



Compounding Lines

Your Global Compounder of Custom Engineered Thermoplastics

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Anchor Man

With an innovative device that stops boats instantly, fish don't stand a chance; and with an innovative polymer protecting the device's sensitive electronics, water damage doesn't, either.



A few years back, fisherman John Oliverio was out on the Florida saltwater flats. He cast his line near a passing school of fish, and—for the umpteenth time in his fishing career—watched in frustration as his boat drifted out of range.

But this time, Oliverio had an idea.

"He thought, 'wouldn't it be awesome if I could stop the boat as instantly as I can start it,'" said Jantzen Maynard, Product Design Engineer at **JL Marine**, the company Oliverio co-founded to develop his innovation.

Maynard explains that, ordinarily, the only way to stop a moving boat is by cutting the motor and dropping the boat's anchor. This requires abandoning the fishing pole, walking carefully to the stern and dropping the heavy anchor, causing commotion that can scare the fish away. Further, even at anchor, most boats will still drift significantly, at the mercy of prevailing wind and currents. The fisherman can restart the motor to try to fight it, but that creates more noise.

In contrast, the Power-Pole is a pole shaped anchor driven by hydraulics that is launched quickly into the water via a convenient button hung around

the fisherman's neck. The pole digs into the bottom and stops the boat swiftly, silently, and completely.

"A boat can become almost like a car in terms of stop/start maneuverability," noted Maynard.

The Power-Pole was marketed successfully for several years, but Oliverio challenged his team to make the product even better.

"The device's electronics are as sophisticated as a smart phone's, but they might be exposed to water or be fully submerged for significant periods. If just a drop of water got through the case it could lead to a failure," explained Maynard. *"One of our goals was to keep the electronics even better protected." cont.*

"The success of this project has made RTP Company our go-to partner"

-Jantzen Maynard
Product Design Engineer





RTP Company
offers specialized engineering
expertise to help specify
& optimize solutions

cont.

Maynard sensed that a solution might lie in materials selection, noting that, at the time, the company was using the glass-reinforced nylon suggested by their compounder. He and his team decided to take a polymer science class at the University of Massachusetts to learn more.

"The class really opened our eyes to the huge universe of polymer performance possibilities. At the time, it seemed, we were using the best polymer for the application that the supplier happened to sell, rather than the best polymer for the application period," recalled Maynard. *"We knew we wanted to work with a compounder that had a wide selection of base polymers and the expertise to apply them optimally."*

After some research, he put in a call to **RTP Company**. The difference, he notes, was immediately apparent.

"RTP Company doesn't just offer a handful of base polymers—it seems like they have every commercially viable base polymer known to man,

and with all the additives they can apply, their solutions are nearly infinite," said Maynard. *"In addition, they offer specialized engineering expertise to help specify and optimize solutions, not just sales representatives with limited scientific knowledge."*

RTP Company engineers pointed them toward glass-reinforced Polybutylene Terephthalate (PBT), a thermoplastic engineering polymer used as an insulator in the electrical and electronics industries.

"There's a whole gamut of ways that a polymer could fail in this application and the RTP Company compound is successfully addressing every one of them," said Maynard. *"It has low moisture absorption, excellent electrical resistance, great dimensional stability, creep resistance and more."*

Extensive lab testing and early field testing has resulted in zero failures, even better than any prior performance, Maynard noted.

Further, **JL Marine** is enjoying an unexpected aesthetic benefit as well.

"Unlike nylon, the PBT is really glossy with no strands of glass visible—it looks great and it's going to give us a further marketing advantage," he said.

According to Maynard, the success of this project has made RTP Company their go-to partner, with numerous other projects now underway.

"We're not getting plastic from anyone else from now on," Maynard explains. *"Here's a company that has so many different polymers and so much expertise that they're always going to steer you in the right direction, not just to something they happen to have on the shelf. That's the kind of company we can trust."*

JL Marine Systems, Inc.
Power-Pole Shallow Water Anchor

Market: Sports and Recreation
Compound: RTP 1003 UV Black



Hello Yellow!

Superior water removal and eye-catching color help make the WaterBUG™ a winner for Wayne Water Systems

When it comes to portable submersible utility pumps—devices that effectively remove standing water from undesired locations—Wayne Water Systems of Harrison, Ohio seems to have raised the bar considerably with their new innovation, the WaterBUG™.

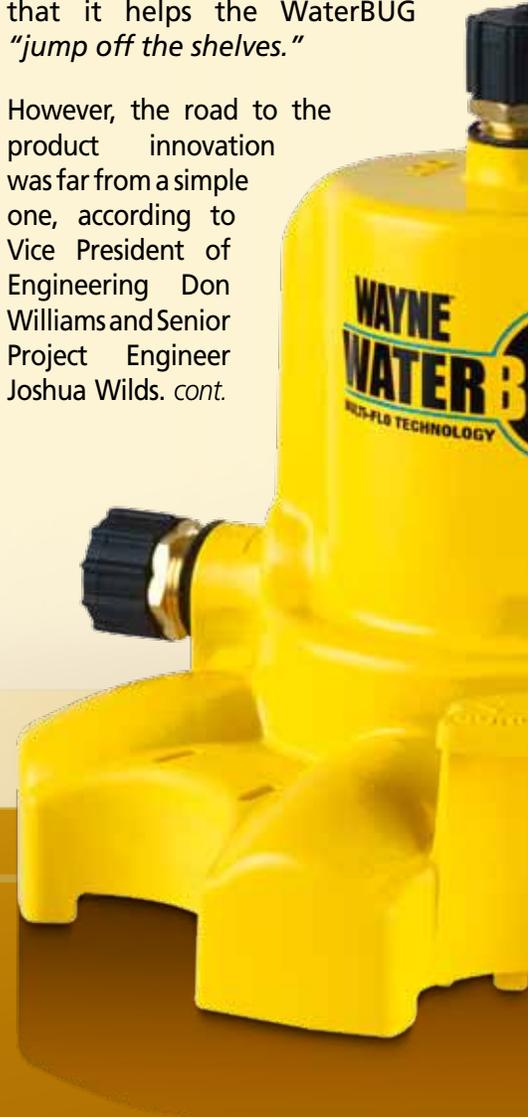
Unlike anything else on the market, the WaterBUG allows consumers to select between top or side hose connection and discharge, making a single cost-effective device equally suitable for tight spaces like utility closets or big open areas like pools or basements. In addition, the WaterBUG also delivers unmatched water removal capability—pumping down to a towel-dryable 1/16" of an inch, as well as a highly effective multi-ring suction strainer to filter out grit and debris.

However, what captures the attention of consumers in the aisles of their local home improvement center or hardware store is the color of the WaterBUG.

"Suddenly, in the midst of a sea of black pumps, here's an eye-catching, bright yellow one—it telegraphs instantly that something is different," explained Marketing Manager Jana Bartlett. *"Then homeowners see the list of innovative features on our packaging, and realize that yes, indeed it is—not only are they holding a pump that can dry half as close to the ground, they only have to buy one pump that becomes the perfect go-to for nearly any pumping situation they would likely ever be up against, now or in the future."*

Retailers, she said, seem to love the bright color as much as consumers—especially the fact that it helps the WaterBUG "jump off the shelves."

However, the road to the product innovation was far from a simple one, according to Vice President of Engineering Don Williams and Senior Project Engineer Joshua Wilds. *cont.*



“RTP Company met all the physical requirements— from flame retardance to UV-resistance to perfect color matching, all at a cost-effective price.”

— Don Williams, Vice President of Engineering

While Wayne Water Systems' cross-functional teamwork and in-house engineering expertise allowed them to readily design and build in the groundbreaking features, the development of the WaterBUG proved to be a little more challenging on the materials end.

“We were no strangers to specifying materials for products with demanding mechanical and flame retardant requirements for safety, impact-resistance, and durability,” explained Wilds. “However, since the WaterBUG was likely to be spending a lot of time outdoors, it needed to be UV-resistant also, which was a new challenge for

us. Further, this was the first time we worked with a color, much less such a specific one—PMS 123, the category color Wayne Water Systems uses on boxes and displays. After a false start or two with standard Polypropylenes, it was clear that we needed a little materials assistance.”

Fortunately, one of their long-term molders knew of RTP Company.

“I got on a call with them and I could tell right away how extensive their knowledge was around plastics and with applications like ours. They were also very quick to get us information, samples or whatever we needed, and very effective at keeping UL testing schedules on track,” said Wilds.

“RTP Company came into this project fairly late in a tight development cycle and was so responsive that they actually

helped us make up time we had previously lost and launch the WaterBUG on time and on budget,” added Williams. “Not to mention their material met all the physical requirements—from flame retardance to UV-resistance to perfect color matching, all at a cost-effective price.”

With the WaterBUG so new to the market, full sales figures are not yet available, but homeowners have given it a nearly perfect 4.9 stars on Amazon.com, and the syndicated home improvement show Money Pit selected WaterBUG as one of their top products at the 2016 National Hardware Show.

“Now that we know about RTP Company's capabilities, it definitely opens up even more possibilities for future product innovations,” said Williams. “Just think how much more effective we can be together if we involve them earlier in the process!”

**Wayne Water Systems
WaterBUG™**

Market: Consumer Goods
Compound: RTP 199 Series

In-demand features give aquaculture organizations a revolutionary improvement in assessment techniques —with a little help from polymer science.

Bucket List



For the commercial aquaculture industry and researchers alike, arduous “hand-counting and clicking” has long been the standard for assessing marine organisms such as shrimp, trout eggs, or algae in a sample of marine water.

Grad student Valerie Robitaille thought that she had a significantly better way—an electronic device using light sensors and custom-computed, species-specific algorithms that could accurately size and count them in the sample automatically. However, in developing her application, XperCount, she and her team soon experienced a setback from an unexpected place.

“Creating the bucket to pour the water sample into, seemingly a relatively simple matter, proved to be a big challenge,” noted Louis Bourgault, Director of Production for Robitaille’s company, XpertSea.

To operate properly, the bucket had to be fully opaque on the outside to ensure that no outside light got in, and be bright white on the inside to allow accurate performance of the light sensor. No ordinary, off-the-shelf materials could meet those criteria—even when they soldered a bright white insert inside.

So XpertSea turned to custom molding as a solution, and began the search for a white resin that was completely opaque to external light. In addition, the resin had to meet FDA food grade requirements, it had to withstand chlorine and every disinfectant that might be used in any hatchery anywhere in the world, and it had to meet the limitations of the company’s existing molds for the two part product.



“Fortunately, we found RTP Company,” said Bourgault. “It took some back and forth and testing to get the recipe exactly right, but RTP Company helped make it a smooth process.”

The heart of the machine—the computer that forms an “electronic lid” at the top of the bucket—also relies upon

RTP Company materials in the housing, the gaskets, the buttons, and the handle on the bucket itself. These and other parts meet some of the same performance challenges as the bucket, such as demonstrating broad chemical resistance and food grade safety.

“We felt very comfortable working with RTP Company on these items, as well,” said Bourgault. “But compared to the bucket challenge, this side of it was very easy for RTP Company!”



XpertSea
XperCount

Market: Industrial
Compound: RTP 128 UV