



Pioneer Award presented to John Olsen



Dr. David Summers (left) presents Dr. John Olsen with the WJTA 1991 Pioneer Award

John H. Olsen, Ph.D., of Vashon, Washington, is the 1991 recipient of the Water Jet Technology Association's prestigious Pioneer Award. Dr. Olsen is recognized for his achievements in the development of water jetting equipment, particularly intensifiers. The award was presented by WJTA Chairman of the Board, David A. Summers, Ph.D., during the WJTA Awards Banquet on August 26, 1991.

Dr. Olsen's involvement with water jet technology began when the science was new to industry. In 1970, he and colleague Ben Thomas began working to develop a high pressure pump for use in cutting concrete. They worked on

(continued on page 8)

In this issue

WJTA Conference Exhibition	pg. 4
Conference Technical Tour ..	pg. 5
News from WJTA members	pg. 10
Conference sponsors	pg. 11
'91 Conference Proceedings available	pg. 12

From the president's desk...

The Sixth American Water Jet Technology Conference was held at the Westin Galleria, in Houston, Texas, August 24-27, 1991. The conference was very successful, thanks to the effort of the organizing committee and those of our management company, David Birenbaum & Associates. A record was achieved in the number of exhibitors and registrants.

There were 427 registrants from 16 countries including Australia, Austria, Canada, Czechoslovakia, England, France, Japan, Germany, India, Italy, Mexico, Portugal, Russia, Sweden, the United States, and Venezuela. There were 37 U.S. states represented at the conference.

6th AMERICAN WATERJET TECHNOLOGY CONFERENCE



Ribbon-cutting ceremony officially opens the Conference Exhibition Hall. Pictured from left are Conference Chairman Thomas J. Labus, WJTA President George A. Savanick, Ph.D., and WJTA Chairman of the Board David A. Summers, Ph.D.

The conference consisted of a short course, a program on research and development papers, a special session for water-jetting contractors, an exhibition of equipment and supplies, a banquet, and a tour to view the operation of jetting equipment.

The conference opened with a short course on the Fundamentals and Applications of Fluid Technology. Instruction was given to 137 students on the history of fluid jets, fluid mechanics of jets, abrasive jets, high-pressure equipment and safety, and the industrial applications of fluid jetting.

The Association thanks Thomas Labus for organizing the course and his co-lecturers, Dr. David Summers, Dr. Mohamed Hashish, Dr. Michael Hood, and John Wolgamott for an informative day.

(continued on page 2)



Conference Chairman Thomas J. Labus.



Andrew F. Conn, Ph.D., organizer of the Contractors Program.

From the president's desk, from page 1



137 participants attended the Fluid Jet Technology Short Course.

The 137 students received a copy of the new textbook *Fluid Jet Technology Fundamentals and Applications* edited by Thomas Labus and published by the Water Jet Technology Association. This book is in looseleaf format so that it can be updated for future short courses. Copies are available to WJTA members for \$55 (\$70 for nonmembers) plus shipping and handling.

Research and development papers were presented, 42 in total, on many aspects of water jetting including abrasive jets, mining and tunnelling, high-pressure equipment, construction applications, and novel applications. These papers are published as the *Proceedings of the Sixth American Water Jet Conference*. This volume is available from the Association office to WJTA members for \$75 (\$90 for nonmembers) plus shipping and handling.

The special session for contractors was very heavily attended and well received. The Association thanks Andrew Conn for suggesting and organizing this innovative forum. The Association considered this session to be an experiment designed to appeal to the practical water jetter. The obvious success of the experiment assures that similar special sessions will be held at future conferences.

A banquet was held at which the Pioneer Award was presented to John Olsen for his contribution to the development of intensifiers for water jetting.

An exhibition of water-jetting equipment, supplies and services attracted 31 exhibitors. The exhibition hall was the venue for luncheons, coffee breaks and a lot of information exchange between waterjetters.

A field trip was taken to witness the operation of jetting equipment. A large and appreciative group of water jetters was treated to an afternoon of well-staged demonstrations of new equipment. The Association thanks NLB, Jet Edge, Butterworth, and Aqua-Dyne for their hospitality.

A new Board of Directors and set of officers were elected for the 1991-1993 biennium. The new administration is listed to the left of this article. Note that two new members have joined the Board. Bill Hall, of Jet Edge, and Thomas Kim, of the University of Rhode Island, replace Damon Schroter and Evette Steele, who did not seek re-election. The Association hereby thanks Mr. Schroter and Ms. Steele for their effective service.

Related Conference articles and photographs appear throughout this issue.



Dr. W. Glenn Howells offers a toast to the success of the Conference.

Administration

Chairman of the Board

Dr. Mohan Vijay
(613)993-2731

President/Newsletter Editor

Dr. George Savanick
(612)725-4543

Vice-President

Thomas J. Labus
(414)275-5572

Secretary

Dr. Andrew F. Conn
(301)484-3628

Treasurer

John Wolgamott
(303)259-2869

1990-1993 Directors

William Hall (612)545-1477	Forrest Shook (313)624-5555
Dr. Mohamed Hashish (206)872-4900	Dr. David Summers (314)341-4311
Dr. Thomas J. Kim (401)792-2524	Dr. F. D. Wang (303)273-3653
George Rankin (713)864-6929	

Association Manager

Mark S. Birenbaum, Ph.D.
(314)241-1445

When you need quality High Pressure Valves, Fittings and Tubing delivered on time . . . specify Autoclave Engineers

In the water jet industry, it's mandatory you have reliable high pressure components capable of operating at pressures to 60,000 psi. Autoclave Engineers has more than 40 years experience in high pressure technology. We build our valves and fittings by the book . . . our Quality Control Manual, because we have high regard for high pressure and for our water jet customers. This manual is your assurance you are getting the highest quality product available . . . at any cost.

Autoclave has a wide range of high pressure components for the water jet industry in addition to our valves, fittings and tubing. Autoclave also is a source of supply for manifold blocks and valves, accumulators attenuators and custom articulation coils. Eleven coned and threaded tubing sizes are available as well as all types of specialty and custom designed high pressure products. Autoclave is your one-stop source for quality high pressure components. And we ship from stock to arrive just-in-time to meet your schedule.

Remember, the Autoclave difference is in the book — and in the valve. For additional information, contact:



**Autoclave
Engineers** 

Autoclave Engineers, Inc. 2930 W. 22nd St.
Box 4007 Erie, PA 16512 USA (814) 838-2071

Hundreds of industry professionals visited the WJTA Exhibition Hall to see and learn more about the latest water jetting equipment and supplies. Thirty-one companies, from the U.S. and abroad, participated in the Exhibition. Following are photographs of some of the exhibitors.



Over 400 people visited the WJTA Exhibition Hall



Autoclave Engineers



Ingersoll-Rand Water Jet Cutting Systems



CRS Power Flow



Aqua-Dyne, Inc.



Hammelmann Corporation



General Pump



BuTech Pressure Systems



StoneAge Inc.

Scenes from the Conference Technical Tour



Dear JET NEWS:

During the just-concluded Sixth American Water Jet Conference in Houston, I was approached by many attendees requesting to know methods by which long-chain polymeric additives could be introduced into water-jetting systems.

It might be useful to the members of the Association to know that injection systems are available from Utah Metering Systems at the following address:

485 East 1200 North
Logan, UT, USA, 84321

Mr. David Hibshman is a mechanical engineer with this company and has been involved with triplex and similar pumps, as well as intensifier systems for over a decade. He will be pleased to discuss specific systems with Association members.

Sincerely yours,

W. Glenn Howells, Ph.D.

HYDRO ENVIRONMENTAL
SERVICES
LIMITED PARTNERSHIP

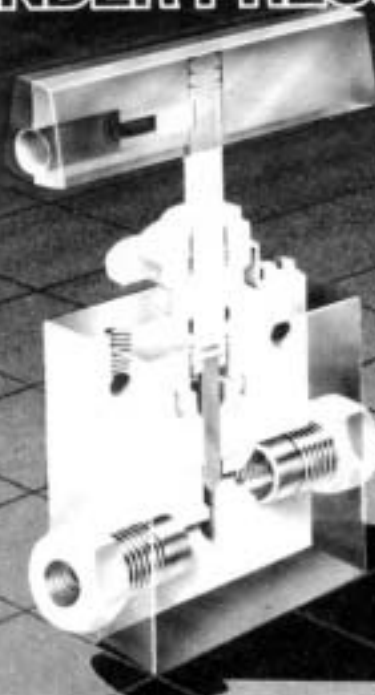


Hydro-Services

P.O. BOX 308
Missouri City, TX 77459
713/499-8611
Fax: 713/499-0293

High pressure
waterblasting
services and equipment
sales

Performance **UNDER PRESSURE**



To illustrate a point, Butech high pressure valves and fittings take water jet technology to the extremes. Our all corrosive resistant construction, with a choice of exotic alloy stem tips, guarantees long lasting pressure performance under extreme conditions. The non-rotating stem design, with adjustable packing below threads, allows precise control of gas and liquid flow at pressures from vacuum up to 150,000 psi. A variety of configurations and end connections are readily available.

We also offer a complete line of high pressure fittings, carefully engineered to meet all of your specific requirements.

When you need to take water jet technology to the extremes, call Butech. Because when the pressure's on . . . Butech performs.

 **Butech**
PRESSURE SYSTEMS

4928 Pittsburgh Avenue • Erie, PA 16509 • 814/833-4904 • FAX 814/833-2612

the cutting edge in

Garnet Abrasives

CG Garnet — *Aggressive abrasives
engineered for mobile applications.*

HP Garnet — *Finer, tightly graded
abrasives for precision cutting.*

- ◆ *The world abrasive standard since 1878.*
- ◆ *At the cutting edge of waterjet technology
since its commercial inception.*
- ◆ *Products & experience to dramatically
improve your cutting operations.*

Find out why
Barton should be your choice!
Schedule an evaluation today.

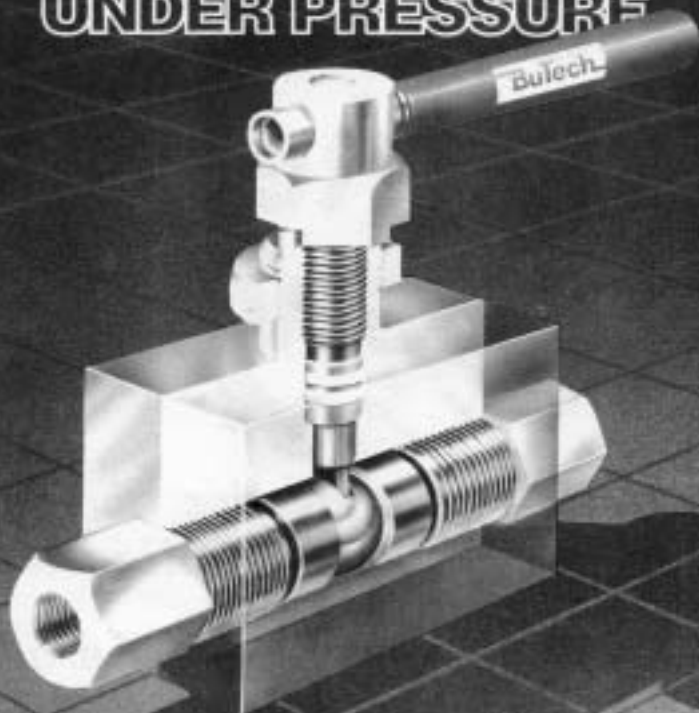
(518) 251-2296

Fax: (518) 251-3655

Barton Mines Corporation
North Creek, New York 12853

Barton

Performance UNDER PRESSURE



To illustrate a point, Butech ball valves are the ultimate in design and performance. Our 316 cold drawn stainless steel construction assures long lasting pressure performance. The blow-out proof stem and ball design, with 1/4 turn positive shut-off, guarantees precise control of liquid or gas flow up to 20,000 psi. A variety of configurations and end connections are readily available.

We also offer a complete line of high pressure fittings, carefully engineered to meet all of your specific requirements.

When you're ready for the ultimate design and performance in high pressure ball valves and components, look to Butech. Because when the pressure's on . . . Butech performs.



4928 Pittsburgh Avenue • Erie, PA 16509 • 814/833-4904 • FAX 814/833-2612

Pioneer Award, from page 1

the project part-time after the concept was rejected as a research project by Boeing Scientific Research Laboratory where Olsen was a research scientist and Thomas was the manager of Boeing's research and development shops. Dr. Olsen designed the intensifier and Thomas built it. The first unit was powered by a power take-off on Olsen's jeep and was tested outdoors with a wheelbarrow as a test stand.

A year later, Dr. Olsen and Thomas teamed up with Mike Pao, another Boeing colleague. Pao had founded Flow Research to perform research and development in fluid mechanics, and he was seeking products for his new company. Dr. Olsen continued to improve the pump and set up the manufacturing operation.

Complete cutting systems were the major marketable water jet cutting equipment in the early days of the technology. To help accommodate the demand, Olsen spent the next few years designing and developing water jet cutting machinery and accessories. A business emerged and Flow Systems was spun off from the research company.

Dr. Olsen's career with Flow has been primarily as a technical manager. He also served as the general manager of Flow's Taiwan manufacturing operation.

Dr. Olsen received his doctoral degree in mechanical engineering from the Massachusetts Institute of Technology, Cambridge, Massachusetts, in 1966. An author of numerous papers regarding water jet technology, Dr. Olsen has taught educational programs at the National Chiao-Tung University in Hsinchu, Taiwan and at the Massachusetts Institute of Technology.

Dr. Olsen is the president and owner of Pacific Concrete Products, Inc., a small manufacturing company producing pressed concrete products, in Kent, Washington.

Dr. Olsen's pioneering experiments continue. He is developing a Stirling cycle engine generator set which he began working on in April 1986. He is also designing equipment for the Seattle-based Abrasive Jet Machining Company and serves as a consultant to Flowdril Corp., working to improve that company's water jet oil field drilling equipment.

GARNET

For Water Jet

High Performance!
Fast Delivery!
Better Service!
Best Price!

#80 #HP80

\$360 per ton

Discounts on large repeat orders

Let Our Technical Service Associates Help Make
You More Profitable
with "NEW"

HYDRO-K Nozzle



International Garnet

P.O. Box 1386

New Bern, NC 28560

Telephone: (800)252-9288

Fax: (919)633-3905

Branches in: Harvey, Louisiana – Keasville, New York and soon to open in California.

News from WJTA members

Autoclave Engineers now offers a new large bore 8/6H high pressure flexible hose for waterjet applications featuring an 8MM (0.31") bore for 36,250 psi operating pressure and 90,625 psi burst pressure. Contact Autoclave Engineers, 2930 W. 22nd Street, Erie, PA 16506, (814)838-5700.

Autoclave products are now available from Guico Specialty Co., Inc., a full-service distributor for high pressure flexible hose. Contact Guico, 104 Kol Drive, Broussard, LA 70518, (318)837-2161.

BuTech Pressure Systems' new pipe catalog is now available. Contact BuTech Pressure Systems, 4928 Pittsburgh Avenue, Erie, PA 16509-6207, (814)833-4904.

Butterworth Jetting Systems has introduced a new 350-400 HP Tri-plex pump. Butterworth also offers a water-powered swivel for hand-held and hydro-mower (20,000 psi) jets. Contact Butterworth, P.O. Box 230312, Houston, TX 77223-0312, (713)644-3636.

CRS Power Flow now offers the LS-Series Control Gun with the "VSS" cartridge, featuring an easy-to-replace valve/seat cartridge for quick 30-second overhaul and a trigger safety latch for safer operation. The cartridge is easily rebuilt for great cost savings. Contact CRS Power Flow, 6989 West Little York, Suite T, Houston, TX 77040, (713)939-1631.

New faces at **Flow International Corporation** - Former Governor and Senator, Daniel J. Evans of Daniel J. Evans Associates, and Kenneth M. Roberts

(continued on page 11)

STONEAGE WATERJET ENGINEERING

Manufacturers of tools and components for waterblasting. Specializing in rotary equipment and mechanized cleaning systems.

TUBE BUNDLE LANCING MACHINES

TANK CLEANING NOZZLES

ROTARY LINE MOLES

HIGH PRESSURE WATER SWIVELS

ROTARY NOZZLE HEADS

Call or write:

(303) 259-2869 FAX (303) 259-2868

54 Girard Street · P.O. Box 2907 · Durango, Colorado 81302

— WANTED —

Used and Surplus Waterjet Equipment

Will pay cash for:

Flow Systems Pumps and Parts

Cutting Tables

Control Systems

Send equipment list to:

Belco Manufacturing Inc.

156 Tunnel #1

Berkeley, CA 94705

News from WJTA members, from page 10

Advisory Group, have joined Flow's Board of Directors. J. Ronald McLain has been named Flow's marketing manager. Fred Nussbaum is the new regional sales manager for Flow's Great Lakes Territory, including Michigan, Ohio, Indiana, Kentucky, West Virginia, and western Pennsylvania.

General Pump recently acquired Pratisoli Pumps which allows the company to sell higher pressure pumps. A new model that operates at 17,400 psi at 11.6 gpm is expected to be available in early 1992. Contact General Pump, 1335 Mendota Heights Road, Mendota Heights, MN 55120, (612)454-6500.

Ingersoll-Rand Water Jet Cutting Systems introduced a new-phased intensifier, Streamline PHASE III, at the 6th American Water Jet Technology Conference in August. Streamline is the first compact, fully-integrated system with a high quality pressure signal for water jet cutting. The unit measures just 24" x 50" x 62" and is easily installed and serviced. The Streamline has two independent piston/plunger assemblies and uses Ingersoll-Rand's propriety "phasing" technology to eliminate pressure drops. For information, contact Paul Ashe, Ingersoll-Rand Water Jet Cutting Systems, 23629 Industrial Park Drive, Farmington Hills, MI 48335, (800)826-9274.

Damon Schroter is the new manager of technical services at Ingersoll-Rand Water Jet Cutting Systems, Baxter Springs, Kansas. **Mike Dixon** will assume Schroter's previous duties.

Pipeline Supply offers a specially designed PSS Flexible Track Cutting System especially designed for high power cutting. Contact Pipeline Supply, P.O. Box 301130, Houston, TX 77230-1130, (713)747-0090.

(continued on page 12)

Many thanks to the sponsors of the 6th American Water Jet Technology Conference

American Powerlance
Houston, Texas

Aqua-Dyne Inc.
Houston, Texas

Dowell-Schlumberger Inc.
Houston, Texas

Flow International Corp.
Kent Washington

**International Society of
Water
Jet Technology**
Ottawa, Canada

**Toyo Glass Machinery Co.,
Ltd.**
Yokohama, Japan

WATER JET ORIFICES

FOR HIGH PRESSURE CUTTING AND CLEANING

PRECISION SAPPHIRE ORIFICE ASSEMBLIES

READY FOR INSTALLATION INTO YOUR

WATER JET SYSTEM



524 TINDALL AVENUE
TRENTON, N.J. 08610

PHONE (609) 396-1577

FAX (609) 695-4339

WJTA Conference participant list

A complete list of participants in the 6th American Water Jet Technology Conference is available to WJTA members FREE of charge. The list is printed in alphabetical order by participant name and includes mailing addresses.

Pressure sensitive mailing labels are also available for a fee of \$50. To obtain a list or set of mailing labels, contact the WJTA Office.

One must not tie a ship to a single anchor, nor life to a single hope.

-Epictetus

GARNET

The
abrasive
with
GRIT

Almandite Jet Cut Garnet

Our jet cut brand is the answer. Expect high productivity with our jet cut almandite garnet grains for high pressure water jet cutting applications. Our jet cut brand is the hardest, sharpest, heaviest, fastest cutting and cleanest of the garnet family. High density and high kinetic energy. Sizes from 8 through 250 mesh. 100 lb. bags. Sales Representative for Emerald Creek Garnet. For more information contact:

Myers Metals & Minerals, Inc.
Norton Building
801 Second Ave., Suite 1505
Seattle, Washington 98104
TEL: (206)622-2278
FAX: (206)682-8829
TLX: 759030

WJTA 1991-1993 Officers, Board of Directors



Pictured from left: John Wolgamott; George A. Savanick, Ph.D.; Thomas J. Labus; Mohamed Hashish, Ph.D.; Mohan Vijay, Ph.D.; William Hall, Jr.; Andrew F. Conn, Ph.D.; George Rankin; David A. Summers, Ph.D.; Thomas J. Kim, Ph.D.; and F.D. Wang, Ph.D.

News from WJTA members, from page 11

Wilco Supply Inc. now offers high pressure adapters, whip checks, and an expanded supply of lance hoses. contact Wilco Supply, 6003 Armour Drive, Houston, TX 77020, (713)675-6366.

New from **WOMA Corporation** is the High-Pressure Plunger Pump 150 Z, a 29,000 psi reciprocating pump that can be used for paint removal, cleaning, and other applications that now require an intensifier pump. Contact WOMA, 90 Newfield Avenue, Raritan Center, P.O. Box 6793, Edison, NJ 08818-6793, (908)417-0010.

WJTA '91 Conference Proceedings Available

The official Proceedings of the 6th American Water Jet Technology Conference are available in a single hardcover volume. Over 640 pages in length, the Proceedings are a compilation of the papers, complete with illustrations and photographs, presented during the 6th American Water Jet Technology Conference held August 24-27, 1991, in Houston, Texas.

Topics covered in tech sessions

- Abrasive Jets: Material Removal Mechanisms, Cutting Performance Characterization, and Fluid Mechanics/Nozzle Design;
- Excavation/Tunnelling Applications;
- Mining Applications;
- High Pressure Equipment and Systems;
- Construction, Non-Manufacturing Applications;
- Novel Jets and Applications; and
- Direct Pumping Abrasive Suspensions Jets

Topics covered in a special session for contractors

- High Pressure Flow Control Valves
- A rotary Water Jet Concrete Demolition Method
- A Hydrodemolition System
- Practical Applications of Portable Ultra-high Water Pressure Jet Cutting and Blasting
- Self-rotating Nozzle Heads
- Recent Developments in the High Pressure Water Blast Gun; and
- How to Avoid Negligence Lawsuits.

The Proceedings are available for \$90 (special WJTA member price - \$75) plus \$5.00 for shipping and handling within the continental United States. Additional shipping charges may apply for destinations outside the United States. VISA/MasterCard, checks, and purchase orders are accepted. To order, forward applicable payment or purchase order to the Water Jet Technology Association, 818 Olive Street, Suite 918, St. Louis, Missouri 63101-1598; Telephone: (314)241-1445, Fax: (314)241-1449. Telephone orders are accepted (VISA/MasterCard ONLY).