



Richard T. Whitcomb

04/08/2010

Richard T. Whitcomb Collection

MS 52

Personal Papers

ABSTRACT:

This collection contains papers and articles by and about Richard T. Whitcomb, NASA engineer who invented the Area Rule, Supercritical Wing and Winglets, all designed for planes to use less fuel and fly faster. The collection also includes many awards given to Dr. Whitcomb, including the National Medal of Science.

BIOGRAPHICAL HISTORY

Richard T. Whitcomb was born in 1921 in Evanston, Illinois. His family moved to Worcester when he was young. As a boy, he made model airplanes and won contest awards.

He graduated from Worcester Polytechnic Institute in 1943 with a bachelor's degree in Mechanical Engineering and a concentration in Aeronautics.

SCOPE AND CONTENT:

Most of the collection relates to Richard Whitcomb's career with NACA (National Advisory Committee for Aeronautics) and NASA (National Aeronautics and Space Administration) and spans the years from 1954 to 1980.

The materials are organized in series: Early Achievements; NASA work and career, including papers by Richard Whitcomb; Patents and Patent-related materials; Correspondence; Awards; Articles and reports by others; Articles with reference to Richard Whitcomb; News articles about Whitcomb and his achievements; Reference books; Photographs; Trophies; Mementos; Academic Robes.

Container List

Container	Folder	Date	Title
None			

Series I Early Achievements

MS 52_001

Personal Papers

Container List

Container	Folder	Date	Title
Box 1	Folder 1	c. 1936	Model airplanes, articles and stationary
Box 1	Folder 2	1939	Diploma, North High School
Box 1	Folder 3	1943, 1956	Diplomas, WPI Bachelor of Science, Honorary Doctor of Engineering

Series II NASA work and career

MS 52_002

Personal Papers

Container List

Container	Folder	Date	Title
Box 1	Folder 5	June 25, 1952	Memorandum <i>"A Study of the Flow over a 45 degree Sweptback Wing-Fuselage Combination at Transonic Mach Numbers," by Richard T. Whitcomb and Thomas C. Kelly, National Advisory Committee for Aeronautics</i>
Box 1	Folder 6	Sept. 3, 1953	Memorandum <i>"Recent Results Pertaining to the Application of the Area Rule," by Richard T. Whitcomb, National Advisory Committee for Aeronautics (NACA)</i>
Box 1	Folder 7	1956	Report <i>"A Study of the Zero-Lift Drag-Rise Characteristics of Wing-Body Combinations Near the Speed of Sound," by Richard T. Whitcomb, NACA</i>
Box 1	Folder 8	1960	Technical Report <i>"A Supersonic Area Rule and an Application to the Design of a Wing Body Combination with High Lift-Drag Ratios," by Richard T. Whitcomb and John P. Sevier, Jr. - NASA</i>
Box 1	Folder 9	n.d., c. 1960s	Papers <i>"Transonic Airfoil Development" and "Transonic Empirical Configuration Design Process," by Richard T. Whitcomb - Presented at Special Course on Subsonic/Transonic Aerodynamic Interference for Aircraft, North Atlantic Treaty Organization, France</i>
Box 1	Folder 10	Feb. 29, 1972	Symposium Report <i>Supercritical Wing Technology - A Progress Report on Flight Evaluations, with 2 papers by Richard T. Whitcomb</i>
Box 1	Folder 11	July 1976	NASA Technical Note <i>"A Design Approach and Selected Wind-Tunnel Results at High Subsonic Speeds for Wing-tip Mounted Winglets," by Richard T. Whitcomb</i>
Box 1	Folder 12	Nov. 14, 1994	Lecture <i>"Research on Methods for Reducing the Aerodynamic Drag at Transonic Speeds," by Richard T. Whitcomb, Inaugural Eastman Jacobs Lecture</i>
Box 1	Folder 13	Nov. 30, 2005	Oral history interview <i>Interview re. history of NASA, with Richard Whitcomb, by Robert Ferguson</i>
Box 2	Folder 1	February 1980	Album 1 <i>Richard Whitcomb's retirement from Langley Research Center</i>
Box 2	Folder 2	February 1980	Album 2 <i>Richard Whitcomb's retirement from Langley Research Center</i>
Box 2	Folder 3	February 1980	Guest signatures <i>Richard Whitcomb's retirement from Langley Research Center</i>

Series III Patents and Patent-Related Material

MS 52_003

Papers, Personal

Container List

Container	Folder	Date	Title
Box 2	Folder 4	July 8, 1958	Patent <i>Apparatus for Reducing Exhaust Gas Pressure in Internal Combustion Engines</i>
Box 2	Folder 5	February 24, 1959	Patent <i>Fuselage Shaping to Reduce the Strength of Shock Waves about Airplanes at Transonic and Supersonic Speeds</i>
Box 2	Folder 6	August 4, 1959	Patent <i>Fuselage Shaping to Reduce the Strength of the Initial Shock Wave on Lifting Airplane Wings</i>
Box 2	Folder 7	January 3, 1961	Patent <i>Boundary-Layer Control Means for Lifting Wings</i>
Box 2	Folder 8	April 27, 1976	Patent <i>Airfoil Shape for Flight at Subsonic Speeds</i>
Box 2	Folder 9	1970	Legal Case, U. S. Court of Appeals <i>Law suit for Patent Infringement, General Dynamics Corp. & American Airlines v. Richard T. Whitcomb</i>
Box 2	Folder 10	1971	Legal Case - Petition to Supreme Court <i>Richard T. Whitcomb v. General Dynamics Corp. & American Airlines</i>

Series IV Correspondence

MS 52_004

Papers, Personal

Container List

Container	Folder	Date	Title
Box 3	Folder 1	1954-2005	<i>Miscellaneous Correspondence</i>
Box 3	Folder 2	1974-2007	<i>Correspondence from WPI</i>

Series V Awards

MS 52_005

Papers, Personal

Container List

Container	Folder	Date	Title
Box 3	Folder 3	1954	<i>The Collier Trophy documentation, literature, articles</i>
Box 3	Folder 4	1956	<i>WPI Honorary Degree - articles about</i>

Box 3	Folder 5	1956	
			<i>Distinguished Service Medal from NACA (National Advisory Committee for Aeronautics) - articles about</i>
Box 3	Folder 6	1957	
			<i>U. S. Junior Chamber of Commerce - The Ten Outstanding Men of 1956 - articles about award</i>
Box 3	Folder 7	January 1970	
			<i>Sylvanus Albert Reed Award, American Institute of Aeronautics and Astronautics - correspondence, program, articles</i>
Box 3	Folder 8	October 10, 1973	
			<i>National Medal of Science - program, correspondence, articles</i>
Box 3	Folder 9	1974	
			<i>Wright Brothers Memorial Trophy, National Aeronautic Association - correspondence, program, article</i>
Box 3	Folder 10	1974	
			<i>Aircraft Design Award, American Institute of Aeronautics and Astronautics, for Supercritical Wing - correspondence</i>
Box 3	Folder 11	1978	
			<i>H. J. E. Reid Award, NASA Langley Research Center - for Outstanding Paper - "A Design Approach and Selected Wind-Tunnel Results at High Subsonic Speeds for Wing-Tip Mounted Winglets"</i>
Box 3	Folder 12	1985	
			<i>Honorary Doctor of Science Degree, Old Dominion University - correspondence, article</i>
Box 3	Folder 13	November 5, 1998	
			<i>NASA Lifetime Achievement Award - program, correspondence, article</i>
Box 3	Folder 14	2000	
			<i>National Academy of Sciences Award in Aeronautical Engineering - award, articles</i>
Box 3	Folder 15	2001	
			<i>Smithsonian National Aviation and Space Exploration Wall of Honor - correspondence, certificate</i>
Box 3	Folder 16	2003	
			<i>Induction into the National Inventors Hall of Fame, Akron, Ohio - inductee summaries, published interview, correspondence</i>
20"X23" framed		1956	WPI Honorary Degree
			<i>Doctor of Engineering</i>
21 1/4"X25 1/2" framed		October 10, 1973	National Medal of Science
17 1/2"X20 1/2" framed - Quantity 2		2001	Daniel Guggenheim Medal
16 1/2"X20 1/2" framed			National Air and Space Museum Trophy
			<i>For Outstanding Achievements in Aerospace Technology</i>

21"X26 3/4" framed

WPI Presidential Medal

16"X20" folder

1985

Old Dominion Honorary Degree

Doctor of Science

Series VI Articles and reports by others

MS 52_006

Papers, Personal

Container List

Container	Folder	Date	Title
Box 3	Folder 17	1936 & 1940	<i>Paper - "Liquid Propellant Rocket Development," by Robert H. Goddard, 1936; Astronautics, Journal of the American Rocket Society, 1940</i>
Box 3	Folder 18	February 27, 1941	<i>Memorandum - "Tests of a Stern Propeller on a 1/40 scale model of the Airship 'Akron' in the 19-foot pressure tunnel," by James McHugh and R. H. Neeley</i>
Box 3	Folder 19	December 1952	<i>Report - "Aerodynamic Study for Stern Propulsion on XZP5K Airship," by H. R. Liebert & R. C. Eger, Goodyear Aircraft Corp.</i>
Box 3	Folder 20	July 1, 1953	<i>Engineering Report - Airship Stern Propulsion, General Development Corporation, Maryland</i>
Box 4	Folder 1	January 24, 1961	<i>Design Information Memorandum - "Boundary Layer Ingestion," by H. D. Sowers, General Electric Co.</i>
Box 4	Folder 2	June 20, 1963	<i>Report - "Tests on a Rear Inlet Model 1:5 in the Standard Wind Tunnel of the DFL Braunschweig from 4/1/63-4/28/63</i>
Box 4	Folder 3	2002, 2003	<i>NASA Reports</i>
Box 4	Folder 4	August 11-14, 2003	<i>Conference Paper - "Mechanization and Control Concepts for Biologically Inspired Micro Aerial Vehicles," by David L. Raney & Eric Slominski</i>

Series VII Articles, papers about Richard Whitcomb/his achievements

MS 52_007

Papers, Personal

Container List

Container	Folder	Date	Title
Box 4	Folder 5	1956	<i>Paper - "Forty Years of Aeronautical Research," by J. c. Hunsaker [p. 270 reference to Richard Whitcomb and Area Rule]</i>

Box 4	Folder 6	January 1976 <i>Paper - "A Lifting Surface Theory for the Analysis of Nonplanar Lifting Systems," by M. I. Goldhammer, McDonnell Douglas Corp. [with reference to Richard Whitcomb's work on winglets]</i>
Box 4	Folder 7	1995 <i>Article [printed from Internet] - "NACA and the 'Century Series'" [references to Richard Whitcomb, p. 1 of 4, p. 1 of 7]</i>
Box 4	Folder 8	July 2002 <i>Article about Richard Whitcomb - "The Man Who Could See Air," in Air & Space Smithsonian</i>
Box 4	Folder 9	2003 <i>NASA Publication - From Research to Relevance - Significant Achievements in Aeronautical Research at Langley Research Center (1917-2002), by Mark A. Chambers [see pp. 6, 13]</i>
Box 4	Folder 10	1955-c. 1980 <i>News articles - Area Rule</i>
Box 4	Folder 11	1969-1978 <i>New articles - Supercritical Wing/Airfoil</i>
Box 4	Folder 12	1977 <i>News articles - Winglets</i>
Box 4	Folder 13	c. 1960s-2000s <i>News articles - general</i>
Box 4	Folder 14	1980 <i>News articles upon Richard Whitcomb's retirement from NASA</i>

Series VIII Books

MS 52_008

Papers, Personal

Container List

Container	Folder	Date	Title
Box 4	Folder 15	1914, 1937	Books of tables, for reference <i>A Short Table of Integrals, compiled by B. O. Peirce; Logarithmic and Trigonometric Tables</i>
Box 4	Folder 16	1993, 2003	2 books re. awards <i>Daniel Guggenheim - The Man and His Medal 1929-1993; Inductees of the National Inventors Hall of Fame</i>

Series IX Photographs

MS 52_009

Papers, Personal

Container List

Container	Folder	Date	Title
Box 5	Folder 1	c. 1940s-2000s	<i>Portrait photographs of Richard Whitcomb</i>

Box 5	Folder 2	1954-1980 <i>Photographs that were with retirement albums, including portraits, trophies, other</i>
Box 5	Folder 3	1954 <i>Collier Trophy</i>
Box 5	Folder 4	October 10, 1973 <i>National Medal of Science</i>
Box 5	Folder 5	1974 <i>WRight Brothers Trophy</i>
Box 5	Folder 6	1979 <i>Henry I. E. Reid Award</i>
Box 5	Folder 7	1950s-c. 1980 <i>Richard Whitcomb at work, groups, planes, models</i>
Box 5	Folder 8	c. 1950s-1990s <i>Photographs - various [many are snapshots]</i>
Box 5	Folder 9	c. 1950s-1960s <i>Snapshots and 2 negatives of Richard Whitcomb - Area Rule</i>
Box 5	Folder 10	c. 1970s <i>Slides - NASA Supercritical Airfoil</i>
Box 5	Folder 11	c. 1970s <i>Slides - NASA Supercritical Airfoil</i>
Box 5	Folder 12	c. 1950s-1970s <i>Photographs on Tiles</i>
Box 5	Folder 13	c. 1950s-1970s <i>Photographs on tiles</i>

Series X Trophies and Medals

MS 52_010

Papers, Personal

Container List

Container	Folder	Date	Title
Cabinet	T1	1954	Collier Trophy <i>bronze on wood stand, approximately 8"X8"X14" high</i>
Cabinet	T2	1974	Wright Brothers Memorial Trophy <i>Metal model of Wright Brothers Plane on granite stone on black stand, approximately 11"X11"X11"</i>
Cabinet	T3	May 2007	Lifetime Award <i>From AIAA [American Institute of Aeronautics & Astronautics, Hampton Roads Section, approximately 8 1/2"X3"X11 1/2" high</i>

Cabinet	M1	January 1956	Medal - NACA <i>Round 1 1/2" diameter medal on blue ribbon with white stripe, from National Advisory Committe for Aeronautics to Richard T. Whitcomb for Distinguished Service</i>
Cabinet	M2	1973	National Medal of Science <i>Round 3 1/4" diameter medal</i>
Cabinet	M3	2001	Daniel Guggenheim Medal <i>2 1/2" diameter medal, to Richard T. Whitcomb for Great Achievement, Aeronautics, 2001</i>
Cabinet	M4	2003	Patent Medal <i>Round medal 2 1/2" diameter on red, white, blue ribbon. On one side: raised images of Edison and Lincoln - "The Patent System Added the Fuel of Interest to the Fire of Genius A. Lincoln." On other side: "Richard T. Whitcomb Patent No. 3,952,971 Supercritical Wing Inducted 2003</i>
Cabinet	M5	June 5, 2003	WPI Presidential Medal <i>Round medal 3" diameter on maroon and gray ribbon. "Richard T. Whitcomb '43 100 Years of Powered Flight June 5, 2003</i>
Cabinet	M6		NASA Exceptional Scientific Achievement <i>Round 1 1/2" diameter medal on blue striped ribbon</i>
Metal Cabinet	M7		Air Force Medal <i>Round 1 1/2" diameter medal on blue ribbon "To Richard T. Whitcomb for exceptional civilian service to the Department of the Air Force"</i>
Cabinet	M8		Exceptional Scientific Achievement Medal <i>2 pins in case, one with NASA symbol, other blue with white center</i>

Series XI Other Memorabilia

MS 52_011

Papers, Personal

Container List

Container	Folder	Date	Title
Box 6 - 12"X16" box		1988	Gavel <i>10" long. Inscribed: Presented to the Langley Alulmni Association from the Center Employees March 25, 1988</i>
Box 6 - 12"X16" drop-front box			NACA Symbol <i>Symbol mounted on wood base 6 3/4"X12 1/2" with hanger on back</i>
Box 6 - 12"X16" drop-front box		1972	Paperweight <i>Green oval with gold writing: TACT - Fisrt Chips, TACT Wing 3-8-'72 Dr. R. T. Whitcomb</i>
Box 6 - 12"X16" Drop-front box			Paperweight <i>White 3 1/2" square - 75 Years NACA NASA Langley Research Center</i>

Box 6 - 12"X16"
drop-front box

Paperweight

Rounded rectangle 2 3/4"X4 1/4" WPI Celebrates 100 Years of Powered Flight

Box 6 - 12"X16"
drop-front box

Desk Sign

Lightweight sign 5"X1" with blue background and white writing: 1954- Richard Travis Whitcomb, NACA Research Scientist - For discovery and experimental verification of the area rule, a contribution to base knowledge yielding significantly higher airplane speed and greater range with same power.

Box 6 - 12"X16"
drop-front box

Pins

2 airplane pins (tie pins)

Series XII Academic Cowls

MS 52_012

Papers, Personal

Container List

Container	Folder	Date	Title
Box 7			Academic Cowls
			<i>2 Academic Cowls</i>