

FINDING AID FOR THE JOHN W. KIKER PAPERS, 1945-1998 (#2016-0012)

Contact Information

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Descriptive Summary

Repository (049) University Archives

Collection # (099) 2016-0012

Title (245) John W. Kiker Papers

Creator (100/110) John W. Kiker

Inclusive Dates: 1945-1998

Bulk Dates: 1985-1992

Extent (300): 4.5 linear ft (5 boxes)

Language (546): English

Administrative Information

Restrictions on Access (506) none

Restrictions on Use (540) none

Acquisition Information (541) Donated by Charles Lowery on November 11, 2005

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Biographical/Historical Note (545)

John W. Kiker began his career as a pilot trainer in WWII, flying B-52's. He had a long career with NASA, and designed the parachute and descent systems for Mercury, Gemini and Apollo spacecraft. He also assisted in designing the landing and docking systems for the lunar module and the Apollo command module. By 1971, he was chief of the Mechanisms Branch in the Spacecraft Design Division.

Kiker always was ready to share credit for ideas that worked, but the one for which he is best known within NASA is one he developed entirely on his own, and for which many of his colleagues at first questioned his sanity. Kiker's idea – to carry the orbiter on the back of a

modified Boeing 747 – was met with initial skepticism, but the utility of his idea was finally proven in full-scale approach and landing tests of the shuttle Enterprise at Edwards Air Force Base, Calif., in October 1977.

Today the image of the space shuttle riding piggyback on one of NASA's two shuttle carrier aircraft is a well-recognized part of the program's history. Kiker, who passed away in 2005 at the age of 79, would probably get a kick out of the instruction printed on the rear mounting point on one of the aircraft: "Attach Orbiter Here. Note: Black Side Down."

-Excerpt from NASA (http://www.nasa.gov/50th/50th_magazine/unsungHeroes.html) and the *Houston Chronicle* (<http://www.legacy.com/obituaries/houstonchronicle/obituary.aspx?pid=3515778>)

Scope and Content (520)

The collection contains 5 boxes of materials pertaining to the work of John W. Kiker from the period of 1945-1998. The collection includes technical manuals, correspondence, presentations, meeting minutes, and reports.

Arrangement

Folders are arranged within ten series: Early Apollo, General Aviation Models, Tires & Brakes, Shuttle Development, Separation Systems, SRB Recovery, Berthing & Docking, Shuttle Drag Chute, Technology, and CRV.

Index Terms (6xx):

Personal Names

Andrich, Steve
Barber, Marvin
Cox, Catherine Bly
Haise, Fred W.
Jones, Charles K.
Murray, Charles
Piland, Robert O.
Piland, William M.
Rogers, William F.
Schneider, William C.
Sisk, Thomas R.
Talay, Theodore A.

Corporate Names

Rockwell International
NASA

Subjects

Project Apollo (U.S.)
Aviation

Document Types

Technical report
Review
Technical drawing
Government publication
Conference publication

Related Material (544)

John M. Trebes Papers, 1962-1992 (#2013-0001)

Richard Boudreau "Apollo Mission Techniques" Documents, 1966-1967 (#2015-0009)

Inventory

<u>Box</u>	<u>Folder</u>	<u>Title</u>	<u>Date</u>
		Series I: Early Apollo	
1	1	Technical Diagrams	undated
	2	"NASA Technical Note: Apollo Experience Report, Lunar Module Landing Gear Subsystem" by William F. Rogers	Jan 1972
	3	"Apollo: The Race to the Moon" by Charles Murray and Catherine Bly Cox	undated
	4	Memo: Capsule Selective Orientation for Impact" from C. Johnson to R. Piland	undated
		Series II: General Aviation Models	
	5	"National Aeronautics and Space Administration Proposed Technical Note: An Evaluation of the Flying Qualities of Seven General Aviation Aircraft" by Marvin Barber, Charles K. Jones, Thomas R. Sisk, & Fred W. Haise	undated
	6	Figure index	undated
		Series III: Tires & Brakes	
	7	Orbiter Brake Hardware Description by J. McCullough	June 1987
	8	Landing/Deceleration System Modifications/Improvements Evaluation by J. McCullough	June 1987
	9	Orbiter Landing Deceleration System by C.C. Campbell	undated
	10	MLG Load Relief Study (Phase I) by Rockwell International	undated
		Series: IV: Shuttle Development	
	11	History & Background	undated
	12	Phase B Shuttle Studies	1967-1973
	13	Memoranda	1973-1986
	14	"Shuttle Systems Evaluation and Selection: Mid-Term Briefing, Vol. I, Executive Summary"	Dec 15, 1971
	15	"Shuttle Development Key Decision Points: My Recollections" by Steve Andrich	1969-1973
	16	Space Shuttle Orbiter Approach and Landing Test: Final Evaluation Report	Feb 1978
	17	"Advanced Manned Launch System Comparisons" by William M. Piland and Theodore A. Talay	October 1989
	18	"STS Crew Egress and Escape Study Presentation to STS Program Manager"	June 1986
	19	"Landing/Deceleration System Improvements" by William C. Schneider	June 1987
	20	"Appendix E: Natural Environment Design Requirements"	undated
		Series V: Separation Systems	
	21	Shuttle Orbiter Mechanisms	undated
	22	Frangible Nut on ET Side Configuration	undated
	23	Shear Flange Separation Bolt Configuration	undated
		Series VI: SRB Recovery	
	24	SRM Characteristics & Recovery by Royce Mitchell	1972
	25	Subzone Evaluator's Report by W.R. Pinnell	May 30, 1972

		Series VII: Berthing & Docking	
2	1	"Apollo Experience Report: The Docking System" by Robert D. Langley	June 1972
	2	"Statement of Work for Preliminary Design, Layout, and Analysis of Shuttle/ISF Docking System"	undated
	3	Correspondence	1984-1985
	4	"Joint Review of Specific Design Issue"	Aug 1984
	5	"Berthing Mechanisms Program Requirements Review" (Meeting Minutes)	Oct 29-30, 1985
	6	"Space Station Berthing Mechanisms – Design Concepts"	Nov 18, 1985
	7	"Requirements for Spacecraft Docking and Berthing"	Oct 1983
	8	"Construction/Docking Technology" by W.F Rogers	Sept 1, 1983
	9	"Berthing Mechanisms for Industrial Space Facility" C.C. Johnson	Aug 21, 1984
	10	"Apollo-Soyuz Docking System Sequence of Docking and Undocking"	May 1, 1975
	11	"Apollo-Soyuz Test Project: Criteria for Docking Initial Contact"	Aug 15, 1974
	12	"Docking System of Androgynous and Peripheral Type" by V.S. Syromatnikov	undated
	13	"Berthing Mechanism Proposal Outline" by Gene Burns	Jan 31, 1985
	14	"Berthing/Docking for Orbital Assembly"	Sept 5, 1984
	15	"Operational Characteristics of the Docked Configuration" by Homer Dotts, et al.	undated
	16	"Customer Training: Apollo J-Mission, CSM 112-113-114: Docking and Crew Transfer System Description"	April 15, 1971
	17	"Neuter Docking Mechanism Study" by James C. Jones	undated
	18	"Dynamic Testing of Docking System Hardware" by Wade C. Dorland	undated
	19	"Dynamic Analysis of Apollo Salut/Soyuz Docking" by John A. Schliesing	undated
	20	"Docking Devices for Soyuz-Type Spacecraft" by V.S Syromatnikov	undated
	21	Final Report	Nov 17-18, 1977
	22	Concept Drawings	undated
	23	"Gemini Summary Conference" (Incomplete)	Feb 1-2, 1967
		Series VIII: Shuttle Drag Chute	
	24	Flight History Summary	Nov 17, 1992
	25	Landing/Deceleration Materials	1989-1992
	26	Wind Tunnel Tests	1988-1993
	27	Wake Studies	1993
3	1	Parachute Design Considerations	1986-1989
	2	"Orbiter Drag Chute Project: Preliminary Design Review"	Oct 24-28, 1988
	3	"Orbiter Drag Chute: Delta Preliminary Design Review"	Jan 20, 1989
	Book	"Orbiter Drag Chute Project: Critical Design Review"	June 5-9, 1989
	4	Drag Chute Tests	1989-1992
	5	Loads Analysis	1992
	6	Riser Systems	1992-1993
	7	"Refurbishment of Orbiter Drag Parachute System Components"	June 10, 1993

4	8	Parachute Reuse	1992-1994
	9	"Parachute Manufacturing Seminar" by T.W Knacke	1986
	1	Correspondence	1992
	2	Meeting Minutes	1989-1990
		Series IX: Technology	
	3	"Summary of Design Considerations for Airplane Spin-Recovery Parachute Systems" by Sanger M. Burk, Jr.	May 25, 1972
	4	"The Hypersonic Revolution: Eight Case Studies in the History of Hypersonic Technology" vols. I-II	1987
	5	"Current Efforts in U.S. Parachute Development" by R.E. Meyerson	undated
	6	"Note on Analysis of the Opening Shock of Parachutes at Various Altitudes" by Dr. Theodore von Karman	1945
	7	"A Summary of the Low Altitude Flight Tests of the Viking Decelerator System" by Clinton V. Eckstrom and Harold N. Murrow	Jan 16, 1974
	8	Ejection Systems	1986
	9	Correspondence	Nov 29, 1961
	Book	NASA Contractor Report: Motorless Flight Research	1972
		Series X: CRV	
	10	Paper on Potential Application of High Performance Parachute to CRV	1998
	11	CRV Development Schedules	1997-1998
	12	"Landing and Recovery: Technology Project Summary-'Soft Landing Project Initiative'"	Mar 29, 1991
	13	"International Space Station (ISS)-Crew Return Vehicle (CRV)-Interface Requirements Document"	Jan 1998
	14	"Flight Test Techniques and Instrumentation for Large Scale Parafoils" by John F. Muratore	undated
	15	"X-38 Project Review Board Final Report"	May 1998
		Series XI: Oversize Materials	
5	1	Correspondence	1998
	2	Performance Characteristics of Components	undated
	3	"Launch Abort" Charts	undated
	4	"Landing Configuration" Charts	undated
	5	"Landing Systems" Charts	undated
	6	"Condensation of Study Contractor's Support Recommendations"	undated
	7	Development Plan Charts	1962-1970
	8	Engineering Master Schedule	1974-1981
	9	Orbiter Program Schedule	Jan 28, 1974
	10	ET/SRB Separation Configuration	undated
	11	Payload Bay Doors/Radiator Configuration	undated
	12	ET Separation Configuration	undated
	13	"Apollo-Soyuz Physical Interface Requirements"	undated
	14	Degradation Limit Analysis Spreadsheet	May 1994