

Guide to
Max Bentele
Papers, 1936-1993

6 cubic feet

Accession Number 4567

Prepared by John E. Hanks
October 1997

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Introduction

Max Bentele
Papers, 1936-1993
6 cubic feet (7 boxes)
Accession Number 4567

Dr. Bentele gave his aviation papers to the American Heritage Center in several shipments from 1976 to 1994. The papers were in good condition and original folder titles have been maintained.

The collection should be cited as: Max Bentele Papers, 1936-1993, Accession Number 4567, Box Number..., Folder Number..., American Heritage Center, University of Wyoming.

RECEIVED AND ACKNOWLEDGED

Rick Ewig
Assistant Director

Date:

Biography

Dr. Max Bentele was awarded his doctorate in Engineering from the Technical University of Stuttgart in 1938. During World War II he served with the Heinkel Aircraft Company designing jet engines and turbo superchargers. He also contributed to the development of the famous 004B Junkers jet engine. After the war he worked for the British government and C.A. Parsons Ltd. for nine years developing high temperature gas turbines. In 1956 he came to the United States to work for Curtiss-Wright as engineer of rotary combustion. After eleven years, he switched to Avco Lycoming and stayed with them for 34 years. Dr. Bentele was in charge of the mechanical design of the Curtiss-Wright turbojet which was entered into the SST (Supersonic Transport) contest in 1976. By 1978 Dr. Bentele was President of the German-based Mahle Company and he was instrumental in getting the prestigious piston-making company to locate in Morristown, Tennessee. In 1981 Dr. Bentele was elected a fellow in the SAE (Society of Automotive Engineers). Dr. Bentele was perhaps most well known as the person who introduced the Wankel engine to the United States.

Series Description

The Max Bentele Papers are arranged in 4 series:

Series I. Manuscript Sources, *Engine Revolutions*, 1936-1992. (2.5 document boxes + 8 oversize folders). *Engine Revolutions* was the title of Max Bentele's autobiography. This series consists of files used by him to create the autobiography. Dr. Bentele's original order and folder titles have been maintained including a correspondence file.

Series II. Personal Files, 1952-1993. (2 folders + 1 oversize folder). Includes awards, booklets, clippings, etc.

Series III. Subject Files, 1944-1982. (1.5 document boxes + 5 oversize folders). Includes a wide variety of aviation related materials, but the major emphasis is on sonic and hypersonic flight including the SST and the Concorde.

Series IV. Printed Material, 1946-1989. (2 Record Boxes). Includes books, periodicals, newsletters, etc.

Scope and Content

The Max Bentele Papers, 1936-1993, are mainly concerned with turbine aircraft engines, although much concern is devoted to jet and piston types, especially for the failed SST (Supersonic Transport) of the 1970s. His subject files contain clippings and other materials related to the history of sonic and hypersonic flight with particular emphasis on the Supersonic Transport and Concorde programs.

Folder List

Series I. Manuscript Sources, *Engine Revolutions*, 1936-1992

<u>Folder</u>	<u>Title</u>	<u>Date</u>
<u>Box 1</u>		
1	SINGLE SLEEVE/FLAT DISK/ROTARY-VALVE ENGINES Charts, correspondence, photographs (Bentele #1).	1936-1975
2	AIR-COOLING FOR TURBOCHARGERS AND GAS TURBINES Correspondence and charts in German, charts, photographs (Bentele #2).	1942-1957
3	AIR-COOLING FOR TURBOCHARGERS AND GAS TURBINES Charts and photographs (Bentele #2).	1958
4	AIR-COOLING FOR TURBOCHARGES AND GAS TURBINES Charts, notes, photographs (Bentele #2).	1958-1967
5	SUPERCHARGING AND SUPERCHARGERS Charts, correspondence, and photographs, in German (Bentele #3).	1940-1945
6	BLADE VIBRATION PHENOMENA Charts, correspondence, and photographs, in German and English (Bentele #4).	1942-1966
<u>Box 2</u>		
1	HIGH PERFORMANCE AIRCRAFT: CURTISS-WRIGHT -WRIGHT AERONAUTICS DIVISION Brochure, charts, notes, photographs (Bentele #5).	1940-1944
2	HIGH PERFORMANCE AIRCRAFT: CURTISS-WRIGHT -WRIGHT AERONAUTICS DIVISION Articles, booklets, notes (Bentele #5).	1951-1956
3	HIGH PERFORMANCE AIRCRAFT: CURTISS-WRIGHT -WRIGHT AERONAUTICS DIVISION Turbo compound engine manuals (Bentele #5).	1957-1958
4	HIGH PERFORMANCE AIRCRAFT ENGINES: D.NAPIER & SON Nomad diesel engine articles, booklet (Bentele #5).	1953-1954

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Series I. Manuscript Sources, *Engine Revolutions* (cont.)

<u>Folder</u>	<u>Title</u>	<u>Date</u>
<u>Box 2</u> (cont.)		
5	OTTO DIESEL ENGINE/PUMPLESS INJECTION/MUFFLING A/C ENGINES Booklets & photographs in German, photographs of muffler test B-17 & HSS-1 helicopter (Bentele #6).	1941-1956
6	AIRCRAFT GAS TURBINES J-65 history, photographs, memoranda (Bentele #7).	1950-1963
7	AIRCRAFT GAS TURBINES/SINGLE-ROTOR LIFT FAN ENGINE Promotional material, feasibility study, articles (Bentele #7).	1964-1978
<u>Box 3</u>		
1	WANKEL AIRCRAFT ENGINES Promotional material, articles, booklets (Bentele #8).	1960-1985
2	WANKEL AIRCRAFT ENGINES Aviation articles (Bentele #8).	1985-1986
3	CORRESPONDENCE Related (and unrelated) to <i>Engine Revolutions</i> (Bentele #9).	1970-1992
4	BOOK REVIEWS Of <i>Engine Revolutions</i> (Bentele #10).	1991
Series II. Personal Files, 1952-1993		
5	BIOGRAPHICAL INFORMATION Clippings in German and English, photographs.	1952-1973
6	S.A.E., AVCO, CURTISS-WRIGHT MEMORIAL PUBLICATIONS	1979-1981
7	DR. BENTELE'S LIST OF MANUSCRIPT SOURCES FOR <u>ENGINE REVOLUTIONS</u>	1993
8	DR. BENTELE'S SUBJECT FILE LIST	1976

Series III. Subject Files, 1944-1982

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Series III. Subject Files (cont.)

<u>Folder</u>	<u>Title</u>	<u>Date</u>
9	RESEARCH AND FLIGHT MILESTONES Aviation magazine articles (Bentele 1.1).	1954-1982
<u>Box 3</u> (cont.)		
10	RESEARCH AND FLIGHT MILESTONES WWII photographic espionage? copy (and photo copy) of <i>Jet Propulsion</i> by Geoffrey Smith.	1944
11	SUPERSONIC AND HYPERSONIC FLIGHT: U.S. MILITARY Aviation magazine and newspaper articles (Bentele 1.2).	1956-1974
12	SUPERSONIC AND HYPERSONIC FLIGHT: COMMERCIAL (SST) Articles, technical reports on the SST (Bentele 1.3).	1957-1974
13	SUPERSONIC AND HYPERSONIC FLIGHT: ENVIRONMENT/EXHAUST EMISSIONS (1 of 2) Government documents, articles (Bentele 1.4).	1970-1972
<u>Box 4</u>		
1	SUPERSONIC AND HYPERSONIC FLIGHT: ENVIRONMENT/EXHAUST EMISSIONS (2 of 2) Government documents, articles (Bentele 1.4).	1970-1972
2	SUPERSONIC AND HYPERSONIC FLIGHT: SONIC BOOM, NOISE Magazine articles, professional reports (Bentele 1.5).	1964-1976
3	SUPERSONIC MILITARY AIRCRAFT: AMERICAN Magazine articles (Bentele 2.1).	1953-1974
4	SUPERSONIC MILITARY AIRCRAFT: EUROPEAN Magazine articles (Bentele 2.2).	1953-1974
5	AMERICAN SUPERSONIC TRANSPORT (SST): DEVELOPMENT PROGRAM Magazine articles (Bentele 3.1).	1958-1973
6	AMERICAN SUPERSONIC TRANSPORT (SST): BOEING CORP. Magazine articles, professional reports (Bentele 3.2).	1964-1968
7	AMERICAN SUPERSONIC TRANSPORT (SST): LOCKHEED CORP. Magazine articles (Bentele 3.3).	1965-1966

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Series III. Subject Files (cont.)

<u>Folder</u>	<u>Title</u>	<u>Date</u>
<u>Box 4 (cont.)</u>		
8	FRENCH/BRITISH SUPERSONIC TRANSPORT: CONCORDE DEVELOPMENT AND SALES PROGRAM Magazine and professional articles (Bentele 4.1).	1963-1976
9	FRENCH/BRITISH SUPERSONIC TRANSPORT: CONCORDE TECHNICAL Magazine articles (Bentele 4.2).	1963-1973
10	RUSSIAN SST PROGRAM A/C identification book, paper, magazine articles (Bentele 5.0).	1967-1976
11	JET ENGINES FOR SUPERSONIC AIRCRAFT: AMERICAN ENGINE DEVELOPMENTS Magazine articles and booklets (Bentele 6.1).	1957-1975
12	JET ENGINES FOR SUPERSONIC AIRCRAFT: GENERAL ELECTRIC (GE) Charts, drawings, magazine articles, notes (Bentele 6.2).	1958-1972
13	JET ENGINES FOR SUPERSONIC AIRCRAFT: PRATT & WHITNEY AIRCRAFT (P&W) Magazine and professional articles, speech (Bentele 6.3).	1966-1974
14	JET ENGINES FOR SUPERSONIC AIRCRAFT: CURTISS-WRIGHT (CW) Articles, booklets, drawings, photographs (Bentele 6.4).	1956-1964
15	JET ENGINES FOR SUPERSONIC AIRCRAFT: BRISTOL- SIDDELEY/ROLLS ROYCE/SNECM Articles, drawings, flyers, photographs (Bentele 6.5).	1953-1972

Box 5 (Oversize F41)

Series I. Manuscript Sources, *Engine Revolutions*, 1936-1992

1	AIR-COOLING TECHNOLOGY FOR TURBOCHARGERS AND GAS TURBINES Two 11x30 (approx.) finished drawings, five pencil sketches, and notes of J 65 conversion from blade to air-cooled turbine (Bentele #2).	1958
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Series I. Manuscript Sources, *Engine Revolutions* (cont.)

<u>Folder</u>	<u>Title</u>	<u>Date</u>
<u>Box 5</u> (cont.)		
2	SUPERCHARGERS AND TURBOCHARGERS Blueprint for German J-Projekt 9-2281, turbocharger with single stage supercharger (Bentele #3).	1942
3	SUPERCHARGERS AND TURBOCHARGERS Blueprint for 9-2426 German turbocharger with single-stage supercharger and "topfschaufel" (Bentele #3).	1944
4	CURTIS-WRIGHT: WRIGHT AERONAUTICAL DIVISION Five 41x110 turbo compound engine assembly blueprints (Bentele #5).	1958
5	PUMPLESS INJECTION Blueprint 13x35 of Witzky pumpless injection (Bentele #6).	1963
6	PUMPLESS INJECTION Blueprint 20x36 of Porsche stratified-charge-chamber system (Bentele #6).	1975
7	AIRCRAFT GAS TURBINES Blueprint for Armstrong-Siddeley turbojet (Bentele #7).	1956
8	ROTARY (WANKEL) ENGINE DEVELOPMENTS <u>Technische Rundschau</u> newspaper article on Curtiss-Wright's rotating combustion engines (Bentele #8).	1961

Series II. Personal Files, 1952-1993

9	DR. MAX BENTELE PERSONAL <u>Donau Zeitung</u> newspaper article with picture of Dr. Bentele at 1952 Farnborough Air Show.	1952
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Series III. Subject Files, 1944-1982

10	FRENCH/BRITISH SUPERSONIC TRANSPORT: CONCORDE DEVELOPMENT & SALES PROGRAM <u>New York Times</u> two page spread featuring Air France Concorde (Bentele 4.1).	1976
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Series III. Subject Files, (cont.)

<u>Folder</u>	<u>Title</u>	<u>Date</u>
<u>Box 5</u> (cont.)		
11	FRENCH/BRITISH SUPERSONIC TRANSPORT: CONCORDE DEVELOPMENT & SALES PROGRAM <u>New York Times</u> one page spread featuring Air France Concorde (Bentele 4.1).	1976
12	FRENCH/BRITISH SUPERSONIC TRANSPORT: CONCORDE DEVELOPMENT & SALES PROGRAM <u>New York Times</u> two page spread featuring British Airways Concorde (Bentele 4.1).	1976
13	FRENCH/BRITISH SUPERSONIC TRANSPORT: CONCORDE TECHNICAL <u>Flight International</u> cutaway drawing of production Concorde (Bentele 4.2).	1970
14	FRENCH/BRITISH SUPERSONIC TRANSPORT: CONCORDE TECHNICAL <u>Flight International</u> cutaway drawing of Rolls Royce/Snecma Olympus 602 turbojet which powers the Concorde (Bentele 4.2).	1971

Series IV. Printed Material, 1946-1989

Box 6

Books

1. Aviation Fuels and Their Effects on Engine Performance, (Soft Cover) NAVAER-06-5-501, Ethyl Corporation, 1951 (Series I, Bentele 11)
2. Deputy for Propulsion, Tenth Anniversary Historical Symposium, (Soft Cover) Dept. of the Air Force, Wright Patterson Air Force Base, OH, 1986 (Series I, Bentele 11)
3. An Encounter Between the Jet Engine Inventors, Sir Frank Whittle and Dr. Hans Von Ohain, (Soft Cover) AFSC Historical Publication, Wright-Patterson Air Force Base, OH, 1978 (Series I, Bentele 11)

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4. 50 Jahre Turbostrahlflug, "50 Years of Jet-Powered Flight", (German & English Soft Cover) Vortrage DGLR-Symposium, Munchen, 1989 (Series I, Bentele 11)

Box 6 (cont.)

Books (cont.)

5. From Jets to Tanks, My Contribution to the Turbine Age, (Soft Cover) by Dr. Anselm Franz, Avco Lycoming, Stratford, CN, 1985 (Series I, Bentele 11)
6. Gas Turbines and Jet Propulsion for Aircraft, (Damaged Hard Cover) by G. Geoffrey Smith, Flight Pub., London, 1946 (Series I, Bentele 11)
7. History of the Aircraft Piston Engine, (Hard Cover) by S.D. Heron (autographed), Ethyl Corporation, Detroit, MI. 1961 (Series I, Bentele 11)
8. The Jet Age, Forty Years of Jet Aviation, (Soft Cover) by Walter J. Boyne and Donald S. Lopez, National Air and Space Museum, Smithsonian Inst., 1979 (Series I, Bentele 11)
9. The Memoirs of Ernest C. Simpson, Aero Propulsion Pioneer, (Soft Cover) Air Force Wright Aeronautical Laboratories, Wright-Patterson Air Force Base, OH, 1987 (Series I, Bentele 11)
10. Sound Barrier, The Story of High Speed Flight, by Neville Duke and Edward Lanchbery, (Hard Cover) Cassell and Company Ltd., London (1953)
11. The Status of the Air-Cooled Engine: A Review, (Soft Cover) by S.D. Heron, Ethyl Corp. Detroit, MI, 1961 (Series I, Bentele 11)

German Publications

1. DGLR, Deutschen Gesellschaft for Luft- und Raumfahrt E.V. with annotations, 1980
2. DGLR, Luft- und Raumfahrt January, 1980 - February 1982
3. DGLR, Mitteilungen January 1968 - April 1969
4. DGRR, Deutsche Gesellschaft fur Raketentechnik und Raumfahrt E.V. 1968
5. LTA, Wingfoot Lighter-Than-Air Society, Akron, OH, September, 1961 - July-August, 1970
6. WGLR, Wissenschaftlichen Gesellschaft fur Luft- und Raumfahrt E.V. 1968

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Box 7

German Publications (cont.)

1. ZFW, Zeitschrift für Flugwissenschaften February, 1969 - December, 1976
2. ZFW, Zeitschrift für Flugwissenschaften und Weltraumforschung/Journal of Flight Sciences and Space Research Heft 1, 1977 - Heft 6, 1981