McNotes
Vol 17 No. 1 Oct. 2017

Soup to Nuts

With a history that spans over 40 years, AMCA has rarely had a project that's been "soup to nuts", but our latest project with the Houston Pilots has been just that. The project began in late 2015 with the signing of a shipyard contract for the construction of two SWATHs that would be used as pilot transfers for the Port of Houston.

ACMA was initially asked to evaluate the Houston Pilot's existing pilot vessels. After a thorough review of current documented vessel condition and recent repairs, as well as an on-site inspection, ACMA determined that the vessels were at the end of their service life. Since our assessment confirmed what the pilots had surmised, plans were put in motion for some replacement tonnage.

As fate would have it, shortly after making the decision to proceed, the Houston Pilots made contact with the shipyard Abeking & Rasmussen at the New Orleans Workboat Show. Once a few minor modifications were made to one of the shipyard's "stock" designs, a contract was signed and the construction process was initiated for two replacement pilot vessels.

According to ACMA VP Darrel Harvey, who provided on-site construction overview, the whole construction process went off without incident or issue in large part because these two vessels were the 24th and 25th vessels built based on the stock design. Darrel also noted that the yard delivered an excellent product and was a pleasure to work with throughout the process. Upon final acceptance of the second vessel, ACMA provided the load-out and transportation acceptance on behalf of the insurance underwriters.

"This was one of the best jobs of my career", says Darrel. "The Pilots were well prepared and wanted no more or no less than what they paid for. This, combined with the willingness of the yard to accommodate the owners, further bolstered the quality and craftsmanship that the yard put into the final product."

Alan C.
McClure Associates, Inc.
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From the Top

Hopefully, all of our clients and business associates throughout Texas, Louisiana and Florida came through Hurricanes Harvey and Irma "high and dry" or, at the very least, they weathered these extremely destructive storms with very little damage.

ACMA remained closed during Hurricane Harvey and made the necessary adjustments to assure the safety of our personnel and company property so we could get back and support our industry as soon as possible. I'm happy to report our office was able to open only a few short days following the departure of Harvey and our entire team is now working at full force.

It seems that during the most difficult times the marine industry always forms an even stronger bond and focuses on helping each other recover. All of us at ACMA are proud to be a part of that tradition and we look forward to working together with all our colleagues to make the remainder of 2017 a good one!

Scott C. McClure, President

Twenty Years of Volunteering Comes to a Close

ACMA's VP Darrel Harvey

ACMA has always been supportive of our employees' involvement in various professional societies that promote and advance the interests of the offshore and marine industry. For the past 20 years, ACMA Vice President Darrel Harvey has devoted a considerable amount of his time and talent to the Offshore Technology Conference (OTC).

"My involvement with OTC began in 1997," says Darrel. "Initially working with the Society of Naval Architects and Marine Engineers (SNAME), I reviewed and ranked abstracts. That experience led me to many years of collaboration with leaders from the ten founding societies to develop and refine the technical programs that have become such an important part of OTC."

"After working behind the scenes for about 17 years", continues Darrel, "I decided to put my name in the hat and provide leadership as the Program Committee Vice-Chair and then Chair." Now having successfully completed his "tour of duty" heading up the Program Committee, Darrel has decided to end his involvement in putting together interactive presentations for OTC's "active arena" and working with his friends Greg Carter and Tom Gee from the Society of Petroleum Engineers (SPE).

How would Darrel sum up his "extracurricular" experience with OTC for the past 20 years? "I've had the opportunity to meet and get to know some of the best and brightest in our industry. True professionals whom I'm fortunate enough to count on today as both colleagues and friends. Without a doubt, my experience as a volunteer will be looked back on as a highlight of my career."

The Importance of Towing Tank Model Testing

By Nicholas Barczak

We often hear promises about "big data" and "digital technology." But computers don't solve all problems…especially when it comes to constructing a new ship. A towing tank allows for "physical" model testing that offers "big confidence" in speed and power predictions.

The test model – no small thing

ACMA recently served as the owner's representative with model testing of a polar expedition cruise vessel. Model tests are necessary when building a new vessel. They accurately predict resistance and propulsion requirements, with "accurately" being the key word. A towing tank is easily accurate within a 1% or better error margin and that confidence is the primary value of any test program.

Contiued on the next page.

McNotes is published by
Alan C. McClure Associates

Founded in 1975, Alan C. McClure Associates, Inc. (ACMA) is one of the industry's premier naval architecture and engineering firms. Headquartered in Houston, Texas, we've provided advanced design and engineering services to our international clientele in offshore exploration, production and marine transportation for four decades.

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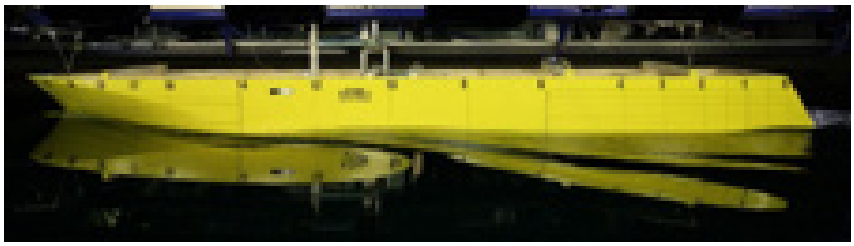
The Importance of Towing Tank Model Testing - Contiued



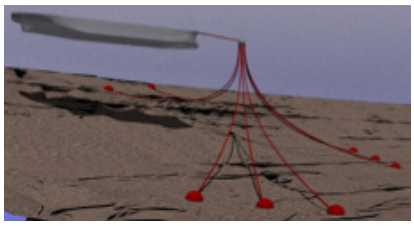
The test model in towing tank

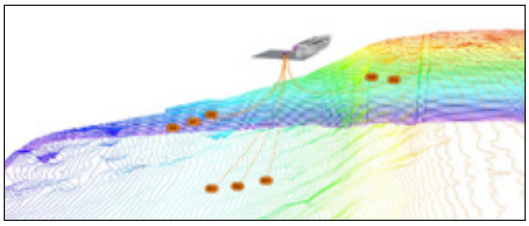
The first task of any tank test program is the construction of a massive model. Our model measured seven meters long and weighed 1.5 metric tons! Definitely not a kid's toy. Its massive size is critical to accurate data. In addition to accuracy, these physical tests offer a second advantage to the design process – detailed data on the breakdown of the various physics. A towing tank quantifies all the elements contributing to vessel resistance and powering, which ultimately answers the question: do you have a good hullform?

The quantity and veracity of test data from towing tank model testing propagates throughout the detailed design, promising dependable predictions of final vessel performance. Few other aspects of the design process deliver such exacting dependability.

ACMA Illustrates Mooring Project at ANSYS Conference

By Nicholas Barczak





Left - ACMA-designed single point mooring system

Right - Seabed contours showing a steep seabed slope

Volcanic. Mooring. Oil Tanker. Any project with those words linked together promises an innovative and interesting solution. In August, ACMA presented the nuanced challenges of designing a single-point mooring system for installation in the U.S. Virgin Islands. The major challenge: a very steep seabed which conjured images of plummeting underwater volcanic slopes.

ACMA detailed this project at the ANSYS Innovation Conference which highlighted many of the innovative projects possible through the advanced numerical analysis software ANSYS. A longtime user of ANSYS, ACMA was invited to present our latest project that demonstrated inventive capabilities in the field of mooring analysis.

Mooring analysis is relatively routine when the geography accommodates with tranquil, flat seabeds. Faced with the challenge of a plummeting seafloor on the side of an island, ACMA developed new guidelines for anchoring this unique mooring system. The capabilities of the ANSYS software allowed exploration across dozens of different mooring configurations. This yielded a mooring system which appeared simple, but unfolded with layers of complex dynamic behavior.

This system balanced a series of competing design requirements. It permitted large buoy motions to survive massive hurricanes and yet the system also controlled the buoy excursions to minimize any motions with an oil tanker attached. These minimal motions were critical to avoiding any risk of the vessel grounding on the rapidly rising seabed.

Armed with the advanced capabilities of the ANSYS software and the creative solutions developed by ACMA employees, we developed a new mooring solution for the tenacious problem of how to balance a mooring system on a volcanic island slope that was well received by our fellow industry leaders at the ANSYS Innovation Conference.