SPACE SHUTTLE MISSIONS SUMMARY

FLT NO.	ORBITER	CREW (7) 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 INC	ORBIT HA/HP	FSW	PAYLOAD WEIGHTS, PAYLOADS/ EXPERIMENTS	MISSION HIGHLIGHTS (LAUNCH SCRUBS/DELAYS, TAL WEATHER, ASCENT I-LOADS, FIRSTS, SIGNIFICANT ANOMALIES, ETC.)
STS-94 (STS-83R) SEQ FLT #85 KSC - 85 PAD 39A-49 MLP-1	OV-102 (Flight 23) Columbia 21st Spacelab Flight LM-15 EDO 11 OMS PODS: LPO5-12 RPO5-11 FRC2-23	CDR: James D. Halsell, Jr. (Flt 4 - STS-65, STS-74, & STS-83) P490/R178/V123/M156 PLT: Susan L. Still (Flt 2 - STS-83) P491/R218/V141/F28 M/S 1 (PAYLOAD CDR): Janice E. Voss (Flt 4 - STS-57, STS-63, & STS-83) P482/R167/V115/F22 M/S 2: Michael L. Gernhardt (Flt 3 - STS-69 & STS-83) P493/R199/V138/M173 M/S 3: Donald A. Thomas (Flt 4 STS-65, STS-70, STS-83) P494/R180/V119/M158 P/S 1: Roger Crouch (Flt 2 - STS-83) P495/R219/V142/M191 P/S 2: Gregory T. Linteris (Flt 2 - STS-83) P496/R220/V143/M192 MCC WHITE FCR (15) FLIGHT DIRECTORS: A/E - L. J. Ham LD/O 3 - R. M. Kelso O 1 - W. D. Reeves O 2 - G. A. Pennington O 3 - J. P. Shannon MOD - A. L. Briscoe	KSC PAD 39A 182:18:01:59.96Z 1:50:00 PM EDT (P) 2:02:00 PM EDT (A) Tuesday 12 7/1/97 (5) LAUNCH WINDOW: 2H30M CTOB EOM PLS: KSC TAL: BYD TAL WX: BEN SELECTED: RTLS: KSC 15/N/N TAL: BYD 32 AOA: EDW 22/N/N PLS: EDW 22/N/N TDEL: 0.01 0.382/0.42 MAX Q NAV: 701 PSF 703 PSF SRB STG: 2:03.5 2:04 PERF: NOMINAL 2 ENG TAL (BYD): 2:41 2:41 NEG RETURN: 3:56 3:58 PTA (U/S): 5:11 5:08 DROOP (BYD): 5:27 5:30 PTM (U/S): 7:03 7:05 MECO CMD: 8:28.6 8:29 VI: 25877 25871 OMS-2: 39:53 39:53 222 FPS 221.7 FPS BURN TIME: 2:23 2:23	KSC 33 (KSC 38) 198:10:46:33Z 6:46:33 AM EDT Thursday 9 7/17/97 (8) DEORBIT BURN: 198:09:43:45Z XRANGE: 81.7 NM ORBIT DIR: DL 42 AIM PT: NOMINAL MLGTD: 3056 FT 198:10:46:33Z VEL: 208 KGS 202 KEAS HDOT: -1.1 FPS TD NORM 205: 2774 FT DRAG CHUTE DEPLOY: 194 KEAS 198:10:46:37Z NLGTD: 6583 FT 198:10:46:44Z VEL: 158 KGS 152 KEAS HDOT: -5.9 FPS BRK INIT: 100 KGS DRAG CHUTE JETTISON: 52 KGS 198:10:47:12Z BRK DECEL FPS^2: AVE 5.8 PK 7.2 WHEELS STOP: 198:10:47:31Z 11948 FT ROLLOUT: 8892 FT 58 SEC WINDS: T1, 0X KTS OFFICIAL: 1502P02 T2, 0X KTS DENS ALT: 1113 FT FLT DURATION: 15:16:44:33 S/T: 708:07:31:41 OV-102: 237:07:55:39 DISTANCE: 6,200,000 sm	104/104/ 109% PREDICTED: 100/104/104/ 67/104 ACTUAL: 100/104/104/ 69/104 1 = 2037 (4) 2 = 2034 (9) 3 = 2033 (9) M 3 EOM: WEIGHT: 230818 LBS X CG: 1078.40 LANDING: WEIGHT: 230773 LBS X CG: 1080.10	BI-088 RSRM 62 ET-86 LWT-79 ET PRED RPT: 271.3K ET BRKUP: 214K ET IMPACT 1:21:04 MET LAT: 13.5°N LONG 163.46° W	28.45 (45)	DIRECT INSERTION POST OMS-2: 163.4 X 160.1 NM DEORBIT: 162 X 156.4 NM VELOCITY: 25793 FPS ENTRY RANGE: 4396 NM	OI-25 (7)	CARGO: 34359 LBS PAYLOAD CHARGEABLE: 25568 LBS DEPLOYED: 0 LBS NON-DEPLOYED: 23536 LBS MIDDECK: 2032 LBS SHUTTLE ACCUMULATED WEIGHTS: DEPLOYED: 837857 LBS NON-DEPLOYED: 1230575 LBS CARGO TOTAL: 2552583 LBS PERFORMANCE MARGINS (LBS): FPR: 3200 FUEL BIAS: 809 FINAL TDDP: 2845 RECON: 4193 PAYLOADS: PLB: Microgravity Science Laboratory. Protein Crystallography, Combustion Science, and Materials Sciences (MSL-1/LM) OARE CRYOFD MIDDECK: SAREX-II MSX 5 CRYO TK SETS + 4 EDO 5 N2 TANKS EDO PALLET NO RMS	KSC W/D: OPF 53, VAB 7, PAD 21 = 81 days total. LAUNCH POSTPONEMENTS: None - Reflight of MSL-01/STS-83 was baselined as STS-83R on 4/10/97 with a launch date of 7/1/97. - On 4/25/97, STS-83R was renumbered STS-94. LAUNCH SCRUBS: None - LAUNCH DELAYS/EARLY LAUNCH TIMES: At the L-1 MMT, the weather forecast at KSC for 7/1/97 launch at 1837Z was thunderstorms/rain with 90% probability of NO-GO. The decision was made to move the launch time 47 minutes early to improve the probability of launch, which changed the EDW landing opportunities from 2-2-2 to 1-1-1. New launch time was 1750Z. Counted down to T-9 minutes and held due to thunderstorm forecast for RTLS landing time. Thunderstorms at RTLS time was removed from the forecast. Launch delay was 12M00S TAL WX: Banjul was prime and selected. Banjul was NO GO for most of the count for 3000 feet broken but became GO late in count. Ben Guerir forecast and observed GO. DOLILU-II I-LOADS: DOLILU-II uplink #16, I-load uplink #35. KSC LANDING WEATHER: - Forecast for landing time was technically NO-GO for rain within 30 NM; however, rain was offshore, moving NE, and approach path was clear. Observed GO at deorbit burn minus 2 minutes. At landing time, rain was 29 ESE. Flight rule waiver written. FLIGHT DURATION CHANGES: None. FIRSTS/LASTS: - First reflight of same payloads (MSL-01 with same crew after STS-83 minimum duration flight declared due to FC2, substack 3 delta volts change). - First flight of Wraparound DAP (called part 5) used for complete entry. RCS usage 500 lbs vs baseline 700 lbs and redline 1430 lbs (28.45 inclination). EVENTS: - Entry was observed at approx 16 degrees elevation in Houston. - Deorbit burn was 298.5 FPS. SIGNIFICANT ANOMALIES: - Fuel cell 3, substack 2, cell performance monitor output increased approximately 32 mv in 20 minutes. - TDRSS Ku-band channel lock dropouts (worse with 48 MBPS on TDRS-E). - Loss of aero surface actuator (ASA) 4 redundant power. - Lower port fastener retainer housing separated from locker L6G (transfer from Spacelab to MF28K & M as DTO). - Ku-band channel 2 frequency shifts. - Ku-band roll/alpha gimbal anomaly. - Window #7 debris impact reported by crew. - APU 3 fuel isolation valves on heated string B cycling low. - Tempus top video camera failure.