WJTA Jet News

Water Jet Technology Association

DECEMBER 1992

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SES-200 with waterjet propulsion system. Photograph courtesy of U.S. Navy Domestic Technology Transfer Fact Sheet.

Waterjet Propulsion System

The Carderock Division of the Naval Surface Warfare Center in Bethesda, Maryland, recently completed the first in a series of sea trials on the U.S. Navy's only operational Surface Effect Ship, the SES-200 (see photo above). Following the installation of a new and more powerful waterjet propulsion system, the trials were conducted to evaluate the ship's performance and handling under various environmental and operational conditions.

According to the officer-in-charge of the SES-200, the speed-versus-thrust data are being collected to compare the new system with the previous lower-powered, fixed-pitch propeller system. In addition, the trials provide the crew with an opportunity to evaluate the seakeeping and shiphandling characteristics.

The SES-200 was originally a 110-ft long SES that was modified structurally by the insertion of a 50-ft section amidship, to evaluate the effects of increasing length-to-beam ratio. The upgraded SES-200, with an improved propulsion system, is now capable of speeds in excess of 40 knots and can routinely make extended at-sea deployments with only minimal shore support. This waterjet-propelled SES is manned by a crew of two officers and 20 enlisted personnel from the Carderock Division's Special Trials Unit, which also has a shore component. Modifications, maintenance, and supply support are provided by one officer and 15 enlisted personnel.

For more information, contact: **Basil V. Nakonechny, Code 0117, Naval Surface Warfare Center, Carderock Division, Bethesda, MD 20084-5000, (301)227-1037.**

Article and photograph appear courtesy of the U.S. Navy Domestic Technology Transfer Fact Sheet.

Abstracts are still being accepted for the 7th American Water Jet Conference. See details on page 2.

Abstracts Due Now For 7th American Water Jet Conference

Authors who wish to present papers at the 7th American Water Jet Conference should submit abstracts immediately to ensure consideration. Although the deadline date for abstract submission has passed, abstracts will be accepted through **December 15, 1992**.

To submit an abstract(s), please complete the Abstract Submission Form on page 10 of this issue and forward to the attention of the Conference Coordinator at the Water Jet Technology Association.

From The President's Desk...

Every two months my duty is to find interesting material to publish in *Jet News*. In 1987 when I became the editor I was worried that I would soon run out of interesting applications to feature. I need not have worried. Water jets have so many applications that continually surprise me.

My search for articles that would catch the attention of our readers has led to applications that were new to me. Among these were: the use of water jets in creating sculpture such as the Navy War Memorial in Washington, D.C. and the segment of the Berlin Wall at Westminster College in Fulton, Missouri, commemorating the end of the cold war; the manufacture of jigsaw puzzles; capping of oil wells set afire during the Gulf War; recycling tires and wrecked air planes; aerating turf on golf courses; washing clothes; and excavating World War II airplanes from glaciers in Greenland.

This month's search led me to the U.S. Navy's use of water jets to propel a surface effect ship. A surface effect ship is similar to a catamaran in that only the sides of the ship contact the water. I have also heard that water jets are used to steer aircraft carriers and to flush toilets on submarines. Perhaps I can get enough information on these applications so that they may be featured in future issues of *Jet News*.

– George A. Savanick, Ph.D.

WJTA Administration

NLB Introduces New Ultra-Clean 30™ System

Ultra Clean 30™ Machine

National Liquid Blasting (NLB) Corporation has introduced an ultra-high pressure water-jet cleaning system which delivers pressure of 30,000 psi. Instead of an intensifier, the Ultra-Clean 30™ system uses the rugged, dependable plunger pump design that has been proven in thousands of NLB applications. Low flows (up to six gpm) simplify disposal after cleaning.

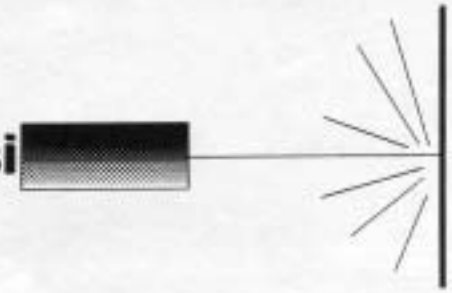
The Ultra-Clean 30 quickly cleans concrete, steel and other surfaces, easily stripping coatings, epoxies, lead paint, and other tough substances. It is equally suitable for heavy-duty equipment cleaning and abrasive cutting applications.

The unit comes mounted on a heavy-duty steel skid with a sound-attenuating enclosure. It can also be mounted on a trailer for mobile applications. A 200 hp diesel engine drives the triplex plunger pump, while a self-contained 22 cfm air system powers an NLB rotating lance and other accessories. A Gear-Pac drive and on-board water filtration (to six microns) help assure long pump life.

NLB, a leader in high-pressure water-jet technology, manufactures a full line of quality water-jetting systems for many uses, including surface preparation, concrete demolition, tank cleaning, descaling, paint and sludge removal, concrete and pipe cutting, and more. **For additional information, contact: David Yared, NLB Corporation, 29830 Beck Road, Wixom, MI 48393-2824, (313)624-5555.**

Rogan and Shanley, Inc
- a Polyflex company -

Hoses for 20,000 psi



Type	Hose size (in)		Working Pressure (psi)	Applications
	ID	OD		
4005 St	0.20	0.43	26,000	Ideal for lancing small bore tubes.
4006 St	0.25	0.50	21,600	Lance with more flow area than 4005
4008 St	0.33	0.61	21,750	Lance or 3/8" bore delivery hose.
4113 St	0.50	0.88	20,400	New full 1/2" bore delivery hose.
6020 St	0.80	1.30	20,300	Big bore delivery hose for high power machines.

All hoses feature a full 2.5:1 safety factor on burst pressure. All hose assemblies are fully pressure tested at 1.5times working pressure and are serial numbered. An evaluation and repair service is offered on all Rogan and Shanley hose assemblies.

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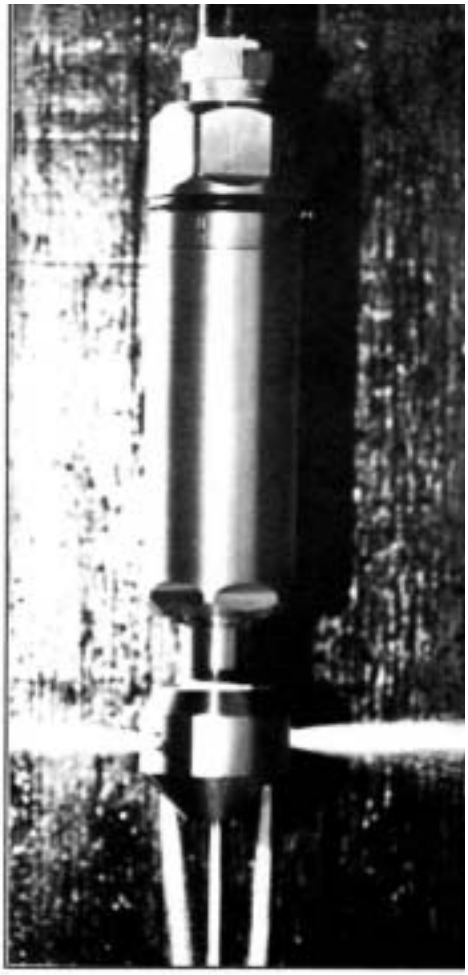

Downhole Cleaning – Using a self-rotating waterblast nozzle head to clean wells and pipelines. Coil tubing units can put down over 10,000 ft of continuous steel tubing. With the rotating nozzle head, a single pass can clean paraffin, scale, and other buildup from the well interior. Typically operates at about 5,000 psi and 100 gpm.

Photographs courtesy of StoneAge, Inc., Durango, Colorado.

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Flow International Acquires Spider Staging Corporation

Flow International Corporation has signed a definitive agreement to acquire all of the outstanding stock of Spider Staging Corporation in a move to improve the distribution and service network for its products.

Spider Staging Corporation, of Tukwila, Washington, is the leading supplier of temporary and permanently installed power driven scaffolding equipment to the maintenance and construction industries in the United States.

"Spider has 16 branch locations throughout the United States and Canada, giving us tremendous potential to increase our market penetration in the industrial cleaning, HydroMilling®, and HydroCleaning™ markets. Some of these branches will also be used for regional demonstration sites to bolster our ultrahigh-pressure waterjet product sales," said Ronald W. Tarrant, president and chief executive officer. "In addition, we expect Spider to enhance Flow's profitability commencing on the acquisition date."

"We will begin combining facilities and staff where appropriate and will begin taking advantage of the synergies as soon as the acquisition is complete," he said.

Operating through 16 branch locations, Spider Staging Corporation designs, sells, rents, and services its equipment to most of the nation's construction and maintenance organizations. In its most recently completed fiscal year, Spider's revenues were $20 million.

"We believe this decade will be one of restoration and repair of infrastructure throughout the United States and that the combination of Spider and Flow uniquely positions the combined entity to jointly market its products and services. Many of Spider's customers have been targeted for the sale of Flow industrial cleaning products," said W.R. Greenwood, president and chief executive officer of Spider.

For additional information, contact: **Thomas A. Cross, Flow International Corporation, 21440 68th Avenue South, Kent, WA 98032, telephone: (206)872-4900.**

Willem Schlösser Joins Jet Edge

Willem M.J. Schlösser of Helmond, Netherlands has been retained as a consultant by Jet Edge, Inc., an ultra-high pressure jet cutting and jet blasting equipment company based in Minneapolis, Minnesota.

Dr. Schlösser received his doctorate in engineering in 1959, and in 1989, retired as Professor Emeritus of Eindhoven University of Technology, Netherlands. He has been an advisor to a number of companies for product design and development, and has been involved in international licensing agreements, joint ventures and company strategies. The author of more than 200 publications on the subject of power transmissions in machines, Dr. Schlösser is regarded as one of the world's foremost fluid dynamicists. In honor of his many achievements, Dr. Schlösser was knighted in the Order of the Dutch Lion by Queen Beatrix of the Netherlands last year.

Dr. Schlösser will assist Jet Edge in formulating strategies and enhancing its line of ultra high pressure waterjet equipment. **For additional information, contact: Jet Edge, Inc., 825 Rhode Island Avenue South, Minneapolis, MN 55426, (800)JET-EDGE.**

– WANTED – Mechanic

A New Jersey company has a position for a mechanic. Must have all around mechanical abilities with experience in hydraulics and fabrication of parts. Welding knowledge with CDL license preferred. Water jetting experience a plus. Call Vicki at (908)355-7775.

See you at the

7th American Water Jet Conference

August 28-31, 1993

Seattle, Washington

Ingersoll-Rand and Fanuc Integrate Robots and Waterjet Cutting Systems

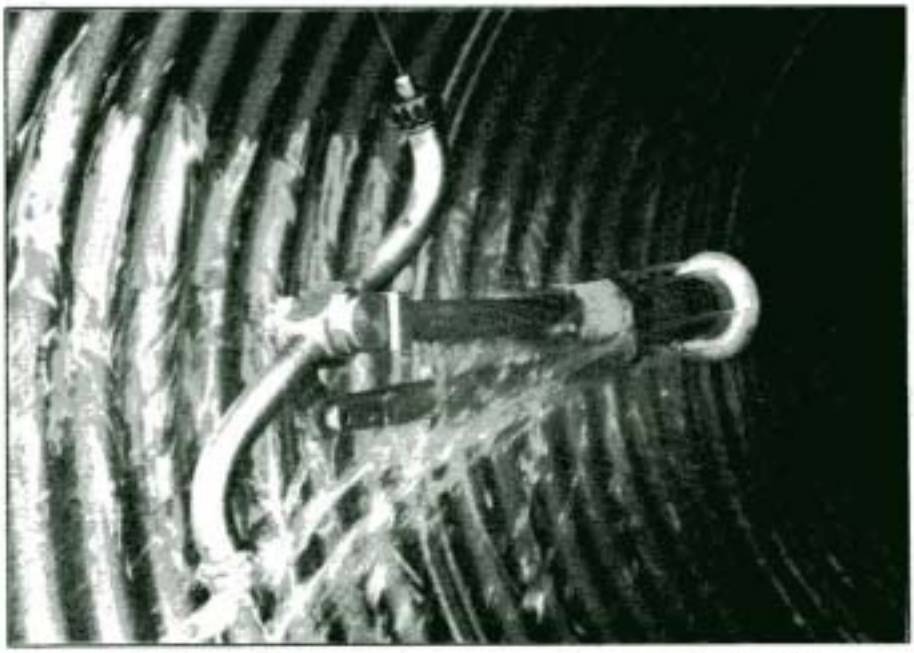
Joining forces to meet the growing industrial demand for robotized waterjet cutting systems, Ingersoll-Rand Company and Fanuc Robotics, Auburn Hills, Michigan, announced an agreement for Ingersoll-Rand to integrate Fanuc robots with its waterjet equipment nationally.

Ingersoll-Rand Waterjet and Fanuc Robotics, both leaders in their industries, firmly believe that the alliance will ensure mutual customers are provided with the best possible robotic cutting systems at the most competitive price. "Although waterjet offers many advantages, automotive trim suppliers are extremely sensitive to the cost of waterjet cutting," states Chuck Havill, vice president and general manager for Ingersoll-Rand's Waterjet Division. "Our development of better waterjet components and experience building automation systems, combined with Fanuc's technical support and advanced robotics, will enable us to provide lower cost cutting solutions and achieve broad market acceptance."

With over 300 robot-controlled waterjets already in automotive trim applications, this agreement will utilize the technical and marketing strengths of both companies. To better serve its automotive component customers, Ingersoll-Rand recently relocated to Farmington Hills, Michigan, where it currently designs and manufactures robotized waterjet systems.

Last year, Ingersoll-Rand developed a new phased technology for its intensifiers that vastly improves reliability while drastically cutting operating costs.

Ingersoll-Rand's expertise in high-pressure pumps led to the development of waterjet cutting in 1971. A waterjet's ultra-high-pressure stream is capable of cutting materials as diverse as soft plastic, high-strength composites and space-age super alloys. **For further information contact: Ingersoll-Rand Waterjet Cutting Systems, 23629 Industrial Park Drive, Farmington Hills, MI 48335, (313)471-0888.**



Automated Vessel Cleaner – An automated apparatus for high pressure cleaning of horizontal vessels. Capable of entering through a small diameter valve opening and unfolding nozzle arms to rotate and clean all areas of the interior. Programmable pneumatic circuits control all functions. Complete cleaning cycle in 15 minutes with 35 gpm at 8,000 psi. Photograph courtesy of Stone Age, Inc., Durango, Colorado.

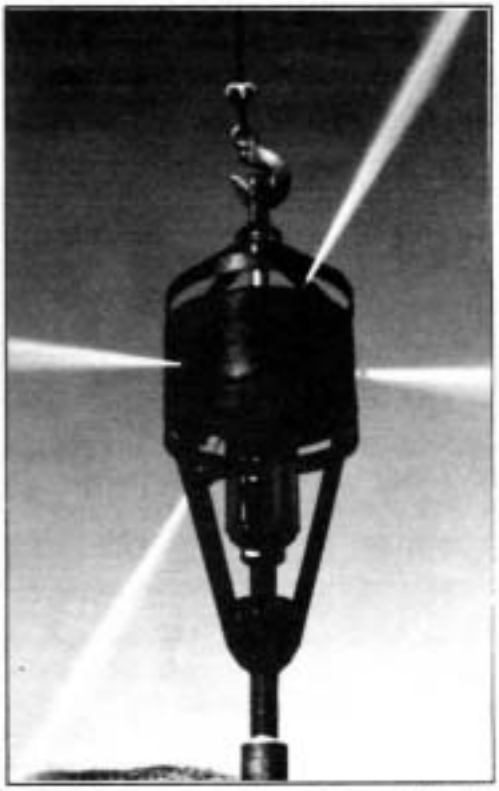
NLB Expands Internationally

National Liquid Blasting Corporation (NLB) has established business relationships in Holland and Mexico to serve its rapidly growing international business. Sales, rentals, service, and replacement parts for many European customers, particularly those in Scandinavian and Benelux countries, are now handled by National Liquid Blasting B.V. in Hoogvliet (Rotterdam). Empresas Campos, S. A. of Mexico City is the new distributor for Mexico.

NLB Holland B.V. is a newly-formed subsidiary of Peinemann Equipment Company, a substantial industrial equipment sales and rental firm serving the refinery and construction industries. **Contact Hans Meijer, National Liquid Blasting B.V., Steenhouwerstraat 41, NL-3194 Ag Hoogvliet; telephone 3110-438 67 55; telefax 3110-472 27 58.**

Empresas Campos, S.A. provides industrial and commercial cleaning services to automotive plants and other manufacturers throughout Mexico. **Contact Pablo Campos Berry, Yosemite No. 63, Napoles, Mexico DF03810; telephone (525)523-4738; telefax (525)687-9052.**

From all around the world they came:
St. Andrews, Scotland – place of fame
The home of golf – and haggis too?
To view jet cutting aspects new
They spake of many wondrous things
Drambuie, shortbread, Scottish Kings
But the view they'll cherish to the hilt
'Twas David Summers in his kilt.
Photograph courtesy of Weber Lubrifiants S.A., France.



Tower Cleaner – A self-rotating nozzle head for cleaning frac towers in oil refining. The centralizing cage allows the tool to be pulled up passed trays without catching. Eliminates most of the need for a man to enter and blast in a dangerous situation. Typically 5-10,000 psi and up to 100 gpm. Photograph courtesy of StoneAge, Inc., Durango, Colorado.

Letter to the Editor

Dear Dr. Savanick:

In the article "Polymer Enhanced Water Jets Cut Shoe Sole Material" which was published in the September 1992 issue of *Jet News*, the last sentence read "Additionally, because of the lubricity imparted by the polymer, the intensifiers and nozzles experience less wear with a resulting savings in operating and maintenance costs."

I have received questions concerning the specifics of this statement and am now able to report that Mr. Bill Howell of the U.S. Shoe Company has informed me that the diamond nozzles that have a manufacturers life expectancy of 720 hours has been extended to 2,040 hours and 2,424 for two of the nozzles while a third nozzle is still performing at an optimal level after 2,928 hours.

Thus the Super-Water® is extending nozzle lifetime by factors of 2.83, 3.37 and 4.07+.

Sincerely yours,

W. Glenn Howells, Ph.D.
Berkeley Chemical
Research, Inc.

Send Us YOUR News!

Water Jet Technology Association
ATTN: Dr. George Savanick
818 Olive Street - Suite 918
St. Louis, MO 63101-1598, USA
Phone: (314)241-1445
Fax: (314)241-1449

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The use of specific product names in the *Jet News* does not imply endorsement by the Water Jet Technology Association.

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Abstract Submission Form

To submit your abstract(s) for consideration, please complete this form. Abstracts are to be submitted **NO LATER THAN DECEMBER 15, 1992**, to ensure consideration. Authors will be advised by January 15, 1993, regarding the decision of the Abstract Review Committee.

Author, Delegate Information

(Please print or type)

Name .....
Position/Title .....
Company .....
Street Address .....
City, Province ..... State .....
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Business Telephone ..... Facsimile .....
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Paper Information

Authors .....
Title .....
Abstract (Up to 500 words. Use separate sheet if necessary.)

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*August 28 is reserved for a Waterjet "Short Course" and Conference Reception.

Mail completed form and abstract, **NO LATER THAN DECEMBER 15, 1992**, to: **Conference Coordinator, 7th American Water Jet Conference, Water Jet Technology Association, 818 Olive Street, Suite 918, St. Louis, MO 63101, USA, (314)241-1445, FAX: (314)241-1449.**

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Watch for more information in future issues of your *Jet News*.

Best Wishes For A Happy Holiday Season And Prosperous New Year!