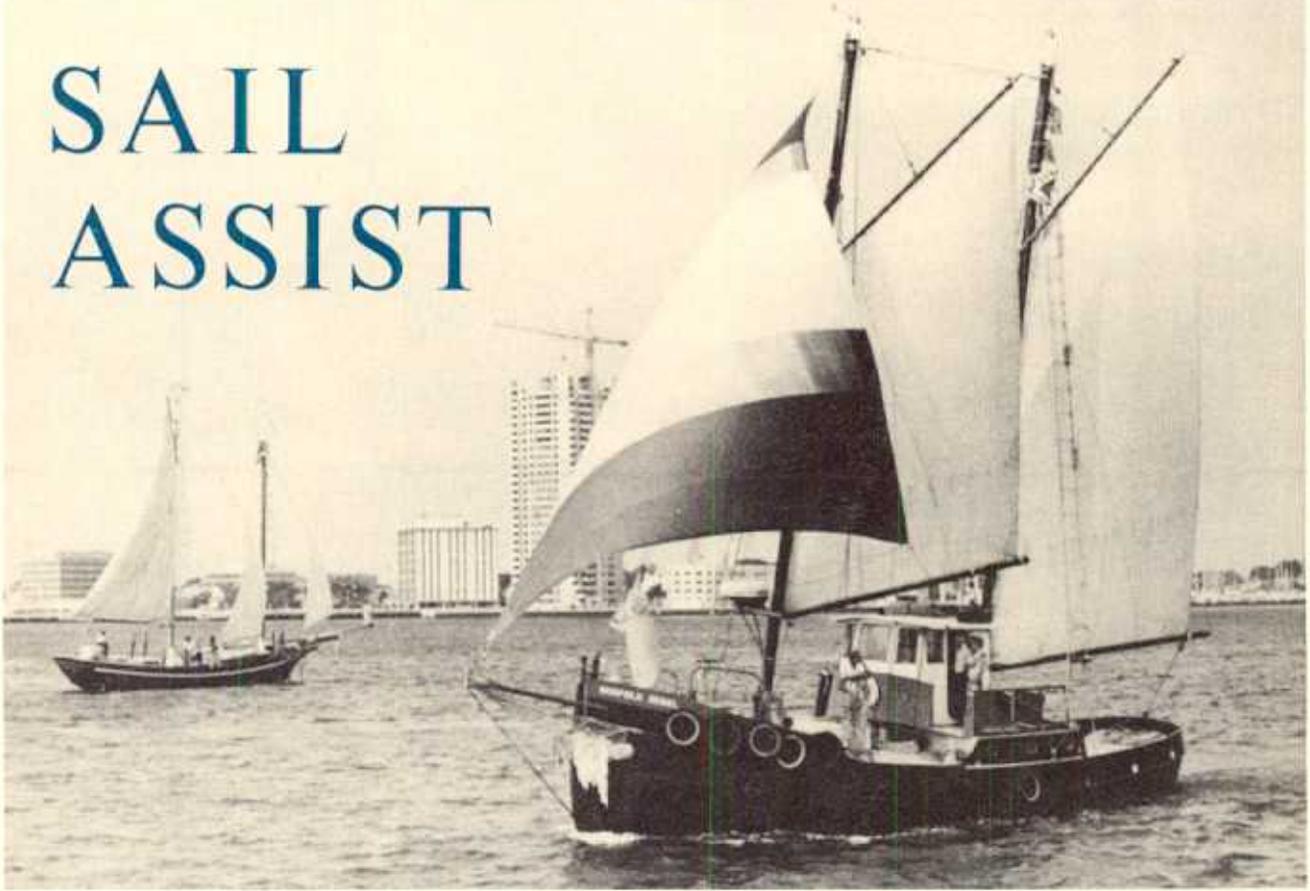


SAIL ASSIST



Dick Cook

Relief from the Oil Crunch?

The men who “go down to the sea in ships” have, for the past 50 years, mostly made the trip in vessels which burned coal, oil or gas as fuel. Before that, wind was the prime mover and a sail was the machine it played against. The shift to coal, and then to cheap, plentiful oil, eventually spelled the demise of most commercial sailing vessels.

By 1930 the role of sailing ships, with a few longlived exceptions, became one of recreation or sail training. From that time to the present, large fishing and freight-hauling vessels worldwide depended almost entirely on petroleum fuels. But now a change is occurring.

Today’s vessel operations, plagued with the rising prices and uncertain future of oil, are looking toward wind power again. Several modern pioneering efforts have demonstrated that sail-assisted power, while possibly not feasible for all classes and sizes of vessels, has a place in modern marine commerce and fishing.

Such were the conclusions arrived at May 19-

21, 1982 at a unique conference and workshop held at the Omni International Hotel in Norfolk, Virginia. The purpose of the conference was to provide a forum for discussion and evaluation of sail-assisted power as it is now being used on vessels or may be used in the not-too-distant future.

Conference coordinator Jon Lucy, marine recreation and trades specialist with the Virginia Sea Grant Program at VIMS, said he was very pleased at the interest in the conference from both the U.S. and abroad. “Obviously, we were correct in our assessment that there was a need to convene such a forum,” Lucy said. Approximately 150 individuals attended the meeting, including persons from Norway, Canada, England and Hawaii. French interests were represented by embassy officials.

Sponsors of the conference included VIMS (through the Virginia Sea Grant Program); the Florida Sea Grant College Program; Mid-Atlantic Fisheries Development Foundation in cooperation with Mobil Corporation; National Marine Fisheries Service; University of South Florida

College of Engineering; and Sail-Assist International Liaison Associates (SAILA).

The conference's early sessions were highlighted by presentations on the realistic feasibility of wind propulsion for American merchant marine vessels. Lloyd Bergeson, President of Wind Ship Development Corporation, keynoted the conference with a discussion of his 1981 study on this subject conducted for the U.S. Maritime Administration. The issues surrounding Coast Guard stability criteria were thoroughly discussed, both during formal and informal sessions. Jim Brown, a design consultant from North, Virginia who works primarily with Third World fishery projects, delivered an enlightening luncheon address and slide program. Brown's message was that some third world nations are beginning to use sail-assisted multihull vessels for fishing, cargo and transportation that are essentially modern creations of basic boat forms used in their part of the world for centuries.

As the conference turned to nuts and bolts panel discussions, it became evident that many of the people concerned with designing and operating various types of vessels had committed to sail assist as a result of their own convictions.

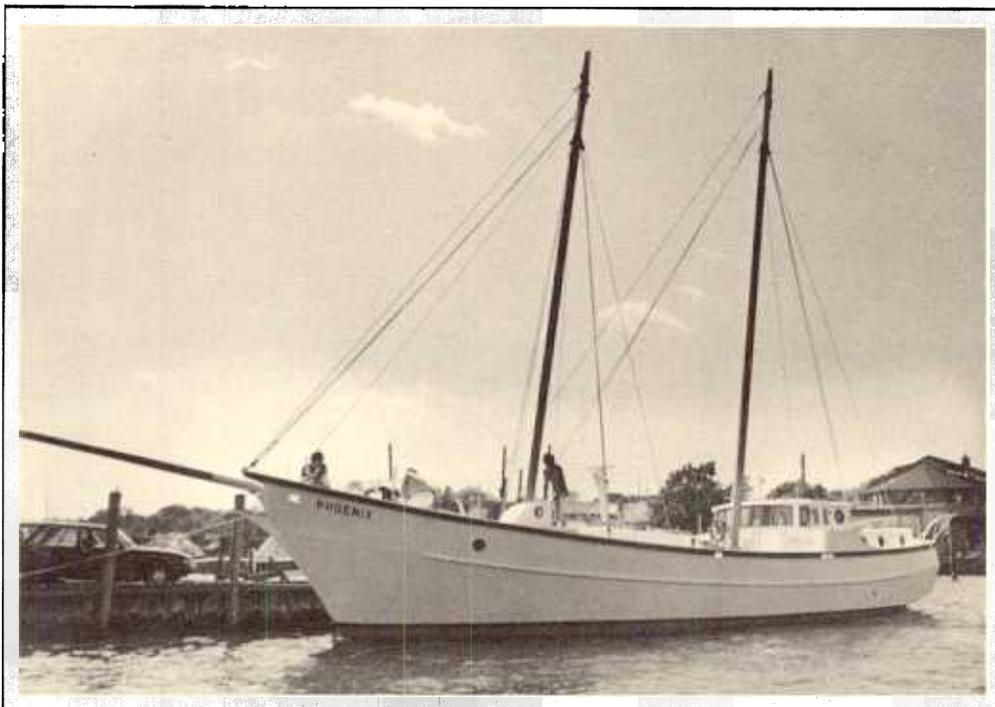
One of these pioneers is Captain Lane Briggs of Norfolk, VA. Briggs and his son, Captain Jesse Briggs, operate Rebel Marine Service, a towing and salvage business. Having broken into sail-assisted power in 1975 by jerry-rigging a 46-foot tug with sails as a joke for their marina's regatta, the father-son team made a full commitment to

the concept in 1978 with the laying of the keel of the 52-foot tug/fishing vessel NORFOLK REBEL. Designed by naval architect Merritt Walter, the vessel, launched in 1980, is gaff-rigged with a retractable bowsprit to allow for pushing barges. So what does one call such a vessel? Briggs settled on TUGANTINE®. NORFOLK REBEL is a tri-purpose vessel; it can be used for towing, salvage, and with minimum rigging, commercial fishing.

The National Marine Fisheries Service (NMFS) believed enough in what Briggs was trying to do to provide him with a small grant to finish fitting out the boat and demonstrate its fuel-saving fishing capabilities. Assisted by VIMS in analyzing his vessel's performance, Briggs is realizing a 20-30 percent average reduction in fuel consumption with the use of sails. NMFS Director Bill Gordon addressed the conference during its second day, stressing that sail-assisted power is beginning to prove itself to be one of several major technological applications leading to improved harvesting efficiency in the nation's fisheries.

Among those conferees who feel they have found a particular niche for sail-assisted cargo hauling is Greg Brazier of East Islip, N.Y., master/builder of the 57-foot packet schooner PHOENIX, also designed by Merritt Walter. Dozier plans to make short hauls between various ports around Long Island Sound, competing with commercial trucking which has to take the long way around.

Joe and Sharon Spivey of Deltaville, VA are



The 57' packet schooner PHOENIX is now being used on Long Island Sound as a short-haul cargo vessel. Master/builder Greg Brazier will compete with commercial trucking.

Bill Moriarty--ICON Photo

co-owners of the cargo schooner SHARON VIRGINIA, the largest (72 feet overall) sail-assisted commercial vessel operating out of an East Coast port. The Spiveys, who envision owning several such schooners in the future if all goes well, have become mired down in federal regulations regarding Coast Guard certification of their vessel.

Not having worked closely with the Coast Guard during their vessel's design and construction phases, the Spiveys have been unable to achieve post-construction certification for the craft as a sail-assisted cargo vessel. In conjunction with this dilemma, Sharon Spivey testified at hearings last year of the Subcommittee on Coast Guard and Navigation of the House Committee on Merchant Marine and Fisheries (Oversight Hearing on Marine Safety). The Subcommittee report recommended that the Coast Guard change its regulations to specifically address sail-assisted cargo vessels. However, the Coast Guard expressed concern that by implementing such regulations without the benefit of considerable research and practical experience, they well might be seriously inhibiting development of sail-assisted technology.

Gordon Baxter, master/owner of the 65-foot schooner MEMORY was another conferee who shed some light on the tribulations of the emerging sail-assist industry. Baxter and MEMORY have lately returned from the West Indies where the ship was profitably used in inter-island trade for 18 months. When he tried to sell a cargo of Haitian artifacts dockside in Baltimore and Annapolis, however, he says he spent 6 weeks "battling city hall" concerning licenses and zoning issues. His frustrations have him refitting MEMORY for charters.

The schooners MEMORY and SHARON VIRGINIA, designed by Tom Colvin of Miles, Virginia, were built by Paul Mooney, Mooney Marine Inc. of Deltaville, VA. Both vessels are constructed of steel.

Another steel-hulled sail-assisted vessel was just launched on Hampton Roads. Carrying cruise passengers on Chesapeake Bay in summer and general cargo in the Caribbean inter-island trade in winter, the NORFOLK ROVER is a 63-foot topsail schooner owned and built by naval architect Merritt Walter, president of Rover Marine, Inc. in Norfolk.

On the West Coast, where the greatest number of sail-assisted vessels work, the emphasis is on fishing rather than cargo and passenger hauling. Bernie Arthur is president of Skookum Marine

Construction, Inc. in Port Townsend, Washington. Arthur says he has built 45 sail-assist vessels since 1974, boats which are used in Northwest waters for tuna and salmon, potting dungeness crab and longlining halibut and cod. Sails are primarily used while traveling to and from fishing areas up to 1,000 miles from port.

A check of the publication "Sail-Assisted Commercial Marine Vessels, Bibliography and Abstracts" by Jack Shortall, III, published for the conference by the Florida Sea Grant College Program, shows that an ever-increasing number of commercial fishermen are turning to sail assist in order to extend their operating range and prolong engine life. A current estimate is that there may be as many as 200 sail-assisted fishing vessels in use or planned for use in the Pacific.

Under Shortall's direction, the University of South Florida College of Engineering also has a continuing research program concerned with computer-aided design of sail-assist fishing vessels. Boats being monitored are those of the snapper-grouper fishing industry, and preliminary reports on stone crab lobster boats are encouraging, al-



Dick Cook

MEMORY, here hauled for cleaning and refitting, did well in the West Indies inter-island trade but hit a trade impasse in Baltimore and Annapolis, says her master/owner Gordon Baxter.

though projected savings there are not so great as for the snapper-grouper category.

Although certain larger vessels just over 200 feet in length are experimenting with sail-assist (the 3,000 DWT Greek cargo ship MINI LACE and the 1,600 DWT Japanese motor tanker SHIN AITOKU MARU - both discussed at the conference), the most immediate adaptation of the concept seems to be better suited for smaller vessels. Overall investment to either retrofit or design and construct really large vessels for sail assist would be so great, most conferees agreed, as to limit a quick response to the sail-assist alternative.

However, Wind Ship Development Corporation's award-winning retrofit sail design for the MINI LACE appears to be providing the vessel enough fuel savings that a reasonable payback period will result.

With the overall purpose of the conference being to achieve a realistic appraisal of sail-assisted power applications, the advantages and disadvantages of the concept were summarized.

Among the advantages, those which seem to be distinct are a reduction in the impact of fuel availability and associated high costs, increased stability under sail, longer trips, larger payloads and longer engine life. Oceanographic research ships, some now in the the planning stage, are seen by sail-assist proponents as being especially suited for the "marriage of technologies."

Problems associated with the use of sail-assist

power included bridges at major ports limiting mast height; resistance to new concepts by management, governments, the insurance industry and possibly unions; and the Coast Guard's lack of research funds to adequately study the certification stability criterion as it relates to sail-assist vessels.

In the conference's wrap-up session, with approximately half of the conferees remaining in attendance, two recommendations received votes of support.

The first was the need for a Coast Guard review of the stability criterion for certification of sail-assist vessels. The point made was that relatively small sail-assist vessels need to be evaluated differently from large ships.

Secondly, conferees endorsed U.S. Senate Bill 1356. This bill, co-sponsored by Senator John Warner (R-Virginia) and Senator Spark Matsunaga (D-Hawaii) would allow energy investment credits for masts, sails and rigging on sail-assist vessels.

With the many complex issues associated with what appears to be a budding working sail industry, it was appropriate that the conference also served to formally launch SAILA (Sail Assist International Liaison Associates). A non-profit organization serving as an information clearinghouse on working sail, SAILA can be contacted at 1553 W. Bayville Street, Norfolk, VA 23503.

According to Jon Lucy, he and others are already working with Jack Shortall in Florida on plans for a 1983 follow-up conference. This

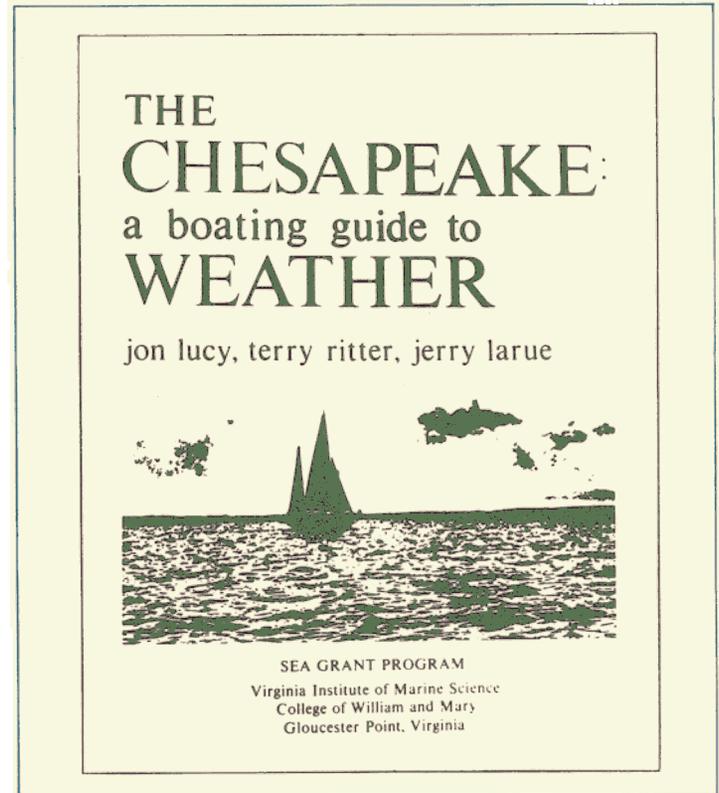


The Greek cargo ship MINI LACE is working out of New Orleans in the Caribbean tramping trade. Her 214' length is helped along by a fully automated sail, providing fuel savings.

conference would likely provide an international focus on wind power applications for fishing vessels.

A special conference report entitled "New Working Watercraft: A Return to Former Capabilities" by Jim Brown, may now be ordered through VIMS Sea Grant Communications Office (\$8.50 per copy). The report was the basis for Brown's conference address.

Finally, a published proceedings of the Norfolk conference will be available sometime in the fall of 1982. The proceedings, produced through the Virginia Sea Grant Program at VIMS with assistance from the National Marine Fisheries Service, will be available through Jon Lucy, Marine Advisory Services, VIMS, Gloucester Point, VA 23062



A valuable aid to Bay users, "The Chesapeake, a Boating Guide to Weather" currently is available from the VIMS Sea Grant Communications Office for \$1.00 per copy.

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Dr. Frank O. Perkins Dean/Director,
Virginia Institute of Marine Science

Dr. William Rickards Director,
Virginia Sea Grant

Dr. William D. DuPaul Head,
Advisory Services

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Dick Cook Editor

Cover Note

Picture proof that Chesapeake Bay can create its own weather. In early June, the relatively cool air temperature over water inhibits cloud formation (white puffs) during late morning and afternoon. In fall, the opposite effect results. NASA LANDSAT Photo.

Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
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