

EXECUTIVE SUMMARY. This US SAILING Safety Review answers two questions: What should American Sailors learn from the *RAMBLER 100* capsize during the 2011 Rolex Fastnet Race and what improvements to US SAILING Procedures and Regulations might prevent a reoccurrence of this incident. Survivors were left with no access to lifesaving equipment or emergency communications with boats sailing near them and rescue forces searching around them for two PLBs whose registration did not identify their boat. The review was completed independent of any technical analysis of the keel fracture and it is based primarily on the narratives of all 21 of the crew members and situation reports of the SAR authorities.

To the surprise of all survivors there was no time to take anything with them. All they could do is get clear of the capsizing hull and its rigging as the boat inverted. The struggle to do this and the focus on how the safety equipment they had with them worked is combined into their suggestions for the future. The overwhelming opinion of the survivors is that a combination offshore lifejacket & safety harness is not complete without wearing crotch/thigh straps, the ISAF recommended Sprayhood/Splashguard, a tether/safety line and adequate signaling equipment (Bright light, flare(s), whistle and PLB).

This review recommends changes to the ISAF Offshore Special Regulations to require boats with movable ballast to have ready escape capability and safety equipment accessible if the boat becomes inverted. It also recommends several changes to offshore racing regulations and procedures including full implementation of required ISAF Survival Training in the US for offshore sailors.

The training, experience and calm manner of handling this horrific incident by a group of world class professionals is credited with their total survival. They worked together, helped each other and remained calm, thinking clearly about their shipmates and the next step. Combined with their individual will to survive, this professionalism resulted in a 100% outcome.

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INTRODUCTION. US SAILING President, Gary Jobson, requested that Safety at Sea Committee member Ron Trossbach conduct a Safety Review of the 15 August 2011 capsizing of the US Yacht *RAMBLER 100* in the 2011 Rolex Fastnet Race off Fastnet Rock in Southwest Ireland. He requested that this review answer the question “**What should American Sailors learn from this accident?**” In a letter to owner George David (attached) President Jobson said that he had asked Captain Trossbach to study the *RAMBLER* incident to “**understand what procedures and regulations can be improved**”.

BRIEFLY, WHAT HAPPENED? *RAMBLER 100*, a 100 FT canting keel racing sloop with a crew of 21 participating in the 2011 Rolex Fastnet Race, rounded Fastnet Rock at 1717 local time (BST) and turned southwest for the Pantaenius offset mark (7 miles away) into 23-25 knot headwinds and a sizable (2m) short sharp sea. Shortly after the turn her canting keel snapped off just below the hull exit causing her to capsize, in less than 60 seconds.

Three of the crew on deck were able to climb straight onto the upturned hull as the boat capsized, the remaining eighteen people ended up in the water (14 C/57 F), including four without lifejackets who had been down below off watch. In the struggle that followed 13 more people were able to climb with difficulty onto the upturned yacht while five, including skipper George David, floated away to drift for three hours before being rescued.

After some delay in associating two Personal Locating Beacon (PLB) distress signals with the yacht *RAMBLER 100*, MRSC Valentia diverted a RNLI Lifeboat and a privately owned dive boat who were already underway, and in the area photographing yachts passing Fastnet Rock to conduct a search, first for the indicated PLB positions then for the missing yacht. The two PLBs activated were later determined to have been on the overturned hull of *RAMBLER 100*.

The sixteen people on the upturned yacht were unsuccessful in hailing several passing race boats in high winds and seas, plus restricted visibility. In addition veering wind caused the layline of approaching racers to shift 300-500 yards right of *RAMBLER 100*'s port tack and capsize position. They were finally sighted and rescued by the RNLI Lifeboat that was searching for the two PLBs which were the only two electronic distress signals received.

The five who were unable to attach themselves to the boat because there were no lines that could be reached, managed to tie or hold themselves together until they were rescued by the dive vessel, *WAVE CHIEFTAIN*, diverted from taking photos of boats and vectored by MRSC Valentia, who used a search and rescue mapping software system, SARMAP, to predict their set and drift.

Incredibly everyone was rescued and the shaken crew was taken to nearby Baltimore, except for crew member Wendy Touton who was airlifted by Irish Coast Guard Rescue 115 helicopter to Kerry General Hospital, suffering from advanced hypothermia and later released.

Local residents of Baltimore, Ireland greeted the shaken crew with genuine hospitality, offering them dry clothing, food and drink at the local sailing club and lodging in two private homes. One of the survivors later commented that “Baltimore is the ideal place to be shipwrecked”.

BOAT DESCRIPTION. *RAMBLER 100* was designed by Juan Kouyoumdjian of Juan Yacht Design, based in Valencia, Spain and built by Cookson Boats in New Zealand for Alex Jackson as *SPEEDBOAT*. She was subsequently modified and measured for IRC competition and chartered to George David who is referred to as the owner because he also has part ownership. *RAMBLER 100* finished first the 2011 Transatlantic Race setting a new monohull record in 6 days, 22 hours. Then they won the Maxi Class at Cowes Week 2011 before entering the 2011 Rolex Fastnet Race. Earlier in the year,

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RAMBLER 100 set the course record and won the overall RORC Caribbean 600 Race and did the same at Block Island Race in May.

Tagged as the Fastest Monohull Super Maxi in the world, *RAMBLER 100* has both water ballast and canting keel with port and starboard daggerboards. Dimensions are: LOA 30.48m/100 ft, Beam 7.4m/24.7 ft, Draft 5.7m/18.7 ft, Mast Height 47m/154.2 ft, Displacement 33mT/72,753 lbs. The approximate length of the keel section that broke off is 4.3m/14 ft, weighing about 14T/30,360 lbs with a 5.75/18.9ft bulb on the bottom.

RAMBLER 100, manned by a permanent crew of seven, was raced in the Fastnet with 21 people, all prominent professionals with George David as skipper. The boat exceeded the required training for an ISAF Category Two event with 11 graduates of the ISAF Offshore Personal Survival Course aboard. In addition, prior to their Transatlantic Race in July the boat hired a professional safety trainer and conducted live Man Overboard and Abandon Ship drills underway. They also had all of their Safety Kits professionally inspected and repacked. The value of this training is referred to several times in the Crew Narratives and is credited with saving the lives of those who were in the water for three hours.

REPORT FORMAT.

This report consists of this Introduction, an Incident Time Line, a List of *Rambler 100* Crew Recommendations, a List of what American Sailors should learn from this accident and Recommendations for Improvements to Procedures and Regulations that might prevent reoccurrence in races conducted in the US. By intent individual names and stories about the process of abandoning ship and being rescued have been omitted so that the focus could be placed on what worked and what didn't. The fact that all personnel survived without serious injury and no casualties is testimony to the professionalism of the crew and the preparation of the boat and its safety equipment, which not only met, but exceeded the minimum requirements of the ISAF Category Two race that it was competing in when the accident occurred.

REPORT LIMITS.

This Safety Review does not contain a technical report of what caused the loss of *RAMBLER 100's* keel. Investigations are separately being conducted by the Race Organizer of the Rolex Fastnet Race, the Royal Ocean Racing Club (RORC), and the Irish Marine Casualty Investigation Board. There is also an insurance investigation underway. None of these have been explored in this Safety Review. When the results of these investigations are received they should be reviewed by the Safety at Sea Committee and technical staff at US SAILING relative to the current guidelines for Moveable and Variable Ballast contained in Appendix K of the ISAF Special Regulations Governing Offshore Racing, including US SAILING Prescriptions.

CONCLUSION

Much has been said about the fact that so much went so well in this incident. The positives clearly outnumbered the negatives and the outcome was correctly described by Owner/Skipper George David who said 'We had a 100% outcome with no fatalities in challenging circumstances, and that's a tribute to the skills and quiet professionalism of the crew, the RNLI and the Irish Coast Guard.'

This list of the positives from one of the crew narratives explains further:

- daylight hours
- relatively close to shore (5 mi from Fastnet Rock, 15 miles from Baltimore, Ireland)
- wind and wave conditions were not extreme (SW 23 kts, 2 m seas)
- two rescue boats underway and nearby – taking photos at Fastnet Rock
- larger than normal percentage of crew on deck all wearing full gear and lifejackets in full compliance with RORC Prescription (that PFDs must be worn when reefed)
- two Personal Locator Beacons (PLBs) that worked (slowly!)

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- diligence of the rescue team (Irish CG and Baltimore RNLI lifeboat to stay searching for PLBs and discovering an inverted boat
- experience and recent training of most of the R100 crew (underway training and servicing of safety kits by Life Raft Survival Equipment (LRSE) in Newport prior to July's Transatlantic Race 2011)
- three of the team did the "high side shuffle" accelerating the recovery of the swimmers out of the water
- calm, professional reactions and swift decision making by many team members
- everything that kept the five long distance swimmers floating and breathing until *Wave Chieftain* arrived
- all of the lifejackets on the boat had disabled the "water activation" feature
- the(repaired) #2 jib held – so R100 was far enough along the track to be on the short weather leg with its steeper seas with a few hours of daylight to go.

Areas of concern that are still being addressed and require answers:

- why did the keel fracture ?
- should the boat have been rigged for a capsize escape and launching of safety equipment?
- why did it take rescue forces one hour and forty five minutes to declare a MAYDAY?
- why couldn't R100 signal race boats that passed as close as 3-400m leeward of them after the capsize?

My Recommendations for Improvements to US SAILING Procedures and Regulations that might help prevent reoccurrence.

After completing this review I have the following recommended changes to US SAILING's Offshore Special Regulations (OSR) and US SAILING Prescriptions that should be submitted for Safety at Sea Committee review, US SAILING Board of Director's approval and forwarded to ISAF to be included the ISAF Special Regulations Governing Offshore Racing for Monohulls.

- Modify ISAF OSR Appendix K (Movable and Variable Ballast) to include emergency escape and access to a liferaft and grab bag from an inverted position. (ISAF OSR , App K)
- Add a requirement to be able to launch a Horseshoe, MOM or Lifesling from an inverted position.
- Add a requirement to paint underwater appendages with an area of highly visible color for movable ballasted boats. (OSR 4.02.3)
- Require Digital Selective Calling (DSC) Connection and emphasize its use in a MAYDAY Situation (OSR 3.29)
- Add a recommendation that the required Waterproof Handheld VHF Radio have DSC installed (OSR 3.29.1 e)
- Mount one EPIRB topside (OSR 4.19)
- Add a requirement that AIS remain on during all races (OSR 3.29.1 n)
- Mount AIS antennas on Mast Head (OSR 3.29.1 n)
- Add a requirement to list PLB info on Crew Lists for offshore races (OSR 4.19 e)
- Add a recommendation that PLB owners add their boat's name on PLB Registration Forms (OSR 5.01 k)
- Require Full ISAF Hands-On Training for all US Cat 1 and 2 Race Boats (OSR 6.01)
- Emphasize the need for USCG to accept ISO Lifejacket Standards (OSR 5.01)
- Add requirement to wear PFD & Harness when reefed to US SAILING Prescription (OSR 5.02.5)
- Recommend that all auto inflatable PFD's have a manual only option (OSR 5.01)
- Review tether snaphook design requirements (OSR 5.02.5 d)
- Add warning notes about whistle and strobe light adequacy (OSR 5.01)
- Modify the existing recommendation (ISAF OSR 5.02.5 e) to pre-fit and keep your own PFD, Tether and Harness for the duration of the race.

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I plan to submit each of the proposed changes recommended above to the US SAILING Safety at Sea Committee along with supporting rational for their consideration and forwarding to the US SAILING Board of Directors.

Respectfully Submitted,

S/S Ronald C Trossbach

ATTACHMENTS:

Gary Jobson letter of August 31 to Mr. George David

Incident Time Line

RAMBLER 100 Crew Recommendations

What should Americans Sailors learn from the Accident?

Safety Reviewer's Observations and Notes

Description of the Safety Review Process

Biography - Captain Ronald C. Trossbach, USN (Ret)

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August 31, 2011



Mr. George David
United Technologies Corp
1 Financial Plaza
3rd Floor
Hartford, CT 06101

Dear George,

I am writing on behalf of US SAILING. All of us are very happy that you and your crew survived the capsized during the Fastnet Race.

It would be most helpful if US SAILING could learn from this accident. We had two other tragedies this summer: a young girl drowned at Severn Sailing Association in Annapolis, MD, and two deaths resulting from a storm during the Chicago to Mackinac Race. We are preparing reports on these two incidents. The purpose of the reports is to understand what procedures and regulations can be improved. In 1979 I participated in the Fastnet Race storm inquiry. The resulting regulations benefited ocean racing.

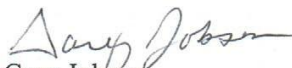
I have asked Ron Trossbach to study the Rambler 100 incident. He is a longtime member of US SAILING's Safety-at-Sea Committee and an expert on our regulations. Ron is a retired Naval officer and commanded a Guided Missile Cruiser. Ron would like to talk with your team members and receive information as it becomes available. Ron has agreed to write a report to present to US SAILING.

Here are some items we wish to understand:

- | | |
|--|-------------------------|
| 1. Abandon ship routines | 5. Radio communications |
| 2. Use of life rafts | 6. Alarms |
| 3. Life jackets and personal safety gear | 7. Hypothermia |
| 4. Safety in the water | 8. Navigator's duties |

Thanks, in advance, for working with us.

Sincerely,


Gary Jobson
President
US SAILING

cc: Ron Trossbach
Dan Nowlan
Stan Honey

United States Sailing Association NATIONAL GOVERNING BODY FOR THE SPORT OF SAILING

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INCIDENT TIME LINE CONSTRUCTED FROM CREW NARRATIVES, PRESS REPORTS and MRSC VALENTIA SITUATION REPORT

- 1717 BST 15 August 2011 - *RAMBLER 100* rounded Fastnet Rock (first monohull to do so)
- 1740 BST (26 min after rounding Fastnet Rock) *RAMBLER's* keel fractured (8 miles from Irish Coast, 12 miles from Baltimore) (S winds, 20-25 kts, gusts to 27-28, 2 m seas with 'square' waves, misty and foggy)
- within 15 sec boat laid on its side with sails and mast in the water. Voice MAYDAY call on installed VHF received no response.
- within 60 sec boat turned turtle. MAYDAY call on handheld abandoned to escape from overturned boat. Handheld lost while swimming out.
- 16 people got clear and onto overturned boat, four without foul weather gear or lifejackets. Five people (all in PFDs) who were on deck floated away, linking themselves together. Only 2 of 21 PLB's and none of the 3 boat's EPIRBs or Liferrafts were available once the boat capsized.
- est 1745-1750 BST - both PLB's (on top of the boat) were turned on.
- about 1809 BST - *ICAP LEOPARD* (another 100 ft maxi) passed 3-400m to leeward. All efforts to hail or otherwise alert them failed.
- about 5 min later - two Volvo 70's (*GROUPAMA* and *ABU DHABI*) and later an IMOC 60 sailed by to leeward. All efforts to hail or alert them failed.
- 1829 BST (about 39-44 min after 2 PLB's were activated) Valentia Maritime Rescue Sub-Center (MRSC) received data confirming the location of the person registered as holder of both PLB's. At first the call over VHF was "Gigi Bernard competing in the Rolex Fastnet Race", who was thought to be a crew member of one of the French multihulls in the race. Later, with the help of another race boat's (*ICAP Leopard*) navigator "G. G. Bernard" was determined to be the Point of Contact for "George David" and connected him to the race boat *RAMBLER 100* which was no longer showing on AIS. (all of *RAMBLER's* PLBs were registered to "George David"). *Rambler's* sat phone number was given to MRSC Valentia by *ICAP Leonard's* navigator.
- 1851 BST PAN PAN Declared by Valentia MRSC. Baltimore RNLI Lifeboat dispatched from Fastnet Rock where they were taking photos of boats and sent to the PLB position to search for an individual PLB (Gigi Bernard).
- 1930 BST - after trying to call *RAMBLER's* Sat Phone and getting no answer a MAYDAY was declared by Valentia MRSC. Two helos and local craft assigned to the search.
- 1946 BST - RNLI lifeboat discovered *RAMBLER* about 45 min into their search and was immediately sent by those on *RAMBLER* to look for the five in the water. They returned when they were notified that another boat was being assigned to the search & rescue of the five crew members in the water. They then conducted the transfer of the 16 from *RAMBLER* via a small two man dinghy controlled with lines. ("One of the best dinghy rides I have ever taken." "Mr. Toad's Wild ride followed by a leap and mauling aboard at the other end.")
- 1946 BST - Dive boat *Wave Chieftain* responded to Valentia's call for all ships in the area. They were 3 miles downwind of PLB position.
- 1948 BST (2 hours after capsized) - first race boat (*Hugo Boss*) became involved with the Search and Rescue effort
- 2020 BST – all 16 from *RAMBLER* aboard Baltimore RNLI Lifeboat
- 2031 BST - *Wave Chieftain* sighted the remaining five crew in the water. *Wave Chieftain* used hydraulic dive platform to hoist all five aboard. Skipper George David insisted that he be last aboard after his crew.
- 2036 BST - *Wave Chieftain* and Baltimore RLNI Lifeboat in sight of each other for "team salute" reunion of the *RAMBLER* crew
- 2059 BST - Wendy Touton airlifted off *Wave Chieftain* to hospital
- 2105 BST - **SUNSET**
- 2030 BST - *Wave Chieftain* docked in Baltimore
- "From Rescue to Warm Clothes and Cold Beer – 3 Hours +/-"
- "Seeing all your friends alive in the Baltimore Sailing Club – PRICELESS"

RAMBLER 100 CREW RECOMMENDATIONS

LIFEJACKET(s) -

1. The auto inflate capability on all PFD's should remain disabled.
2. Manual inflation handles should be made of a contrasting/fluorescent color or material.
3. Consider Survival Suits offshore above 25 knots. (Need one that is more accommodating)
4. Get laser rescue pointers (laser flares) for all.
5. Having small pen sized flares would have been useful.
6. If any of the crew had been clipped on when the boat flipped they would have had a hard time getting disengaged from the clip while dangling at the end of their tether in mid-air and once in the water they might have had more problems. The current tethers are way too "beefy" with heavy clips. They are cumbersome to wear and should be much lighter.

LIFERAFT(s)

1. Mount rafts so that they can be launched from any angle of heel, including capsized
2. Mount a mini-grab bag (with a lanyard) topside in a waterproof stowage, accessible when capsized

ELECTRONICS

1. Always monitor VHF Ch 16, as *RAMBLER* did.
2. Always have a VHF Handheld radio (on a lanyard) in the cockpit, on the person of the watch captain.
3. Always have Satcom C turned on, if installed
4. EPIRB(s) mounted topside where it might float free and self activate
5. Should the Race Tracker have detected the problem?
6. AIS antenna on the mast head, instead of the stern rail.

BOAT CHANGES

1. Mark bottom or rudder and dagger board(s) with contrasting high vis color
2. Steps in transom to facilitate reboarding
3. Hatch in transom or bottom of boat
4. Have Lifesling available at transom
5. Have other lines/"tow ropes" at transom
6. Install lifeline stanchions (Stainless?) strong enough to tolerate crew weight in a rollover
7. Emergency lighting below decks
8. Small air bottle (Spare Air) and goggles for a person trapped below to wear while swimming free.

GENERATOR/ENGINE/HYDRAULICS

1. Have a stop/kill switch in the cockpit.
2. Have check valves on tank vents to prevent oil spills when capsized

What should American Sailors learn from this accident?

1. LIFEJACKETS (combination Inflatable PFD and Harness is recommended)
 - a. Always wear your own lifejacket – properly fitted & secured. “A life jacket isn’t on until it’s complete with fitting/adjustment, crotch straps attached, and PLB and bright strobe on your person. The tether/harness must be attached (but not necessarily hooked on)”
 - b. Lifejackets should be either on a person, hooked to their bunk, or otherwise immediately available.
 - c. Inspect your lifejacket every time you put it on and conduct an air test of your inflatable annually.
 - d. Revisit the decision whether you want to wear an automatic or manual inflating lifejacket
 - e. Know how to manually inflate your inflatable lifejacket. Finding the pull cord is not always easy.
 - f. Wear crotch/thigh straps (required by ISAF OSR 5.02.5 b) on all harnesses since Jan 2011)
 - g. Know how to deploy & use your sprayhood. (splashguard/sprayhoods are already strongly recommended by ISAF OSR 5.01 j)
 - h. Upgrade your whistle. (Installed PFD whistles were considered useless.)
 - i. Many PFD strobe light sensors must be in water to work and they are not very bright.
2. ALWAYS STAY WITH THE BOAT
 - a. If you can’t – Stay with the group
3. ALWAYS CARRY (in Fanny Pack, attached to PFD, or in your foul weather gear)
 - a. A Personal Locating Beacon (PLB) 100% of the time. Be sure that the boat’s name is included on the Registration Form that you submit to NOAA.
 - b. An alternate to a PLB is a waterproof VHF Handheld Radio, preferably with DSC (Digital Selective Calling)
 - c. A bright Strobe Light
 - d. A Tether/Safety Line
 - e. One or more mini flares or a Laser Flare
 - f. A knife

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SAFETY REVIEWER'S OBSERVATIONS and NOTES

- **Digital Selective Calling (DSC) was installed but not used**
- Handheld VHF never made it topside
- **Satcom C was installed but not turned on**
- ISAF Compliant tethers with Gibb Hooks at both ends were aboard for all
- Safety pouches/'fanny packs' with PLB and Strobe Light issued to every crew member but not carried or attached to PFDs
- 11 people on board held current ISAF Offshore Personal Survival Course certificates
- Underway training held by Dan O'Connor of LRSE (Liferaft Raft Survival Equipment) prior to Transatlantic Race
- Crew Member Wendy Touton attended pre-race SAS Seminar held at NYYC, Harbour Court and the full day Hands-On training at LRSE prior to Transatlantic Race. She mentions the positive effect this training had and recommends attendance every two years for all.
- Should IMOCA 60 multihull rules cited in press apply to canting keeled and water ballasted boats?
- **RORC recommendation to OSR 4.21.2 that consideration be taken when stowing a Grab Bag to its accessibility in the event of a full inversion was not observed.**
- PLB Registration review being done by LRSE. (21 Australian built 406 PLBs with GPS registered to one US person using NOAA system.)
- LRSE investigating 'weak signal' comments about PLBs
- None the less, PLBs were correctly registered with NOAA. Irish CG issuing a radio call for the primary point of contact (G.G. Bernard vice George David) seems to be their error ??
- PLBs are registered to a person not to a boat. A notation (Boat and Race Names) can and should be included in a field of the NOAA Registration Form by the individual PLB owner.
- A misconception exists that once a PLB Beacon is activated that a helo will magically appear to rescue the person who set it off.
- **The inability to tell passing boats they were in trouble by radio, visually or by sound is the most ALARMING aspect of this incident**
- Owner/Skipper points out that PFD's were on all hands topside because the RORC Prescription required them whenever a reef was in the mainsail.
- Have not found the 14 ton keel yet. Salvage cost exceeds value of metal in the keel.
- RORC and Irish Coast Guard (Marine Casualty Investigation Board) conducting investigations
- Questions about the Irish Coast Guard being too slow (1 ¾ hours) in sounding a MAYDAY? They did this only after being prompted by another competitor who helped them identify the PLB as registered to George David and associated him with RAMBLER 100 and the fact that *ICAP LEOPARD* had no Tracker, AIS , VHF or Sat Phone contact.
- Race Organizer apparently being criticized for not informing Irish CG about the Fastnet Race ??
- Hands-On Training should be required in the US for Cat 1 racers.
- 100% outcome statement of owner should be emphasized

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- **Many things went very seriously wrong. The fact that there were no major injuries or casualties can be credited to the calm and professional manner in which the crew worked together and helped each other but LUCK also has to be mentioned. Had any one of several fortunate circumstances been different the outcome would surely have been significantly different.**
- **No casualties or injuries should not be interpreted to mean that serious corrective actions are not required. All offshore racers, especially those with canting keels and movable ballast, should at least have access to a grab bag and a liferaft from an inverted position.**

SAFETY REVIEW DESCRIPTION.

CREW NARRATIVES.

1. Ron Trossbach initially approached *RAMBLER 100* owner George David with a proposed questionnaire to send to each crew member. Mr David responded that he had already asked each person for much of the same information so it was agreed that he would share the responses he received with Ron. **All of the twenty one people aboard subsequently submitted a narrative** that answered the following request sent to them on 24 August: "Before we get too far removed from the event could I trouble each of you to write up in a page or so your recollections and recommendations. I'm recommending you include where you were when the fin broke and what happened in the subsequent minutes until you ended on top of the boat or in the water. Time references as best as you can recall them will help. Similarly for what happened when the rescue services got there. Second category is recommendations on design/equipment changes to safeguard against comparable accidents in the future. The huge surprise to all of us was the nearly instant capsize with few if any seconds to reach for a life jacket or EPIRB or indeed even to react other than to get out of the boat." **These narratives have been the major source of information provided in this report.**

2. Additional information requests and questions were sent to and received by E-mail from the Navigator of *RAMBLER 100*, Peter Isler.

SITUATION REPORTS (SITREPs). Official copies of SAR SITREP No ONE and No TWO from the MRSC IN Valentia, Ireland were obtained from the Royal Ocean Racing Club (RORC) who was the Race Organizer of the 2011 Rolex Fastnet Race. These SITREPs have provided times used in constructing the Incident Time Line that describes what happened. They also have identified the Search and Rescue forces involved.

PRESS REPORTS. All known Press and Internet Reports of the incident have been reviewed as well as many of the Sailing Blog statements about the situation.

REPORTS FROM OTHER BOATS.

1 The Navigator of *ICAP Leopard*, another competitor, submitted a report explaining his contacts with RORC and the Irish Coastguard during the incident with vital information that helped them connect a Personal Locator Beacon (PLB) signal to *RAMBLER 100*. He also contacted RORC via Sat phone first to tell them about the ongoing incident and then to confirm the number of people aboard.

2 The Navigator of another competitor, *Phaedo*, submitted a report describing what they heard on the VHF radio between *Leopard* and Coastguard and that they stopped racing and proceeded toward the reported position when MAYDAY was sounded until the report was received that all people were rescued.

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CREW INTERVIEWS. Ron Trossbach interviewed Owner/Skipper George David in Washington, DC on 5 October. In this discussion Mr David again offered access to the crew. Ron interviewed the Project Manager of *RAMBLER 100*, Rick Harvey, in Newport, RI on 25 October. The cooperation of owner and crew was complete and without hesitation and is greatly appreciated.

The following people contributed to this Safety Review with advice and by reviewing all or parts of this Report for accuracy and consistency: Dan Nowlan (Offshore Director, US SAILING), Stan Honey (US Rep to ISAF Oceanic Committee), Dan O'Connor (Certified Hands-On instructor and VP of Life Raft Survival Equipment (LRSE) , Jim Teeters (US SAILING), and Chuck Hawley and John Rousmaniere (Members, US SAILING SAS Committee).

BIOGRAPHY

Ronald C. Trossbach, Captain USN (Ret)

Ron Trossbach serves on the Cruising Club of America's Safety at Sea (SAS) Committee and US SAILING's SAS Committee where he edits the Offshore Special Regulations for Racing and the booklet Safety Recommendations for Cruising Sailboats. He is one of six Moderators of US SAILING Sanctioned Safety at Sea Seminars.

Ron held the Vanderstar Sailing Chair at his alma mater, the US Naval Academy, in 1994-95. He is past chairman of CCA's and US SAILING's SAS Committees. He has served on the Newport Bermuda Race Organizing Committee since 1992 and was Chairman of the 2000 Newport Bermuda Race.

The Trossbach's typically spend up to six months a year on their boat. They sailed a 39 foot cutter, *MOONESHINE*, for 20 years. They have sailed four transatlantic passages along the North Atlantic Circle to and from Ireland twice and from Grenada to Labrador including a circumnavigation of Newfoundland. They have over 85,000 sea miles sailing their own boats in the Atlantic and Pacific. Ron has sailed in five races to Bermuda.