



CHRIS FERTIG USES FLOSCAN TO SET NEW BERMUDA CHALLENGE RECORD

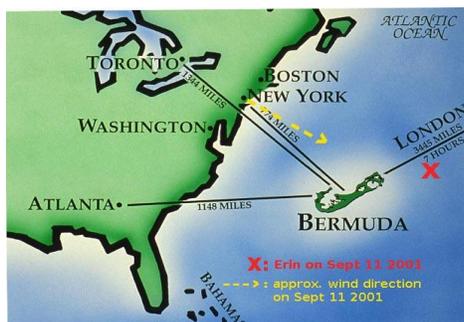
ANOTHER CHALLENGE, ANOTHER VICTORY FOR FLOSCAN

FloScan is certainly no newcomer to playing a pivotal role in amazing challenges that pit man and machine against incredible odds, the vagaries of Mother Nature and the clock. After all, it was a FloScan fuel monitoring system that was chosen for use aboard the experimental aircraft *Voyager* by Burt Rutan and company to set a milestone in aviation that might never be duplicated—a nonstop flight around the world *without refueling!* Imagine flying nonstop for nine days on a single tank of fuel to circumnavigate the earth because that's what Rutan and co-pilot Jeana Yeager did to accomplish this incredible feat, but without continuous, precise fuel consumption data at every stage of the flight it would have been impossible. FloScan technology and reliability helped make the impossible possible and it is one of the reasons FloScan is number one in civil aviation applications.

That's why it was with great anticipation that FloScan joined a select group of companies in a joint effort with Chris Fertig to break the Bermuda Challenge Record. Our past history, total confidence in the products we develop and manufacture, and thirst to continually test them in the harshest environments under the most demanding circumstances possible made the decision a no brainer.

What is the Bermuda Challenge? It's a dash across 780 miles of treacherous ocean in the North Atlantic starting from the United States mainland, across the unpredictable Gulf Stream ending at the tiny island of Bermuda. It has been described as "the longest single powerboat race in the world," a nonstop sprint across open ocean without benefit of refueling that has been attempted numerous times since the gauntlet was first laid down in 1994, but only completed three times prior to Fertig's attempt.

The Challenge was the brainchild of David Seidman, editor of *Boating* magazine at the time. He claimed the idea came to him in a bar while talking with a friend. He had been testing small powerboats for the magazine for the past 15 years and had witnessed amazing advances in design, construction and power applications. Seidman wanted to come up with a way to showcase these advancements and while looking at a map he found his muse.



"There on the chart, in the middle of nowhere in the Atlantic Ocean, on the other side of the Gulf Stream, was Bermuda," Seidman said. He felt that reaching that tiny island in a small powerboat would be the perfect way to showcase the advances in boats, motors and electronics and "would make a statement." It certainly got a lot of people's attention once he publicized the concept in an article in the magazine.

The only criteria for the race were the boat being used had to be less than 40 feet and it had to carry all the fuel to make the trip in its own tanks. That was the Bermuda Challenge in a nutshell, but like so many ideas going from paper to application takes a lot more doing. The first person to attempt the crossing was Larry Graf, then president of Glacier Bay Boats, in 1996. He set the bar at 37 hours, which fell the following year to another catamaran boat, the time cut to 29 hours, 30 minutes. That held until 2002 when Neil Burnie smashed the record making the run in 22 hours, 23 minutes. It was thought by many that the Burnie record would hold as the pinnacle of the Challenge, an unbeatable time set under ideal conditions and this belief was reinforced as several attempts made after his record failed, but that didn't deter Chris Fertig, it only made the Challenge that much more tempting.

So just who is Chris Fertig and why did he have a burning desire to break the Bermuda Challenge Record? He is an experienced seaman with an adventurer's heart and a student of marine engineering with a remarkable background that lent credence to his quest. Upon graduation from the US Coast Guard Academy, he served onboard the Coast Guard Cutter *Bear*, a vessel that specialized in high-speed drug interdiction operations. Chris was responsible for the successful seizure of over \$120 million in illegal narcotics and the repatriation of 352 Cuban and Haitian illegal migrants including leading a high-profile hostage rescue mission that took place aboard the Cuban survey Vessel Gavito-16.

After leaving the *Bear*, Chris was assigned to the Coast Guard's Atlantic Area Command where he oversaw the operations of the CG Buoy Tender Fleet from New Jersey to North Carolina. During Hurricane Katrina, Chris assumed duties as a response officer in the CG Crisis Action Center, which assisted in the rescue of over 33,000 citizens along the Gulf Coast in the aftermath of that devastating storm. Today, Chris works as a defense contractor for Maersk Line, LTD, the largest operator of US flagged ships in the world.



Chris Fertig (r) and throttle man Tyson Gavin made the treacherous NYC to Bermuda Run.

Breaking the Challenge record is not something that is easily accomplished. It requires an incredible amount of planning and logistical work not the least of which is selecting and modifying the appropriate vessel for the task. After much deliberation Chris decided that he would forgo using outboard engines and a catamaran hull like prior teams that completed the challenge and shifted his attention to using a pair of cutting edge V8 diesel engines offered for recreational powerboats by Mercury Marine installed in a 34' Statement Marine deep-vee center console boat. The engines were coupled to



Mercury's Bravo Three dual counter-rotating prop outdrives and are significantly larger in displacement, horsepower and torque output than the outboards used in previous successful crossings. The engines are remarkably fuel efficient, yet the question remained could a mono hull boat maintain the speed necessary to break the existing record through the varying sea conditions that would be encountered during

the run and provide the requisite fuel economy required to get there without refueling? There was only one way to find out and that would be to build the boat and test it under a wide range of conditions and that would require the most accurate and reliable fuel monitoring system in the world. Where did Chris turn to find this invaluable piece of equipment? FloScan!

FloScan provided their most advanced system that included their proven opto-electronic turbine fuel flow sensors, renowned for their accuracy and rugged reliability in tens of thousands of marine applications. The flow rate data provided by the sensors was routed through the revolutionary FloNET module, converted to NEMA 2000 that interfaced directly with the Simrad navigational electronics display Chris had in place aboard the boat. This remarkable system provided instantaneous and continuous readings of gallons per hour; gallons remaining in the fuel tanks; nautical miles per gallon and projected distance to empty right on the Simrad LED screen at the helm for constant reference both in testing and throughout the upcoming Challenge.



With FloScan on board the testing began and it quickly established exactly what Chris had hoped. The Statement Marine 34' center console with the Mercury TDI diesel engines and outdrives was powerful and fast enough to provide all the speed necessary to beat the current record time while being efficient enough to make the run on a single fuel load. But Chris knew it would require more than just speed and fuel efficiency to break the existing Challenge record!



Using FloScan technology the Statement Marine 34 can be operated at peak performance balanced against fuel consumption requirements.

“Long distance, open-ocean endurance racing is a balancing act between speed, fuel consumption, stamina and equipment failure.” Chris explained. “The ability of our FloScan FloNET fuel management system to accurately report our fuel consumption and predict our corresponding range based on actual race conditions as they occurred was a key component of our successful Bermuda Challenge World Record. Having complete confidence in our fuel consumption performance enabled us to run longer and faster with less fuel reserve, which ultimately allowed us to shave almost an hour off the previous Challenge Record.”

Ah, but then there is Mother Nature and she can be a stern taskmaster! Fertig and company made their first attempt to break the record in September, 2011 with favorable weather forecasts and high hopes, only to be forced to return to the mainland after reaching the midway point in the transit.

“The weather deteriorated quickly and the seas in the Stream grew to the point where it would have been impossible to maintain enough speed to complete the course in a reasonable time frame. It was compromising the safety of the vessel and crew, and eating up valuable fuel reserves at an alarming rate,” Chris told us.

From everything he knew about the Gulf Stream and the seas between the North Wall and Bermuda it was only going to get worse so he pulled the plug and limped back to the West eventually finding port in Indian River, Delaware. But failure only increased his desire to succeed. He knew he had the equipment, the knowledge and the stamina to complete the Challenge in record time, all he needed was a window with reasonable weather conditions to make it happen and that would not occur again that year with the unpredictable weather that accompanies the onset of autumn in the North Atlantic.



Fertig and Gavin pass the Statue of Liberty on their way to the open Atlantic and Bermuda.

After almost three years of study, design, experimentation and a weather aborted first attempt behind him, Chris and throttle man Tyson Garvin boarded his Mercury TDI powered center console on August 4, 2012 in New York Harbor to make a final stab at conquering the Bermuda Challenge. The going was smooth most of the way out and even upon entering the Gulf Stream. The Stream, for those unfamiliar with this unique ocean current, is a river of warm, dark blue water that emerges from the Gulf of Mexico and runs up the eastern seaboard to Cape Hatteras, where it makes a jog to the east getting further and further from the US mainland on its way toward Greenland. It can flow at speeds in excess of 5 knots and the current and water temperatures can generate unpredictable weather phenomenon. When the wind blows from the

wrong quadrant on the compass, it can create massive waves! This time the weather was more forgiving, but they still encountered 6 to 8 foot seas at the North Wall, which tended to slow them down and increase fuel consumption. As they passed out of the Stream the seas relented until they were within 125 miles of Bermuda where they started building again.

According to Fertig the single most important aspect of the project was fuel management throughout the entire run. "We knew exactly how hard we could push the boat under every sea condition we encountered thanks to FloScan technology," Chris reported. "We hit some pretty gnarly 6' to 8' seas at the North Wall that slowed our progress and increased fuel consumption, but we watched our FloNET readings, kept hour-by-hour log entries and projections and the closer we got to Bermuda the more confident we were that we had more than enough fuel, which made it possible to push the throttles up and increase speed cutting additional minutes from the final time."

The FloScan FloNET system is so accurate that it let Fertig compensate for greater fuel consumption at the start of the run compared to what they would achieve later in the race. Leaving with 686 gallons on board the boat was running at 1.2 nautical miles per gallon, not enough to make the 780 mile trip, but as fuel levels dropped fuel economy increased and by the halfway mark overall performance rose to 1.6 MPG leaving them with more fuel in reserve than would be needed if the weather and seas cooperated. The rough seas at the North Wall and as they closed in on Bermuda could have hindered fuel economy significantly, but Fertig was able to compensate by balancing speed and fuel consumption thanks to FloScan's unerring accuracy and unquestionable reliability.

At 7:09 AM the following morning Chris and Tyson made landfall in Bermuda achieving his goal and breaking the existing record, the record many thought could not be broken, by a respectable 46 minutes. Along the way he tested himself and his equipment, including the invaluable FloScan FloNET system that was instrumental in the achievement. Chris will not bask the glory very long. He's not that kind of man. He will, no doubt, move on to new challenges that only he will be able to determine are worth achieving.

The final question is just what does this mean to pleasure boaters or commercial boat operators and why should they sit up and take note of this remarkable achievement? The FloScan performance advantage that helped Chris Fertig set a new Bermuda Challenge World Record is the same performance advantage that can help you identify the optimum performance points for your boat helping you cruise further, burn less fuel and even identify potential problems that can cost you more money each time you fuel up. It is one critical piece of marine technology that can actually *save you money* and a system for your boat is less expensive than you might imagine!

FloScan offers affordable fuel computer systems for a wide range of gasoline and diesel applications that can pay for themselves in fuel savings in no time. Chris Fertig wouldn't leave the dock without his FloScan. Why should you?