Finding Aid Report

Carle W. Highberg 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 form 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.
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<tr>
<th>Container</th>
<th>Folder</th>
<th>Date</th>
<th>Title</th>
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<tbody>
<tr>
<td>Box 01</td>
<td>Folder 01</td>
<td>1994-2006</td>
<td>Biographical materials</td>
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<td>Box 01</td>
<td>Folder 02</td>
<td>1959, 1997</td>
<td>Correspondence from WPI</td>
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<td><em>1959 reunion letter; physics department survey</em></td>
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<td>Box 01</td>
<td>Folder 03</td>
<td>June 15, 1979</td>
<td>Press Release and Photograph of Carle Highbert</td>
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<td><em>Elgin Diamond Products Co. announcement of appointment of Carle W. Highbert as Vice President, Research and Development</em></td>
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<tr>
<td>Box 01</td>
<td>Folder 04</td>
<td>1945, n.d.</td>
<td>2 booklets</td>
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<td></td>
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<td><em>Helpful Hints for the Busy Optician,</em> Bausch &amp; Lomb, 1945; <em>Optical Lenses 7 Greyhound Optical Equipment and Accessories</em> - catalog, no date</td>
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<tr>
<td>Box 01</td>
<td>Folder 05</td>
<td>c. 1950s</td>
<td>Promotional booklet and Reference manual</td>
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<td><em>Bausch &amp; Lomb Automatic Sphere Surfer</em></td>
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<tr>
<td>Box 01</td>
<td>Folder 06</td>
<td>1947-c. 1954</td>
<td>Write-ups of Bifocal Processes - Bausch &amp; Lomb</td>
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<tr>
<td></td>
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<td><em>Second Fusion Matching, Cleaning Countersinks and Disks, Mechanical Cleaning Process Review, Semi-Finish Grinding, Disk Milling</em></td>
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<tr>
<td>Box 01</td>
<td>Folder 07</td>
<td>c. 1950s</td>
<td>Promotional Booklets on Gages and Gage Blocks</td>
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<td><em>Swedish Gage Company of America, C. E. Johansson Gage Company</em></td>
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<td>Box 01</td>
<td>Folder 08</td>
<td>May 12, 1955</td>
<td>Report for Carle Highbert</td>
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<td><em>Review of Single Countersinking,</em> by F. J. Gutbertlet, S-10 Dept., Bausch &amp; Lomb</td>
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<tr>
<td>Box 01</td>
<td>Folder 09</td>
<td>May-Sept. 1956</td>
<td>Memos from C. Highbert, Bausch &amp; Lomb</td>
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<td><em>Re. bifocal issues and operations</em></td>
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<td>Box 01</td>
<td>Folder 10</td>
<td>Nov. 1956</td>
<td>Paper by Carle Highbert</td>
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<td><em>Plan for Complete Mechanization of Bifocal and Trifocal Operations</em></td>
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<td>Box 01</td>
<td>Folder 11</td>
<td>1954-1958</td>
<td>Meeting Minutes &amp; Report by Carle Highbert</td>
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<td><em>Exploratory Work Done with Diamond Lapping in 1953</em> - meeting with Super-Cut, Inc.; specifications for lap surfaces and paper on diamond particles per carat vs. mesh and surface area</td>
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<tr>
<td>Box 01</td>
<td>Folder 12</td>
<td>1967</td>
<td>Memo on Bond Densities and Temperatures</td>
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<td><em>Super-Cut, Inc.</em></td>
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<tr>
<td>Box 01</td>
<td>Folder 13</td>
<td>June 15, 1961</td>
<td>Report by C. W. Highberg</td>
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<td><em>Plate Glass Surfacing with Diamond Wheels</em> (patents applied for)</td>
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<tr>
<td>Box 01</td>
<td>Folder 14</td>
<td>1961</td>
<td>Papers by Carle W. Highberg</td>
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<td><em>A New and Realistic Look at Grinding Wheel Evaluation Procedures,</em> published by American Society of Tool and manufacturing Engineers (ASTME); <em>Furthering the Use of Diamonds in Industry through Research into New Fields and Development of Existing Applications,</em> presented at 16th Annual Meeting of Industrial Diamond Association of America</td>
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<tr>
<td>Box 01</td>
<td>Folder 15</td>
<td>1959-1966</td>
<td>Notes, memos, government standards</td>
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<td><em>Diamond grit sizes, mesh, sieve [this was Mr. Highbert's label on original folder]</em></td>
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Box 01  Folder 16  1966 & 1967  Englehard Industries Reports
   Diamond Grit Coating
Box 01  Folder 17  1968, n.d.  Promotional Materials
   'Man-Made Diamond Physical Properties Handbook,' General Electric; Lens Sphere Production Generator,
   Shuron Optical Co.; Diamond Grinding Wheel Catalog, Electronics Semi-Conductor
   Norton Company -- catalogs and price lists for Diamond Wheels and Hones; newsletter 1970
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  Materials re. Englehard Industries
   Moving announcement, prospectus
Box 02  Folder 03  1974, 1978, 1982  Standard - American National Standards Institute
   Specifications for Shapes & Sizes of Diamond Grinding Wheels, Hand Hones, and Mounted Wheels
Box 02  Folder 04  1975  Memoranda re. Bonds
   Powder Metal, ZE & SO Type - "H" Process
Box 02  Folder 05  1975, n.d.  Catalogs - Elgin Diamond Products
   No. 41 & No. 61
Box 02  Folder 06  1980s  Brochures, Price Lists - Elgin Diamond Products, Inc.
   Includes conversion table for Wheel SFPM/Spindle RPM
Box 02  Folder 07  Feb. 1988  Sales Bulletins - Elgin Diamond Products, Inc.
   Resin-bonded wheels, UFG wheels, diamond electro-plated, diamond compound
Box 02  Folder 08  1988  Paper
   Edwards, Janet B. Davis - Lawrence Livermore National Laboratory
Box 02  Folder 09  1980, 1985  Publication - Indiaqua [Industrial Diamond Quarterly] - 2 issues
Box 02  Folder 10  c. 1950s  Photograph and Fact Sheet
   Diamond Lap Surfacer, made by Robinson-Houchin, Inc.
Box 02  Folder 11  c. 1960s  Photographs
   Indexing Head, Downfeed Counter Control, Cup Testing Equipment
Box 02  Folder 12  c. 1960s  Photographs of Diamonds
   color photographs
Box 02  Folder 13  c. 1960s  Photographs
   with 1960s materials
Box 02  Folder 14  c. 1960s  Photographic slides
Box 02  Folder 15  c. 1960s  Flexible metal disk
   with 1960s materials
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


approximately 9" X 14," 3 photographs of machinery

Box 04  
Folder 01  
1966-1968  
Correspondence, memos, Englehard Industries

Most from Carle Highberg, includes photographs of diamonds

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

Sheet Glass Core Drilling Machine, Englehard Industries

Box 04  
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March & April 1973  
Patent Application and related materials

Sheet Glass Seaming Machine - for Englehard Industries

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Folder 06  
May 9, 1973  
Revised Specifications for Patent Application

Multiple Spindle Cluster for Sheet Glass Core Drilling Machine - Englehard Industries

Box 04  
Folder 07  
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