

SPACE SHUTTLE MISSIONS SUMMARY

FLT NO.	ORBITER	CREW (5) TITLE, NAMES & EVA'S	LAUNCH SITE, LIFTOFF TIME, LANDING SITES, ABORT TIMES	LANDING SITE/ RUNWAY, CROSSRANGE LANDING TIMES, FLT DURATION, WINDS	SSME-TL NOM-ABORT EMERG THROTTLE PROFILE ENG. S.N.	SRB RSRM AND ET	ORBIT		FSW	PAYLOAD WEIGHTS, PAYLOADS/ EXPERIMENTS	MISSION HIGHLIGHTS (LAUNCH SCRUBS/DELAYS, TAL WEATHER, ASCENT I-LOADS, FIRSTS, SIGNIFICANT ANOMALIES, ETC.)
							INC	HA/HP			
STS-38 SEQ FLT #37 KSC-37 PAD 39A-27 MLP-1	OV-104 (Flight 7) Atlantis OMS PODS LPO1 - 13 RPO3 - 12 FRC4 - 7	CDR: Richard O. Covey (Flt 3 - STS 51-I & STS-26) P188/R73/V34/M67 PLT: Frank L. Culbertson P189/R116/M104 M/S 1: Carle J. Meade P190/R114/M105 M/S 2: Robert C. Springer (Flt 2 - STS-29) P191/R98/V57/M89 M/S 3: Charles D. Gemar P192/R118/M106 MCC FCR-2 (20) FLIGHT DIRECTORS: Asc/Ent - A. L. Briscoe O 1 - R. M. Kelso Ld/O 2 - C. R. Knarr Plng - C. W. Shaw MOD - B. R. Stone	KSC 39A 319:23:48:15Z 6:48:15 PM EST Thursday 9 11/15/90 (7) PLS: EDW RTLS: KSC TAL: Banjul (Selected) TAL WX: Ben Guerir SELECTED: RTLS: KSC 15 TAL: BYD 32 AOA: EDW 22 MAX Q: 00:49 MET SRB SEP: 2:03 MET MECO: 8:29 MET ET SEP: 8:47 MET OMS-1: 10:30 MET OMS-2: 47:43 MET	KSC 33 (KSC 6) 324:21:42:42Z 4:42:42 PM EST Tuesday 8 11/20/90 (6) DEORBIT BURN: 324:20:46:15Z X RANGE: 3 NM ORB DIR: DL 19 AIM PT: CLOSEIN MLGTD: 1414 FT 324:21:42:42Z VEL: 195 KGS 199 KEAS HDOT: -1 FPS TD NORM 195: 1850 FT NLGTD: 4600 FT 324:21:42:52Z VEL: 162 KGS HDOT: -3.1 FPS BRK INIT: 127 KGS AVE BRK DECEL: 7 FPS/S WHEELS STOP: 324:21:43:39Z 10417 FEET ROLLOUT: 9003 Feet 57 Seconds WINDS: 4H, 4.4R KTS OFFICIAL: 4H, 4R DENS. ALT: 387 FT FLT DURATION: 4:21:54:27 117:54:27 S/T: 214:10:53:17 OV-104: 33:16:43:40 DISTANCE: 2,045,056 sm	104/104/ 109% ACTUAL: 100/104/ 104/72/ 104/65 1 = 2019 (7) 2 = 2022 (5) 3 = 2027 (5) M 3 EOM WEIGHT: X CG: LANDING WEIGHT: 191091 X CG: 1098.6	BI-039 RSRM 12 ET-40 LWT-33 ET RPT 222K 47:10 MET ET BR/UP 181K 47:56 MET ET IMPACT LAT: 28.52°S LONG: 84.9°W	28.45° (23) STANDARD INSERTION DEORBIT BURN 114.9 SECS 228.5 FPS DEORBIT 142 X 115 NM VELOCITY 25729 FPS ENTRY RANGE 4146 NM OMS BURN 114.9 SECS 228.5 FPS	OI-8D (2) DOD PERFORMANCE MARGINS (LBS): FPR: 4652 FUEL BIAS: 994 FINAL TDDP: 863 RECON: 474 SECONDARY PAYLOADS: APE VFT-1 RME-III AMOS APM S-BAND XPONDERS ON SRB'S	KSC W/D: OPF 134 (2), VAB 26 (3), PAD 85 (2) = 245 LAUNCH POSTPONEMENTS: - As of Jan 1990, launch date was 7/9/90. On 5/29/90, OV-102/STS-35 launch was scrubbed because of excessive H2 leak in aft compartment. Special H2 tanking tests were performed on OV-104/STS-38. - 6/18/90 - STS-38 rolled out to Pad A. Scheduled launch 7/9. - 6/29/90 - LH2 Tanking Test #1 - Excessive H2 leak detected in umbilical area. - 7/13/90 - LH2 Tanking Test #2 - Excessive H2 leak detected in umbilical and plate gap areas. - 7/25/90 - LH2 Tanking Test #3 - Excessive H2 leak ET 17" disconnect flange area. Decision made to roll back and fix leak. - 8/9/90 - Rolled stack back to VAB. - 8/15/90 - OV-104 to OPF. Umbilical removed from ET-37 and sent to MSFC and RI-D for tests. Subsequently, found follower arm seal and shaft seal leaks in tests. Decision to use ET-40 after replacing LH2 umbilical. - 10/13/90 - Rolled out to Pad A. - 10/24/90 - LH2 Tanking Test #4 successful. - Launch scheduled for 11/15/90. 129-day slip. LAUNCH SCRUBS: None during second time at pad. LAUNCH DELAY: Launch delayed because Range Bermuda command link out of service. TAL WX: - Banjul - GO (weather good). - Ben Guerir - GO (weather good). I-LOADS: - Due to seasonal slip in launch, pitch negative became pitch nominal, which LSEAT selected, and was uplinked (Uplink 4). NIGHT LAUNCH: Fifth Shuttle night launch. WAVEOFFS: - Waved off on fourth day because of excessive head and crosswinds on all three landing opportunities at EDW. - Extended one rev to land at KSC because of high winds predicted at EDW. Continued . . .		



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STS-38 Continued											<p>Continued . . .</p> <p><u>LANDING SITE CHANGE:</u> - Changed from EDW to KSC landing because of predicted unfavorable winds.</p> <p><u>FIRSTS:</u> - First flight with Air Force, Navy, Army, and Marine Corps crewmembers. All 4 hymns were used as wakeup music on one day. - First flight of GOX FCV's in step 2 position.</p> <p><u>SIGNIFICANT ANOMALIES:</u> - WSB 2 not cooling on controller A. - FES water supply accumulator heater biased low. - Vacuum cleaner short, CB 29 opened. - CCTV monitor 2 fault light on - powered down. - APU 2 EGT and APU 2 and 3 injector tube temps interacting. - Right vent door 1 and 2 purge position dropped to closed position instead of purge position - RIU PC low. - Continuous 'Tire 'Press' FDA messages post landing. - Several smoke detectors had event indicators go high but not high enough to trigger alarm. - GPC mode switch found in STDBY and power switch in off.</p>