRY/LANDING
INRTL ATT
(3-25) R P Y

MM304 PREBANK (ENT Mnvr Cue Card) L R

... AOS EI -

... LOS EI -

ALTM SET (3-4)

D=4

VREL 1ST REVERSAL

L R DVID STRT det RWY

WINDS: (ENT Mnvr Cue Card)
50K /
40K /
30K /
20K /
7K /
SURFACE /

REMARKS: APU START SEQUENCE then

OMS PRPLT PAD

BURN CARD

XFEED CUE

DEORBIT BURN (2 ENG)

OMS ENG FAIL [ ][ ] %L [ ][ ] %R

DEORBIT BURN (1 ENG)

OMS XFEED [ ][ ][ ] ΔVTOT
[ ][ ] %

OMS TK SW [ ][ ][ ] ΔVTOT

DEORBIT BURN (RCS)

OMS TK SW [ ][ ][ ] ΔVTOT

OMS PRPLT LOW [ ][ ][ ] ΔVTOT

UNBALANCED PRPLT DEORBIT BURN

BEFORE 1 POD FEED

OMS ENG FAIL (XFEED) ΔVTOT [ ][ ][ ] [ ][ ][ ]
[ ][ ] %L [ ][ ] %R

DURING 1 POD FEED

START 1 POD FEED [ ][ ][ ] ΔVTOT
[ ] TK ISOLS CL

OMS ENG FAIL (XFEED) [ ] TK ISOLS OP [ ] TK ISOLS CL [ ][ ][ ] ΔVTOT
[ ][ ] % [ ]

AFTER 1 POD FEED

STOP 1 POD FEED [ ][ ][ ] ΔVTOT
[ ] TK ISOLS OP

OMS ENG FAIL (XFEED) [ ][ ] %L [ ][ ] %R

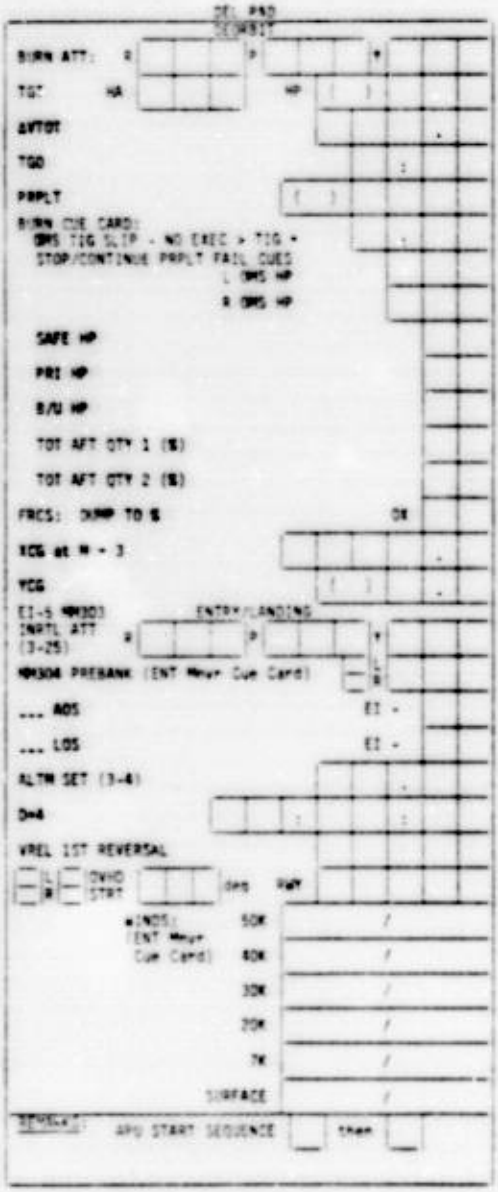
DEORBIT BURN (MIXED XFEED)

[ ] OMS ENG - ARM/PRESS

[ ][ ][ ][ ] ΔVTOT: Feed from GOOD POD
[ ][ ] %
[ ] OMS He PRESS OP
TK ISOLS OP
[ ] OMS He PRESS CL
TK ISOLS CL

RCS COMPLETION, OMS ENG FAIL:

[ ] OMS XFEEDS OP
Feed from GOOD POD at [ ][ ][ ] ΔVTOT
[ ] OMS He PRESS OP
TK ISOLS OP
[ ] XFEEDS CL



DEL PND
DEORBIT

BURN ATT: R P Y

TGT HA HP ( )

ΔVTOT .

TGO :

PRPLT ( )

BURN CUE CARD:
OMS TIG SLIP - NO EXEC > TIG +
STOP/CONTINUE PRPLT FAIL CUES .
L OMS HP
R OMS HP

SAFE HP

PRI HP

B/U HP

TOT AFT QTY 1 (%)

TOT AFT QTY 2 (%)

FRCS: DUMP TO % OK

XCG at M = 3 .

YCG ( ) .

EI-5 MM303 ENTRY/LANDING
INRTL ATT
(3-25) R P Y

MM304 PREBANK (ENT Mnvr Cue Card) L R

... AOS EI -

... LOS EI -

ALTM SET (3-4) .

D=4 : :

VREL 1ST REVERSAL

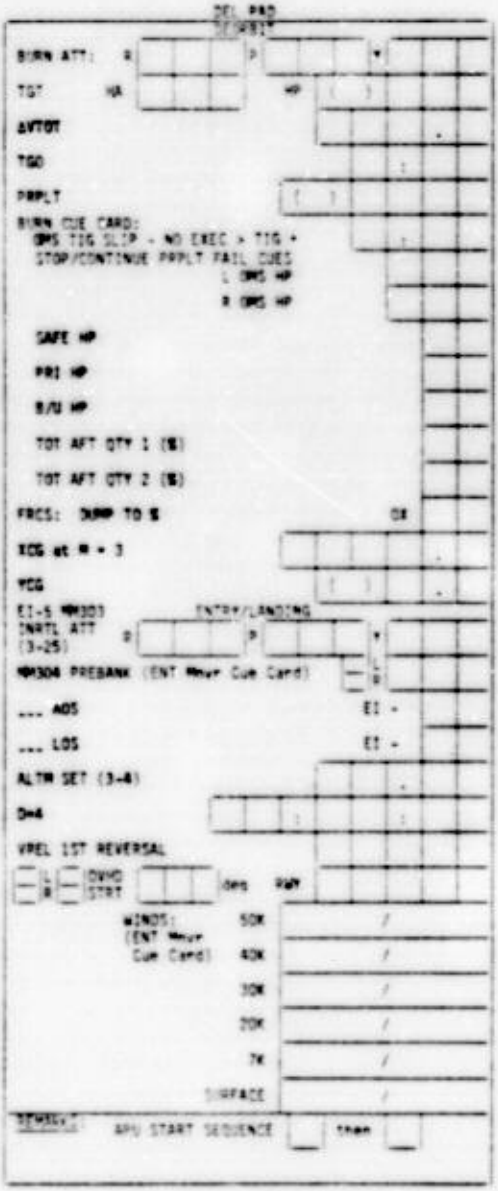
L R OVHD STRT deg RWY

WINDS: (ENT Mnvr Cue Card)
50K /
40K /
30K /
20K /
7K /
SURFACE /

REMARKS: APU START SEQUENCE then

OMS PRPLT PAD

BURN CARD		XFEED CUE
DEORBIT BURN (2 ENG)	OMS ENG FAIL	%L %R
DEORBIT BURN (1 ENG)	OMS XFEED	ΔVTOT %
	OMS TK SW	ΔVTOT
DEORBIT BURN (RCS)	OMS TK SW	ΔVTOT
	OMS PRPLT LOW	ΔVTOT
UNBALANCED PRPLT DEORBIT BURN	BEFORE 1 POD FEED OMS ENG FAIL (XFEED) ΔVTOT	%L %R
	DURING 1 POD FEED START 1 POD FEED	ΔVTOT ☐ TK ISOLS CL
	OMS ENG FAIL (XFEED) ☐ TK ISOLS OP ☐ TK ISOLS CL	ΔVTOT % ☐
	AFTER 1 POD FEED STOP 1 POD FEED	ΔVTOT ☐ TK ISOLS OP
	OMS ENG FAIL (XFEED)	%L %R
DEORBIT BURN (MIXED XFEED)	☐ OMS ENG - ARM/PRESS	
	ΔVTOT: Feed from GOOD POD %	☐ OMS He PRESS OP TK ISOLS OP ☐ OMS He PRESS CL TK ISOLS CL
	RCS COMPLETION, OMS ENG FAIL: ☐ OMS XFEEDS OP Feed from GOOD POD at	ΔVTOT
	☐ OMS He PRESS OP TK ISOLS OP ☐ XFEEDS CL	



DEL PAD
DEORBIT

BURN ATT: R P Y

TGT HA HP ( )

ΔVTOT .

TGO :

PRPLT ( )

BURN CUE CARD:
OMS TIG SLIP - NO EXEC > TIG +
STOP/CONTINUE PRPLT FAIL CUES :
L OMS HP
R OMS HP

SAFE HP

PRI HP

B/U HP

TOT AFT QTY 1 (%)

TOT AFT QTY 2 (%)

FRCS: DUMP TO % OX

XCG at M = 3 .

YCG ( ) .

EI-5 MM303 ENTRY/LANDING
INRTL ATT
(3-25) R P Y

MM304 PREBANK (ENT Mnvr Cue Card) L R

... AOS EI -

... LOS EI -

ALTM SET (3-4) .

D=4 : :

VREL 1ST REVERSAL

L R OVHD STRT deg RWY

WINDS: (ENT Mnvr Cue Card)
50K /
40K /
30K /
20K /
7K /
SURFACE /

REMARKS: APU START SEQUENCE then

OMS PRPLT PAD

BURN CARD

XFEED CUE

DEORBIT BURN (2 ENG)

OMS ENG FAIL [ ] %L [ ] %R

DEORBIT BURN (1 ENG)

OMS XFEED [ ] ΔVTOT [ ] %

OMS TK SW [ ] ΔVTOT

DEORBIT BURN (RCS)

OMS TK SW [ ] ΔVTOT

OMS PRPLT LOW [ ] ΔVTOT

UNBALANCED PRPLT DEORBIT BURN

BEFORE 1 POD FEED

OMS ENG FAIL (XFEED) ΔVTOT [ ] %L [ ] %R

DURING 1 POD FEED

START 1 POD FEED [ ] ΔVTOT

[ ] TK ISOLS CL

OMS ENG FAIL (XFEED) [ ] TK ISOLS OP / TK ISOLS CL [ ] ΔVTOT [ ] % [ ]

AFTER 1 POD FEED

STOP 1 POD FEED [ ] ΔVTOT

[ ] TK ISOLS OP

OMS ENG FAIL (XFEED) [ ] %L [ ] %R

DEORBIT BURN (MIXED XFEED)

[ ] OMS ENG - ARM/PRESS

[ ] % ΔVTOT: Feed from GOOD POD

[ ] OMS He PRESS OP
TK ISOLS OP

[ ] OMS He PRESS CL
TK ISOLS CL

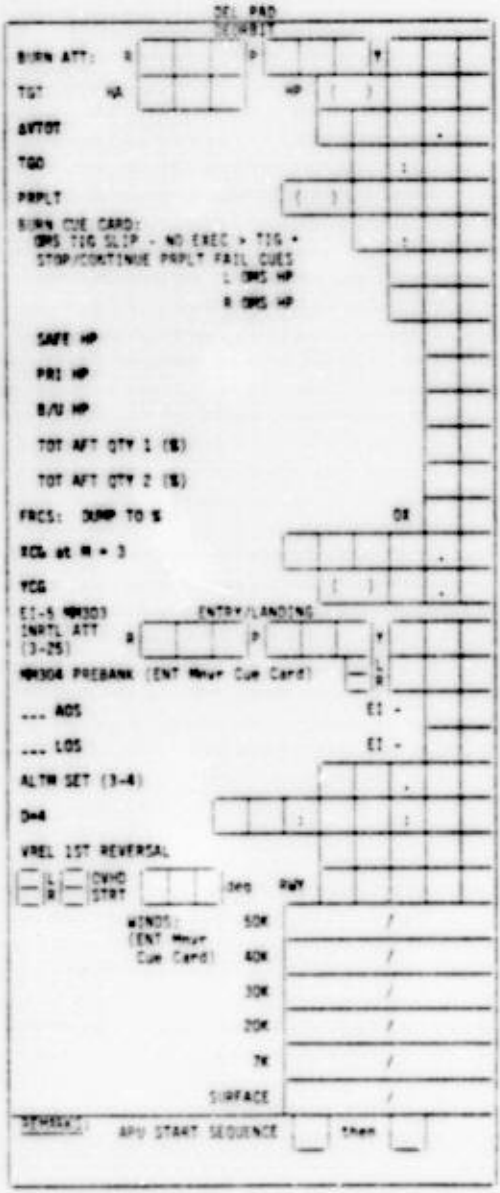
RCS COMPLETION, OMS ENG FAIL:

[ ] OMS XFEEDS OP

Feed from GOOD POD at [ ] ΔVTOT

[ ] OMS He PRESS OP
TK ISOLS OP

[ ] XFEEDS CL



DEL PAD
DEORBIT

BURN ATT: R P Y

TGT HA HP ( )

ΔVTOT .

TGO :

PRPLT ( )

BURN CUE CARD:
OMS TIG SLIP - NO EXEC > TIG +
STOP/CONTINUE PRPLT FAIL CUES :
L OMS HP
R OMS HP

SAFE HP

PRI HP

B/U HP

TOT AFT QTY 1 (%)

TOT AFT QTY 2 (%)

FRCS: DUMP TO % OX

XCG at M = 3 .

YCG ( ) .

EI-5 MM303 ENTRY/LANDING
INRTL ATT
(3-25) R P Y

MM304 PREBANK (ENT Mnvr Cue Card) L R

... AOS EI -

... LOS EI -

ALTM SET (3-4) .

D=4 : :

VREL 1ST REVERSAL

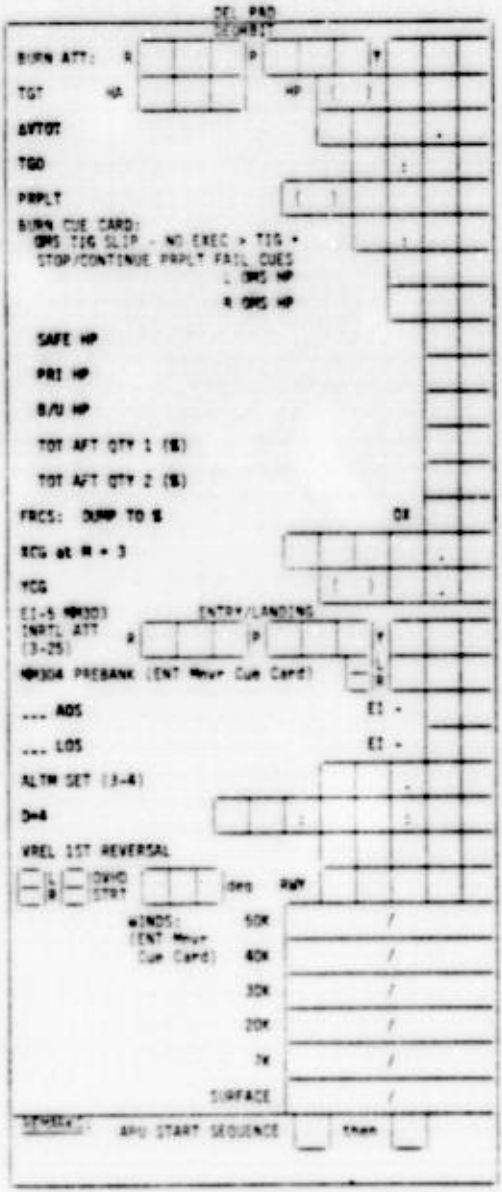
L R OVHD STRT deg RWY

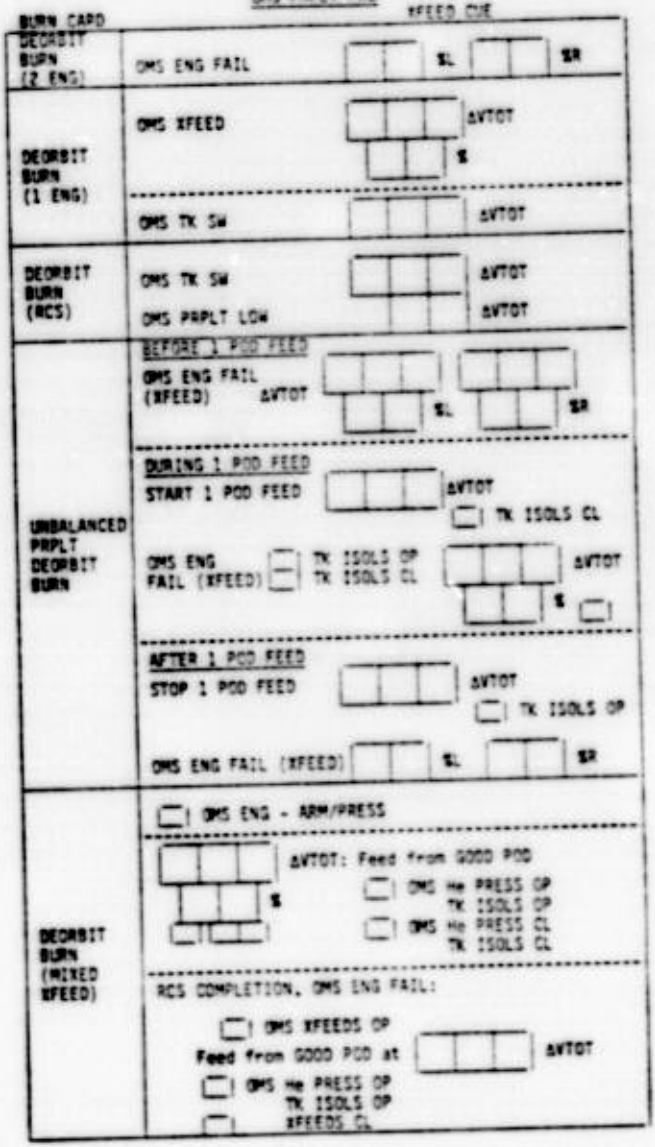
WINDS: (ENT Mnvr Cue Card)
50K /
40K /
30K /
20K /
7K /
SURFACE /

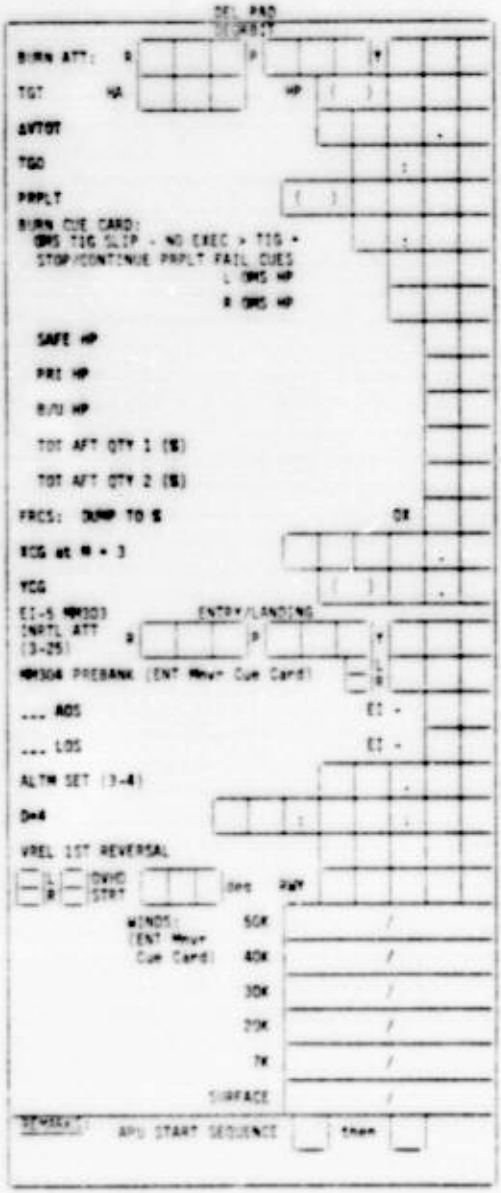
REMARKS: APU START SEQUENCE then

OMS PRPLT PAD

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


DEL P&D
DEBRIEF
BURN ATT: R P Y
TGT HA HP
ΔVTOT
TGO
PRPLT
BURN CUE CARD:
OMS TIG SLIP - NO EXEC > TIG +
STOP/CONTINUE PRPLT FAIL CUES
L OMS HP
R OMS HP
SAFE HP
PRI HP
B/U HP
TOT AFT QTY 1 (%)
TOT AFT QTY 2 (%)
FRCS: DUMP TO %
DX
RCG at R + 3
YCG
ENTRY/LANDING
EI-5 MM303
INRTL ATT
(3-25)
P P Y
L
R
MM304 PREBANK (ENT Hour Cue Card)
... AOS
EI +
... LOS
EI +
ALTM SET (3-4)
3=4
VREL 1ST REVERSAL
L
R
OVHD
STBD
deg
RWY
WINDS:
(ENT Hour
Cue Card)
50K
40K
30K
20K
7K
SURFACE
APU START SEQUENCE
then


BURN CARD
XFEED CUE
DEORBIT BURN (2 ENG)
OMS ENG FAIL
%L
%R
DEORBIT BURN (1 ENG)
OMS XFEED
ΔVTOT
%
OMS TK SW
ΔVTOT
DEORBIT BURN (RCS)
OMS TK SW
ΔVTOT
OMS PRPLT LOW
ΔVTOT
UNBALANCED PRPLT DEORBIT BURN
BEFORE 1 POD FEED
OMS ENG FAIL (XFEED)
ΔVTOT
%L
%R
DURING 1 POD FEED
START 1 POD FEED
ΔVTOT
TK ISOLS CL
OMS ENG FAIL (XFEED)
TK ISOLS OP
TK ISOLS CL
ΔVTOT
%
AFTER 1 POD FEED
STOP 1 POD FEED
ΔVTOT
TK ISOLS OP
OMS ENG FAIL (XFEED)
%L
%R
DEORBIT BURN (MIXED XFEED)
OMS ENG - ARM/PRESS
ΔVTOT: Feed from GOOD POD
%
OMS He PRESS OP
TK ISOLS OP
OMS He PRESS CL
TK ISOLS CL
RCS COMPLETION, OMS ENG FAIL:
OMS XFEEDS OP
Feed from GOOD POD at
ΔVTOT
OMS He PRESS OP
TK ISOLS OP
XFEEDS CL



DEL PAD
DEORBIT

BURN ATT: R P Y

TGT HA HP ( )

ΔVTOT .

TGO :

PRPLT ( )

BURN CUE CARD:
OMS TIG SLIP - NO EXEC > TIG +
STOP/CONTINUE PRPLT FAIL CUES :

L OMS HP

R OMS HP

SAFE HP

PRI HP

B/U HP

TOT AFT QTY 1 (%)

TOT AFT QTY 2 (%)

FRCS: DUMP TO % OK

XCG at M = 3 .

YCG ( ) .

EI-5 MM303 ENTRY/LANDING
INRTL ATT
(3-25) R P Y

MM304 PREBANK (ENT Mnvr Cue Card) L R

... AOS EI -

... LOS EI -

ALTM SET (3-4) .

D=4 : .

VREL 1ST REVERSAL

L R OVHD STRT dec RWY

WINDS: (ENT Mnvr Cue Card)

50K	/
40K	/
30K	/
20K	/
7K	/
SURFACE	/

REMARKS: APU START SEQUENCE then

OV099/BAS 8

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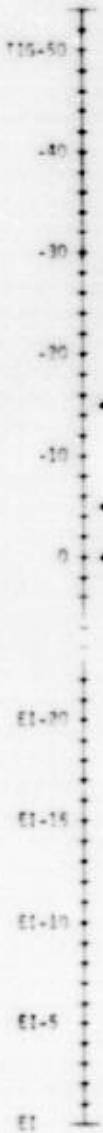
DEORBIT BURN PROCEDURES

EOM COMMUNICATION COVERAGE

Nominal Timeline

DEORBIT BURN

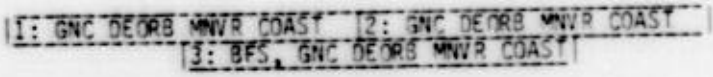


EOM COMMUNICATION COVERAGE

Nominal 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

                On MCC GO:
C   CRT1          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 *

✓HYD LG RET/CIRC VLV - CL
R2 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 SD HORIZ SIT
3: BFS, GNC SD HORIZ SIT

1: GNC DEORB MNVR COAST | 2: GNC 50 HORIZ SIT
3: BFS, GNC 50 HORIZ SIT

HORIZ SIT CONFIG

ALTM - ITEM 9 * [2][9].[ ][ ]

	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

```
|1: 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 51 OVERRIDE        |
CRT 2  VENT DOOR CNTL CLOSE - ITEM 23 EXEC

....If BFS.......................................
.                                               .
.                  |2: BFS, GNC 51 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
```

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 O7 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

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

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 .

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 MADS 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 MADS 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)

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

* If OMS PRPLT FAIL, *
* √affected TK ISOL (two) - CL *

XFEED (four) - CL (tb-CL)

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

* **UNDERBURN** *
* Determine ΔHP *
* (CUR HP - TGT HP) *

PREBANK TABLE (NOMINAL) (HA = 118 nm)

ΔHP	2	5	8	11	13		
PREBANK (deg)	23	46	59	70	78		

Continue to EDW

ΔHP	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

POS: BURN

PREBANK TABLE

ΔHP							
PREBANK (deg)							

Continue to EDW

ΔHP							
PREBANK (deg)							

Redesignate to NOR
TACAN MODE (three) - T/R
CH tw (three) - 69X

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

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

CRT1 Verify gimbal positions:

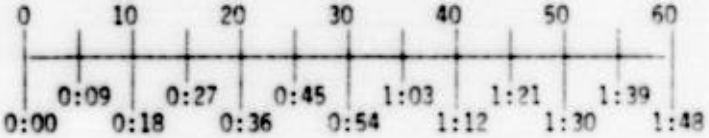
	L	R
P	+5.9	+5.9
Y	+6.4	-6.4

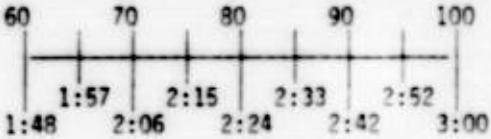
GMBL OFF - ITEM 32 EXEC
- ITEM 33 EXEC

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 (%)



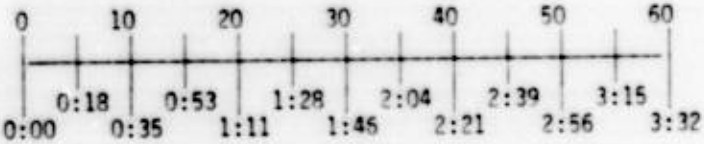


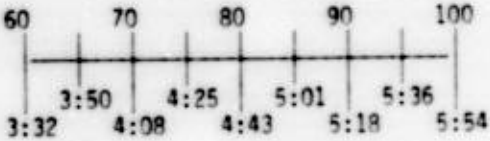
TIME FROM DUMP INITIATION (M:S)

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)

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

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:	STA:	****:
EDW	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) - OP
✓APU/HYD RDY tb (two) - gray

* If tb - bp, attempt normal start *

APU CNTL (two) - START/RUN
F8 ✓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

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 Call)**

CRT2 SURF DRIVE ON - ITEM 39 EXEC
Start TIMER

SPI Observe AEROSURFACES CYCLING

ELEV	U33	to	D18 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 ΔT - 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

Remove, stow in pocket:
C 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 LDG

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

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 ✓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 LEH

donn LWHS

GPC 2 - 69

CDR

NOTE

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

RCS, OMS SAFING (RJDs)

MS 2 help

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

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

SETUP:

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

LOAD TEST:

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

RELEASE:

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

C3 Repeat Load Test

R2 HYD MN PUMP PRESS 3 - NORM

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 / GPC		9 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 O2 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 IOS 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 COMPLETE' msg:
Proceed with APU/HYD SHUTDOWN

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

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 'VFB89' (~60 sec)
MM READ - ITEM 2 EXEC
After 'VFB89 - 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, PS A11, A15, MO39M COMM CCU PWR - OFF

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)

EXTEND PWR UP

1: GNC, VERT SIT 2	2: BFS, GNC BFS MEMORY
3: GNC I05 YCS CONTROL	

CDR

SYSTEM DEACT FOR EXTENDED PWR UP

CRT3 | 3: GNC 0 GPC MEMORY |

CONFIG GPC	9 10000
STR 1	1
2	1
3	1
4	1
PL 1/2	1
CRT 1	1
2	1
3	1
4	0
L 1	1
2	1
MM 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 1 PWR (one) - OFF

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 IOS YCS 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, PS	A11, A15, MO39M	COMM CCU PWR - OFF

Descend to middeck and unstow 'Return to Houston' Bags

ORBITER UNAIDED EGRESS

Egress Orbiter

1: OFF 2: BFS,
3: GNC IOS YCS CONTROL

PLT SYSTEM DEACT FOR EX

2: B

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 se

ORBITER UNAIDE

Descend
Orbiter

MCC TO LRD HA
or completion
procedure. 5-

1: OFF | 2: BFS, GNC BFS MEMORY | 3: GNC IOS YCS CONTROL

PLT ~~SYSTEM DEACT FOR EXTENDED PWR UP~~

MS EXT PWR UP

2: BFS, SM SYS SUMM 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)

MS

MS EXT PWR UP

MS SYSTEM DEACT FOR EXTENDED 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/HYD SHUTDOWN)

A12 APU HTR

TK/FU LINE H20 SYS (six)	- OFF
GAS GEN/FUEL PUMP (three)	- OFF
LUBE OIL LINE (three)	- OFF

RCS/OMS HEATERS PWRDN

A14 OMS CRSFD 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	

CDR

GSP EXT PWR UP

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

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	

CDR

CLS PWRDN AND EGRESS

CABIN PRESSURE EQUALIZATION

(NOR only and if cabin press is > 15.1 psi)

> **WARNING**
> The possibility exists for the ingestion of toxic gas into the cabin from the PLB after cabin pressure equalized

```
O14:D  cb MNA CAB VENT        - CL
                  VENT ISOL   - CL
L2     CAB VENT ISOL - OP
           VENT      - OP (klaxon)
O1     When CABIN dP/dT -0.
L2     CAB VENT ISOL - CL
           VENT      - CL
```

CLS P/LDG

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

A11, A15, M039M
- COMM CCU PWR - OFF

CLS P/LDG
- Disconnect COMM Cable (at HIU)

C L5
- 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 lighting 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

TRANS DAP B

These procedures assume:
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

1-ORB LATE

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

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

TIG-10 ▸ **MNVR TO 1-ORBIT LATE DEORBIT 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 SUMM 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, θ_T) 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 FFS EVAP

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
- ΔVTOT
- TGO
- 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 / GPC	3 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)

3: GNC DEORB MNVR COAST

C3 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 SI OVERRIDE

CRT2 VENT DOOR CNTL CL - ITEM 23 EXEC

1: GNC DEORB MNVR COAST

...If BFS.....

3: BFS, GNC SI 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 cl 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 + 5°
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 •

XFEED (four) - CL (tb-CL)

F8 FLT CNTLR PWR - OFF

• **UNDERBURN** •
•
• Determine ΔHP •
• (CUR HP - TGT HP) •
• If ΔHP > 2: •
• Use PREBANK TABLE •

I: GNC DEORB MNVR EXEC	2: OFF
3: BFS, GNC SYS SUMM 2	

PREBANK TABLE (NOMINAL) (HA = 118 nm)

ΔHP	2	5	8	11	13		
PREBANK (deg)	23	46	59	70	78		
Continue to EOW							

ΔHP	14	16	18	20	25	30	35
PREBANK (deg)	95	52	60	67	83	102	133
Redesignate to NOR							
TACAN MODE (three) - T/R							
CH tw (three) - 69Y							

PREBANK TABLE

ΔHP							
PREBANK (deg)							
Continue to EOW							

ΔHP							
PREBANK (deg)							
Redesignate to NOR							
TACAN MODE (three) - T/R							
CH tw (three) - 69Y							

Record UNDERBURN prebank on 7-19

POST BURN STATUS

NOMINAL

Δ 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 +

P - ITEM 25 +

Y - ITEM 26 +

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

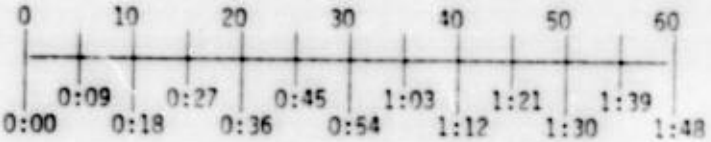
CRT1 GMBL OFF - ITEM 32 EXEC
- ITEM 33 EXEC

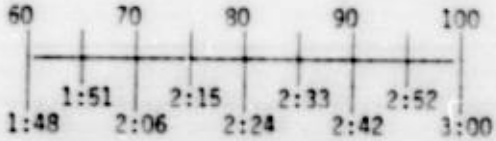
EI-12 ▶ P **FORWARD RCS DUMP** (use for off-nominal X cg entry)

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

FOUR JET DUMP:

F RCS PRPLT TO BE DUMPED (%)



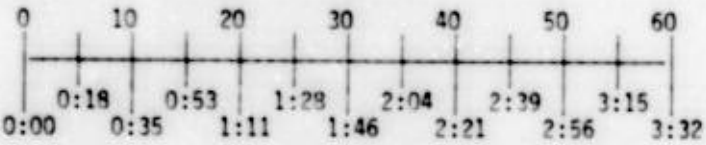


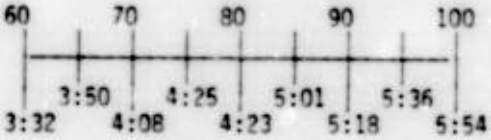
TIME FROM DUMP INITIATION (M:S)

1: GNC DEORB MNVR 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:
OB 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 ✓RADAR ALTM - 1
P F8 ALTM - 1 (due to pwrdown)

1: GNC DE/RB MNVR COAST	2: OFF
3: BFS, GNC SYS SUMM 2	

BURN REPORT (from 7-10)

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

STATE VECTOR CHANGE (thread)

CRT1 ΔT - 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

HORIZ SIT CONFIG

ALTM - ITEM 9 + .

	PASS ITEM	BFS ITEM
PTI	INH 2 ✓	-
INDEX	1 ✓	-
RNG CTR	BLANK	BLANK
RNG (DEL PAD)	✓	✓
TAEM TGT		
G&N	OVHD ✓	BLANK ✓
HSI	BLANK	BLANK
XEP	XEP 7 ✓	XEP 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 29 ✓
DES any failed TACANs	✓	✓
TAC	DELTA 35 ✓	-
HUD	37 L 0 ✓	-
	38 R 0 ✓	-

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

ENTRY MANEUVERS Cue Cards installed

If B psi cabin pressure entry,
ALL VLEH visor down

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

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 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

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

EI-5

APU START

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

* If tb - bp, attempt normal start *

APU CNTL 1
F8 ✓HYD PRESS 1 ind - START/RUN
R2 ✓APU/HYD RDY 1 tb - LO green
- bp

* If no start, *
* APU CNTL - OFF *
* Start other APUs *

HYD MN PUMP PRESS 1 - NORM
F8 ✓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 1	2: OFF
3: BFS, GNC ENTRY TRAJ 1	

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 *

$\bar{q}$ = 0.5 — ✓Auto elevon trim

$\bar{q}$ = 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

$\bar{q}$ = 10 — Roll jets inactive
Go to ENTRY MANEUVERS Cue Cards, $\bar{q}$ = 10