Harold W. Iversen papers

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Descriptive Summary
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Abstract: The collection consists of reports and papers on the subjects of pumps, turbines, fans, metering and flow (hydraulics).
Languages: The collection is in English.
Access
The collection is open for research.
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[identification of item], [date if possible]. Harold W. Iversen collection (WRCA 081). Water Resources Collections and Archives. Special Collections & University Archives, University of California, Riverside.
Acquisition Information
Dean M. P. O'Brien, upon his arrival in Berkeley in the late 1920's, started a collection of reprints, pamphlets, etc. on various areas of hydraulics—principally in the fields of interest to civil and mechanical engineers. The base of this collection appears to be the personal collection of Blake van Leer, Professor of Mechanical Engineering at the University, who later was to serve with distinction as President of the Georgia Institute of Technology. The collection of O'Brien was in his office in the Mechanics Building and additions were made continually over the years by Professors E. D. Howe, R. G. Folsom, H. A. Einstein, J. W. Johnson, and H. W. Iversen.
By 1958, when Einstein and Johnson were transferred from the Department of Mechanical Engineering to the Department of Civil Engineering, most of the collection was taken to the then new O'Brien Hall—with the exception of the material on pumps, turbines, etc. which was of interest principally to mechanical engineers. This material was left with Professor Iversen, who systematically cataloged the collection into subject listings. Upon Iversen's death, the collection was transferred to the Water Resources Collections and Archives where it is now known as the Iversen Collection.
Processing History
Processed by Water Resources Collections and Archives staff, 1999.
Collection Number
Collection number updated February 2019. Legacy collection number was MS 76/13. This change was part of a project in 2018/2019 to update the collection numbers for collections in the Water Resources Collections and Archives.
Biographical Note
Harold Walter Iversen died on November 10, 1973 at the age of sixty, after a long and valiant struggle to overcome the effects of major cancer surgery. He is survived by his wife, Ruby Kahler Iversen, and two children, his son Jon and his daughter Karen Iversen Timm, both of Dixon, California.
Harold Iversen was born in San Francisco on September 1, 1913, the son of foreign-born parents-Carl Alfred Iversen, a native of Norway, and Martha Jorgensen Iversen, who came from Denmark. His parents moved to San Pedro, where his father, a former ship captain, found employment as Port Captain and Dock Superintendent. Harold spent his early years in San Pedro, where he acquired a familiarity with ships and with people who work in shipping which later proved important to him.
After completing his secondary education in the public schools of San Pedro, Harold studied at UCLA for two years, completing the pre-engineering program and qualifying for transfer to the Berkeley campus, which at that time had the only Engineering College in the University system. Before enrolling at Berkeley, he spent two years earning the money to finance his education. Most of the jobs related to the sea, ranging from bathhouse attendant to wiper and oiler in the engine rooms of tanker ships, the latter activity keeping him at sea for nearly a year.

Following receipt of the B.S. degree in Engineering after two years at Berkeley, Harold worked as a Mechanical Engineer for the Ingersoll-Rand Corporation in New Jersey, where his work involved the development and testing of compressors, blowers, pumps, and allied equipment. During the four-year period at this work, he rose from engineering trainee to responsible charge of the test work in the laboratory. This practical engineering experience contributed to his ability to later teach engineering subjects from a practical viewpoint.

Harold returned to the Berkeley campus in 1941 to teach in the general field of fluid mechanics and to qualify for the M.S. degree, which was awarded to him in 1943. He served in several academic ranks and was advanced to Professor of Mechanical Engineering in 1957. While he taught a variety of different courses in the laboratory and lecture room, his major interest was in the field of pumping machinery. The course in this subject, taught for a number of years, was a developing course, keeping pace with his research in the field. At the time of his death Harold was engaged in the compilation of his research and course notes into a textbook on pumping machinery.

Harold was in local charge of the engineering group sent to Bikini Atoll to measure the wave disturbance produced by the early atom bomb tests conducted there. He developed the recording instruments required for these observations and was able to improvise on the spot, as indicated by his use of empty tomato cans lashed to palm trees at various heights to determine the maximum heights of the wave crossing the atoll.

As a professional engineer, Harold was called upon to serve as a consultant on fluid mechanics problems, one of these being the problem of designing a dredge pump for use in Ghana, at a site where the sand contained diamond particles capable of eroding the runners of pumps quite rapidly. His design of a jet pump solved the problem, with laboratory models to support his conclusions. This preoccupation with models was also evidenced by his success in solving problems for the City of San Francisco, where the pump intakes in the waste treatment plants could not carry the load until revamped, following model tests carried on by Professor Iversen. He also used models to finalize the hydraulic design of the fountain at the Bank of America in San Francisco, a design which has been copied for other fountains.

Professor Iversen served as Associate Dean of the College of Engineering from 1964 to 1969. Here he worked with students and faculty members to improve the advising system of the College and to aid students in finding solutions to their problems of academic standing. He served as advisor to student organizations and exercised his hobby of cooking by serving as barbecue chef at the annual ASME student picnic.

Harold will be remembered by his colleagues and former students for his careful and time-consuming preparation for class presentations, his clear and concise reporting of research and design work, and his insistence upon the best performance of which the students were capable.

E. D. Howe
J. W. Johnson
P. B. Stewart

Collection Scope and Contents
The collection consists of reports and papers on the subjects of pumps, turbines, fans, metering and flow (hydraulics).

Collection Arrangement
The collection is arranged topically into 66 series.

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

Subjects
Flow meters
Fluid dynamics
Fluid mechanics
Hydraulic measurements
Hydraulic turbines
Hydraulics
Hydrodynamics
Turbines
Water hammer

Genres and Forms of Materials
Papers (documents)
Reports

Series 1. Disk Friction Pumps 1926-1969

Box 1, Folder 1.1
November 17, 1922 August 31, 1928 September 28, 1928

Box 1, Folder 1.2
Correspondence from Westco Pump Sales Co. re multi-stage pumps, Also miscellaneous catalogs and blueprints on Westco pumps 1951

Box 1, Folder 1.3
*Summary of single stage tests (turbulence pump)*, by C.C. Ross, 4 1. (typescript). Re U.C. pump development, Navy trim pumps March 1947

Box 1, Folder 1.4
*Report on partial completion of tests on Burkes Pump with application to ultra-rough surfaces* includes curves, by William Everett April 1935

Box 1, Folder 1.5
*Pumpen kleiner Leistung*, by F.R. Lorenz, in *Zeitschrift des Vereines deutscher Ingenieure*, Band 78, Nr.9, (pp.287-291). Also English translation. - Translation of Part C: Water-ring pumps with common discharge for air and pumped-water. Bucket work is positive, both for air and water output, by C. Pfleiderer, in *Die Kreiselpumpen*,2nd add. (pp.443-447) - "Wee-Mac Self-Priming Pump," *Mechanical Engineering*, (pp.315). Also miscellaneous correspondence and literature re pumps März 1934 May 1933

Box 1, Folder 1.6
*Disc pump tests, ring leakage and single stage tests*, by A.C. Marshall March 1943

Box 1, Folder 1.7
*Single stage test unit*, by Wilcox Haggard April 1943

Box 1, Folder 1.8
*Data sheet and curves on Westco ratios*, by R.G. Folsom March 1943

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Box 1, Folder 1.11

Box 1, Folder 1.12

Box 1, Folder 1.13
*Combined hydrostatic and hydrodynamic principles applied to non-contacting face seals*, by James F. Gardner (presented at the Fourth International Conference on Fluid Sealing held in conjunction with the 24th ASLE annual meeting in Philadelphia, ), American Society of Lubrication Engineers, Park Ridge, Ill., pp.84-93 (FICFS Preprint no.36) May 5-9, 1969

Box 1, Folder 1.14
*Development of a liquid dynamic seal to vacuum*, by E. Schnetzer and R.J. Rossbach (presented at the Fourth International Conference on Fluid Sealing held in conjunction with the 24th ASLE annual meeting in Philadelphia, ), American Society of Lubrication Engineers, Park Ridge, Ill., pp.253-262 (FICFS Preprint no.40) May 5-9, 1969

Box 1, Folder 1.15

Box 1, Folder 1.16
*The development of a three-stage screw-type labyrinth seal*, by A.I. Golubiev (presented at the Fourth International Conference on Fluid Sealing held in conjunction with the 24th ASLE annual meeting in Philadelphia, ), American Society of Lubrication Engineers, Park Ridge, Ill., pp.1-3 (FICFS Preprint no.35) May 5-9, 1969

Box 1, Folder 2.1-2.2
*Calculation of leakage from pressure measurements*, by Wm. R. Walden April 29, 1938

Box 1, Folder 2.3
*Pumping machinery notes*, by R.G. Folsom
Box 1, Folder 2.4  Characteristic curves of Type V turbine pumps, blueprint graphs, Simonds Machinery Co., San Francisco October 12, 1937

Box 1, Folder 2.5  Notes for ME 127, Chap. I, Pumping machinery problems and solutions, University of California, Department of Mechanical Engineering, Fluid Mechanics Laboratory 1926, 1936

Box 1, Folder 2.6  a) Experimental investigations on the problem of roughness, by H. Schlichting (Verlag von Julius Springer, Berlin, Band VII, Heft 1, ), translated by Josef Stauffer, University of California, Department of Mechanical Engineering February 1936

Box 1, Folder 2.7  September 10, 1936


Box 1, Folder 2.8  "Summary of discussion with Dr. Samaras and Mr. Bierlein of Wright-Patterson Field, by H.W. Iversen 4 1., handwritten. Also correspondence, notes, photo re turbulence pump, Ohio State University July 25, 1950,"

Box 1, Folder 2.9  a) Letter from A. Hollander, Byron Jackson Co., Los Angeles, to M.P. O'Brien, U.C. Berkeley, re patent situation on friction pumps dated February 2, 1937

b) Notes for ME 127 on Energy loss in laminar sublayer September 12, 1937

c) Burks shallow and deep well water systems, Decatur Pump Company, Decatur, Ill., 16 p. (Bulletin no. 40-60) 1938

Box 1, Folder 2.10  Dimensions, capacities and typical mountings of self-aligning equalizing types of Kingsbury thrust bearings; horizontal and vertical, Kingsbury Machine Works, Inc., Philadelphia, Pa., 39 p. (Bulletin HV) 1931

Box 1, Folder 2.11  Horizontal mountings; Kingsbury thrust bearings and journal bearings, small to medium sizes, Kingsbury Machine Works, Inc., Philadelphia, Pa., 35 p. (Bulletin S) 1932

Box 1, Folder 2.12  The new 1000 h.p. Wright Cyclone, Wright Aeronautical Corporation, Paterson, N.J. 1936

Box 1, Folder 2.13  Miscellaneous pamphlets:

a) Roots-Connersville Regenerative Turbine Pumps, Roots-Connersville Blower Corp., Connersville, Ind., (Bulletin 260-B11B) 1935

b) Burks pumps, Decatur Pump Company, Decatur, Ill., 30 p. (Catalog no. 34) 1934

c) Burks self priming turbine condensation return units, Decatur Pump Co., Decatur, Ill., 8 p. (Bulletin no. 104C) 1938

d) G200 Series Wright Cyclone, Wright Aeronautical Corporation, Paterson, N.J. 1937

e) Burks self priming super turbine pumps and water systems, Decatur Pump Company, Decatur, Ill., 43 p. (General catalog no. 40) 1937

f) SureVac low speed, self priming centrifugal pumps, Dorward Pump Co., San Francisco, 6 p. (Bulletin no. 501)

g) Regenerative RCS turbine pumps; some outstanding advantages, Roots-Connersville-Wilbraham, Connersville, Ind., 11 p. (Bulletin no. 260-B11) 1935

h) Worthington balanced monobloc regenerative turbine pumps, Worthington Pump and Machinery Corporation, Harrison, N.J., 7 p. (Bulletin W-324-B3) 1935

i) Westco pumps, Westco Pump Corporation, Davenport, Iowa, 8 p. (Form 701) 1936

Box 1, Folder 2.14  "Portable air compressor", Engineering, p. 309 September 27, 1946


Box 1, Folder 2.17  Miscellaneous notes on pumps, by O'Brien and Folsom

Box 1, Folder 2.18  Blueprints on pumps, University of California, Fluid Mechanics Laboratory February 1943

Box 1, Folder 2.19  a) Correspondence between R.G. Folsom and C.D. Bower, Fairbanks, Morse Co., Pomona 1944

b) Miscellaneous advertisements on pumps

Box 1, Folder 2.21  *Influences of the suction nozzle on the characteristics of a peripheral pump and an effective method of their removal*, by Yasutoshi Senoo, in *Reports of Research Institute for Applied Mechanics*, Kyushu University, Vol.III, No. 11, pp.129-153 August 1954.


Box 1, Folder 2.25  *Selbstansaugende Kreiselpumpen und Versuche an einer neuen Pumpe dieser Art*, von Carl Ritter, Max Jänecke, Verlags-buchhandlung, Leipzig 1931.

Box 1, Folder 2.26  *Description of the experimental pump*, by Carl Ritter, Translation, 15 l Spring 1930.


Box 1, Folder 2.29  See 2.28.

Box 1, Folder 2.30  Miscellaneous pamphlets on Aurora pumps, Burks series CT 4CT close coupled turbine pumps, and Armstrong circulators 1966-1969.

Box 1, Folder 2.31  See 2.27.


Box 1, Folder 2.33  Westco catalogues and curves: miscellaneous material on pumping machinery, etc. 1926-1930.

Box 1, Folder 2.34  Westco pump geometry and performance: tables and graphs re pumping machinery performance, etc. 1930.

Box 1, Folder 2.35  *Complete characteristics of a turbulence pump; log book* by Roy E. Leasure March 11, 1947 to June 2, 1947.

Box 1, Folder 2.36  See 1.3.


Box 1, Folder 2.38  See 2.8.

Box 1, Folder 2.39  *Vortex pumps, or, slip in the centrifugal pump*, by Owen A. Price; includes *Communications, in Journal Proceedings*, Institution of Mechanical Engineers, Vol.142, No.5, pp.413-458. Note by Iversen: Questionable vortex head equation - not fundamentally correct. Pointed out by discussers March 1940.

Box 1, Folder 2.40  *Affinity relations for trimming the impeller on a centrifugal pump*, by Arnold W. Zimmerman and William E. Zerbe, for Mech.131B, University of California, Department of Mechanical Engineering, Berkeley, 1 folder, (handwritten). Special data book Spring 1938.

Box 1, Folder 2.41  "Factors affecting the validity of the affinity laws for speed trim," by William E. Zerbe, for ME 131B, University of California, Department of Mechanical Engineering April 23, 1938.

Box 1, Folder 2.42  *Affinity laws for speed and trim*, by W.E. Zerbe A.W. Zimmerman, for ME 131B, University of California, Department of Mechanical Engineering Spring 1938.
Box 1, Folder 3.5  
Centrifugal pump - impeller diam. relations, by W.A. Blair and C.F. Hains, for ME 131B, University of California, Department of Mechanical Engineering April 27, 1939

Box 1, Folder 3.6  
Cavitation characteristics of centrifugal pumps described by similarity considerations, by G.F. Wislicenus, R.M. Watson, and I.J. Karassik 1937-38?

Box 1, Folder 3.7  

Box 1, Folder 3.8  
Performance curves on U.C. Pump Test Lab pumps, by H.E. Burrier Spring 1939

Box 1, Folder 3.9  
Drawings, graphs and handwritten notes re centrifugal pump characteristics - curves and calculations 1932-1937

Box 1, Folder 3.10  
Notes on methods of self-priming centrifugal and rotary pumps handling water, by R.G. Folsom March 17, 1943

Box 1, Folder 3.11  
Letter to Editor of Engineering, England, from R.G. Folsom re specific speed of pumps dated November 4, 1940

Box 1, Folder 3.12  
Blueprints - solutions to problems on pumps

Box 1, Folder 3.13  

Box 1, Folder 3.14  
Centrifugal pumps and blowers, by G. Ure Reid, Letter to Editor, Engineering, p.16. Note by Iversen: Head curve from flow area reduction due to dead water in impeller July 5, 1946

Box 1, Folder 3.15  
References and problems for Chapter 2, ME 127

Box 1, Folder 3.16  
Miscellaneous pamphlets, newsletters from Byron Jackson, etc. on centrifugal pumps
 a) Design and operating problems of high pressure centrifugal pumping cycles, by Igor J. Karassik, reprint of four articles from National Engineer, July-November 1946
 b) The new Fairbanks-Morse bladeless sewage and trash pump, Fairbanks, Morse Co., Chicago, Ill. 15 p. (Bulletin 5400K-1)
 d) Reference chart to Jenkins figure numbers for evaporator connections, Jenkins Bros., New York
 e) Advertisement for the Foster (Air-Raid) Siren, Foster Engineering Company May 1943
 f) Advertisement for the Motorpump, by Ingersoll-Rand, New York September 1941
 g) Specific speed curves for single stage, centrifugal, mixed flow and axial flow pumps, Hydraulic Institute, New York December 1940
 h) Motor-driven pump competes with water-powered triplex, F-M News, pp. 11-12 May-June 1941
 i) Material from F-M News, p.3-6 re pictures of Fairbanks-Morse Ashland boat, F-M pumps and motors, Sanford Pumping Plant (Fla.), etc. July-August 1941
 j) Upper limits of specific speed for double suction single stage centrifugal pumps, by A. Hollander, Byron Jackson Newsletter, Vol. VI, No. 8 November 1, 1932
 k) Engine-driven centrifugal pipe line pumps, Byron Jackson Newsletter, Vol. X, No. 11 November 1, 1937
 l) Determination of operating points of centrifugal pumps working on pipe lines, Byron Jackson Newsletter, Vol. X, No. 16 March 15, 1938

Box 1, Folder 3.17  
a) Discussion of 'Centrifugal-pump performance as a function of specific speed,' by A.J. Stepanoff, by R.G. Folsom January 6, 1943
 b) Advertisements on centrifugal pumps 1941

Box 1, Folder 3.18  
Centrifugal-pump performance as a function of specific speed, by A.J. Stepanoff, Transactions of the A.S.M.E., 1943

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Box 1, Folder 4.7
Pressure distributions on the vanes of a radial flow impeller, by D.A. Morelli (prepared for presentation to the Heat Transfer and Fluid Mechanics Institute, Stanford University, ), 12 l. (typescript) June 1951

Box 1, Folder 4.8

b) Evaluation of a two dimensional centrifugal pump impeller, by John H. Beveridge, and Dino A. Morelli, (prepared for presentation at the Annual Meeting, New York, of the American Society of Mechanical Engineers), 8 l. (ASME Paper no.50-A-147) November 26-December 1, 1950

Box 1, Folder 4.9
Inadequacy of the conception 'The specific number of Revolutions', in the calculations concerning hydraulic turbo-engines, by Benjamin Meisel, Comm. de la Soc. Math. de Kharkof, Ser.4, T.12, pp.115-118 1935

Box 1, Folder 4.10
Blueprints and letters re Byron Jackson pump tests 1932-1939

Box 1, Folder 4.11
Thrust characteristics tabulations, by M. Ruth April 1941

Box 1, Folder 4.12
3 De Laval pump acceptance tests data; blueprints and calculations (handwritten notes)

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Box 1, Folder 5.1
Miscellaneous correspondence between M.P. O'Brien and R.G. Folsom and the Byron Jackson Pump Company, Los Angeles, re impellers, Also includes blueprints 1938-1943

Box 1, Folder 5.2
Blueprints; calculations; brochures on centrifugal pumps, Pacific Pumping Company, Portland and San Francisco 1939

Box 1, Folder 5.3
a) Calculations and blueprints on centrifugal pump efficiencies and specific speeds 1937
b) Tables, correspondence, graphs, etc. re Byron Jackson 12-inch pumps 1937

c) Tabulated data and pump curves, by F. Kinley

Box 1, Folder 5.4
Miscellaneous handwritten calculations on Byron Jackson pumps 1937-1938

Box 1, Folder 5.5
Centrifugal pumps, by Hans Lorenz

Box 1, Folder 5.6
Some types of centrifugal pumps, by Wm. O. Webber, Transactions of the A.S.M.E., Vol.XXVI, pp.764-800 1905

Box 1, Folder 5.7

Box 1, Folder 5.8
Dimensional analysis and the performance of centrifugal pumps and fans, by J. Jennings, The Engineer, pp.614-615 May 19, 1939

Box 1, Folder 5.9
Material on Goulds Pumps, curves and related information

Box 1, Folder 5.10
Miscellaneous notes, tables, charts, etc. on specific speed 1937

Box 1, Folder 5.11
History and development of the Grand Coulee Pumping Plant, by E.B. Moses

Box 1, Folder 5.12

Box 1, Folder 5.13
Predesign investigations of hydraulic features for Grand Coulee Pumping Plant, by G.J. Hornsby

Box 1, Folder 5.14
Development of the hydraulic design for the Grand Coulee pumps, by Carl Blom, Transactions of the ASME, 12 p. (ASME Paper no.49-SA-8) 1949

Box 1, Folder 5.15


Box 2, Folder 6.1
1:4 dredge pump model, Progress report #3: Experimental work made at the Bonneville Hydraulic Laboratory, by A.J. Gilardi June 16, 1936

Box 2, Folder 6.2

Box 2, Folder 6.3
Principles of pumping machinery, by M.P. O'Brien and R.G. Folsom, for M.E.127, Spring semester 1940, University of California, Berkeley dated December 1939

Box 2, Folder 6.4
4 photographs of dredge pump model March 1936

Box 2, Folder 6.5
Abmessungen der Pumpe und besondere Versuchseinrichtungen an der Pumpe, undated

Box 2, Folder 6.6
Potential flow through centrifugal pumps and turbines, by E. Sorensen, National Advisory Committee for Aeronautics, Washington, D.C., 35 p. (NACA Technical memorandum no.973) April 1941

Box 2, Folder 6.7
Contribution to regulation of centrifugal pumps and investigations concerning the theoretical and actual delivery head, by Wilhelm Siebrecht (Verlag, Berlin - Forschungsarbeiten, Number 321), translated by Fred Thompson, University of California, Department of Mechanical Engineering, Berkeley, 50 l. (typescript). (Works Progress Administration Project no.58, Translation no.187) 1929 September 15, 1936

Box 2, Folder 6.8
Alteration of fundamental equations, by C. Pfleiderer (in Die Kreisenpumpen, Berlin, Sections 41-47 Inc.), translated from German by E. Beatrice Barnes, University of California, Department of Mechanical Engineering, Berkeley, 57 l. (typescript). (Works Progress Administration Project No.6090-5070, Translation no.265.) 1932

Box 2, Folder 6.9

Box 2, Folder 6.10
Prediction of performance curves of high speed centrifugal pump runners, by C. Pfleiderer (VDI-Verlag GMBH, Berlin, ), translated by N.Y.A., University of California, Department of Mechanical Engineering, Fluid Mechanics Laboratory 1938 1938

Box 2, Folder 6.11
Miscellaneous notes, calculations, and photos of centrifugal pumps 1939-1941

Box 2, Folder 6.12
Determination of delivery load of centrifugal pumps, by Benjamin Meixel, translated by J.W. Cameron undated
Balanced design with double volute case centrifugal pumps, Byron Jackson
Newsletter, Vol.XII, No.21 September1, 1941

The evolution and development of the bladeless sewage and trash pump, by R.C. Glazebrook, Fairbanks, Morse Co., Chicago, Ill. November4, 1949

Delivery head ratios of radial centrifugal pumps with logarithmically spiral blades, by A. Buseman (Zeitschrift für angewandte Mathematik und Machanik, Band 8, Heft 5, ), translated by E.B. Barnes, University of California, Department of Mechanical Engineering, Berkeley, 28 l. (typescript).(Works Progress Administration Project No.6090-5970, Translation no.345) Oktober 1928 July 14, 1938


A review of slip factors for centrifugal impellers, by F.J. Wiesner, Transactions of the ASME, pp.558-572 October 1967


Performance of a mixed-flow impeller in combination with a semivaneless diffuser, by Eugene B. Laskin and Milton G. Kofskey, National Advisory Committee for Aeronautics, Washington, D.C., 8 p. (NACA Research memorandum E7C05a) April 4, 1947


Box 2, Folder 8.1  
**Pressure distributions on the vanes of a radial flow impeller**, by D.A. Morelli, prepared for Heat Transfer and Fluid Mechanics Institute, Stanford University, 9 1. Also includes misc. correspondence, and handwritten notes by Iversen June 1951

Box 2, Folder 8.2  

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Box 2, Folder 8.4  
**Head and flow observations on a high efficiency free centrifugal pump impeller**, by W.C. Osborne and D.A. Morelli 1949

Box 2, Folder 8.7  
Miscellaneous handwritten notes and outline on centrifugal pumps, by R.G. Folsom

Box 2, Folder 8.8  
Blueprints of axial thrust characteristics of Pump No.4 at variable clearance and speed; and efficiency and thrust ratio with plain impellers and with impellers with ribs, University of California, Department of Mechanical Engineering, Pump Testing Laboratory undated

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Box 2, Folder 9.1  
Miscellaneous calculations and design computations for pumps, Peerless Pump No.2 1938-39

Box 2, Folder 9.2  
Miscellaneous calculations, blueprints, etc. for Peerless Pump No.1 1938

Box 2, Folder 9.3  
Blueprints from the Food Machinery Corp., on ditch pump impeller, standard bowl, bowl vanes, suction manifold, diffuser cone 1938

Box 2, Folder 9.4  
Miscellaneous material, correspondence, tables, blueprints, graphs on propeller pumps 1934-36

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Blueprints of Byron Jackson Co. propeller pumps 1925, 1932

Box 2, Folder 9.6  
Miscellaneous correspondence, calculations, notes, on Byron Jackson Co. propeller pumps, 1936

Box 2, Folder 9.7  
Miscellaneous calculations, curves, notes, etc. on propeller pumps, 1936

Box 2, Folder 9.8  
**Graphic solution of the problem of design of impellers for propeller pumps**, by Charles F. Hains, for Mech. Eng. 199, University of California December 1938

Box 2, Folder 9.9  

Series 7. Losses in Centrifugal Pumps 1910-1953

Box 2, Folder 10.1  
**Principles of pumping machinery**, Chapter IV, (Centrifugal pumps), by R.G. Folsom and M.P. O’Brien December 1939

Box 2, Folder 10.2  

Box 2, Folder 10.3  
**Experiments on centrifugal pumps**, by Werner Krumnow (unpublished dissertation for degree of doctor-engineer), Translation by Peter Goedewaagen January 16, 1934

Box 2, Folder 10.5  
**Leakage in capillary seals of hydraulic valves and pumps**, by Paul G. Exline, reprinted from *Product Engineering*, April 1946

Box 2, Folder 10.6  
**Studies of submergence requirements of high-specific-speed pumps**, by H.W. Iversen, reprinted from the *Transactions of the ASME*, pp.635-641 May 1953

Box 2, Folder 10.7  
**Fluid flow friction factors for pipes, valves and fittings**, by V.L. Streeter, reprinted from *Product Engineering*, July 1947

Box 2, Folder 10.8  
**Resistance to rotation of disks in liquids**, by A.H. Church and S.A. Gertz, New York University June 1949
Box 2, Folder 10.9  Miscellaneous disk friction material 1950

Friction of flat discs rotated in water, by J.N. LeConte, *Journal of Electricity, Power and Gas*, pp.483-488. Folder also includes related correspondence December 3, 1910

Miscellaneous pamphlets on centrifugal pumps

a1) Carter self-priming centrifugal pumps, Ralph B. Carter Co., Bulletin nc.112 undated
a2) Carter self-priming centrifugal pumps, Ralph B. Carter Co., Bulletin no. 4310 July 1944
c) Gould pumps- priming methods, Goulds Pumps, Inc., Seneca Falls, N.Y., 780-2 June 30, 1941
d) Byron-Jackson double volute case centrifugal pumps, Byron Jackson Co., Los Angeles, Calif undated
e) Goulds Pumps - handy data on power pumping, The Goulds Manufacturing Co., Seneca Falls, N.Y. 1924

Box 2, Folder 10.12  Miscellaneous notes, calculations, comments, etc. re centrifugal pumps 1936

Box 2, Folder 10.13  Vorausbestimmung der Kennlinien schnellaufiger Kreiselpumpen, von C. Pfleiderer, Mit 33 Bildern im Text, Berlin 1938

Box 2, Folder 10.14  Notes on Chapter IV, Spiral casing of centrifugal pumps


Box 2, Folder 10.16  a) Note on hydraulic machinery shock losses, 1922; excerpt from *Aus der Ingenieurforschung*: “Über den Einflub der Lage der Eintrettskenten von Kreispumpenschaufeln und Dauerstandfestigkeit von Stählen,” pp.1505-1506
b) "Pumpen-Spiralgehäuse mit Drallströmung," *Aus der Ingenieurforschung*, pp.391-392 March 1937

Box 2, Folder 10.17  Operation of centrifugal boiler-feed pumps, by Hans Gartmann, reprinted from *Combustion*, January 1941

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<td><em>Critical speeds of shafts in fluids</em>, by Levi James Knight, Jr., (unpublished Master's thesis), University of California, Department of Mechanical Engineering 1938</td>
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<td><em>What we make: Sturtevant puts air to work - Sturtevant Condensed Catalog Engineering Data</em>, B.F. Sturtevant Company, Hyde Park, Boston, Mass., 200 p. (Catalog no.500) 1945</td>
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<td>Box 3, Folder 13.5</td>
<td><em>Presentation of centrifugal-compressor performance in terms of nondimensional relationships</em>, by B.E. Del Mar, <em>Transactions of the A.S.M.E.</em>, pp.483-490 August 1945</td>
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<td><em>Ejectors for solvent recovery operations</em>, by J.R. Shields, ASME, pp.20-29 Spring 1947</td>
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*An electrical dynamometer for the direct measurement of mechanical power, torque and rpm for very high shaft speeds - (A description of the amplifying system and controls is given in Volume 25 of this series)*, by B. Eckert (Volume 1 of a series of articles on compressor and fan design written by German engineers), U.S. Navy Department, Washington, D.C. May 1946

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a) References: centrifugal pumps with viscous fluids, by A. Elvitsky for ME 271 Spring 1953

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Box 5, Folder 25.1  Folder containing material re water hammer, including: Bibliography, water hammer; Chapter 9, "Hydraulic dam, pp.9.1 and 9.2, 9.19A, B, C; miscellaneous charts, graphs, and figures on hydraulic constants, Folsom notes on water hammer 1939; 1947

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Box 5, Folder 25.3  Pelton surge suppressor, by F.H. Rued, The Pelton Water Wheel Co., San Francisco undated

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Box 5, Folder 25.19  Comparisons between calculated and test results on water hammer in pumping plants, by O. Schnyder, reprinted from Transactions A.S.M.E., pp.695-700 November 1937

Box 5, Folder 25.20  a) Water-hammer pressures in compound and branched pipes, by Robert W. Angus, American Society of Civil Engineers Papers, pp.133-169 January 1938

Box 5, Folder 25.21  b) Kreitner's diagram for water-hammer problems, by Robert W. Angus, Mechanical Engineering pp.781-782 1935?

Box 5, Folder 25.22  New aspects of maximum pressure rise in closed conduits, by S. Logan Kerr, Transactions of A.S.M.E, pp.13-30. (HYD-51-3) 1928
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<tr>
<td>Box 5, Folder 27.1</td>
<td>Air chambers and valves in relation to water hammer, by R.W. Angus, in Transactions of the A.S.M.E., pp.661-668. (HYD-59-8) 1937</td>
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<td>Box 5, Folder 27.2</td>
<td>Air chambers for discharge pipes, by Lorenzo Allievi, in Transactions of the A.S.M.E., pp.651-668. (HYD-59-7) 1937</td>
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<td>Pump, Patent no.1,730,337, by Toribio Bellocq, Buenos Aires, Argentina. Application filed August 30, 1928</td>
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<td>Box 5, Folder 27.5</td>
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<td>Box 5, Folder 27.6</td>
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<td>Box 5, Folder 27.7</td>
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<td>Box 5, Folder 27.8</td>
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<td>Box 5, Folder 27.9</td>
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<td>Water hammer in pipe lines; studies extended to include effects of imperfect reflection at discharge end, friction, non-uniform change of valve opening and imperfect action of discharge opening as a nozzle, by W.F. Durand, Engineering News-Record, Vol.85, No.26, pp.1212-1216 December 23, 1920</td>
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<td>Box 5, Folder 27.11</td>
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<td>An extension of the theory of water hammer, by R. Skalak, American Society of Mechanical Engineers, N.Y., N.Y. April 1955</td>
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<td>Box 5, Folder 27.13</td>
<td>a) Water hammer, by N. Joukovsky, translated by O. Sinnin 1898</td>
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<td>Box 6, Folder 27.14</td>
<td>Water hammer investigation, by Gosline, Deming, Trolese, Schullerts, Coit, Kirchhoff, McGlynn March 1930</td>
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<td>Box 6, Folder 27.15</td>
<td>Notes on 2&quot; water hammer experiments, including: original data, computed data, oscillograph films and pictures, and notes of Prof. LeConte, prepared by L. Laine April 1934</td>
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Box 6, Folder 28.1 | Folder containing articles in re water hammer: Longitudinal wave transmission and impact, by L.H. Donnell, ASME Paper APM-52-14 1930 Photocopy of Chapter XIV-(Section E), Hydraulic Ram, from The control of Water, by P.M. Parker Effect of speed regulation and water hammer on the design of relief valves, penstocks and surge tanks, Hydraulic Power Committee 1926-27 Graphical records of surge pressures in pipe lines, by R. Bennett, Engineering News-Record, Vol.82, No.22. pp.1048-1216 The calculation of pressure surges in pipelines, by P. de Haller June 1929 |
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Box 6, Folder 28.4
Folder containing miscellaneous notes, translations, abstracts, etc. on water hammer, acoustic waves, surges 1909-1910, 1917, 1928-1929

Box 6, Folder 28.5
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Box 6, Folder 28.6
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A perpetual water supply without fuel, oil or repairs, advertisement from Rife Hydraulic Engine Manufacturing Company, New York 1929

Box 6, Folder 29.5
Photocopy of Chapter XIV-(Section E), Hydraulic Ram, taken from Control of water. pp.842-853

Box 6, Folder 29.7
Experiment H-17, Hydraulic ram, University of California, Hydraulic Laboratory undated
Box 6, Folder 30.1  Figures 24-33 and Runs of Film - illustration for O'Brien and Gosline hydraulic ram 1933
Box 6, Folder 30.3  Hydraulic ram test; party report, by E.Y Soomil and R.P. Work, for ME 131, University of California April 1935
Box 6, Folder 30.4  Hydraulic ram test calculations, by E.Y Soomil, for ME 131B, University of California April 1935
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Box 6, Folder 30.7  Notes for Hydraulic Ram HE-14, includes working sheets by Soomil and Work April 1935
Box 6, Folder 30.8  Hydraulic ram data, August 1931

Series 27. Rotary Pumps 1891-1968

Box 6, Folder 31.1  Folder containing types of positive displacement pumps; descriptions, advertisements, figures, papers, articles 1931-1946
Box 6, Folder 31.2  Rotary pumps for light liquids, by William J. McGraw, for M.E. 127, University of California May 1942
Box 6, Folder 31.3  Utility of variable-displacement oil-pressure pumps for hot-pressing in plywood operations, by Elek K. Benedek, Transactions of ASME, pp.89-95. (WDI-56-2) 1933
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Box 6, Folder 31.14  Folder containing material re reciprocating pumps theory, includes:
Letter (copy) of to D.R.A. Jones, Southern California Gas Company, from R.G. Folsom, acknowledging gear pump data June 6, 1942
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Box 6, Folder 32.1  Articles on pumping, published by the American Society of Mechanical Engineers: Performance criteria for positive-displacement pumps and fluid motors, by W.E. Wilson, (48-SA-14) 1948
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Some characteristics of rotary pumps in aviation service, by R.J.S. Pigott 1944

Effect of aeration on gear-pump delivery and lubrication ceiling, by P.H. Schweitzer 1944

Power consumption of boiler-feed pumps, by K.A. Mayr, (FSP-50-44) 1944

Proposed expressions for Roots' Supercharger Design and efficiencies, by F.A. Hiersch 1943

“The modern hydraulic reservoir: how it provides micron-range filtration and pump supercharging, by W.W. Thayer 1943

High- and low-pressure airplane hydraulics in Europe, by J. Mercier 1943

Problems in modern deep-well pumping, by C.J. Coberly, (PME-60-2) 1938

Determination of the rate of discharge in jerk-pump fuel-injection systems, by K.J. Dejuhasz, (OGP-60-2) 1938

Plunger lift for pumping deep wells, by H.W. Fletcher, (PME-58-1) 1936

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Measuring volumes of low-pressure air, by E.H. Oneal and C.T. Todd, Engineering and Mining Journal, August 14, 1926
A study of temperature in a two-stage air compressor, by W.S. Weeks, C.F. Milisich, and H. LeC.Berteaux, Engineering and Mining Journal, May 9, 1925
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University of California pump-testing laboratory, by Richard G. Folsom, Mechanical Engineering, pp.301-305 April 1938
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Report on electrical submergible-motor centrifugal pumps for oil-well pumping, submitted by B.H. Hellier, for M.E. 127, University of California May 2, 1942

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Letter of to R.G. Folsom from G.C. Schneider (Barrett, Haentzens Company) re vertical pumps March 5, 1945

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a) "Bibliography of paper making, by C.J. West, for M.E.127, University of California 1928-1935,"
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Box 7, Folder 35.3
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a) Letters from R.T. Hancock to R.G. Folsom, re: Transportation of sand in pipe lines, June 1938

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