



ALAN HITCHCOX | Editor



# Fluid Power TIMELINE\*

Although pneumatics technology was born during the industrial revolution of the 1800s, modern hydraulics is a child of the 20th century. This timeline presents some of the key events that occurred just before and during 70 years since *Hydraulics & Pneumatics* emerged as the continuing authority in fluid power technology.

1945

OCTOBER

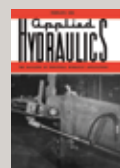
The Illinois Institute of Technology's Armor Research Foundation holds the first Annual Meeting of the National Conference on Industrial Hydraulics. Later known as the National Conference on Fluid Power, ownership eventually is transferred to the National Fluid Power association.



1948

FEBRUARY

Inaugural issue of *Applied Hydraulics* magazine is published by the Technical Publishing Co., Cleveland.



The Joint Industry Council (JIC) publishes the first set of standardized symbols for drawing hydraulic circuits. Although limited in scope, the symbols easier to draw and interpret than sectional views of components. A similar set of symbols for pneumatics is introduced in 1950.

1950

JULY

Paul Rolnick is hired as associate editor. Rolnick was probably the most influential staff member of the magazine. Hired just a year after he graduated from Case Institute of Technology with a BS in mechanical engineering, he rose through the ranks to become chief editor, publisher, and eventually executive vice president of parent company Penton Media. Along the way, he was a founding member of the National Fluid Power Association and honored to receive NFPA's achievement award in 1984. Rolnick was also a founding member of the Fluid Power Society and served as its president in 1968. He helped create the *Fluid Power Handbook & Directory* and the Annual Designers Guide to Fluid Power Products.



1952

DECEMBER

*Applied Hydraulics* launches its annual Prize Paper Contest. Readers submit technical papers, which are rated by technical experts serving on a panel of judges. Cash prizes of \$1,200 were awarded each year.

1953

MAY

The National Fluid Power Association is founded at its first annual meeting in Bedford Springs, Pa., with representatives from 32 fluid power companies.



1955

OCTOBER

The first edition of the *Fluid Power Handbook & Directory* is published and contains tutorial technical information about hydraulics and pneumatics technologies and extensive directories to products, manufacturers, and distributors. It is still published in every other December issue and also available online.



1957

JANUARY

*Applied Hydraulics* publishes its first annual Quick Guide to Product Selection (which is later renamed the Fluid Power Designers Guide)—containing dozens of fluid power product categories and hundreds of specifications—and the accompanying Manufacturers Index.

1958

OCTOBER

Beginning with the very first issue, *Applied Hydraulics* has covered pneumatics technology in every issue, so the magazine's name is officially changed to *Applied Hydraulics & Pneumatics* to more accurately describe its scope.



1959

JANUARY

The first full-color advertisement appears in the January issue of *Applied Hydraulics & Pneumatics*.

1960

MAY

The Fluid Power Society is founded in Detroit, by 30 professionals interested in supporting the future of the fluid power industry and the ever-changing technologies involved. Today, its mission is to continue enhancing the quality of certifications, educational opportunities, technology evolution, and professionalism within the fluid power community.



JUNE

*Applied* is dropped from the magazine's title, making it what it is today, simply *Hydraulics & Pneumatics*.

1962

The Milwaukee School of Engineering (MSOE) establishes the Fluid Power Institute, with Russ Henke, P.E., serving as its first director. That same year MSOE awards the first degree in fluid power.

1966

ANSI Y32.10 is published, instructions and a set of standard symbols for drafting hydraulic and pneumatic circuits. Designers could now illustrate detailed functionality using simple symbols, which also provided a valuable troubleshooting aid.

1967

The Fluid Power Hall of Fame is dedicated at the Milwaukee School of Engineering.

Starting with a 6,000 ft<sup>2</sup> former tobacco warehouse, Rexroth's first official facility in the United States opens in Easton, Pa.



1971

OCTOBER

*Hydraulics & Pneumatics* publishes a news article describing the first modern application of hydraulics. Waterbury Tool, founded in 1898, produced the first workable hydraulic power drive in 1903, later known as the Waterbury transmission. The first installation of this new drive occurred in 1906 to train (aim) and elevate the guns of the battleship USS Virginia. The USS Virginia was intentionally sunk by the U. S. Army Air Corps. in a training exercise on September 5, 1923. Go to [bit.ly/Virginia\\_sinks](http://bit.ly/Virginia_sinks) to view a video of the sinking.\*

1973

SEPTEMBER

The first-ever national exhibition dedicated to fluid power technology in the US is held in Cleveland Sept 25 to 27. Held in conjunction with the 29th National Conference on Fluid Power, the *Hydraulics & Pneumatics Show* houses 123 exhibitors and hosts an estimated 4,000 visitors.



1974

The Fluid Power Distributors Association is founded as a distribution-centric collaborative organization dedicated to delivering networking, education, best practices and business intelligence designed to enhance business performance.



1976

Industrial Publishing Co., H&P's parent company, is merged with Penton Publishing to become Penton/IPC. The IPC was later dropped. Rexroth is acquired by Mannesmann AG to become Mannesmann Rexroth.



1979

JUNE

Mannesmann Rexroth purchases what would become the Mobile Hydraulics Division in Wooster, Ohio from Borg-Warner Inc.

1980

The Fluid Power Society releases its first certification program, Fluid Power Specialist. Ray Hanley, FPS VP of Certification, later leads efforts to expand certification into several different levels and functions.

1983

Robert Bosch Corp. adds Racine Hydraulics to its U.S. portfolio and later renames the company Bosch Fluid Power Corp.



1984

JANUARY

The exclusive regional advertising program is adopted for *Hydraulics & Pneumatics*, where distributors sponsor every issue in a calendar year. H&P is the only original brand to still offer this unique opportunity for distributors to sponsor back-cover advertising for the regions they serve.

1985

JUNE

The first annual meeting of the NAHAD (The Association for Hose Accessories and Distribution) is held at the Opryland Hotel in Nashville, with Harry O. "Buzz" Hooper serving as the first president.



1988

OCTOBER

The National Fluid Power Association holds its first national trade show, The International Fluid Power Exhibition (IFPE) at Chicago's McCormick Place East.



1989

Mannesmann Rexroth opens Brueninghaus Hydromatik in Fountain Inn, S. C., which is now Bosch Rexroth's main mobile hydraulics manufacturing in North America.



1993

JANUARY

The first installment of *Motion Control* is published. Authored by Jack Johnson, P.E., an electrohydraulic specialist and former director of MSOE's Fluid Power Institute, the column primarily covers closed-loop electrohydraulic control systems and components and mathematical modeling of them.

1996

JULY

The first high-resolution image downloaded from the internet is published in an article describing the hydraulic system used in a train promoting the 1996 Olympic Games to be held in Atlanta.



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**1997**

**JANUARY**

*Hydraulics & Pneumatics* launches its first website, offering global access to much of the same content published in the magazine and a continually updated online version of its Designer's Guide to Fluid Power Products.



**2001**

Bosch Rexroth is founded when Robert Bosch GmbH acquires Rexroth from Mannesmann and merges it with Bosch Automation Technologies.



**2002**

**MARCH**

NFPA holds its first IFPE in conjunction with ConExpo/ConAgg at the Las Vegas Convention Center. IFPE will now be held every three years instead of every four.

**2006**

The Center for Compact & Efficient Fluid Power is founded at the University of Minnesota.

**2008**

Bosch Rexroth acquires Hågglunds Drives AB and Rineer Hydraulics Inc., adding important breadth to the company's hydraulics product offerings.



**2010**

**OCTOBER**

*Troubleshooting Challenge*, a popular column authored by Robert Sheaf Jr., fluid power design and troubleshooting expert, debuts and quickly becomes a popular monthly addition to *Hydraulics & Pneumatics*.

**2011**

NAHAD launches the Hose Safety Institute. Supported by an Advisory Council of end users, it manages guidelines, online exams, white papers and other resources.

**2012**

**JUNE**

ISO 1219-1:2012 replaces ANSI Y32.10 as the standard of fluid power symbols and practices for drawing functional schematic diagrams, which is still in use today.

**2013**

**FEBRUARY**

NAHAD publishes the Hose Safety Institute Handbook, which contains 312 pages of information on hose assembly, recommendations, data-sheets, and hundreds of useful images.



**2013**

Bosch Rexroth completes a major expansion at its Fountain Inn campus to meet growing demand for mobile hydraulics products.



**2014**

**MARCH**

The last National Conference on Fluid Power is held in Las Vegas in conjunction with IFPE 2014.

**2016**

**OCTOBER**

Informa PLC, a UK-based corporation, acquires Penton, bringing H&P into a much larger group of publications, including the *International Journal of Fluid Power*.

**2017**

Bosch Rexroth celebrates 50 years in the U.S., a testament to essential contributions from distributor partners and associates.



**2018**

**MARCH**  
Our next issue will explore the wide variety of hydraulic power units driven by variable-speed electrical drives as a means of reducing power consumption, reducing noise, and increasing life and reliability of hydraulic systems.

ROSS CONTROLS  
RETRO AD

