
Descriptive Summary**Creator:** Back, Frank G.**Title:** Frank Back Papers,**Date (inclusive):** 1899 - 1983**Extent:** 6.10 linear feet(5 archives boxes, 2 card file boxes and 20 oversize folders)

Abstract: Papers of Frank Back, optical engineer and founder and president of Zoomar Inc., an optical engineering company specializing in lens design for television, motion picture and single-lens reflex cameras. Born in Vienna in 1902, Back immigrated to the United States in 1939 after receiving a doctorate in science from the Technische Hochschule (Technical University) in Vienna in 1931. Back invented the optically-compensated zoom lens for television and single lens reflex (SLR) 35mm cameras. Back and his companies, Zoomar Inc. and Research and Development Laboratory, contributed significantly to the development of optical technologies for television and motion pictures, as well as astronomical, medical, commercial, and military applications in the 1950s, 1960s, and 1970s. Materials include biographical documents from his early years in Austria; reprints and typescript drafts of Back's professional writings; several patent applications; correspondence, including a photograph of a letter to Back from Albert Einstein; miscellaneous Zoomar records and memorabilia; and biographical documents related to Back's brother-in-law, Herbert Lowen. The collection also includes photographs of Back, Zoomar facilities and products, and Back's meeting with Albert Einstein in 1955. The papers are arranged in nine series: 1) BIOGRAPHICAL MATERIALS, 2) WRITINGS BY BACK, 3) WRITINGS BY OTHERS, 4) CORRESPONDENCE, 5) ZOOMAR MATERIALS, 6) PHOTOGRAPHS, 7) MISCELLANEOUS MATERIALS, 8) HERBERT LOWEN MATERIALS, and 9) ORIGINALS OF PRESERVATION PHOTOCOPIES.

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La Jolla, California 92093-0175

Collection number: MSS 0568**Language of Material:** Collection materials in English**Access**

Collection is open for research.

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Not Available

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Publication Rights

Publication rights are held by the creator of the collection.

Biography

Frank Gerhard Back was born in Vienna, Austria, on August 25, 1902. Upon completion of his secondary schooling in 1920, Back matriculated at the Technische Hochschule (Technical University) in Vienna, where he received his masters in engineering in 1925 and a doctorate in science in 1931. He worked as a self-employed consulting engineer in Vienna until September of 1938 when he moved to France. Back remained in France for less than a year and during the summer of 1939, he immigrated to the United States.

After working as an engineer for several companies in New York City, Back started his own company called Research and Development Laboratory in 1944. A year later, Back started a second company, Zoomar Inc., and served as its president and head engineer until his retirement in the late 1970s.

Throughout his life, Back invented several optical devices and improvements of existing optical technologies. He held numerous patents in the United States, Canada, Germany, Austria, France, Britain, and Italy. At Zoomar he developed and patented an optically-compensated zoom lens for television cameras in 1948 and one for single lens reflex (SLR) 35mm cameras in 1959. From the late 1940s to the 1970s, Back and Zoomar Inc. continually advanced optical technologies and introduced optical innovations for television and motion pictures, as well as astronomical, medical, commercial, and even military applications.

Back was also recognized for his expedition to the Philippines in 1955 to observe and photograph the solar eclipse on June 20th. He intended to provide conclusive evidence for Einstein's theory of relativity by calculating the optical distortion, if any, of starlight caused by

the sun's gravity. Prior to his trip, Back conferred briefly with Albert Einstein on the type of data needed in order to prove the theory of relativity. He published a narrative report of his trip and his findings later that year in a book entitled HAS THE EARTH A RING AROUND IT? Over the course of his career, Dr. Back received numerous honors and awards from professional organizations in his field including the Royal Photographic Society, the Society for Motion Picture and Television Engineers, and the Society of American Military Engineers. In addition, Back lectured frequently at professional conferences and published regularly in professional journals in the United States and abroad.

Frank Back died in San Diego, California, on July 6, 1983.

Scope and Content of Collection

The Frank Back Papers contain materials related to the professional career of the Austrian-born optical engineer and founder and president of Zoomar Inc. who contributed to the advancement of optical technologies in television, motion pictures, medicine, commercial, and military applications from 1945 to the late 1970s in the United States. While the collection contains little documentation of Back's development of optically-compensated zoom lenses, materials related to his professional career include reprints and typescript drafts of his published writings; several patent applications; writings by others on optical engineering; miscellaneous Zoomar records; and memorabilia describing or advertising Zoomar products. Also included are biographical materials from Back's early life and education in Austria and his immigration to the United States via France in 1939; correspondence; biographical materials of Back's brother-in-law, Herbert Lowen; and photographs of Back, Zoomar facilities and products, and Back's meeting with Albert Einstein in 1955. The papers are arranged in nine series: 1) BIOGRAPHICAL MATERIALS, 2) WRITINGS BY BACK, 3) WRITINGS BY OTHERS, 4) CORRESPONDENCE, 5) ZOOMAR MATERIALS, 6) PHOTOGRAPHS, 7) MISCELLANEOUS MATERIALS, 8) HERBERT LOWEN MATERIALS, and 9) ORIGINALS OF PRESERVATION PHOTOCOPIES.

SERIES 1: BIOGRAPHICAL MATERIALS

The BIOGRAPHICAL MATERIALS series, arranged alphabetically, consists mainly of official records, governmental or institutional certificates, documenting significant moments in Back's life such as his birth, secondary and university education, membership to various professional societies, and his immigration to the United States from Austria in 1939.

SERIES 2: WRITINGS BY BACK

The WRITINGS BY BACK series is arranged in two subseries: A) Articles and Papers and B) Patents.

A) The Articles and Papers subseries, arranged chronologically, contains mostly typescript drafts and reprints of articles that Back published in professional journals in the United States and abroad from 1930 to 1980. Also included are several undated documents Back wrote to describe or promote Zoomar products.

B) The Patents subseries, arranged chronologically, contains documents relating to four of Back's numerous patents. Materials include typescript drafts of patent applications and United States Patent Office certificate for Back's "Photographic Camera and Projection Device."

SERIES 3: WRITINGS BY OTHERS

The WRITINGS BY OTHERS series, arranged alphabetically, contains articles on optical engineering collected by Back. Materials include reprints from professional and scholarly journals, many with Back's annotations.

SERIES 4: CORRESPONDENCE

The CORRESPONDENCE series, arranged alphabetically, contains a mixture of English and German personal and professional correspondence from the 1930s to the early 1980s. Notably, the series contains a photograph of letter to Back from Albert Einstein.

SERIES 5: ZOOMAR MATERIALS

The ZOOMAR MATERIALS series is organized into two subseries: A) Business Documents and B) Product Information.

A) The Business Documents subseries, arranged alphabetically, contains memorabilia and materials documenting important moments in the life of Zoomar Inc. Materials document both the inception and dissolution of Zoomar and include Back's Agreement of Partnership for the Television Zoomar Corporations with Jack Pegler and Westbrook Pegler II in 1959 and a certificate of Back's sale of his share of Zoomar stock to Optical Industries in 1979. Other materials include an award from the City of Glen Cove, New York, newspaper clippings related to Zoomar Inc., and administrative materials such as inter-office correspondence and employment agreements.

B) The Product Information subseries, arranged alphabetically, contains product pamphlets on individual lenses, as well as some blueprints of product designs and graphs of data on product capabilities and specifications.

SERIES 6: PHOTOGRAPHS

The PHOTOGRAPHS series is arranged in three subseries: A) Images of Back, B) Zoomar, and C) Miscellaneous.

A) The Images of Back subseries, arranged alphabetically, contains photographs which show Back either alone or with others. Included are photographs of Back at conferences and a biographical scrapbook created by Back. Notably, this subseries contains a large number of images of Back with Albert Einstein at Einstein's residence in Princeton, New Jersey.

B) The Zoomar subseries, arranged alphabetically, contains photographs of the interiors and exteriors of factories in Glen Cove, New York, and in Germany, as well as some photographs of Zoomar products.

C) The Miscellaneous subseries, arranged alphabetically, contains a mixture of photographs of presumed family members, unidentified individuals or places, and a scrapbook of photographs and newspaper clippings related to Back's expedition to the Philippines.

SERIES 7: MISCELLANEOUS MATERIALS

The MISCELLANEOUS MATERIALS series, arranged alphabetically, includes research and employment materials not related to Zoomar, such as blueprints for an "episcop project" and "epiprojector" that Back developed after retiring from Zoomar, miscellaneous calculations and data, advertisements for products manufactured by Back while he was in Austria, and a box of microdot optic lenses. Also included are income tax returns for Back, newspaper clippings about Albert Einstein, unsent postcards, and two biographical documents related to Elizabeth Lowen, Back's sister.

SERIES 8: HERBERT LOWEN MATERIALS

The HERBERT LOWEN MATERIALS series is arranged alphabetically and contains biographical materials of Back's brother-in-law, Herbert Lowen, including documentation of birth, education, immigration to the United States, correspondence, and a copy of Lowen's death certificate.

SERIES 9: ORIGINALS OF PRESERVATION PHOTOCOPIES

The ORIGINALS OF PRESERVATION PHOTOCOPIES series contains the originals of brittle or high acid content documents that have been photocopied.

Indexing Terms

The following terms have been used to index the description of this collection in the library's online public access catalog.

Subjects

Back, Frank G. -- Archives

Einstein, Albert, 1879-1955

Lowen, Herbert

Zoomar, Inc

Optical instruments -- Design and construction

Lenses -- Design and construction

Zoom lenses -- Design and construction

Optical industry

BIOGRAPHICAL MATERIALS

- box 1, folder 1 **Awards, medals and pins**
box 2, folder 1, **Awards - Voigtlander Medal letter and photograph 1960**
oversize FB35201
box 2, folder 2 **Birth certificate 1904**
- Note**
- Back was born in 1902, but his birth certificate was not issued until 1904.
- box 2, folder 3 **Certificates of membership 1937 - 1967**
- Note**
- Photographic Society of America and Optical Society of America.
- box 2, folder 4, **Certificates of membership - Oversize 1944 - 1961**
oversize FB35202
- Note**
- Photographic Society of America, Society of Motion Picture Engineers, The Royal Photographic Society, Society of American Military Engineers, Society of Photographic Scientists and Engineers, Society of Motion Picture and Television Engineers, and Who's Who in California.
- box 2, folder 5 **Certificate of Legitimation 1936**
- Note**
- Document indicates Back as cameraman for the Unifilm Company.
- box 2, folder 6 **Curriculum vitae 1980**
box 2, folder 7, **Doctoral diploma from Technische Hochschule zu Wien 1931**
oversize FB35203
box 2, folder 8 **Education - Realschule 1912 - 1920**
- Note**
- Annual certificates, semester certificates and 1920 class photo with image of Back at age eighteen.
- box 2, folder 9 **Education - Technische Hochschule zu Wien 1920 - 1931**
- Note**
- Course certificates, semester certificates and other documents relating to his university degrees.
- box 2, folder 10 **Identity Card for Commercial Travellers 1933**
- Note**
- Austria.
- box 2, folder 11 **Letters of recommendation about Back 1924 - 1943**
box 2, folder 12 **Newspaper clippings about Back 1949 - 1979**
- Note**
- MINNEAPOLIS STAR, NEWSDAY, NEW YORK TIMES, NEW YORK HERALD TRIBUNE.
- box 2, folder 13 **Passports - United States 1950 - 1976**

box 2, folder 14

Travel documents 1938 - 1939

Note

Itemized lists, certificate of domicile, and travel certificates.

WRITINGS BY BACK

Articles and Papers

- box 2, folder 15 **Die Physikalisch-Technischen Grundlagen der Mageninnen Photographie 1930**
Note
Reprint.
- box 2, folder 16 **Back, Frank and Otto Ehrentheil. Ein Neuer Kehlkopf-Photographie-Apparat 1932**
Note
Reprint.
- box 2, folder 17 **Back, Frank et. al. Wiener Laryngo=Rhinologische Gesellschaft 1934**
Note
Reprint.
- box 2, folder 18 **Back, Frank and F. Ehrenhaft. Non-Intermittent Motion Picture Projector 1940**
Note
Reprint.
- box 2, folder 19 **Positive Vari-Focal View-Finder for Motion Picture Cameras 1945**
Note
Reprint.
- box 2, folder 20 **Nonintermittent Motion Picture Projector with Variable Magnification 1946**
Note
Reprint.
- box 2, folder 21 **Zoom Lens for Motion Picture Cameras with Single-Barrel Linear Movement 1946**
Note
Reprint.
- box 2, folder 22 **Zoomar Lens 1947**
Note
Reprint.
- box 2, folder 23 **Physical Properties and the Practical Application of the Zoomar Lens 1947**
Note
Reprint.

WRITINGS BY BACK

Articles and Papers

- | | |
|---------------------------------------|--|
| box 2, folder 24 | Zoomar Lens for 35mm Film 1948
Note
Reprint. |
| box 2, folder 25 | Approach to Better Studio Lighting 1949
Note
Reprint. |
| box 2, folder 26 | TV Studio Illumination 1949
Note
Pamphlet. Date and authorship information found on curriculum vitae. See Box 2, Folder 5. |
| box 2, folder 27 | Optical Lens Development 1950
Note
Typescript. |
| box 2, folder 28,
oversize FB35204 | Optical Lens Development - Oversize 1950
Note
Reprint. |
| box 2, folder 29 | Basic Optical Requirements for a Good TV Broadcast 1950
Note
Typescript drafts. |
| box 2, folder 30 | Lens Tester for Photographic Lenses 1950
Note
Reprint and typescript. |
| box 2, folder 31 | Modern Requirements of Photographic Lenses 1952
Note
Reprint. |
| box 2, folder 32 | How to Use the Video Analyzer 1953
Note
Reprint. |
| box 2, folder 33 | New Approach to the Evaluation of the Performance of Photographic Lenses 1953
Note
Reprint. |
| box 2, folder 34 | Large Range Variable Magnification Telescope 1953
Note
Reprint. |

- box 2, folder 35 **Basic Theory of Varifocal Lenses with Linear Movement and Optical Compensation 1954**
- Note**
- Reprint.
- box 2, folder 36 **Varifocal Camera Lenses 1954**
- Note**
- Reprint.
- box 2, folder 37 **Performance Testing of Photographic Lenses 1955**
- Note**
- Reprint.
- box 2, folder 38 **Answer to N. J. Rumsey's "Note on a Suggested Method for Evaluating Image Sharpness" 1955**
- Note**
- Reprint.
- box 2, folder 39 **HAS THE EARTH A RING AROUND IT? 1955**
- Note**
- See also Solar Eclipse Expedition Scrapbook, Box 5, Folder 7.
- box 2, folder 40 **Developments in Catadioptric Telephoto Systems 1957**
- Note**
- Reprint.
- box 2, folder 41 **Expert Previews Tomorrow's Lenses 1957**
- Note**
- Reprint.
- box 2, folder 42 **Back, Frank and Herbert Lowen. Generalized Theory of Zoomar Systems 1958**
- Note**
- Reprint.
- box 2, folder 43 **Zoom Lens for Closed-Circuit Television 1958**
- Note**
- Reprint.
- box 2, folder 44 **New Concepts in the Evaluation of Television Lenses 1962**
- Note**
- Reprint and photocopy of a paper presented at two different conferences.

- box 2, folder 45 **Einfluß eines zum Zwecke der Linienfrequenz-Änderung Eingebauten Zoom-Objektivs auf die Meßgenauigkeit im ... 1969**
- Note**
- Reprint.
- box 2, folder 46 **Off-Axis MTF Measurements on Wide-Angle Lenses 1970**
- Note**
- Reprint of a paper presented at the Society of Photo-Optical Instrumentation Engineers Seminar in Tokyo, Japan.
- box 2, folder 47 **Optical Design for the Visible Versus Infrared 1975**
- Note**
- Reprint and typescript of a lecture given at the Summer Conference on Infrared Technology, University of Michigan.
- box 2, folder 48 **Design and Testing for Germanium Optics 1976**
- Note**
- Photocopy.
- box 2, folder 49 **Zoom Lens, History and Present 1980**
- Note**
- Typescripts with handwritten corrections.
- box 2, folder 50,
oversize FB35205 **Zoom Lens, History and Present - Oversize 1980**
- Note**
- Typescript with handwritten corrections.
- box 2, folder 51 **Lensless Lens Developed for TV**
- Note**
- Typescript.
- box 2, folder 52 **Novel Measuring Method for Optical Transfer Functions**
- Note**
- No date. Zoomar pamphlet.
- box 2, folder 53 **Tool Room Girl**
- Note**
- Typescript poem.
- box 2, folder 54 **Untitled**
- Note**
- No date. Typescript related to television camera optical systems.
-

Patents

Patents

box 2, folder 55

Process for the Photographic Recording of Sound 1938

Note

Typescript of patent application.

box 2, folder 56

Verfahren zur Photographischen Schallaufzeichnung, Insbesondere fur die Zwecke des Tonfilmes 1938

Note

Typescript of patent application with figures.

box 3, folder 1

Photographic Camera and Projection Device 1965

Note

Typescripts of patent application with figures and patent certificate from US Patent Office.

box 3, folder 2

Varifocal Lens System and Actuating Mechanism 1971

Note

Reprint.

WRITINGS BY OTHERS

- box 3, folder 3 **Deutsch, Felix. "Ein Registrier-Endes Druckmanometer zur Messung des PreBdruckes" 1933**
Note
Reprint.
- box 3, folder 4 **Eggert, John. "Die Photographie als Wissenschaft und Technik" 1957**
Note
Reprint.
- box 3, folder 5 **Eggert, John. "Karl Friedrich Bonhoeffer" 1958**
Note
Reprint.
- box 3, folder 6 **Eggert, John. "The Present Status of Photographic Development in Theory and Practice" 1958**
Note
Reprint.
- box 3, folder 7 **Eggert, John. "Radioaktive Konferenz in Zurich" 1958**
Note
Reprint.
- box 3, folder 8 **Eggert, John. "Zur Spektralen Empfindlichkeit Photgraphischer Schichten" 1959**
Note
Reprint.
- box 3, folder 9 **Eggert, John and A. Buchler. "Wietere Versuche Uber Den Wiegert-Effekt. II" 1956**
Note
Reprint of paper presented at a conference.
- box 3, folder 10 **Eggert, John and Heinrich Hopft. "Uber Den Angriff von Polystyrul Durch Insektenlarven" 1959**
Note
Reprint.
- box 3, folder 11 **Eriksen, Erling and Albert Braastad. "Plural-Row Cinematographic Camera" 1929**
Note
Reprint of United States patent.
- box 3, folder 12 **Fischer, Henning. "Uber die Konvertierung Photographischer Schichten Inbesondere bei Anuesenheit Eines..." 1957**
Note
Photocopy of Ph.D. dissertation.

- box 3, folder 13 **James, D. and W. A. Peters. "Photographic Camera" 1915**
Note
Reprint of United States patent.
- box 3, folder 14 **Kingslake, Rudolf. "Lense Design by Desk Calculator" 1976**
Note
Article in IMAGE of the Institute of Optics.
- box 3, folder 15 **Lause, H. "Zur Bestimmung des Falschlichtes bei Femrohren Durch Photoelectrisches Photometrieren" 1966**
Note
Reprint.
- box 3, folder 16 **Luchsinger, R. and K. Pfister. "Ergebnisse von Kehlkopfaufnahmen mit Einer Zeitdehnerapparatur" 1959**
Note
Reprint.
- box 3, folder 17 **Lyttleton, R. A. "The Neptune Story" 1959**
Note
Reprint.
- box 3, folder 18 **Lyttleton, R. A. "The End of the Iron-Core Age" 1973**
Note
Reprint.
- box 3, folder 19 **Lyttleton, R. A. and S. Fred Singer. "Dynamical Considerations Relating to the West Ford Experiment" 1964**
Note
Reprint.
- box 3, folder 20 **Pavlopoulus, T. G. "Breakdown of Lorentz Invariance" 1967**
Note
Reprint. Copy is stamped by the Navy Electronics Lab, San Diego, CA.
- box 3, folder 21 **Pavlopoulos, T. G. "The Special Theory of Relativity and the Problem of Universal Constants" 1969**
Note
Reprint. Copy is stamped by the Navy Electronics Lab, San Diego, CA.
- box 3, folder 22 **Reichenbach, Heinz. "The Mach-Zehnder Interference Refractor"**
Note
n.d. Reprint.
- box 3, folder 23 **Rixen, C. J. "Photographic Camera" 1933**
Note
Reprint of United States patent.
-

box 3, folder 24 **Wartburg, Rene von. "Die Verwendung von Elektronenblitzlampen als Neue Lichtquellen in der..." 1957**

Note

Reprint.

box 3, folder 25 **Wartburg, Rene von. "Nuere Untersuchungen Uber Den Reziprozitatsfehler (Schwarzschild-Effect)" 1956**

Note

Reprint.

CORRESPONDENCE

box 3, folder 26 **A-Z - Miscellaneous 1945 - 1983**
box 3, folder 27 **Back, Irma (wife) 1939**
box 3, folder 28 **Bihlmaier, Oskar 1973**
box 3, folder 29 **Einstein, Albert 1955**

Note

Photograph of Einstein's letter to Back with English translation.

box 3, folder 30 **Helix Gage Works - Letter of resignation 1943**
box 3, folder 31 **Shereff Brothers Counselors at Law (Louis H. and Harry Shereff) 1958 - 1979**
box 3, folder 32 **Society of Motion Picture and Television Engineers 1980 - 1981**

Note

Correspondents: Edward J. Blasko, Stephen C. Chamberlain, Jack F. Christensen, and Lynne Robinson.

box 3, folder 33 **Whitaker, J. G. 1938 - 1940**
box 3, folder 34 **WISDOM: THE MAGAZINE OF KNOWLEDGE FOR LIFETIME LEARNING AND EDUCATION (Leon Gutterman, President) 1966 - 1975**
box 3, folder 35 **Unidentified correspondents 1929 - 1981**

ZOOMAR MATERIALS

Business Documents

- box 3, folder 36 **Agreement of Partnership - Television Zoomar Corporation 1959**
- Note**
- Signed by Frank Back, Jack Pegler, and Westbrook Pegler II.
- box 3, folder 37 **Agreement of Sale of Zoomar Stock to Optical Industries 1979**
- Note**
- Inventory of Zoomar as of 31 October 1977 attached.
- box 3, folder 38 **Agreement - Stockholders of Zoomar Marketing Corp. 1958**
box 3, folder 39 **Award from City of Glen Cove, NY 1962**
- Note**
- Bronze plate.
- box 3, folder 40 **Capital stock certificates 1957 - 1958**
- Note**
- Television Zoomar Export Corp., Zoomar Marketing Corp., and Television Zoomar Trading Ltd.
- box 3, folder 41 **Inter-office correspondence 1974 - 1977**
box 3, folder 42 **Newspaper clippings 1962**
box 3, folder 43, **Posters 1949 - 1955**
oversize FB28207
- Note**
- Posters of letters to Jack Pegler and of other documents relating to Zoomar products.
- box 3, folder 44 **Sterflinger, Ludwig - Employment agreements 1954 - 1972**
- Note**
- Typed agreements and typed letter of salary increase from Walter Steuer.

Product Information

- box 3, folder 45, **Production Information - Miscellaneous. 1971**
oversize FB35302
- Note**
- Two three-ring binders of Zoomar product pamphlets, photographs, and related information.
- box 3, folder 46 **Drawings and graphs 1966 - 1977**
- Note**
- Blueprints and photoreproductions.

ZOOMAR MATERIALS

Product Information

box 3, folder 47,
oversize FB28208

Drawings and graphs - Oversize 1966 - 1977

Note

Blueprints and photoreproductions.

box 3, folder 48

Exklusiv! FM-Objektivtest "Normal" Weitwinkel 35mm 1970

Note

Article mentions Zoomar MTF-meter.

box 3, folder 49

InfraRed Lenses

Note

No date. Product pamphlet and IRAP 100 graphs.

box 3, folder 50

Logo plate for color TV system

Note

No date.

box 3, folder 51

Mark XB-2

Note

No date. Product pamphlet.

box 3, folder 52

New Orbiter for Pyroelectric Cameras - Mark II

Note

No date. Product pamphlet.

box 4, folder 1

T-Meter and Opticometer

Note

No date. Product pamphlet.

box 4, folder 2

Television Zoomar manual 1951

Note

Product manual.

box 4, folder 3

Zoomar Lenses for Vidicon TV Cameras

Note

No date. Product pamphlet.

box 4, folder 4

Zoomar MTF Meter

Note

No date. Product pamphlets.

box 4, folder 5

Zoomar Products and Capabilities

Note

No date. Product pamphlet for optical tracking systems.

PHOTOGRAPHS

Images of Back

- | | |
|---------------------------------------|---|
| box 4, folder 6 | Attending conferences
Note
No dates. |
| box 4, folder 7 | Back with Albert Einstein
Note
c. 1955. Includes some images of Einstein alone and Einstein with others. |
| box 4, folder 8,
oversize FB35208 | Back with Einstein - Oversize
Note
c. 1955. |
| box 4, folder 9 | Lecturing
Note
No dates. |
| box 4, folder 10,
oversize FB35301 | Personal scrapbook 1952 - 1970
Note
Biographical scrapbook with photographs, newspaper clippings, and an envelope of duplicate photographs. |
| box 4, folder 11 | Portraits
Note
No dates. |
| box 4, folder 12,
oversize FB35207 | Portraits - Oversize
Note
No dates. |
| box 4, folder 13 | With optical instruments or cameras
Note
No dates. |
| box 4, folder 14,
oversize FB35209 | With optical instruments or cameras - Oversize
Note
No dates. |

PHOTOGRAPHS

Images of Back

box 4, folder 15

With others

Note

No dates.

box 4, folder 16,
oversize FB35210

With others - Oversize

Note

No dates.

Zoomar

box 4, folder 17,
oversize FB35401

Factory in Germany

Note

No dates. Two scrapbooks with photographs of interior and exterior of factory plus duplicate photographs.

box 4, folder 18

Factory in Glen Cove, NY

Note

No dates.

box 4, folder 19,
oversize AB027C

Photo poster

Note

Large mounted collage of product photographs and images of Back.

box 4, folder 20

Products

Note

No dates.

Miscellaneous

box 4, folder 21

Back, Maritsch (aunt) 1899

Note

Earliest photograph dated 1899. No dates on other images.

box 5, folder 1

Family members - Unidentified

Note

No dates.

box 5, folder 2

Greece

Note

No dates. Images of ruins, buildings, and radar/optical equipment.

PHOTOGRAPHS

Miscellaneous

box 5, folder 3

House - Unidentified 1957

Note

Two of the photographs are dated 1957. Other photographs are undated.

box 5, folder 4

Lowen, Herbert

Note

No dates.

box 5, folder 5

Miscellaneous

Note

No dates. Images of buildings, landscapes, and astronomical phenomena.

box 5, folder 6,
oversize FB35211

Miscellaneous - Oversize

Note

No dates. Images of astronaut on the moon and aerial image of San Diego, CA.

box 5, folder 7,
oversize FB35501

Solar eclipse expedition scrapbook

Note

c. 1955. Materials related to Back's expedition to observe and photograph the solar eclipse of June 20, 1955. The scrapbook contains images of Back only and Back with Einstein, newspaper clippings, and typescript of DOES THE EARTH HAVE A RING AROUND IT?

box 5, folder 8

Unidentified people

Note

No dates.

box 5, folder 9

Work benches and tools

Note

No dates.

box 5, folder 10,
oversize FB35212

Work benches and tools - Oversize

Note

No dates.

MISCELLANEOUS MATERIALS

box 5, folder 11 **Advertisements for products manufactured by Back**

Note

c. 1932-1938.

box 5, folder 12,
oversize FB35206 **Calculations and data - Miscellaneous**

Note

c. 1975

box 5, folder 13 **Employment Agreement with Bol Ltd. 1943**
box 5, folder 14 **Epiprojector and Episcop Projector 1980 - 1983**

Note

Typescript describing episcopic projectors and handwritten agreement of disclosure.

box 5, folder 15,
oversize MC15403 **Epiprojector and Episcop Projector - Oversize 1980 - 1983**

Note

Blueprints and drawings.

box 5, folder 16 **Income Tax Returns 1941 - 1942**

Note

Federal and state tax returns for Frank and Irma Back.

box 5, folder 17 **Inspection Report from the Inspection Board of U. K. and Canada 1942**
box 5, folder 18 **Letterhead and envelope**

Note

No date.

box 5, folder 19 **List of Passengers for a Trip from Havre to New York 1929**

Note

Pamphlet.

box 6, folder 1 **Microdot Optics**

Note

No dates. Box contains twenty-nine seemingly identical small microdot lenses or lens systems with "W. Germany" scratched into larger barrel of lens. There are six variants: two are not inscribed with "W. Germany" and instead have scored lines around the circumference of the larger lens barrel, three have either the numbers 3, 21, or 23 written in pencil on the larger lens barrel, and one has masking tape attached with illegible handwriting.

box 7, folder 1 **Newspaper clippings about Albert Einstein 1963**
box 7, folder 2 **New York Telephone Company - Bond certificate 1973**

Note

Photocopy.

box 7, folder 3 **Lowen, Elizabeth (sister) - Documents 1923 - 1938**

Note

Education document and letter of recommendation.

box 7, folder 4 **Postcards unsent**

Note

No dates. Images of Vienna, astronomical phenomena, telescopes, paintings and the Middle East.

HERBERT LOWEN MATERIALS

box 7, folder 5 **Award to H. Lowen from Zoomar Inc. 1973**

Note

Brass plate.

box 7, folder 6 **Birth certificate 1902**

box 7, folder 7 **Certificate of baptism 1902**

box 7, folder 8 **Certificate of confirmation 1918**

box 7, folder 9 **Certificate of death and related documents 1975**

Note

Certificate of death and contract of purchase for cemetery plot.

box 7, folder 10 **Certificate of Literacy 1945**

box 7, folder 11 **Certificate from Vienna police 1937**

box 7, folder 12 **Correspondence 1942 - 1968**

Note

Typed letters to and from Herbert Lowen.

box 7, folder 13 **Education - Heinrich Hertz-Realgymnasium 1913 - 1921**

Note

Transcript.

box 7, folder 14 **Education - Universitat zu Wien 1927 - 1937**

Note

Course certificates, test certificates and a copy of his law diploma.

box 7, folder 15 **Employment documents 1932 - 1943**

box 7, folder 16 **Goldschmidt, Hans - Documents 1943 - 1944**

Note

Last will and testament, certificate of death, and cemetery deed.

box 7, folder 17 **Housing documents 1943 - 1946**

Note

Notice of maximum rent, mortgage documents, and deeds relating to various residence in New York State.

box 7, folder 18 **Identity cards and passports 1928 - 1961**

Note

Vienna University ID card, receipt for French ID card, notarized translation of Austrian ID card, US social security cards, and US passport.

box 7, folder 19 **Letters of recommendation 1926 - 1930**

box 7, folder 20 **Lowenstein, Ernst (Lowen's father) - Documents 1923 - 1942**

Note

Contract between Ernst and Herbert Lowenstein and certificate of death.

box 7, folder 21 **Newspaper clipping**

Note

No date. Clipping is from German or Austrian newspaper.

box 7, folder 22 **Notice of inheritance 1955**

Note

Photocopy.

box 7, folder 22 **Receipts - Miscellaneous 1942 - 1958**

Note

Receipts are from notary publics, US Department of Justice, US Draft Board, and US District Court.

box 7, folder 24 **Vaccination records 1902 - 1961**

ORIGINALS OF PRESERVATION PHOTOCOPIES

box 7, folder 25 **Originals of preservation photocopies**