

CENTER SERIES

GEORGE W.S. ABBEY PAPERS

George W.S. Abbey's rise to prominence began in earnest with his B.S. from the U.S. Naval Academy in 1954 and his M.S. in electrical engineering from the Air Force Institute of Technology in 1959. After working for the Air Force on the X-20 DYNA-SOAR Program, Abbey assumed engineering management responsibilities for the Lunar Orbiter photographic and communications subsystems. In 1964, while still in the Air Force, Abbey joined the Apollo Program at the Manned Space Center. His responsibilities grew steadily, and in 1967 Abbey resigned his Air Force commission and accepted a new position as the Technical Assistant to the Apollo Spacecraft Manager. In this capacity, Abbey played an integral role in the Apollo accident investigation and helped develop and implement critical safety improvements required for the first manned Apollo flights. NASA's move from the beginnings of lunar exploration to the increasingly advanced space programs placed new burdens on Center management. To help allay some of this added load, Abbey was appointed Technical Assistant to the Director in 1969. Here Abbey gained valuable organizational and managerial experience as he conducted special studies and reviews, recommended policies for future technical activities and strove to integrate new programs into the Center organizational hierarchy. His success propelled him to his next position, Director of Flight Operations at JSC, which he attained in January 1976. As Director of Flight Operations, Abbey was responsible for astronaut flight crew training and development, flight control activities, as well as mission operations support for all U.S. human space flight missions. Abbey exhibited his leadership qualities while managing the JSC Aircraft Operations program, which consisted of 37 aircraft with an annual flight-hour program of over 14,000 hours. These aircraft supported flight readiness training, Shuttle mission profile training, zero-gravity testing and various other Shuttle program-related activities. Abbey also reviewed the hardware and software designs for the Space Shuttle, the Upper Stage engines, Mission Control Center and others to ensure their designs met flight operational requirements. In this period, Abbey also chaired the Astronaut Selection Board from 1976-78. As Director of Flight Ops, Abbey emphasized a cost-effective approach whenever possible. Having led Flight Ops successfully for nearly a decade, Abbey was put in charge of the newly formed Flight Crew Operations division, where he managed the astronaut flight crews and supported flight readiness training and high-altitude research with aircraft operations. Abbey later served as NASA's Deputy Associate Administrator for Space Flight from 1988 to 1990. Space Shuttle operations, the Space Station, launch operations and other tasks fell under his jurisdiction. His leadership in the aftermath of the Challenger explosion and later the Shuttle's return to flight earned him an appointment to a new position in 1991, the Senior Director for Civil Space Policy, National Space Council, Executive Office of the President. Abbey was then named Special Assistant to the nascent Administrator of NASA in 1992. In this capacity, Abbey participated in discussions between the United States and Russia, which resulted in the first formal contract between NASA and the Russian Space Agency. NASA named Abbey Deputy Director of JSC in January 1994 and then Center Director in January 1996. He held this responsibility until February 2001, when he became the Senior Assistant for International Issues reporting to the NASA administrator. Abbey officially retired from NASA effective January 3, 2003. During his half-century federal service career, Abbey received numerous awards, including the Medal of Freedom for his role on the Apollo 13 Mission Operations Team.

The documents in this collection provide some insight into the everyday life of George Abbey during his tenure as the Director of Flight Operations at JSC (1975- 1986). Some of the later documents were created after he attained the position of Director of Flight Crew Operations, but the large majority was produced while in the former position. Memos, reports and correspondence comprise the bulk of the documents, and nearly all of the memos are items addressed to Abbey, not his work. A somewhat substantial number of documents came outside of any folder, even a rough grouping. These independent documents were placed in new folders and assigned to one of the eight major groups. This collection contains 22 boxes and is subdivided into eight major groups. The folders in each group, whenever possible, contain the same group of documents as filed when the donation was received. The Aircraft group encompasses one of the focal points of Abbey's position as Director of Flight Operations. This group includes documents about some of the 37-odd aircraft under his authority. A few documents from Aircraft Operations Division (sub-department of Flight Ops) are found here, along with documents concerning Ellington Air Force base. A significant portion of this group deals with the Shuttle Carrier Aircraft (SCA), the SCA In-Flight Refueling phase, and the T-38. It should be noted that Shuttle Trainer Aircraft (STA) documents form their own group due to their quantity. Documents relating to the astronauts themselves (training documents notwithstanding) comprise the Astronaut Office group. Abbey's responsibilities for crew training and development put him into contact with astronaut issues outside the realm of training. Select documents regarding astronaut selection, medical status, crew patches, PPK/OFK (Personal Preference Kit/Official Flight Kit) are included in this group. The documents placed in the Flight Crew Operations group were created while Abbey headed the Flight Crew Operations Division from 1985-1988. This position grew out of his prior role as Director of Flight Operations. This group consists of Abbey's outgoing and concurrence correspondence from January 1986 - February 1987. The Flight Ops group, in essence, consists of documents that did not fit well in any of the other groups. This group is quite limited in size, containing only five folders. The NASA/JSC group contains documents a bit outside the scope of Flight Operations, such as the Manned Space Flight Education Foundation Visitor Center and documents on NASA/JSC functions and goals. The Shuttle group incorporates a fairly substantial array of documents, spanning areas like payload, vehicle modifications and weather issues. The group even touches on

the aborted Shuttle/Centaur program and contingency plans for emergency landings. Not contained in this group are the Shuttle Carrier Aircraft (SCA) and the Shuttle Trainer Aircraft (STA). Although both aircraft contain "shuttle" in their name, the SCA better fits in the aircraft group due to way in which Abbey dealt with it. The STA merits its own group designation due to the quantity of documents relating to it. The STA group consists of a large assortment of documents on the Shuttle Trainer Aircraft. A fair portion of the documents have to do with the presentation and procurement of the third STA, monthly training summaries and flight reports. Flight schedules and maintenance also appear quite often in this group. The final group, Training/Simulators, touches on Abbey's management and operation of the many devices used to train the astronauts. Simulators such as the Shuttle Mission Simulator, Shuttle Procedures Simulator, Shuttle Systems Trainer, Spacelab Simulator and the Single Systems Trainer can be found in this group. In addition to these machines, a select number of specific crew training summaries (for which Abbey was also responsible) appear in this group. A large number of memos concerning the requirements and costs of these trainers and simulators are found at the end of this group.

Inventory

SubHeading:	Box Number: 01	
Aircraft	Aircraft/JSC Evacuation Plans	1985
Aircraft - Aircraft Operations Division	Aerospace Safety Advisory Panel	1983-1984
Aircraft - Aircraft Operations Division	Aircraft Operations Division Hierarchy Chart and Memos	1986
Aircraft - Aircraft Operations Division	Aircraft Operations Division Safety, Systems, Quality Assurance	1980-1984
Aircraft - Aircraft Operations Division	Aircraft Operations Division Computers	1985
Aircraft - Aircraft Operations Division	Aircraft Operations Division Patrick Facilities	July 25, 1983
SubHeading:	Box Number: 02	
Aircraft - Aircraft Operations Division	Johnson Space Center Monthly Flying Reports, 1986	1986
Aircraft - Aircraft Operations Division	Audit Reports on Non-Administrative Aircraft	1983
Aircraft - Ellington	Aircraft Operations Division Facilities	1983-1984
Aircraft - Ellington	Facilities Construction, Training, J-85	1983-1986
Aircraft - Ellington	KC-135	1981-1985
Aircraft - Aircraft Operations Division	Aircraft Support Plan	1985
Aircraft	B-57 Project Airstream	1983
Aircraft	El Paso Facilities	1982-1985
Aircraft	Gulfstream I	1983-1986
Aircraft - Aircraft Operations Division	Aircraft Operations Division Safety, Systems, Quality Assurance (cont.)	1980-1984
SubHeading:	Box Number: 03	
Aircraft	Gulfstream II Administrative Aircraft	1978-1986
Aircraft	Heavy Aircraft Familiarization	1975-1983
Aircraft	Helicopter	Feb. 21, 1985
Aircraft	J-85 Engine	1982-1984
Aircraft	Northrup Worldwide Aircraft Services, Inc.	1982-1983
Aircraft	PIFS (Aircraft)	1982-1983
SubHeading:	Box Number: 03 *	
Aircraft - Shuttle Carrier Aircraft	Backup Pitch, Maintenance, Canister * 82 pages of this document have been scanned	1982-1985
SubHeading:	Box Number: 04	
Aircraft - Shuttle Carrier Aircraft	Backup Shuttle Carrier Aircraft (SCA)	1983-1984
SubHeading:	Box Number: 04 *	
Aircraft - Shuttle Carrier Aircraft	Backup, Pitch, Maintenance, Canister (cont.) * 80 pages of this document (folder 4) have been scanned	1982-1985
Aircraft - Shuttle Carrier Aircraft	Shuttle Carrier Aircraft Ferry and	1978-1986

Canister, Maintenance * 358 pages of this document have been scanned (folders 6, 7, 8, and 10)

SubHeading:

Box Number: 05

Aircraft - Shuttle Carrier Aircraft	Shuttle Carrier Aircraft Paris May 1983	May 1983
Aircraft - Shuttle Carrier Aircraft	Shuttle Carrier Aircraft Performance and Ferry Studies	1983-1985

SubHeading:

Box Number: 05 *

Aircraft - Shuttle Carrier Aircraft	Shuttle Carrier Aircraft Ferry and Canister, Maintenance (cont.) * 88 pages of this document (folder 2) has been scanned	1978-1986
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Aircraft - Shuttle Carrier Aircraft	Shuttle Carrier Aircraft Heavy Weight Orbiter Ferry * This 63 page document has been scanned	1982
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Aircraft - Shuttle Carrier Aircraft In-Flight Refueling	Shuttle Carrier Aircraft In-Flight Refueling * This 295 page document has been scanned * Document contained in folders 6, 7, 8, and 9	1982-1986
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Aircraft - Shuttle Carrier Aircraft In-Flight Refueling	Shuttle Carrier Aircraft In-Flight Refueling Presentation * This 116 page document has been scanned * Document contained in folders 10 and 11	1983
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SubHeading:

Box Number: 06 *

Aircraft - Shuttle Carrier Aircraft In-Flight Refueling	Shuttle Carrier Aircraft In-Flight Refueling Presentation and Tests * This 372 page document has been scanned * This document is contained in folders 1, 2 and 3	1982-1983
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Aircraft - Shuttle Carrier Aircraft In-Flight Refueling	Shuttle Carrier Aircraft In-Flight Refueling Study Final Report * This 174 page document has been scanned	May 22, 1985
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Aircraft - Shuttle Carrier Aircraft In-Flight Refueling	Shuttle Carrier Aircraft In-Flight Refueling Study Final Report, Boeing Correspondence on SCA * This 389 page document has been scanned * This document is contained in folders 5, 6, and 7.	1977-1985
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SubHeading:

Box Number: 07

Aircraft - T-38	Astronaut Proficiency: Flying	1974-1979
Aircraft - T-38	T-38 Aircraft Utilization - Personnel	1975-1986
Aircraft - T-38	T-38 Chase Aircraft Activity and Design	1974-1985
Aircraft - T-38	T-38 L/D Chase Aircraft	1983-1984
Aircraft	Super Guppy	1978-1986

SubHeading:

Box Number: 07 *

Aircraft - Shuttle Carrier Aircraft In-Flight Refueling	Shuttle Carrier Aircraft In-Flight Refueling Study Final Report, Boeing Correspondence on Shuttle Carrier Aircraft (cont.) * This 120 page document has been scanned	1977-1985
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SubHeading:

Box Number: 08

Aircraft - T-38	T-38 Repair	Feb. 15, 1983
Aircraft - T-38	T-38 Replacement	July 6, 1983
Aircraft - T-38	T-38 Safety	1983-1987
Aircraft - T-38	T-38 Safety, Tests	1977-1986

SubHeading:

Box Number: 09

Aircraft - T-38	T-38 Safety, Tests (cont.)	1978-1986
Aircraft - T-38	T-38 Structural Life Extension Program	1982-1985
Aircraft - T-38	T-38 Aircraft Operating Procedures Manuals	1982-1985

Aircraft	Zero-Gravity Aircraft	1977-1986
SubHeading:	Box Number: 10	
Astronaut Office	Al Shepherd Correspondence with Prince Charles	1986
Astronaut Office	"Alternate" Columbia Crew Patch and Humorous Documents	1984-1985
Astronaut Office	ASTP Crew Patch	1974-1975
Astronaut Office	Astronaut Appearances	1986
Astronaut Office	Astronaut Candidate (ASCAN) "Public Speaking + Media Relations Workshop"	1977-1984
Astronaut Office	Astronaut Meeting Issues	Oct. 26, 1978
Astronaut Office	Astronaut Office Info	1980-1983
Astronaut Office	Astronaut Proficiency: Technical	1980
Astronaut Office	Astronaut Safety Office	1977-1986
Astronaut Office - Astronaut Selection	Astronaut Selection Presentation to DOD	Nov. 26, 1979
Astronaut Office - Astronaut Selection	Astronaut Selection & Training	Apr. 24, 1979
Aircraft	Zero Gravity Aircraft (cont.)	1977-1986
SubHeading:	Box Number: 11	
Astronaut Office	Challenger Fund	1986
Astronaut Office	Crew and Payload Lists, Equipment	1983-1985
Astronaut Office	Flight Crew Operations Directorate Action Items	1984-1986
SubHeading:	Box Number: 12	
Astronaut Office	Flight Crew Operations Directorate (FCOD) Action Items (cont.)	1984-1986
Astronaut Office - Medical	Crews and Crew Selection	1978-1982
Astronaut Office - Medical	Life Sciences	1978-1985
Astronaut Office	Memos Re: Nominations, Awards, etc.	1977-1986
Astronaut Office - Medical	Medical Items	1976-1984
SubHeading:	Box Number: 13	
Astronaut Office	NASA News Articles	1979-1983
Astronaut Office - Personal Preference Kit/Official Flight Kit	Apollo-Soyuz Test Project (ASTP) Official Flight Kit/Personal Preference Kit (OFK / PPK)	1974-1975
Astronaut Office - Personal Preference Kit/Official Flight Kit	Official Flight Kit/Personal Preference Kit, 1972-1975 (OFK / PPK)	1972-1975
Astronaut Office - Personal Preference Kit/Official Flight Kit	Personal Preference Kit/Official Flight Kit, 1977-1985 (OFK / PPK)	1977-1985
Astronaut Office - Personal Preference Kit/Official Flight Kit	Skylab Official Flight Kit/Personal Preference Kit (OFK / PPK)	1974-1976
Flight Crew Operations - Outgoing Correspondence	CA/Flight Crew Operations Outgoing Correspondence, 1/1/86 - 2/28/86	1/1/1986-2/28/1986
SubHeading:	Box Number: 14	
Flight Crew Operations - Outgoing Correspondence	CA/Flight Crew Operations Outgoing Correspondence, 3/1/86-4/30/86	3/1/1986-4/30/1986
Flight Crew Operations - Outgoing Correspondence	CA/Flight Crew Operations Outgoing Correspondence, 6/1/86-8/31/86	6/1/1986-8/31/1986
Flight Crew Operations - Outgoing Correspondence	CA/Flight Crew Operations Outgoing Correspondence, 9/1/86-12/31/86	9/1/1986-12/31/1986
Flight Crew Operations - Outgoing Correspondence	CA/Flight Crew Operations Outgoing Correspondence, 11/1/86-12/31/86	11/1/1986-12/31/1986
Flight Crew Operations - Outgoing Correspondence	CA/Flight Crew Operations Outgoing Correspondence, 1/1/87-2/28/87	1/1/1987-2/28/1987
Flight Crew Operations - Concurrence Correspondence	CA/Flight Crew Operations Concurrence Correspondence, 9/1/86-10/31/86	9/1/1986-10/31/1986

Flight Crew Operations - Concurrence Correspondence	CA/Flight Crew Operations Concurrence Correspondence, 11/1/86-12/31/86	11/1/1986-12/31/1986
Flight Crew Operations - Concurrence Correspondence	CA/Flight Crew Operations Concurrence Correspondence, 1/1/87-2/28/87	1/1/1987-2/28/1987
Flight Crew Operations	Personnel 1986	1986
SubHeading:	Box Number: 15	
Flight Ops	ECOSystems Final Reports and Reviews on Flight Ops	1982-1984
Flight Ops	Engineering & Development	1980-1986
Flight Ops	Experiment Planning & Operations on Skylab	July 7, 1985
Flight Ops	Intelsat	June 17, 1986
Flight Ops	Safety and Management Issues	1982-1984
NASA/JSC	Manned Space Flight Education Foundation, Inc., Visitor Center	1986
NASA/JSC	Microgravity	1986
SubHeading:	Box Number: 16	
NASA/JSC	NASA History	1983-1987
NASA/JSC	NASA History Program and Challenger Accident	May 23, 1988
NASA/JSC	NASA HQ Survey of Safety	April 18, 1979
NASA/JSC	NASA/JSC Functions and Goals	1973-1983
NASA/JSC	Southwest Research Institute	1987
NASA/JSC	U.S. Government Appointment Book	1988
Shuttle	Element Concentrations from Lunar Orbital Gamma-Ray Measurements	1974
Shuttle	Inertial Upper Stage	1978-1984
Shuttle	Manned Maneuvering Unit (MMU)	1984
Shuttle - Orbiter Vehicle Modifications	OV-99 (Orbiter Vehicle)	1981-1982
SubHeading:	Box Number: 17	
Shuttle - Payload	Payload Operations	1978-1985
Shuttle - Orbiter Vehicle Modifications	OV-102 (Orbiter Vehicle)	1982
Shuttle - Payload	Payload Operations Working Group	1976-1986
Shuttle - Payload	Payload Specialist Office (PSLO)	1977
Shuttle	Principal Investigator Review of STS Operations Planning	1978-1979
Shuttle	Remote Manipulator System (RMS) - Tests and Checks	1981-1984
SubHeading:	Box Number: 18	
Shuttle	Space Transport System (STS)	1978-1986
Shuttle	Shuttle Avionics Integrations Laboratory (SAIL)	1979-1980
Shuttle	Shuttle/Centaur Program	1985-1987
Shuttle	Shuttle Emergency Landing Prep for Bonn-Cologne Airport	Nov. 1983
Shuttle	Shuttle EVA Patch	July 28, 1982
Shuttle	Shuttle Poster Covers	1977-1978
Shuttle	Shuttle Waste Collection System	1982
SubHeading:	Box Number: 19	
Shuttle - Weather Issues	Shuttle - Lightning Studies/Constraints	1982-1983
Shuttle	Space Transport System (STS) (cont.)	1978-1986
Shuttle	STS Payload Canister	1982-1983

Shuttle	Thermal Protection System	1979-1980
Shuttle	Vehicle Integration Test Office (VITT)	1976-1984
Shuttle - Weather Issues	Shuttle Atmospheric Flight Capabilities and Constraints	1982
SubHeading:	Box Number: 20	
Shuttle - Weather Issues	Shuttle - Lightning Studies/Constraints (cont.)	1982-1983
Shuttle - Weather Issues	Shuttle - Weather Forecasting	1983-1984
Shuttle Trainer Aircraft (STA)	Shuttle Trainer Aircraft (STA)	1982-1983
SubHeading:	Box Number: 21	
Shuttle Trainer Aircraft (STA)	Shuttle Trainer Aircraft (cont.)	1984-1986
SubHeading:	Box Number: 22	
Shuttle Trainer Aircraft	Shuttle Trainer Aircraft Side Force Control Removal	1983
Shuttle Trainer Aircraft (STA)	Shuttle Trainer Aircraft (cont.)	1975-1985
Shuttle Trainer Aircraft (STA)	Shuttle Trainer Aircraft Maintenance	1982-1985
Shuttle Trainer Aircraft (STA)	Shuttle Trainer Aircraft Training	1983-1984
Shuttle Trainer Aircraft (STA)	Shuttle Trainer Aircraft Training Records	1984
SubHeading:	Box Number: 23	
Shuttle Trainer Aircraft	Shuttle Trainer Aircraft 4	1983-1985
Shuttle Trainer Aircraft (STA)	Shuttle Trainer Aircraft 3 Program Briefing to NASA	1983-1985
Training/Simulators	Flight Controller Training	1975-1983
Training/Simulators - Shuttle Crew Training	Apollo-Shuttle Crew Training Cost Analysis	March 1975
Training/Simulators - Shuttle Crew Training	Astronaut Training, 1977-1986	1977-1986
Training/Simulators - Shuttle Crew Training	Mercury, Gemini, Apollo & Skylab Crew Training Summaries	Sept. 1974
Training/Simulators - Shuttle Crew Training	Shuttle/ASCAN (Astronaut Candidate) Training Program and Summaries	1982-1985
SubHeading:	Box Number: 24	
Training/Simulators - Single Systems Trainer (SST)	Single Systems Trainer Readiness Review, Aft Upgrade Proposal	1978
Training/Simulators - Shuttle Crew Training	Shuttle Mission Simulator (SMS)	1977-1986
Training/Simulators - Shuttle Crew Training	Shuttle Procedures Simulator	1977-1980
Training/Simulators - Shuttle Crew Training	Shuttle Systems Trainer	1976
Training/Simulators - Shuttle Crew Training	Spacelab Simulator	1978-1982
Training/Simulators - Shuttle Crew Training	Weightless Environment Test Facility (WETF)	1982-1985
SubHeading:	Box Number: 25	
Training/Simulators - Single Systems Trainer (SST)	Single Systems Trainer Software Requirements	Jan. 1977
Training/Simulators - Trainer and Simulator Requirements and Costs	Memos (Orbiter Neutral Buoyancy Trainer, Shuttle Mission Simulator)	1976-1986
Training/Simulators - Trainer and Simulator Requirements and Costs	Memos (Teleoperator Retrieval System, Probe Data Relay Subsystem, Shuttle System, Manned Maneuvering Unit, Weightless Environment Test Facility)	1975-1983