

Ascent Checklist

**Mission Operations Directorate
Flight Design and Dynamics Division
Final
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National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas



PRELAUNCH PROCEDURES

SWITCH LIST FOR HANDOVER/INGRESS

F6U	L HUD MODE	– √NORM
	DIM BRT sel	– mid range
	HUD BRT	– as reqd
F3	HUD PWR	– √OFF
	DRAG CHUTE pb (six)	– √lt off
F8U	R HUD MODE	– √ NORM
	DIM BRT sel	– mid range
	HUD BRT	– as reqd
F4	All pb lts off except:	
	SPDBK/THROT pb	– AUTO lt on
	PITCH pb	– AUTO lt on
	ROLL/YAW pb	– AUTO lt on
F6	MDU PWR (two)	– ON
	BRT sel (two)	– as reqd
	LDG GEAR pb (two)	– lt off
	LDG GEARtb (three)	– √UP
	FLT CNTLR PWR	– ON
	ADI ATT	– √REF
	ADI ERR	– MED
	ADI RATE	– MED

ABORT MODE – √OFF

ABORT MODE pb – √lt off

AIR DATA – √NAV

F7

MDU PWR (five) – ON

BRT sel (five) – as reqd

MAIN ENG STAT lts (six) – √off

SM ALERT lt – √off

C/W matrix lts – √off

F8

MDU PWR (two) – ON

BRT sel (two) – as reqd

LDG GEAR pb (two) – √lt off

LDG GEAR tb (three) – √UP

FLT CNTLR PWR – ON

ADI ATT – √REF

ADI ERR – MED

ADI RATE – MED

AIR DATA – √NAV

R1

PL PRI MN B,FC3 (two) – $\sqrt{\text{ctr}}$ (tb-OFF)

PL AUX MN A,B – $\sqrt{\text{OFF}}$

PL AFT MN B – $\sqrt{\text{OFF}}$

PL AFT MN C – $\sqrt{\text{OFF}}$

INV PWR (three) – $\sqrt{\text{ctr}}$ (tb-ON)

INV/AC BUS (three) – $\sqrt{\text{ctr}}$ (tb-OFF)

AC BUS SNSR (three) – MONITOR
(CRYO)

O2 MANF VLV (two) – $\sqrt{\text{ctr}}$ (tb-OP)

O2 TK1,2 HTRS A (two) – AUTO

O2 TK1,2 HTRS B (two) – $\sqrt{\text{OFF}}$

O2 TK1,2 HTRS RESET/TEST – $\sqrt{\text{ctr}}$

O2 TK3 HTRS (two) – $\sqrt{\text{OFF}}$

O2 TK3 HTRS RESET/TEST – $\sqrt{\text{ctr}}$

FUEL CELL REAC (three) – $\sqrt{\text{ctr}}$

tb (six) – $\sqrt{\text{OP}}$

H2 MANF VLV (two) – $\sqrt{\text{ctr}}$ (tb-OP)

H2 TK1,2 HTRS A (two) – AUTO

H2 TK1,2 HTRS B (two) – $\sqrt{\text{OFF}}$

H2 TK3 HTRS (two) – $\sqrt{\text{OFF}}$

R2

MPS PRPLT DUMP (two) – GPC

ENG PWR (six) – ON

He ISOL A,B (six) – GPC

PNEU L ENG He XOVR – GPC

PNEU He ISOL – GPC

LH2 ULL PRESS – AUTO

He I'CNCT (three) – GPC

R2

APU/HYD RDY TO STRT tb (three) – $\sqrt{\text{bp}}$

APU OPER (three) – $\sqrt{\text{OFF}}$

HYD MN PUMP PRESS (three) – NORM

APU CNTLR PWR (three) – $\sqrt{\text{OFF}}$

FUEL TK VLV (three) – $\sqrt{\text{CL}}$

BLR CNTLR/HTR (three) – A

BLR PWR (three) – ON

BLR N2 SPLY (three) – $\sqrt{\text{OFF}}$

ET UMB DR CTRLINE LAT – GND (tb-bp)

L,R DR (two) – $\sqrt{\text{OFF}}$ (tb-OP)

LAT (two) – $\sqrt{\text{OFF}}$ (tb-REL)

C2	IDP/CRT PWR (three)	– ON
	MAJ FUNC (three)	– GNC
	SEL (two)	– as reqd
	EVENT TIMER MODE	– DN
	EVENT TIMER CNTL	– ctr
	TIMER SET pb (four)	– 0900
	TIMER	– ctr
C3	OMS ENG (two)	– $\sqrt{\text{OFF}}$
	BFC CRT DISP	– $\sqrt{\text{OFF}}$
	BFC CRT DISP SEL	– $\sqrt{3+1}$
	AIR DATA PROBE STO (two)	– $\sqrt{\text{INH}}$
	MN ENG LIMIT SHUTDN	– AUTO
	DAP	– $\sqrt{\text{all off}}$
	SRB SEP	– $\sqrt{\text{AUTO}}$
	ET SEP	– $\sqrt{\text{AUTO}}$
O2	AIR DATA PROBE (two)	– $\sqrt{\text{STOW}}$
	CRYO O2 HTR ASSY TEMP sel	– $\sqrt{\text{TK 1}}$
	O2/H2 sel	– $\sqrt{\text{TK 1}}$
O3	FUEL CELL STACK TEMP sel	– 1
	RCS/OMS PRESS sel	– RCS He X 10
	PRPLT QTY sel	– OMS FUEL
	MSN TIME	– MET
O6	S TRK DR CNTL (two)	– $\sqrt{\text{OFF}}$

	ANNUN LAMP TEST	– √ctr
	BUS SEL ACA 1	– √MNA
	BUS SEL ACA 2/3	– √MNB
	GPC PWR (five)	– ON
	OUTPUT 1,2,3,4 (four)	– √NORM
	OUTPUT 5	– NORM (tb-bp)
	IPL SOURCE	– √OFF
	GPC MODE 1,2,3,4 (four)	– RUN
	GPC MODE 5	– SBY
O8	RADAR ALTM (two)	– ON / OFF
R11L	IDP/CRT4 PWR	– ON
	MAJ FUNC	– SM
R13L	PL BAY DR SYS (two)	– √DSBL
	PL BAY MECH PWR SYS (two)	– √OFF
	PL BAY DR	– √STOP (tb-as is)
	RAD LAT CNTL (two)	– √OFF (tb-LAT)
	RAD CNTL (two)	– √OFF (tb-STO)
	KU ANT DIRECT STO	– √OFF
STO)	KU ANT	– √GND (tb-

A6U	DAP	– $\sqrt{\text{all off}}$
	SENSE:	-Z
	FLT CNTLR PWR	– $\sqrt{\text{OFF}}$
	ADI ATT	– INRTL
	ADI ERR	– MED
	ADI RATE	– MED
	ANNUN BUS SEL	– OFF
	LAMP TEST	– $\sqrt{\text{ctr}}$
	EVENT TIMER SET pb (four)	– as reqd
	MODE	– UP
	CNTL	– $\sqrt{\text{ctr}}$
	TIMER	– $\sqrt{\text{ctr}}$
	PL RETEN LOGIC PWR (two)	– $\sqrt{\text{OFF}}$
	PL SEL	– MON
	PL RETEN LAT (five)	– $\sqrt{\text{OFF (tb-bp)}}$
	RDY TO LAT tb (five)	– $\sqrt{\text{bp}}$
A2	DIGI DIS SEL	– $\sqrt{\text{EL/AZ}}$
	X-PNTR SCALE	– $\sqrt{\text{X10}}$

A7U	MSTR ALARM pb	– √lt off
	PL BAY FLOOD (eight)	– √OFF
	PORT RMS LIGHT	– √OFF
	TV CAMR PWR (five)	– √ctr (tb-OFF)
	VID INP pb (thirteen)	– √lt off
	VID OUT pb (eight)	– √lt off
	CAMR CMD PAN/TILT	– LO RATE
	TILT	– √ctr
	PAN	– √ctr
A7L	(APDS CNTL PNL)	
	CNTL PNL PWR (three)	– √OFF
	HTRS/DCU PWR (three)	– √OFF
	APDS PWR (three)	– √OFF (lt off)
	STATUS lts (thirty-six)	– √off
	PYROS (three)	– √OFF (lt off)
	PYRO CIRC PROT OFF lts (two)	– √off
A4	MSN TIMER sel	– MET

A8U (This panel may be replaced or deleted if RMS not flown)

MSTR ALARM pb	– \sqrt{lt} off
EE MODE	– \sqrt{OFF}
MAN CONTR	– \sqrt{ctr}
tb (six)	– bp
DIRECT DR	– \sqrt{ctr}
PARAM sel	– PORT TEMP
JOINT sel	– CRIT TEMP
SINGLE/DIRECT DR	– \sqrt{ctr}
SHDLR BRACE REL	– \sqrt{ctr} (tb-bp)

A8L (This panel may be deleted if RMS not flown)

if no MPMs)	STBD RMS	– $\sqrt{\text{OFF}}$ (tb-STO)
	STBD RMS	– ($\sqrt{\text{OFF}}$ (tb-bp)
if no MPMs)	RETEN LAT	– $\sqrt{\text{OFF}}$ (tb-LAT)
	RETEN LAT	– ($\sqrt{\text{OFF}}$ (tb-bp)
RMS)	HTR (two)	– $\sqrt{\text{OFF}}$
	RDY FOR LT tb (three)	– $\sqrt{\text{gray}}$
	RDY FOR LT tb (three)	– ($\sqrt{\text{bp}}$ if no
	RMS SEL	– $\sqrt{\text{OFF}}$
if no MPMs)	RMS PWR	– $\sqrt{\text{OFF}}$
	PORT RMS	– $\sqrt{\text{OFF}}$ (tb-STO)
	PORT RMS	– ($\sqrt{\text{OFF}}$ (tb-bp)
	RETEN LAT	– $\sqrt{\text{OFF}}$ (tb-LAT)
if no MRLs)	RETEN LAT	– ($\sqrt{\text{OFF}}$ (tb-bp)
	HTR (two)	– $\sqrt{\text{OFF}}$
RMS)	RDY FOR LT tb (three)	– $\sqrt{\text{gray}}$
	RDY FOR LT tb (three)	– ($\sqrt{\text{bp}}$ if no

MEDS CONFIGURATION FOR INGRESS

MDU	Display	Edgekey Menu
CRT1	DPS	DPS
CRT2	DPS	DPS
CRT3	DPS	DPS
CRT4	DPS	DPS
CDR1	OMS/MPS	SUBSYS STAT
CDR2	A/E PFD	FLT INST
MFD1	HYD/APU	SUBSYS STAT
MFD2	OMS/MPS	SUBSYS STAT
PLT1	A/E PFD	FLT INST
PLT2	HYD/APU	SUBSYS STAT
AFD1	N/A	N/A

-32:00 PASS/BFS TRANSFER PREP

(-1:22:00)

O6 √GPC MODE 5 – STBY

C3 √BFC CRT SEL: 3+1
 CRT DISP – ON

-30:00 OMS GN2 PRESS

(-1:20:00)

C3 OMS ENG (two) – ARM PRESS

WSB GN2 SUPPLY ACTIVATION

R2 √BOILER CTRL/HEATER(three) – ON
 BOILER N2 SUPPLY – ON

-20:00 OPS 1 LOAD

(-1:00:00)

CRT1 GNC OPS 101 (LAUNCH TRAJ)

CRT2 GNC OPS 101 (LAUNCH TRAJ)

CRT3 BFS, SM SYS SUMM 2

C3 √BFC CRT DISPLAY – ON
 √BFC CRT SEL – (3+1)

-16:00

MPS He RECONFIG

(-56:00)

R2	MPS He ISOL A,B (six)	– OP
	√He REG A Press ~800 psi	
	MPS PNEU He ISOL	– OP
	√He REG Press ~800 psi	

-9:00

When 'GO FOR LAUNCH' (All)

(~-15:00)

C2	Set Timer Thumbwheels To 09:00	
	TIMER SWITCH	– SET
	√EVENT TIMER MODE is DWN	
	At T-9'	
	EVENT TIMER	– START

F7	√TIME ind – counting down
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-8:00

Connect ESS BUSES to FC (GLS √@T-7:24)

R1	ESS BUS SOURCE FC (three) – ON
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-6:15

APU PRE START (GLS √ @ T-5:25)

R2	BLR N2 SPLY (three)	– ON
	BLR PWR (three)	– ON
	BLR CNTLR/HTR (three)	– A
	√HYD CIRC PUMP (three)	– GPC
	√APU FU TK VLV (three)	– CL
	√APU SPEED SEL (three)	– NORM
	√APU OPER (three)	– OFF
	√HYD MN PUMP PRESS (three)	– LO
	APU CNTLR PWR (three)	– ON
	APU FU TK VLV (three)	– OP
	√APU/HYD RDY tb (three)	– gray

-5:00

APU START (GLS √ @ T-4:05)

R2	APU OPER (three)	– START/RUN
	√HYD PRESS ind (three)	– LO green
	√APU/HYD RDY tb (three)	– bp
	HYD MN PUMP PRESS (three)	– NORM
	√PRESS ind (three)	– HI green

ASCENT PROCEDURES

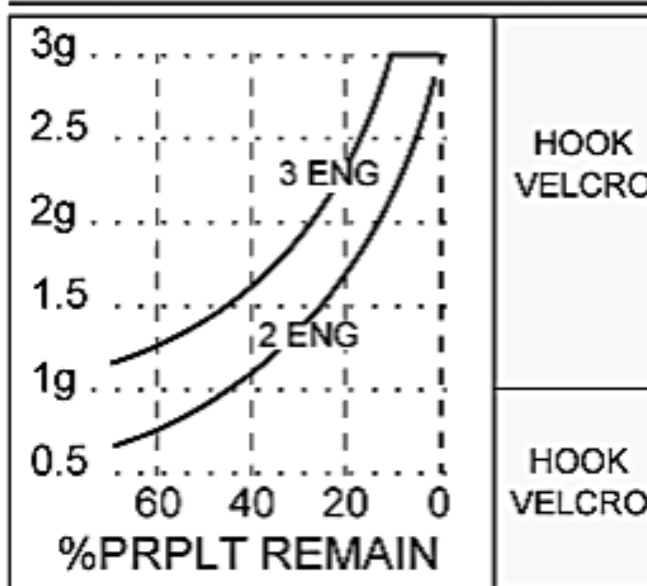
NO COMM MODE BOUNDARIES

NEG RETURN (104)	8200	2 ENG ZZA (104)	5900
PRESS TO ATO (104)	10800	ABORT TAL ZZA (4)	
SE OPS 3 (109)	12300	EO VI	<input type="text"/>
SE ZZA (104)	14300	SE OPS 3 ZZA (109) (4)	<input type="text"/>
PRESS TO MECO (104)	14900	SE ZZA (104) (4)	<input type="text"/>
SE PRESS (104)	17600		
NEG MRN (2 @ 67)	19800	2 ENG MRN (104)	5800
LAST PRE MECO TAL	23000	ABORT TAL MRN (3)	
LAST TAL		EO VI	<input type="text"/>
YJT	19900	SE OPS 3 MRN (109) (3)	<input type="text"/>
YYT	20200	SE MRN (104) (3)	<input type="text"/>
YQX	22000		
IKF	23700	2 ENG FMI (104)	6200
INN	24200	ABORT TAL FMI (29)	
BEJ	24300	EO VI	<input type="text"/>
FFA, MRN	24400	SE OPS 3 FMI (109) (29)	<input type="text"/>
KBO	24600	SE FMI (104) (29)	<input type="text"/>
ESN	24900		
ZZA, KKI	25100		
FMI, JDG	25200		

R180	LVLH
.84M	$\sqrt{P_c} \rightarrow 72\%$
1.17M	$\sqrt{P_c} \rightarrow 104\%$
$P_c < 50+5$ s	$\sqrt{\text{SRB SEP (Backup AUTO SEP 2:21)}}$ $\sqrt{\text{TMECO}}$
	<ul style="list-style-type: none"> * If <u>NOT STABLE</u> (10 sec): * NO COMM – CSS & MAN THROT
MM103+10 s	$\sqrt{\text{OMS assist}}$ Close suit O2, open visor
3:00	$\sqrt{\text{EVAP OUT (T < 60)}}$ <ul style="list-style-type: none"> * If Systems ABORT reqd: * RTLS at 3:40 or * TAL Select prior to <u>23000</u> * Otherwise Manual MECO <u>23700</u>
$V_I = \text{13.2K}$	$\sqrt{\text{Roll Heads Up}}$ <ul style="list-style-type: none"> * If Man Throttle (3 eng): * Man Shutdn at <u>25700</u> * If 1 eng: * <u>TRAJ</u> $\sqrt{\text{SERC ON}}$ * When MPS PRPLT = 5%: * MAN THROT * When MPS PRPLT = 2%: * MIN THROT ($P_c \rightarrow 67\%$) * AUTO THROT
MECO	$\sqrt{V_I = \text{25819}}$
MECO+20 s	$\sqrt{\text{ET SEP}}$ <ul style="list-style-type: none"> * If 'SEP INH': * ET SEP – MAN * If Rates > .7,.7,.7: * MPS PRPLT DUMP SEQ – STOP * Null rates * ET SEP – SEP * Post ET Sep -Z xlation: * MPS PRPLT DUMP SEQ – GPC * If Rates < .7,.7,.7: * Assume Feedline Fail * If $V_I < \text{25760}$: * OPS 104 – PRO ($\sqrt{\text{BFS 104}}$) * <u>NOTE:</u> Expect – 'Illegal Entry' (PASS) * 'Illegal TIG' (BFS)
► MM104+2 s	If ET Sep complete and HA > <u>72</u> : +X xlation for 11 sec $\sqrt{\text{TGTS}}$ $\sqrt{\text{ASC PKT for failures}}$ If OMS 1 not reqd: OMS ENG (two) – OFF Go to <u>POST OMS 1</u>

ASCENT ADI - NOMINAL

TIME	θ	H	\dot{H}	(335 OCFR3 CY)
0:30	69	9K	665	
0:50	61	26K	1001	
1:10	52	51K	1439	
1:30	39	84K	1900	
1:50	30	126K	2198	



-STAGING-

V_I	θ	H	\dot{H}	ASC-14a/335/A/A
6	19	219K	1701	
7	16	276	1253	
8	13	311	906	
9	12	333	625	
10	9	346	396	
12	6	356	58	
14	9	355	-149	
16	25	350	-232	
18	23	344	-267	
20	21	339	-217	
22	19	337	-104	
24	17	337	66	
25819	13	345	272	

OMS 1 BURN

OMS 1 TARGETING

If TIG LATER THAN MECO + 6 min:

MECO + 4 min:

APU shutdn (if time permits)

If 1 OMS ENG FAIL and VTOT > 500:

Burn good OMS + THC +X at TIG

C3 DAP – AUTO/DISC

CRT1 GNC OPS 104 PRO (OMS 1 MNVR EXEC)

LOAD TGT DATA

Trim Load (*1 eng)

P – ITEM 6 = + 0.4 *(+ 0.4)

LY – ITEM 7 = - 5.7 *(+ 5.2)

RY – ITEM 8 = + 5.7 *(- 5.2)

Select TIG – ITEM 10 + ___ / ___ : ___ : ___

Load TGT PEG7

ΔV_x – ITEM 19

ΔV_y – ITEM 20

ΔV_z – ITEM 21

LOAD – ITEM 22 EXEC

$\sqrt{\text{TGT PEG 7 } (\Delta V_x, \Delta V_y, \Delta V_z, \Delta V_{\text{tot}})}$

TIMER – ITEM 23 EXEC

$\sqrt{\text{CTRL PWR (two)}}$ – ON

$\sqrt{\text{OMS ENG (two)}}$ – ARM/PRESS

-00:15

CRT1 EXEC

00:00

TIG; start watch ($\sqrt{P_c}$, ΔV_{TOT} , ENG VLVs)

CUTOFF

+00:02

C3

OMS ENG (two) – OFF

Trim inplane X,Y residuals < 2 fps

POST OMS 1 BURN PROCEDURES

ET PHOTO MANEUVER/MPS DUMP

If OMS 1 Burn performed, go to

POST BURN STATUS

+X and Pitch Mnvr:

At MECO + 6 min: (14:23 Nom)

ET SEP – SEP

At MM104 + 2 sec

+X xlation for 11 sec

At OMS 1 TIG: (16:05 Nom)

Pitch up at 2°/sec until ET in O/H
window (P ~110°)

Go to MPS DUMP complete

If NO-GO for Photo Pitch Mnvr, go to MPS DUMP
complete; do not pitch

MPS DUMP start (MECO + 2:03)

At OMS 1 TIG + 30 sec: (MECO + 2:33)
(10:56 Nom)

- C3 DAP – INRTL: R (DISC), P (PULSE), Y (DISC),
Orbiter pitches up
Control pitch rate 2°/sec to 3°/sec
If no pitch rate, go to MPS DUMP complete
- When ET in O/H window (MS call or P ~90°):
P – DISC
Adjust pitch photo att as reqd for MS

MPS DUMP complete

√BDY FLP pb – It off (MECO + 4 min) (12:24 Nom)
If no pitch rate,
P – DISC
Pitch up at 2°/sec until ET
in O/H window (P ~85°)

POST BURN STATUS

ALPHA MANAGEMENT (if reqd)

If underspeed (ATO or AOA-S) OMS 1

and Post OMS 1 HP <75 nm:

Maneuver to LVLH R000, P340, Y000

(maintain LVLH P = 0 +/-20)

After 10 min:

Maneuver to LVLH P = 340

After 10 min:

Maneuver to Burn Attitude

When MPS dump complete:

F6,F8	FLT CNTLR PWR (two)	– OFF
C3	DAP	– AUTO

APU/HYD SHUTDN

R2	√APU AUTO SHTDN (three)	– ENA
	BLR PWR (three)	– OFF
	BLR N2 SPLY (three)	– OFF
	APU OPER (1,2,3; 5 sec interval)	– OFF
	APU FU TK VLV (three)	– CL
	√Shutdn (HYD PRESS < 200)	
	APU CNTLR PWR (three)	– OFF
	√HYD MN PUMP PRESS (three)	– NORM

(MA)

FES & HEATER ACTIVATION

R1	O2 TK1,2 HTRS B (two)	– AUTO
	H2 TK1,2 HTRS B (two)	– AUTO

AC BUS SNSR

R1	AC BUS SNSR (three)	– OFF (1
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sec),

then AUTO TRIP

MAJOR MODE CHANGE

CRT1/2	GNC OPS 105 PRO (OMS 2 MNVR EXEC)
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OMS 2 BURN

OMS 2 BURN SETUP

CRT1 TRIM LOAD – ITEM 6 +0.4 -5.7 +5.7 EXEC

For single eng burn (good eng):

TRIM LOAD LY – ITEM 7 +5.2 EXEC

TRIM LOAD RY – ITEM 8 -5.2 EXEC

OMS L – ITEM 2 EXEC

OMS R – ITEM 3 EXEC

For RCS burn:

RCS SEL – ITEM 4 EXEC

√Targets, OMS TARGETS

LOAD – ITEM 22 EXEC

TIMER – ITEM 23 EXEC

MPS ISOL

R2	MPS He ISOL (six)	– GPC
	MPS PNEU He ISOL	– GPC
	√He I'CNCT (three)	– GPC

25:00

MPS PWRDN

R2	MPS ENG PWR L (two)	– OFF
	MPS ENG PWR CTR (two)	– OFF
	MPS ENG PWR R (two)	– OFF

ET UMBILICAL DOOR CLOSURE

R2	ET UMB DR MODE	–
GPC/MAN		
	CTRLINE LAT	– STO
	√After 6 sec, CTRLINE LAT tb	– STO
	CTRLINE LAT	– STOP
	L,R DR (two) – CL (tb-bp)	
	√After 24 sec, L,R DR tb (two)	– CL
	L,R LAT (two)	– LAT (tb-
bp)		
	√After 6 sec, L,R LAT tb (two)	– LAT
	L,R DR (two)	– OFF
	L,R LAT (two)	– OFF
	MODE	– GPC

If FRCS reqd,

Go to OPS 1 RCS BURN

OMS 2 BURN ATTITUDE MANEUVER

F6,F8	√ADI ATT (two)	– INRTL
	ATT RATE (two)	– 1

CRT1 MNVR – ITEM 27 EXEC (*)

CRT3 BFS GNC SYS SUMM 2

TIG-5 Go to OMS 2/ORBIT OMS BURN Cuecard

OMS 2/ORBIT OMS BURN

1.LOAD TGT DATA

CRT1 GNC OPS 105 PRO (OMS 2 MNVR EXEC)

TV ROLL

If Posi Heads Up – ITEM 5 + 0 EXEC

If Posi Heads Dwn – ITEM 5 + 180 EXEC

Trim Load (*1 eng)

P – ITEM 6 = + 0.4 *(+ 0.4)

LY – ITEM 7 = - 5.7 *(+ 5.2)

RY – ITEM 8 = + 5.7 *(- 5.2)

2.PERFORM OMS BURN

CRT1 √ENG SEL

C3 √DAP AUTO (PASS)/DISC

TIG-4 F6/F8 ADI RATE (two) – MED (1 deg/sec)
FLT CNTLR PWR (two) – ON
√DAP – AUTO(PASS)/DISC
√GMBL TRIM

TIG-2 C3 SEL OMS ENG(s) – ARM PRESS (√P VLVs OP)
If P VLV CL: Aff OMS ENG – OFF

TIG-00:15 CRT1 EXEC

00:00 TIG: start watch (√Pc, ΔVTOT, ENG VLVs)

CUTOFF

+00:02 C3 OMS ENG(s) – OFF

OPS 1 RCS BURN

AFT RCS

√RCS BURN CONFIG:

switch at ΔV_{TOT}	OMS TK ISOL (all)	– OP
	L(R) OMS XFEED (two)	– OP
	R(L) OMS XFEED (two)	– CL ½
	AFT L,R RCS XFEED (four)	– OP
	AFT L,R RCS TK ISOL (six)	– CL
TIG-2	L,R OMS He PRESS/VAP ISOL A	– OP
	Wait 2 sec	
	L,R OMS He PRESS/VAP ISOL B	– OP
CRT	$\sqrt{MM105}$	
F6/F7	CTRL PWR (two)	- ON
	$\sqrt{BURN ATT (INRTL)}$ then REF, pb	– push
	$\sqrt{RCS SEL}$	
C3	DAP: INRTL/DISC	

00:00

+X

Maintain PITCH ATT ERR +/- 3°

Monitor OMS data

Monitor $\Delta VTOT$

CUTOFF

Release THC

CTRL PWR (two)

– OFF

FWD RCS

FRCS BURN PREP
Load DUMMY target for FRCS attitude
RCS SEL – ITEM 4 EXEC
TIG @ TTA = 2:00 or as reqd
 $\Delta VX = -2.1$ (ITEM 19)
 $\Delta VY = 0$ (ITEM 20)
 $\Delta VZ = +1.0$ (ITEM 21)
LOAD – ITEM 22 EXEC
TIMER – ITEM 23 EXEC
TIG-10 Auto Mnvr to ATT
When in attitude:
ADI ATT – REF (push)
Load External ΔV Burn Target
 $\Delta VX = +80$
 $\Delta VY = 0$
 $\Delta VZ = 0$
LOAD – ITEM 22 EXEC
TIMER – ITEM 23 EXEC
 $\sqrt{VGOX} = \text{negative}$
 $\sqrt{VGOY} = 0$
 $\sqrt{VGOZ} = +21 \pm 2$
 $\sqrt{REF} \text{ ball} - 0,0,0$

-00:30

F6,F8 CTRL PWR - ON

C3 DAP: INRTL/DISC

00:00 -X (THC)

CUTOFF CUR HP = TGT HP _____, release THC

F6,F8 CNTRL PWR (two) – OFF

POST OMS 2 BURN PROCEDURE

F6/F8 FLT CNTLR PWR (two) – OFF

C3 OMS ENG(two) – OFF

√DAP: AUTO

MAJOR MODE CHANGE

CRT1 GNC OPS 106 PRO (OMS 2 MNVR COAST)

Go to **POST INSERTION CHECKLIST**



<h1>ASCENT CHECKLIST</h1>	<h1>STS ALL</h1>
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BACK COVER