Space Shuttle Mission 2007

Designed By: Michael Swannick

Mission Checklist
STS-121

Crew Members

Commander - Steven W. Lindsey | Pilot - Mark E. Kelly

Mission Specialist

Michael E. Fossem | Lisa M. Nowak | Piers J. Sellers | Stephanie D. Willson | Thomas A. Reiter

Mission Highlights

Carried out by Discovery on July 4, 2006. ISS resupply mission. Thomas Reiter will remain onboard the ISS. This was the most photographed shuttle mission in history, with more than 100 high-definition, digital, video and film cameras documenting the launch and climb to orbit.

Payload

Multi Purpose Logistics Module (MPLM) LEONARDO. The Italian built module contains supplies that will be transferred to ISS.
Integrated Cargo Carrier (ICC). The ICC will hold the new pump module and the new TUS-RA during launch and docking. It will also hold the faulty TUS-RA while traveling back to Earth.
Lightweight Multipurpose Experiment Support Structure Carrier (LMC). The LMC will carry a large box with a lid, a Development Test Objective (DTO), that astronauts will open up during a tentatively planned third spacewalk to conduct several tile and RCC panel repair experiments while on orbit..
External Active Thermal Control System (EATCS) pump module. The EATCS is carried on the ICC and will be placed on the ISS equipment support platform for later use.
Oxygen Generation System (OGS). The MPLM will transport the 1,465 lb. OGS rack to the International Space Station. The system uses water to generate breathable oxygen for six crew members.
External Airlock with Androgynous Peripheral Docking System (APDS).
Minus Eighty Laboratory Freezer for ISS (MELFI). The MELFI will also be flying to the space station in the MPLM. It is a rack size facility which will provide the space station with refrigerated volume for storage and fast freezing of life science and biological samples.
Trailing Umbilical System Reel Assembly (TUS-RA). The TUS-RA is basically a large spool much like a garden hose reel that pays out cable when the Mobile Transporter (MT) on the ISS moves away and rolls it back up as the MT returns to the center of the truss. The facility TUS-RA on ISS will be replaced and the faulty one brought back to Earth for analysis.
Percutaneous Electrical Muscle Stimulator (PEMS). The purpose of the PEMS is to deliver electrical stimulation to non-thoracic muscle groups of a human test subject.
European Modular Cultivation System (EMCS). The EMCS is a large incubator that provides control over atmosphere, lighting, and humidity of growth chambers. The first planned experiment will use the chamber to study plant growth. It will be carried in the MPLM

Flight Summary

Launchpad: Kennedy Space Center (KSC) 39A | Orbit: 122NM | Inclination: 51.6 | Orbits: 202

Duration: 12 Days, 18 Hours, 57 Minutes, 34 Seconds | Landing: Kennedy Space Center

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PRE-LAUNCH CHECKLIST

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 Front Left Panel	L2 F2	* Set CABIN VENT ISOL To CLOSE * Set CABIN VENT To CLOSE * Press MASTER ALARM	Cabin Leak Check Cancel Master Alarm Sound
8	T-00:00:51:00				Pilot Confirms IMU Alignment
9	T-00:00:50:00	Right Panel Overhead Aft Panel Center Panel	R2 O14 O16 C3	* Check BOILER CNTLR/HTR (1/2/3) Are On - A * Set BOILER N2 Supply (1/2/3) To ON * Set L OMS ENG VLV Is ON * Set R OMS ENG VLV Is ON * Set OMS ENG (LEFT & RIGHT) Are Set To ARM/PRESS	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 C2	C3 	* Set BFC CRT DISPLAY To ON * Confirm BFC CRT SELECT Is At (3+1) * Enter ITEM 25 EXEC (Use Left Keypad)	Enable Backup Flight System (BFS) And Execute Computer Data Transfer To BFS Copy Primary Avionics SW To BFS
12	T-00:00:36:40	Left Panel Overhead Low Panel	L2 O1	* Set CABIN VENT To CLOSE * Set CABIN VENT ISOL To OPEN * Check CABIN dP/dT Gauge For Possible Depressurization	Cabin Leak Check - Continued
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 Center Panel	F6 C3	* Check ABORT Light ON/OFF For 8 Seconds * Set CAUTION/WARNING MEMORY To CLEAR	Final Test Of The ABORT System Clear C/W Memory
18	T-00:00:09:00	Center Panel	C3	* Set Timer Thumbwheels To 0900 * Set TIMER Switch To SET * Check EVENT TIMER MODE Is DOWN	Enable Countdown From Nine (9) Minutes
605	T-00:00:09:00	Center Panel Front Center Panel	C3 F7	* Set EVENT TIMER CONTROL To START * Confirm EVENT TIMER Display Continues The Countdown	Start The Nine (9) Minute Countdown
19	T-00:00:08:00	Right Panel	R1 R2	* Set ESS BUS SOURCE (MN B/C, MN C/A, MN A/B) To ON * 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 * Set HYD CIRC PUMP (1/2/3) Set To GPC * Set APU CNTLR PWR (1/2/3) To ON	Enable Fuel Cells The Crew Access Arm Is Retracting APU Prestart Check Is Underway
20	T-00:00:05:10	Right Panel Front Center Panel Right Panel Front Center Panel Front Left Panel Right Panel	R2 F7 R2 F7 F2 R2	* Set APU FUEL TK VLV (1/2/3) To Open * Check APU/HYD READY TO START (1/2/3) Repeaters-(White) * Set APU OPERATE (1/2/3) To START/RUN * Check HYDRAULIC (APU) Pressure 900psi (Use MFD #2) * Set HYD MAIN PUMP PRESS (1/2/3) To NORM * Check HYDRAULIC (APU) Pressure 3000psi (Use MFD #2) * Press MASTER ALARM (If Required) * Set HYD CIRC PUMP (1/2/3) Set To OFF	APU Start The Master Alarm May Sound Until APU Pressure Reaches 3000 PSI. (Silence Alarm)
21	T-00:00:04:30 T-00:00:04:10	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 APU Check Complete
22	T-00:00:03:45 T-00:00:03:05				Start Hydraulic Check, Aero Surfaces Are Moved, A Gimbal Check Is Performed 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 Center Panel	R2 R1 C3	* Set APU AUTO SHUT DOWN (1/2/3) To INHIBIT * Set AC BUS SNSR (1/2/3) To MONITOR * Set CAUTION/WARNING MEMORY To CLEAR	APU Power - Inhibit

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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
25	T-00:00:01:40				Liquid Hydrogen External Tanks Closed
25	T-00:00:01:20				Go For Launch Announcement
25	T-00:00:01:00				One Minute Countdown Announcement
25	T-00:00:00:30				Thirty Seconds Countdown Announcement
26	T-00:00:00:15				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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ASCENT CHECKLIST

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
600	T+00:00:02:10				An OMS Assist Burn Is Now Performed To Add Additional Boost
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
601	T+00:00:05:19				The Shuttle Performs A Roll-To-Heads-Up
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)
32	Mission Dep.			* Check MAIN ENGINE STATUS Lights (Left/CTR/Right) Are Red	External Tank Separation
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 Gimbaled 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	* Confirm DAP (Digital Auto Pilot) Switches Are 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 & Drain Valve To Ground Control Set Attitude Manually Enable Vernier RCS Enable Manual Control Of The RCS Align All ADI Needles
43	Mission Dep.	Right Panel Aft Right 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 * Set HYDRAULIC HEATER - ELEVON To A AUTO * Set HYDRAULIC HEATER - AFT FUSELAGE To A AUTO	Thermal Condition The Shuttle
44	Mission Dep.	Aft Left 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	Activate Various Heater Systems

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

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55	Mission Dep.	Right Aft Panel	R11L	* Set DUMP ISOL VLV To OPEN	
59	Mission Dep.	Right Aft Panel	R11L	* Check MAJ FUNC To GNC	Deploy KU Antenna
				* Enter SPEC 25 PRO (AFT Keypad)	Indicates Status For All THC/RHC (Joysticks).
			R13L	* Set KU ANTENNA To DEPLOY	KU Antenna Deployment Takes 15 Seconds
				* Check KU ANTENNA Talkback For DEP	Indicates KU Antenna Is Deployed
				* Set KU ANTENNA To GND	
		Aft Right Panel	A1U	* Set KU BAND POWER To STBY	
		Right Aft Panel	R11L	* Check MAJ FUNC To GNC	
				* Enter SPEC 33 PRO (AFT Keypad)	
				* Enter ITEM 2 EXEC (AFT Keypad)	Enable KU Antenna
60	Mission Dep.				Shuttle Is Configured & Ready For Mission

Commence On-Orbit Mission

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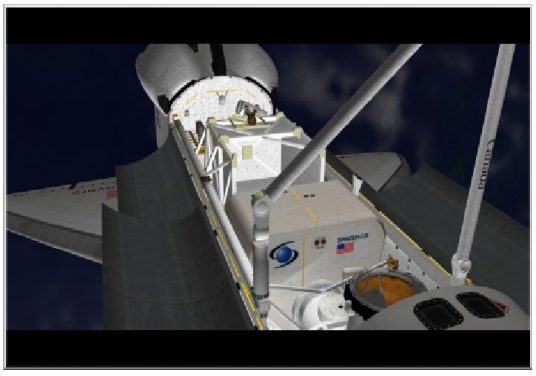
STS-121 MISSION CHECKLIST

COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
1100	Mission Dep.				The RMS Is Powered Up And Checked Next Event
1101	Mission Dep.	Aft Left Panel	A8L	* Set RMS POWER To PRIMARY * Set RMS SELECT To PORT * Set The PORT RMS DEPLOY To DEPLOY	Power Up & Deploy The RMS
1102	Mission Dep.	Aft Left Panel	A8L	* Set The PORT RMS DEPLOY To OFF * Set The PORT RMS Latch To RELEASE * Set The PORT RMS Latch To OFF * Hold The RMS SHOULDER BRACE RELEASE Toward PORT	RMS Deployed Wait Until Talkback Indicates REL Press Until Talkback Indicator Turns White
1103	Mission Dep.	Right Aft Panel Aft Left Panel	R11L A8U	* Set MAJ FUNC To SM * Enter SPEC 94 PRO (Aft Keypad) * Set MODE Rotary Switch To SINGLE * Press ENTER Just Below The MODE Rotary Switch * Set BRAKES Switch To OFF	Continue RMS Preparation
1104	Mission Dep.	Aft Left Panel	A8U	* Set The PARAMETER Rotary Switch To JOINT ANGLE * Set The JOINT Rotary Switch To SHOULDER/PITCH * Press & Hold The SINGLE DIRECT DRIVE In The + Position * Set The JOINT Rotary Switch To ELBOW * Press & Hold The SINGLE DIRECT DRIVE In The - Position * Set The MODE Rotary Switch To MANUAL ORB UNL * Press ENTER Just Below The MODE Rotary Switch	Move RMS Out Of Reach Limit Confirm Digital Readout Indicates +3 Degrees Confirm Digital Readout Indicates -3 Degrees
1105	Mission Dep.	Aft Right Panel	A6U	* Set FLT CNTLR POWER To ON	Gain Manual RMS RHC/THC Control
1106	Mission Dep.	Aft Left Panel Front Left Panel	A8L A8U F6	* Set RMS POWER To OFF * Set RMS BRAKES To ON * Set FLT CNTLR POWER To ON	Turn Off RMS Power For Later Use.
1107	Mission Dep.				This Ends The Activation And Checkout Of The RMS. Next Event
1110	Mission Dep.	Center Panel Overhead Aft Panel Center Panel	C2 C3 O14 O16 C2	* Set MAJOR FUNC To GNC For CRT #2 * Enter OPS 202 PRO (Right Keypad) * 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 * Confirm L OMS ENG VLV Is ON * Confirm R OMS ENG VLV Is ON * Press EXEC - (Right Keypad) Confirms ready for OMS burn	The First In A Series Of Rendezvous Burns
1111	Mission Dep.	Center Panel	C3	* Set OMS ENG (Left & Right) To OFF	Burn Complete - Disable OMS Next Event
1115	Mission Dep.	Center Panel C3 C2	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	The Second NC Burn Is Complete
1116	Mission Dep.	Center Panel	C3	* Set OMS ENG (Left & Right) To OFF	Second Burn Complete - Disable OMS Next Event
1118	Mission Dep.	Aft Left Panel Aft Right Panel Aft Left Panel	A8L A6U A8U	* Set RMS POWER To PRIMARY * Set RMS SELECT To STBD * Set The STARBOARD RMS DEPLOY To DEPLOY * Set The STARBOARD RMS DEPLOY To OFF * Set RMS To PORT * Set RMS BRAKES To OFF * Set FLT CNTLR POWER To ON * Set END EFFECTOR | MODE To AUTO	Begin Shuttle Inspection With The OBSS. Gain Manual Control Of The RMS.
1119	Mission Dep.	Aft Left Panel	A8L	* Use The RMS To Grapple The OBBS 	You Have Full Manual Control Of The RMS Arm. Align The End Effector With The OBSS Forward End Grapple Fixture. Grapple The OBSS When The RMS Is In Position Press Enter POSITION - P Y R P: -090.0 | Y: 000.0 | R: 000.0 POSITION - X Y Z X: 0550 | Y: 0099 | Z: 0465 JOINT ANGLE YAW: -085.9 SHOULDER: 092.9 ELBOW: -131.4 WRIST PITCH: -051.4 WRIST YAW: 000.0 WRIST ROLL: 086.0
1120	Mission Dep.	Aft Left Panel	A8L	* Set RMS SELECT To STBD * Set The STARBOARD RMS Latch To RELEASE	Unlatch The OBSS

Space Shuttle Mission 2007

Designed By: Michael Swannick

STS-121 MISSION CHECKLIST

COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
1121	Mission Dep.	Aft Left Panel	A8L	* Set The STARBOARD RMS Latch To OFF * Set RMS SELECT To PORT	Disable Latches & Regain RMS Control.
1122	Mission Dep.	Aft Left Panel	A8L	* Use The RMS To Inspect The Shuttle's Tiles	The Far End On The OBSS Contains A Laser Dynamic Range Imager (LDRI), A Laser Camera system (LCS), And An Intensified Television Camera (ITVC). Move The OBSS End Below The Shuttle And Thoroughly Inspect The Underside For Damage To The heat Shield.
1123	Mission Dep.	Aft Left Panel	A8L	* Use The RMS To Return The OBSS To Its Latched Position.	The Tile Inspection Takes A Lot Of Time. To Keep Things Simple, We Consider The Tile Inspection Complete. Return The OBSS Back To Its Latched Position. Use The Same Coordinates As COMM 1119
1124	Mission Dep.	Aft Left Panel	A8L	* Set RMS SELECT To STBD * Set The STARBOARD RMS Latch To LATCH	The OBSS Is In The Latch Position, Latch The OBSS.
1125	Mission Dep.	Aft Left Panel	A8L	* Set The STARBOARD RMS Latch To OFF * Set RMS SELECT To PORT	Set The Starboard RMS Latch To Off.
1126	Mission Dep.	Aft Left Panel	A8L	* Release The OBSS - Press Backspace	Release The OBSS
1127	Mission Dep.	Aft Left Panel	A8L	* Stow The RMS	Return The RMS To Its Latched Position.
1128	Mission Dep.	Aft Left Panel Front Left Panel	A8L F6	* Set RMS POWER To OFF * Set RMS BRAKES To ON * Set FLT CNTLR POWER To ON	Heatshield Inspection Complete Next Event
1130	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	Perform Third NC Burn
1131	Mission Dep.	Center Panel Right Aft Panel	C3 R11L	* Set OMS ENG (Left & Right) To OFF * Set MAJOR FUNC To GNC * Enter SPEC 22 PRO (Aft Keypad) * Enter ITEM 5 EXEC (Aft Keypad) * Enter ITEM 6 EXEC (Aft Keypad) * Enter ITEM 11+1 EXEC (Aft Keypad) * Enter ITEM 12+1 EXEC (Aft Keypad)	Burn Complete - Disable OMS Activate Star Trackers Target = International Space Station (ISS)
1132	Mission Dep.	Right Aft Panel	R11L	* Press RESUME (Aft Keypad)	Star Trackers Are Configured Resume Closes Star Tracker Display Next Event
1135	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	Final NC Burn
1136	Mission Dep.	Center Panel	C3	* Set OMS ENG (Left & Right) To OFF	Burn Complete - Disable OMS
1137	Mission Dep.	Aft Right Panel Right Aft Panel	A1U R11L	* Set KU BAND | POWER To ON * Set KU BAND | Rotary Switch To AUTO TRACK * Enter SPEC 33 PRO (Aft Keypad) * Enter ITEM 1 EXEC (Aft Keypad)	Activate KU Band Radar
1138	Mission Dep.	Aft Right Panel	A6L	* SYSTEM POWER (MN A & MN B) To ON * PSU POWER (MN A & MN B) To ON	Power Up The APDS
1139	Mission Dep.	Aft Left Panel	A7L	* Set CONTROL PANEL POWER (A - B - C) To ON * Set HEATERS DCU POWER (H1 - H2/DCU - H3/DCU) To ON * Set APDS POWER (ABS - BDS - CDS) To ON	Activate APDS Power Panel
1140	Mission Dep.	Aft Left Panel	A7L	* APDS Control Commands | Press POWER ON * APDS Control Commands | Press APDS CIRC PROT OFF * APDS Control Commands | Press RING OUT	Extend APDS Capture Ring
1141	Mission Dep.	Aft Left Panel	A2	* Use RCS Thrusters To Close On The ISS	The ISS Is Approximately 45,000 Feet Away. Use The RCS Thrusters To Translate The Shuttle Up/Down Until The Yellow Reticules Overlap The White Cross Hairs. Always Maintain The Following Attitude ROLL=0 PITCH=0 YAW=90 When The Reticules Are Centered, The Hubble Telescope Is Right In Front Of The Shuttle. If You Are Impatient, Use Next Event
1150	Mission Dep.	Aft Left Panel	A2	* Use RCS Thrusters To Position The Shuttle	The ISS Is In Visual Range. Bring The Shuttle In Front Of, And About 600ft From ISS. The Shuttle Will Now Perform A Back Flip Maneuver That Allows ISS To Take Images Of The Shuttle's Heat Shield.

Space Shuttle Mission 2007

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STS-121 MISSION CHECKLIST

COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
1151	Mission Dep.	Aft Left Panel	A2	* Use RCS Thrusters To Set The Closing Rate To Zero	Bring The Closing Rate Between The Shuttle And The ISS To Zero.
1152	Mission Dep.	Front Left Panel	F6	* Use RCS Thrusters To Pitch The Shuttle Up To 180 Degrees	Slowly Pitch The Shuttle Up To 180 Degrees Pitch Angle. The Correct Attitude Roll ROLL=180 PITCH=180 YAW=90
1153	Mission Dep.	Front Left Panel	F6	* Use RCS Thrusters To Pitch The Shuttle Up	Continue To Pitch The Shuttle Up Until You Complete The 180 Degree Maneuver. Digital Images Are Being Taken By The ISS Crew For Later Inspection By Ground Control. The Correct Alignment ROLL=0 PITCH=0 YAW=90
1160	Mission Dep.	Aft Left Panel Aft Right Panel	A7U A6U	* Set VIDEO INPUT To PL 1 * Set VIDEO OUTPUT To MON 1 * Set PAYLOAD BAY FLOOD | DOCKING To BRIGHT * Set FLT CNTLR POWER To ON * Set SENSE To -Z * Set MANUAL MODE | TRANSLATION To Y (LOW Z)	Carefully Translate The Shuttle Below The Destiny Lab And Dock With The PMA. Docking Will Be Fully Automatic Once The Shuttle's APDS Gets Close To Unity
1161	Mission Dep.				Contact, Active Damping Is Performed
1162	Mission Dep.				The Ring Aligned Command Is Issued & The Electromechanical Dampers Are Deactivated. An Automatic Ring In Command Activates The Fixers To Rigidize The System.
1163	Mission Dep.	Aft Left Panel	A7L	* APDS Control Commands | Press POWER OFF * Set CONTROL PANEL POWER (A - B - C) To OFF * Set HEATERS DCU POWER (H1 - H2/DCU - H3/DCU) To OFF * Set APDS POWER (ABS - BDS - CDS) To OFF	Docking Complete, Disable The APDS
1164	Mission Dep.				After ODS Preparation, The Hatches Are Opened & The ISS And Shuttle Crews Finally Meet. Next Event
1170	Mission Dep.				The ISS RMS Will Now Be Used To Grapple The OBSS Boom In The Shuttle Bay.
1171	Mission Dep.	Aft Left Panel	A8L	* Set RMS POWER To PRIMARY * Set RMS SELECT To STBD * Set The STARBOARD RMS Latch To RELEASE	Unlatch The OBSS
1172	Mission Dep.	Aft Left Panel	A8L	* Set The STARBOARD RMS Latch To OFF * Set RMS SELECT To PORT	Disable Latches & Regain RMS Control. As A Test The OBSS Will Be Moved Out Of The Payload Bay And Released To Free Flight.
1173	Mission Dep.				The ISS RMS Will Now Move The OBSS To The Handoff/Ungrapple Position.
1174	Mission Dep.				The ISS RMS Is Now Releasing The OBSS
1175	Mission Dep.				The ISS RMS Is Moved Out Of The Way.
1176	Mission Dep.				The Next Event Will Be The Arm transfer Of The Leonardo Module. Next Event
1180	Mission Dep.				The ISS RMS Will Now grapple The Multi Purpose Logistics Module (MPLM) Leonardo In The Shuttle Payload Bay.
1181	Mission Dep.	Center Panel Aft Right Panel	C3 A6U	* PAYLOAD SAFING Switches (1-2-3-4-5) To NORM * PAYLOAD RETENTION | LOGIC POWER (SYS 1) To ON * PAYLOAD SELECT Rotary Switch To 2 * PAYLOAD RETENSION LATCHES (1-2-3-4-5) To RELEASE	Release The Leonardo Module From The Payload Bay.
1182	Mission Dep.	Aft Right Panel	A6U	* PAYLOAD RETENSION LATCHES (1-2-3-4-5) To OFF * PAYLOAD RETENTION | LOGIC POWER (SYS 1) To OFF	Set All Retention Latches To Off.
1183	Mission Dep.				The Leonardo Module Will Now Be Installed On The ISS.
1184	Mission Dep.				The Leonardo Module Is Now Installed.
1185	Mission Dep.				The ISS/RMS Arm Will Now Move To The Mobile Base Unit (MBU).
1186	Mission Dep.				The ISS RMS Will Be Moved To A Standby Position.
1187	Mission Dep.				Equipment Is Being Transferred From The Leonard Module To The ISS. Next Event
1190	Mission Dep.			* EV1	EV1 Emerges From The ISS Airlock. The First Task Is To Repair The Zenith IUA. Move EV1 To The MBS Using Handholds On The Truss Segment.
1191	Mission Dep.			* EV1 & EV2	EV2 Emerges From The Airlock. Move EV2 To The MBS To Assist With Repairs.

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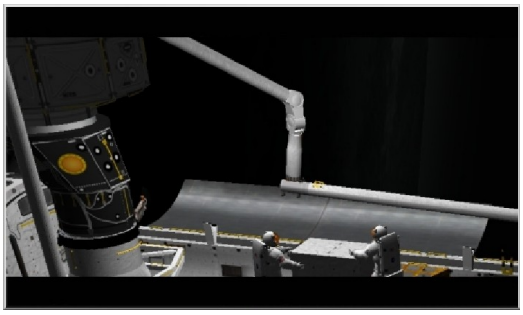
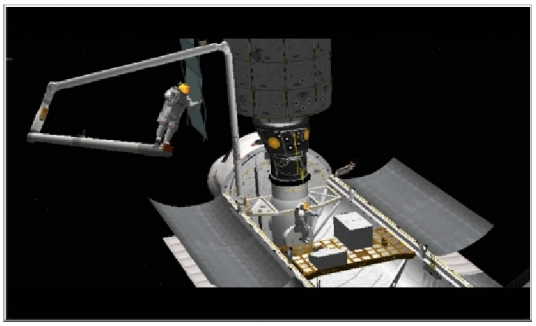
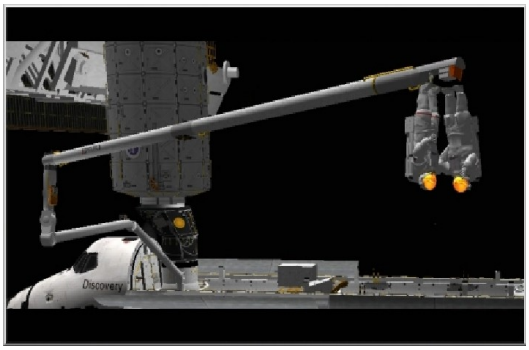
COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
1192	Mission Dep.				IUA Repair Will Take About 30 Minutes. Next Event
1195	Mission Dep.			* EV1 & EV2	IUA Repair Complete. Move EV1 To The PMA 1 On The Unity Node To Fetch A Foot Restraint For OBSS Test Purposes.
1196	Mission Dep.			* EV1 & EV2	Move EV1 & EV2 To The Cargo Carrier In The Shuttle Payload Bay.
1197	Mission Dep.	Aft Left Panel Aft Right Panel Aft Left Panel	A8L A8U A6U A8L	* EV1 & EV2 * Set RMS POWER To PRIMARY * Set RMS SELECT To PORT * Set RMS BRAKES To OFF * Set FLT CNTLR POWER To ON * Use The RMS To Grapple The OBBS 	The Foot Restraint Will Be Attached To The Cargo Carrier And Configured By EV2. Grapple The OBSS With The Shuttle's RMS When The RMS Is In Position Press Enter POSITION - P Y R P: -102.4 | Y: -006.3 | R: 099.7 POSITION - X Y Z X: 0639 | Y: 0104 | Z: 0498 JOINT ANGLE YAW: -060.5 SHOULDER: 091.0 ELBOW: -121.6 WRIST PITCH: -060.0 WRIST YAW: -013.9 WRIST ROLL: -038.5
1198	Mission Dep.			* EV1 & EV2	Maneuver The Far End Of The OBSS Close To EV1.
1199	Mission Dep.	Aft Left Panel	A8L	* EV1 & EV2 * Conduct OBSS Stress Test 	The Astronauts Attach The Foot Restraint To The RMS And EV1 Attaches To The Restraint. An OBSS Stress Test Is Conducted. Move The RMS With EV1 To The Designated Area. POSITION - P Y R P: -071.4 | Y: 032.6 | R: 008.9 POSITION - X Y Z X: 0469 | Y: -0409 | Z: 0595 JOINT ANGLE YAW: 106.5 SHOULDER: 089.5 ELBOW: -100.9 WRIST PITCH: -049.6 WRIST YAW: -024.2 WRIST ROLL: -103.6
1200	Mission Dep.			* EV1 & EV2	Once In Position EV1 Will Perform Several Movements To Simulate A Real Inspection Or Repair Actions. Now Bring EV1 Back To EV2 In The Shuttle's Payload Bay.
1201	Mission Dep.	Aft Left Panel	A8L	* EV1 & EV2 * Conduct Second OBSS Stress Test 	EV1 And EV2 Attach To The Shuttle's RMS End Effector Foot Restraint. A Stress Test Will Now Be Conducted With Both Astronauts Attached To The OBSS. Move The RMS With EV1 And EV2 To The Designated Area. Follow The Coordinates Listed On The Next Page. Move The RMS To The Designated Area POSITION - P Y R P: 088.9 | Y: -011.7 | R: -144.0 POSITION - X Y Z X: 0561 | Y: -0590 | Z: 0636 JOINT ANGLE YAW: 087.0 SHOULDER: 023.8 ELBOW: -023.1 WRIST PITCH: 100.9 WRIST YAW: -001.6 WRIST ROLL: -128.6

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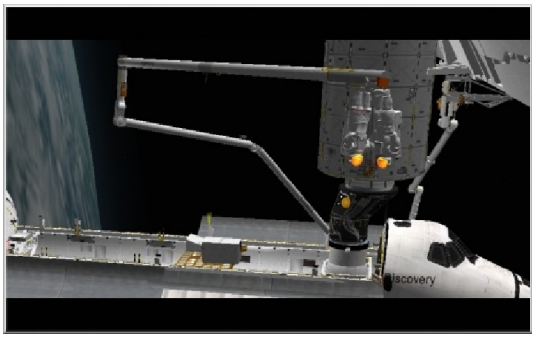
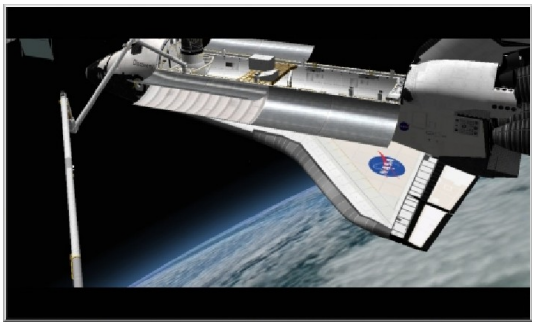
STS-121 MISSION CHECKLIST

COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
1202	Mission Dep.	Aft Left Panel	A8L	* EV1 & EV2 * Conduct Final OBSS Stress Test 	The Final Stress Test Will Now Be Conducted With Both Astronauts Attached To The OBSS. Move The RMS With EV1 And EV2 To The Designated Area. Move The RMS To The Designated Area POSITION - P Y R P: 081.5 | Y: -011.7 | R: -048.9 POSITION - X Y Z X: 0835 | Y: 0227 | Z: 0765 JOINT ANGLE YAW: -048.0 SHOULDER: 049.0 ELBOW: -039.2 WRIST PITCH: 065.8 WRIST YAW: -001.6 WRIST ROLL: -096.3
1203	Mission Dep.			* EV1 & EV2	Final Stress Test Complete, Return EV1 & EV2 To The Cargo Carrier Inside The Shuttle's Payload Bay.
1204	Mission Dep.			* EV1 & EV2	Move EV1 Back To PMA 1 Where The Foot Restraint Will Be Placed.
1205	Mission Dep.			* EV1 & EV2	Foot Restraint Placed On The PMA 1. Return EV1 To The ISS Airlock.
1206	Mission Dep.			* EV2	This Concludes The First Spacewalk, Return EV2 To The ISS Airlock.
1208	Mission Dep.	Aft Left Panel	A8L	* Use The RMS To Position The OBBS 	Move The OBSS Out Of The Way For The Second Spacewalk. Move The OBSS To The Designated Area POSITION - P Y R P: 090.2 | Y: 013.7 | R: -133.7 POSITION - X Y Z X: 0534 | Y: -0572 | Z: 0525 JOINT ANGLE YAW: 090.0 SHOULDER: 032.0 ELBOW: -062.6 WRIST PITCH: 106.8 WRIST YAW: 000.2 WRIST ROLL: -136.1 Next Event
1210	Mission Dep.			* EV1	EV1 Emerges From The Airlock. Move EV1 To The Pump Module Attached To The Cargo Carrier In The Shuttle Payload Bay.
1211	Mission Dep.			* EV1 & EV2	EV2 Emerges From The Airlock. Move EV2 To The Pump Module Attached To The Cargo Carrier In The Shuttle Payload Bay.
1212	Mission Dep.			* EV1 & EV2	EV1 & EV2 Prepare The Pump Module For The ISS RMS. Move The Astronauts To The TUS-RA (Training Umbilical System).
1213	Mission Dep.				The ISS RMS Will Travel To The Destiny Lab.
1214	Mission Dep.				The ISS RMS Will Now Grapple The Pump Module.
1215	Mission Dep.				The Pump Module Is Transported To The ISS ESP.
1216	Mission Dep.			* EV1 & EV2	Move EV1 & EV2 Close To The ESP Where They Will Attach The ESP To The ESP Platform.
1217	Mission Dep.			* EV1 & EV2	Move EV2 To The ESP To Retrieve The Foot Restraint.
1218	Mission Dep.			* EV1 & EV2	Move EV2 To The ISS RMS End Effector For Attachment.
1219	Mission Dep.			* EV1 & EV2	The ISS RMS With EV2 Is Being Moved To The Old TUS-RA At The ISS S0 Truss. Meanwhile, Move EV1 To The Old TUS-RA To Assist With The Removal.
1220	Mission Dep.			* EV1 & EV2	While EV2 Finishes The Removal Of The Old TUS-RA Unit. Bring EV1 Back To The Cargo Carrier To Prepare The New TUS-RA Unit.

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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
1221	Mission Dep.			* EV1 & EV2	EV2 Will Be Moved Back Into The Shuttle Payload Bay With The Old TUS-RA Unit.
1222	Mission Dep.			* EV1 & EV2	The Astronauts Switch The TUS-RA Units. EV1 Will Attach The Old One To The Cargo Carrier While EV2 Moves To The S0 Truss.
1223	Mission Dep.			* EV1 & EV2	Move EV1 To The S0 Truss To Assist With The Installation Of The New TUS-RA Unit.
1224	Mission Dep.			* EV1 & EV2	After The New TUS-RA Is Installed, Bring EV1 Back To The ISS Airlock.
1225	Mission Dep.			* EV2	EV2 Dismounts And Detaches The Foot Restraint. Move EV2 To The ISS Airlock.
1226	Mission Dep.				This Concludes The Second Spacewalk. Next Event
1230	Mission Dep.			* EV1	During The Final Spacewalk, The Astronauts Simulate Thermic Tile Repairs. Move EV1 To The ESP Platform To Pick Up The Foot Restraint.
1231	Mission Dep.			*EV1 & EV2	The ISS RMS Moves Into Position As EV2 Emerges From The Airlock. When The ISS RMS Is In Position Move EV1 To Its End Effector For Mounting.
1232	Mission Dep.			* EV1 & EV2	EV1 Carries An Infrared Camera That will Be Used To Take Images Of The Space Shuttle's Leading Wing Edges. Move EV2 To The Aft Lightweight Experiment Pallet In The Shuttle Payload Bay.
1233	Mission Dep.			* EV1 & EV2	The Astronauts Now Perform Various Repair Tasks Using Thermic Tiles Carried In The Experiment Box. The Repair Experiments Are Scheduled To Last About 5 Hours. Next Event
1235	Mission Dep.			* EV1 & EV2	The Repairs Are Complete. While The ISS RMS With EV1 Moves To The Airlock for Dismounting, EV2 Stows All the Experiments Equipment.
1236	Mission Dep.			* EV1 & EV2	EV1 Climbs Of The ISS/RMS And Will Stow The Foot Restraint To The ESP Platform.
1237	Mission Dep.			* EV1 & EV2	Move EV2 To The ISS Airlock.
1238	Mission Dep.			* EV1	Move EV1 To The ISS Airlock.
1239	Mission Dep.				This Concludes The Final Spacewalk. Next Event
1240	Mission Dep.				The ISS RMS Will Be Moved Into Positioned To Capture The Leonardo.
1241	Mission Dep.	Aft right Panel	A6U	* PAYLOAD RETENTION | LOGIC POWER (SYS 1) To ON * PAYLOAD SELECT Rotary Switch To 2 * PAYLOAD RETENSION LATCHES (1-2-3-4-5) To OFF	Leonardo Will Be Placed In The Shuttle's #2 Payload Bay. Prepare The Payload Retention Latches.
1242	Mission Dep.				The ISS RMS Will Place Leonardo At The Latch Position In The Shuttle Payload Bay.
1243	Mission Dep.	Aft Right Panel	A6U	* PAYLOAD RETENSION LATCHES (1-2-3-4-5) To LATCH	Latch The Leonardo
1244	Mission Dep.	Aft Right Panel	A6U	* PAYLOAD RETENSION LATCHES (1-2-3-4-5) To OFF * PAYLOAD RETENTION | LOGIC POWER (SYS 1) To OFF	Set All Retention Latches To Off.
1245	Mission Dep.				The ISS/RMS Will Now Attach Itself To The Mobile Transporter.
1246	Mission Dep.				This Concludes All ISS Tasks. After The Usual Farewell Ceremony, The Shuttle will Undock And Head Back To Earth. Thomas Reiter Will Remain On The ISS For The Next 166 Days. Next Event
1250	Mission Dep.	Aft Right Panel Aft Left Panel	A6L A7L	* VESTIBULE DEPRESS VALVE | (SYS 1) VENT ISOL To OPEN * VESTIBULE DEPRESS VALVE | (SYS 2) VENT ISOL To OPEN * VESTIBULE DEPRESS VALVE | (SYS 1) VENT To OPEN * VESTIBULE DEPRESS VALVE | (SYS 2) VENT To OPEN * Set CONTROL PANEL POWER (A - B - C) To ON * Set HEATERS CDU POWER (H1 - H2/DCU - H3/DCU) To ON * Set APDS POWER (ABS - BDS - CDS) To ON * APDS Control Commands | Press POWER ON * APDS Control Commands | Press APDS CIRC PROT OFF	After Closure Of All Hatches, The Docking Vestibule Is Depressurized.
1251	Mission Dep.	Aft Left Panel	A7L	* APDS STATUS Press UNDOCK COMPLETE (Lower Left)	Initiate Undock Sequence
1252	Mission Dep.	Aft Left Panel Front Left Panel Aft Left Panel	A8L F6 A7L	* Set RMS POWER To OFF * Set FLT CNTLR POWER To ON * APDS Control Commands | Press POWER OFF * Set CONTROL PANEL POWER (A - B - C) = OFF * Set HEATERS CDU POWER (H1 - H2/DCU - H3/DCU) = OFF	Disable RMS And Enable RCS Controls Deactivate APDS

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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
1252	Mission Dep.	Aft Left Panel Aft Right Panel	A7L A6L	* Set APDS POWER (ABS - BDS - CDS) = OFF * Docking System Power | System Power (MN A & MN B) = OFF * Docking System Power | PSU Power (MN A & MN B) = OFF	Disable RMS And Enable RCS Controls
1253	Mission Dep.	Center Panel Overhead Aft Panel Center Panel	C2 C3 O14 O16 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 * Confirm L OMS ENG VLV Is ON * Confirm R OMS ENG VLV Is ON * Press EXEC - (Right Keypad) Confirms ready for OMS burn	Perform An OMS Separation Burn
1254	Mission Dep.	Center Panel	C3	* Set OMS ENG (Left & Right) To OFF	Burn Complete - Disable OMS
1256	Mission Dep.	Aft Left Panel Aft Right Panel	A8L A8U A6U	* Set RMS POWER To PRIMARY * Set RMS BRAKES To OFF * Set FLT CNTLR POWER To ON	A Final Heat Shield Inspection Is Performed Using The OBSS. Gain Manual Control Of The RMS.
1257	Mission Dep.	Aft Left Panel	A8L	* Use The RMS To Return The OBSS To Its Latched Position. Note: Use COMM 1119 For Correct Coordinates	The Tile Inspection Takes A Lot Of Time. To Keep Things Simple, We Consider The Tile Inspection Complete. Return The OBSS Back To Its Latched Position.
1258	Mission Dep.	Aft Left Panel	A8L	* Set RMS SELECT To STBD * Set The STARBOARD RMS Latch To LATCH	The OBSS Is In The Latch Position, Latch The OBSS.
1259	Mission Dep.	Aft Left Panel	A8L	* Set The STARBOARD RMS Latch To OFF * Set RMS SELECT To PORT	Set The Starboard RMS Latch To Off.
1261	Mission Dep.	Aft Left Panel	A8L	* Release The OBSS - Press Backspace * Stow The RMS	Release The OBSS Return The RMS To Its Latched Position.
1262	Mission Dep.	Aft Left Panel Front Left Panel	A8L F6	* Set RMS POWER To OFF * Set RMS BRAKES To ON * Set FLT CNTLR POWER To ON	That Completes The Heat Shield Checkout That Concludes STS-121 Next Event

Commence Deorbit & Landing

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Designed By: Michael Swannick

DEORBIT & LANDING CHECKLIST

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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	NOTES
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 | GPC 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 Right Panel Right Aft Panel	R11L A1U R13L R11L	* Set The MAJ FUNC Switch To GNC * Enter SPEC 33 PRO (AFT Keypad) * Enter ITEM 2 EXEC (AFT Keypad) * Enter ITEM 1 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 NOTE: Rendezvous Navigation Has Been Used It Must Be Disabled. Confirm On CRT 4 There Are No Asterisks Besides The Following Entries. RNDZ NAV ENA 1 KU ANT ENA 2
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
1090	Mission Dep.	Aft Left Panel	A8L	* Set RMS POWER To PRIMARY * Set RMS SELECT To STBD * Set STARBOARD RMS (DEPLOY/OFF/STOW) To STOW * Set STARBOARD RMS (DEPLOY/OFF/STOW) To OFF	Stow The OBSS Boom Wait Until Talkbacks Indicate (STO)
1091	Mission Dep.	Aft Left Panel Aft Right Panel	A8L A6U A8U	* Set RMS POWER To PRIMARY * Set RMS SELECT To PORT * Set FLT CNTLR POWER To ON * Set RMS BRAKES To OFF * Set The MODE Rotary Selector To SINGLE * Press ENTER Just Below The MODE Rotary Selector * Set The PARAMETER Rotary Selector To JOINT ANGLE * Set The JOINT Rotary Selector As Required * Depress The SINGLE/DIRECT DRIVE (+-) Spring Switch	Stow The RMS Return All Joint Angles To Their Stowed Position. By Returning All Joint Angles To Zero, You Will Eventually Reach The RMS Latch Position.
1092	Mission Dep.	Aft Left Panel Front Left Panel	A8L F6	* Port RMS | Retention Latches | Ready For Latch Talkbacks (White) * Set PORT RMS (RELEASE/OFF/LATCH) To LATCH * Set PORT RMS (RELEASE/OFF/LATCH) To OFF * Set PORT RMS (DEPLOY/OFF/STOW) To STOW * Set PORT RMS (DEPLOY/OFF/STOW) To OFF * Set RMS POWER To OFF * Set FLT CNTLR POWER To ON	Latch The RMS Wait Until Talkbacks Indicate (LAT) Wait Until Talkbacks Indicate (STO)
1093	Mission Dep.	Aft Left Panel	A7U	* Set All PAYLOAD BAY FLOOD Lights To OFF	Turn Off All Payload Bay Flood Lights
1006	Mission Dep.	Right Aft Panel R11L	R11L R13L R11L	* Set MAJ FUNC Switch To SM * If Required, Enter OPS 202 PRO (AFT Keypad) * 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	R4	* Check HYDRAULICS BRAKE HEATER (A/B/C) Set To AUTO	Final Switch Configuration Check

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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	NOTES
1010	Mission Dep.	Overhead Aft Panel	O15	* Set BRAKES MN B To ON	Final Switch Configuration Check
			O14	* Set BRAKES MN A To ON	
			O16	* Set BRAKES MN C To ON	
		Center Panel	C3	* ORBITAL DAP / MANUAL MODE / ROTATION - ROLL To PRI	
				* Check ORBITAL DAP / CONTROL To AUTO	
		Left Panel	L2	* Confirm ANTI SKID - Set To ON	
				* Confirm NOSE WHEEL STEERING - Set To 1	
				* Confirm ENTRY MODE - Set To AUTO	
			L1	* Set FLASH EVAP CONTROLLER (PRI A & PRI B) To GPC	
				* Set FLASH EVAP CONTROLLER SEC To GPC	
			L2	* 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	
		Aft Right Panel	A12	* 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	
1012	Mission Dep.	Right Panel	R2	* Set He ISOLATION A LEFT/CENTER/RIGHT To OPEN	Main Propulsion System / Helium Release
				* 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	
1013	Mission Dep.	Right Aft Panel	R11L	* Confirm MAJ FUNC Set To GNC	Final IMU Alignment
				* Enter SPEC 21 PRO (AFT Keypad)	
				* Enter ITEM 16 EXEC	
1014	Mission Dep.	Center Panel	C2	* Enter ITEM 34 EXEC (Right Keypad)	Perform OMS Gimbal
		Right Panel	R2	* 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	
				* Set 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 WHITE	
		Center Panel	C2	* Confirm GIMBAL CK 34 On CRT 2 Is Complete (No Asterisk)	If there's an asterisk next to GMBL CK 34
				* Enter OPS 302 PRO (Right Keypad)	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	Horizontal Situation & Override Displays
				* Enter SPEC 50 PRO (Left Keypad)	
				* Enter SPEC 51 PRO (Right Keypad)	
				* Enter ITEM 44 EXEC (Right Keypad)	
1016	Mission Dep.	Center Panel	C2	* Press RESUME (Right Keypad)	
		Right Panel	R2	* Set APU OPERATE - START/RUN For APU 1	
1017	Mission Dep.	Center Panel	F7	* Check CRT 1 Confirm Display Of OPS MODE 3021	Perform Deorbit Burn
			C2	* ITEM 22 EXEC (Right Keypad)	
				* ITEM 27 EXEC (Right Keypad)	
				* ITEM 23 EXEC (Right Keypad)	
		Overhead Aft	O14	* Confirm L OMS ENG VLV Is ON	
			O16	* Confirm R OMS ENG VLV Is ON	
		Center Panel	C3	* Set OMS ENG (LEFT & RIGHT) To ARM/PRESS	
			C2	* Press EXEC - (Right Keypad) Confirms ready for OMS burn	
1018	Mission Dep.	Center Panel	C3	* Set OMS ENG (LEFT & RIGHT) To OFF	Deorbit Burn Complete
		Overhead Aft Panel	O14	* Set L OMS ENG VLV To OFF	
			O16	* Set R OMS ENG VLV To OFF	
1020	Mission Dep.	Center Panel	C2	* Enter OPS 303 PRO (Right Keypad)	Correct Attitude Hint
		Front Left Panel	F6	* Position The Shuttle To The Correct Attitude	Align All ADI Needles
1022	Mission Dep.	Center Panel	C2	* Enter ITEM 36 EXEC (Right Keypad)	Dump RCS Propellant
				* Enter ITEM 37 EXEC (Right Keypad)	
		Right Panel	R2	* Set APU OPERATE - START/RUN For APU (2 & 3)	
				* Set HYD MAIN PUMP PRESS (1/2/3) To NORM	Pressure Should Rise To 3000 psi
		Overhead Aft Panel	O17	* Set ATVC - (1/2/3/4) To ON	
		Right Panel	R1	* Set AC BUS SNSR (1/2/3) To MONITOR	
		Center Panel	C2	* Enter ITEM 39 EXEC (Right Keypad)	
1023	Mission Dep.	Center Panel	C2	* Enter ITEM 38 EXEC (Right Keypad)	
				* Enter ITEM 40 EXEC (Right Keypad)	Wait Until The Cycle Completes
		Overhead Right Panel	O8	* 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	
		Center Panel	C2	* Enter OPS 304 PRO (Right Keypad)	

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DEORBIT & LANDING CHECKLIST

COMM	MET	PANEL SECTION	PANEL	PROCEDURE	NOTES
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	
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	* Set HUD POWER To ON (Commander) * Set HUD POWER To ON (Pilot) * Set PITCH & ROLL/YAW To CSS (Commander)	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
1033	Mission Dep.	HUD Display Window		* Press LANDING GEAR ARM (Twice)	Arm The Landing Gear
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) * Press CHUTE JETT (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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SHUTDOWN CHECKLIST

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

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SHUTDOWN CHECKLIST

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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) HATCH OPENING PROCEDURE * 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) HATCH OPENING PROCEDURE * Tabs/Visor - CLOSE * Green Apple - PULL * Open Hatch/Deploy Slide Per Decal	Hatch Opening
	Mission Dep.			ORBITER UNAIDED EGRESS * Egress Orbiter * Hand Carry Landing Site Data Book * If ELS - (Reference ELS POST LANDING Procedures)	Orbiter Egress