



Finding Aid Report

Carle W. Highberg Papers

MS 59_0

Personal Papers

ABSTRACT:

These papers deal with Carle W. Highberg's (WPI Class of 1944) work on super-abrasives. He was instrumental in the development of lineless bifocal lenses and safety glass for automobiles and gun turrets of airplanes.

BIOGRAPHICAL NOTE:

Carle W. Highberg was born in Worcester in 1922. He graduated from WPI in 1944 with a B.S. in Physics. After graduation, he worked for Bausch & Lomb in Rochester, NY, and was in charge of all processes associated with the manufacture of bifocal and trifocal lenses.

Around 1956, he took a job as General Manager and Chief Engineer for Robinson Hauchen in Columbus, Ohio. The company manufactured one piece bifocal lenses and optical machinery.

In 1959, based on his experience at Bausch & Lomb in surfacing glass lenses with diamond grinding wheels, he was hired by Englehard Industries in New Jersey to head a research section with two primary objectives: first, to develop an economically competitive diamond grinding process for surfacing plate glass; and second, to provide engineering back-up for the Englehard Diamond Grit sales section.

In the late 1970s, Mr. Highberg joined Elgin Diamond Products Co. in Elgin, Illinois. In 1979, he was appointed Vice President for Research and Development. For some of the time between then and his retirement in 1988, he also worked as Vice President for Sales and Marketing.

Mr. Highberg had nine articles published in The Journal of the American Ceramic Society, beginning in 1963. He held several U.S. patents, including 2415105, 2417568, 3179797, 3828479, 4010583, and 4018206.

Mr. Highberg died in Downers Grove, Illinois in 2006.

Note: Much of the above information comes from Mr. Highberg's WPI 50th Reunion entry for his class's book. Some additional information is from his daughter.

SCOPE AND CONTENT:

The bulk of material in this collection is notes, memoranda and reports. Also included are photographs, small tools, trade magazines and promotional materials. Dates range from the 1940s to 1980s.

Most of the collection is organized roughly by date. Biographical information is at the beginning of the collection, and most of the photographs, a metal disk, and the tools are in Box 3. Some materials were received after the first 3 boxes were processed. These materials all relate to Mr. Highberg's work at Englehard Industries in the 1960s and 1970s and are in Box 4.

Container List

Container	Folder	Date	Title
Box 01	Folder 01	1994-2006	Biographical materials
Box 01	Folder 02	1959, 1997	Correspondence from WPI <i>1959 reunion letter; physics department survey</i>
Box 01	Folder 03	June 15, 1979	Press Release and Photograph of Carle Highberg <i>Elgin Diamond Products Co. announcement of appointment of Carle W. Highberg as Vice President, Research and Development</i>
Box 01	Folder 04	1945, n.d.	2 booklets <i>"Helpful Hints for the Busy Optician," Bausch & Lomb, 1945; "Optical Lenses 7 Greyhound Optical Equipment and Accessories" - catalog, no date</i>
Box 01	Folder 05	c. 1950s	Promotional booklet and Reference manual <i>Bausch & Lomb Automatic Sphere Surfacers</i>
Box 01	Folder 06	1947-c. 1954	Write-ups of Bifocal Processes - Bausch & Lomb <i>Second Fusion Matching, Cleaning Countersinks and Disks, Mechanical Cleaning Process Review, Semi-Finish Grinding, Disk Milling</i>
Box 01	Folder 07	c. 1950s	Promotional Booklets on Gages and Gage Blocks <i>Swedish Gage Company of America, C. E. Johansson Gage Company</i>
Box 01	Folder 08	May 12, 1955	Report for Carle Highberg <i>"Review of Single Countersinking," by F. J. Gutbertlet, S-10 Dept., Bausch & Lomb</i>
Box 01	Folder 09	May-Sept. 1956	Memos from C. Highberg, Bausch & Lomb <i>Re. bifocal issues and operations</i>
Box 01	Folder 10	Nov. 1956	Paper by Carle Highbert <i>"Plan for Complete Mechanization of Bifocal and Trifocal Operations"</i>
Box 01	Folder 11	1954-1958	Meeting Minutes & Report by Carle Highberg <i>"Exploratory Work Done with Diamond Lapping in 1953" - meeting with Super-Cut, Inc.; specifications for lap surfaces and paper on diamond particles per carat vs. mesh and surface area</i>
Box 01	Folder 12	1967	Memo on Bond Densities and Temperatures <i>Super-Cut, Inc.</i>
Box 01	Folder 13	June 15, 1961	Report by C. W. Highberg <i>"Plate Glass Surfacing with Diamond Wheels" (patents applied for)</i>
Box 01	Folder 14	1961	Papers by Carle W. Highberg <i>"A New and Realistic Look at Grinding Wheel Evaluation Procedures," published by American Society of Tool and Manufacturing Engineers (ASTME); "Furthering the Use of Diamonds in Industry through Research into New Fields and Development of Existing Applications," presented at 16th Annual Meeting of Industrial Diamond Association of America</i>
Box 01	Folder 15	1959-1966	Notes, memos, government standards <i>Diamond grit sizes, mesh, sieve [this was Mr. Highberg's label on original folder]</i>

Box 01	Folder 16	1966 & 1967 <i>Diamond Grit Coating</i>	Englehard Industries Reports
Box 01	Folder 17	1968, n.d. <i>'Man-Made Diamond Physical Properties Handbook," General Electric; Lens Sphere Production Generator, Shuron Optical Co.; Diamond Grinding Wheel Catalog, Electronics Semi-Conductor</i>	Promotional Materials
Box 01	Folder 18	1961, 1970, n.d. <i>Norton Company -- catalogs and price lists for Diamond Wheels and Hones; newsletter 1970</i>	Catalogs, Price Lists, Newsletter
Box 01	Folder 19	Oct. 1969	List of Registrants - International Industrial Diamond Conference
Box 02	Folder 01	Sept. & Oct. 1970	Publication - Industrial Diamond Review
Box 02	Folder 02	1971 <i>Moving announcement, prospectus</i>	Materials re. Englehard Industries
Box 02	Folder 03	1974, 1978, 1982 <i>Specifications for Shapes & Sizes of Diamond Grinding Wheels, Hand Hones, and Mounted Wheels</i>	Standard - American National Standards Institute
Box 02	Folder 04	1975 <i>Powder Metal, ZE & SO Type - "H" Process</i>	Memoranda re. Bonds
Box 02	Folder 05	1975, n.d. <i>No. 41 & No. 61</i>	Catalogs - Elgin Diamond Products
Box 02	Folder 06	1980s <i>Inlcudes conversion table for Wheel SFPM/Spindle RPM</i>	Brochures, Price Lists - Eligin Diamond Products, Inc.
Box 02	Folder 07	Feb. 1988 <i>Resin-bonded wheels, UFG wheels, diamond electro-plated, diamond compound</i>	Sales Bulletins - Elgin Diamond Products, Inc.
Box 02	Folder 08	1988 <i>"Subsurface Damage in Optical Materials: Origin, Measurement, and Removal," by P. Paul Hed, David F. Edwards, Janet B. Davis - Lawrence Livermore National Laboratory</i>	Paper
Box 02	Folder 09	1980, 1985	Publication - Indiaqua [Industrial Diamond Quarterly] - 2 issues
Box 02	Folder 10	c. 1950s <i>Diamond Lap Surfacers, made by Robinson-Houchin, Inc.</i>	Photograph and Fact Sheet
Box 02	Folder 11	c. 1960s <i>Indexing Head, Downfeed Counter Control, Cup Testing Equipment</i>	Photographs
Box 02	Folder 12	c. 1960s <i>color photographs</i>	Photographs of Diamonds
Box 02	Folder 13	c. 1960s <i>with 1960s materials</i>	Photographs
Box 02	Folder 14	c. 1960s	Photographic slides
Box 02	Folder 15	c. 1960s <i>with 1960s materials</i>	Flexible metal disk

Box 03	small boxes 1 & 2		tools for polishing/grinding
Box 03	Box of slides		for Carle Highberg Paper
Box 03	Folder	c. 1960s	Photographic prints <i>approximately 9" X 14," 3 photographs of machinery</i>
Box 04	Folder 01	1966-1968	Correspondence, memos, Englehard Industries <i>Most from Carle Highberg, includes photographs of diamonds</i>
Box 04	Folder 02	1969-1975	Correspondence, memos, blueprints - Englehard Industries
Box 04	Folder 03	1968, 1969	Blueprints & Spherical Surfacing Machine Components List
Box 04	Folder 04	April 9, 1973	Patent Application and Related Materials <i>Sheet Glass Core Drilling Machine, Englehard Industries</i>
Box 04	Folder 05	March & April 1973	Patent Application and related materials <i>Sheet Glass Seaming Machine - for Englehard Industries</i>
Box 04	Folder 06	May 9, 1973	Revised Specifications for Patent Application <i>Multiple Spindle Cluster for Sheet Glass Core Drilling Machine - Englehard Industries</i>
Box 04	Folder 07	1972, c. 1970s	Annual Report - Englehard, Technical Guide - Concut, Inc.