

CENTER SERIES

THOMAS K. MATTINGLY FILES

Thomas K. Mattingly was selected to the astronaut corps in April 1966. As command module pilot for Apollo 16, he deployed scientific instruments that photographed and mapped a belt around the lunar equator. Mattingly served as head of astronaut office support to the STS program from 1973 to 1978 and, so, participated heavily in the development of the orbiter from the flight crew perspective. The papers in this subseries originate from this later period in Captain Mattingly's career. The materials are heavily annotated and many handwritten notes from Mattingly and other astronauts are included. The marginalia in this collection provides an interesting look at the interaction among members of the astronaut corps on technical issues. Particularly important are papers related to orbiter enhancements and improvements, advanced avionics, crew station arrangement, and critical and outstanding issues of safety and operational autonomy. The provenance of the subseries has been maintained wherever possible. Unfortunately, a portion of the collection arrived unfolded and well scrambled. A subject file arrangement was imposed on the loose materials since Mattingly's other files are organized by subject or major issue. Bulk dates for the collection are from 1973 to 1979. Consult the History Office biographical files for more detailed information regarding Mattingly's total career.

Inventory

SubHeading:	Box Number: 1	
	Astronaut Office, Operational Guidelines and Assumptions	August - September 1977
	Flight Crew Roles in Shuttle Program (astronaut input)	1979, n.d.
	FOD Roles and Responsibilities Working Group (extensive notes)	c. 1978
	Crew Autonomy in the Operational Era (operational concepts)	1974, 1978, n.d.
	Critical / Outstanding Issues (astronaut concerns)	1973 - 1978
	Summary of Launch and Abort Issues for the Shuttle	November 1, 1972
	Orbiter Enhancement Proposal and Orbiter Improvement Plan	1978, n.d.
	Orbiter Improvement / Enhancement Suggestions and Correspondence	1978
	Ad Hoc Crew Station Review (Orbiter Improvement Study)	1978 - 1979, n.d.
SubHeading:	Box Number: 2	
	Advanced Avionics Task Team (AHCSRT)	1978
	Heads-Up Display Issues (HUD Symbology Development Project)	1974, 1977 - 1979, n.d.
	Displays and Controls Guidelines and Criteria	1975 - 1977
SubHeading:	Box Number: 3	
	Flight Control Design Team Review	1973 - 1974, n.d.
	Flight Control System Simulations and Evaluations	1978, n.d.
	Flight and Entry Control System (Assorted papers with annotations)	1961, 1968, 1974 - 1976,
	Reaction Control System (RCS) Propellant Requirements and Acquisition	1974 - 1976, n.d.
	SENSITIVE! Entry Flight Control RCS Jet Interaction Problem, ESIG Meeting	August 7, 1978
	Powered Flight Guidance / Powered Explicit Guidance (PEG)	1974
	Digital Fly-By-Wire Control System	December 1973
	Control Characteristics and Handling (MSC-07151, Flying Qualities Requirements for the Orbiter utilizing	1973, 1976

	Closed - Loop, Fly-by-Wire Control of Response Parameters)	
	Thoughts on the Effects of Vehicle L/D (lift over drag) on the Shuttle Landing Task	July 23, 1973
	Flight Test of Orbiter Landing Capabilities	1979
	Auto / Manual Review Board, Design Issues	1975, n.d.
	Trajectory Optimization / Autoland Study Report	December 7, 1976
SubHeading:	Box Number: 4	
	Entry Aerodynamics Presentation Material	1974, 1976, n.d.
	Back-up Flight System Simulation	1975, 1978
	AIF-I Objectives and Test Plan, (FCS Design Verification)	1978
	AIF-II and GRTLS (Gliding Return to Launch /Landing Site), FCS Design Verification for Entry Through Landing	1978 - 1979, n.d.
	GRTLS Simulation (Gliding Return to Launch / Landing Site)	1978 - 1979
	Calspan NT-33A Flight Demonstration (re: Flight Control System)	1976 - 1977
	Microwave Scan Beam Landing System (MSBLS) Navigation Set for Space Shuttle Orbiter Vehicle	n.d.
SubHeading:	Box Number: 5	
	STA (Shuttle Training Aircraft) Notes, Handwritten	1978
	Detailed Requirements Document for the Shuttle Training Aircraft Processing System, JSC-09879	November 1977
	Crippen Presentation to Headquarters, "Operational View of Orbiter ALT Software"	1977
	Hydraulics and Actuators, (Port Popping Question)	1976 - 1977
	Space Shuttle Assessment, Orbiter Hydraulic System Architecture Assessment	n.d.
	Guidance, Navigation and Control Simulation (GNC / S-1)	1978, n.d.
	Alpha and Beta Estimation	1978, n.d.
	Air Data System RM	1978, n.d.
	JSC-13993, Proximity Operations Software, Level C Requirements	May 1978
	Notes on Universal Pointing and Proximity Operations (Rendezvous)	May 1978
	Remote Manipulator System (RMS) / Payload Deployment and Retrieval System (PDRS)	1975 - 1978
	Payload Deployment Notes	1978
SubHeading:	Box Number: 6	
	RCS Plume Flow Field Studies	1978
	Shuttle Mission Simulator Motion Base Crew Station Operational Readiness	1979, n.d.
	Orbiter Aeroflight Simulator Operational Readiness Inspection Committee Final Report (SMS)	1976
	SPS Downmoding Simulation	1978, n.d.
	Military Specification - Flying Qualities of Piloted Airplanes (MIL-F-8785B)	August 7, 1969

Structural Design Requirements of Orbital Vehicle	n.d.
Space Shuttle Main Engine Briefings and Technical Descriptions (note briefing on POGO Suppression)	1975 - 1977
EVA EMU / MMU Development (including suit gloves)	1974 - 1977