

## **MS-632: Rudi Berndt Papers**

**Collection Number:** MS-632

**Title:** Rudi Berndt Papers

**Dates:** 1927-2003 (bulk 1937-1953)

**Creator:** Berndt, Rudi Julius, 1921-2004

**Summary/Abstract:**

Berndt was a German scientist who came to the U.S.A. as part of Operation Paperclip at the close of WWII. His collection primarily documents his work in parachute development, in both Germany and the United States, from the WWII era through the Cold War. Materials include photographs, scientific test notes, educational records, security investigation reports, German identification papers, resumes, memoir, and other documents.

**Quantity/Physical Description:** 2.5 linear feet and 135.5 megabytes

**Language(s):**

This collection includes materials in English, German, and French. If a folder contains documents in a language other than English, the language(s) are noted in the folder description.

**Repository:**

Special Collections and Archives, University Libraries, Wright State University, Dayton, OH 45435-0001, (937) 775-2092

**Restrictions on Access:**

There are no donor-imposed restrictions on accessing material in this collection. All electronic records listed in this finding aid are processed and available; however, researchers are requested to provide two business days advance notice when requesting electronic records. Call (937) 775-2092 or e-mail us at [archives@www.libraries.wright.edu](mailto:archives@www.libraries.wright.edu).

**Restrictions on Use:**

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**Preferred Citation:**

[Description of item, Date, Box #, Folder #], MS-632, Rudi Berndt Papers, Special Collections and Archives, University Libraries, Wright State University, Dayton, Ohio

**Acquisition:**

The collection was donated to Special Collections and Archives, Wright State University Libraries, by George Berndt, son of Rudi Berndt, in June 2018 and November 2018.

**Custodial History:**

The collection came to Wright State University by way of Paul Woodruff, Cultural Resources Manager, Wright-Patterson Air Force Base, to whom George Berndt initially brought the collection. Woodruff recommended that the collection be donated to Special Collections and Archives, Wright State University Libraries, and transferred the materials to SCA via Dawne Dewey on June 28, 2018. SCA then worked with the donor, George Berndt, directly, to acquire a deed of gift. A small addition was received in November 2018 directly from George Berndt.

**Existence and Location of Originals:**

Some materials in Series III: Operation Paperclip are copies of originals held in the U.S. National Archives. These are identified as “NARA copy/copies” at the file level.

**Separated Material:**

The original German ring-binder for the “*Bildbericht*” Photo Report in Series II was not retained with the collection. However, digital photographs of the binder, taken by archives staff, are available in the E-Archive e-item ms632\_e0001.

**Other Finding Aid:**

The finding aid is available on the Special Collections & Archives, Wright State University Libraries web site at <https://www.libraries.wright.edu/special/collectionguides/files/ms632.pdf>. It is also available in the OhioLINK Finding Aid Repository at <http://ead.ohiolink.edu/xtf-ead/>.

**Physical Characteristics and Technical Requirements:**

A computer with software capable of reading \*.JPG, \*.TIF, and \*.PDF file format will be needed to view electronic records in this collection.

**Related Material:**

[MS-274: Heinrich Gunermann Album.](#)

[MS-310: Dave Gold Parachute Collection.](#)

[MS-335: Hans von Ohain Papers.](#)

[MS-433: Reinhold Gross Collection.](#)

[Helmut G. Heinrich Papers \(UARC 352\)](#), Archives and Special Collections, Elmer L. Andersen Library, University of Minnesota.

[Parachute History Collection](#), Linda Hall Library, University of Missouri-Kansas City.

**Processing Information:**

All sheets from the “*Bildbericht*” Photo Report in Series II have been numbered by the archivist to ensure that original order is maintained. This notation has been made lightly in pencil on the back side of each sheet near the lower left side. It is in the form of the letter code for the section, followed by the sheet number (e.g., A-1).

**Processed by:**

Finding aid written according to DACS standards by Lisa Rickey, October 2018, revised November 2018.

**Arrangement:**

The collection is arranged into four series:

Series I: German Life and Work, 1927-1946, 1949

Series II: German Parachute Research, 1941-1946, 1983

Series III: Operation Paperclip, 1946-1953

Series IV: American Life and Work, 1953-2003

**Biographical/Historical Note:**

Rudi Julius Karl Berndt was born February 19, 1921, in Stettin, Germany (now Szczecin, Poland), to Otto and Elisabeth Berndt. Rudi's father Otto was a high voltage electro-mechanic by trade, and it was partially because of this that Rudi became interested in electrical engineering.

Rudi Berndt was educated in Stettin, attending grammar and secondary school, then trade school. He also attended college in Stettin at the State Engineering College, to which he had a state scholarship.

In May 1940, Berndt was ordered to present himself at the local Wehrmacht Induction Center for examination and potential military service. However, he had been born with a club foot, and consequently he was released from any military service obligation, and was therefore able to continue his college studies. In June 1941, he completed his Bachelor of Science degree in Electrical Engineering, graduating with distinction.

In the summer of 1941, Berndt was hired at the Graf Zeppelin Research Institute [*Forschungsanstalt Graf Zeppelin*, or FZG] Stuttgart-Ruit. He joined the parachute research and development team, which included Helmut Heinrich (Berndt's immediate supervisor) and Theodor W. Knacke, both leaders and innovators in the field.

Heinrich and Knacke had worked together at the Institute of Aeronautical Engineering at the Technical University of Stuttgart [*Flugtechnischen Institut an der Technischen Hochschule Stuttgart*, or FIST], which in 1941 was absorbed by the Graf Zeppelin Research Institute (FZG). Their research at FIST and the FZG focused on the development of parachutes for aircraft and weapons (bombs, mines, etc.). Knacke, along with Georg Madelung, Rudolf Isermann, and Albert Keller, invented the FIST ribbon brake parachute [*bänder-bremsschirm*], which was constructed from a grid-like pattern of ribbons (as opposed to a solid piece of fabric). Heinrich invented the guide surface parachute.

Berndt's duties as an instrumentation engineer at the Graf Zeppelin Research Institute included the design and development of test equipment and instrumentation for wind tunnel and free-flight testing of parachutes for aircraft runway deceleration, ejection seat and bomb retardation and stabilization, and high altitude cargo delivery.

Berndt worked at the FZG until July 1946, with the exception of a brief time in the 1945. The laboratory had been relocated to Lake Constance, on the Swiss border, and he was taken prisoner by the French Army. The French offered Berndt a position in parachute research, which he

ultimately declined. He was released in May 1945 to rejoin his family near Stuttgart, in the American occupation zone.

In the summer of 1946, Berndt accepted an offer of employment from the U.S. Army Air Forces, as part of Operation Paperclip (or Project Paperclip), a secret program of the Joint Intelligence Objectives Agency (JIOA) to recruit leading German scientists, engineers, and technicians. At age 25, Berndt was one of the youngest recruits for Operation Paperclip.

On September 6, 1946, Berndt set sail from Bremerhaven, Germany, aboard the *U.S.A.T. George Washington*, bound for New York City, arriving on September 16. There were about a dozen German scientists onboard, including Reinhold Gross (Berndt's friend and co-worker), Dr. Karl Gottfried Guderley, and Dr. Otto Walchner. Upon arrival in New York, the Operation Paperclip scientists were taken by bus to Fort Hunt, Virginia, near Washington, D.C., where they remained for almost two months.

On November 2, 1946, a group that included Berndt, Dr. Guderley, Dr. Walchner, Dr. Hans von Ohain (the inventor and developer of the turbojet engine), and Dr. Walter Dornberger (the commander of the German Army Rocket Test Station at Peenemunde) was escorted to the train station and boarded an overnight train to Dayton, Ohio, bound for Wright Field. There, he was reunited with his team leaders Dr. Heinrich and Mr. Knacke.

Berndt's wife Ingeborg, son George, and daughter Elke, joined him in the U.S.A. in 1948. The family resided in Springfield. Berndt became a U.S. citizen in 1954.

From 1946 to 1956, Berndt was a general engineer in the Parachute Branch, Equipment Laboratory, Wright Air Development Center (WADC), at Wright-Patterson Air Force Base. He directed projects that resulted in airbag decelerators for C-130 load platforms, the T-10 troop personnel parachute, and the parachute systems used to drop the D4 bulldozer.

From 1956 to 1960, he was a research engineer. He planned and directed programs that led to the development of specialized parachute performance instrumentation, as well as programs to extend the operational capabilities of parachutes into the supersonic speed regime. He also directed efforts that led to the pilot ejection seat stabilization systems, as well as the development of the time sequencing and instrumentation system for the Stratospheric Altitude Balloon Gondola.

In 1960, Berndt became a manager, serving as Section Chief, Advanced Technology Section, Retardation and Recovery Branch (1960-1963); Section Chief, Advanced Technology Section, Recovery and Crew Station Branch, Air Force Flight Dynamics Laboratory (1963-1974); and Branch Chief, Recovery and Crew Station Branch (1974-1976). Under his direction, detailed technology such as parachute opening, drag, and stability in both the subsonic and supersonic speed regimes was successfully developed. He was also involved in the development of supersonic aerodynamic decelerators. He developed predictive methodologies for the time required to fill solid cloth type parachutes use to para-drop equipment and personnel. He was involved in the development of the para-foil steerable airdrop parachute.

From 1976 until his retirement in 1990, Berndt served as Assistant for Plans and Programs to the Chief of the Vehicle Subsystems Division. He developed and implemented vast changes within the division's research and development planning and tracking process. He personally developed a tracking system allowing the division chief to know at a glance the exact status of all division personnel and funding levels. That system was adopted by others in similar positions at other organizations. He also developed the procedures to be followed by project engineers in the development of purchase request packages.

Berndt received numerous outstanding performance ratings and Special Act of Service awards throughout his career at WPAFB. He was also U.S. Air Force nominee for the Arthur S. Flemming Award (honoring outstanding federal employees) in 1961. He was author or co-author of many technical reports, research articles, and conference presentations.

Rudi Berndt retired from the U.S. Air Force on November 30, 1990, and celebrated with a retirement party the following February, around the time of his 70<sup>th</sup> birthday. He was a long-time member of Grace Evangelical Lutheran Church, Young Men's Literary Club, and Mitchell Hills Country Club. He died on January 12, 2004, at Eaglewood Village Care Center in Springfield, Ohio, and is buried in Ferncliff Cemetery in Springfield.

#### **Scope and Content Note:**

The Rudi Berndt Papers primarily document Berndt's work in parachute development, in both Germany and the United States, from the WWII era through the Cold War. Educational records, as well as a significant amount of material pertaining to Berndt's arrival in the United States as part of Operation Paperclip, are also included. Of particular note are Berndt's memoirs, which describe his early life in Germany through his retirement in 1991, in Series IV.

**Series I, German Life and Work**, pertains to Berndt's education and early engineering career. Materials include school report cards [*zeugnisse*] and school-leaving certificates (similar to American diplomas or degree certificates); letters of recommendation and employment verification; employment documents; and photo identification cards. Of particular note are his Labor Book [*Arbeitsbuch*], listing all places of employment as both a student and professional engineer while in Germany; his Military Passport [*Wehrpass*], which includes an immigration stamp for Niagara Falls in 1949; and a civilian identification pass from the French government in 1945. Materials in this series date between 1927 and 1946, with the exception of the 1949 entry in the *Wehrpass* (in addition to other entries dated 1940-1945). All materials in this series are in German, with the exception of the French civilian pass, which is in French. Note: Researchers interested in this time period should also consult Berndt's memoirs in Series IV.

**Series II, German Parachute Research**, contains specific technical materials related to Berndt's work in parachute research and development at the Graf Zeppelin Research Institute (FGZ) Stuttgart-Ruit during WWII. The majority of this series consists of folders all originally stored together in a single binder labeled "*Bildbericht*" (Photo Report), containing photographs, diagrams, and reports related to scientific testing of ribbon parachutes on various aircraft, bombs, and devices. In addition to the *Bildbericht*, this series also includes two narrative reports by Theodor W. Knacke about parachute development at the FGZ. All materials in this series date

between 1941 and 1946, with the exception of one report, which was written in 1983 (though it describes the time period from 1934 to 1945). All materials in this series are in German except one report, which is in English.

**Series III, Operation Paperclip**, includes documents related to Berndt's inclusion in the secret program of the same name in which German scientists were recruited for U.S. government employment following WWII. The majority of these documents are immigration and security investigation forms and reports, as well as employment contracts. Other materials include photo identification cards for Berndt and his wife, correspondence pertaining to the immigration of Berndt's family, memoranda to foreign scientists at Wright Field, and a few photographs. Materials in this series date from 1946 to 1953. The majority of the materials in this series are in English; some are in German.

**Series IV, American Life and Work**, pertains to Berndt's engineering career in the United States, including technical reports, resumes, and photographs. Of particular note are: Berndt's memoir, describing his early life in Germany through his retirement in 1991 (electronic copy available); and his retirement keepsake album, which includes many labeled photographs of Wright-Patterson Air Force Base personnel as well as congratulatory notes from colleagues (including Hans von Ohain). Materials in this series date from 1953 to 2003. The majority of the materials in this series are in English; one folder includes German.

## **Subject Terms**

### **Persons/Families**

Berndt, Rudi Julius, 1921-2004

Heinrich, Helmut Gustav

Knacke, T. W.

### **Places**

Dayton (Ohio)

Stuttgart (Germany)

Wright-Patterson Air Force Base (Ohio)

### **Subjects (General)**

Aeronautics

Engineering

German Americans -- History -- 20th century

Military research -- History -- 20th century

Nazis -- History -- 20th century

Parachutes -- History

Parachutes -- Materials -- Testing

World War, 1939-1945 -- Technology

World War, 1939-1945 -- German Americans

### **Material Types**

Photographs

Technical reports

**Occupations**

Engineers

Scientists -- Recruiting -- Germany -- History -- 20th century

Scientists -- Recruiting -- United States -- History -- 20th century

## Collection Inventory

<b>Box</b>	<b>File</b>	<b>Description</b>	<b>Date</b>
<b>Series I: German Life and Work</b>			<b>1927-1946, 1949</b>
1	1	School Report Cards [ <i>Zeugnis</i> ], Bugenhagen Grammar School and Schiller-Realgymnasium (German)	1927-1934
1	2	School Report Cards [ <i>Zeugnis</i> ], Schiller-Realgymnasium (German)	1934-1936
1	3	School-Leaving Certificate [ <i>Abgangs-Zeugnis</i> ], Schiller-Realgymnasium zu Stettin (German)	1937
1	4	Swimming Certificates [ <i>Schwimmer Zeugnis</i> ] (German)	1933
1	5	School-Leaving Certificate [ <i>Abgangs-Zeugnis</i> ], Trade School (German)	1939
1	6	School Report Cards [ <i>Zeugnis</i> ], State Engineering College Stettin (German)	1939-1941
1	7	Engineering Certificate [ <i>Ingenieur Zeugnis</i> ] and Leaving Certificate [ <i>Abschluss Zeugnis</i> ], State Engineering College Stettin (German)	1941
1	8	Labor Book [ <i>Arbeitsbuch</i> ] (German)	1937-1946
		Military Passport [ <i>Wehrpass</i> ] (German)	1940-1945, 1949
1	9	Letters of Recommendation, Employment Verification Letters (German)	1937-1940
1	10	Letter of Recommendation, Employment Verification Letter (German)	1946 Apr 20
1	11	Photo Identification Cards (German): Rudi Berndt (German)	1941, 1945
1	12	Employee Insurance Card [ <i>Angestellten Versicherung/ Versicherungskarte</i> ] (German)	1944-1947
1	13	Civilian Identification Pass (French)	1945 May 11
1	14	Employee Tax Declarations [ <i>Erklärung des Arbeitnehmers zur Lohnsteuer</i> ] (German)	1946 May 29
1	15	Opinion of the Works Council on Staffing Matters at Graf Zeppelin Research Institute [ <i>Stellungnahme des Betriebsrates der Forschungsanstalt Graf Zeppelin zu den personellen Angelegenheiten des Betriebes</i> ] (German)	1946 June 20
<b>Series II: German Parachute Research</b>			<b>1941-1946, 1983</b>
2	1	Photo Report [ <i>Bildbericht</i> ]: Index Page and Loose Page, Device Delivery (German)	Circa 1941-1944
2	2	Photo Report [ <i>Bildbericht</i> ], Section Pre-A: Photo, Ribbon Parachute (German)	Circa 1941-1944
2	3	Photo Report [ <i>Bildbericht</i> ], Section A: Parachute	1942



<b>Box</b>	<b>File</b>	<b>Description</b>	<b>Date</b>
		Testing with Aircraft DFS 230 and Gotha 242 transport gliders (German)	
2	4	Photo Report [ <i>Bildbericht</i> ], Section B: Wind Tunnel Tests at Chalais-Meudon in German-occupied France (German)	Circa 1941-1944
2	5	Photo Report [ <i>Bildbericht</i> ], Section C-D: Parachute Testing with Aircraft DFS 230, Dornier 217, Junkers 88 (German)	1941-1942
2	6	Photo Report [ <i>Bildbericht</i> ], Section E: Parachute Testing with Aircraft Junkers 52 (German)	1941-1944
2	7	Photo Report [ <i>Bildbericht</i> ], Section F: Testing Parachute Delivery of (Devices) (German)	1943
2	8	Photo Report [ <i>Bildbericht</i> ], Section M: Testing Parachute Delivery of gerät Flora, Traube, Monika (Bombs) (German)	1943
2	9	Photo Report [ <i>Bildbericht</i> ], Section N: Testing Parachute Delivery of gerät Liesel and Lotte (Bombs) (German)	Circa 1943
2	10	Photo Report [ <i>Bildbericht</i> ], Section S: Testing Parachute Delivery of gerät Mischlast-Abwurfbehälter 1000 (Mi 1000) Supply Canister (German)	Circa 1943
2	11	Photo Report [ <i>Bildbericht</i> ], Section Sch: Testing Parachute Delivery of (Human Beings?) (German)	Circa 1941-1944
2	12	Photo Report [ <i>Bildbericht</i> ], Section St: Parachute Components, Connectors and Hardware (German)	Circa 1941-1944
2	13	Photo Report [ <i>Bildbericht</i> ], Section TU: Parachute Components, Canvas and Ropes (German)	Circa 1941-1944
2	14	Photo Report [ <i>Bildbericht</i> ], Section V-W: Research Data and Reports, FIST Ribbon Parachutes [ <i>Bänderschirme</i> ] (German)	Circa 1945
	ms632_e0001	Photo Report [ <i>Bildbericht</i> ]: digital photos (119 MB) of original album binder (photos by archives staff, 2018)	Undated
2	15	“The FIST Ribbon Brake Parachute of the Graf Zeppelin Research Institute” [ <i>Der FIST-Bänder-Bremsschirm der Forschungsanstalt Graf Zeppelin</i> ] by Theodor W. Knacke and Rudolf Isermann (English)	1946 Mar
2	16	“Parachute Development in the Institute of Aeronautical Engineering at the Technical University of Stuttgart (FIST) and in the Graf Zeppelin Research Institute (FGZ) Stuttgart-Ruit from 1934 to 1945” [ <i>Fallschirmentwicklung im Flugtechnischen Institut</i> ]	1983 May

<b>Box</b>	<b>File</b>	<b>Description</b>	<b>Date</b>
		<i>an der Technischen Hochschule Stuttgart (FIST) und in der Forschungsanstalt Graf Zeppelin (FGZ) Stuttgart-Ruit von 1934 bis 1945]</i> by Theodor W. Knacke (German)	
<b>Series III: Operation Paperclip</b>			<b>1946-1953</b>
1	16	American Military Government of Germany Questionnaire: Rudi Berndt (German, English)	1946 Mar-June
1	17	Special Contract for Employment of German Nationals within the War Department of the United States (original)	1946 July 18
1	18	Special Contract for Employment of German Nationals within the War Department of the United States (NARA copy)	1946 July 18
1	19	Notification of Personnel Action, Transport Orders, U.S. War Department	1946 Aug
1	20	Contracts for Personal Services, U.S. War Department (NARA copies)	1946-1949
1	21	Contracts for Personal Services, Wright Field/ Wright-Patterson Air Force Base	1947-1952
1	22	Immigration and Security Investigation: Rudi Berndt (originals)	1948
1	23	Immigration and Security Investigation: Rudi Berndt (NARA copies) (English, German with translations)	1945-1948
1	24	Immigration and Security Investigation: Ingeborg Berndt (originals) (English, German)	1946-1948
1	25	Immigration and Security Investigation: Ingeborg Berndt (NARA copies) (English, German)	1946-1948
1	26	Orders to Stay Proceedings [ <i>Einstellungsbefehl</i> ]: Rudi Berndt and Ingeborg Berndt (German)	1947 Feb 7
1	27	Photo Identification Cards (American): Rudi Berndt	1946-1950
1	28	Photo Identification Cards: Ingeborg Berndt (German, English)	1946
1	29	Paperclip Dependents, Correspondence and Forms: Wife Ingeborg and Children (NARA copies)	1946-1950
1	30	Paperclip Dependents, Correspondence and Forms: Parents Otto and Elisabeth Berndt (NARA copies)	1952
1	31	Immigration and Naturalization, Transport (NARA copies)	1946-1947
1	32	Identity Disambiguation of Multiple Individuals Named Rudi Berndt (NARA copies)	1947
1	33	Operation Paperclip Security Report/ FBI Investigation (NARA copies)	1947-1951
1	34	Memoranda to German and Austrian Scientists at	1947

<b>Box</b>	<b>File</b>	<b>Description</b>	<b>Date</b>
		Wright Field	
1	35	Memorandum to the Foreign Scientists and Technicians, Wright Air Development Center (WADC)	Circa 1953
4	1	Photographs: Operation Paperclip	1946, undated
<b>Series IV: American Life and Work</b>			<b>1953-1999</b>
3	1	Investigation Proposal: Dynamics of Flexible Shell-Like Aerodynamic Decelerators Operating in Earth and Other Planetary Atmospheres; Principal Investigator: Rudi Berndt	Circa 1962
3	2	“Supersonic Parachute Research” by Rudi J. Berndt (Technical Report ASD-TDR-62-236)	1962 May
3	3	“Experimental Determination of Parameters for the Calculation of Parachute Filling Times” by Rudi J. Berndt (Presented at the Annual Meeting WGLR-DGRR, Berlin)	1964 Sept.
3	4	Original Figures and German versions of “Experimental Determination of Parameters for the Calculation of Parachute Filling Times” (German, English)	1964 Sept.
3	5	“Parachutes: A Brief Historical Sketch” (Report and Photographs) by Rudi J. Berndt	1973 Jan
3	6	Correspondence to H. D. Melzig re: Parachutes	Circa 1969
3	7	Resumes: Rudi Berndt	1961-1990
3	8	Resumes and Descriptions of Technological Accomplishment: Rudi Berndt, Reinhold Gross, et al.	Circa 1962?
3	9	U.S. Air Force Security Form DD398: Rudi Berndt	1968 Nov
3	10	Recognition of Achievements	1961
4	2	Photographs: Parachute Balloon Testing at WPAFB and New Mexico	1953
4	3	Photographs: Packing Procedure for 64’ Nominal Diameter Parachute Balloon Recovery, WADC, WPAFB	1954 June 14
4	4	Photographs: Stratosphere Balloon Gondola Instrument, Camera, and Timing Compartments	1954 June 24
4	5	Photographs: Outdoor Parachute Balloon Testing, HADC, Holloman AFB	1956 Mar
4	6	WADC Gondola Diagrams	Undated
4	7	Photographs: Rudi Berndt	Circa 1965
4	8	Photographs: Retirement Ceremonies	1990-1991

<b>Box</b>	<b>File</b>	<b>Description</b>	<b>Date</b>
5	1	Retirement Certificates	1990-1991
5	2	Retirement Keepsake Album	1991
3	11	Memoir, "Autobiography of Rudi J. Berndt, February 1921 to February 2003" (partial copy, 1921-1945)	2003
3	12	Memoir, Early Life through 1946 (partial copy) <i>(PDF available in the E-Archive ms632_e0002)</i>	Undated (circa 2003)
3	13	Memoir, 1946-1991 (partial copy) <i>(PDF available in the E-Archive ms632_e0003)</i>	Undated (circa 2003)
3	14	"An Overview of the Soviet Threat" by Frederick M. Sallagar (USAF Report R-2580-AF)	1980 Feb
3	15	"The Art of Drag: A History of the U.S. Air Force Parachute Technology Development" (draft) by Andrew S. Kiddis, Aeronautical Systems Center, WPAFB (Berndt is cited in the bibliography on page 169)	Circa 1999