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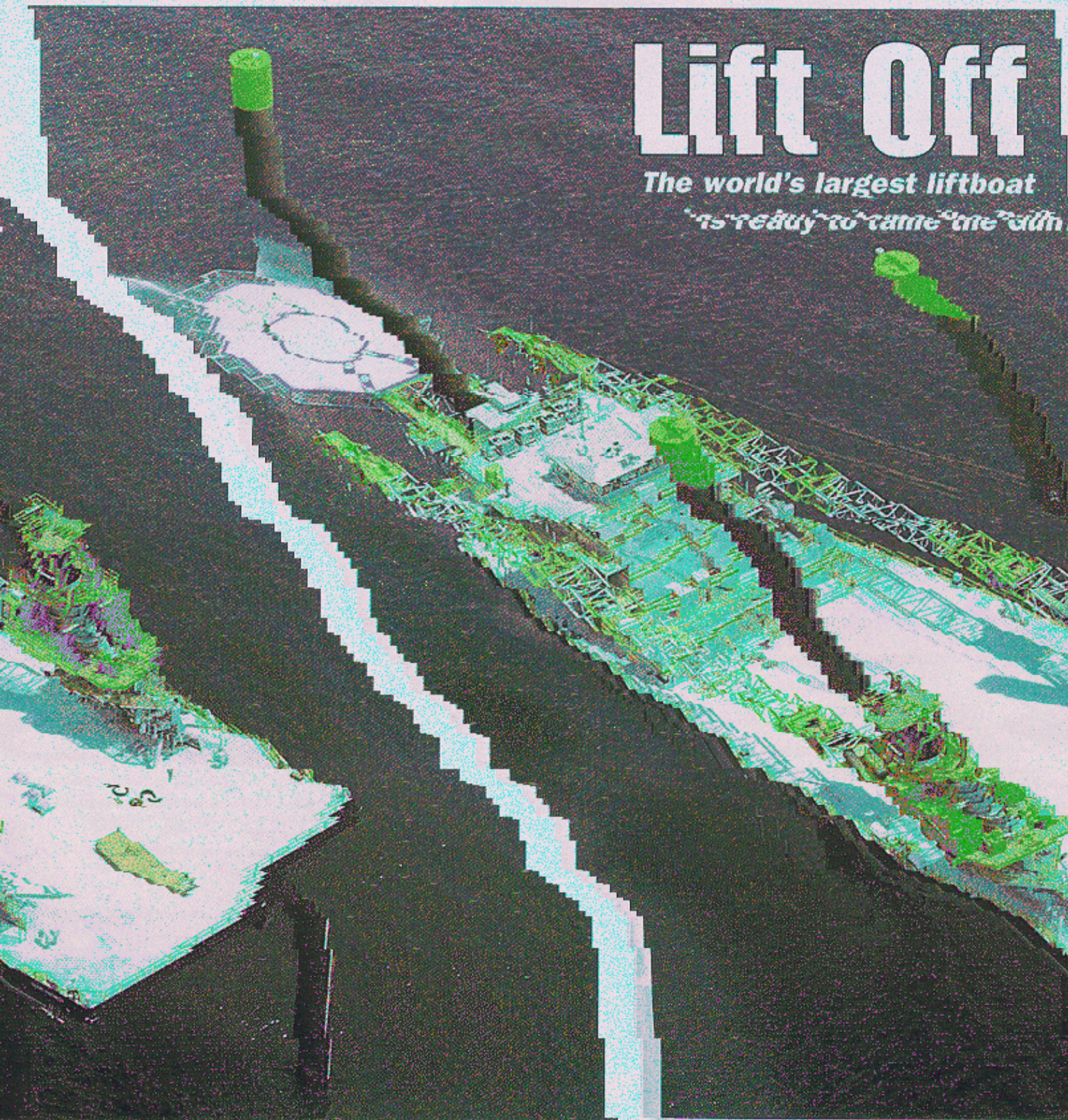
IN BUSINESS ON THE COASTAL AND INLAND WATERS

OCTOBER 2003

Lift Off

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Fireplugs

Old fireboats are in line to be replaced by smaller, faster, and more versatile designs.



Seattle would like to replace the *Alki*, built in 1927, with a new fireboat.

you'll have to package everything into a vessel that fits the confines.

In Los Angeles, after a thorough survey of the target hazard environment of the port's 25 miles of waterfront, the design team for the city's fireboat replacement project developed plans for a 105' vessel that would pump 38,000 gpm from 10 monitors or 20 hose outlets and deliver foam at least 400' while maintaining station with Voith-Schneider propulsion. Engines, pumps, pipes and controls for all that and two multipurpose rooms had to fit into a maximum beam of 29' in order to fit an existing boathouse at the entrance to the Port of Los Angeles.

Robert Allan of Robert Allan Ltd., Vancouver, B.C., the naval architects for the new boat, called *Fireboat 2*, said that part of the challenge "was coming up with a design that was bound by the physical strictures of the boathouse. If I'd have my druthers, that fireboat would have been at least two-to-four feet wider. Having said that, I don't think it really suffered from not being wider."

The *Fireboat 2* boathouse-and-beam example illustrates a basic issue: Every port is different and determining the right combination of vessel and equipment for any given port is a major—and expensive—exercise in itself.

NOT ONLY FOR FIRES

Modern fireboat design also reflects a change in mission. According to the Fire Administration's report, "Routine fireboat duties now encompass many different kinds of emergency and non-emergency operational scenarios that just a few short years ago would have been considered outside the scope of traditional fireboat operations."

New multipurpose fireboats serve three basic functions:

- Conduct rescue operations and transport personnel and equipment to situations inaccessible by land.

By Bruce Buls, Technical Editor

Designing a new fireboat requires careful consideration of many local variables: area to be covered and maximum response times, nature of waterfront facilities, support needs for land-based operations ... to name just a few.

A technical report published in May by the U.S. Fire Administration lists these issues and many others in detail. Called "*Fireboats: Then and Now*," the

report emphasizes the need for "a comprehensive study that clearly identifies the specific mission, operational requirements, and the operating environment of the vessel" when considering a new fireboat. (The report is available on the Web at <http://www.usfa.fema.gov/downloads/pdf/publications/tr-146.pdf>)

One variable not listed was "size of boathouse." But, if you already have one for your new floating firefighter,

VESSEL REPORT: FIREBOATS

based firefighters.

- Provide platforms for operational command posts and for conducting and supporting marine firefighting operations, rescue-and-recovery missions, and marine environmental emergencies.
- Supply water for land-based firefighters during natural and man-made disasters.

The move to multipurpose fireboats has given rise to smaller, faster and more versatile designs. At the same time, the development of technology such as light, compact and powerful engines has given designers and builders the opportunity to pack more into smaller, faster vessels.

But even with advanced design and technology, the ability to supply prodigious amounts of water or foam is limited by available power and space. Many rapid response boats can't pump more than 5,000 gpm, and often much less.

When asked about speed versus

pumping capacity, a New York City firefighter summed it up succinctly: "What do you want? A lot of water, or you want to get there quickly? You can't have it both ways."

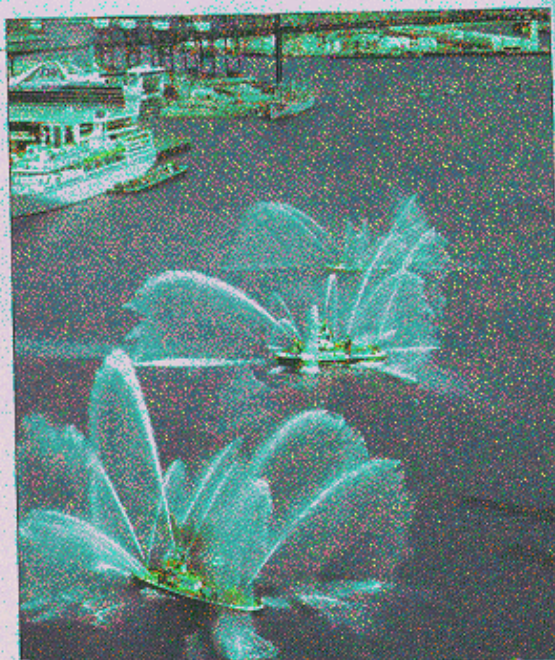
Los Angeles solved this quandary by building both types. For all-around capacity, there's the 105' *Fireboat 2*, a large-platform, full-featured fireboat. But while its Voith-Schneider propulsion is great for maneuvering and stationkeeping, it's not built for speed.

For rapid response, LAFD bought three new 40-footers designed by Jensen Maritime Consultants, Seattle, and built by Seattle's Kvichak Marine. The 25-knot boats can pump 3,000 gpm and are equipped for dive operations, marine search-and-rescue, and

EMS response and patrol duties.

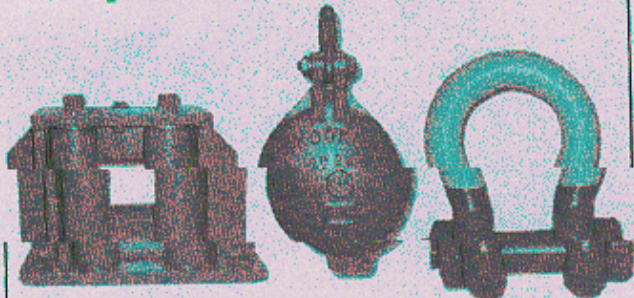
PHILADELPHIA

The city of Philadelphia is currently looking to add a fast-response fireboat



LAFD replaced a fireboat built in 1926.

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to a fleet that currently includes three boats built in the late 1940s.

According to Timothy Lynch of the city's fleet management department, the boats are "archaic" and slow. "We're running out of parts for the power systems," he said. "No one even makes the gear train anymore. Detroit Diesel says they know they made it, but forget it. I can't get you that part."

Even so, the boats are still operable and the two largest vessels, the *Delaware* and the *Franklin*, each have foam capabilities and pump about 5,000 gpm. But with a service area that runs from Delaware Bay to Trenton, N.J., more speed is needed.

"The top speed now is nine knots, and that's going with the tide and the wind," said Lynch. He said the run to either end could take up to eight hours with the old boats.

Philadelphia's city government has recognized the need for a newer, faster boat and, after much delay, authorized a contract with Robert Allan Ltd. for a design. Construction funding, however, has yet to be approved.

The design specifies a 66-footer with four 470-hp diesels turning water-jet pumps capable of producing 28 knots at full load. On site, two of the engines would be switched to fire-pump duty and throw 6,500 gpm.

"Grandma who's going to be new," and it's pressed into service, Lynch said the strategy is to respond first with the fast boat and then "send grandma who could work her way up and relieve the fast response boat."

Lynch said that the city spent the \$1.3 million that had originally been allocated for a new boat, and is now looking to the feds for help. "We're hoping that some of the homeland security funds will help us. There has been X-amount of money given to this region, and they want the Philadelphia Fire Department to pick up some additional responsibilities," Lynch said the estimated construction cost of the new Robert Allan design is around \$1.8 million.

NEW YORK

Another major East Coast city is looking at its aging fireboats and think-

ing new boat. The New York City Fire Department hasn't had a new big boat since the 1950s and "our queen of the fleet, the *Firefighter*, is going to celebrate her 65th birthday in October," according to a FDNY lieutenant. "The *John D. McKean* was built in 1954 and our youngest boat is 10 years old. We're due."

In the early 1990s, New York tried to add two new boats with a surface-effect-ship design, but the boats had so many problems they never went into

service. "They were extremely problematic," said the lieutenant, "and required more maintenance than a helicopter. They leaked. Pumps didn't work. There were a million-and-one problems. It was a debacle to say the least."

"More recently we had two 85-footers on the schedule to get built. Halter was going to get the contract, but they couldn't get the bonding and then went Chapter 11. Now the plan is to build a 130' boat because we realized we need

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INNOVATION IN INTERFACE



Built in 1954, the *John D. McKean* supplied water on 9/11.

a fast large boat, instead of a small boat. The 85-footers didn't have much room for a triage area or for carrying people."

Carrying people is something that has taken on added importance since 9/11. So has the ability to pump water

for land-based fire-fighting. According to the Fire Administration report, three fireboats pumped nearly 60,000 gpm to land-based apparatus for three days following the attacks on the World Trade Center. One of those boats was the *John J. Harvey*, which was built in 1931 and retired in 1994.

In a post 9/11 article called "Twelve Ways to Improve the FDNY," by Vincent Dunn, a retired New York deputy fire chief who teaches fire protection and firefighting strategy, the need for new FDNY fireboats was listed as one of the 12. "After the World Trade Center collapsed, the

water mains and hydrants were buried and broken," Dunn wrote. "One of the fireboats that supplied water to the fire department on Sept. 11, 2001, was the *John J. Harvey*, a boat that was sold for scrap metal several years ago. The fire department used to have nine large fireboats protecting the waterways. Today they have two."

While the city, the fire department and others recognize the need, the Philadelphia, the holdup is funding.

SEATTLE

Seattle is also looking to update its fireboat fleet and a proposed property tax levy would raise \$11.3 million for the design and purchase of a new major platform vessel and the refurbishment of the 97' *Chief Seattle*, the city's primary fireboat.

Until last year, the city hadn't stationed a fireboat inside the locks that separate Seattle's freshwater lakes and canals from Puget Sound. But follow-

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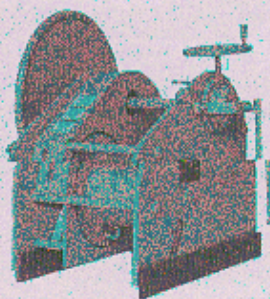
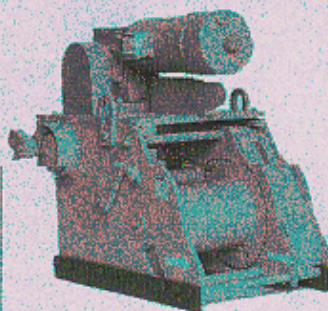
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ing three major marina fires that resulted in millions of dollars of damage on the freshwater side, the fire department moved the 123' *Alki*, its oldest boat, to freshwater moorage. If the tax levy passes in November, the city will build a new large-capacity platform to replace the *Chief Seattle* as the primary saltwater fireboat. Funds from the tax levy would also be available to refurbish the *Chief Seattle*, which would be moved inside to replace the *Alki*.

When all this happens, the *Alki* will be retired, after more than 75 years of continuous service. The riveted-steel fireboat, which entered service in 1928, is rated at 16,500 gpm.

Battalion Chief Jim Woodbury of the Seattle Fire Department said the old boat will still pump that, "but she doesn't like it. We kind of keep her throttled down. She'll pump at 150 psi, but we try not to pump at more than a 100 because of the old pumps, mainfolds and leather gaskets."

Woodbury said the department needs a new big boat that can pump at least 20,000 gpm, have significant foam capability, and enough fuel capacity for long-duration missions.

"EMS would also be a big part of the new boat," he added. The proposed budget for the boat is \$8.4 million.

Right now, the *Chief Seattle* pumps 7,500 gpm, but the department wants to kick that up to 10,000 gpm and refurbish the boat's major systems, all of which would cost \$2.9 million. In addition, the Seattle Fire Department has proposed the addition of a 45' to 50' rapid response boat with a 4,000- to 5,000-gpm capacity and significant foam capability. The Seattle City Council has budgeted \$1.5 million for this project but didn't include it as part of the upcoming levy. They will seek other funding for the fast boat.

The *Alki* is part of a generation of old fireboats that are finally nearing retirement.

"What seems to be happening is that all of these 50-, 60-, 70-year-old boats are coming due," said Robert Allan. "And all at the same time. It seems to me that in the late '30s and '40s every-

body decided to build new fireboats, and those boats are all worn out now—New York, Boston, L.A., Chicago is also looking and a whole bunch of small ports. Seattle has one to replace. It's kind of a generational thing. They're coming due at the same time.

"Everyone is faced with the same problems of trying to maintain this old equipment, which in most cases is probably very well maintained, but they've reached a stage of technologi-

cal obsolescence where they can no longer get parts. At this point, the reliability of the equipment comes into question."

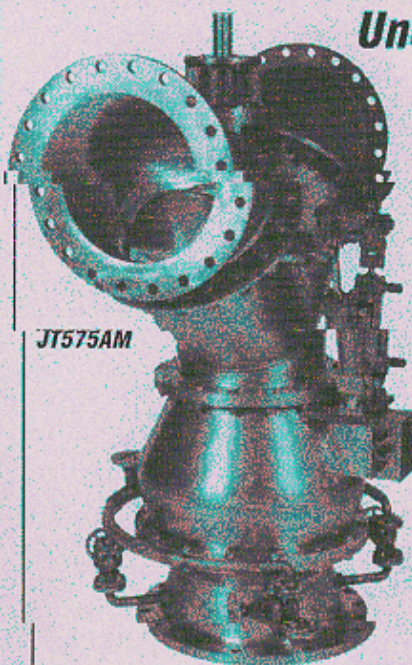
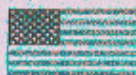
What doesn't come into question is the need to replace the old-timers. In most cases, the holdup is money. Allan said his company gets about one fireboat inquiry a week. "Budget is the big driver," he said. "They're usually asking for a lot more than they can afford given their budgets." **WB**



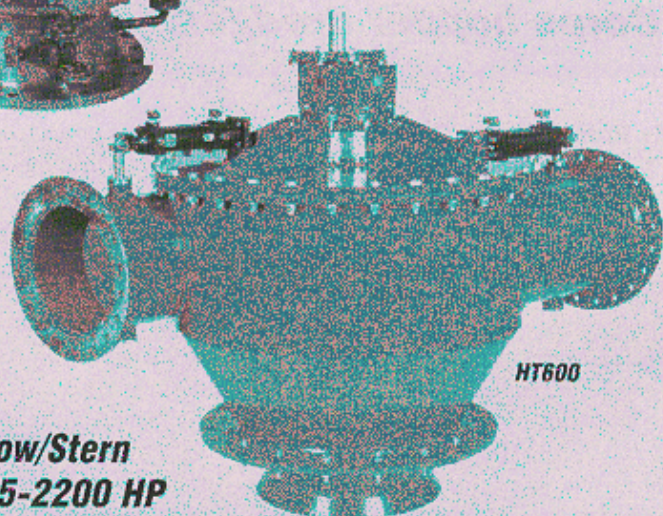
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