

University of Houston Clear Lake

Archives and Special Collections

HSF-59 **Robert M. Kelso Papers**

[Human Space Flight Collection]

Collection Number: HSF-59

Title: Robert M. Kelso Papers

Dates: 1969-1970, 1976, 1978, 1980-1984, 1988, 1996-1998, undated

Creator: Robert M. Kelso; National Aeronautics and Space Administration

Abstract

The Robert M. Kelso Papers is composed of flight manuals, handbooks, checklists, press kits, memorandums, telephone directories, and miscellaneous materials, used and kept by Robert M. Kelso while he worked as flight controller and later lead flight director in Flight Operations in Mission Control Center at NASA Johnson Space Center in Houston, Texas. The bulk of the materials are handbooks, flight manuals, and console binders used by Kelso during the first three Space Shuttle Orbiter missions STS-1, STS-2, and STS-3, while working as a flight controller for the Shuttle between 1981 and 1982. There are also operational manuals, binders, and other records from the Space Shuttle missions STS-5, STS-8, STS-12, and STS-13. One of the more unique items in the collection is Kelso's original National Space Transportation System reference press kit binder from 1988, providing information shared with the public regarding the Space Shuttle STS program.

Extent: 3.2 linear feet

Language(s): English

Repository

University of Houston-Clear Lake Archives and Special Collections, Alfred R. Neumann Library, 2700 Bay Area Blvd., Houston, TX 77058-1002

Restrictions on Access: There are no restrictions on accessing this collection.

Restrictions on Use

There are no known restrictions on accessing this collection. Some of the technical and scientific information in this collection may fall under the International Traffic in Arms Regulations (ITAR) of the United States government. As such, it cannot be placed shared online, digitally, or

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Preferred Citation

[Item name or title], [Box Numbers], [Folder Numbers], Robert M. Kelso Papers, HSF-59, University of Houston-Clear Lake Archives and Special Collections, Alfred R. Neumann Library, 2700 Bay Area Blvd., Houston, TX 77058-1002

Acquisition

The collection was deposited with the University of Houston-Clear Lake Archives and Special Collections by Robert M. Kelso of League City, Texas, in two separate deposits in November 2017 and July 2019, respectively. The donation was completed in November 2022.

Processing Information

The collection was received from the donor in loose order in two separate deposits. Most of the materials had been stored in an area where they were exposed to pests and moisture over time. All of the manuals and handbooks were stored in three-ring binders, with the plastics covers sticking to the paper contents, the metal rings rusting heavily, dirt and bug debris built up in the spine of the binders, and the records bent from slumping in the binders in long-term storage. This is common damage seen in materials stored in the coastal Houston, Texas, region. A number of the loose materials were covered in dust or dirt, and miscellaneous other debris. The processing archivist shook loose as much of the debris as possible from all the archival materials, though some remains stuck in between pages of various documents.

Several of the manuals were received by the Archives missing title covers or whole sections of the binders. In the absence of titles, the processing archivist assigned general titles to materials based on the indicating content of the documents. For example, one manual was termed a "Flight Manual" for a particular STS mission, as its content was similar to other flight manuals used by flight controllers and directors in the UHCL Archives' collections already. Some manuals only had specific sections with titles listed on the spines of as plastic cover paper inserts of the binders. In these cases, the spine or cover titles were photocopied as a preservation copy, with the copy placed at the front of the first part or section of the manual in the archival folder.

Processed by: Matthew M. Peek, September-November 2022.

Arrangement

The collection is arranged based on purpose of records in series, with loose chronological order within the series. The collection is arranged in the following series: Series I: Space Shuttle Missions' Operational Manuals; Series II: General Space Shuttle Manuals and Handbooks;

Series III: Miscellaneous NASA Manuals and Handbooks; Series IV: National Space Transportation System Materials; and Series V: Miscellaneous Materials.

Biographical Note

Robert M. Kelso born in Galveston, Texas. He would attend college at Austin College between 1973 and 1977, where he earned a bachelor's degree in physics. Kelso started working at NASA Johnson Space Center in coastal Houston, Texas, in 1973 while he was in college. Starting in April 1981, Kelso started working in Flight Operations in JSC Mission Control Center as a flight controller on STS-1, the first Space Shuttle orbiter mission. Kelso would spend twelve years as Space Shuttle Flight Director (also referred to in NASA press releases as Lead Flight Director) at JSC, leading flight operations for 25 Space Shuttle missions in the 1980s and 1990s.

Kelso returned to university in 1986 at the University of Houston-Clear Lake, where he studied and obtained a Master of Business Administration (MBA) in public administration in 1988 while still working at JSC. During his time in Shuttle flight operations, Kelso was chosen in the late 1980s to lead NASA's efforts with the U.S. intelligence community for integrating, planning and flight-execution of highly complex, very high-value U.S. Department of Defense (DoD) spacecraft and missions flown on the Space Shuttle. He also served as NASA's Mission Director, responsible for the launch and delivery of the Chandra X-Ray telescope, the last of the great NASA observatories sent into space, aboard Space Shuttle Columbia (STS-93) on July 23, 1999.

After leaving the Flight Director Office at Johnson Space Center, Robert Kelso served on JSC's senior staff as Deputy Director for Safety and Mission Assurance, responsible for directing safety and quality activities supporting manned space flight. One of Kelso's last roles at NASA was leading efforts to preserve and protect the Apollo lunar landing sites on the Moon. Kelso retired from NASA in December 2011.

Immediately after retiring from NASA, Robert Kelso founded Kelso Aerospace Consulting in December 2011, serving as its CEO with the goal of "providing consulting in strategic development and leadership within the government and commercial aerospace community." He ended the consulting firm in January 2022. From November 2012 to November 2016, Kelso served as the Executive Director of Hawaii state government's Pacific International Space Center for Exploration Systems (PISCES), located in Hilo, Hawai'i. Between January and June 2020 during the global COVID-19 pandemic, Kelso worked as the chief technology officer and program director for robotic lunar landers for the company Planetary Transportation Systems GmbH, based out of Berlin, Germany.

Since May 2020, Robert Kelso has worked as the program director for commercial robotic lunar landers at the lunar transportation company ORBITBeyond, Inc., based in Houston, Texas. The company aims "to provide reliable, repeatable and affordable payload delivery services to the Moon and cis-lunar space." In a civilian role, Kelso served as the assistant baseball coach for the University of Houston men's baseball team from 1998 to 2001, and as assistant baseball coach for the University of Hawai'i at Hilo men's baseball team from November 2012 to December 2015.

[Information for this biographical note was taken directly from the following sources: “Rob Kelso Biography,” National Space Society website, viewed online on November 23, 2022, at <https://space.nss.org/rob-kelso-biography/>; Robert Kelso’s LinkedIn work profile; Rob Kelso Biography from the International Lunar Research Park Exploratory Workshop held on April 5, 2011, viewed on their Google Site webpage at <https://sites.google.com/site/ilrpexploratoryworkshop2011/agenda/robkelso>; and a one-page work biography supplied by Robert Kelso to the UHCL Archives].

Scope and Content

The collection is composed of flight manuals, handbooks, checklists, press kits, memorandums, telephone directories, and miscellaneous materials, used and kept by Robert M. Kelso while he worked as flight controller and later lead flight director in Flight Operations in Mission Control Center at NASA Johnson Space Center in Houston, Texas. The bulk of the materials are handbooks, flight manuals, and console binders used by Kelso during the first three Space Shuttle Orbiter missions STS-1, STS-2, and STS-3, while working as a flight controller for the Shuttle between 1981 and 1982. There are also operational manuals, binders, and other records from the Space Shuttle missions STS-5, STS-8, STS-12, and STS-13.

One of the more unique items in the collection is Kelso’s original National Space Transportation System reference press kit binder from 1988, providing information shared with the public regarding the Space Shuttle STS program. There is also an original dedication program for Onizuka Air Force Station, named in honor of NASA astronaut Ellison S. Onizuka who was killed in the *Challenger* explosion in 1986. The collection is arranged in the following five series: Series I: Space Shuttle Missions’ Operational Manuals; Series II: General Space Shuttle Manuals and Handbooks; Series III: Miscellaneous NASA Manuals and Handbooks; Series IV: National Space Transportation System Materials; and Series V: Miscellaneous Materials.

Subject Terms

Personal/Family Name

Kelso, Robert M.

Corporate Names

Lyndon B. Johnson Space Center
United States. National Aeronautics and Space Administration

Geographic Name

Houston (Tex.)

Topical Term

Manned space flight--History

Space Shuttle Program (U.S.)
Space shuttles--United States--History
Space--Social aspects--History
United States. National Aeronautics and Space Administration--History

Genre/Physical Characteristic

Handbooks
Memorandums
Operating manuals
Publications
Technical manuals
Technical reports

Collection Inventory

Series I: Space Shuttle Missions' Operational Manuals

Series I consists of flight manuals, handbooks, checklists, used and kept by Robert M. Kelso for STS missions while he worked as flight controller and later lead flight director in Flight Operations in Mission Control Center at NASA Johnson Space Center in Houston, Texas. The bulk of the materials are handbooks, flight manuals, and console binders used by Kelso during the first three Space Shuttle Orbiter missions STS-1, STS-2, and STS-3, while working as a flight controller for the Shuttle between 1981 and 1982. Most of the materials date between 1980 and 1983 within the first three years of the Shuttle Program.

There are also operational manuals, binders, and other records from the Space Shuttle missions STS-5, STS-8, STS-12, and STS-13. Some of the manuals and binders are partial, and were missing their cover pages with actual titles as well as full sections of the manuals. Names were assigned as best as possible to represent the content of the materials, even if the exact title is not correct (in the case of the partial STS-1 Flight Manual, which had no title or cover page indicating that it was a full flight manual).

Box/Folder	Description	Date
1/1	Flight Control Operations Handbook: Orbiter Flight Test STS-1 (Final) (Part 1)	April 1, 1981
1/2	Flight Control Operations Handbook: Orbiter Flight Test STS-1 (Final) (Part 2)	April 1, 1981
1/3	STS-1 Flight Data File Crew Activity Plan: Orbital Flight Test (Final) (Part 1) Binder	1980-1981
1/4	STS-1 Flight Data File Crew Activity Plan: Orbital Flight Test (Final) (Part 2) Binder	1981

1/5	Partial STS-1 Flight Manual (Part 1)	Various dates
1/6	Partial STS-1 Flight Manual (Part 2)	Various dates
2/1	STS-1 Flight Data File Ascent Checklist Binder (Part 1)	February 1, 1981
2/2	STS-1 Flight Data File Ascent Checklist Binder (Part 2)	February 1, 1981
2/3	STS-1 Flight Data File Ascent Checklist Binder (Part 3)	February 1, 1981
2/4	STS-1 Medical Report	December 1981
2/5	STS-2/OSTA-1 Experiments Console Binder: STS-2 Payloads Handbooks and Procedures Manuals (Folder 1)	1981
2/6	STS-2/OSTA-1 Experiments Console Binder: STS-2 Payloads Handbooks and Procedures Manuals (Folder 2)	1981
2/7	STS-2/OSTA-1 Experiments Console Binder: STS-2 Payloads Handbooks and Procedures Manuals (Folder 3)	1981
3/1	STS-3 Flight Manual (Part 1)	Various dates
3/2	STS-3 Flight Manual (Part 2)	Various dates
3/3	STS-3 Flight Manual (Part 3)	Various dates
3/4	Orbital Flight Test (OFT) Flight Rules: STS-3 Flight	1982
3/5	Kelso's STS-3 Payload Operations Book Binder (Part 1)	1981
4/1	Kelso's STS-3 Payload Operations Book Binder (Part 2)	1981
4/2	STS-3 Crew Activity Plan (Final)	February 15, 1982
4/3	Orbiter Operations Cargo Systems Manual: STS-3, STS-4, STS-5	1982-1983
4/4	Payload Support Console Handbook for STS-5 (Final)	October 22, 1982
4/5	Kelso's STS-5 Orbit Flight Techniques Panel Meeting Memos	April-August 1982
4/6	Kelso's Original STS-8 Payloads Flight Controller's Log Book	August-September 1983

4/7	STS-12 Cargo Systems Manual: LDEF	May 30, 1983
5/1	STS-13 Cargo Systems Manual: SMRM	October 15, 1983

Series II: General Space Shuttle Manuals and Handbooks

Series II consists of a flight manual, handbook, and binder, used and kept by Robert M. Kelso while he worked as a flight director at NASA Johnson Space Center in Houston, Texas. Most of the materials date between 1996 and 1998. The materials include a partial Space Shuttle Systems Handbook, divided into sections 1-20 (there may be some pages missing) from November 1, 1998. There is an original July 1996 Shuttle Crew Operations Manual, and a partial STS Flight Rules binder from 1996 to 1998, used by Kelso towards the end of his time in Shuttle Flight Operations. These records were general Space Shuttle program operational records that were regularly consulted for various aspects of the flight planning and operation for the Shuttle missions by Kelso.

Box/Folder	Description	Date
5/2	Space Shuttle Systems Handbook [Revision F, DCN-2]: Sections 1-5 (Part 1)	November 1, 1998
5/3	Space Shuttle Systems Handbook [Revision F, DCN-2]: Sections 5-7 (Part 2)	November 1, 1998
5/4	Space Shuttle Systems Handbook [Revision F, DCN-2]: Sections 12-14	November 1, 1998
5/5	Space Shuttle Systems Handbook [Revision F, DCN-2]: Section 14	November 1, 1998
6/1	Space Shuttle Systems Handbook [Revision F, DCN-2]: Section 15	November 1, 1998
6/2	Space Shuttle Systems Handbook [Revision F, DCN-2]: Section 16	November 1, 1998
6/3	Space Shuttle Systems Handbook [Revision F, DCN-2]: Sections 17-20	November 1, 1998
6/4	Shuttle Crew Operations Manual (Part 1)	July 1996
7/1	Shuttle Crew Operations Manual (Part 2)	July 1996
7/2	Shuttle Crew Operations Manual (Part 3)	July 1996

7/3	STS Flight Rules, Sections 7-18 Binder: Sections 7-11	1996-1998
7/4	STS Flight Rules, Sections 7-18 Binder: Sections 12-18	1996-1998

Series III: Miscellaneous NASA Manuals and Handbooks

Series III consists of a flight manual, handbook, and booklet, used and kept by Robert M. Kelso while he worked as a flight controller at NASA Johnson Space Center in Houston, Texas, between 1981 and 1982. Two of the items are from NASA Goddard Space Flight Center, specifically regarding the OSS-1 managed by NASA's Office of Space Science. The OSS-1 Payload of nine experiments was carried on the STS-3 Space Shuttle flight in March 1982. The OSS-1 Payload contained four instruments that evaluated specific aspects of the Space Shuttle Orbiter's environment. Also in this series is a partial console handbook on the upper stages for the Shuttle, used by Kelso in 1982 and 1983.

Box/Folder	Description	Date
7/5	Goddard Space Flight Center OSS-1 Manual	1981-1982
8/1	OSS-1 Booklet: First Goddard Space Flight Center Payload Developed for Flight on Space Shuttle	Undated
8/2	Upper Stages (PAM-D) Console Handbook [Preliminary, PCN-1] (Partial)	November 10, 1982

Series IV: National Space Transportation System Materials

Series IV consists of the entire set of materials stored in a binder entitle "National Space Transportation System Reference Press Kit" in June 1988, providing information shared with the public regarding the Space Shuttle STS program. This copy was kept and used by Robert Kelso while he served as lead flight director for the Shuttle Flight Operations at Johnson Space Center.

Box/Folder	Description	Date
8/3	Kelso's National Space Transportation System Reference Press Kit Binder (Part 1)	June 1988
8/4	Kelso's National Space Transportation System Reference Press Kit Binder (Part 2)	June 1988
8/5	Kelso's National Space Transportation System Reference Press Kit Binder (Part 3)	June 1988

Series V: Miscellaneous Materials

Series V consists of a memorandum, dedication program, telephone directories, and a publication, kept and used by Robert Kelso when he worked at Johnson Space Center. There are five original telephone directories for JSC from the 1970s and 1980s. There is a period copy of a flight control memo on the Apollo lunar landing for Apollo 11 from 1969. Most significantly is an original dedication program for Onizuka Air Force Station, named in honor of NASA astronaut Ellison Onizuka who was killed in the *Challenger* explosion in 1986.

Box/Folder	Description	Date
8/6	NASA Technical Memo: Flight Control of the Apollo Lunar-Landing Mission	December 1969
8/7	Manned Spacecraft Center: Apollo Lunar Trajectory Notes publication	April 8, 1970
8/8	Dedication of Onizuka Air Force Station Program [for <i>Challenger</i> Shuttle Astronaut]	September 3, 1986
8/9	Johnson Space Center Telephone Directories	1976, 1978, 1980, 1983-1984