Modern forklifts help boats sit 'tall and proud'.

Dave Huempfner

Let's turn this boat around

The latest drystack technology provides greater revenue-generating solutions over those of 30 years ago. *Dave Huempfner* reports

On a clear spring day at the Daniel Island Marina, my heart stopped as a brand new 36ft Boston Whaler quietly glided into the wetslip staging area. I couldn't believe my luck when the owner asked if he could store this magnificent centre-console boat all winter long - I could see the money rolling in! This is what dreams are made of for an owner of a dry storage facility.

I knew that I could successfully lift a 33ft vessel, but 36 feet left me shaking. I could only envision the forklift groaning under the weight and length of this boat. Do I dare risk it? No. I have to turn him away and lose all of that revenue. Even if the forklift could have plucked this vessel successfully from the water, I knew that I could not squeeze it into the largest space I had. So, away drove the boat and owner, and with it went a large portion of the marina's revenue for the next six months.

This may sound trite and possibly unimportant, but having the right facility and the perfect equipment can make all the difference and can turn a struggling dry storage facility into a beaming beacon of hope and revenue.

For many dry storage owners, the only systems available to them are the traditional ones that have been in operation since the late 1970s. Typical construction for these facilities includes steel framing and racks with a concrete foundation and a forklift travel aisle. In the past these facilities have used heavy-duty, specialised forklifts to facilitate launch and retrieval operations.

Over the last 30 years, such systems have consistently provided dry storage owners with predictable operational performance and costs. However, increasingly competitive marina markets cause some owners to now look for ways to maximise revenues by accommodating larger vessels (35 feet or greater). Mike Wiggins of Wiggins Lift Company confirms that owners around the world face the same dilemma. In response to this situation, his company now produces forklift trucks, such as the MarinaBull2, which can accommodate vessels up to 50 feet in length. For the first time, dry storage owners can purchase a forklift with greater lifting capacity and retrofit their facility's rack system if they want to accommodate these vessels.

As a consultant for Applied Technology & Management (ATM), I can easily relate to dry storage owners with similar tales of woe. The good news is that they now have the opportunity to 'turn this boat around' by planning facilities that accommodate a variety of vessels, even those 50 feet and beyond. With an improved forklift and the appropriate amount of space, the boats of today and the future can sit tall and proud throughout an entire winter.

And there is more good news. A number of manufacturers now have the capability to address additional challenges in site efficiencies, cycle time, vessel weight and labour costs. ATM was recently contracted to conduct a study of new dry storage technologies for a developer in the United Arab Emirates who is faced with a tight site, anticipated vessels that may exceed 50 feet, and a requirement for unprecedented storage capacity - up to 12,000 vessels!

We found that automation technology has made dramatic improvements to site efficiencies, cycle time, vessel weight capacity and labour requirements. Automated dry storage systems typically employ at least one (if not a combination) of heavy lifting technologies. Our research indicates that these include overhead cranes, elevator transport vehicles (ETV) and/or carousel transport technologies. Many of these technologies have been used in a variety of industries in the

past for air freight transport and automobile parking/storage for example. Now there are a number of savvy companies who have adapted, or are in the process of adapting, this technology to the challenges of marine storage.

Here's what some of these companies have demonstrated on the subject.

- Vertical Yacht Storage Systems (VYSS) utilises overhead crane technology in dry storage automation. This system has been successfully implemented at The Port Marina in Fort Lauderdale, Florida. Andrew Sturner of VYSS points out that 'higher returns are achieved by reducing aisle width and expanding the vertical dimension to allow more vessels as well as larger vessels in every rack while improving overall customer satisfaction.' (See *Marina World* Vol 6, Issue 6)
- Justin James of Automated Marine Technologies (AMT) explained that his firm's systems are built to meet the client's throughput requirements as opposed to building a facility according to the technical capacity of a forklift. AMT utilises ETV technology that has been historically implemented in freight transfer installations at major airports and for the US Air Force. An ETV is a rigid elevator unit designed to carry vessels on a mobile platform. As this elevator transport vehicle travels down the building's centre aisle it simultaneously lifts the vessel to the appropriate level and then transfers it from the platform to the storage rack. Currently, AMT's marine storage systems are being designed to store boats with a length overall (LOA) between 38 and 75 feet and weights from 22 to 100 tons. (See *Marina World* Vol 8, Issue 6)
- The Aero-Docks system utilises carousel transport technology that can store vessels from 30 to 100 feet in overall length with weights over 112 tons. These systems are designed to maintain electrical power while the boats are stored, allowing on-board refrigerators and other equipment to run. Richard Lydle of Aero-Docks indicated that his company's automated systems double the number of vessels that can be stored in the same amount of space when compared with traditional fork-lift storage systems. (See p. 42)

Legendary Marina, a premier storage facility in Destin, Florida, offers boaters a full concierge service, ship's store and indoor storage for vessels up to 48 feet. Photo Courtesy: Legendary Marina.

Before and after at New Port Cove Marine Center's 300-vessel drystack, Palm Beach, Florida.

Conversations with these manufacturers reveal that most have plans on the drawing board for greater vessel length and weight capacities, and a few even believe that megayachts could be a viable market in the near future. Sturner of VYSS further indicates that there are numerous observable benefits to automated systems, specifically the 'elimination of vessel damage, a reduction in staffing costs, and safer operations'.

Vessel damage repairs are costly to a dry storage owner's budget. Consequently, a customer with a damaged vessel can be an owner's worst nightmare if the patron believes operational negligence may have occurred and could have been easily avoided. Automation can reduce vessel damage due to these systems' tight control and lifting tolerances that are governed by computers, lasers and other technologies.

Additionally, finding qualified and competent marine forklift operators in some areas can be very difficult for dry storage owners. Dockhands may be high school or college students off for the summer who may have limited boating experience and reliability issues. Since turnover for both of these positions can be high, a dry storage owner can realise a reduction in staffing needs as it takes fewer skilled operators to launch and retrieve vessels using a fully automated system.

Lastly, automation increases operational safety by reducing the possibility of human error and staff/customer proximity to heavy equipment (i.e. crushing hazards) - a fact that your insurance agent should appreciate.

Because traditional forklift-assisted dry storage technology is a proven system with a 30-year performance record, there are predictable costs and operational performance for operators of these systems. However, advances in both forklift technology and automated dry storage systems are pushing the envelope when it comes to:

- Reducing overall building footprints while increasing vessel storage efficiencies
- Cycling more vessels to and from the water in shorter periods of time
- Accommodating large volumes of vessels with greater overall lengths and weights
- Lowering labour and vessel damage costs while improving operational safety

In the near future it may not be uncommon to see a hybrid system that combines both forklift and automated dry storage systems. This scenario may be especially true if a large number of current dry storage owners who have significant investments in infrastructure chose to explore potential additional revenue by implementing a full, partial or limited retrofit of their facility.

Unlike my situation with the 36ft Boston Whaler, the options for our developer client in the UAE are virtually limitless with the advances in today's dry storage technology. Theirs is obviously a unique situation but it represents the opportunities of today and the possibilities of tomorrow. Does it get any better than that?

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Drystack working group

In a move that recognises the importance of drystack in developing regional boating facilities, the PIANC Recreational Navigation Commission and the International Council of Marine Industry Associations (ICOMIA) have established a joint working group focusing on drystack storage.

"This is an exciting time in the development of new technologies for drystack systems," says Esteban Biondi, chairperson of the joint working group (WG132) and marina studio leader for Applied Technology & Management.

The recent activity by a number of players in the field (designers, patent holders, builders and developers) is significant and a large number of projects have reportedly been studied over the past few months. However, 'new systems' by definition have no track record and most of them will be put to the test in the near future.

"Our recent evaluations of solutions to specific drystack project needs with alternative automated drystack systems was challenging and led to a number of conclusions," says Biondi. While the main purpose of the working group is not to address automated drystack systems, it will likely feature in a section of the final report.

Headquartered in Brussels, Belgium, PIANC is the international association for waterborne transport infrastructure. Established in 1885, PIANC continues to be the leading partner for government and private sector in the design, development and maintenance of ports, waterways and coastal areas.

Esteban Biondi has over 15 years of experience in ocean and waterfront projects, ranging from marina developments and cruise destinations to port structure and environmental impact studies.

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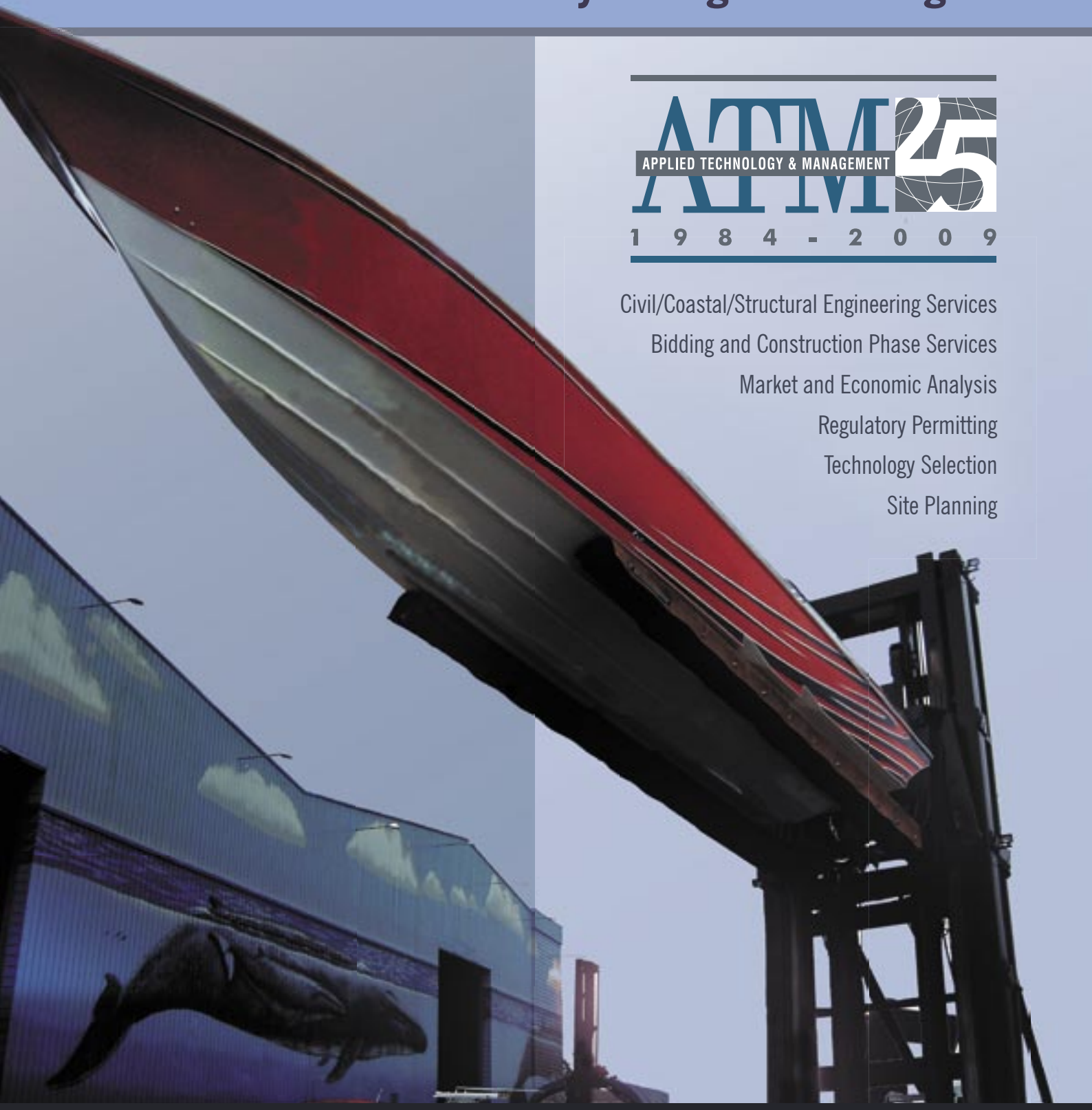

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