Space Shuttle Mission 2007

Designed By: Michael Swannick

Mission Checklist
STS-51A

Crew Members

Commander - Frederick H. Hauck | Pilot - David M. Walker

Mission Specialist
Anna L. Fisher | Dale A. Gardner | Joseph P. Allen

Mission Highlights

STS-51A is still hailed as the most daring and complex Space Shuttle mission to date. During STS-51A, the Shuttle crew deployed TELESAT-H and the DoD SYNCOM IV-1. The crew also retrieved PALAPA-B2 and WESTAR-VI, two malfunctioning satellites previously deployed during STS-41B. To retrieve the satellites, Mission Specialists Joseph P. Allen and Dale A. Gardner used Manned Maneuverable Units (MMU) while Mission Specialist Anna L. Fisher controlled the RMS for capturing and stowing them in the Shuttle Payload Bay. The uniqueness of this mission lays in the fact that it was the first mission a Space Shuttle was used to deploy two satellites and retrieve two malfunctioning ones. It was also the last mission where the MMU was used.

Payload

SYNCOM IV-I (LEASAT 1) DoD Communications Satellite

TELESAT-H (ANIK D2) A Canadian Communications Satellite, Deployed by PAM-D

Diffusive Mixing of Organic Solutions (DMOS) experiment

Radiation Monitoring Equipment (RME) experiment

Two Manned Maneuvering Units and Flight Support Stations

2 Pallet Attach Structures

PALPA B-2: HS-376 type satellite salvaged from space and brought back to Earth

WESTAR VI: HS-376 type satellite salvaged from space and brought back to Earth

Flight Summary

Launchpad: Kennedy Space Center (KSC) 39A | Orbit: 160NM | Inclination: 28.5 | Orbits: 98
Duration: 6 Days, 1 Hour, 08 Minutes, 43 Seconds | Landing: Kennedy Space Center

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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 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	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 Center Panel	C3 C2	* 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 * Check 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
25	T-00:00:01:40 T-00:00:01:20				Liquid Hydrogen External Tanks Close. Go For Launch Announcement.

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PRE-LAUNCH CHECKLIST

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.				Engines Throttle Down In Preparation For Main Engine Cutoff (MECO) MECO
32	Mission Dep.	Front Center Panel	F7	* Check MAIN ENGINE STATUS Lights (Left/CTR/Right) Are Red	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 Is ON * Set R OMS ENG VLV Is ON * Set OMS ENG (LEFT & RIGHT) Are Set To ARM/PRESS * Press EXEC - Confirm ready for OMS burn (Use Right Keypad)	Prepare For OMS Burn Load Burn Targets Start Attitude Adjustments Start Countdown Timer
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	* 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) * Set L OMS ENG VLV Is ON * Set R OMS ENG VLV Is ON * Set OMS ENG (LEFT & RIGHT) Are Set To ARM/PRESS	Circularize Orbit
37	Mission Dep.	Right Panel R4	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	Thermal Condition The Shuttle

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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	NOTES
44	Mission Dep.	Aft Left Panel Right Panel Aft Left Panel	A12 R4 A12	* Set HYDRAULIC HEATER - RUDDER SPD BRK To A AUTO * 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	
		Aft Right Panel	A14	*Set RCS/OMS HEATERS - FWD RCS To A AUTO * Set RCS/OMS HEATERS - LEFT POD To A AUTO	
		Aft Right Panel	A14	* 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	
			A8L	* Set TOPPING EVAP HEATER - DUCT Selector To A/B	
		Left Panel	L1	* 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	
				* Press GPC/CRT (AFT Keypad)	
				* Enter 4 EXEC (AFT Keypad)	GPC 3 Preserves Independent Source Data
				* Enter OPS 201 PRO (AFT Keypad)	GPC 4 Contains System Management Data
		Overhead Left Panel	O6	* Set GENERAL PURPOSE COMPUTER - MODE 3 To HALT	GPC 5 Retains The Backup Flight System
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	* Confirm MAJOR FUNC Is Set To SM	
				* 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

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54	Mission Dep.	Right Aft Panel	R11L	* Enter SPEC 21 PRO (AFT Keypad) * Enter ITEM 16 EXEC (AFT Keypad)	IMU Alignment
55	Mission Dep.	Overhead Center Panel Right Aft Panel	O7 R11L	* Set GPS 1 POWER To ON * Set GPS 1 PRE AMPL UPPER To ON * 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 Global Positioning System (GPS)
59	Mission Dep.	Right Aft Panel Aft Right Panel Right Aft Panel	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-51A MISSION CHECKLIST

COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
1100	Mission Dep.				First Mission Event = NC Burn: Next Event
1101	Mission Dep.	Center Panel	C2	* Set CRT 2 | MAJ FUNC Switch To GNC	Perform The First NC Burn
				* Enter OPS 202 PRO (Right Keypad) - If Necessary	
				* Enter ITEM 2 EXEC (Right Keypad)	Left OMS Engine Burn
				* Enter ITEM 22 EXEC (Right Keypad)	
				* Enter ITEM 27 EXEC (Right Keypad)	
				* Enter ITEM 23 EXEC (Right Keypad)	
			C3	* Set OMS ENG (Left) To ARM/PRESS	
		Overhead Aft Panel	O14	* Confirm L OMS ENG VLV Is ON	
			O16	* Confirm R OMS ENG VLV Is OFF	
		Center Panel	C2	* Press EXEC - (Right Keypad) Confirms ready for OMS burn	
1102	Mission Dep.	Center Panel	C3	* Set OMS ENG (Left) To OFF	OMS Burn Complete
1103	Mission Dep.	Aft Left Panel	A8L	* Set RMS POWER To PRIMARY	Power Up & Deploy The RMS
				* Set RMS SELECT To PORT	
				* Set The PORT RMS DEPLOY To DEPLOY	
1104	Mission Dep.	Aft Left Panel	A8L	* Set The PORT RMS DEPLOY To OFF	RMS Is Deployed
				* Set The PORT RMS Latch To RELEASE	Confirm Talkbacks Indicate REL
				* Set The PORT RMS Latch To OFF	
				* Hold The RMS SHOULDER BRACE RELEASE Toward PORT	Hold Until The Talkback Turns White
1105	Mission Dep.	Right Aft Panel	R11L	* Set MAJ FUNC To SM	RMS Preparation
				* Enter SPEC 94 PRO (Aft Keypad)	
		Aft Left Panel	A8U	* Set MODE Rotary Switch To SINGLE	
				* Press ENTER Just Below The MODE Rotary Switch	
				* Set BRAKES To OFF	
1106	Mission Dep.	Aft Left Panel	A8U	* Set The PARAMETER Rotary Switch To JOINT ANGLE	Move RMS Out Of Reach Limit
				* Set The JOINT Rotary Switch To SHOULDER/PITCH	
				* Press & Hold The SINGLE DIRECT DRIVE In The + Position	Confirm Digital Readout Indicates +3 Degrees
				* Set The JOINT Rotary Switch To ELBOW	
				* Press & Hold The SINGLE DIRECT DRIVE In The - Position	Confirm Digital Readout Indicates -3 Degrees
				* Set The MODE Rotary Switch To MANUAL ORB UNL	
				* Press ENTER Just Below The MODE Rotary Switch	
1107	Mission Dep.	Aft Right Panel	A6U	* Set FLT CNTLR POWER To ON	Assign RHC/THC Control To The RMS
1108	Mission Dep.	Aft Left Panel	A8L	* Set RMS POWER To OFF	Turn Off RMS Power For Later Use
			A8U	* Set RMS BRAKES To ON	
			F6	* Set FLT CNTLR POWER To ON	
1109	Mission Dep.				RMS Powered Up & Checked: Next Event
1110	Mission Dep.	Center Panel	C2	* Set CRT 2 | MAJ FUNC Switch To GNC	Perform The Second NC Burn
				* Enter OPS 202 PRO (Right Keypad) - If Necessary	
				* Enter ITEM 3 EXEC (Right Keypad)	Right OMS Engine Burn
				* Enter ITEM 22 EXEC (Right Keypad)	
				* Enter ITEM 27 EXEC (Right Keypad)	
				* Enter ITEM 23 EXEC (Right Keypad)	
			C3	* Set OMS ENG (Right) To ARM/PRESS	
		Overhead Aft Panel	O14	* Confirm L OMS ENG VLV Is OFF	
			O16	* Confirm R OMS ENG VLV Is ON	
		Center Panel	C2	* Press EXEC - (Right Keypad) Confirms ready for OMS burn	
1111	Mission Dep.	Center Panel	C3	* Set OMS ENG (Right) To OFF	Burn Complete, Disable OMS
					Next Event
1115	Mission Dep.	Center Panel	C2	* Set CRT 2 | MAJ FUNC Switch To GNC	Perform The Third NC Burn
				* Enter OPS 202 PRO (Right Keypad) - If Necessary	
				* Enter ITEM 2 EXEC (Right Keypad)	Left OMS Engine Burn
				* Enter ITEM 22 EXEC (Right Keypad)	
				* Enter ITEM 27 EXEC (Right Keypad)	
				* Enter ITEM 23 EXEC (Right Keypad)	
			C3	* Set OMS ENG (Left) To ARM/PRESS	
		Overhead Aft Panel	O14	* Confirm L OMS ENG VLV Is ON	
			O16	* Confirm R OMS ENG VLV Is OFF	
		Center Panel	C2	* Press EXEC - (Right Keypad) Confirms ready for OMS burn	
1116	Mission Dep.	Center Panel	C3	* Set OMS ENG (Left) To OFF	Burn Complete, Disable OMS
					Next Event
1118	Mission Dep.	Center Panel	C2	* Set CRT 2 | MAJ FUNC Switch To GNC	Perform An Attitude Change Burn
				* Enter OPS 202 PRO (Right Keypad) - If Necessary	
				* Enter ITEM 1 EXEC (Right Keypad)	Left & Right OMS Engine Burn
				* Enter ITEM 22 EXEC (Right Keypad)	
				* Enter ITEM 27 EXEC (Right Keypad)	
				* Enter ITEM 23 EXEC (Right Keypad)	
			C3	* Set OMS ENG (Left & Right) To ARM/PRESS	
		Overhead Aft Panel	O14	* Confirm L OMS ENG VLV Is ON	
			O16	* Confirm R OMS ENG VLV Is ON	
		Center Panel	C2	* Press EXEC - (Right Keypad) Confirms ready for OMS burn	
1119	Mission Dep.	Center Panel	C3	* Set OMS ENG (Left & Right) To OFF	Burn Complete, Disable OMS
					Next Event
1120	Mission Dep.	Center Panel	C2	* Set CRT 2 | MAJ FUNC Switch To GNC	Circularization Burn
				* Enter OPS 202 PRO (Right Keypad) - If Necessary	
				* Enter ITEM 22 EXEC (Right Keypad)	
				* Enter ITEM 27 EXEC (Right Keypad)	

Space Shuttle Mission 2007

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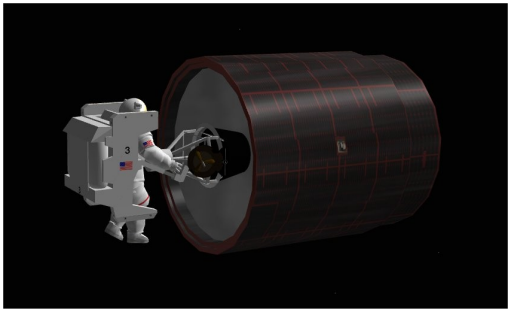| COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
1120	Mission Dep.	Center Panel Overhead Aft Panel Center Panel	C2 C3 O14 O16 C2	* Enter ITEM 23 EXEC (Right Keypad) * Set OMS ENG (Left & Right) To ARM/PRESS * Confirm L OMS ENG VLV Is ON * Confirm R OMS ENG VLV Is ON * Press EXEC - (Right Keypad) Confirms ready for OMS burn	Circularization Burn
1121	Mission Dep.	Center Panel	C3	* Set OMS ENG (Left & Right) To OFF	Burn Complete, Disable OMS Next Event
1125	Mission Dep.	Center Panel Overhead Aft Panel Center Panel	C2 C3 O14 O16 C2	* Set CRT 2	MAJ FUNC Switch To GNC * Enter OPS 202 PRO (Right Keypad) - If Necessary * 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	Final Burn
1126	Mission Dep.	Center Panel	C3	* Set OMS ENG (Left & Right) To OFF	Burn Complete, Disable OMS Next Event
1131	Mission Dep.	Front Left Panel	F6	* Rotate Shuttle To Proper Attitude (Pitch/Roll)	Joystick - RHC)	Maneuver Shuttle To Correct Attitude Target Attitude: Roll=0, Pitch=88, Yaw=0
1132	Mission Dep.	Left Aft Panel	L12	* Standard Switch Panel	Set PAM DOOR To OPEN	Open PAM Door
1133	Mission Dep.	Left Aft Panel	L12	* Standard Switch Panel	Set PAM ASE POWER To ON * Standard Switch Panel	Set PAM ENG ARM To ON * Standard Switch Panel	Set PAM SEQ START To START	Begin Automatic Telesat-H Deployment / Launch Sequence.
1134	Mission Dep.	Left Aft Panel	L12	* Standard Switch Panel	Set PAM DOOR To CLOSED * Standard Switch Panel	Set PAM ASE POWER To OFF * Standard Switch Panel	Set PAM ENG ARM To OFF	Once The Telesat-H Is Deployed, Close The Sun Shield And Turn Off All Pam-D Power Switches.
1135	Mission Dep.	Center Panel Overhead Aft Panel Center Panel	C2 C3 O14 O16 C2	* Set CRT 2	MAJ FUNC Switch To GNC * Enter OPS 202 PRO (Right Keypad) - If Necessary * Enter ITEM 3 EXEC (Right Keypad) * Enter ITEM 22 EXEC (Right Keypad) * Enter ITEM 23 EXEC (Right Keypad) * Set OMS ENG (Right) To ARM/PRESS * Confirm L OMS ENG VLV Is OFF * Confirm R OMS ENG VLV Is ON * Press EXEC - (Right Keypad) Confirms ready for OMS burn	OMS Separation Burn Right OMS Engine Burn Confirm OMS Burn
1136	Mission Dep.	Center Panel	C3	* Set OMS ENG (Right) To OFF	Burn Complete, Disable OMS
1137	Mission Dep.				Discovery Continues It Orbit Next Event
1140	Mission Dep.				The Telesat-H Approaches Perigee, The Pam Ignites.
1141	Mission Dep.				The Telesat-H Pam-D Ignites And Sends The Satellite To A Higher Orbit. After Burnout The Pam-D Is Jettisoned. Next Event
1150	Mission Dep.	Left Aft Panel	L12	* Standard Switch Panel	Set ASE POWER To ON	Power Up The Syncom IV-1 Satellite
1151	Mission Dep.				A Series Of Tests Are Performed On The Syncom IV-1 Satellite Systems. Next Event
1155	Mission Dep.	Left Aft Panel	L12	* Standard Switch Panel	Set ASE KEEL PIN To RETRACT	The Keel/Pivot Pin Is Retracted On The Syncom IV-1 Satellite. NOTE: Launch Window = 60 Minutes
1156	Mission Dep.	Front Left Panel	F6	* Rotate Shuttle To Proper Attitude (Pitch/Roll)	Joystick - RHC)	Maneuver Shuttle To Correct Attitude Target Attitude: Roll=180, Pitch=30, Yaw=0
1157	Mission Dep.	Left Aft Panel	L12	* Standard Switch Panel	Set ASE PUSHOFF PIN To RETRACT	Press And Hold The ASE Pushoff Pin Switch In The Up Position.
1158	Mission Dep.	Left Aft Panel	L12	* Standard Switch Panel	Set ASE DEPLOY Switch To DEPLOY	Press And Hold The ASE Deploy Switch In The Up Position.
1159	Mission Dep.				Syncom IV-1 Satellite Rotates Out Of The Shuttle Payload Bay.
1160	Mission Dep.	Center Panel Overhead Aft Panel Center Panel	C2 C3 O14 O16 C2	* Set CRT 2	MAJ FUNC Switch To GNC * Enter OPS 202 PRO (Right Keypad) - If Necessary * Enter ITEM 3 EXEC (Right Keypad) * Enter ITEM 22 EXEC (Right Keypad) * Enter ITEM 23 EXEC (Right Keypad) * Set OMS ENG (Right) To ARM/PRESS * Confirm L OMS ENG VLV Is OFF * Confirm R OMS ENG VLV Is ON * Press EXEC - (Right Keypad) Confirms ready for OMS burn	Syncom IV-1 Satellite Separation Burn.
1161	Mission Dep.	Center Panel	C3	* Set OMS ENG (Right) To OFF	Separation Burn Complete Next Event
1165	Mission Dep.				At 3/04:00:00 The Syncom IV-1 Satellite Perigee Kick Motor Will Ignite.
1166	Mission Dep.				The Syncom IV-1 Satellite Kick Motor Burn Will Last About 70 Seconds.

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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
1167	Mission Dep.				Syncom IV-1 Satellite Burn Complete. The Crew Will Now Retrieve Two HS-376 Satellites Stranded In Orbit. **Next Event**
1168	Mission Dep.	**Center Panel**	C2	* Set CRT 2 | MAJ FUNC Switch To GNC * Enter OPS 202 PRO (Right Keypad) - If Necessary * Enter ITEM 1 EXEC (Right Keypad) * Enter ITEM 22 EXEC (Right Keypad) * Enter ITEM 27 EXEC (Right Keypad) * Enter ITEM 23 EXEC (Right Keypad)	Commence NC Burn
			C3	* Set OMS ENG (Left & Right) To ARM/PRESS	
		Overhead Aft Panel	O14	* Confirm L OMS ENG VLV Is ON	
			O16	* Confirm R OMS ENG VLV Is ON	
		Center Panel	C2	* Press EXEC - (Right Keypad) Confirms ready for OMS burn	
1169	Mission Dep.	**Center Panel**	C3	* Set OMS ENG (Left & Right) To OFF	**Burn Complete, Disable OMS** **Next Event**
1170	Mission Dep.	**Right Aft Panel**	R11L	* 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+4 EXEC (Aft Keypad) * Enter ITEM 12+4 EXEC (Aft Keypad)	Activate Star Trackers Target = PALAPA-B2 Satellite
1171	Mission Dep.	**Aft Right Panel**	A1U	* Set KU BAND | POWER To ON * Set KU BAND | Rotary Switch To AUTO TRACK	Activate KU Band Antenna
		Right Aft Panel	R11L	* Enter SPEC 33 PRO (Aft Keypad) * Enter ITEM 1 EXEC (Aft Keypad)	REL NAV Display Mode Rendezvous Radar Data

1174	Mission Dep.	**Aft Right Panel**	A2	* Use RCS Thrusters To Close On The PALAPA-B2 Satellite	The PALAPA-B2 Satellite 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=0
					When The Reticules Are Centered, The PALAPA-B2 Satellite Is Right In Front Of The Shuttle.
					  If You Are Impatient, Use Next Event

1175	Mission Dep.	**Aft Left Panel**	A2	* Use RCS Thrusters To Translate Below The PALAPA Satellite	The PALAPA-B2 Satellite Is In Visual Range, Slowly Position The Shuttle About 100 Feet Below The PALAPA-B2 Satellite.
1176	Mission Dep.	**Aft Left Panel**	A2	* Use RCS Thrusters For Velocity Changes	Bring The Relative Velocity Between The Shuttle And The PALAPA-B2 Satellite To Zero.
1177	Mission Dep.			* EV1	EV1 Emerges From The Shuttle. Detach The Apogee Kick Motor Capture Device. Move EV1 To The ACD.
1178	Mission Dep.			* EV1	Move EV1 To The Port MMU For Mounting.
1179	Mission Dep.			* EV1	Approach The PALAPA-B2 Satellite From Below And Attach The ACD To The satellite's Apogee Engine.
1180	Mission Dep.			* EV1 & EV2	EV2 Emerges From The Airlock. Move EV2 To The Aft Pallet Structure.
1181	Mission Dep.	**Aft Left Panel** **Aft Right Panel** **Aft Left Panel**	A8L A6U A8U	* EV1 & EV2 * Set RMS POWER To PRIMARY * Set FLT CNTLR POWER To ON * Set RMS BRAKES To OFF * Set END EFFECTOR To AUTO * Use The RMS To Grapple The PALAPA-B2 Satellite	EV2 Prepares The Bridge Structure For Attachment On Top Of The PALAPA-B2 Satellite. EV1 Moves The PALAPA-B2 Satellite To Within Grapple Range Of The RMS. Once The PALAPA-B2 Satellite Is Within Grapple Range, Set The Relative Velocity To Zero. Grapple The PALAPA-B2 Satellite.

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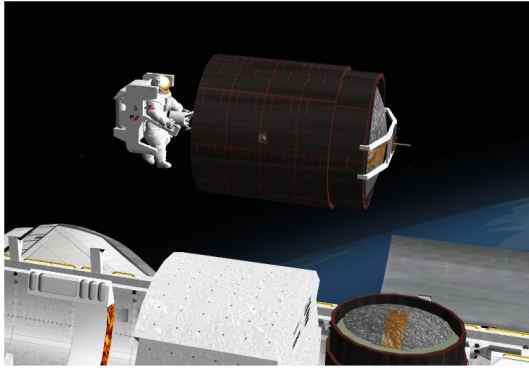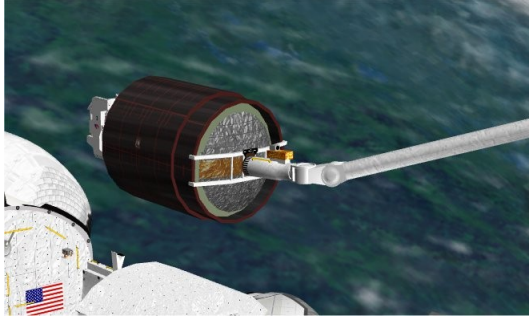| COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
1182	Mission Dep.	Aft Left Panel	A8U	* EV1 & EV2 * Use The RMS To Position The PALAPA-B2 Satellite	Position The PALAPA-B2 Satellite Above The Shuttle Payload Bay With The Satellite's Antenna Pointing Down Toward The Shuttle So It Can Be removed By EV2.
1183	Mission Dep.			* EV1 & EV2	EV2 Removes The Antenna And Mounts An Attachable Bridge Structure On Top Of The PALAPA-B2 Satellite. This Operation Will Take About An Hour. If You Don't Want To Wait, Use Time Skip
1184	Mission Dep.	Aft Left Panel	A8U	* EV1 & EV2 * Use The RMS To Release The PALAPA-B2 Satellite	At This Point, The Crew Discovers That The Bridge Structure Does Not fit On The Satellite. An Alternate Fix Has Been Devised. EV2 Will hold Onto The Satellite, While EV1 Stowes The MMU. Release EV1 & The Satellite From The RMS.
1185	Mission Dep.	Aft Left Panel	A8U	* EV1 & EV2 * Move The RMS Away From The PALAPA-B2 Satellite	The PALAPA-B2 Satellite Is Released From The RMS. EV1 Releases The ACD From The Satellite. Move The RMS Away From The Satellite.
1186	Mission Dep.			* EV1 & EV2	Move EV1 To The MMU Support Structure For Dismounting.
1187	Mission Dep.			* EV1 & EV2	After Stowing The MMU Move EV1 To The Aft Berth Pallet To Reattach The ACD.
1188	Mission Dep.			* EV1 & EV2	Move EV1 To The Top Of The PALAPA-B2 Satellite. You Also Need To Be In Front.
1189	Mission Dep.			* EV1 & EV2	EV1 And EV2 Rotate The PALAPA-B2 Satellite So The Engine Points Down Toward The Shuttle Payload Bay.
1190	Mission Dep.			* EV1 & EV2	While EV1 Keeps The Satellite Stable, EV2 Attaches The Berthing Adaptor.
1191	Mission Dep.			* EV1 & EV2	Move EV2 Closer to The Forward Pallet And Away From The Berthing Latches.
1192	Mission Dep.			* EV1 & EV2	EV1 & EV2 Slowly Move The PALAPA-B2 Satellite To The Birthing Attitude & Position.
1193	Mission Dep.			* EV1 & EV2	It Will Take About 30 Minutes To Enable The Latches That Will Hold the PALAPA-B2 Satellite In Place For The Ride Home.
1194	Mission Dep.			* EV1 & EV2	Move EV1 Into The Shuttle Airlock.
1195	Mission Dep.			* EV2	Move EV2 Into The Shuttle Airlock.
1196	Mission Dep.				This Concludes The First Spacewalk And The Retrieval Of The PALAPA-B2 Satellite. Next Event
1200	Mission Dep.	Right Aft Panel	R11L	* Set MAJOR FUNC To GNC * Enter SPEC 22 PRO (Aft Keypad) * Enter ITEM 11+5 EXEC (Aft Keypad) * Enter ITEM 12+5 EXEC (Aft Keypad)	Activate Star Trackers Target = WESTAR-VI Satellite
1201	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	Power Down & Secure The RMS

1204	Mission Dep.	Aft Left Panel	A2	* Use RCS Thrusters To Close On The WESTAR-VI Satellite	The WESTAR-VI Satellite 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=0
					When The Reticules Are Centered, The WESTAR-VI Satellite Is Right In Front Of The Shuttle.
					  If You Are Impatient, Use Next Event

1205	Mission Dep.	Aft Left Panel	A2	* Use RCS Thrusters To Position The Shuttle	The WESTAR-VI Satellite Is In Visual Range, Slowly Position The Shuttle About 100 Feet Below The WESTAR-VI Satellite.
1206	Mission Dep.	Aft Left Panel	A2	* Use RCS Thrusters For Velocity Changes	Bring The Relative Velocity Between The Shuttle And The WESTAR-VI Satellite To Zero.
1207	Mission Dep.			* EV2	EV2 Emerges From The Airlock. Detach The Apogee Kick Motor Capture Device At The Forward Berthing Pallet. Move EV2 To The ACD.
1208	Mission Dep.			* EV2	Move EV2 To The Port MMU For Mounting.
1209	Mission Dep.			* EV1 & EV2	Approach The WESTAR-VI Satellite From Below And Attach The ACD To The satellite's Apogee Engine. Use COMM 1179 As A Guide.

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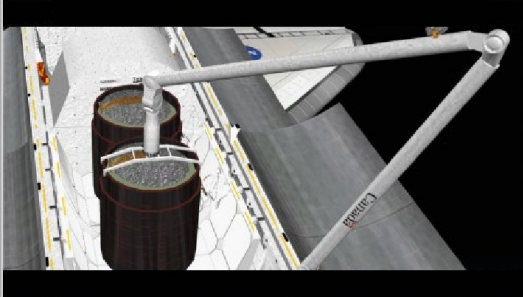| COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
1210	Mission Dep.			* EV1 & EV2	EV1 Emerges From The Airlock. Move EV1 To The Forward Pallet Structure.
1211	Mission Dep.	Aft Left Panel Aft Right Panel Aft Left Panel	A8L A6U A8U	* EV1 & EV2 * Set RMS POWER To PRIMARY * Set FLT CNTLR POWER To ON * Set RMS BRAKES To OFF * Set END EFFECTOR To AUTO * Use The RMS To Grapple The WESTAR-VI Satellite	EV1 Prepares The Bridge Structure For Attachment On Top Of The WESTAR-VI Satellite. EV2 Moves The WESTAR-VI Satellite To Within Grapple Range Of The RMS. Once The WESTAR-VI Satellite Is Within Grapple Range, Set The Relative Velocity To Zero. Grapple The WESTAR-VI Satellite .
1212	Mission Dep.	Aft Left Panel	A8U	* EV1 & EV2 * Use The RMS To Position The WESTAR-VI Satellite	Position The WESTAR-VI Satellite Above The Shuttle Payload Bay With The Satellite's Antenna Pointing Down Toward The Shuttle So It Can Be removed By EV1.
1213	Mission Dep.			* EV1 & EV2	EV1 Removes The Antenna And Mounts An Attachable Bridge Structure On Top Of The WESTAR-VI Satellite. This Operation Will Take About An Hour. If You Don't Want To Wait, Use Time Skip
1214	Mission Dep.	Aft Left Panel	A8U	* EV1 & EV2 * Use The RMS To Position The WESTAR-VI Satellite	Move The WESTAR-VI Satellite High Above The Shuttle Payload Bay.
1215	Mission Dep.	Aft Left Panel	A8U	* EV1 & EV2 * Use The RMS To Release The WESTAR-VI Satellite	Release The WESTAR-VI Satellite.
1216	Mission Dep.			* EV1 & EV2 	Maneuver EV2 & Position The WESTAR-VI Satellite. The Satellite Should Hover Above The Telesat-H Sun Shield Doors With The Top Grapple Facing Forward.
1217	Mission Dep.	Aft Left Panel	A8U	* EV1 & EV2 * Use The RMS To Grapple The WESTAR-VI Satellite 	Use The RMS To Capture The WESTAR-VI Satellite's Front Grapple.
1218	Mission Dep.			* EV1 & EV2	Move EV2 To The MMU Support Structure To Dismount.
1219	Mission Dep.			* EV1 & EV2	After Stowing The MMU, Move EV2 To The Forward Berth Pallet To Attach The ACD.
1220	Mission Dep.	Aft Left Panel	A8U	* EV1 & EV2 * Use The RMS To Position The WESTAR-VI Satellite	Position The WESTAR-VI Satellite Above EV1 & EV2, With The bottom Facing The Payload Bay.
1221	Mission Dep.			* EV1 & EV2	EV1 And EV2 Will Attach The Berthing Adaptor To The Satellite Engine.
1222	Mission Dep.			* EV1 & EV2	Move EV1 & EV2 Close To The Airlock And Out Of The Way Of The Berthing Latches.
1223	Mission Dep.	Aft Left Panel	A8U	* Use The RMS To Position The WESTAR-VI Satellite Coordinates & Diagram Provided On The Next Page	Use The RMS To Lower The WESTAR-VI Satellite Into The Cargo Bay. Toward The Berth Latches.

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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	PANEL AREA & NOTES
1223	Mission Dep.	Aft Left Panel	A8U	* Use The RMS To Position The WESTAR-VI Satellite	Align The WESTAR-VI Satellite With The Berthing Latches. **POSITION - P Y R** P: -090.0 | Y: 000.0 | R: 000.0 **POSITION - X Y Z** X: 659 | Y: 000 | Z: 501 **JOINT ANGLE** YAW: -041.1 SHOULDER: 110.6 ELBOW: -136.7 WRIST PITCH: -063.8 WRIST YAW: 000.0 WRIST ROLL: -319.0
1224	Mission Dep.			* EV1 & EV2	Move EV1 To The Pallet To Activate The Payload Latches.
1225	Mission Dep.			* EV1 & EV2	While EV1 Enables The Latches, Move EV2 To Pick Up The RMS Foot Restraint From The Payload Bay.
1226	Mission Dep.	Aft Left Panel	A8U	* Use The RMS To Un-Grapple The WESTAR-VI Satellite	Release The WESTAR-VI Satellite
1227	Mission Dep.	Aft Left Panel	A8U	* EV1 & EV2 * Use The RMS To Maneuver EV2	Move The RMS With EV2 To The Top Of The WESTAR-VI Satellite To Remove The Bridge Grapple Structure.
1228	Mission Dep.			* EV1 & EV2	EV2 Will Now Remove The Bridge Grapple Structure, It Will Take About 10 Minutes.
1229	Mission Dep.	Aft Left Panel	A8U	* EV1 & EV2 * Use The RMS To Maneuver EV2	Move EV1 & EV2 Close To The Port Payload Bay Between The Two Satellites.
1230	Mission Dep.	Aft Left Panel	A8U	* EV1 & EV2 * Use The RMS To Maneuver EV1 & EV2	EV2 Hands Over The Bridge Structure To EV1. EV1 Then Joins EV2 On The RMS Foot Restraint. Move The RMS With EV1 & EV2 Above The WESTAR-VI Satellite.
1231	Mission Dep.	Aft Left Panel	A8U	* EV1 & EV2 * Use The RMS To Maneuver EV1 & EV2	A Practical Joke Was Played By The Two Astronauts During The Final Segment Of The EVA, They Advertised Both Satellites They Salvaged As Being For Sale. Move The RMS With EV1 & EV2 Close To The Airlock For Dismounting.
1232	Mission Dep.			* EV1 & EV2	EV2 Will Now Stow The Foot Restraint.
1233	Mission Dep.			* EV1 & EV2	Move EV2 To The Airlock.
1234	Mission Dep.			* EV1	Move EV1 To The Airlock.
1235	Mission Dep.				This concludes STS-51A On-Orbit Mission. Next Event

Commence Deorbit & Landing

Space Shuttle Mission 2007

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DEORBIT & LANDING CHECKLIST

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 MEAS ENA 3
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
1091	Mission Dep.	Aft Left Panel Aft Right Panel Aft Left 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	* Check/Set All PAYLOAD BAY FLOOD Lights To OFF	Turn Off All Payload Bay Flood Lights
1006	Mission Dep.	Right Aft Panel R13L 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 Overhead Aft Panel Center Panel	R4 O15 O14 O16 C3	* 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	Final Switch Configuration Check

Space Shuttle Mission 2007

Designed By: Michael Swannick

DEORBIT & LANDING CHECKLIST

COMM	MET	PANEL SECTION	PANEL	PROCEDURE	NOTES
1010	Mission Dep.	Left Panel	L2	* 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	Final Switch Configuration Check
			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 * 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	C2 R2	* 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 * 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	Perform OMS Gimbal
		Center Panel	C2	* Confirm GIMBAL CK 34 On CRT 2 Is Complete (No Asterisk) * Enter OPS 302 PRO (Right Keypad)	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	F7 C2	* Check CRT 1 Confirm Display Of OPS MODE 3021 * ITEM 22 EXEC (Right Keypad) * ITEM 27 EXEC (Right Keypad) * ITEM 23 EXEC (Right Keypad)	Perform Deorbit Burn
		Overhead Aft	O14 O16	* Confirm L OMS ENG VLV Is ON * Confirm R OMS ENG VLV Is ON	
		Center Panel	C3 C2	* Set OMS ENG (LEFT & RIGHT) To ARM/PRESS * Press EXEC - (Right Keypad) Confirms ready for OMS burn	
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 Hint Align All ADI Needles
1022	Mission Dep.	Center Panel	C2	* Enter ITEM 36 EXEC (Right Keypad) * Enter ITEM 37 EXEC (Right Keypad)	Dump RCS Propellant
		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 Right Panel Center Panel	O17 R1 C2	* Set ATVC - (1/2/3/4) To ON * Set AC BUS SNSR (1/2/3) To MONITOR * 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)	
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	

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COMM	MET	PANEL SECTION	PANEL	PROCEDURE	NOTES
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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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
		Center Panel	C3	* MSTR MADS - OFF (DoD ELS, MCC call DoD OSC on NCC)	DOFF Suits. (Post Safety Assessment)
	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	
	Mission Dep.	Overhead Aft Panel		(NOT PERFORMED IF ELS)	Drag Chute Safing
			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
		Center Panel	C3	* Run Full Load Test	Systems Are Required For This 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)	

Space Shuttle Mission 2007

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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