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National Air and Space Museum

NASA F-8 Supercritical Wing Collection

Edward J. Pupek

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National Air and Space Museum Archives
14390 Air & Space Museum Parkway
Chantilly, VA 20151
Business Number: Phone: 703-572-4045
NASMRefDesk@si.edu
<https://airandspace.si.edu/archives>

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Collection Overview

Repository:	National Air and Space Museum Archives
Title:	NASA F-8 Supercritical Wing Collection
Date:	1964-1972
Identifier:	NASM.XXXX.0104
Creator:	National Aeronautics and Space Administration. Langley Research Center
Extent:	5.85 Cubic feet (13 boxes)
Language:	English .
Summary:	The supercritical wing concept was developed by Dr. Richard T. Whitcomb of the NASA Langley Research Center in Hampton, Virginia. Whitcomb's airfoil was designed to delay formation of shock waves at high speeds.

Administrative Information

Acquisition Information

NASA, gift, 1984, XXXX-0104, unknown

Preferred Citation

NASA F-8 Supercritical Wing Collection, Acc. XXXX-0104, National Air and Space Museum, Smithsonian Institution.

Restrictions

No restrictions on access

Conditions Governing Use

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Biographical Note

Richard T. Whitcomb (1921-) was born in Evanston, Illinois. His family later moved to Worcester, Massachusetts, where Whitcomb attended public schools. He received a B.S. degree in mechanical engineering from Worcester Polytechnic Institute in 1943. Following graduation he accepted a position with the National Advisory Committee for Aeronautics (NACA, the forerunner of NASA) at Langley Laboratories, Virginia. Whitcomb devoted much of his career to research in the problems of supersonic flight.

In the early 1950s Whitcomb discovered the transonic area rule concept. This rule amounts to a sensitive balance of fuselage and wing volume, which minimizes drag at transonic speeds. This concept was applied to post World War II fighters and resulted in operational military aircraft capable of supersonic flight.

Whitcomb earned international acclaim through his accomplishments with the area rule concept and the supercritical wing. Until his retirement from NASA he worked on aircraft energy efficiency and new winglet configurations.

Historical Note

The supercritical wing concept was developed by Dr. Richard T. Whitcomb of the NASA Langley Research Center in Hampton, Virginia. Whitcomb's airfoil was designed to delay formation of shock waves at high speeds.

In comparison with conventional wing cross sections, the supercritical wing was flattened on top, delaying the formation of shock waves and moving them further aft along the wing to increase total wing efficiency. To compensate for the lift lost with the flattened wing top, the rear lower surface was shaped with a deeper, more concave curve. The Mach number (the speed of the aircraft calculated as a percentage of the speed of sound) at which the relative airflow reaches the speed of sound at some point on the airframe is called the critical Mach number. Below the critical Mach number the flow is said to be subcritical, and above the critical Mach number it is called supercritical. The initial wind tunnel tests of the supercritical wing indicated that the new airfoil shape could allow highly efficient flight near the speed of sound of approximately 660 mph at cruising altitudes.

Initial designs for the supercritical wing were produced in 1964. The development of the supercritical airfoils included three phases: slotted (1964-1966); integral (1967); and thickened trailing edge integral (1968-1969). Flight testing of the supercritical wing began in 1971 and ended in December 1972. A Ling-Temco-Vought (LTV) F-8 aircraft modified with the supercritical wing was used in these tests, making its first flight on 25 March 1955. The LTV F-8 was a single place land or carrier based supersonic aircraft equipped with radar to provide an all-weather capability. Its most unusual feature was the hydraulically operated variable incidence wing.

The blunt leading edge of the supercritical wing led to better takeoff, landing, and maneuvering characteristics. Subsonic transports, business jets, STOL (short takeoff and landing) aircraft, and remotely piloted vehicles made use of the supercritical wing technology, using less fuel and flying more efficiently than aircraft with conventional wings.

The F-8 Supercritical Wing Collection was received by the National Air and Space Museum in July 1984 from NASA's Langley Research Center. The collection was assembled originally by Dennis W. Bartlett Richard Whitcomb's colleague at Langley's 8-Foot Transonic Dynamics Tunnel. The material in the collection came from the offices and warehouses of the tunnel facility.

Scope and Contents

This collection contains documents gathered from Langley Research Center on the development of the supercritical wing concept and the F-8 test bed program. The material primarily consists of notes and reports covering the wind tunnel development, flight testing, and evaluation of the concept. The collection also includes general and press information about the program.

Series and Subseries Organization

The NASA F-8 Supercritical Wing Collection is divided into four series:

Series 1 - Background Information

The Background Information Series contains publicity material, articles, general information, and technical reports. The technical reports are then arranged chronologically.

Series 2 - Wind Tunnel Testing

Test reports of the Wind Tunnel Testing Series are arranged numerically, and reports are arranged alphabetically by folder title.

Series 3 - Development and Flight Testing

The Development and Flight Testing Series begins with work statements and requests for proposal (RFP) information. These are followed by notes arranged in chronological order. Developmental technical reports are in alphabetical order by folder title. The flight test reports are arranged chronologically. These reports are then followed by photographs.

Series 4 - Evaluation of the Supercritical Wing

Evaluation reports on the Supercritical Wing Series are in chronological order

Names and Subject Terms

This collection is indexed in the online catalog of the Smithsonian Institution under the following terms:

Subjects:

- Aerodynamics
- Aerodynamics, Transonic
- Airplanes -- Flight testing
- Periodicals
- Transonic wind tunnels
- Vought F-8 (F8U) Crusader Family

Types of Materials:

- Correspondence
- Drawings
- Manuscripts
- Notes
- Photographs
- Publications
- Reports

Names:

- National Aeronautics and Space Administration. Langley Research Center
- North American Aviation, Inc.
- Whitcomb, Richard, 1921-

Container Listing

Series 1: Background Information, 1953-1971

Language: English.

Scope and Content: General information about the supercritical wing and the LTV F-8 aircraft are covered in this series.

Contents: The time span for this information is 1953-1971.

Arrangement: The technical reports are arranged chronologically.

Box 1, Folder 1	Supercritical Wing Publicity Information, 1969-1971 (1 of 2)
Box 1, Folder 2	Supercritical Wing Publicity Information, 1969-1971 (2 of 2)
Box 1, Folder 3	"The Chance Vought F-8A-E Crusader" -- article by Gerhard Joos, undated
Box 1, Folder 4	"There's No Substitute for Flight-Testing" -- article by J. S. Butz, Feb. 1969
Box 1, Folder 5	F-8 Supercritical Wing General Information, undated
Box 1, Folder 6	Boundary Layer Trip; F-8 calculations, undated
Box 1, Folder 7	NATOPS F-8 Flight Manual, 15 August 1964
Box 1, Folder 8	Supercritical Wing Work Statements, 1967-1968
Box 1, Folder 9	NASA Supercritical Wing Presentation, March 1969
Box 1, Folder 10	Supercritical Wing Proposal, U.S. Navy, July 10, 1969
Box 1, Folder 11	Supercritical Wing Status Review, August 1969
Box 1, Folder 12	Supercritical Wing Progress Report, including photographs & drawings, 1969

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Series 2: Wind Tunnel Testing, 1969-1971

Language: English.

Scope and Contents: Wind tunnel tests of the supercritical wing were conducting from 1969-1971. The series includes charts, data, notes, and photographs from these tests.

Arrangement: Test reports of the Wind Tunnel Testing Series are arranged numerically, and reports are arranged alphabetically by folder title.

Box 2, Folder 1	Test 27 - F-8 supercritical wing low turbulence pressure tunnel. Test 497 - F-8 8-foot probe, undated
Box 2, Folder 2	Test 240 - Plots of mass flow of F-8 model in 16-foot wind tunnel, undated
Box 2, Folder 3	Test 240 - Phase III for an F-8 model in a 16-foot wind tunnel measuring A1 control wing and high speed fuselage, undated
Box 2, Folder 4	Tests 240 and 480 - Comparison of slots data for phase I of an F-8 model in both 8-foot and 16-foot wind tunnels, undated
Box 2, Folder 5	Test 475 - Preliminary data, undated
Box 2, Folder 6	Tests 475 and 480 - F-8 supercritical wing oil flow photographs, undated
Box 2, Folder 7	Test 480 - Data, plots, and notes of wing-fuselage sections after 8-foot transonic pressure tunnel test, undated
Box 2, Folder 8	Tests 480 and 492 - F-8 supercritical wing oil flow photographs, undated
Box 2, Folder 9	Test 488 - F-8 supercritical wing test of side bodies, undated
Box 2, Folder 10	Tests 488 and 492 - Preliminary data, undated
Box 2, Folder 11	Tests 488, 492, and 514 - Drag-rise comparison plots with wide slots, undated
Box 2, Folder 12	Test 492 -- Data, undated
Box 2, Folder 13	Test 492 - F-8 drag due to lift factor vs. Mach number, plots and notes, undated
Box 2, Folder 14	Test 493 - F-8 supercritical wing test, data for trim coefficient drag and coefficient lift, undated
Box 2, Folder 15	Test 493 - Preliminary plots, undated
Box 2, Folder 16	Test 497 - 1/11.5-scale F-8 Test; Mach probe position error calibration, undated
Box 2, Folder 17	Tests 506 and 541 - Data of NASA Ames test 11-506 compared with 8-foot wind tunnel test 541, undated

Box 2, Folder 18	Test 512 - Static pressure wing test of F-8 supercritical wing in 8-foot wind tunnel, undated
Box 2, Folder 19	Test 514 - Steel wing fence and transition investigation, undated
Box 2, Folder 20	Tests 514 and 515 - Plots of Reynolds number effects on F-8 aluminum and steel wings, undated
Box 2, Folder 21	Test 515 - Plots, drawings, and notes of F-8 control test, undated
Box 2, Folder 22	Test 515 - Charts and notes, undated
Box 2, Folder 23	Test 515 - Data and plots, undated
Box 3, Folder 1	Test 515 - Beta derivatives by Dennis Bartlett, undated
Box 3, Folder 2	Test 522 - 1/11.5-scale F-8 model test of the landing gear and speed brake, undated
Box 3, Folder 3	Test 522 - F-8 supercritical wing speed brake test; notes and drawings, undated
Box 3, Folder 4	Test 523 - F-8 supercritical wing vertical tail mounted body of revolution, undated
Box 3, Folder 5	Tests 523 and 526 - Comparison plots of final data, undated
Box 3, Folder 6	Tests 523 and 526 - Fuselage side fairings; Photograph, drawing, notes, and plots, undated
Box 3, Folder 7	Tests 523 and 526 - Performance data of sting cross-sectional, F-8 cross-sectional with side fairings, and vertical-tail body of revolution, undated
Box 3, Folder 8	Test 523 and 532 - Test 523 on line of fuselage side fairings-vertical tail mounted on body, undated
Box 3, Folder 9	Test 532 - Plots and notes on the F-8 area distribution from Atkins and Merrel using 1/11.5 mylars for fuselage additions, undated
Box 3, Folder 10	Test 532 - Comparison plots of F-8 test final data, undated
Box 3, Folder 11	Tests 532, 536, and 541 - Notes and comparison of F-8 tests, undated
Box 3, Folder 12	Test 536 - Final plots, undated
Box 3, Folder 13	Tests 536 and 541 - Drag-rise plots for test 541 with configuration 217 and computations and configurations 216 and 213 from test 536, undated
Box 3, Folder 14	Test 541 - Preliminary plots, undated

Box 3, Folder 15	Test 541 - Fuselage pressure data, undated
Box 3, Folder 16	Tests 541 and 600 - F-8 supercritical wing fuselage side fairing report of section-lift curves, undated
Box 3, Folder 17	Test 565 - test plots, undated
Box 3, Folder 18	Test 579 - Drag-rise plots, undated
Box 3, Folder 19	Test 579 - F-8 buffet data, undated
Box 3, Folder 20	Test 579 - 1/11.5-scale F-8 supercritical wing test: mass-flow, side fairings off and on, and buffet for TmX-2633 and TmX-2471, undated
Box 3, Folder 21	Test 583 - F-8 supercritical wing side fairing orifice locations. Drawings and plots., undated
Box 3, Folder 22	Test 600 - Wind tunnel trim curves comparison with flight data, undated
Box 3, Folder 23	Test 600 - F-8 Supercritical wing test: tunnel wall insert notes, boundary layer trip arrangement drawings, charts, run instructions, shift notes, and angle of attack channel 46 Endevco, undated
Box 3, Folder 24	Test 600 - F-8 flight tunnel computations, undated
Box 3, Folder 25	Test 602 - F-8 supercritical wing test charts, undated
Box 3, Folder 26	Test 602 - Plots and data of test of the F-8 (1/16- scale) model, undated
Box 3, Folder 27	Test 602 - 1/16-scale F-8 tests: data, charts, run instructions, shift notes, and transition arrangements, undated
Box 4, Folder 1	Test 603 - 1/11.5-scale F-8 test: angle of attack instrumentation and Finley Boeing laser interferometer, undated
Box 4, Folder 2	Test 603 - Data, undated
Box 4, Folder 3	Test 611 - Test of the boundary layer of the F-8 (1/11.5-scale) model, undated
Box 4, Folder 4	Test 612 - Dynamic pressure data of test in an 8-foot wind tunnel of an F-8 (1/11.5-scale) model, undated
Box 4, Folder 5	Test 612 F-8 supercritical wing test: charts, undated
Box 4, Folder 6	Tests 612 and 613 - 1/11.5-scale F-8 tests, undated

Box 4, Folder 7	Tests 612 and 621 - Notes and comparison plots for group I of tests 621 and 612. Also includes AIAA paper #72-1008, "Transonic Wall Interference Effect on Bodies of Revolution" by Lana Couch, undated
Box 4, Folder 8	Tests 612 and 621 - Comparison plots. Test 612: 1/11.5-scale F-8. Test 621: 1/16-scale F-8., undated
Box 4, Folder 9	Tests 612 and 621 - Data of F-8 scale effects, undated
Box 4, Folder 10	Test 613 - Drawings, notes, and data of test of the wing tip spline on the F-8 (1/11.5-scale) model in an 8-foot wind tunnel, undated
Box 4, Folder 11	Test 615 - Notes, drawings, and data of test of F-8 tip mounted flow nacelles and plots for F-8 (1/16-scale) model wing tip nacelles, undated
Box 4, Folder 12	Test 615 - 1/16-scale F-8 test: test plots, undated
Box 4, Folder 13	Test 621 - 1/16-scale F-8 Test: Reynolds number and dynamic pressure effects, undated
Box 4, Folder 14	Test 621 - Trailing edge truncation report - notes and plots, undated
Box 4, Folder 15	Test 621 - Plots (trailing edge modification) using F-8 (1/16-scale) model, undated
Box 4, Folder 16	Test 621 - F-8 (1/16-scale) model plotting instructions of inlet and exit areas. Duct dimensions and orifice location are included. Notes and drawings., undated
Box 4, Folder 17	Tests 621 and 622 - 1/16-scale F-8 tests; Test 621: trailing edge truncation data. Test 622: mass flow data., undated
Box 4, Folder 18	Test 634 - Test plots - upper surface modifications using F-8 (1/16-scale) model, undated
Box 4, Folder 19	Test III - Notes and drawings of F-8 supercritical wing 1/11.5-scale model and full-scale aircraft test, undated
Box 5, Folder 1	F-8 Area Distribution - Drawings and plots from cordax., undated
Box 5, Folder 2	F-8 Area Distribution - Basic F-8 and supercritical wing F-8 area distribution; drawings, undated
Box 5, Folder 3	F-8 Area Distribution - Ideal F-8 area distribution with/without fuselage side fairings, undated
Box 5, Folder 4	F-8 Area Calculations - F-8 distribution and finest ratio calculations of area due to lift, undated
Box 5, Folder 5	F-8 Charts - 1/16-scale F-8 side fairing template charts, undated

Box 5, Folder 6	F-8 Coordinates - Cape and glove intersection, rear fuselage intersection; charts and printouts, undated
Box 5, Folder 7	F-8 Duct Skin - friction calculations, undated
Box 5, Folder 8	F-8 Inlet and Exit - Drawings and notes of inlet and exit areas base pressure corrections, undated
Box 5, Folder 9	F-8 Ordinates - North American Rockwell F-8 ordinates, undated
Box 5, Folder 10	F-8 Performance Information - takeoff and landing angles, mass-flow data, attach point strength, aircraft positions, cowl shape, drag correlation, and roll tail estimate, undated
Box 5, Folder 11	F-8 Rake - Experiment with model and full scale; includes notes and drawings, undated
Box 5, Folder 12	F-8 Rake and Pressure Measurements - report "Supercritical Wing Pressure Distribution" by Lawrence C. Montoya; notes and full-scale drawing of the wake survey rake for the F-8 supercritical wing, undated
Box 5, Folder 13	F-8 Supercritical Wing Drag Values - full scale drag values using 8-foot transonic pressure tunnel results, undated
Box 5, Folder 14	F-8 Supercritical Wing Fuselage Coordinates - coordinates with side fairings and base parachute fairing; vertical reference is model water line 10.317, undated
Box 5, Folder 15	F-8 Supercritical Wing Rear Fairings - notes, plots, and data before test 512, undated
Box 5, Folder 16	F-8 Supercritical Wing-I Static Twist - thickness distribution data, undated
Box 5, Folder 17	F-8 Supercritical Wing-I Streamwise Coordinates - North American Rockwell resolved streamwise coordinates: F-8 supercritical wing-I full scale, undated
Box 5, Folder 18	F-8 Supercritical Wing Model Aerodynamic Derivatives - 1/11-scale model; derivatives of Langley Research Center wind tunnel test, undated
Box 5, Folder 19	F-8 Supercritical Wing Wetted Area - Calculation of wetted area on F-8 supercritical wing; Three-view drawing of the F-8 and notes included, undated
Box 5, Folder 20	TF-8 Supercritical Wing Model Coordinates, undated
Box 6, Folder 1	TF-8 Supercritical Wing Fuselage Coordinates - taken after 8-foot wind tunnel test 541. Vertical reference is model water line 10.317, undated
Box 6, Folder 2	TF-8 Supercritical Wing Fuselage Coordinates - high speed front and rear side fairings, undated

Box 6, Folder 3	F-8 Wind Tunnel Test Photographs - NASA Ames Research Center, undated
Box 6, Folder 4	F-8 Wing Deflection - calculations; charts, computer printouts, notes, undated
Box 6, Folder 5	Langley Simulator - studies note, undated
Box 6, Folder 6	Lift Interference - Notes and computer printouts, undated
Box 6, Folder 7	Non-Dimensional Streamwise Coordinates, undated
Box 6, Folder 8	Oil Flows - photographs of 1/16-scale F-8 supercritical wing oil flows, undated
Box 6, Folder 9	Original Wing Ordinates - Langely wing planform 802; 1/11.5-scale drawing of the wing planform of the F-8 supercritical wing included, undated
Box 6, Folder 10	Protuberances - drawings of protuberances on the F-8 supercritical wing, undated
Box 6, Folder 11	Reference Dimensions - North American Rockwell reference notes, undated
Box 6, Folder 12	Streamwise F-8 Wing Coordinates - supercritical wing-I resolved coordinates and steel wing streamwise cordax coordinates, undated
Box 6, Folder 13	Supercritical Wing Deflection - calculations and drawings, undated
Box 6, Folder 14	Wing Cross Sectional Area - fuselage station 27 outboard from North American Rockwell steamwise coordinates; includes computer printouts and charts, undated

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Series 3: Development and Flight Testing

Language: English.

Scope and Contents: Flight tests of the supercritical wing were needed to confirm the wind tunnel results. The flight tests began in March 1971 and ended in December 1972. Photographs and technical reports are included in this series.

Arrangement: The Development and Flight Testing Series begins with work statements and requests for proposal (RFP) information. These are followed by notes arranged in chronological order. Development technical reports are in alphabetical order by folder title. The flight test reports are arranged chronologically. These reports are then followed by photographs.

Box 7, Folder 1	Work Statement - for installation of a supercritical wing and wide-body junction on a TF-8A aircraft; includes many drawings, undated
Box 7, Folder 2	Work Statement - negotiated work statement concerning F-8 supercritical wing, undated
Box 7, Folder 3	Work Statement -- review of work statements on supercritical wing, undated
Box 7, Folder 4	Final Work Statements - memos, final work statements, and comments on negotiations between NASA and LTV on F-8 supercritical wing program, undated
Box 7, Folder 5	LTV Original Proposal and NASA's Informal Statements, undated
Box 7, Folder 6	Request for Proposal - issued 20 February 1969, 20 February 1969
Box 7, Folder 7	Comments about the Request for Proposal, undated
Box 7, Folder 8	November 1967 Notes - notes of presentation given on 20 November 1967 for supercritical wing program review, 20 November 1967
Box 7, Folder 9	Visit Summaries (1968-1969), 1968-1969
Box 8, Folder 1	Notes: 1968-1971, 1968-1971
Box 8, Folder 2	NASA Trip to Edwards AFB, April 1970
Box 8, Folder 3	Notes - May 1970; includes "Supercritical Wing Pressure Distribution" paper by Lawrence C. Montoya, May 1970
Box 8, Folder 4	Notes - July and October 1970 - collected data on F-8 Supercritical wing about stability/control and handling characteristics, October 1970, July 1970
Box 8, Folder 5	Correspondence with Edwards Air Force Base, 1971
Box 8, Folder 6	Data of F-8 area distributions, undated

Box 8, Folder 7	Construction Tolerances - aircraft construction tolerance information, drawings, and reports, undated
Box 8, Folder 8	Layout of coordinates for supercritical wing on F-8, undated
Box 8, Folder 9	Data comparison of 8-foot and 16-foot wind tunnel tests, undated
Box 8, Folder 10	Data Transmittals - F-8 supercritical wing data transmittals from Flight Research Center, undated
Box 8, Folder 11	Data Transmittals - F-8 supercritical wing data transmittals to Flight Research Center, undated
Box 9, Folder 1	F-8 Supercritical wing day notes, undated
Box 9, Folder 2	Drawings - General arrangement drawings of XF8U-1, undated
Box 9, Folder 3	F-8 Analysis, undated
Box 9, Folder 4	F-8 Boundary Layer Data, undated
Box 9, Folder 5	F-8 Buffet Data, undated
Box 9, Folder 6	F-8 Notes - includes 621 data; papers "Aerodynamic smoothness" by John P. Morris, "Scale Effect Studies of Airfoil Profile Drag at High Subsonic Speed" by Dezso George-Falvy and "Review of Drag Measurements from Flight Tests of Manned Aircraft with Comparisons to Wind-Tunnel Predictions" by Jon S. Pyle and Edwin J. Saltzman, undated
Box 9, Folder 7	Final contract for F-8 supercritical wing, undated
Box 9, Folder 8	Flight Program Notes, undated
Box 10, Folder 1	Flutter Analysis Reports and Memos, undated
Box 10, Folder 2	Flutter Notes, undated
Box 10, Folder 3	Fuselage Side Fairings Information, undated
Box 10, Folder 4	F-8 Fuselage Sections Drawings, undated
Box 10, Folder 5	Fuselage Side Additions, undated
Box 10, Folder 6	General Calculations for F-8 Supercritical Wing, undated
Box 10, Folder 7	F-8 Supercritical Wing Load Tests, undated

Box 10, Folder 8	Logs - F-8 configuration logs data, undated
Box 10, Folder 9	F-8 Model Tests Configuration Logs - data, undated
Box 10, Folder 10	Narrative - NASA F-8 project record narrative, undated
Box 10, Folder 11	Ordinates - F-8 supercritical wing final wing ordinates and planform, undated
Box 10, Folder 12	Ordinates - F-8 supercritical wing ordinates from North American Rockwell, undated
Box 11, Folder 1	Ordinates - F-8 supercritical wing ordinates from North American Rockwell, undated
Box 11, Folder 2	Planform - Supercritical wing planform, undated
Box 11, Folder 3	Pratt and Whitney J57P4 Engine Data, undated
Box 11, Folder 4	Schedules - F-8 supercritical wing schedules, undated
Box 11, Folder 5	Tunnel and Flight Data, undated
Box 11, Folder 6	Wing - wing sections, phase 1, undated
Box 11, Folder 7	Wing - wing sections, phase 2, undated
Box 11, Folder 8	Wing - wing sections, phase 3; includes drawings, notes, and plots, undated
Box 11, Folder 9	Wing Glove - ordinates of the F-8 supercritical wing, August 27, 1969
Box 11, Folder 10	Supercritical Wing Flight Test Program - comments, memoir and notes covering proposed supercritical wing flight test program, undated
Box 11, Folder 11	Flights 33-40 - preliminary data for flights 33-40, supercritical wing 1-8, undated
Box 11, Folder 12	Flights 33-40 - flight test information phase 1, flights 33-40. Narrative of first flight of the F-8 supercritical wing on 9 March 1971 included, undated
Box 11, Folder 13	Flights 41-59 - F-8 supercritical wing flight test data for phase 2, flights 41-59, undated
Box 12, Folder 1	Flights 60-80 - F-8 supercritical wing flight test data for phase 3, flight 60-80. Flight notes, flight requests, initial schedules, and flight plans included, undated
Box 12, Folder 2	Flights 81-102 - F-8 supercritical wing flight test data for phase 4, flights 81-102, undated
Box 12, Folder 3	29 February 1972 Symposium, 29 February 1972. Includes three papers by Richard T. Whitcomb: "The NASA Supercritical Airfoil and Its Application to Swept Wings", "Comments on Wind-Tunnel: Flight Correlations for the F-8 Supercritical Wing

Configuration", and "Evolution of the F-8 Supercritical Wing Configuration", 29 February 1972

Box 12, Folder 4	Flight Test Data, December 1971- January 1972
Box 12, Folder 5	Report NA-69-220, Vol. 1 -- "Technical Proposal for Design, Fabrication, and Installation of a Supercritical Wing and Wing-Body Junction on a TF-8 Aircraft", vol. 1, undated
Box 12, Folder 6	Report NA-69-220, Vol. 2 -- "Business Management Proposal for Design, Fabrication and Installation of a Supercritical Wing and Wing-Body Junction on a TF-8 Aircraft", vol. 2, undated
Box 12, Folder 7	Rockwell Correspondence, undated
Box 12, Folder 8	F-8 Model Photos - supercritical wing after test 480, undated
Box 13, Folder 1	F-8 Model Photos and Drawings, undated
Box 13, Folder 2	F-8 Model Photos - Model photos of F-8 with supercritical wing, phase 3, undated
Box 13, Folder 3	F-8 Supercritical Wing Aircraft 1 and Model 1 Photographs, undated
Box 13, Folder 4	F-8 Supercritical Wing Aircraft with Fairings Photographs, undated
Box 13, Folder 5	F-8 Supercritical Wing Model 2 Final Configuration photographs, undated
Box 13, Folder 6	F-8 Supercritical Wing Model 1 Final Configuration Photographs, undated
Box 13, Folder 7	North American Rockwell Supercritical Wing Construction Photographs and 5 Black and White Negatives, undated
Box 13, Folder 8	F-8 Supercritical Wing AIAA Model Photographs, undated

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Series 4: Evaluation of the Supercritical Wing

Language: English.

Scope and Contents: Evaluation of the supercritical wing program showed that the design was highly successful. Flight

Contents: test reports are included in this series.

Arrangement: Evaluation reports on the Supercritical Wing Series are in chronological order

Box 13, Folder 9	Source Evaluation Board - notes, memos, manuals, undated
Box 13, Folder 10	Summary of F-8 Supercritical Wing Tests, undated
Box 13, Folder 11	"Preliminary Evaluation of the Handling Qualities of the Supercritical Wing/F-8 Aircraft" - report, undated
Box 13, Folder 12	"Preliminary Lift and Drag Results for a Flight Vehicle with a Supercritical Wing", February 1972 by Jon S. Pyle, February 1972
Box 13, Folder 13	Four F-8 Supercritical Wing Reports"Evolution of the F-8 Supercritical Wing Configuration" by Thomas C. Kelly and Dr. Richard T. Whitcomb, "Piloting and Operational Aspects" by T.C. McMurtry, "The Supercritical Wing Buffet Characteristics" by V.M. DeAngelis, and "F-8 Supercritical Wing Pressure Evaluation" by Lawrence C. Montoya and Richard D. Banner, undated

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