



Space Shuttle Mission 2007



Designed By: Michael Swannick

Mission Checklist

STS-1

Crew Members

Commander - John W. Young | Pilot - Robert L. Crippen

Mission Highlights

Carried out by Columbia on April 12, 1981. Primary mission objectives of the maiden flight was to check out the overall shuttle system, accomplish a safe ascent into orbit and return to earth for a safe landing. All of these objectives were met successfully and the shuttles worthiness as a space vehicle was verified

Payload

A Development Flight Instrumentation (DFI) pallet containing various equipment for shuttle performance monitoring.

Aerodynamic Coefficient Identification Package (ACIP), Used to collect aerodynamic data during launch, entry and landing

Shuttle Entry Air Data System (SEADS)

Shuttle Upper Atmospheric Mass Spectrometer (SUMS)

Technology Flight Instruments (TFI)

Dynamic, Acoustic and Thermal Environment Experiment (DATE)

Infrared Imagery of Shuttle (IRIS)

Shuttle Infrared Leaside Temperature Sensing (SILTS)

Tile Gap Heating Effects Experiment (TGH)

Catalytic Surface Effects (CSE)

Flight Summary

Launchpad: Kennedy Space Center (KSC) 39A | Orbit: 166NM | Inclination:40.3 | Orbits: 37

Duration: 2 Days, 6 Hours, 20 Minutes, 53 Seconds | Landing: Edwards Air force Base



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PRE-LAUNCH CHECKLIST

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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
1	T-00:01:50:00				Astronauts Enter The Shuttle
2	T-00:01:40:00	Overhead Left Panel	O5	* Set Left Audio XMIT/ICOM MODE To VOX/VOX * Set Left Audio A/G (1 & 2) To T/R * Set Left Audio A/A To T/R * Set Left Audio ICOM (A & B) To T/R * Set Left Audio (AUD) Power Switch To AUD/TONE	Activates Commander Communications
3	T-00:01:35:00	Overhead Right Panel	O9	* Set Right Audio XMIT/ICOM MODE To VOX/VOX * Set Right Audio A/G (1 & 2) To T/R * Set Right Audio A/A To T/R * Set Right Audio ICOM (A & B) To T/R * Set Right Audio (AUD) Power Switch To AUD/TONE	Activates Pilot Communications
5	T-00:01:20:00	Front Left Panel	F6	* Check ABORT Light (DIM/BRIGHT/DIM) For 8 Seconds	Abort Advisory Check
6	T-00:01:10:00				Flight Control Confirms With Commander That The Side Hatch Is Closed & Locked
7	T-00:01:05:10	Left Panel	L2	* Set CABIN VENT ISOL To CLOSE	Cabin Leak Check
		Front Left Panel	F2	* Set CABIN VENT To CLOSE * Press MASTER ALARM	Cancel Master Alarm Sound
8	T-00:00:51:00				Pilot Confirms IMU Alignment
9	T-00:00:50:00	Right Panel	R2	* Check BOILER PWR (1/2/3) Are ON * Check BOILER CNTLR/HTR (1/2/3) Are On - A * Set BOILER N2 Supply (1/2/3) To ON	Confirm Boiler Power On
10	T-00:00:45:00	Left Panel	L2	* Set CABIN VENT/VENT To OPEN	Open Cabin Vent
11	T-00:00:42:00	Center Panel	C3	* Set BFC CRT DISPLAY To ON	Enable Backup Flight System (BFS) And
			C2	* Confirm BFC CRT SELECT Is At (3+1) * Enter ITEM 25 EXEC (Use Left Keypad)	Execute Computer Data Transfer To BFS Copy Primary Avionics SW To BFS
12	T-00:00:36:40	Left Panel	L2	* Set CABIN VENT To CLOSE	Cabin Leak Check - Continued
		Overhead Low Panel	O1	* Set CABIN VENT ISOL To OPEN * Check CABIN dP/dT Gauge For Possible Depressurization	
13	T-00:00:33:20	Left Panel	L2	* Set CABIN VENT ISOL To Close * Check CABIN VENT Is CLOSED	Cabin Pressurization Check Complete
14	T-00:00:30:00	Center Panel	C2	* Enter OPS 101 PRO (Use Right Keypad) * Enter SPEC 99 PRO (Use Right Keypad) * Press RESUME (Use Right Keypad)	Load OPS 1 - Planned 10 Minute Hold Load First Stage SW Into Primary Avionics System
15	T-00:00:29:00	Center Panel	C2	* Enter OPS 101 PRO (Use Left Keypad)	Load OPS 1 Into The BFS
16	T-00:00:26:00	Right Panel	R2	* Set He ISOLATION A (LEFT/CRT/RIGHT) To Open * Set He ISOLATION B (LEFT/CRT/RIGHT) To Open * Set PNEUMATICS He ISOL To Open * Set 6 ENGINE POWER Switches (LEFT/CTR/RIGHT) To ON	Begin The Main Propulsion System (MPS) Helium (He) Pressurization
17	T-00:00:15:00	Front Left Panel	F6	* Check ABORT Light ON/OFF For 8 Seconds	Final Test Of The ABORT System
		Center Panel	C3	* Set CAUTION/WARNING MEMORY To CLEAR	Clear C/W Memory
18	T-00:00:09:00	Right Panel	R1	* Set ESS BUS SOURCE (MN B/C, MN C/A, MN A/B) To ON	Enable Fuel Cells, Enable Countdown From
		Center Panel	C3	* Set Timer Thumbwheels To 0900 * Set TIMER Switch To SET * Check EVENT TIMER MODE Is DOWN * Set EVENT TIMER CONTROL To START	Nine (9) Minutes, Start The Countdown
		Front Center Panel	F7	* Confirm EVENT TIMER Display Continues The Countdown	
19	T-00:00:08:00	Right Panel	R2	* Check APU FUEL TK VLV (1/2/3) Are CLOSED * Check APU AUTO SHUT DOWN (1/2/3) Are Enable * Check HYD MAIN PUMP PRESS (1/2/3) Are LOW * Check APU SPEED SELECT (1/2/3) Are NORM * Check HYD CIRC PUMP (1/2/3) Set To GPC * Set APU CNTLR PWR (1/2/3) To ON	The Crew Access Arm Is Retracting APU Prestart Check Is Underway
20	T-00:00:05:10	Right Panel	R2	* Set APU FUEL TK VLV (1/2/3) To Open * Check APU/HYD READY TO START (1/2/3) Repeaters-(White)	APU Start
		Front Center Panel	F7	* Set APU OPERATE (1/2/3) To START/RUN	
		Right Panel	R2	* Check HYDRAULIC (APU) Pressure 900psi (Use MFD #2)	
		Front Center Panel	F7	* Set HYD MAIN PUMP PRESS (1/2/3) To NORM	
		Front Left Panel	F2	* Check HYDRAULIC (APU) Pressure 3000psi (Use MFD #2)	
		Right Panel	R2	* Press MASTER ALARM (If Required) * Set HYD CIRC PUMP (1/2/3) Set To OFF	The Master Alarm May Sound Until APU Pressure Reaches 3000 PSI. (Silence Alarm)
21	T-00:00:04:30	Left Panel	L2	* Set FLASH EVAP FEEDLINE HTR A & B SUPPLY To OFF	The Shuttle Is On Internal Power. Turn Off Flash Evaporator Feed Line & Heater Supply
	T-00:00:04:10				APU Check Complete
22	T-00:00:03:45				Start Hydraulic Check, Aero Surfaces Are Moved, A Gimbal Check Is Performed
	T-00:00:03:05				Hydraulic Check Complete
23	T-00:00:02:55				External Tank Liquid Oxygen (LOX) Vents Are Closing & The External Tank Begins To Pressurize. External Tank Cap Is Retracted.
24	T-00:00:02:00	Right Panel	R2	* Set APU AUTO SHUT DOWN (1/2/3) To INHIBIT	APU Power - Inhibit
			R1	* Set AC BUS SNSR (1/2/3) To MONITOR	
		Center Panel	C3	* Set CAUTION/WARNING MEMORY To CLEAR	
25	T-00:00:01:40				Liquid Hydrogen External Tanks Close.
	T-00:00:01:20				Go For Launch Announcement.



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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
25	T-00:00:01:00 T-00:00:00:30				One Minute Countdown Announcement Thirty Seconds Countdown Announcement
26	T-00:00:00:15				Begin Countdown To Liftoff The Shuttles Main Engines Will Ignite At T-00:00:00:05. A Staggered Start Of The Main Engines Will Commence In 120 millisecond Intervals. The Two SRB's Will Ignite At T-00:00:00:00, Followed By An Almost Instantaneous Liftoff. Once The Shuttle Clears The Tower, It Will Complete A Roll Maneuver.
26	T-00:00:00:00				Shuttle Liftoff

Commence Ascent Checklist



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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	NOTES
27	T+00:00:00:30 T+00:00:01:05				Main Engines Throttle Down To 65% Main Engines Throttle Up To 104%
28	T+00:00:02:00 T+00:00:02:05	Front Center Panel	F7	* Check Pressure Pc<50 (MFD / CRT 1)	Standby For SRB Separation SRB Separation
602	T+00:00:03:00	Overhead Low Panel	O1	* Check FREON - EVAP OUT TEMP Gauge Shows Below 60 Degrees	Check Flash Evaporator Is Operational
29	T+00:00:04:20				Negative Return
30	T+00:00:06:56				Single Engine Press To MECO
31	Mission Dep.	Front Center Panel	F7	* Check MAIN ENGINE STATUS Lights (Left/CTR/Right) Are Red	Engines Throttle Down In Preparation For Main Engine Cutoff (MECO) MECO Confirm Main Engine Shutdown External Tank Separation
33	Mission Dep.	Center Panel Overhead Aft Panel Center Panel	C2 O14 O16 C3 C2	* Enter ITEM 22 EXEC (Use Right Keypad) * Enter ITEM 27 EXEC (Use Right Keypad) * Enter ITEM 23 EXEC (Use Right Keypad) * Set L OMS ENG VLV To ON * Set R OMS ENG VLV To ON * Set OMS ENG LEFT & RIGHT To ARM/PRESS * Press EXEC - Confirms ready for OMS burn (Use Right Keypad)	Prepare For OMS Burn Load Burn Targets, Start Attitude Adjustments, Start Countdown Timer Confirm OMS Burn
34	Mission Dep.	Left Panel Center Panel Right Panel Front Left Panel Front Right Panel Center Panel	L1 L2 C3 R1 F6 F8 C3	* Set FLASH EVAP CONTROLLER PRI A & PRI B To ON * Set FLASH EVAP FEEDLINE HTR A SUPPLY & B SUPPLY To 1 * Set BFC CRT DISPLAY To OFF * Set AC BUS SNSR (1/2/3) To AUTO TRIP * Set O2 TK 1 (B) & O2 TK 2 (B) HEATERS To AUTO * Set H2 TK 1 (B) & H2 TK 2 (B) HEATERS To AUTO * Check FLT CNTLR POWER Is OFF * Check FLT CNTLR POWER Is OFF * Check ORBIRAL DAP - CONTROL Is Set To AUTO	Remaining MPS Propellants Are Dumped Automatically. Main Engines Are Gimballed Down During The Dump
35	Mission Dep.	Center Panel	C3	* Enter OPS 105 PRO (Use Left Keypad)	Prepare To Circularize Orbit
36	Mission Dep.	Center Panel Overhead Aft Panel Center Panel	C3 C2 O14 O16 C3	* Check ORBIRAL DAP - CONTROL Is Set To AUTO * Enter ITEM 22 EXEC (Use Right Keypad) * Enter ITEM 27 EXEC (Use Right Keypad) * Enter ITEM 23 EXEC (Use Right Keypad) * Confirm L OMS ENG VLV Is ON * Confirm R OMS ENG VLV Is ON * Confirm OMS ENG (LEFT & RIGHT) Are Set To ARM/PRESS	Circularize Orbit
37	Mission Dep.	Right Panel	R2 R4	* Set 6 ENGINE POWER Switches (LEFT/CTR/RIGHT) To OFF * Set He ISOL A (LEFT/CTR/RIGHT) To GPC * Set He ISOL B (LEFT/CTR/RIGHT) To GPC * Set PNEUMATICS He ISOL To GPC * Set H2 PRESS LINE VENT To OPEN	Propellant Dump Complete
38	Mission Dep.	Right Panel	R2 R4	* Set ET UMBILICAL DOOR - MODE GPC To GPC/MAN * Set CENTERLINE LATCH To STOW * Set LEFT & RIGHT Door To CLOSE * Check Talkback Shows CLOSE * Set LEFT & RIGHT LATCH To LATCH * Check Talkback Shows CLOSED & LATCHED * Set LEFT & RIGHT DOOR To OFF * Set LEFT & RIGHT LATCH To OFF * Set HYD MAIN PUMP PRESS (1/2/3) To LOW * Set APU OPERATE - START/RUN (1/2/3) To OFF * Set APU FUEL TK VLV (1/2/3) To CLOSE * Set APU CNTLR PWR (1/2/3) To OFF * Set BOILER PWR (1/2/3) To OFF * Set BOILER N2 SUPPLY (1/2/3) To OFF * Set HYD CIRC PUMP (1/2/3) To GPC * Set H2 PRESS LINE VENT To GND	Close & Latch The ET Umbilical Doors. APU Shutdown
39	Mission Dep.	Center Panel	C2	* Press EXEC - Confirms ready for OMS burn (Use Right Keypad)	Confirm OMS Burn
40	Mission Dep.	Right Panel Center Panel	R4 C3	* Set PROPELLANT FILL/DRAIN LH 2 OUTBD & INBD To OPEN * Set OMS ENG LEFT & RIGHT To OFF	Liquid He Manual Dump
41	Mission Dep.	Overhead Aft Panel Right Panel	O17 R4	* Set ATVC (1/2/3/4) To OFF * Set Engine Interface Units - EIU (L-C / C-R / R-L) To OFF * Set MEC (1 & 2) To OFF * Set MPS/TVC ISOL VLV - (SYS 1, SYS 2, SYS 3) To CLOSE	Turn Off Main Engine Controllers
42	Mission Dep.	Right Panel Center Panel Front Left Panel	R4 C3 F6	* Set PROPELLANT FILL/DRAIN - LH2 OUTBD To GND * Check PROPELLANT FILL/DRAIN - LH2 INBD To OPEN * ORBITAL DAP/MANUAL MODE - ROTATION YAW, VERN=ON * Set FLIGHT CNTLR POWER To ON * Rotate The Shuttle To Zero Attitude (Pitch/Roll) (Joystick - RHC)	Set Liquid H2 Outboard Fill And Drain Valve To Ground Control. Enable Manual Control Of The RCS Align All ADI Needles
43	Mission Dep.	Right Panel Aft Left Panel	R4 A12	* Set HYDRAULICS - BRAKE HEATERS (A/B/C) To AUTO * Set APU HEATER - GAS GEN/FUEL PUMPS (1/2/3) To A AUTO * Set APU HEATER - LUBE OIL LINES (1/2/3) To A AUTO * Set TANK/FUEL LINE/H2O (SYS 1A, SYS 2A, SYS 3A) To AUTO * Set HYDRAULIC HEATER - RUDDER SPD BRK To A AUTO * Set HYDRAULIC HEATER - BODY FLAP To A AUTO	Thermal Condition The Shuttle



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43	Mission Dep.	Aft Right Panel	A12	* Set HYDRAULIC HEATER - ELEVON To A AUTO * Set HYDRAULIC HEATER - AFT FUSELAGE To A AUTO	Thermal Condition The Shuttle
44		Aft Right Panel	A14	* Set RCS/OMS HEATERS - FWD RCS To A AUTO * Set RCS/OMS HEATERS - LEFT POD To A AUTO * Set RCS/OMS HEATERS - RIGHT POD To A AUTO * Set RCS/OMS HEATERS - FWD RCS JET (1/2/3/4/5) To AUTO * Set RCS/OMS HEATERS - AFT RCS JET (1/2/3/4/5) To AUTO * Set RCS/OMS HEATERS - OMS CRSFD LINES To A AUTO * Set PORT RMS HEATER To AUTO A * Set TOPPING EVAP HEATER - NOZZLE (L & R) To A AUTO * Set TOPPING EVAP HEATER - DUCT Selector To A/B * Set HI LOAD EVAP - HI LOAD DUCT HTR Selector To A/B	
		Left Panel	A8L L1		
45	Mission Dep.	Left Panel	L2	* Set O2 SYS 2 SUPPLY To CLOSE * Set N2 SYS 2 SUPPLY To CLOSE * Set N2 SYS 2 REG INLET To CLOSE * Set H2O LOOP 2 BYPASS - MODE To AUTO * Set H2O PUMP - LOOP 1 To OFF H2O PUMP - LOOP 2 To GPC * Set RGA 1 To OFF * Set RGA 2 & 4 To OFF * Set RGA 3 To OFF * Set ACCEL 3 To OFF * Set ACCEL 4 To OFF	
		Overhead Aft Panel	L1 O14 O15 O16 O15		
46	Mission Dep.	Overhead Left Panel Right Aft Panel	O6 R11L	* Set GENERAL PURPOSE COMPUTER - MODE 5 To HALT * Check MAJ FUNC Set To GNC * Enter OPS 201 PRO (AFT Keypad) * Set MAJ FUNC To SM * Press GPC/CRT (AFT Keypad) * Enter 4 EXEC (AFT Keypad) * Enter OPS 201 PRO (AFT Keypad) * Set GENERAL PURPOSE COMPUTER - MODE 3 To HALT	Configure Computers For Orbit Switch To On-Orbit SW Mode Load GPC 1/2/3 With GNC SW GPC 3 Preserves Independent Source Data GPC 4 Contains System Management Data GPC 5 Retains The Backup Flight System
		Overhead Left Panel	O6		
47	Mission Dep.	Left Panel	L1 L2	* Set RAD CONTROLLER - (LOOP 1 & LOOP 2) To AUTO A * Set RAD CONTROLLER - BYPASS MODE (1 & 2) To AUTO * Set FREON LOOP ISOLATION - MODE To AUTO	Activate Radiator Cooling
48	Mission Dep.	Right Aft Panel	R11L R13L	* Confirm MAJOR FUNC Is Set To SM * Enter OPS 202 PRO (AFT Keypad) * Enter ITEM 3 EXEC * Enter ITEM 1 EXEC * Set PL BAY DOOR (SYS 1 & SYS 2) To ENABLE * Set PL BAY DOOR To OPEN * Confirm PL BAY DOOR Talkbacks Show DEP	Open Payload Doors PL BAY DOOR SPEC Display Enable Auto Mode Enable AC Power Opening Both PL Doors Takes 3 Minutes Indicating Both PL Doors Are Open
49	Mission Dep.	Right Aft Panel	R13L	* Set PL BAY MECH PWR (SYS 1 & SYS 2) To ON * Set RADIATOR LATCH (SYS A & SYS B) To RELEASE * Check RADIATOR LATCH SYS Talkbacks Indicate REL * Set RADIATOR CONTROL (SYS A & SYS B) To DEPLOY * Check RADIATOR CONTROL SYS Talkbacks Indicate DEP	Deploy Radiators Indicating That The Radiators Are Ready For DEP. Deploying Both Radiators Takes 30 Seconds. Indicating Both Radiators Are Deployed.
50	Mission Dep.	Right Aft Panel	R13L R11L	* Set RADIATOR LATCH (SYS A & SYS B) To OFF * Set RADIATOR CONTROL (SYS A & SYS B) To OFF * Set PL BAY DOOR To STOP * Set PL BAY MECH PWR (SYS 1 & SYS 2) To OFF * Set PL BAY DOOR (SYS 1 & SYS 2) To DISABLE * Enter ITEM 2 EXEC (AFT Keypad)	Disable All Power To PL Doors And Radiators. Disable AC Power To The Doors
51	Mission Dep.	Right Aft Panel	R11U	* Set FUEL CELL - PURGE HEATER To GPC * Set H2O LINE HTR & H2O RELIEF HTR To A AUTO * Confirm PURGE VALVES (1/2/3) Are On GPC * Confirm STARTUP HEATER (1/2/3) Are Set To ENABLE * Set GPC PURGE SEQ To START - Press START For 3 Seconds * Confirm GPC PURGE SEQ START Talkback Is WHITE	Initiate Fuel Cell Purge
52	Mission Dep.	Right Aft Panel Left Panel	R11L L1	* Confirm MAJOR FUNC Is Set To SM * Enter SPEC 69 PRO (AFT Keypad) * Enter SPEC 88 PRO (AFT Keypad) * Set FLASH EVAP CONTROLLER (PRI A & PRI B) To OFF * Set FLASH EVAP CONTROLLER - SEC To OFF * Set HILOAD EVAP To OFF	Check Purge Process On The SPEC Display Check Coolant Loops Secure The Flash Evaporator
53	Mission Dep.	Overhead Left Panel Right Aft Panel	O6 R11L	* Set STAR TRACKER POWER (-Y & -Z) To ON * Set DOOR CONTROL (SYS 1 & SYS 2) To OPEN * Check DOOR CONTROL (SYS 1 & SYS 2) Talkbacks Are OP * Set DOOR CONTROL (SYS 1 & SYS 2) To OFF * Set MAJ FUNC To GNC * Enter SPEC 22 PRO (AFT Keypad) * Enter ITEM 3 EXEC (AFT Keypad) * Enter ITEM 4 EXEC (AFT Keypad)	Deploy & Activate The Star Trackers Indicating The ST Doors Are Open
54	Mission Dep.	Right Aft Panel	R11L	* Check MAJ FUNC To GNC * Enter SPEC 21 PRO (AFT Keypad) * Enter ITEM 16 EXEC (AFT Keypad)	Initiate IMU Alignment
55	Mission Dep.	Overhead Center Panel	O7	* Set GPS 1 POWER To ON * Set GPS 1 PRE AMPL UPPER To ON	Activate Global Positioning System (GPS) Activate GPS 1



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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	NOTES
55	Mission Dep.	Overhead Center Panel	07	* Set GPS 1 PRE AMPL LOWER To ON * Set GPS 2 POWER To ON * Set GPS 2 PRE AMPL UPPER To ON * Set GPS 2 PRE AMPL LOWER To ON * Set GPS 3 POWER To ON * Set GPS 3 PRE AMPL UPPER To ON * Set GPS 3 PRE AMPL LOWER To ON * Set DUMP ISOL VLV To OPEN	Activate GPS 2 Activate GPS 3
59	Mission Dep.	Right Aft Panel Right Aft Panel Aft Right Panel Right Aft Panel	R11L R11L R13L A1U R11L	* Check MAJ FUNC To GNC * Enter SPEC 25 PRO (AFT Keypad) * Set KU ANTENNA To DEPLOY * Check KU ANTENNA Talkback For DEP * Set KU ANTENNA To GND * Set KU BAND POWER To STBY * Check MAJ FUNC To GNC * Enter SPEC 33 PRO (AFT Keypad) * Enter ITEM 2 EXEC (AFT Keypad)	Deploy KU Antenna Indicates Status For All THC/RHC (Joysticks). KU Antenna Deployment Takes 15 Seconds Indicates KU Antenna Is Deployed Enable KU Antenna
60	Mission Dep.				Shuttle Is Configured & Ready For Mission

Commence On-Orbit Mission



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STS-1 MISSION CHECKLIST

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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
1100	Mission Dep.				Shuttle Test Mission, System Checkouts Are Performed Next Event
1105	Mission Dep.	Center Panel Overhead Aft Panel Center Panel	C2 C3 O14 O16 C2	* Enter OPS 202 PRO (Right Keypad) - (If Not Displayed) * Enter ITEM 22 EXEC (Right Keypad) * Confirm ORBITAL DAP/CONTROL Switch Is Set To AUTO * Enter ITEM 27 EXEC (Right Keypad) * Enter ITEM 23 EXEC (Right Keypad) * Set OMS ENG (Left & Right) To ARM/PRESS * Set L OMS ENG VLV To ON * Set R OMS ENG VLV To ON * Press EXEC - (Right Keypad) Confirms ready for OMS burn	Orbit Adjustment Burn - (First OMS Burn) Orbit Adjustment Burn - (Second OMS Burn)
1106	Mission Dep.	Center Panel	C3	* Set OMS ENG (Left & Right) To OFF	First Orbit Adjustment Complete Next Event
1110	Mission Dep.	Center Panel	C2 C3 C2	* Enter ITEM 22 EXEC (Right Keypad) * Enter ITEM 27 EXEC (Right Keypad) * Enter ITEM 23 EXEC (Right Keypad) * Set OMS ENG (Left & Right) To ARM/PRESS * Press EXEC - (Right Keypad) Confirms ready for OMS burn	Note: ORBIT MNVR EXEC Should Be Displayed On The CRT. Note: LOAD Will Be Flashing On The CRT
1111	Mission Dep.	Center Panel	C3	* Set OMS ENG (Left & Right) To OFF	OMS Burn Complete
1112	Mission Dep.				Columbia Continues Its Mission Next Event
1115	Mission Dep.	Front Left Panel	F6	* Confirm FLT CNTLR POWER Is ON	Shuttle Translation Test

Shuttle Translation Test

Translate the shuttle around as you wish. This is a great opportunity to see how the shuttle performs.

The orbital digital auto pilot (ORBITAL DAP) push buttons on the CENTER PANEL (C3), control the behavior of the Translation/Rotation actions.

In PULSE mode the RCS fires short burst each time the joystick is deflected.

In DISC RATE mode the RCS fires for as long as you deflect the joystick, the RCS will fire Counter-Bursts once the joystick is released until the shuttle stabilizes

The PRI, ALT and VERN modes select different dead bands size and rates of thrust. VERN mode uses dedicated RCS's and is used for final attitude adjustments. VERN mode conserves fuel and is the primary mode used while in orbit.

The LOW Z & HIGH Z translation modes select whether any up-firing jets are allowed to fire.

Once the translation tests are complete, Select NEXT EVENT and follow the Deorbit & Landing Checklist

Commence Deorbit & Landing



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DEORBIT & LANDING CHECKLIST

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1000	Mission Dep.	Left Panel	L1	* Set RAD CONTROLLER - OUT TEMP To HIGH * Set RAD CONTROLLER (LOOP 1 & LOOP 2) To OFF * Set RAD CONTROLLER - BYPASS MODE (1 & 2) To MAN * Confirm RAD FLOW BYPASS VALVE Talkbacks Display (BYP) * Confirm The HI LOAD EVAP ENABLE Is Set To OFF * Set FLASH EVAP CONTROLLER (PRI A & PRI B) To ON * Set FLASH EVAP CONTROLLER - SEC To ON	Trap Cold Freon In The Bay Radiators If The Rad Bypass Valve Talkbacks Do Not Display (BYP), Set The Manual Rad Flow Bypass Switches 1 & 2 To Bypass.
1001	Mission Dep.	Right Aft Panel Aft Left Panel Right Aft Panel	R11L A1U R13L R11L	* Confirm The MAJ FUNC Switch Is Set To GNC * Enter SPEC 33 PRO (AFT Keypad) * Enter ITEM 2 EXEC (AFT Keypad) * Set KU BAND POWER To OFF * Set KU Antenna To STOW * When KU Antenna Talkback Shows STO, Set KU Antenna To GND * Enter SPEC 22 PRO (Aft Keypad) * Enter ITEM 9 EXEC (Aft Keypad) * Enter ITEM 10 EXEC (Aft Keypad)	Deactivate & Stow The KU Antenna If Rendezvous Navigation Has Been Used It Must Be Disabled. To Disable Enter: ITEM 1 EXEC On The AFT Keypad.
1002	Mission Dep.	Right Aft Panel	R13L	* Set PL BAY MECH PWR (SYS 1 & SYS 2) To ON * Set RADIATOR CONTROL (SYS A & SYS B) To STOW * Set LATCH CONTROL (SYS A & SYS B) To LATCH * Set LATCH CONTROL (SYS A & SYS B) To OFF * Set RADIATOR CONTROL (SYS A & SYS B) To OFF * Set PL BAY MECH PWR (SYS 1 & SYS 2) To OFF	Stow The Radiators Wait Until The RADIATOR CONTROL Talkbacks Show STO Before Setting The LATCH CONTROLS SYS 1 & SYS 2 To LATCH. Wait Until Latch Control Talkbacks Show LAT Before Turning Off ALL Radiators.
1003	Mission Dep.	Overhead Left Panel Center Panel Right Panel	O6 C3 R2	* Set GENERAL PURPOSE COMPUTER - MODE 5 To STBY * Set The BFC/CRT - Display To ON * Confirm The BFC/CRT SELECT Is Set To (3+1) * Confirm BOILER CNTLR/HTR Switches (1/2/3) Are ON * Set HYD CIRC PUMP Switches (1/2/3) To OFF	Activate Backup Flight System
1004	Mission Dep.	Overhead Aft Panel Right Aft Panel	O14 O15 O16 O15 R11L	* Set RGA 1 To ON * Set RGA (2 & 4) To ON * Set RGA 3 To ON * Set ACCEL 3 To ON * Set ACCEL 4 To ON * Set SUPPLY H2O - Crossover Valve To OPEN	Gyro Assemblies & Accelerators
1006	Mission Dep.	Right Aft Panel	R11L R13L R11L	* If Required, Enter OPS 202 PRO (AFT Keypad) * Set MAJ FUNC Switch To SM * Enter ITEM 1 EXEC (AFT Keypad) * If Not Already Enabled, Enter ITEM 3 EXEC (AFT Keypad) * Set PL BAY DOOR (SYS 1 & SYS 2) To ENABLE * Set PL BAY DOOR To CLOSE * Set PL BAY DOOR To STOP * Set PL BAY DOOR (SYS 1 & SYS 2) To DISABLE * Enter ITEM 2 EXEC (AFT Keypad)	Close Payload Bay Doors Wait Until The PL BAY DOOR Talkback Shows CL.
1008	Mission Dep.	Right Aft Panel Overhead Left Panel Right Aft Panel	R11L O6 R11L	* Set MAJ FUNC To GNC * Press GPC/CRT (AFT Keypad) * Enter 4 EXEC (AFT Keypad) * Enter OPS 201 PRO (AFT Keypad) * Set GENERAL PURPOSE COMPUTER - MODE 3 To RUN * Enter OPS 301 PRO (AFT Keypad)	Reconfigure GNC's For Deorbit
1009	Mission Dep.	Overhead Left Panel	O6	* STAR TRACKER DOOR CONTROL (SYS 1 & SYS 2) To CLOSE * STAR TRACKER DOOR CONTROL (SYS 1 & SYS 2) To OFF * Set The STAR TRACKER POWER Switches (-Y & -Z) To OFF	Close Star Tracker Doors Wait Until STAR TRACKER DOOR POSITION Talkback Shows CL.
1010	Mission Dep.	Right Panel Overhead Aft Panel Center Panel Left Panel Aft Left Panel	R4 O15 O14 O16 C3 L2 L1 L2 A12	* Check HYDRAULICS BRAKE HEATER (A/B/C) Set To AUTO * Set BRAKES MN B To ON * Set BRAKES MN A To ON * Set BRAKES MN C To ON * ORBITAL DAP / MANUAL MODE / ROTATION - ROLL To PRI * Check ORBITAL DAP / CONTROL To AUTO * Confirm ANTI SKID - Set To ON * Confirm NOSE WHEEL STEERING - Set To 1 * Confirm ENTRY MODE - Set To AUTO * Set FLASH EVAP CONTROLLER (PRI A & PRI B) To GPC * Set FLASH EVAP CONTROLLER SEC To GPC * FREON LOOP ISOLATION - MODE To OFF * Set O2 SYS 2 SUPPLY To OPEN * Set N2 SYS 2 SUPPLY To OPEN * Set N2 SYS 2 REG INLET To OPEN * Set O2/N2 CNTLR VLV SYS 1 To OPEN * Set APU HEATER - GAS GEN/FUEL PUMP (1/2/3) To OFF * Set APU HEATER - LUBE OIL LINE (1/2/3) To OFF * Set All TANK/FUEL LINE/H2O SYS Switches To OFF * HYDRAULIC HEATER - RUDDER SPD BRK (A & B) To OFF * HYDRAULIC HEATER - BODY FLAP (A & B) To OFF * HYDRAULIC HEATER - ELEVON (A & B) To OFF * HYDRAULIC HEATER - AFT FUSELAGE (A & B) To OFF	Final Switch Configuration Check



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1012	Mission Dep.	Right Panel	R2	* Set He ISOLATION A LEFT/CENTER/RIGHT To OPEN * Set He ISOLATION B LEFT/CENTER/RIGHT To OPEN * Set PNEUMATICS L ENG He XOVR To OPEN * Set PNEUMATICS He ISOL To OPEN * Set LEFT He INTERCONNECT To - IN OPEN * Set CENTER & RIGHT INTERCONNECT To - OUT OPEN	Main Propulsion System / Helium Release
1013	Mission Dep.	Right Aft Panel	R11L	* Confirm MAJ FUNC Set To GNC * Enter SPEC 21 PRO (AFT Keypad) * Enter ITEM 16 EXEC	Final IMU Alignment
1014	Mission Dep.	Center Panel Right Panel Center Panel	C2 R2 C2	* Enter ITEM 34 EXEC (Right Keypad) * Set BOILER N2 SUPPLY (1/2/3) To ON * Set BOILER PWR (1/2/3) To ON * Set APU FUEL TK VLV (1/2/3) To OPEN * Set APU CNTLR PWR (1/2/3) To ON * Confirm APU AUTO SHUT DOWN (1/2/3) Set To INHIBIT * Confirm HYD MAIN PUMP PRESS (1/2/3) Set To LOW * Confirm APU SPEED SELECT Set To NORM * Confirm APU/HYD Ready To Start Talkbacks Are GREY * Confirm GIMBAL CK 34 On CRT 2 Is Complete (No Asterisk) * Enter OPS 302 PRO (Right Keypad)	Perform OMS Gimbal Check If there's an asterisk next to GMBL CK 34 It means the gimbal check is incomplete. You must wait for the asterisk to Disappear.
1015	Mission Dep.	Center Panel	C2	* Confirm (CRT 1, CRT 3, CRT 2) Are Set To MAJ FUNC GNC * Enter SPEC 50 PRO (Left Keypad) * Enter SPEC 51 PRO (Right Keypad) * Enter ITEM 44 EXEC (Right Keypad)	Horizontal Situation & Override Displays
1016	Mission Dep.	Center Panel Right Panel	C2 R2	* Press RESUME (Right Keypad) * Set APU OPERATE - START/RUN For APU 1	
1017	Mission Dep.	Center Panel Overhead Aft Center Panel	F7 C2 O14 O16 C3 C2	* Check CRT 1 Confirm Display Of OPS MODE 3021 * ITEM 1 EXEC (Right Keypad) (If Required) * ITEM 22 EXEC (Right Keypad) * ITEM 27 EXEC (Right Keypad) * ITEM 23 EXEC (Right Keypad) * Confirm L OMS ENG VLV Is ON * Confirm R OMS ENG VLV Is ON * Set OMS ENG (LEFT & RIGHT) To ARM/PRESS * Press EXEC - (Right Keypad) Confirms ready for OMS burn	Perform Deorbit Burn Enables Both OMS Engines
1018	Mission Dep.	Center Panel Overhead Aft Panel	C3 O14 O16	* Set OMS ENG (LEFT & RIGHT) To OFF * Set L OMS ENG VLV To OFF * Set R OMS ENG VLV To OFF	Deorbit Burn Complete
1020	Mission Dep.	Center Panel Front Left Panel	C2 F6	* Enter OPS 303 PRO (Right Keypad) * Position The Shuttle To The Correct Attitude	Correct Attitude Align All ADI Needles
1022	Mission Dep.	Center Panel Right Panel Overhead Aft Panel Right Panel Center Panel	C2 R2 O17 R1 C2	* Enter ITEM 36 EXEC (Right Keypad) * Enter ITEM 37 EXEC (Right Keypad) * Check APU OPERATE - START/RUN For APU (2 & 3) * Set HYD MAIN PUMP PRESS (1/2/3) To NORM * Set ATVC - (1/2/3/4) To ON * Set AC BUS SNSR (1/2/3) To MONITOR * Enter ITEM 39 EXEC (Right Keypad)	Dump RCS Propellant Pressure Should Rise To 3000 psi
1023	Mission Dep.	Center Panel Overhead Right Panel Center Panel	C2 O8 C2	* Enter ITEM 38 EXEC (Right Keypad) * Enter ITEM 40 EXEC (Right Keypad) * Set FWD RCS - He PRESS (A & B) To CLOSE * Set TANK ISOLATION (1/2 & 3/4/5) To CLOSE * Set MANIFOLD ISOLATION (1/2/3/4/5) To CLOSE * Enter OPS 304 PRO (Right Keypad)	Wait Until The Cycle Completes
1024	Mission Dep.	Front Left Panel Front Right Panel	F6 F8	* Set Commander ATTITUDE INRTL To LVLH * Set Pilot ATTITUDE INRTL To LVLH	
1025	Mission Dep.	Front Right Panel	F4	* Check PITCH & ROLL/YAW Set To AUTO	Atmospheric Entry Begins
1026	Mission Dep.				The Shuttle Will Perform Roll Reversals
1027	Mission Dep.	Left Panel	L1	* Set RAD CONTROLLER - OUT TEMP To NORM * Set RAD CONTROLLER (LOOP 1 & LOOP 2) To AUTO A * Set RAD CONTROLLER - BYPASS MODE (1 & 2) To AUTO	
1080	Mission Dep.	Right Panel Left Panel	R4 L1	* Set MPS/TVC/ISOL/VLV (SYS1, SYS2, SYS3) To OPEN * Set NH3 BOILER - NH3 CONTROLLER (A & B) To PRI/GPC	Hydraulics / Brake Heater
1028	Mission Dep.	Center Panel Front Left Panel Front Right Panel Overhead Right Panel	C3 F6 F8 O8	* Set AIR DATA PROBE (Left & Right) To DEPLOY HEAT * Set AIR DATA To LEFT * Set AIR DATA To RIGHT * Set RADAR ALTIMETERS (1 & 2) To ON	Deploy Air Data Probes
1029	Mission Dep.	Front Left Panel Front Right Panel Front Left Panel	F3 F3 F2 F6	* Set HUD POWER To ON (Commander) * Set HUD POWER To ON (Pilot) * Set PITCH & ROLL/YAW To CSS (Commander) * Check FLT CNTLR POWER To ON	Commander & Pilot HUD Power
1031	Mission Dep.	Overhead Right Panel	O8	* Set MLS (1/2/3) Switches To ON * Set MLS Thumbwheel To (111)	Auto Software Transition To OPS 305 Microwave Scan Beam Landing System
1034	Mission Dep.	HUD Display Window		* Press LANDING GEAR ARM (Twice)	Arm The Landing Gear



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1034	Mission Dep.	HUD Display Window		* Press LANDING GEAR DOWN (Twice)	Deploy Landing Gear
1035	Mission Dep.	HUD Display Window		* Press SHUTE ARM (Twice) * Press DEPLOY SHUTE (Twice)	Touchdown: Gently Push The Nose Down Until The Nose Wheel Touches The Runway. Use The Rudder To Steer. Apply Wheel Brakes.
1036	Mission Dep.	HUD Display Window		* Press CHUTE JETT (Twice)	Release Brake Shute
1037	Mission Dep.				End Of Mission

Commence Shutdown



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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	NOTES
	Mission Dep.	Left Panel Right Panel Front Left Panel Front Right Panel Front Left Panel Front Right Panel	L2 R2 R1 F6 F8 F3 F3	* SPD BK - MAN (Full FWD) * NWS - OFF * APU Auto Shutdown (1/2/3) - ENABLE * APU Speed Select (1/2/3) - NORM * AC BUS SNSR (1/2/3) - AUTO TRIP * Commander FLT CNTLR POWER - OFF * Pilot FLT CNTLR POWER - OFF * Commander HUD POWER - OFF * Pilot HUD POWER - OFF	
	Mission Dep.	Center Panel	C3	(PERFORMED IF ELS) * MSTR MADS - OFF (DoD ELS, MCC call DoD OSC on NCC)	Note: MCC Will Report Go/No-Go To DOFF Suits. (Post Safety Assessment)
	Mission Dep.	Center Panel Overhead Aft Panel	C3 O14 O15 O16 O14 O15 O16 O14 O16	* OMS ENG (Left & Right) - OFF * RJDA 1A DRIVER (L2/R2 MANF) - OFF * RJDA 2A DRIVER (L4/R4 MANF) - OFF * RJDF 1B DRIVER (F1 MANF) - OFF * RJDA 1B DRIVER (L1/R1 MANF) - OFF * RJDF 1A DRIVER (F2 MANF) - OFF * RJDA 2B DRIVER (L1/R1 MANF) - OFF * RJDF 2A DRIVER (F1 MANF) - OFF * RJDF 2B DRIVER (F1 MANF) - OFF * RJDA 1A LOGIC (L2/R2 MANF) - OFF * RJDA 2A LOGIC (L4/R4 MANF) - OFF * RJDF 1B LOGIC (F1 MANF) - OFF * RJDA 1B LOGIC (L1/R1 MANF) - OFF * RJDF 1A LOGIC (F2 MANF) - OFF * RJDA 2B LOGIC (L1/R1 MANF) - OFF * RJDF 2A LOGIC (F1 MANF) - OFF * RJDF 2B LOGIC (F1 MANF) - OFF * L OMS ENG VLV - OFF * R OMS ENG VLV - OFF	RMS OMS Safing (RDJs)
	Mission Dep.	Overhead Aft Panel	O15 O16 F2 F3 F4	(NOT PERFORMED IF ELS) * MNB - DRAG CHUTE SYS 2 - op * MNC - DRAG CHUTE SYS 1 - op * DRAG SHUTE - LT OFF * DRAG SHUTE - LT OFF * DRAG SHUTE - LT OFF	Drag Chute Safing
	Mission Dep.	Center Panel	C3	* AIR DATA PROBE (Left & Right) - DEPLOY	Deactivate Air Data Probe HTRS
	Mission Dep.	Right Aft Panel Aft Right Panel Front Left Panel Front Right Panel Aft Right Panel Right Aft Panel	R14 A12 F6 F8 A12 R14	(NOT PERFORMED IF ELS) * ESS 1BC LDG GEAR / ARM/DN - RESET CL * LG ARM/DN RESET - Set Switch To The RESET Position * LDG GEAR - LT OFF * LDG GEAR - LT OFF * LG ARM/DN RESET - Set Switch To The Down Position * ESS 1BC LDG GEAR / ARM/DN - RESET OP	Landing Gear Safing
	Mission Dep.	Right Panel	R2	* ET UMBILICAT DOOR / MODE - GCP/MAN * ET UMBILICAT DOOR / RIGHT LATCH - RELEASE * ET UMBILICAT DOOR / RIGHT LATCH - OFF * ET UMBILICAT DOOR / LEFT LATCH - RELEASE * ET UMBILICAT DOOR / LEFT LATCH - OFF * ET UMBILICAT DOOR / MODE - GCP	ET Umbilical Door Opening
	Mission Dep.	Front Right Panel Front Left Panel Right Panel Center Panel	F4 F8 R2 C3 R2	* BODY FLAP - MAN * FLT CNTLR PWR - ON * HYD MAIN PUMP PRESS #1 - LO * Run Full Load Test * HYD MAIN PUMP PRESS #1 - NORM * HYD MAIN PUMP PRESS #3 - LO * Repeat Load Test * HYD MAIN PUMP PRESS #3 - NORM	Hydraulic Load Test A Minimum Of Two Operating Hydraulic Systems Are Required For This Test
	Mission Dep.	Center Panel Front Right Panel Center Panel Right Panel Center Panel Right Panel Center Panel	C3 C2 F4 C3 R4 C2 R4 C2	* BFC CRT DISPLAY - ON * Enter Item OPS 000 PRO (Right Keypad) * Enter Item OPS 901 PRO (Right Keypad) * BODY FLAP - MAN * BODY FLAP - DOWN * HYDRAULICS - MPS/TVC ISOL VLV (SYS 1, SYS 2, SYS 3) OPEN * Enter ITEM 8 EXEC (Right Keypad) * Enter ITEM 1 +0 2 EXEC (Right Keypad) * Enter ITEM 5 EXEC (Right Keypad) * HYDRAULICS - MPS/TVC ISOL VLV (SYS 1, SYS 2, SYS 3) CLOSE * Enter ITEM 23 EXEC (Right Keypad) * Enter ITEM 1 EXEC (Right Keypad) * Enter ITEM 29+1 EXEC (Right Keypad) * Enter ITEM 30+8 EXEC (Right Keypad) * Enter ITEM 31 EXEC (Right Keypad) * Enter ITEM 32 EXEC (Right Keypad)	DPS Transition GNC 9 (If Pass)



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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
	Mission Dep.	Overhead Left Panel Left Panel	O1 L1	* Confirm FREON EVAP OUT TEMP >40 degrees * RADIATORS / RAD CONTROLLER - OUT TEMP - HI * H2O PUMP LOOP 1 - ON	Radiator Reconfiguration
	Mission Dep.	Right Panel	R4 R2	* HYDRAULICS - MPS/TVC ISOL VLV (SYS 1, SYS 2, SYS 3) - CLOSE * BOILER PWR (1/2/3) - OFF * BOILER N2 SUPPLY (1/2/3) - OFF * APU OPERATE (1/2/3) - OFF * APU FUEL TK VLV (1/2/3) - CLOSE * APU CNTLR PWR (1/2/3) - OFF	APU/HYD Shutdown
	Mission Dep.	Right Panel	R2	* He ISOLATION (A & B) - CLOSE * PNEUMATICS / L ENG He XOVR - CLOSE	Post Landing MPS Reconfiguration
	Mission Dep.	Left Panel	L2	* Set O2 SYS SUPPLY 1 - CLOSE * Set O2 SYS SUPPLY 2 - CLOSE * Confirm O2 EMER Talkback Indicates CL	PCS Deactivation
	Mission Dep.	Aft Left Panel Overhead Center Panel	A13 O7	* GPS POWER (1 & 2) - OFF * GPS PRE AMPL UN - OFF * GPS PRE AMPL LC - OFF * GPS POWER (GPS 1, GPS 2, GPS 3) - OFF * GPS PRE AMPL UPPER (GPS 1, GPS 2, GPS 3) - OFF * GPS PRE AMPL LOWER (GPS 1, GPS 2, GPS 3) - OFF	GPS Power Down
	Mission Dep.	Center Panel	O2	* Enter ITEM 8 EXEC (Right Keypad) * Enter ITEM 1+03 EXEC (Right Keypad) * Enter ITEM 2 EXEC (Right Keypad) * Enter ITEM 5 EXEC (Right Keypad)	Vent Door Purge Positioning (PASS)
	Mission Dep.	Overhead Center Panel	O7 O8 O7	* MASTER RCS CROSSFEED - OFF * LEFT OMS / He PRESS/VAPOR ISOL (A & B) - GPC * RIGHT OMS / He PRESS/VAPOR ISOL (A & B) - GPC * LEFT OMS CROSSFEED (A & B) - OPEN/CLOSE * RIGHT OMS CROSSFEED (A & B) - OPEN/CLOSE * LEFT OMS TANK ISOLATION (A & B) - CLOSE/OPEN/GPC * RIGHT OMS TANK ISOLATION (A & B) - CLOSE/OPEN/GPC * LEFT OMS CROSSFEED (A & B) - OPEN/GPC * FWD RCS / He PRESS (A & B) - CLOSE/GPC * FWD RCS TANK ISOLATION (1/2 & 3/4/5) - CLOSE * FWD RCS MANIFOLD ISOLATION (1/2/3/4/5) - CLOSE * FWD RCS MANIFOLD ISOLATION (1/2/3/4/5) - OPEN/GPC * LEFT OMS / He PRESS/VAPOR ISOL (A & B) - CLOSE/GPC * RIGHT OMS / He PRESS/VAPOR ISOL (A & B) - CLOSE/GPC * LEFT MANIFOLD ISOLATION (1/2/3/4/5) - CLOSE * RIGHT MANIFOLD ISOLATION (1/2/3/4/5) - CLOSE * LEFT MANIFOLD ISOLATION (1/2/3/4/5) - OPEN/GPC * RIGHT MANIFOLD ISOLATION (1/2/3/4/5) - OPEN/GPC * LEFT RCS TANK ISOLATION (1/2 & A 3/4/5 B) - CLOSE * RIGHT RCS TANK ISOLATION (1/2 & A 3/4/5 B) - CLOSE * LEFT & RIGHT RCS CROSSFEED - OPEN/CLOSE/GPC	RCS, OMS Valve Test Open, Then Close Open, Then Close Close, Then Open, Then GPC Close, Then Open, Then GPC Open, Then GPC Close, Then GPC Open, Then GPC Close, Then GPC Close, Then GPC Open, Then GPC Open, Then GPC Open, Then Close, Then GPC
	Mission Dep.	Overhead Center Panel	O7	* LEFT RCS TANK ISOLATION (1/2 & A 3/4/5 B) - OPEN/GPC * RIGHT RCS TANK ISOLATION (1/2 & A 3/4/5 B) - OPEN/GPC	Open, Then GPC Open, Then GPC
	Mission Dep.	Overhead Left Panel	O6	* GPC MODE (1/2/3/4/5) - STBY/HALT	STBY, Then Halt
	Mission Dep.			IF LANDING AT (KSC, EDW, NOR) <u>HATCH OPENING PROCEDURE</u> * Pull G SUIT Controller Clip - (If Inflated) * Lap Belt & Chute - Release * Egress Seat - (Helmet Required If ELS) * Unstow - 'Return To Houston' Bags - (Except ELS)	Hatch Opening
	Mission Dep.			IF YOU ARE NOT LANDING AT (KSC, EDW, NOR) <u>HATCH OPENING PROCEDURE</u> * Tabs/Visor - CLOSE * Green Apple - PULL * Open Hatch/Deploy Slide Per Decal	Hatch Opening
	Mission Dep.			<u>ORBITER UNAIDED EGRESS</u> * Egress Orbiter * Hand Carry Landing Site Data Book * If ELS - (Reference ELS POST LANDING Procedures)	Orbiter Egress