

Marina

World www.marinaworld.com

March/April 2021

Issue 124



Essential reading for marina and waterfront developers, planners and operators



A Capria semi-automatic drystack system is safe and silent and requires less operating space.

racking in pre-designed modules that fit into an existing shed or semi-protected construction. It was not until Hurricane Andrew in late 1992, however, that the real havoc wrought on communities, marinas and drystack put a stop to the “well, it happens sometimes” attitude. Andrew killed 65 people in south Miami and left an ugly scar on those who survived it. Better building techniques were employed and historical meteorological records became part of feasibility studies. Rules on strength of drystack structures were implemented, including foundations, water drainage and chimney effect on fires. The second enemy (this time worldwide) was fire, fortunately a rare occurrence but a sufficient risk to generate rules for drystack fire-fighting (usually water sprinklers and portable and fixed foam equipment) and to forbid work carried out by amateurs while a boat was in the shed. Today, the NFPA (National Fire Protection Association) has standard 303 Fire Protection for Marinas and Boatyards.

The early 21st century saw drystack facilities going bankrupt; something unexpected a few years before. The financial crisis was the catalyst that reduced cash-flow and credit, and highlighted the importance of undertaking down-to-earth due diligence, market study, investment and operational cost calculations before jumping into a new drystack business. The opportunities were previously not analysed with enough pragmatism to make an accurate (or as accurate as possible) business plan. I remember visiting Loggerhead Dry Stack in Palm Beach sometime around 2007, admiring its Marina Bull forklifts (the biggest built at that time), the stylish offices and shops, and the lighthouse landmark embedded in one of the buildings, only to see it go bankrupt two years later.

By 2005 there were norms to be respected for drystack operation: no work in, or access to, the shed; drainplug out before stacking; main battery supply disconnected; and, in most facilities, addition of low level racks to service boats outside the shed.

Drystack turns 55: from the 1960s to the 2020s

by Oscar Siches

The clever drystack solution of storing boats in a reduced space emerged in the 1960s. There is no precise date, but there were drystack in 1965, and at that time two countries were simultaneously seeking the most efficient way that small boats could stay on their trailers out of the water and be reasonably protected against outdoor weather. Those countries were the USA (no surprise) and Argentina (surprise). Argentina has a strong yachting tradition and boating is a popular leisure activity and sport in Buenos Aires most particularly. Drystack were also necessary because of the problem of high tide variations (up to 7m/23ft) due to particular wind conditions. Today, drystack north of Buenos Aires offer 146,000 berths.

At the time, drystack were just sheds, built without any experience and constructed purely to withstand the deadweight of the boats. The innovation took root fast, and new drystack were popping up in Florida on many plots of waterfront land. The 1970s brought forklift technology, and Wiggins Marina Bull equipment delivered negative fork (descending below the level of the floor from which it was operating and thus able to pick the boats directly from the water) and a short wheelbase

to allow narrower aisles in the sheds. A forklift with negative lift is still the most common boat moving system for drystack. New systems have been created but the drystack business is very conservative and retrofits are rarely seen.

Eventually, Nature showed up with Cat 4 and Cat 5 hurricane winds and drystack in the hurricane path took off without needing any air traffic control or flaps. Bellingham Marine created its Unistack line; drystack

BOAT LIFT



HANDLING AND LIFTING SYSTEMS

Via Alba-Narzole 19 - 12055 Diano d'Alba (CN)
tel. +39 (0)173 500357 - fax +39(0)173 500642

www.boatlift.it

Represented in over 40 countries
www.flovac.es

Taking the Green approach to the Blackwater problem

Vacuum sewerage systems are ideal for use in marinas and ports of any size.
The Flovac system can capture sewage and bilge water from boats and all facilities around the marina complex.

- No electrical power required at dockside
- Validates MARPOL certification
- No risk of water contamination
- Suitable for boats and docks of any size
- Discreet, small diameter pipework
- Ease of installation
- No odour

FLOVAC

Around 2007, concrete drystack started to appear for the first time. GCM Contracting pioneered this with Hamilton Harbour in Naples, Florida as the best shelter for hurricane conditions and fire (rack cells are also separated by concrete walls). Today, the concrete construction is similar, but the technique has varied to prove tilt-up to be the best method as (1) it is cheaper (2) it is faster and (3) less surface area is required for the construction site. Concrete is favoured by fire marshals around the world (well, North America, the Mediterranean, Mexico, Brazil, Singapore, Australia, New Zealand and Argentina where most drystack exist).

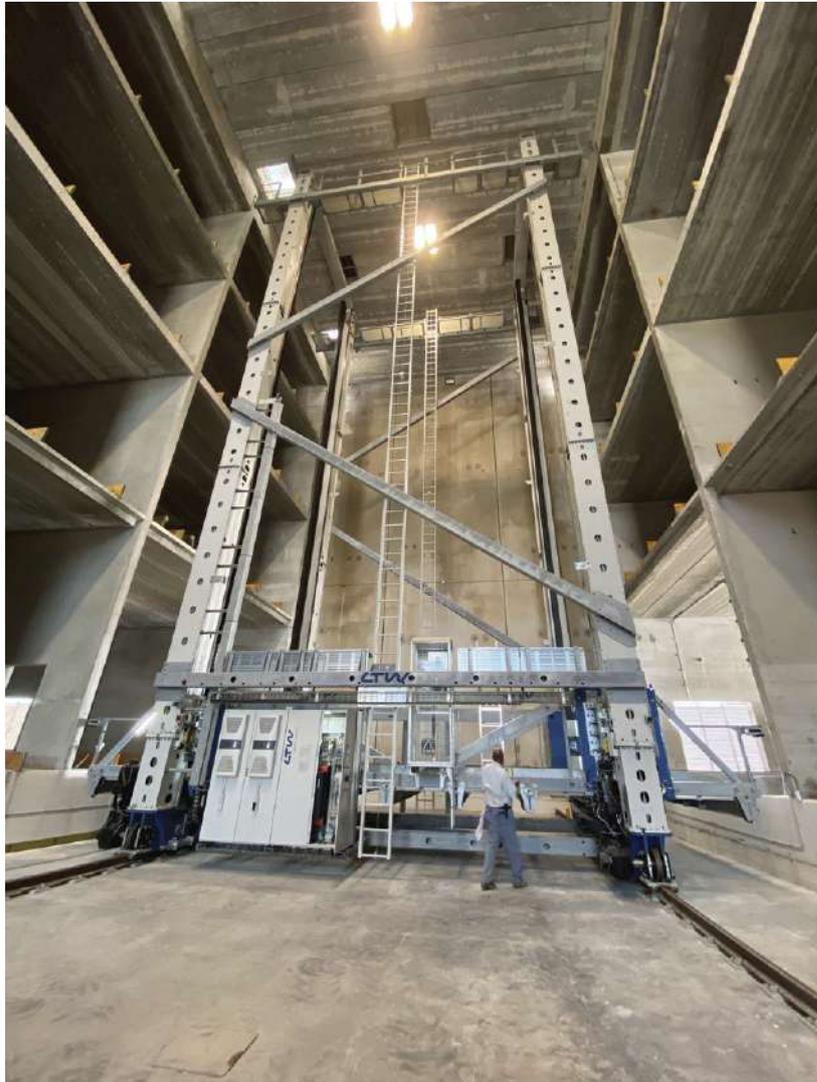
Buildings like these also have the advantage of being easy to dress up on the outside to make them look like big villas or shopping malls. Doors, balconies, small hanging gardens etc., reduce the negative visual impact to zero. Another advantage of this construction method is the ability to have extra adjacent commercial space to give room to F&B, and open terraces on the top (roof), either for mini golf, F&B, solarium or a battery of solar cells for the electrical needs of the marina.

Traditionally, facilities have been protected against the spread of fire with sprinklers but this system has disadvantages: all shed sprinklers work at once – throughout the whole drystack; and boats fill with water (even if drainage plugs are out as dirt inside the boat blocks the drain holes easily). A 7m (23ft) boat can hold nearly 3,000 litres (800 gallons) of water. This means that for a three-tier drystack, racking will be loaded with at least 9,000 kg (19,850 lbs) extra on every row of boats stored; food for disaster by possible collapse of the structure.

In 2010, Argentinian company Capria developed some very ingenious overhead cranes for semi-automatic operation in drystack. The company

can compete with any factory in the world in terms of design and fabrication quality (and its equipment is being copied by other manufacturers). The types of cranes existing prior to this were of home-made quality, one-off inventions to suit specific needs.

With a Capria system, a column



Sophisticated automated machinery at Gulf Star Marina uses artificial intelligence software to distribute boats for highest efficiency.

hangs from the overhead cart, featuring two forks that can rotate 360° and displace themselves vertically. The operator sits in a cabin attached to the forks so as to have 100% control of the forks, the rotation, and the three-axis linear movements. It is simple machinery, providing safety, good speed and silent electric operation that generates no emissions. The company also builds two-stage launchers for high tide operations in conjunction with an overhead crane or forklifts, making the system able to operate with very high tidal variations. This type of

semi-automatic machinery for stacking is the second most popular choice for drystack today and benefits from the low risk of operational/human error.

The start of the 21st century also heralded the first fully automated drystack marinas. At the time, Vertical Yachts built what is today The Port Marina in Ft Lauderdale, Florida - a fully automated facility with a German crane and cantilever racks that ease the load and unload manoeuvre. This facility was also one of the first dockominiums: a legal term by which a boat rack can be sold like property/real estate. Many drystack were bought by speculators and transformed into dockominiums. Many people had to find monthly payment racks elsewhere as the purchase price for the space of the rack had to be paid in full at acquisition. The uncontrolled development of dockominiums created a shortage of water access for boaters. Communities have recently started

to vote to limit the elimination of water access.

Two years ago, Safe Harbour by GCM continued its innovation by creating ASAR. One facility – Gulf Star Marina – is up and running in Ft Myers, Florida and has experienced high occupancy since the day it opened. Gulf Star features a concrete shed with space for 300 boats on a relatively small footprint. This is possible because boats can be stored three deep on each rack; and this is how the ASAR launch and retrieval system proves unique.

LIVART

Premium Floating Solutions

www.livartmarine.net
livart@livartmarine.net

ISO9001:2015 ISO45001:2018 ISO14001:2015

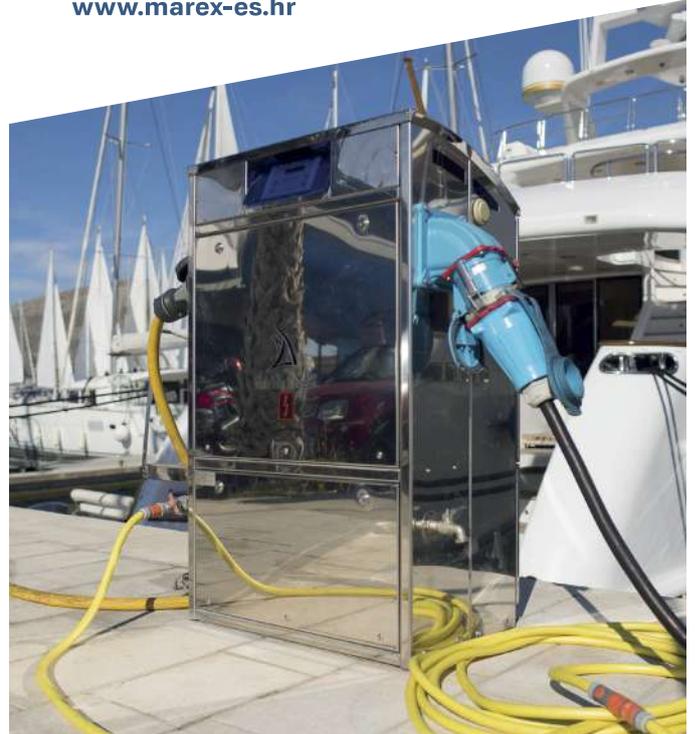


Mega Tango by



Marex
Elektrostroj

www.marex-es.hr



R. Raviv Consulting Engineers Ltd
Marina design & consulting
www.raviveng.com

Are you looking for increased profits and operational efficiency? *Book your demo today.*

Pacsoft
Marina, Boatyard & Shipyard

Pacsoft's fully featured software can bring greater clarity to many of your day-to-day business functions...www.pacsoftmms.com



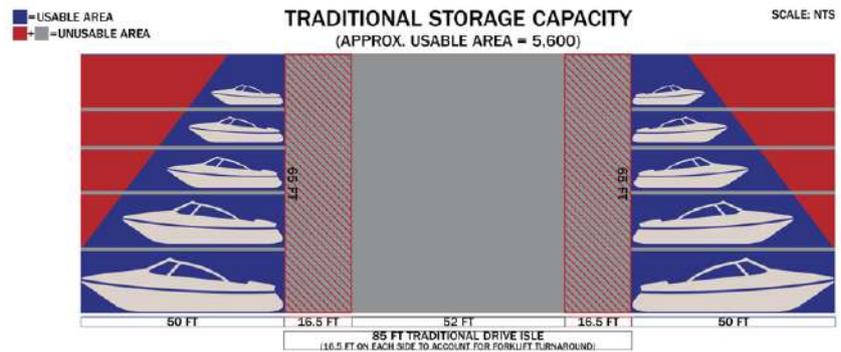
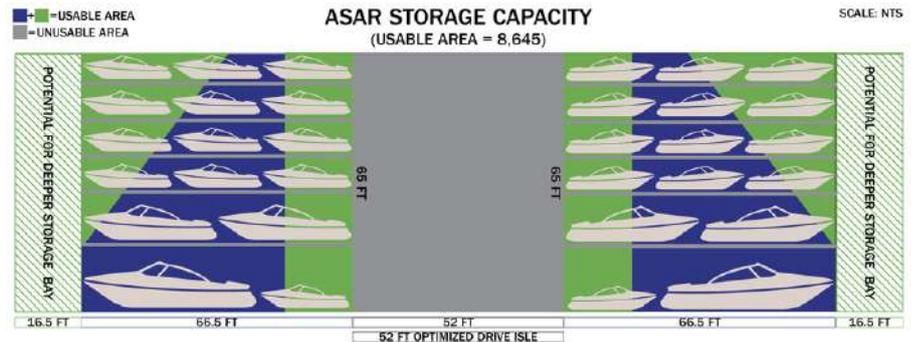
Jonas
Software for Life

Pacsoft is a Jonas Software Company

The ASAR launch and retrieval system from Safe Harbour/GCM can store three boats on each rack unlike traditional storage models.

The crane is a four-leg structure running on a rail. It has double tracking electrical motors running alongside the shed, double motors for vertical motion, and the cart supporting the boats and bringing them to their position in the rack is electrical and steered by wireless technology. Both the four-legged structure and double motors allow horizontal and vertical speeds previously unknown in drystack operation.

The system can store boats, cars or containers and the shed can be compartmentalised or standard. At any given rack, a client can store any combination of a container, a summer vehicle and a boat. Gulf Star Marina has been operating since September 2020 at safe speed, and by the time this article is published the crane technicians will have finished the fine tuning (they could not fly from Austria before now) and the system will be operating at full speed. The artificial intelligence software learns the usage pattern of the boats and distributes



them on the racks for highest efficiency. With extremely low maintenance requirements, the crane has a ten year guarantee for its platform lifting belts. For the first time in many years, the

drystack industry presents a project in which every single stage is innovative. Oscar Siches runs the consultancy firm, Marina Matters, from Mallorca, Spain. E: oscar@siches.com

www.roodberg.com

Moving forward

E-novations
CHECK!!!
www.roodberg.com/news

100% ELECTRIC

Roodberg

The Original