

**United States Sailing Association Independent Review Panel Review of the Fatal
Accident Involving *Aegean* During the 2012 Newport to Ensenada Yacht Race on April
28, 2012**

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US Sailing Independent Review Panel – 2012 Ensenada Race Accident

US Sailing Overview:

US Sailing is the national organizing body for sailing and is the overall authority for sanctioning sailboat races in the United States. US Sailing follows established policies of reviewing races involving causalities and/or fatalities that commenced with the 1979 Fastnet Race Report (Great Britain). The 1988 Sydney Hobart Race Report (Australia) and the 2009 Flinders Islet Race Report (Cruising Yacht Club of Australia) continued this effort.

In 2011, US Sailing Independent Panels reviewed three accidents beginning with a fatal accident in the Severn River (Severn Sailing Association); the fatal accident in the Chicago To Mackinac Race (*WingNuts*) and the near fatal accident in the Fastnet Race (*Rambler 100*). The reviews offer insight for race organizers and sailors of the facts involved in each of these events and offer suggestions to avoid and/or mitigate similar outcomes.

In 2012, US Sailing was invited by the US Coast Guard to establish a panel to review the fatal accident during the Fully Crewed Farallon Island Race (*Low Speed Chase*) and in May of 2012, US Sailing created a panel to review this accident.

Objective –

This report was created as a result of an accident that occurred during the 2012 Newport to Ensenada Yacht Race when the vessel *Aegean*, a Hunter 376, ran into North Coronado Island resulting in the loss of four lives. The objective of this report is to reduce the chance of future similar tragedies by identifying the contributing factors leading up to this incident. This report is not intended to be used in any judicial proceedings whose purpose is to attribute or apportion liability or blame. The panel members who contributed to this investigation and report are listed in Appendix A.

Synopsis of Findings - The panel determined that a key element of the accident was likely an inadequate lookout, and that it is likely that *Aegean* inadvertently motored beyond a waypoint set before North Coronado Island. Although the inadequate lookout was likely the proximal cause of the accident, there were additional safety issues that came to light during the inquiry, and improvement in these areas could prevent or reduce the severity of other accidents.

The panel relied on available facts to create this report. There were no survivors and no eyewitnesses to the accident. The facts include the SPOT Connect position reports from which vessel course and speed were derived, times of SPOT Connect text transmissions during the race, published material, press reports including accounts of the San Diego Coroner's report and the results of their toxicology analysis, interviews with race organizers, participants and past crew from *Aegean*, wreckage found at North Coronado Island and in the debris field and underwater at North Coronado Island

The panel recommends improvements in the following areas:

1. Always maintain a lookout, with a watch of at least two people, using audible waypoint and radar alarms.
2. Racers need to be made aware of the light obscuration zones in the Coronado Islands.
3. Each watch must understand the operation of the boat's navigation systems.
4. The use of autopilots while motoring should be reviewed by race organizers.
5. To improve communication, racers should monitor VHF 16 and race organizers should provide a 24-hour emergency contact.
6. US Sailing should create a guide to emergency signaling devices.
7. US Sailing should create a crisis management template for race organizers.

1.0 FACTS

1.01 Race Information

The 125-mile Newport to Ensenada Yacht Race is held annually, starting from Newport Beach, CA and ending at Ensenada, Mexico. The Newport Ocean Sailing Association (NOSA) is the race organizer, and the race committee reports to NOSA. The 2012 race started on April 27, 2012, and the first finishers completed the race on April 28. The Notice of Race is included in Appendix 1.

The equipment requirements are based on Southern California PHRF rules for a Category 2 race (125 miles or less) and Southern California Ocean Racing Catamaran Association (ORCA), as modified by NOSA. The equipment checklist is found in the Sailing Instructions (modified) and is included in Appendix 2. The Cruising Classes are permitted to motor between the hours of 2000 and 0800 and a penalty is applied against the corrected time of the boat. (Shown in Appendix 2: Section 20)

During the race, visibility was good and winds were light and variable (less than 5 knots during the period surrounding the accident). Reported sea state was a running swell of 1.5 feet from the SSW to SW and wind waves of 3.5 feet to 4.6 feet from the WNW. Moonset was at 0054 PDT on April 28, 2012. Water temperature was 62 degrees. The ground swell and wave height were greater than the wind speed and/or direction might have indicated as noted in Appendix 3.

1.01.1 Vessel Information

Aegean carried an owner-installed integrated Raymarine Electronics package that included a chart plotter, radar, knot meter, wind instruments, depth sounder, and model ST 6002 autopilot. There was a flat screen display below decks that could be set as a repeater for the above deck plotter. The equipment list is shown in Appendix 4. The autopilot manual is shown in Appendix 5. Unless overridden by manual intervention upon reaching a waypoint or end of a route, the Raymarine ST 6002 autopilot software directs the vessel to continue on the prior course. In previous races, the skipper / navigator customarily set a waypoint arrival alarm. *Aegean's* radar was interfaced with the chart plotter display.

The panel's interviews revealed that it was customary for the radar to be used – mostly at night. Previous practice was that radar guard alarms were not set as a standard practice because of the high number of targets encountered during the races.

Aegean carried a SPOT Connect that allowed the skipper to report his position back to friends and family who were following the race, and to serve as a messaging device. SPOT Connect is a GPS tracking device with text capacity when paired with a smart phone. The SPOT Connect also has a manually activated SOS function for the transmission of emergency messages via satellite to a private agency called GEOS. The panel's review showed that information generated by the SPOT Connect was highly accurate in terms of location and time, but unreliable in transmission of position fixes on a timely basis. Data on the SPOT Connect is detailed in Appendix 6. A review of SPOT Connect is shown in Appendix 7. A comparison of the features of SPOT Connect (and other SEND devices) and Emergency Position Indicator Radio Beacons (EPIRBs) and Personal Locator Beacons (PLBs) is in Appendix 8. The USCG issued an ALCOAST regarding SEND devices and outlined the response to such devices. This is found in Appendix 8a.

1.01.2 Crew Background

Theo Mavromatis (49 years old and the owner of *Aegean*) was the skipper as well as the navigator onboard *Aegean*. Under his direction, his crew had placed on the podium in four previous Ensenada races and had won their division twice. (See Appendices 9 and 10.) Mavromatis grew up sailing. He built a small catamaran and sailed it with his sister during the summers as a young man. He was CEO of Aegean Consulting, and had worked with Boeing and Raytheon.

The crew included Joe Stewart who was the brother-in-law of the skipper. Stewart, 64 years old, was from Bradenton FL. Also on board were Kevin Rudolph, 53 years old, of Manhattan Beach, CA and William Johnson, 57 years old, of Torrance, CA. All of the crew had sailed aboard *Aegean* in previous races. Stewart was the longest tenured crewmember with Rudolph and Johnson having the least experience on board during this race.

On the night before the start (April 26, 2012) the crew was recorded as avoiding the pre-race festivities, and retired early on board *Aegean*, as noted in Appendix 11.

1.02 Accident Sequence

A total of 213 boats started the race in 18 classes, with the first start at 1100 PDT as noted in Appendix 12. *Aegean* started the race with nine other boats in her class

(Cruising GB) at 1110 PDT on April 27, 2012. The accident occurred early the next morning. Prior to hitting the island, the SPOT track showed *Aegean* to be on a heading of 129 degrees magnetic at a consistent speed of 7.1 knots for close to 4 hours prior to the last reported position as calculated from data shown in Appendix 13. The SPOT Connect tracking function shows *Aegean* running into North Coronado Island at 0134 PDT on April 28, 2012, at a location shown in Appendix 14.

There are two aids to navigation (lights) located on South Coronado Island. Neither of these lights was visible to *Aegean* as it approached North Coronado Island because they were obscured by the island chain's landmasses. The zones where these lights cannot be seen are marked on one of many charts that cover the area of the race. The zones are also marked on the electronic chart used in the plotter on board *Aegean*. Because the *Aegean's* course was within the zone of obscured light for the entire range of both of these lights, the crew would not have seen these two aids to navigation. Examples of some of the available charts are seen in Appendices 15, 16, 17 and 17a. The SPOT Connect track of *Aegean* is plotted on Appendix 18.

The SPOT Connect has the capacity to transmit text messages when used in conjunction with a smart phone via Bluetooth. Interviews revealed that in past Newport to Ensenada Yacht Races the skipper was the only one on board to use the SPOT Connect as a messaging device. The skipper would post his position reports to a Facebook page for those interested in following *Aegean* on the race. The skipper would send a message to his wife at the time he anticipated she would be going to sleep and again as they passed the US/Mexico border. *Aegean* passed the US/Mexico border at 0000 PDT on April 28. The SPOT records indicate that no texts were sent during the race after 1949 PDT on April 27. Appendix 13 shows the time when messages were sent from the SPOT Connect log.

Aegean's SPOT track ended at North Coronado Island at 0136 PDT.

1.03 Post-Accident Information

The USCG reported that there was no MAYDAY or distress call on VHF or DSC activation on VHF by *Aegean*. No competitor reported a distress call or reported seeing visual distress signals.

A manually activated 911 message was received by GEOS via the SPOT Connect at 0143 PDT on April 28. This transmission identified the SPOT Connect as belonging to the skipper, but did not contain a position fix. Two voice messages were left with the skipper's wife (Loren Mavromati) at 0144 PDT and 0145 PDT. (Shown in the call log in Appendix 19) These messages included the time of the receipt of the information in UTC (local time plus 7 hours), which may have lead to some initial confusion as to the time of the emergency message. At 0901 PDT on April 28, Loren Mavromati called the race organizers at NOSA and left a voice message identifying that a 911 had been sent and she had been contacted by GEOS. NOSA Administrative team member, Judy Foster, retrieved the voice message from Mrs. Mavromati at 0929 PDT. Foster contacted Toby Jackson at NOSA Race Operations in Ensenada, Mexico at 0935 PDT. At 1100 PDT Jackson relayed the information to PRO Mark Townsend. At 1114 PDT NOSA Race official Joseph Baiunco contacted Loren Mavromati from Race Operations in Ensenada to confirm the information about the 911 report from GEOS. The information of the SPOT Connect 911 transmission was relayed to the US Coast Guard – Sector San Diego by NOSA official Jerry Schandera at 1120 PDT on April 28, 2012. The USCG contacted Loren Mavromati upon receipt of this information.

Rolling in the Deep, a Hobie 33 sloop participating in the race, reported discovering debris in the ocean south of North Coronado Island on the morning of April 28, 2012 at approximately 0700.

The US Coast Guard – Sector San Diego, at 1000 PDT on April 28, 2012, received the first report of a potential accident by VHF radio from the race boat *Shockwave*.

Two bodies were recovered at 1042 PDT on April 28 close to each other in the debris field 4.47 nm south of North Coronado Island. A third body was recovered prior to 1400 in the same area. A Mexican Fisherman discovered the body of the skipper, Theo Mavromatis, at 1430 PDT on May 6, 2012 in the same area. None of the victims was wearing life jackets when recovered. One victim, Joe Stewart, was recovered wearing a safety harness, but no tether. The Search Patterns and location of the bodies recovered the first day are shown in Appendix 20.

According to published accounts of the San Diego Coroner's reports, Theo Mavromatis, Kevin Rudolph and William Johnson died of blunt force trauma. Joe Stewart died of drowning due to traumatic injuries. There was no evidence of high levels of carbon monoxide or alcohol found in the three bodies recovered first. Drugs were

not a contributing factor in the accident. The panel was unable to review the official reports by the Coroner, as it is not an official governmental investigative body.

Aegean was not equipped with an EPIRB or life raft. There are photographs (see Appendix 21) of a partially inflated dinghy in the debris field that was buoyant enough to float. Debris was photographed at sea, and portions of the debris were recovered by Vessel Assist and given to the US Coast Guard. The USCG also recovered some debris as shown in Appendix 22. Some debris was recovered by other race boats and turned over to the Navy of Mexico.

The debris recovered included interior parts and laminates from above the waterline where cored material was used in the construction of the boat. Some of the debris pieces had large scratches and gouges consistent with repeated contact against rocks as shown in Appendix 23. The USCG and some members of the panel compared the debris to a Hunter 376 and verified that the material was in fact, from such a boat. Personal effects recovered in the debris field include items such as a GoPro Video camera, a lap top computer and backpack bag, multiple unmarked life jackets, and a Type IV throw cushion.

One piece of hull debris had a mussel shell embedded in the laminate. The shell appears in the photographs in Appendices 24 and 24a. The USCG reported a marine biologist identified the shell as native to the area that includes the Coronado Islands and the size was large enough that it indicated an age older than the service interval of commercial vessels.

A substantial piece of the underwater portion of the boat, with bottom paint that matched the color and appearance of *Aegean* was located and photographed (seen in Appendix 25) in a small cove at the northwest side of North Coronado Island by the US Coast Guard during a fly-over on May 1, 2012. The hull piece was in the area of the SPOT track last report. John Walton photographed the same hull piece from water level during a trip to the site on May 7, 2012 (seen in Appendix 26).

An engine and transmission that match the type from *Aegean* were located in early August 2012 by divers from XPLORE OFFSHORE at the northwest side of North Coronado Island in the same area as the hull fragment mentioned above. The panel contacted Captain Russell Moore regarding his attempts to locate debris in May of 2012 and Moore noted that he would continue to search for evidence of the sinking of *Aegean*. In August diving conditions were such that his team could get close enough to

the area on North Coronado Island to locate and document the engine and transmission as well as other debris. Captain Moore of XPLORE OFFSHORE noted that the hull fragment photographed by the USCG in their flight and by Walton in his survey visit to the site in May was still visible.

2.0 Analysis

2.01 Race Organization/Information

NOSA has a long history of successfully running the Newport to Ensenada Yacht Race. NOSA has created a seminar to educate sailors on the elements of this race. (See Appendix 27) However, the panel noted a lack of consistent communication procedures in crisis management within the race organizing authority when the accident time line is reviewed. The delay in the communication of the emergency from the point of first contact (voice message left at 0901 PDT) to the time that NOSA contacting the USCG was in excess of two hours.

2.02 Crew

The skipper had a technical background and used technology during his racing. The skipper had a better understanding of the electronics and navigation systems than the crew.

Those interviewed by the panel indicated that that the skipper's practice was to navigate from waypoint to waypoint. In previous races, the skipper would determine the position of the next waypoint as the current or active waypoint was approached, based on consideration of conditions on the course.

The panel's interviews showed the skipper did not sleep much during the race, but when he did sleep, most of his rest occurred when *Aegean* was under power. In past races, the skipper's instructions were to be awakened prior to the next waypoint.

2.03 The Accident Sequence

Around 2135 PDT on April 27, the SPOT Connect track shows that *Aegean* increased in speed and then maintained a constant speed in light wind conditions, consistent with motoring. The Sailing Instructions note that the Cruising Classes can engage their engines and motor between the hours of 2000 and 0800 with a penalty applied to the corrected time of the vessel reporting use of their motor during the race. (Refer to Appendix 2 – section 20.) The SPOT tracker data also shows that the boat travelled in a nearly straight line, consistent with the use of the autopilot. The panel believes that *Aegean* was steering by autopilot for three reasons:

1. The panel interviews revealed the skipper would set his autopilot to steer to a waypoint
2. The track is nearly straight – arguably better than a human can steer. (See Appendix 28)
3. It is tactically smart to use an autopilot when motoring in this race to minimize the distance traveled while motoring.

From the position where *Aegean* began motoring, the Coronado Islands were an obstruction on the shortest course to the finish. Interviews suggest that *Aegean's* skipper would create a waypoint north of North Coronado Island so that he could decide on which side of the islands to pass.

Had *Aegean* continued on the course shown by the SPOT Connect track, she would have passed offshore of Point Salsipuedes. (This is the largest point of land North of Bahia De Todos Santos.) This would be a logical position to turn to enter the bay to get to Ensenada. Interview subjects indicated that past practices would not have been to set a waypoint so far from the boat's position.

The SPOT Connect track ends at 0136 PDT on April 28, 2012, at North Coronado Island and, based on calculations made by the panel, extending the course and speed of the vessel from previous SPOT locations and times, *Aegean* hit the Island about 0134 PDT, or about 2 minutes before the last SPOT location transmission

The next scheduled SPOT transmission would have been at 0146 PDT, but it was never received, indicating that the device was not operating by that time.

Based on all factors, the panel concludes that the skipper set a waypoint that took *Aegean* on a path that intersected North Coronado Island, that *Aegean* was motoring under autopilot as she approached the island, and there is no evidence of any intervention to prevent *Aegean's* running into the island.

3.0 RECOMMENDATIONS

3.01 RECOMMENDATIONS TO AVOID SIMILAR ACCIDENTS

3.01.1 Recommendations Regarding Keeping a Lookout

The panel reminds all sailors that a lookout is a requirement for racing and safe vessel operation. A lookout is required at all times by both the Racing Rules of Sailing (ISAF Case 26: All boats, whether or not holding right of way, should keep a lookout at all times.) and the International Regulations for Preventing Collisions at Sea (COLREG Rule 5: Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.).

The panel recommends that skippers enforce a watch standard that ensures that at least two people be on watch whenever possible. Having a minimum of two pair of eyes and four hands is preferable to having fewer.

The panel recommends that skippers be aware that cockpit dodgers can reduce visibility for the lookout, especially at night. When dodgers are deployed, it is critical that additional diligence be employed to ensure adequate visibility. The use of dodgers may affect visibility for those at the helm and may affect the lookout's ability to distinguish hazards and obstacles.

The panel recommends that skippers use waypoint arrival alarms and radar zone alarms to alert the crew of the need for a course change or collision hazards. Loud audible alarms for waypoint arrival and radar zone alarms can assist sailors in maintaining a standard for lookout that improves the safe operation of the vessel. Alarms that are audible for those on watch are important parts of vessel equipment.

3.01.2 Recommendations Regarding Navigation

The panel recommends that NOSA's Pre-Race Seminar include the advice to set a course that does not intersect the Coronado Islands. The Panel also recommends that the Pre-Race Seminar include information on the zones of light obscuration from the

lights on South Coronado Island. (Not all charts used in this race are marked with this information.)

The panel recommends that skippers ensure that crew on each watch be capable of operating the navigation systems on board including charts, chart plotter, GPS, radar and AIS systems. It is incumbent on the skipper to ensure safe operation with each combination of the on-deck watch.

3.01.3 Recommendations Regarding Use of Autopilots

The panel notes that that the Sailing Instructions specifically address the skipper's responsibility while the vessel is being steered by wind vane or autopilot. (See Appendix 2: Section 21.4) The panel recommends that Race Organizers review the use of autopilots while motoring for the cruising classes. The use of autopilots while motoring requires less crew attention than trimming sails or hand steering which can lead the crew to be less alert.

3.02 RECOMMENDATIONS TO MITIGATE SIMILAR ACCIDENTS

3.02.1 Recommendations Regarding Safety Training

The panel recommends NOSA include a segment on safety training in their Pre-Race Seminar.

The panel acknowledges and supports NOSA's interest in creating an online version of their Pre-Race Seminar to allow racers from out of the area to access educational materials.

3.02.2 Recommendations Regarding Signaling

The panel recommends that the Race Organizers require all racers to monitor VHF 16 during the race.

The panel recommends that US Sailing create a guide to emergency signaling devices to assist sailors to select the best device for their type of boating. This guide should refer to the US Sailing Offshore Special Regulations (where applicable). The guide should include emergency electronic devices such as VHF Radio (with DSC), EPIRB, PLB, AIS, and Satellite Enabled Notification Devices and recommended emergency visual

signal devices such as flares, whistles, signal mirrors, and strobe lights. The guide should also include a list of non-approved emergency signaling devices such as laser flares and chemical light sticks.

3.03 RECOMMENDATIONS TO IMPROVE RACE MANAGEMENT

3.03.1 Recommendation Regarding Race Contacts

The panel recommends that NOSA and other race organizers have an emergency contact that is available throughout the duration of the race. This single point of contact (phone number) should be available for at least one hour before the start of the race and one hour after all vessels have finished the race.

3.03.2 Recommendation Regarding Crisis Management Plan

The panel recommends that US Sailing develop a crisis management program template to assist to race organizers. This program should include a crew list template, a template for a point of contact for each boat, a template for listing of communication equipment on board boats while racing, a template for on-the-water emergency systems (rescue boats for small boat events, race committee boats to assist with capsized accidents, emergency medical transport), a template for emergency medical evacuation during a race, a template for on shore emergency services including emergency medical transport, emergency contact (local SAR, USCG, Police or Sheriff, Fire Department, EMT) and a template for communications in the event of an accident.

Appendix A

Members of US Sailing Independent Review Panel – 2012 Newport to Ensenada Yacht Race

Alan Andrews

Yacht Designer; Chair of Transpacific Yacht Club's Technical Committee; Staff Commodore Balboa Yacht Club; active sailor; presenter at US Sailing Safety at Sea Seminars; raced aboard the winning boat in the 2012 Newport to Ensenada Yacht Race (Medicine Man – Andrews 63).

Alan McMillan

Commodore Emeritus of Pensacola Yacht Club; retired senior executive of OSHA, past President and CEO of the National Safety Council, former Deputy Assistant Secretary of Labor, Past co-chairman of the Regatta Al Sol Yacht Race, presenter at US Sailing Safety at Sea Seminars and active sailor.

Bruce Brown

Chairman US Sailing Independent Review Panel – 2012 Newport to Ensenada Yacht Race, manufacturer's representative, past President of US Marine Safety Association, past General Chairman of the Congressional Cup (Long Beach Yacht Club), moderator for US Sailing Safety at Sea Seminars and active sailor.

Ed Adams

Member of US Sailing Board of Directors, two-time Rolex Yachtsman of the Year, Editorial Staff of Sail Magazine and Practical Sailor, Professional sailor and coach, two-time Olympic Athlete of the Year (sailing) and active sailor.

John Winder

Marine Surveyor, two time chairman Newport to Bermuda Yacht Race, member of Storm Trysail Club (steering committee member), presenter at US Sailing Safety at Sea Seminars, active sailor.

Technical Support

Chuck Hawley

Chairman – US Sailing Safety at Sea Committee, Staff Commodore Santa Cruz Yacht Club, Vice President of West Marine (Product Information and Sustainability), moderator US Sailing Safety at Sea Seminars, active sailor.

Evans Starzinger

Two-time Circumnavigator, Seven Seas Award recipient, contributor to Cruising World, Sail, Sailing Magazine, Blue Water Cruising and Practical Sailor, considered to be one of the leading blue water cruisers today, active sailor.

Jim Wildey

Chief Materials Laboratory for NTSB, Investigator NTSB, advisor to US Sailing Independent Review Panel –Farallon Islands Race (Low Speed Chase)

Dr. Stephen Shea

Critical Care Surgeon, Emergency Medicine specialist, serves as Medical Director for the Long Beach Grand Prix auto race, Medical Director for the Long Beach Fire Department and is familiar with traumatic injuries, active boater.

Appendix 1

NOSA Notice of Race – 2012 Newport to Ensenada Race



NEWPORT TO ENSENADA INTERNATIONAL YACHT RACE
April 27-29, 2012
Newport Ocean Sailing Association
Newport Beach, CA



NOTICE OF RACE

The organizing authority for the Newport to Ensenada International Yacht Race is the Newport Ocean Sailing Association (NOSA), PO Box 7485, Newport Beach, CA 92658.

1. RULES

- 1.1 This race will be governed by the rules as defined in the International Sailing Federation (ISAF) Racing Rules of Sailing (RRS) 2009-2012.
- 1.2 The following prescriptions of the United States national authority, US SAILING, that will apply are stated in full below:
 - 1.2.1 RRS rule 68 – Damages: US SAILING prescribes that:
 - (a) A boat that retires from a race or accepts a penalty does not by that action alone admit liability for damages.
 - (b) A protest committee shall find facts and make decisions only in compliance with the rules. No protest committee or US SAILING Appeals authority shall adjudicate any claim for damages. Such a claim is subject to the jurisdiction of the courts.
 - (c) A basic purpose of the rules is to prevent contact between boats. By participating in an event governed by the rules, a boat agrees that responsibility for damages arising from any breach of the rules shall be based on fault as determined by application of the rules, and that she shall not be governed by the legal doctrine of “assumption of risk” for monetary damages resulting from contact with other boats.
 - 1.2.2 RRS rule 76.1 – Exclusion of Boats or Competitors – US SAILING prescribes that an organizing authority or race committee shall not reject or cancel the entry of a boat or exclude a competitor eligible under the Notice of Race and Sailing Instructions for an arbitrary or capricious reason, or for the reason of race, color, national origin, gender, sexual orientation, or age.
 - 1.2.3 RRS rule 76.3 – Exclusion of Boats or Competitors – US SAILING prescribes that a boat whose entry is rejected or cancelled or a competitor who is excluded from a race or series shall, upon written request, be entitled to a hearing conducted by the protest committee under rules 63.2, 63.3, 63.4 and 63.6.
 - 1.2.4 RRS Appendix F, Procedure for Appeals and Requests – See US SAILING RRS Appendix F for full text.
- 1.3 For boats with movable ballast, RRS rule 51 is waived, but only with respect to the shifting of their declared and measured ballast, and RRS rule 52 is also waived, but only with respect to the shifting of that ballast. All ballast systems shall also be capable of manual operation.
- 1.4 National letters of country identification are not required. This changes RRS rule 77 and RRS rule G.1. (b).
- 1.5 The notification requirements of RRS rule 61.1 are satisfied for all filed protests other than Part 2 RRS protests by posting protests pending on either the Official Race Results Board or the Official Notice Board adjacent to the Official Results Board, or both. This changes RRS rule 61.1.
- 1.6 The Performance Handicap Racing Fleet of Southern California (PHRF) Marine Industry Racer (MIR) rule shall not apply to boats racing in the MAXI class. For all other boats racing in the PHRF fleet, the MIR rule shall apply.
- 1.7 Cruising classes are subject to additional rules as set forth in the Sailing Instructions.
- 1.8 In addition to complying with their class and equipment rules:
 - 1.8.1 All boats shall carry a GPS.
 - 1.8.2 All monohulls shall comply with the PHRF Race Category 2 Standard Equipment List.
 - 1.8.3 All monohulls shall carry a spare anchor of the size recommended by the anchor’s manufacturer, metal chain, and line adequate to hold in adverse weather. Chain shall be at least 1/2 the boat’s length. Line shall be at least 150 feet in length.
 - 1.8.4 All multihulls shall be Ocean Racing Catamaran Association (ORCA) members in good standing and shall comply with the ORCA equipment list as detailed in the current ORCA bylaws.



NEWPORT TO ENSENADA INTERNATIONAL YACHT RACE



NOTICE OF RACE

- 1.8.5 NOSA recommends that all competitors comply with the ISAF Offshore Special Regulations for Race Category 3 Monohulls with Life Rafts or Race Category 3 Multihulls with Life Rafts. A link to the ISAF Special Regulations, and the ORCA and PHRF Equipment Lists can be found on the NOSA website.

2. ADVERTISING

- 2.1 Competitor advertising will be restricted as follows: no advertising other than that allowed under ISAF Regulation 20.9 will be allowed.
- 2.2 Boats may be required to display advertising supplied by the Organizing Authority in accordance with ISAF Regulation 20.4.

3. FLEETS AND CLASSES RACING

The following fleets are invited to participate in this race:

- 3.1 Ocean Racing Catamaran Association (ORCA), which may be comprised of ORCA classes, including those competing for special trophies, such as XS.
- 3.1.1 XS boats will race in their assigned ORCA class. Additionally, they will be scored against each other.
- 3.2 Performance Handicap Racing Fleet (PHRF) of Southern California which may be comprised of MAXI classes, SPRIT classes, ANCIENT MARINER classes, PHRF classes, and CRUISING classes, including those competing for special trophies, such as IRC, Double-Handed, All Female Crew, and ORR as are determined eligible by NOSA.
- 3.2.1 NOSA will accept entries from PHRF members of areas other than PHRF of Southern California provided their current, valid PHRF Rating Certificate is submitted with the entry and that the Offwind Course (OWC) Rating for the boat is the same as the PHRF of Southern California OWC Rating for the same manufacturer and model boat. All other PHRF out of area competitors shall obtain a current PHRF of Southern California Rating Certificate before submitting their entry.
- 3.2.2 MAXI class boats have a PHRF Base OWC Rating of -45 or lower.
- 3.2.3 SPRIT class boats have a retractable bow sprit, which may articulate.
- 3.2.4 ANCIENT MARINER boats are traditionally-constructed wooden-hull boats.
- 3.2.5 CRUISING class boats have a PHRF Base OWC Rating of 40 or higher and a Performance Factor less than 1.8. Cruising class boats are subject to additional rules as set forth in the Sailing Instructions. Cruising classes may be comprised of:
- 3.2.5.1 SPINNAKER classes – boats that carry one or more spinnakers as defined in RRS rule 50.4.
- 3.2.5.2 GENNAKER classes – boats that carry one or more gennakers. A gennaker is a cross between a genoa and a spinnaker. It is asymmetric like a genoa, but is not attached to the forestay over the full length of its luff. The gennaker is attached only to the stem fitting or to a pennant attached to the stem fitting. The pennant shall not exceed 10% of the “I” measurement.
- 3.2.5.3 NON-SPINNAKER classes – boats that do not carry spinnakers or gennakers.
- 3.2.6 DOUBLE-HANDED boats will race in their assigned class. Additionally, they will be scored against each other. Double-handed boats shall have only two persons on-board. This changes PHRF Class Rule 10.5.
- 3.2.7 ALL FEMALE CREW boats will race in their assigned class. Additionally, they will be scored against each other. All Female Crew boats shall only have females on-board.
- 3.2.8 IRC boats have an IRC Certificate and will race in their assigned class. Additionally, they will be scored against each other. IRC boats will race in their IRC-rated configuration.
- 3.2.9 ORR boats have an ORR Certificate and will race in their assigned class. Additionally, they will be scored against each other. ORR boats will race in their ORR-rated configuration.



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NOTICE OF RACE

- 3.3 One-Design Classes of boats of the same Manufacturer Type with five (5) or more entries may petition NOSA in writing to be scored against each other. Petitions must be received by NOSA no later than April 12, 2012.
- 3.4 Class designations, starting assignments, and class identification backstay flags will be made available on the NOSA website no later than Friday, April 13, 2012.

4. ELIGIBILITY AND ENTRY

- 4.1 All boats racing shall have a current, valid Rating Certificate issued by the fleet handicapping authority of the classes within which they are competing. Boats competing for special trophies that require additional certificates shall have a current, valid Rating Certificate issued by the appropriate fleet handicapping authority.
- 4.2 The entry fee is \$125 through December 31st, 2011.
- 4.3 The entry fee is \$175 from January 1, 2012 through Thursday, April 12, 2012.
- 4.4 The entry fee is \$225 for any entry received later than Thursday, April 12, 2012.
- 4.5 An On-Line Entry Form and a "printable" Entry Form are available on the NOSA website. Entry must be received by NOSA no later than 1700 hours, Thursday, April 19, 2012, except as permitted at the sole discretion of the Race Chair.
- 4.6 If the Entry is cancelled (Withdrawn) prior to Thursday, April 19, 2012, \$75 will be refunded. After that date, no refunds will be made.
- 4.7 Any boat that has its rating changed after having submitted an Entry Form shall provide NOSA with a new Rating Certificate as soon as possible, but in no case later than 1700 hours, Thursday, April 19, 2012, and shall contact NOSA to determine its appropriate class based on the new rating. Any boat whose rating is changed after 1700 hours, Thursday, April 19, 2012 shall race under its original Rating Certificate.
- 4.8 NOSA reserves the right to move a boat to any class that is deemed appropriate by NOSA.
- 4.9 NOSA reserves the right to refuse entry to boats under RRS rule 76.1 (Exclusion of Boats or Competitors).
- 4.10 Competitors are reminded that US Customs and Border Patrol require a Customs Decal on all boats if they are thirty (30) feet or more in length. For information about obtaining a Decal, go to the NOSA website and click on the US Customs Decal link. Competitors are also reminded that current Passports/Passport Cards are required for skipper and all crew members. For information about obtaining a Passport, go to the NOSA website and click on the Passport Information link.

5. RATINGS

- 5.1 Boats competing in the ORCA Fleet shall be scored based on the boat's ORCA Coastal Rating.
- 5.2 Boats competing in the PHRF Fleet shall be scored based on the boat's PHRF Base Off-Wind Course (OWC) Rating.
- 5.3 Boats competing in a PHRF Cruising Classes shall be scored based on the boat's PHRF Base OWC Rating plus the total Cruising Class Adjustments listed in Appendix D, Section 4 of the PHRF Class Rules.
- 5.4 Boats competing in a PHRF Non-Spinnaker Cruising Class shall be scored based on the boat's PHRF Base OWC Rating plus the total Cruising Class Adjustments listed in Appendix D, Section 4 of the PHRF Cruise Rules plus the non-Spinnaker Offset listed on the PHRF Rating Certificate.

6. SCHEDULE OF THE RACE

- 6.1 The warning signal for the first cruising class start is scheduled for 1055 hours on Friday, April 27, 2012.
- 6.2 The warning signal for the first non-cruising class start is scheduled for 1155 hours on Friday, April 27, 2012.

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NOTICE OF RACE

7. SAILING INSTRUCTIONS

- 7.1 Sailing Instructions will be available on the NOSA website no later than Thursday, April 12, 2012, and will be included in the Skipper's Packet.
- 7.2 Check the NOSA website for the Skipper Packet pickup schedule.

8. THE COURSE

- 8.1 The race will start off Balboa Pier in Newport Beach, CA and finish off Ensenada, Baja Mexico.
- 8.2 For scoring purposes, the handicap distance is 125 nautical miles.

9. TIME LIMIT

The Time Limit is 1100 hours, Sunday April 29, 2012. All boats not finishing before the Time Limit will be scored Did Not Finish (DNF). This changes RRS rule 35.

10. PENALTY SYSTEM

RRS rule 44.3 will be used for Part 2 violations. All other penalties will be defined in the Sailing Instructions.

11. PRIZES

- 11.1 NOSA will present Perpetual Trophies as listed in an Attachment of the Sailing Instructions.

- 11.2 NOSA will present trophies based on the number of entries as follows:

<u>NUMBER OF ENTRIES</u>	<u>NUMBER OF TROPHIES</u>
One (1) to Five (5)	Trophy to 1 st place
Six (6) to Ten (10)	Trophies to 1 st and 2 nd places
Eleven (11) to Fifteen (15)	Trophies to 1 st , 2 nd , and 3 rd places
Sixteen (16) to Twenty (20)	Trophies to 1 st , 2 nd , 3 rd , and 4 th places
Twenty-One (21) or more	Trophies to 1 st , 2 nd , 3 rd , 4 th , and 5 th place

12. INSURANCE

Each participating boat shall be insured with valid combined single limit watercraft liability insurance in an amount not less than \$300,000.

13. DISCLAIMER OF LIABILITY

Competitors participate in this Race entirely at their own risk. See RRS rule 4 (Decision to Race). The Organizing Authority will not accept liability for damage or personal injury or death sustained in conjunction with, prior to, during, or after this Race.

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NEWPORT TO ENSENADA INTERNATIONAL YACHT RACE



NOTICE OF RACE

14. RIGHT TO USE NAME AND LIKENESS

By participating in the Newport to Ensenada International Yacht Race, a competitor automatically grants to the organizers and its sponsors the right, in perpetuity, to make, use, and show from time to time at their discretion, any still or motion pictures and live, taped, or filmed television and other reproductions of him or her without compensation.

15. AMENDMENTS TO THIS NOTICE

The Organizing Authority reserves the right to amend this Notice of Race. Any Amendments made will be posted on the NOSA website. The Notice of Race and any Amendments will also be posted on the Official Notice Board on the Flag Deck of Balboa Yacht Club no later than one week prior to the Race.

Appendix 2

NOSA Sailing Instructions (amended)



SAILING INSTRUCTIONS AS AMENDED ON 4/13/19 (Amendment 3)

The Organizing Authority for the Lexus Newport to Ensenada Yacht Race is the Newport Ocean Sailing Association (NOSA), PO Box 7485, Newport Beach, CA 92658.

Race Headquarters in Ensenada, Mexico is located at the Hotel Coral, Ensenada, Baja California, Mexico and commences operations at 0800, April 28, 2012.

1. RULES

- 1.1 This race will be governed by the rules as defined in the International Sailing Federation (ISAF) Racing Rules of Sailing (RRS) 2009---2012.
- 1.2 The following prescriptions of the United States national authority, US SAILING, that will apply are stated in full below:
 - 1.2.1 RRS 68-- Damages. US SAILING prescribes that:
 - a. A boat that retires from a race or accepts a penalty does not by that action alone admit liability for damages.
 - b. A protest committee shall find facts and make decisions only in compliance with the rules. No protest committee or US SAILING Appeals authority shall adjudicate any claim for damages. Such a claim is subject to the jurisdiction of the courts.
 - c. A basic purpose of the rules is to prevent contact between boats. By participating in an event governed by the rules, a boat agrees that responsibility for damages arising from any breach of the rules shall be based on fault as determined by application of the rules, and that she shall not be governed by the legal doctrine of "assumption of risk" for monetary damages resulting from contact with other boats.
 - 1.2.2 RRS 76.1-- Exclusion of Boats or Competitors. US SAILING prescribes that an organizing authority or race committee shall not reject or cancel the entry of a boat or exclude a competitor eligible under the Notice of Race and Sailing Instructions for an arbitrary or capricious reason, or for the reason of race, color, national origin, gender, sexual orientation, or age.
 - 1.2.3 RRS 76.3-- Exclusion of Boats or Competitors -- US SAILING prescribes that a boat whose entry is rejected or cancelled or a competitor who is excluded from a race or series shall, upon written request, be entitled to a hearing conducted by the protest committee under rules 63.2, 63.3, 63.4 and 63.6.
 - 1.2.4 Appendix F. Procedure for Appeals and Requests -- See US SAILING Appendix F for full text
[http://www.ussailing.org/rules/documents/2009---2012%20Prescriptions%20FINAL CLN.pdf](http://www.ussailing.org/rules/documents/2009---2012%20Prescriptions%20FINAL%20CLN.pdf)
- 1.3 For boats with movable ballast, RRS 51 is waived, but only with respect to the shifting of their declared and measured ballast, and RRS 52 is also waived, but only with respect to the shifting of that ballast. All ballast systems shall also be capable of manual operation.
- 1.4 National letters of country identification are not required. This changes RRS 77 and RRS G.1. (b).
- 1.5 The notification requirements of RRS 61.1 are satisfied for all filed protests other than Part 2 RRS protests by posting protests pending on either the Official Race Results Board or the Official Notice Board adjacent to the Official Results Board, or both. This changes RRS 61.1.
 - 1.6 The Performance Handicap Racing Fleet of Southern California (PHRF) Marine Industry Racer (MIR) rule shall not apply to boats racing in the MAXI class. For all other boats racing in the PHRF fleet, the MIR rule shall apply.
- 1.7 Cruising classes are subject to additional rules as set forth in the Sailing Instructions.
- 1.8 In addition to complying with their class and equipment rules:
 - 1.8.1 All boats shall carry a functioning GPS.
 - 1.8.2 All boats shall comply with Addendum D -- Equipment Checklist and Penalties.
 - 1.8.3 All boats shall carry at least two anchors of the size recommended by the anchor's manufacturer, metal chain and line adequate to hold in adverse weather. Chain will be at least ¼ the boat's length. Line shall be at least 150 feet in length.
 - 1.8.4 All multihulls shall be Ocean Racing Catamaran Association (ORCA) members in good standing.
 - 1.8.5 NOSA recommends that all competitors comply with the ISAF Offshore Special Regulations for Race Category 3 Monohulls with Life Rafts or Race Category 3 Multihulls with Life Rafts. A link to the ISAF Special Regulations, and the ORCA and PHRF Equipment Lists can be found on the NOSA website.

2 ADVERTISING

- 2.1 No advertising other than that allowed under ISAF Regulation 20.9 will be allowed.
- 2.2 Boats may be required to display advertising supplied by the Organizing Authority in accordance with ISAF Regulation 20.4.

3 CLASS DIVISIONS AND IDENTIFICATION FLAGS

- 3.1 Classes Breaks, Starting Assignments and Class Flag information will be appended to and become part of the Sailing Instructions no later than Friday, April 13, 2012, and will be posted on the NOSA website and on the Race Bulletin Board at Balboa Yacht Club (BYC).
- 3.2 While in the starting area and while racing, the class Identification flag must be flown from the backstay, at least six (6) feet above the deck.
- 3.3 Any NOSA---supplied 2012 race participation flags shall be flown in accordance with instructions provided in the NOSA Skipper Packet.
- 3.4 Ratings listed on any document published by NOSA are considered "preliminary" and are not grounds for protest or redress. Only the Ratings issued by PHRF, IRC, ORR, and ORCA shall be used for scoring purposes.

4 CHANGES TO SAILING INSTRUCTIONS / NOTICES TO COMPETITORS

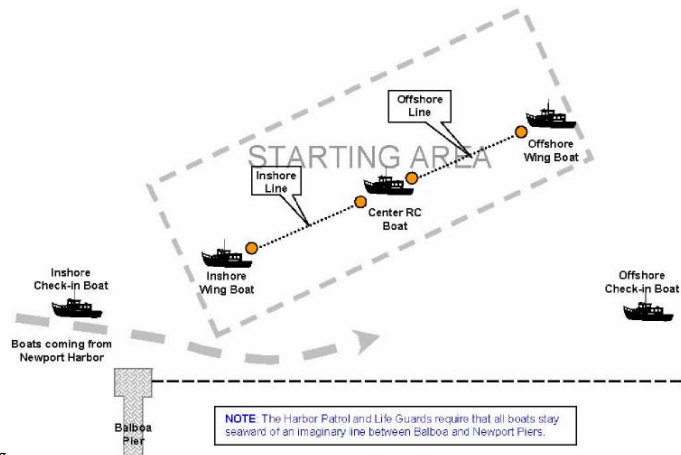
- 4.1 Changes to the Sailing Instructions and/or Notices to Competitors will be posted on the NOSA web site and on the Race Bulletin Board at Balboa Yacht Club (BYC) no later than 9 AM on race day.
- 4.2 Notices to competitors, including protest notification, will be posted on either the Official Race Results Board located at Race Headquarters at the Hotel Coral in Ensenada, Mexico or the Protest Notice Board adjacent to the Official Race Results Board or both.
- 4.3 Signals made ashore will be displayed on BYC Race Tower when Notices to Competitors or changes in the Sailing Instructions are posted.

5 CHECK---IN PROCEDURE

- 5.1 Prior to starting, all boats shall check in with one of the designated Check---In Boats. Do not check in with a Race Committee Signal Boat or Start Boat.
- 5.2 Each entrant must hail the boat's U.S. Sailing or other National Authority or Class sail number to the Check---in boat and obtain a verbal acknowledgement by return hail from the Check---In boat.
- 5.3 Check---in boats will be on---station: (1) inside the Newport harbor in the vicinity of permanent mark "6."; (2) approximately 1/4 mile East of the Inshore Wing Boat in the vicinity of the Balboa Pier; and (3) approximately 1/4 mile West of the of the Offshore Wing Boat located approximately midway between the Balboa Pier and Newport Pier.
- 5.4 A boat failing to Check---In as described above, may be protested by the Race Committee and may be penalized by having sixty (60) minutes added to her elapsed time by the Protest Committee following a hearing.
- 5.5 Boats that do not start shall report the Did---Not---Start (DNS) to NOSA at 949---644---1023 as soon as possible, but in any case not later than 1800 hours on the race start day. Failure to report a DNS may be cause for disqualification from future race participation.

6. STARTING LINES

- 6.1 The starting area will be located to seaward and westerly of the end of the Balboa Pier, Newport Beach, CA
(approximate GPS coordinates in degrees, minutes and decimal minutes are 33.35.810 N and 117.54.400 W).
- 6.2 There are two separate starting lines designated the "INSHORE LINE" and the "OFFSHORE LINE" as shown in the diagram below.
- 6.3 The ends of each starting line shall be identified with orange inflatable marks attached to or next to the start line boats as shown in the diagram below.
- 6.4 A mark may be attached to the stern of the start line boats and shall be considered part of the Starting Mark for the purposes of RRS 28 and RRS 31.
- 6.5 A boat whose WARNING signal has not yet been made shall keep clear of the indicated starting area, which is defined as a minimum of 200 yards clear of the starting line and of all boats whose WARNING signal has been made. A boat failing to stay clear may be protested by the Race Committee and may be penalized by having a sixty (60) minute time penalty added to her elapsed time by the Protest



Committee following a hearing.

7. RADIO COMMUNICATION

- 7.1 NOSA will broadcast information on VHF Channel 6 regarding class starts, count---down times, “On Course Side” starters, General Recall, and any special emergency announcements before and during the starts. Channel 68 will be used if Channel 6 is not working.
- 7.2 During all starting sequences, entrants shall not transmit over Channel 6, or attempt to contact the Race Committee on any other channel. The Race Committee will not respond to any calls.
- 7.3 Failure of any radio announcement shall not constitute grounds for redress.

8. START TIMES AND SIGNALS

- 8.1 RRS 26 applies to all starts.

8.2 CRUISING CLASSES

- 8.2.1 To alert boats that the starting sequence will begin soon, an orange flag will be displayed (with one sound) at least five (5) minutes before the first warning signal.
- 8.2.2 The first warning signal for both starting lines is scheduled for 1055 hours and the first starts are scheduled for 1100 hours.
- 8.2.3 All subsequent starts are at ten (10) minute intervals until all classes have started, including recalled classes if any.

8.3 ALL OTHER CLASSES

- 8.3.1 To alert boats that the starting sequence will begin soon, an orange flag will be displayed (with one sound) at least five (5) minutes before the first warning signal.
- 8.3.2 The first warning signal for both starting lines is scheduled for 1155 hours and the first starts are scheduled for 1200 hours.
- 8.3.3 All subsequent starts are at ten (10) minute intervals until all classes have started, including recalled classes if any.

9. INDIVIDUAL RECALL

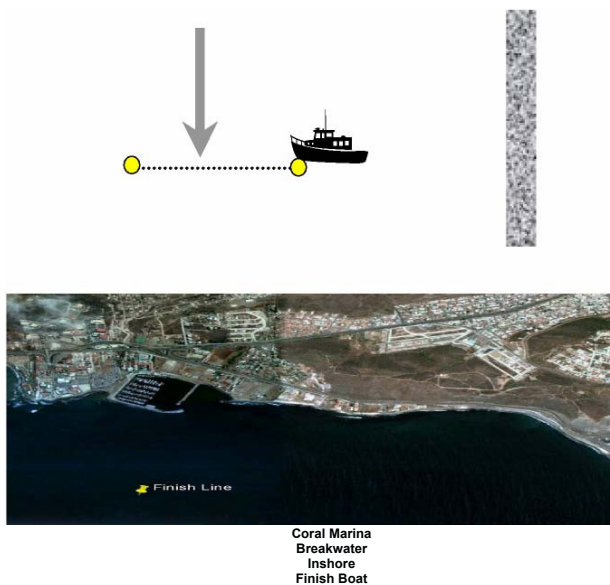
- 9.1 In the event of an Individual Recall, the Race Committee will display the “X” flag and make one (1) sound signal. The Race Committee will attempt to notify recalled boats by hailing their sail number over VHF channel 6. Failure of a boat to see or hear her recall notification shall not relieve her of her obligation to start correctly and shall not be grounds for redress. A boat’s position in the sequence of hailed numbers or broadcast numbers shall not be grounds for redress.
- 9.2 Any boat that is on the course side at her starting signal, or must comply with RRS 30.1, or starts on the wrong line, that does not return to the pre---start side of the line to properly start, will be scored OCS and penalized sixty (60) minutes of elapsed time in lieu of being scored points for the finishing place one more than the number of boats entered in the race. This changes RRS 28.1 and RRS A4.2.

10. GENERAL RECALL

- 10.1 In the event of a General Recall, the Race Committee will hoist the “First Substitute” flag and make two (2) sound signals. The Race Committee will broadcast on Channel 6 that the class is recalled.
- 10.2 Starts for the remaining classes will continue in accordance with the Order of Start listed in the Sailing Instructions
- 10.3 Recalled classes will start on their respective start lines ten (10) minutes after the final scheduled class start and in the order of their respective class starts, at ten (10) minute intervals. This changes RRS 29.2.
- 10.4 Failure of the Race Committee to notify boats of a General Recall on Channel 6 shall not constitute grounds for redress.

11. COURSE AND FINISH LINE

- 11.1 The race will start off Newport Beach, California, USA and finish off Ensenada, Baja, Mexico.
- 11.2 The approximate length of the course is 125 nautical miles. For scoring purposes 125 nautical miles will be used as the handicap distance.
- 11.3 The Finish Line is located seaward of the Hotel Coral Marina (at approximate GPS coordinates in degrees, minutes and decimal minutes of: 31.51.036 N – 116.39.752 W).



- 11.4 The Finish Line will be between 2 yellow inflatable marks. One or both marks may be located next to or attached to a Race Committee boat.
- 11.5 The area in the vicinity of the Finish Line shall be kept clear of all boats except those finishing. A boat failing to stay clear may be protested by the Race Committee and may be assigned a thirty (30) minute time penalty by the Protest Committee following a hearing.
- 11.6 Boats reporting a Did Not Finish (DNF) or acceptance of a Scoring Penalty at the Finish Line shall stand by and hail the Race Committee, while remaining outside the Finish Line.
- 11.7 If conditions permit, the Race Committee will display a flashing signal light on the Finish Boat(s) during the hours of darkness.
- 11.8 All boats that finish should file a 2012 NOSA Race Finish Card, as shown in Addendum B. The Finish Card will be included in the Skipper's Packet. The Finish Card should be submitted at NOSA Race Headquarters in Ensenada within four (4) hours of the boat's finish time, or by 1200 hours on Sunday, April 29, 2012, whichever is earlier.

12. BOATS NOT FINISHING AND TIME LIMIT

12.1 Any boat that starts, but retires before finishing, **SHALL** report Did---Not---Finish (DNF) as soon as possible, but in no case later than 1100 hours, Sunday, April 29, 2012 by using one of the following methods:

- Informing the Race Committee at the Finish Line, or
- Notifying Race Headquarters by radio (Channel 16) or in person at Hotel Coral, Ensenada, Baja California, Mexico or telephoning NOSA at 949---644---1023.

12.2 Failure to report a DNF may be cause for disqualification from future race participation.

13. PENALTY SYSTEM

The scoring penalty RRS 44.3 will apply. The penalty will be the addition of thirty (30) minutes added to the boat's elapsed time. This changes RRS 44.3.

14. PROTEST COMMITTEE AND PROTESTS

14.1 The Protest Committee and Protest Committee Hearings in Ensenada will be located at the Hotel Coral.

14.2 Protests shall be filed in accordance with RRS Part 5 and shall be delivered to Race Headquarters at the Hotel Coral, Ensenada, within two (2) hours of the protesting boat's finish time. This changes RRS 61.3. Protest Forms are available at that location.

14.3 Protests and Requests for Redress may be heard starting at 1400 hours on Saturday, April 28, 2012, in the Protest Room located at the Hotel Coral, Ensenada, provided all parties to the hearing are available. Protests and Requests for Redress not heard on Saturday, April 28, 2012, will be heard starting promptly at 0900 hours on Sunday, April 29, 2012, in the Protest Room in approximately the order received.

14.4 Protest notification will be posted on the Official Race Results Board and the Protest Notice Board adjacent to the Official Race Results Board located at Race Headquarters. Scheduled times for the hearings, sail numbers of the protested boats, and listed witnesses will be posted on the Protest Notice Board.

14.5 It is the responsibility of competitors to observe the posted Notice of Protest maintained on the Official Race Results Board or the Protest Notice Board to determine if their boat is involved in a Protest. Scheduled times and location of Protest Hearings will be posted on Protest Notice Board. Protest posting on either the Official Race Results Board, or the adjacent Protest Notice Board, or both, meets the requirements of notification of RRS 61.1(a)(1), and RRS 61.1(b), and RRS 61.1(c).. Protest hearings shall proceed at, or as close as is possible to, the scheduled hearing time whether or not a representative from the protested boat is present.

14.6 All protests and requests for redress received after 1300 hours on Sunday, April 29, 2012 will be treated as a late protest. In addition, in the event of serious boat damage, injury, withdrawal from the race before finishing, or other reason acceptable to the Protest Committee to extend the Protest Time Limit, a late written protest may be filed. The late protest shall be postmarked within twenty---four (24) hours of the time the protesting boat reaches port, but in any event, no later than two (2) days after Race finish. The Protest Committee may extend this time under RRS 61.3. Mail late protests to: NOSA, PO Box 7485, Newport Beach, CA 92658. Late protests will

be heard from 1400---1800 hours at Balboa Yacht Club, Corona Del Mar, CA, on Sunday, May 13, 2012.

15. EQUIPMENT AND MEASUREMENT CHECKS

15.1 A protested boat or its equipment may be inspected at any time for compliance with the class rules and the Sailing Instructions.

On the water, a protested boat can be instructed by a Race Committee boat to proceed immediately to a designated area for inspection.

15.2 Addendum D – Equipment Checklist and Penalties, lists required equipment and the recommended penalties for failing to carry said equipment during the race. Failure of the Race Committee to list all required equipment in Addendum D shall not relieve a boat of her obligation to be in compliance with all class, Sailing Instruction and regulatory equipment requirements at the time of the race.

15.3 Notwithstanding any other penalties already specified in the Notice of Race or Sailing Instructions, the Protest Committee may, after a hearing, assess an additional penalty(s) up to and including disqualification.

16. PRIZES

16.1. NOSA will present Perpetual Trophies as listed in Addendum A.

16.2 NOSA will present trophies based on the number of entries in each class and the number of boats competing for special trophies such as All---Female Crew, Double---Handed Crew, and XS:

NUMBER OF ENTRIES	TROPHY
1---5	1
6---10	2
11---15	3
16---20	4
>20	5

17. RACE CANCELLATION

At its discretion, the Race Committee may abandon the race. The Committee Boats will display appropriate signals (RRS 32 and RRS Race Signals) and make radio announcements on Channel 6. Whether or not the Race Committee has abandoned the race, it is the responsibility of the skipper of each boat to determine if the weather conditions are a threat to the safety of the boat or crew, and if so, whether to participate or continue racing (RRS 4).

18. ADDITIONAL INSTRUCTIONS FOR CRUISING CLASSES

Paragraphs 19 through 23 apply only to Cruising Class boats.

19. CRUISING CLASS ADJUSTMENTS

In accordance with Appendix D, paragraph 4.0 of the PHRF Class Rules, a Cruising Class boat's Race Rating shall consist of the boat's PHRF Rating, specifically for this race its base Off Wind Course (OWC) Rating, as shown on the valid Rating Certificate, along with the adjustments shown in Appendix D of the PHRF Class Rules and repeated on the 2012 NOSA Entry Form.

20. CRUISING CLASS ENGINE USE

20.1 An engine may be used for charging batteries, pumping bilges or supplying power for weighing anchor or refrigeration while in neutral. In addition Cruising Class participants may use an engine for propulsion within the limitations stated below.

20.2 Motoring time, also referred to as engine in---gear propulsion time, is restricted to between 2000 hours (8 PM) and 0800 hours (8AM) during the race.

20.3 A vessel's speed in knots may not exceed its hull speed while the engine is in---gear propelling the boat. Hull speed is defined as $1.34 \times \text{Square Root (LWL)}$, where "LWL" is the length of the waterline in feet.

20.4 RECORDING REQUIREMENTS

20.4.1 The skipper shall record on the 2012 NOSA Cruising Class Engine Log (as shown on Addendum C) both the GPS Latitude and Longitude position of the boat (to the second decimal place of a minute) and the GPS time (to the nearest second) on each occasion when the engine was put in---gear and was taken out of gear. This changes Appendix D, paragraphs 2.0(e), 2.0(f), 2.0(g) of the PHRF Class Rules.

20.4.2 A minimum of 30 minutes shall be recorded each time the engine is put in---gear. This changes Appendix D, paragraph 2.0(f) of the PHRF Class Rules.

20.4.3 Record the total engine in---gear propulsion time in MINUTES.

20.5 FILING THE 2012 NOSA CRUISING CLASS ENGINE LOG

20.5.1 All Cruising Class participants that finish shall file a 2012 NOSA Cruising Class Engine Log, as shown in Addendum C of these Sailing Instructions, even if the engine is not used. The Cruising Class Engine Log will be included in the Skipper's Packet. The Cruising Class Engine Log must be submitted at NOSA Race Headquarters in Ensenada within four (4) hours of the boat's finish time, or by 1200 hours on Sunday, April 29, 2012, whichever is earlier.

20.5.2 A Cruising Class boat failing to correctly complete and file her 2012 NOSA Cruising Class Engine Log, may be protested by the Race Committee and may be penalized up to a Disqualification (DSQ) by the Protest Committee following a hearing.

20.5.3 ENGINE USE IMPACT ON FINAL CORRECTED TIME – An Adjustment equal to (IN---GEAR---TIME * $0.40 \times \text{Square Root (LWL)}$) will be added to the Corrected Time to produce a Final Corrected Time.

21. CRUISING CLASS PERMITTED EQUIPMENT

21.1 Whisker poles may be used and are limited in length to 1.4 times the "J" measurement. One end shall be attached to the foremost mast. This changes Appendix D, paragraph 3.0(c) of the PHRF Class Rules.

21.2 Double headsails, double head rigs, and multi---masted vessels are allowed.

21.3 Power winches are allowed. This changes RRS 52.

21.4 Steering vanes and autopilots are allowed. However, it is the responsibility of the skipper to ensure that someone is always in position to take command of the boat in an emergency.

22. OTHER CRUISING CLASS REQUIREMENTS AND INFORMATION

22.1 Competitors in the Cruising Classes are reminded that under the International Regulations for Preventing

Collisions at Sea (COLREGs) that they are required to exhibit a white masthead light aloft when under power. 22.2 Rig bands for the "P" and "E" measurement are not required. However, the mainsail must measure to the reported dimensions.

22.3 Sail dimensions are not required to be marked on the sails.

22.4 The U.S. SAILING or foreign National Authority or Class sail number may be displayed from the lifelines. If so displayed, they shall be displayed on both sides of the boat aft of the mainmast in a visible location. Minimum height of letters/numbers shall be 300mm (12 inches). This changes RRS Appendix G and related instructions in the NOR.

22.5 It is the responsibility of the skipper to notify NOSA, prior to racing, of ANY changes in equipment affecting the Adjustments. Additionally, the skipper shall notify PHRF of any changes to a boat's rated configuration. Failure to notify NOSA or PHRF may result in a protest and race disqualification, and may further subject the skipper to a Rules Violation penalty as described in Appendix G of the PHRF Class Rules.

22.6 Cruising boats finishing under power (motoring) shall have the mainsail raised. This changes Appendix D, paragraph 2.0(g) of the PHRF Class Rules. A boat failing to have the mainsail raised, may be protested by the Race Committee and may be penalized by having sixty (60) minutes added to her elapsed time by the Protest Committee following a hearing.

23. CRUISING CLASS PHRF NON--SPINNAKER OFFSET

The PHRF Non--Spinnaker Offset shall be added only to boats racing in one of the Non--Spinnaker Cruising classes. The Race Rating for a boat racing in a Non--Spinnaker Cruising class shall be the PHRF Base OWC Rating + PHRF Non-Spinnaker Offset + any Cruising Class Adjustment.

	ADDENDUM A – PERPETUAL TROPHIES	
---	---	---

As posted “Amendment 1”

	ADDENDUM B – FINISH CARD	
---	---------------------------------	---

BOAT NAME **SAIL NUMBER**

WE FINISHED THE RACE AT

AM PM ON

FINISH CARD ---ALL COMPETITORS

BOAT NAME	SAIL NO		MINS / SECONDS	
		was	:	ahead of us
		was	:	ahead of us
		was	:	behind us
		was	:	behind us

Skipper/Charterer

File your 2012 Finish Card with NOSA Race Headquarters at Hotel Coral within four (4) hours of finishing or the filing deadline of 1200 hours on Sunday, April, 29, 2012, whichever is earlier.

	ADDENDUM C – CRUISING CLASS ENGINE LOG	
---	---	---

BOAT NAMESAIL NUMBER

WE FINISHED THE RACE AT

AM PM ON

COMPLETE THE CRUISING CLASS ENGINE LOG EVEN IF YOU DID NOT USE THE ENGINE.
RECORD GPS LATITUDE AND LONGITUDE POSITION OF THE BOAT TO THE SECOND DECIMAL PLACE OF A MINUTE.

IN GEAR OR OUT OF GEAR	DAY	TIME	LATITUDE	LONGITUDE	ENGINE IN GEAR MINUTES
START	4/27		33 35.81 N	117 54.40W	
IN GEAR					
OUT OF GEAR					
IN GEAR					
OUT OF GEAR					
IN GEAR					
OUT OF GEAR					
IN GEAR					
OUT OF GEAR					
IN GEAR					
OUT OF GEAR					
FINISH			31.5 1.036 N	116.39.752 W	

TOTAL MINUTES ENGINE IN GEAR

Skipper/Charterer	Crew Member One	Crew Member Two

FILING – File your 2012 Cruising Class Engine Log with NOSA Race Headquarters at Hotel Coral within four (4) hours of finishing or the filing deadline of 1200 hours on Sunday, April 29, 2012, whichever is earlier. The skipper **and two crew members** shall certify that the Engine In Gear Time and LAT/LON locations reported are true and accurate.

LIMITATIONS – Total engine propulsion time is not limited for Cruising Class boats, but the engine in---gear time is restricted to between 2000 hours (8 PM) and 0800 hours (8AM) during the race. A vessel's speed in knots may not exceed its hull speed while the engine is in--- gear propelling the boat. Hull speed is defined as 1.34 x Square Root (LWL), where "LWL" is the length of the waterline in feet.

	ADDENDUM D – EQUIPMENT CHECKLIST AND PENALTIES	
---	---	---

Equipment	Recommended Penalty	Inspected
ALL BOATS		
Vessel Registration	30 minutes	
Approved PFD's (proper number and types)	DSQ	
Visual Distress Signals (proper number and current)	DSQ if missing 60 minutes if not current	
Fire Extinguishers (proper number and current)	DSQ if missing 60 minutes if not current	
Sound Producing Devices (primary and backup)	60 minutes	
Navigation Lights (functioning)	60 minutes	
Oil Pollution Placard	60 minutes	
Garbage Placard	60 minutes	
Marine Sanitation Device (functioning)	60 minutes	
Copy of Navigation Rules (if LOA > 39.4 ft)	30 minutes	
GPS	DSQ	
Ability to Reduce Sail Area	60 minutes	
Adequate Bilge Pumps	60 minutes	
Tapered Wood Plugs for Thru---Hulls	60 minutes	
Radar Reflector	60 minutes	
Compass visible from helm	60 minutes	
Spare or portable compass	60 minutes	
First Aid Kit	60 minutes	
VHF radio	60 minutes	
Anchor/chain/line	DSQ	
Spare anchor / chain / line	60 minute	
MONOHULLS		
Type 4 Ring Bouy or Horseshoe Buoy /Man Overboard Pole Light		
/Strobe Light	DSQ	
Inflatable Raft	DSQ	
MULTIHULLS		
Engine	DSQ	
Crash Bag	60 minutes	
Whistle for each crew	30 minutes	
Bosun's chair	30 minutes	
Two flashlights	30 minutes	
Stove	30 minutes	
Lead line or fathometer	30 minutes	
Inflatable raft for non---positively buoyant boats	DSQ	
Man Overboard Pole / Life Ring Assembly or MOM	DSQ	

USCG Type IV Flotation Device Located Readily Available to		
Helmsperson	DSQ	

Unless specified otherwise above, the recommended penalty for missing or non compliant equipment will be the addition of a sixty (60) minutes time penalty. Boats with equipment violations will be protested by the Race Committee. These penalties are recommended penalties. However, the Protest Committee is the final authority.

MARINE | WEATHER HINDCAST REPORT

PREPARED FOR

US SAILING INVESTIGATIVE PANEL

VESSEL: “*Aegean*”

INCIDENT LOCATION: APPROX 32.45N 117.30W

INCIDENT TIME: APPROX 1:30AM Apr. 28 2012

PREPARED BY

SAM WILSON

M.S. METEOROLOGY

SCIENTIST

SURFLINE.COM | BUOYWEATHER.COM

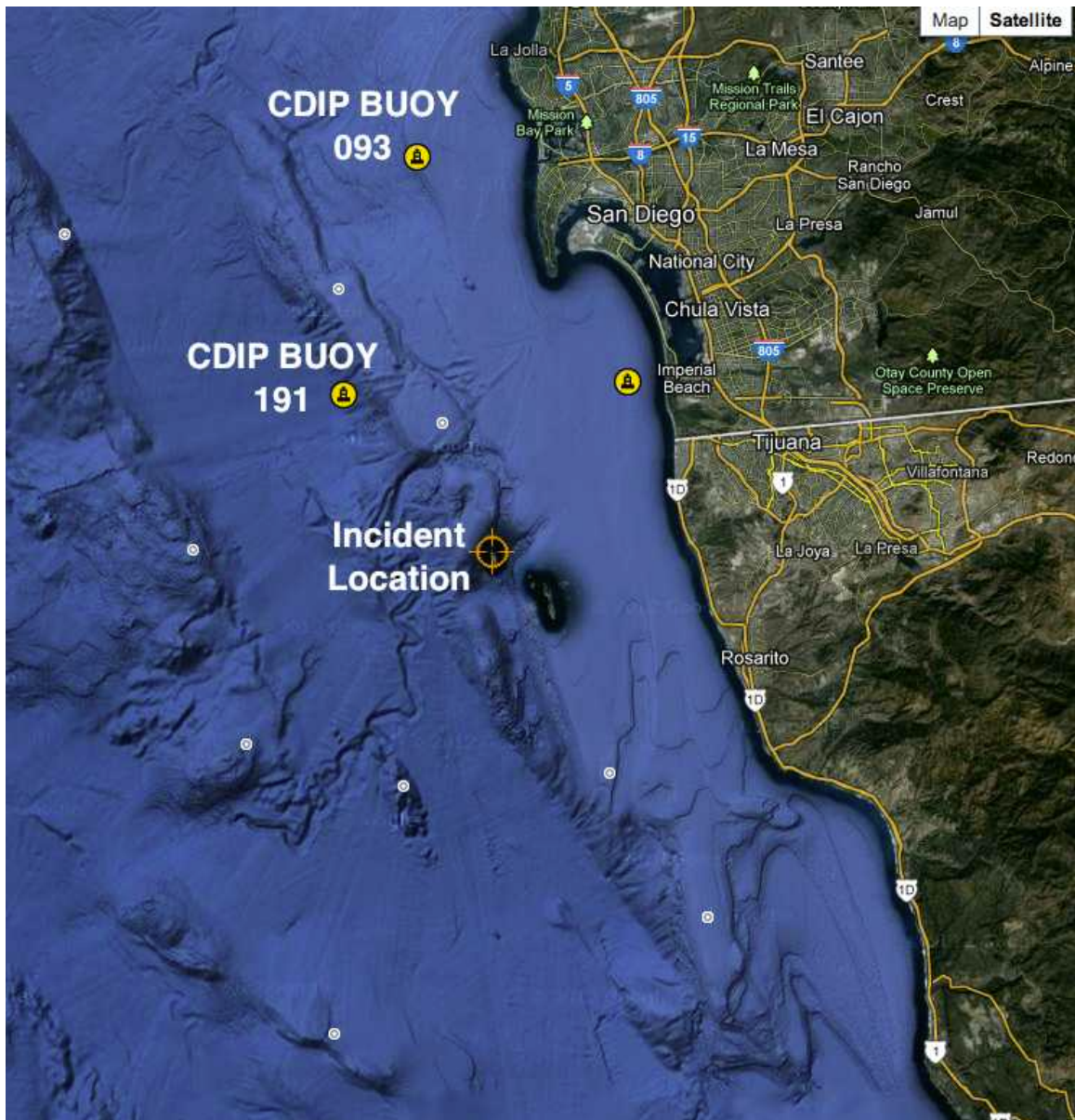
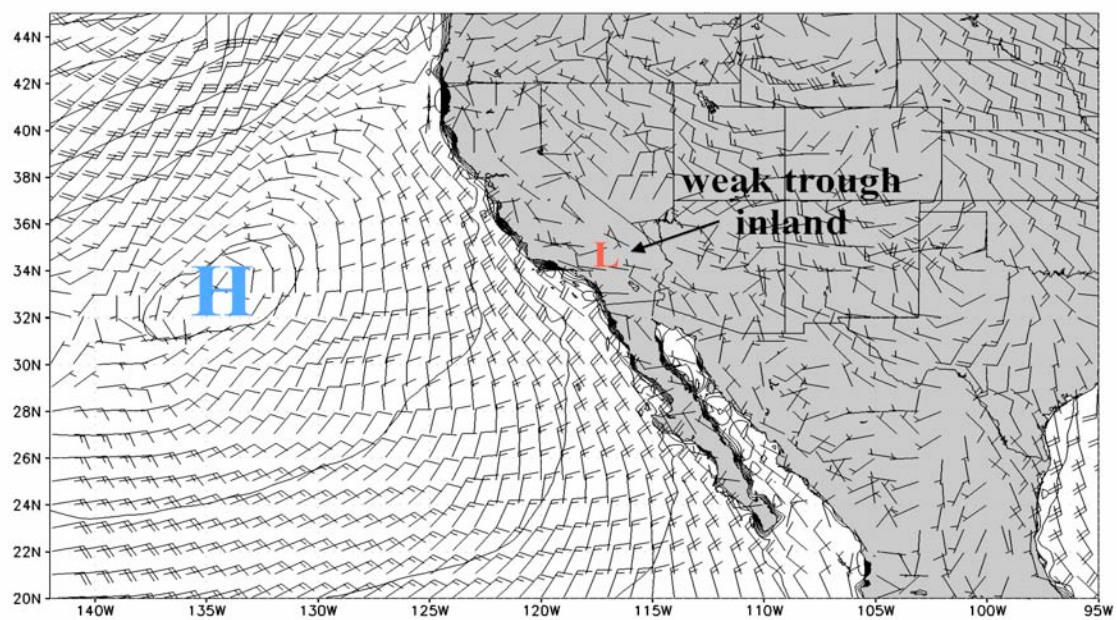


Figure 1: Map showing the incident location (crosshair) at North Coronado Island and nearby CDIP buoys 191 (Point Loma S.) and 093 (Mission Bay).

****NOTES**** CDIP buoys 191 and 093 are used to determine the wave conditions around the time of the incident.

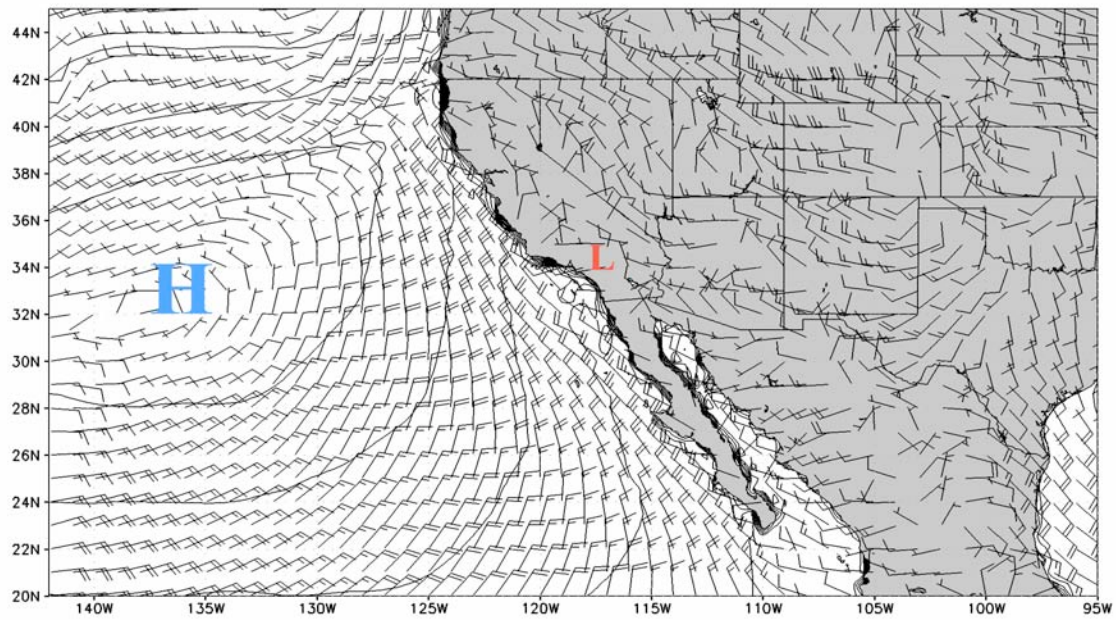
a)

GFS 10m Wind Barb (kt) | Mean Sea Level Pressure (hPa) 12Z27APR2012



b)

GFS 10m Wind Barb (kt) | Mean Sea Level Pressure (hPa) 00Z28APR2012



c)

GFS 10m Wind Barb (kt) | Mean Sea Level Pressure (hPa) 12Z28APR2012

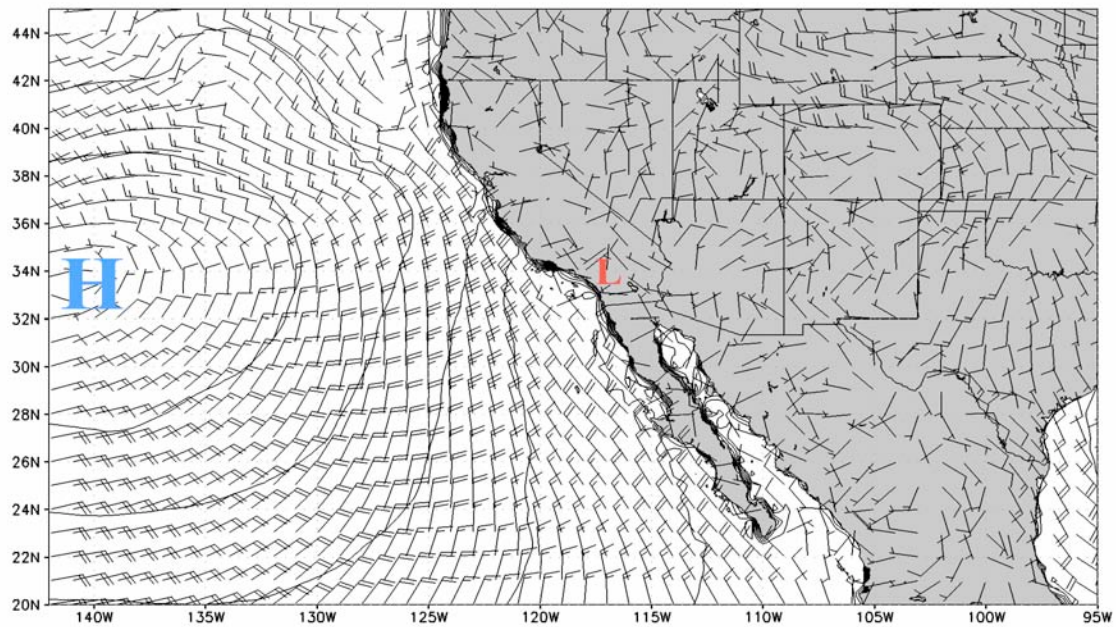


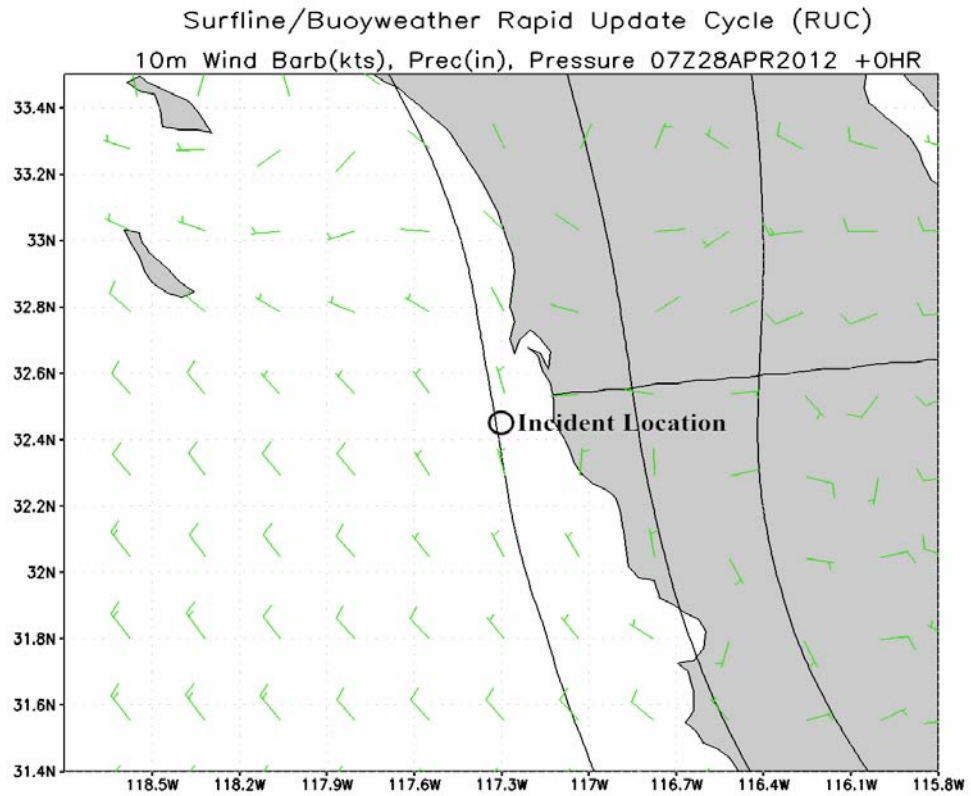
Figure 2: Mean Sea Level Pressure and Wind Speed charts derived from the Global Forecast System (GFS) weather model showing the general weather pattern in place surrounding the time of the incident. Maps valid at a) 12Z 27 Apr 2012 (5AM Local Pacific Time on the 27th), b) 00Z 28 Apr 2012 (5PM Local Pacific Time on the 27th), and c) 12Z 28 Apr 2012 (5AM Local Pacific Time on the 28th).

****NOTES** For reference, the incident occurred at approx. 8:30Z 28 Apr 2012 (1:30AM Local Pacific Time on the 28th). Charts above display wind speed in knots.**

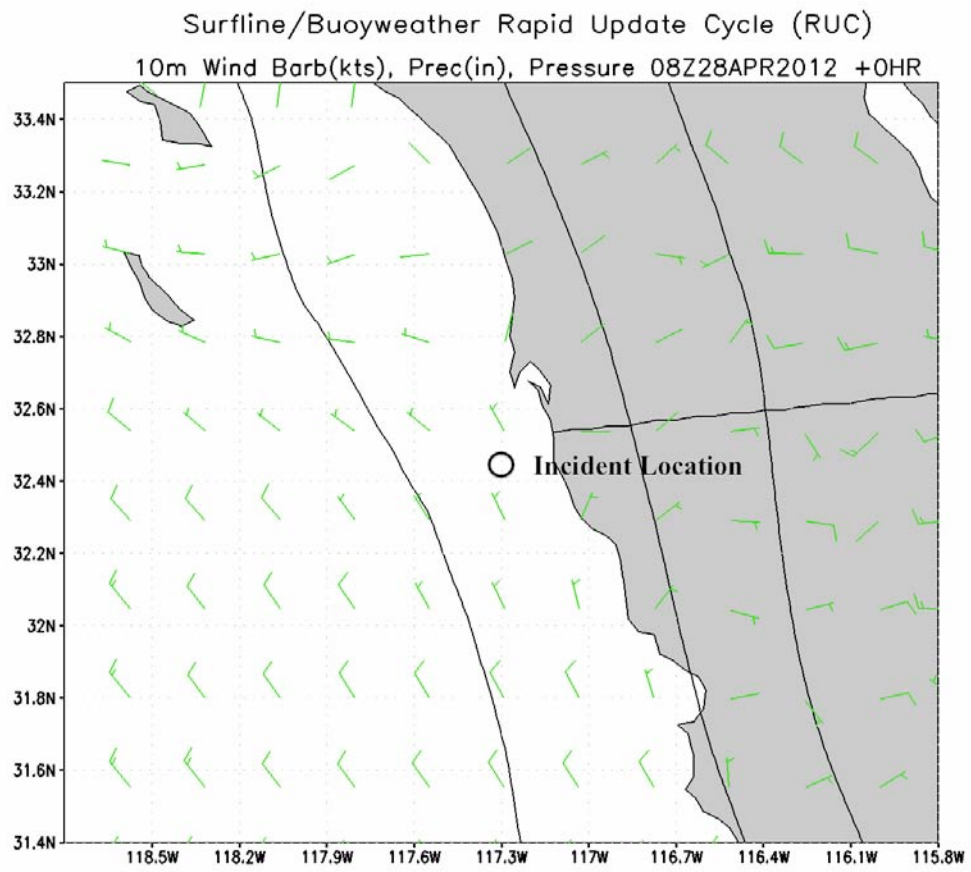
ANALYSIS:

Broad scale high pressure was in place over the NE Pacific offshore of California with a very weak trough of low pressure along the coast and inland of Southern California. Moderate winds (25-30 kt) from the NW/NNW were in place offshore and North of Pt. Conception. A lighter pressure pattern was in place in the Southern California bight with light winds (~ 5kt) from the NNW/NW near the location of the incident.

a)



b)



c)

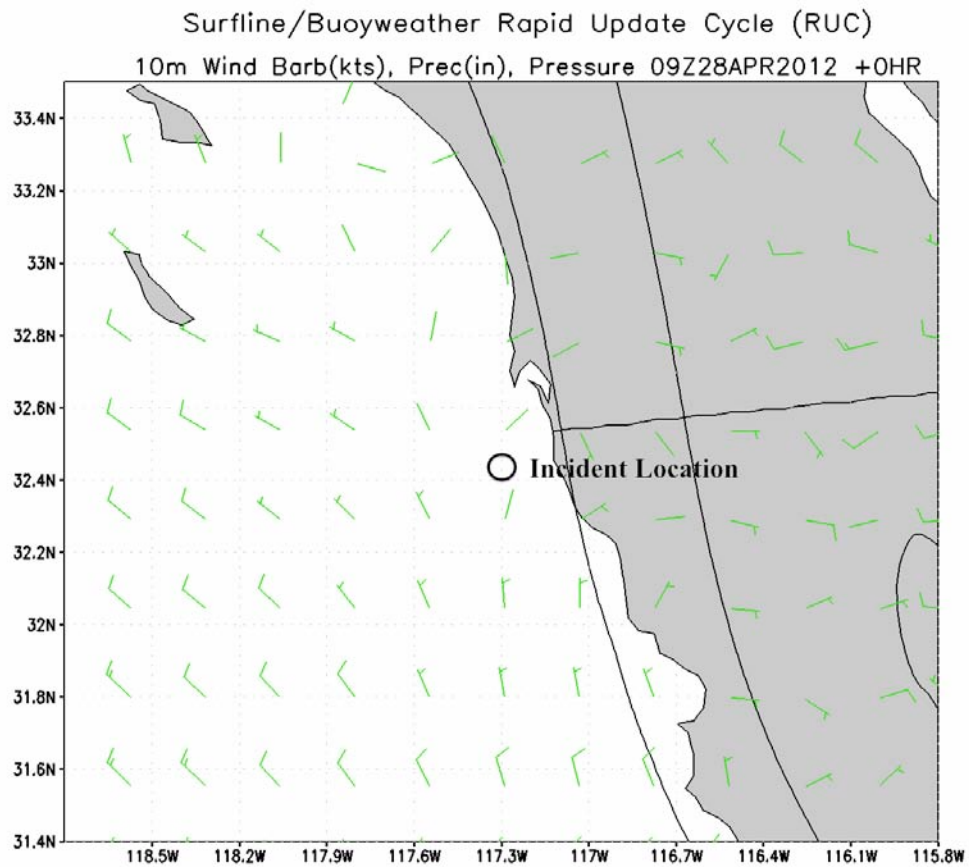


Figure 3: Mean Sea Level Pressure and Wind Speed charts derived from the Rapid Update Cycle (RUC) hourly weather model showing the local winds in place surrounding the time of the incident. Maps valid at a) 07Z 28 Apr 2012 (Midnight Local Pacific Time on the 27th), b) 08Z 28 Apr 2012 (1AM Local Pacific Time on the 28th), and c) 09Z 28 Apr 2012 (2AM Local Pacific Time on the 28th).

****NOTES**** For reference, the incident occurred at approx. 8:30Z 28 Apr 2012 (1:30AM Local Pacific Time on the 28th). Charts above display wind speed in knots.

ANALYSIS:

Very light winds (~5 kt or less) coming from the NNW/NW were in place around the time and place of the incident. Local weather stations along the coast at nearby Imperial Beach, Ca. indicated calm winds around the time of the event (not shown).

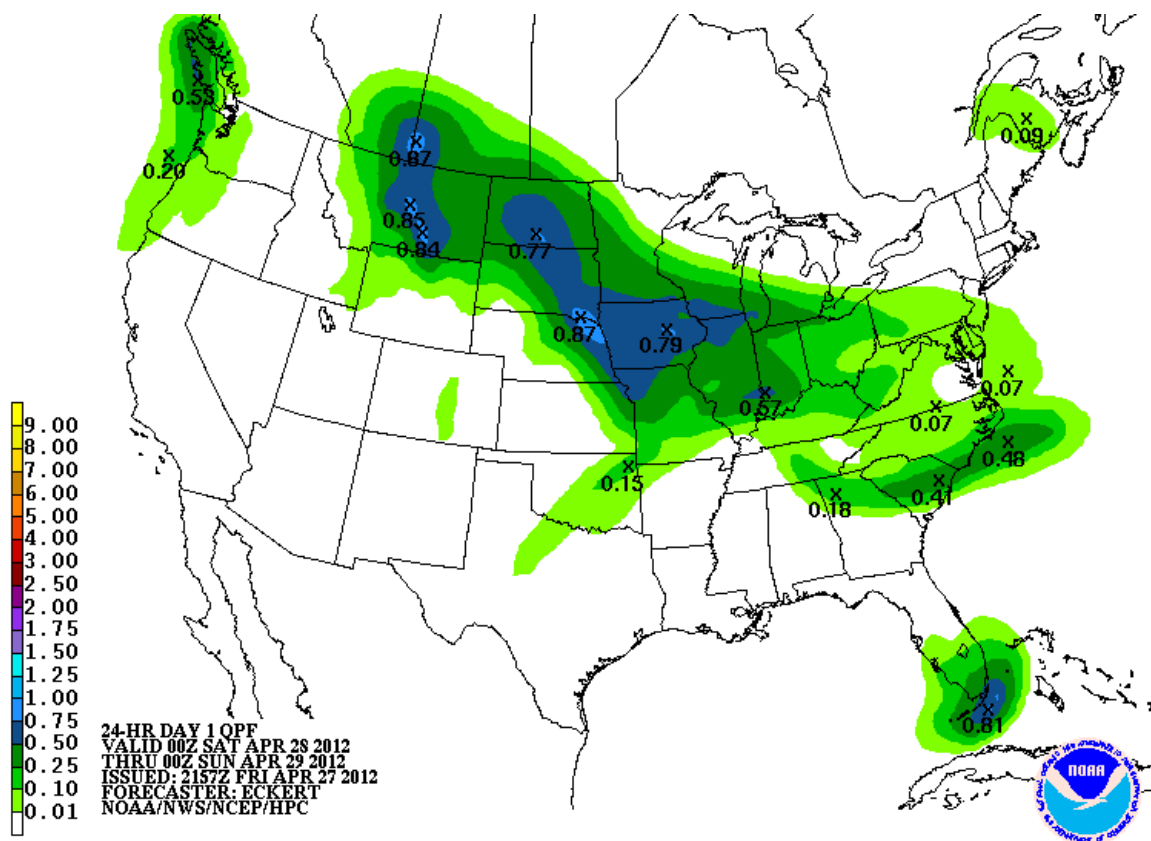


Figure 4: Quantitative Precipitation Forecast issued by the Hydrometeorological Prediction Center prior to the incident at ~22Z Apr 27 2012 (3PM Local Pacific Time on the 27th). Precipitation forecast (shaded colors) is valid from 00Z Apr 28 2012 (5PM Local Pacific Time on the 27th) to 00Z Apr 29 2012 (5PM Local Pacific Time on the 28th)

ANALYSIS:

No precipitation was forecast for the time and location of the incident.

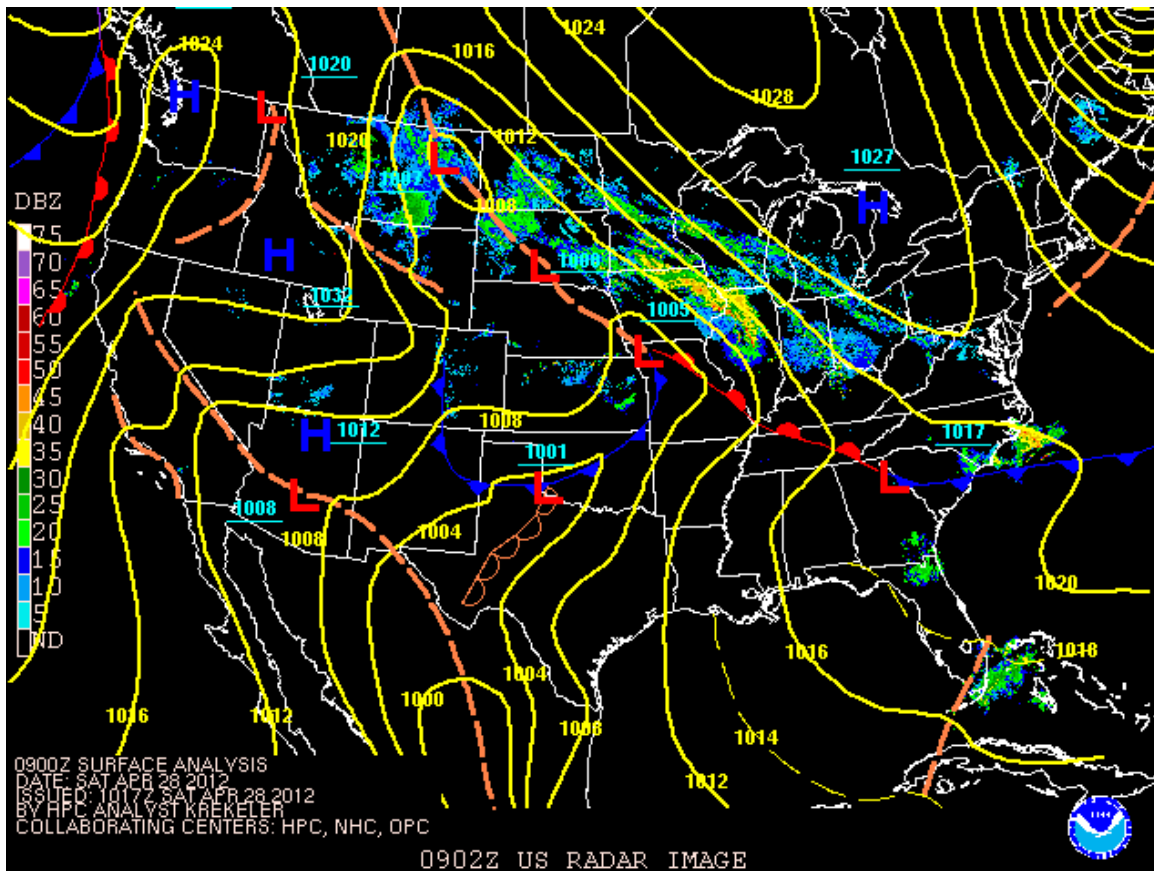


Figure 5: National radar image from the Hydrometeorological Prediction Center approx. 30 minutes after the incident occurred (09Z 28 Apr 2012).

ANALYSIS:

No precipitation indicated on the radar around the location and time of the incident.

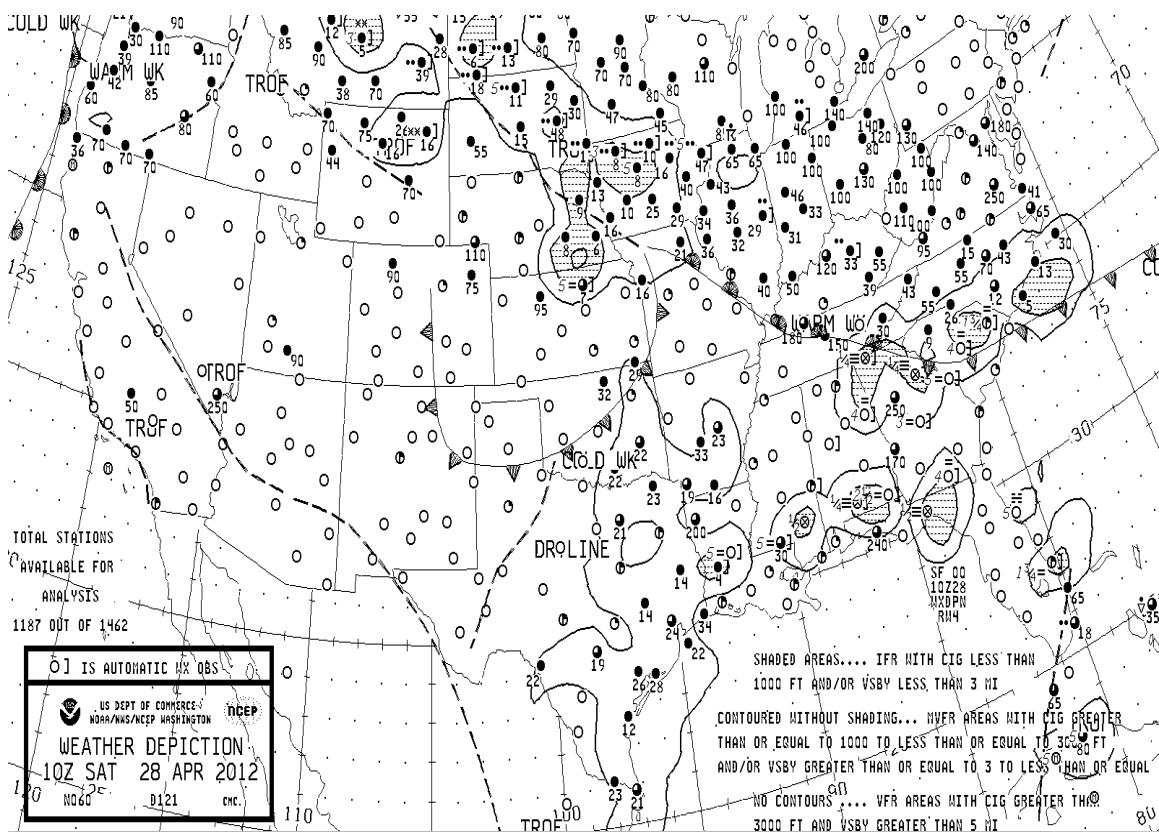


Figure 6: Visibility chart issued by the Ocean Prediction Center valid 10Z 28 Apr 2012 (3AM Local Pacific time on the 28th).

ANALYSIS:

No contours are plotted around the location of the incident, indicating visibility was greater than 5 miles. Local weather stations along the coast at nearby Imperial Beach, Ca. indicated a visibility of 10 miles (not shown).

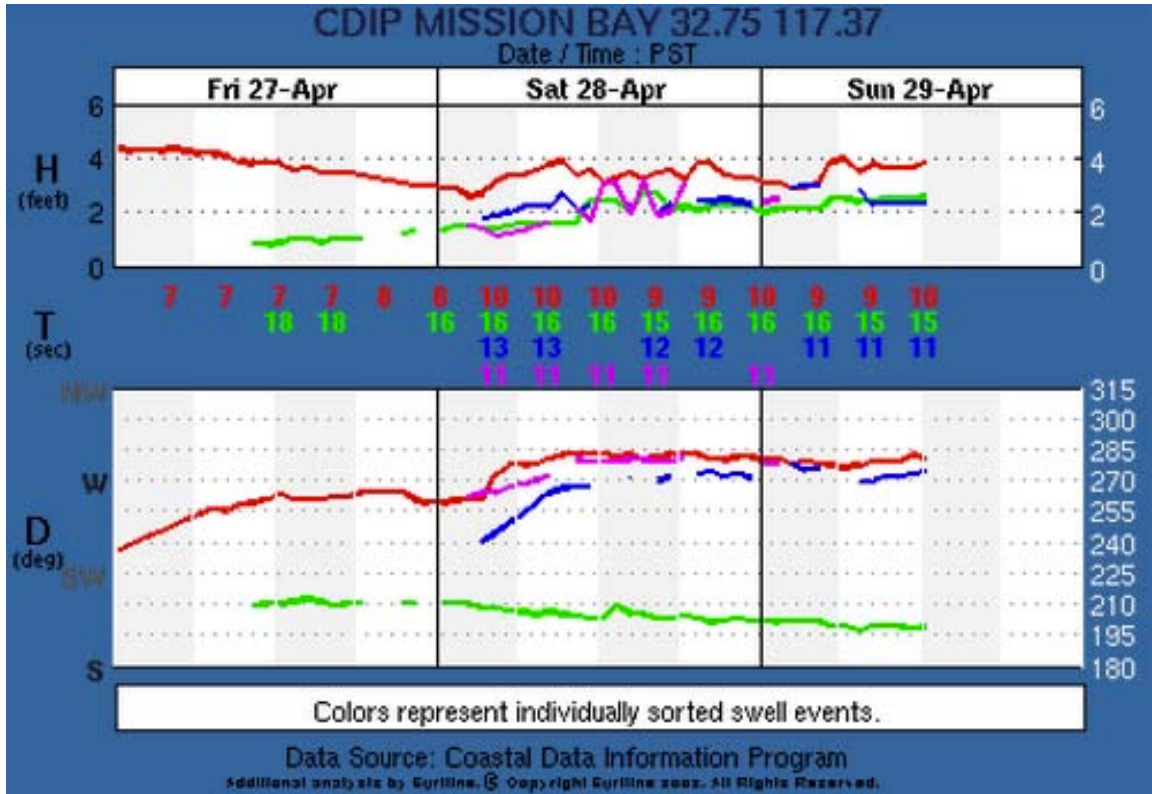
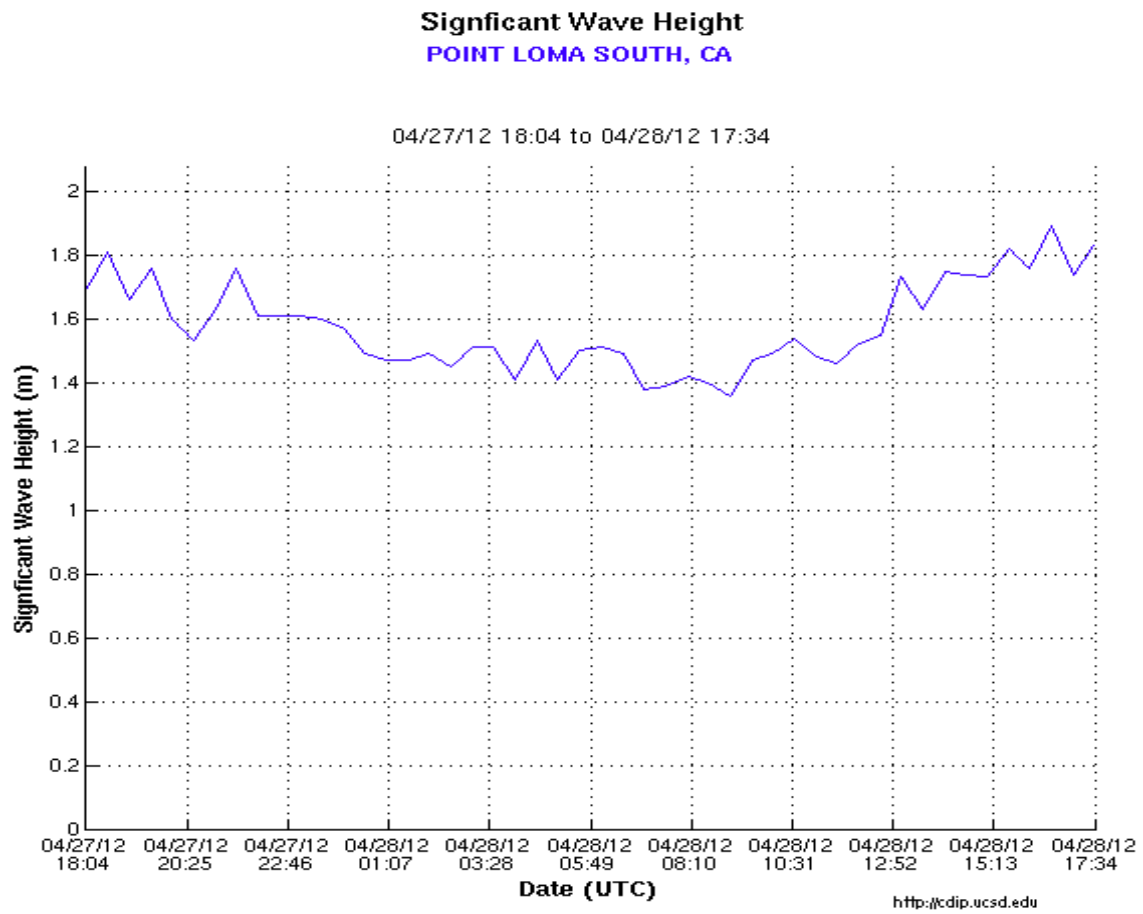


Figure 7: Surflife.com sorted swell events at CDIP Buoy 093 (see Figure 1). Event swell heights are shown in feet in the top graph with corresponding event directions shown in the bottom graph. The different colored lines indicate different swell events. Event wave periods are shown in between the top and bottom graphs.

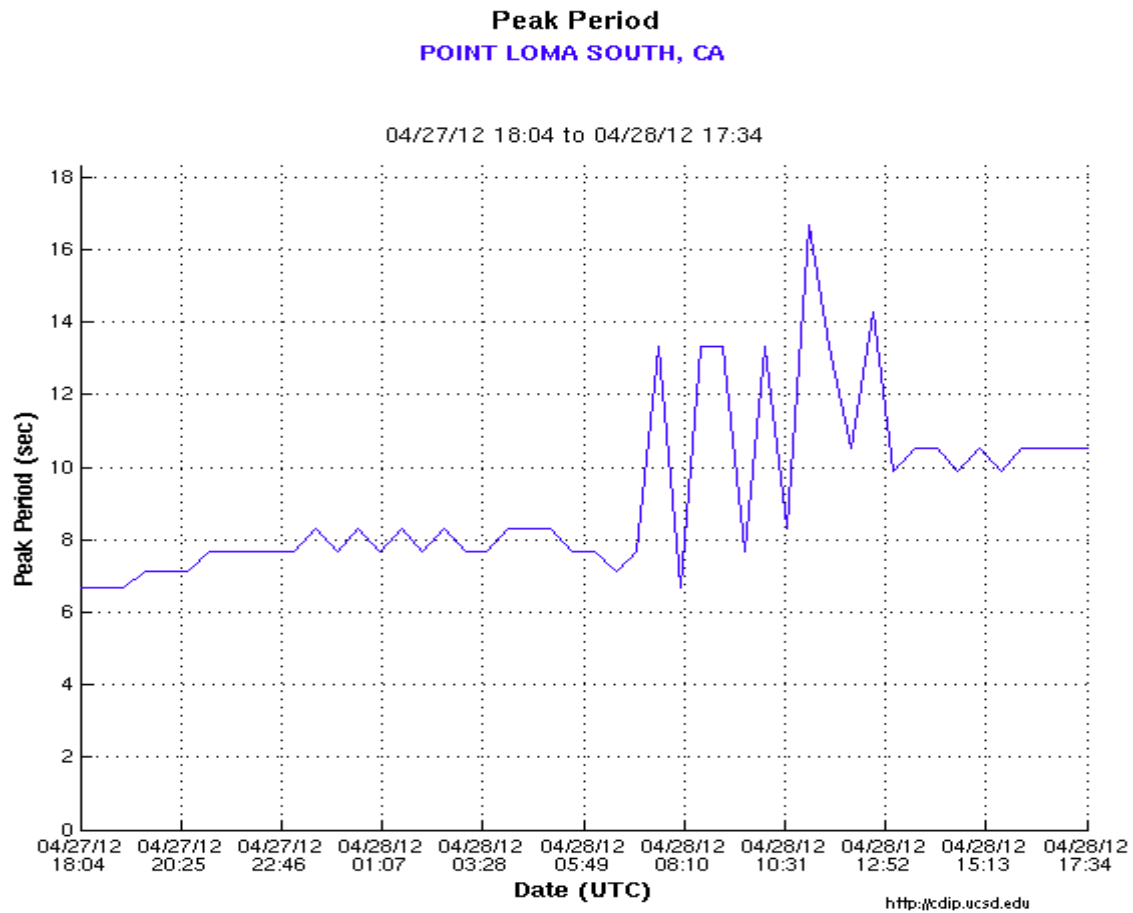
ANALYSIS:

A slowly rising long period (~ 16 seconds) swell from the SSW/SW was in the water during the time of the incident (light green line) on early Saturday morning with a height of around 1.5ft. There was also a small wind-wave event coming from the WNW with a period of 8 to 10 seconds and a height of ~ 3.5ft.

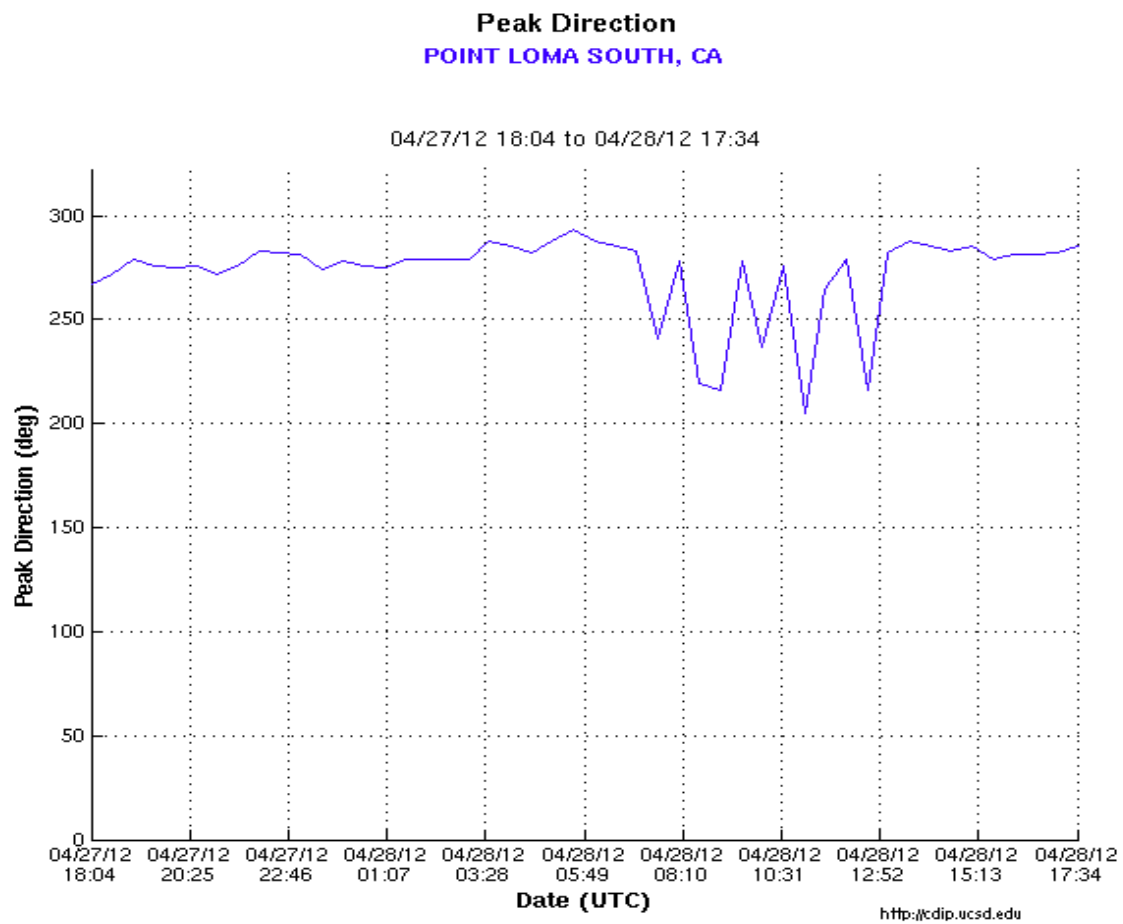
a)



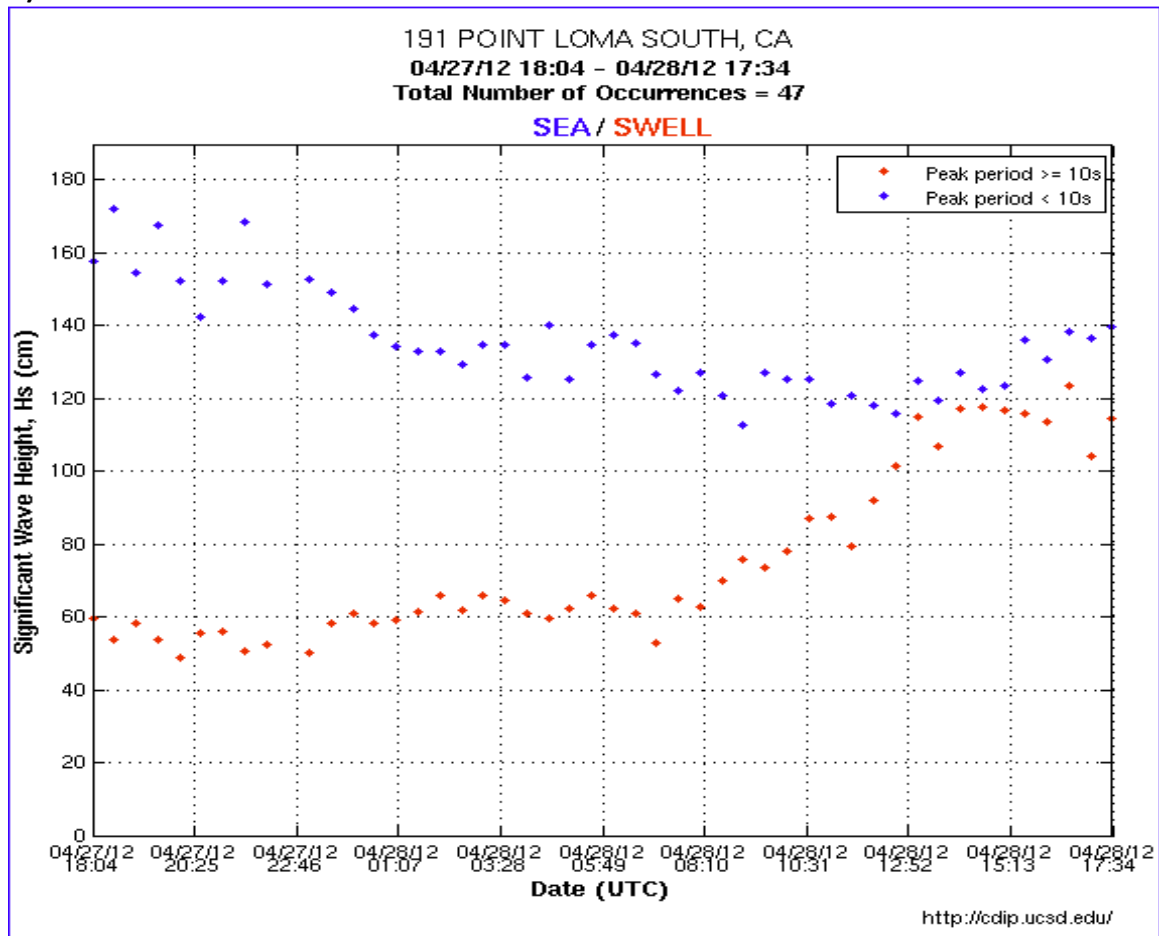
b)



c)



d)



e)

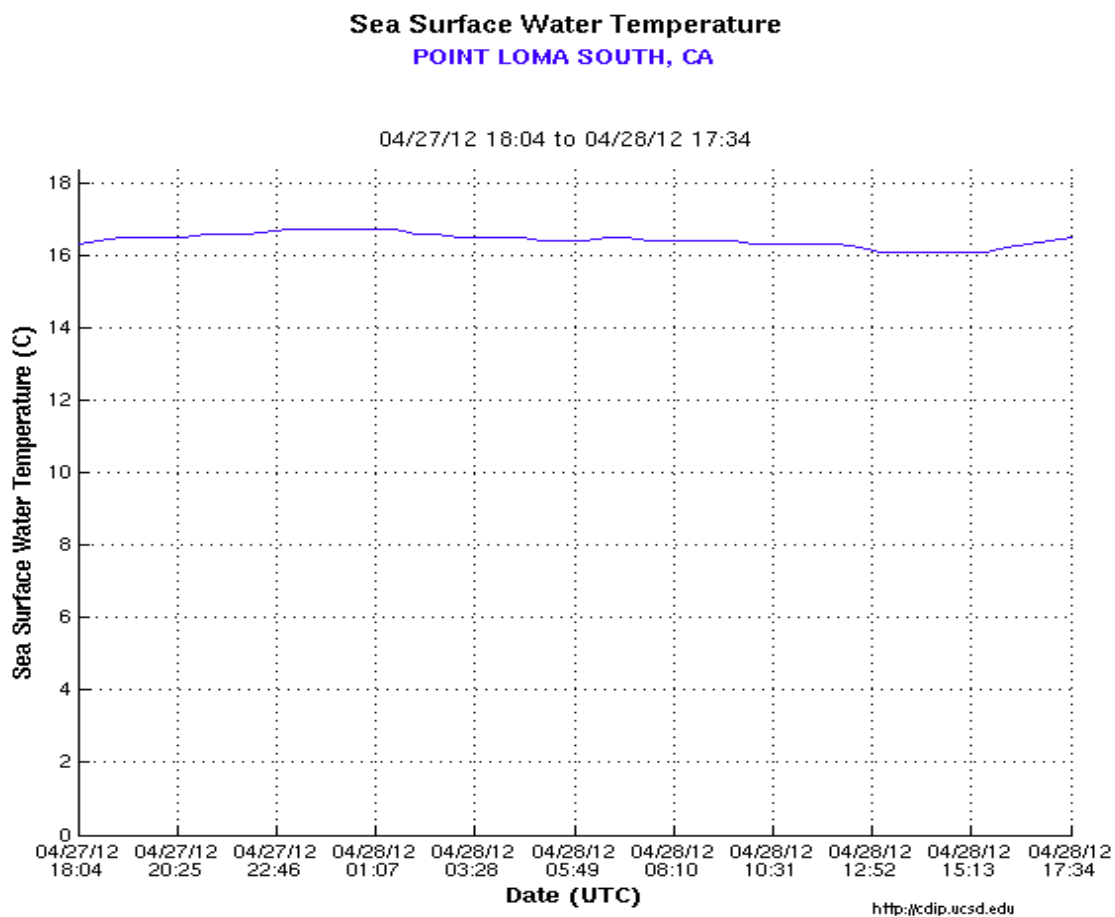


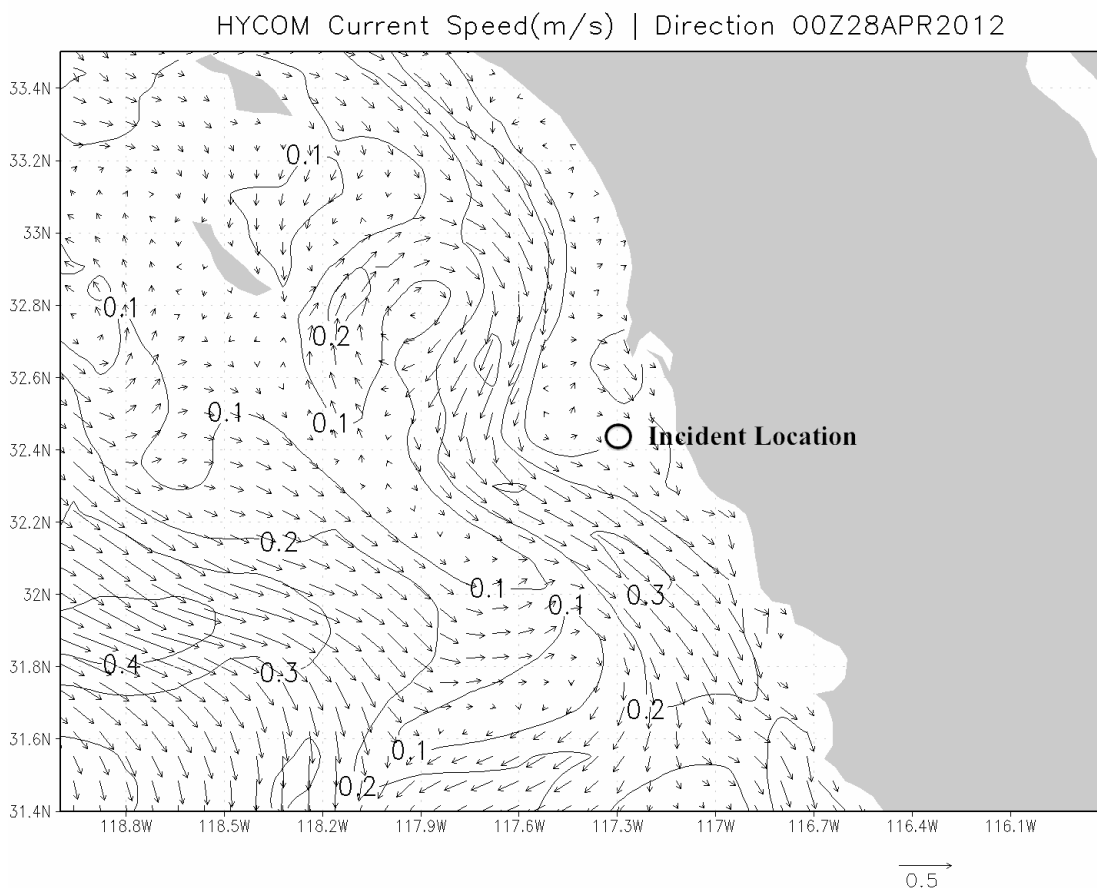
Figure 8: CDIP Buoy 191 (see Figure 1) graphs for a) Significant Wave Height (in meters), b) Peak Period (in seconds), c) Peak Direction, d) Significant Wave Height (in centimeters) of separated Sea (periods < 10 seconds) and Swell (periods greater than 10 seconds), and e) Sea Surface Temperature (in Celsius).

****NOTES**** For reference, the incident occurred at approx. 8:30Z 28 Apr 2012 (1:30AM Local Pacific Time on the 28th). Refer to the x-axis in Figure 8.

ANALYSIS:

- a) A significant wave height of ~1.4 meters (~ 4.6 feet) was recorded by CDIP Buoy 191 at the time of the incident.
- b) Peak period plot indicating the new long period SSW/SW swell becoming dominant around the time of the incident.
- c) Peak direction plot indicating the new long period SSW/SW swell becoming dominant around the time of the incident.
- d) Separated sea/swell plot showing the slowly rising long period swell (red dots) and fairly steady WNW wind waves (blue dots)
- e) Sea surface temperatures recorded by CDIP Buoy 191 indicating temps ~16.5 degrees C (~ 62 degrees F).

a)



b)

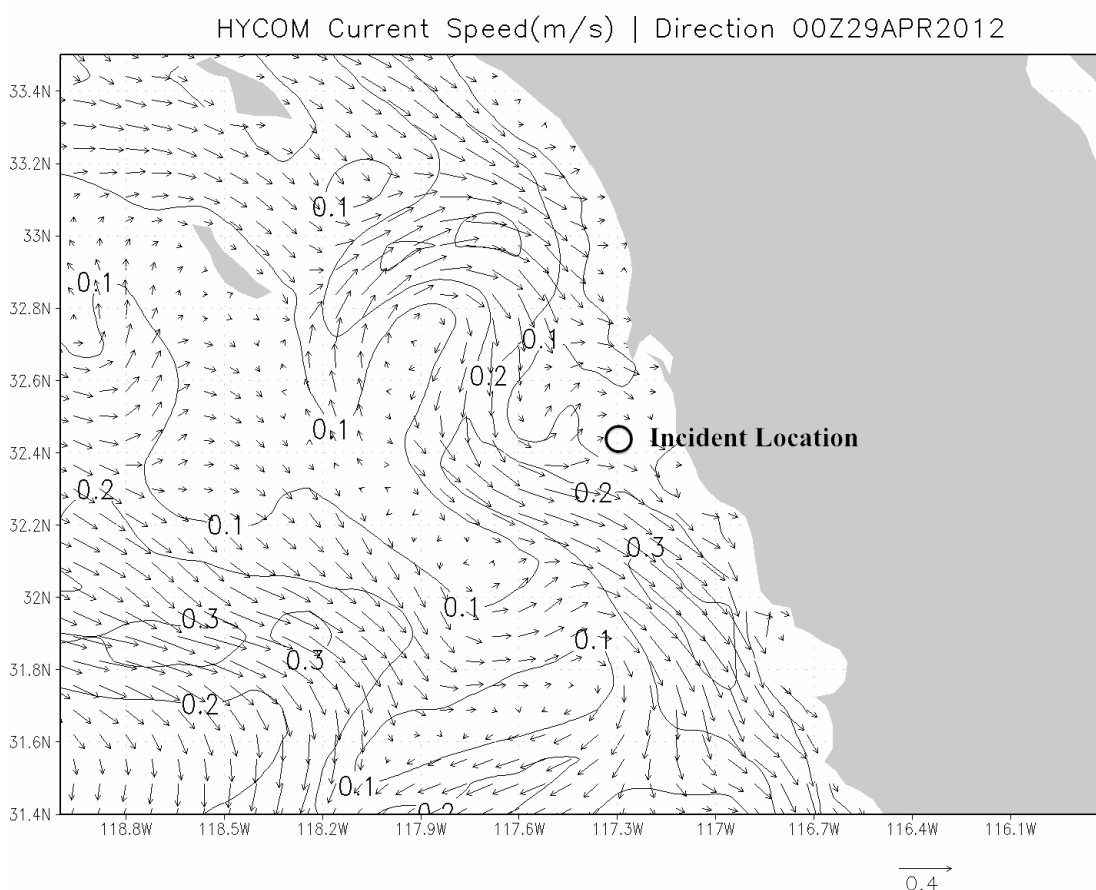


Figure 9: Sea Surface Currents in meters per second derived from the HYCOM Ocean Model valid at a) 00Z 28 Apr 2012 (5PM Local Pacific Time on the 27th) and b) 00Z 29 Apr 2012 (5PM Local Pacific Time on the 28th).

ANALYSIS:

Generally light sea surface currents (~ 0.1 m/s or less) were present at the location of the incident. Stronger currents (~ 0.2 to 0.3 m/s) coming from the N/NW were present nearby to the west of the incident location.

Appendix 4
Aegean and her Equipment

Aegean

Hunter 376
Built 1997
Hull # HUN37418H798
USCG Documentation # 1061071

Equipment known to be on board

VHF Radio with DSC
Raymarine chart plotter
Raymarine knot meter
Raymarine depth indicator
Raymarine radar
Raymarine Autopilot Model # ST 6002
Inflatable Dingy
Outboard motor for the inflatable dingy

Canvas Dodger with vinyl windows
Rail Mounted Barbeque

Gear reported to be brought aboard by owner prior to his personal use:

LCD display at nav station, for chart plotter/radar display
Handheld VHF radio w/ DSC
Night scope
GoPro camera
Laptop computer (at least one)
SPOT Connect Model Tracker

Actions reported in Panel Interviews to have been taken by owner upon getting aboard for his personal use:

Autopilot would be reconnected to power, which was typically deactivated while boat was in charter company's hands

ST6002 SmartPilot Controller

Operating Guide

Document reference: 81269-1
Date: December 2005

Important Information

About the documentation provided

Welcome to Raymarine SmartPilot. The autopilot system that will steer your boat to a heading automatically, accurately, reliably and comfortably.

SmartPilot documentation is arranged so that you can install, commission and quickly use your SmartPilot, keeping to hand only the information necessary.

- **Installation Sheets** - One per element of the system, these easy to understand sheets guide you through the installation process. These can be discarded once the installation is complete.
- **SmartPilot Commissioning Guide** - Describes how to connect, commission and configure the system. Supplied with systems only.
- **Quick Start Guide** - Once commissioned, use your Smart Pilot right away with this handy guide to the main operations.
- **Operating Guide** - This handbook. Contains a detailed description of the SmartPilot's features and functions.

Warranty

To register your new Raymarine product, please take a few minutes to fill out the warranty card. It is important that you complete the owner information and return the card to us to receive full warranty benefits. You can also register online at www.raymarine.com

Safety notices



WARNING: Calibration

We supply this product calibrated to default settings that should provide initial stable performance for most boats. To ensure optimum performance on your boat, you must complete the procedures in *SmartPilot Commissioning Guide* before use.



WARNING: Navigation aid

Although we have designed this product to be accurate and reliable, many factors can affect its performance. As a result, it should only be used as an aid to navigation and should never replace common sense and navigational judgement. Always maintain a permanent watch so you can respond to situations as they develop.

Your Raymarine SmartPilot will add a new dimension to your boating enjoyment. However, it is the skipper's responsibility to ensure the safety of the boat at all times by following these basic rules:

- Ensure that someone is present at the helm AT ALL TIMES, to take manual control in an emergency.
- Make sure that all members of crew know how to disengage the autopilot.
- Regularly check for other boats and any obstacles to navigation – no matter how clear the sea appears, a dangerous situation can develop rapidly.
- Maintain an accurate record of the boat's position by using either a navigation aid or visual bearings.
- Maintain a continuous plot of your boat's position on a current chart. Ensure that the locked autopilot heading will steer the boat clear of all obstacles. Make proper allowance for tidal set – the autopilot cannot.
- Even when your autopilot is locked onto the desired track using a navigation aid, always maintain a log and make regular positional plots. Navigation signals can produce significant errors under some circumstances and the autopilot will not be able to detect these errors.

Product disposal



Waste Electrical and Electronic (WEEE) Directive

The WEEE Directive requires the recycling of waste electrical and electronic equipment.

Whilst the WEEE Directive does not apply to some of Raymarine's products, we support its policy and ask you to be aware of how to dispose of this product.

The crossed out wheeled bin symbol, illustrated above, and found on our products signifies that this product should not be disposed of in general waste or landfill.

Please contact your local dealer, national distributor or Raymarine Technical Services for information on product disposal.

EMC Conformance

All Raymarine equipment and accessories are designed to the best industry standards for use in the recreational marine environment. Their design and manufacture conforms to the appropriate Electromagnetic Compatibility (EMC) standards, but correct installation is required to ensure that performance is not compromised.

Handbook information

To the best of our knowledge, the information in this handbook was correct when it went to press. However, Raymarine cannot accept liability for any inaccuracies or omissions it may contain. In addition, our policy of continuous product improvement may change specifications without notice. As a result, Raymarine cannot accept liability for any differences between the product and the handbook.

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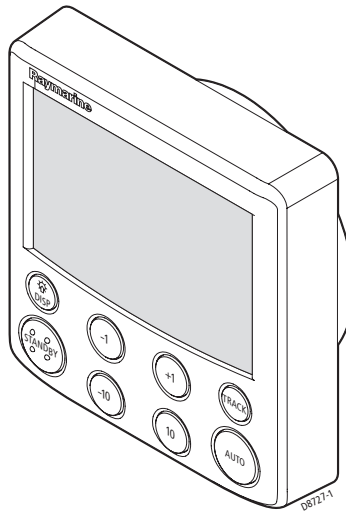
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Chapter 1: SmartPilot Operation

1.1 Introduction



The SmartPilot controller is a SeaTalk® compatible autopilot control unit. It is designed as the main controller for the SmartPilot system.

The SmartPilot controller operates in the following modes:

- **Standby:** SmartPilot off. You have manual control of the boat.
- **Auto:** The SmartPilot steers the boat to maintain a locked heading.
- **Track:** The SmartPilot steers the boat to maintain a track between two waypoints created on a navigation aid.
- **Wind Vane:** The SmartPilot steers the boat to maintain a course relative to a true or apparent wind angle.

The SmartPilot controller also provides:

- automatic tack (AutoTack) in Auto and Wind Vane modes.
- waypoint advance feature in Track mode.

SmartPilot Functions

The functions provided with your SmartPilot system depend on whether the SmartPilot computer contains an internal GyroPlus yaw sensor.

S1G, S2G and S3G systems (with GyroPlus)	Non-G systems (without GyroPlus)
Internal GyroPlus yaw sensor provides enhanced course keeping using AST (Advanced Steering Technology)	Full basic functionality: uses Raymarine steering algorithm without AST
Steering to true and apparent wind in Wind Vane mode	Steering to true and apparent wind in Wind Vane mode
Equipped with AutoLearn, Raymarine's self-learning calibration system	

Extended systems

You can connect the SmartPilot controller to other Raymarine SeaTalk equipment so it can send and receive SeaTalk data:

- it can use waypoint information from a SeaTalk navigation instrument to provide track control.
- it can use boat speed from a SeaTalk speed instrument to optimize track-keeping performance.
- it can use wind information from a SeaTalk wind instrument for Wind Vane steering.

You can also use the SmartPilot with any navigator or wind instrument that transmits National Marine Electronics Association (NMEA) 0183 data.

The SmartPilot control unit can display SeaTalk and NMEA instrument data in a user-defined selection of data pages.

For further information on other connections to your system see *SmartPilot Commissioning Guide*.

1.2 Using the control unit

Switching on and off

All the time that power is applied to the SmartPilot controller, you can use the  **disp** button to switch the instrument off and on as follows:

- To switch the SmartPilot controller off, ensure it is in the Standby mode, then hold down the  **disp** button for approximately 5 seconds. After this time, a switch off count down of 4 seconds occurs. Keep the  **disp** button pressed during this period, to switch off the instrument.
- To switch the instrument back on, hold down the  **disp** button for approximately 1 second.

When the power supply is switched off, the SmartPilot controller buttons have no effect.

- Notes:** (1) *Each time power to the SmartPilot controller is switched on, the controller is initially in the on condition. You do not need to use the  disp button to switch the controller on.*
- (2) *When the SmartPilot controller is on, the operation of the  disp button will perform other operating functions, as described below.*

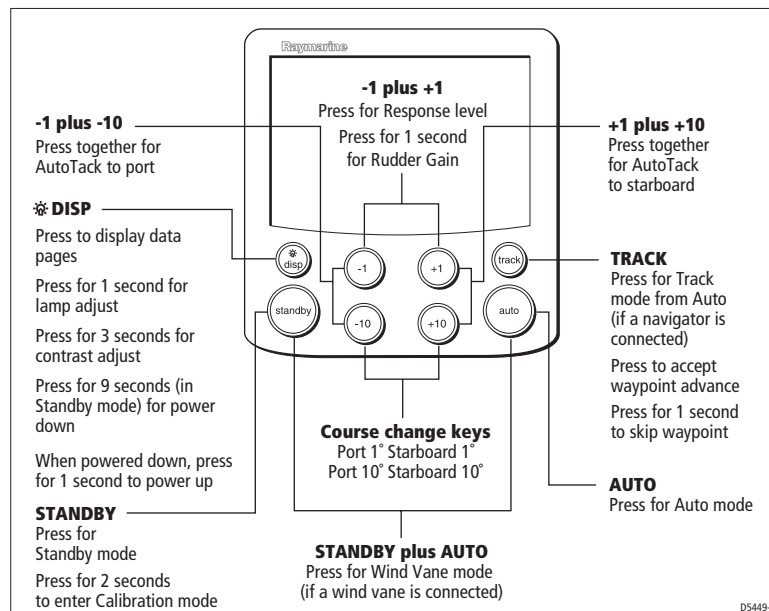
Start-up mode

The SmartPilot always powers up in Standby mode with the display showing the boat's current compass heading.

Note: *You can press **standby** at any time to return to manual steering.*

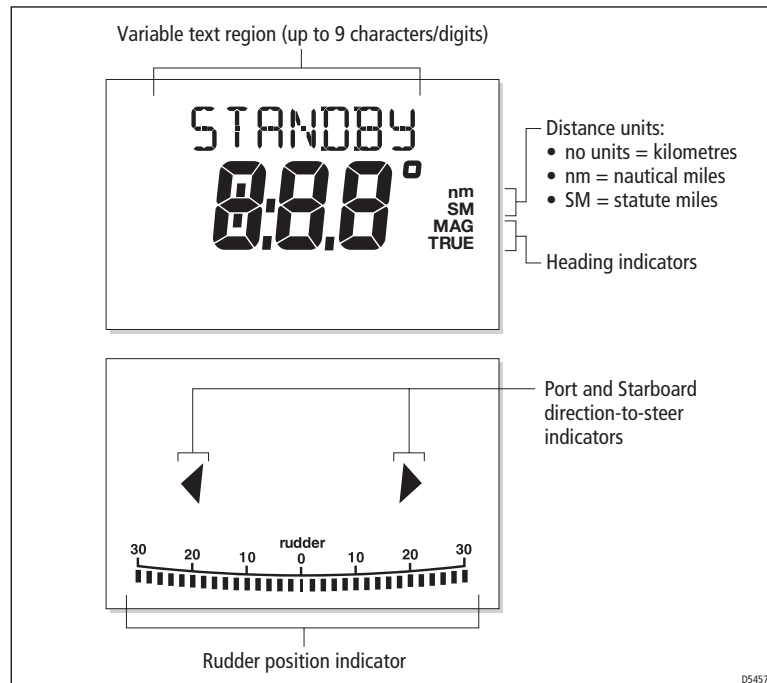
Keypad functions

The SmartPilot is controlled using simple push-button operations, all of which are confirmed with a short beep. In addition to the main single-button functions, there are several dual-button operations.



What does the display tell me?

The SmartPilot display screen provides the following information:



The bar graph at the bottom of the screen indicates the current position of the rudder, as measured by the rudder position sensor.

1.3 Using the SmartPilot to steer your boat

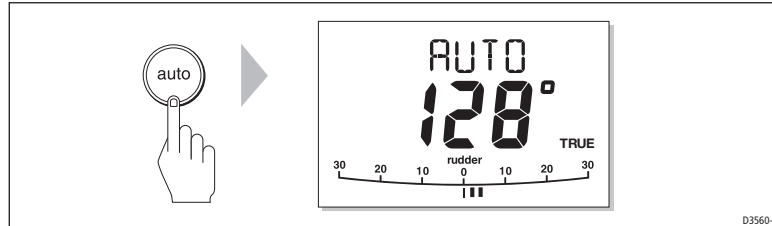
CAUTION: Maintain a permanent watch

Automatic course control makes it easier to sail a boat, but it is NOT a substitute for good seamanship. ALWAYS maintain a permanent watch by the helm.

How do I automatically steer to a heading?

1. Steady the boat on the required heading.
2. Press **auto**.

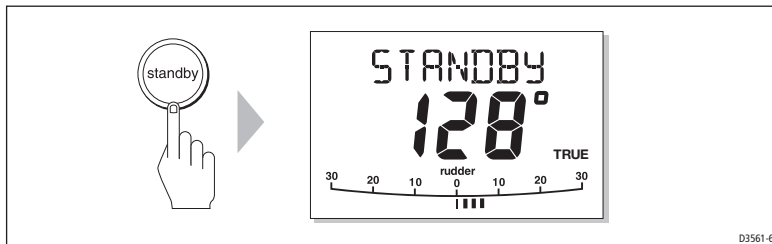
The SmartPilot is now in AUTO mode and will steer to the chosen heading, shown on the display. This mode is often known as "point-and-shoot".



How do I return to hand steering?

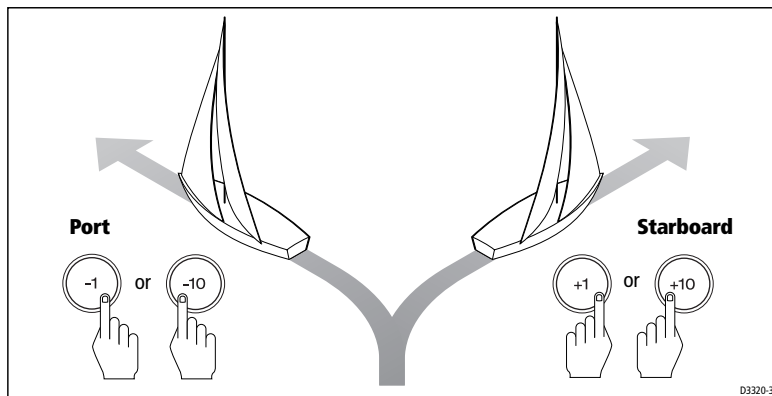
Press **standby** to disengage the SmartPilot:

- in **STANDBY** mode, you have manual control of the boat and the display shows the boat's current compass heading.



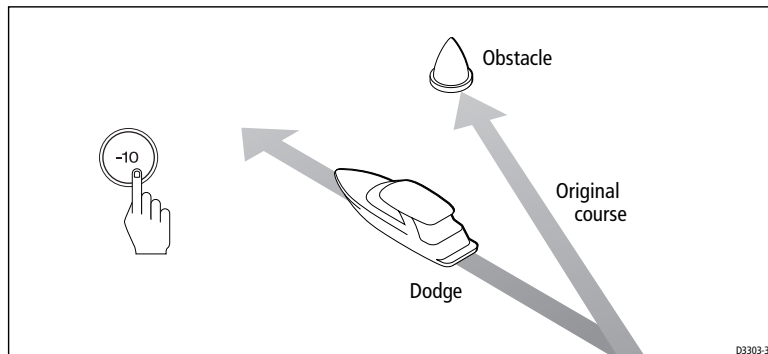
How do I change course in Auto mode?

In Auto mode, use the **-1** and **-10** (port) and **+1** and **+10** (starboard) buttons to change the locked heading in steps of 1° or 10°. For example: press **-10** three times for a 30° course change to port.



Can I dodge an obstacle and then resume course?

To avoid an obstacle when your boat is under autopilot control, you can dodge the obstacle and then resume your previous course.



1. Select a course change in the appropriate direction. For example, press **-10** three times for a 30°dodge to port.
2. When safely clear of the obstacle, reverse the previous course change (for example, press **+10** three times).

1.4 How do I adjust the performance of my SmartPilot?

The principal method of adjusting the performance of SmartPilot systems is by changing the response level. This is the only user adjustment you should need to make to your SmartPilot on a regular basis.

The response level controls the relationship between the SmartPilot's course keeping accuracy and the amount of helm/drive activity. When you turn on your SmartPilot it will always be at the default level. (This level can be adjusted in User Calibration *see page 24*)

When you require extra tight course keeping (e.g. for pilotage in confined and sheltered waters), increase the setting. If you want to minimize drive activity and conserve battery power, decrease the setting.

You can make temporary adjustments to the response level when using your SmartPilot on a day-to-day basis. By doing this you can match performance to conditions as they occur.

Note: You will lose these temporary changes to response level whenever the system is powered off. You can make permanent adjustments in User Calibration (See page 24). This determines the default power-up response level.

Adjusting performance – S1G, S2G and S3G systems

S1G, S2G and S3G systems have 9 levels of response:

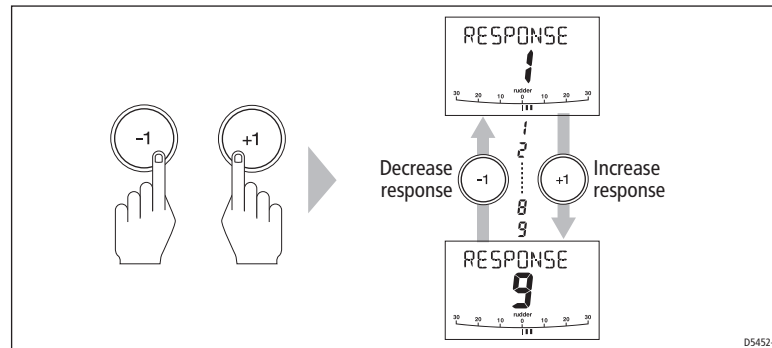
- **level 9 to 7** give the tightest course keeping and greatest rudder activity (and power consumption). This can lead to a rough passage in open waters as the SmartPilot may 'fight' the sea.
- **levels 6 to 4** should give good course keeping with crisp, well controlled turns under normal operating conditions.
- **level 3 to 1** minimizes the amount of pilot activity. This conserves power, but may compromise short-term course-keeping accuracy.

With these points in mind, you should use the following procedure to make temporary adjustments to the response level when required:

1. Display the RESPONSE screen by pressing the **-1** and **+1** buttons together momentarily.

Note: The RESPONSE screen is set as a default data page (see SmartPilot Commissioning Guide) so you can also access it by pressing **disp** and then scrolling through the data pages.

2. Press **-1** or **+1** to change the response level.



3. Press **disp** or wait for 5 seconds to return to the previous display.

Adjusting performance – Non-G systems

Non-G SmartPilot systems have three different response levels:

- **Response Level 1: AutoSeastate on (Automatic deadband)**

The SmartPilot will gradually ignore repetitive boat movements and only react to true variations in course. This provides the best compromise between power consumption and course keeping accuracy.

- **Response Level 2: AutoSeastate off (Minimum deadband)**

This setting provides tighter course keeping but will lead to increased power consumption and drive unit activity.

- **Response Level 3: AutoSeastate off + yaw damping**

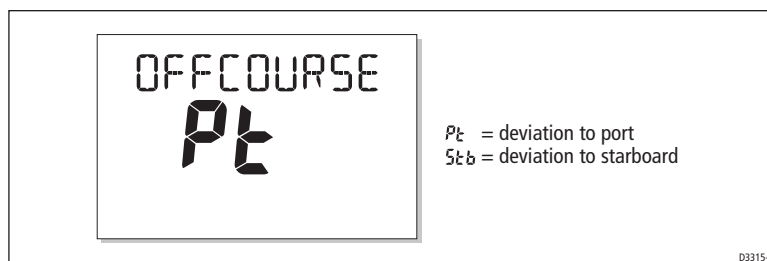
This setting provides the tightest possible course keeping by introducing counter rudder yaw damping. You can adjust the counter rudder setting in Dealer Calibration (see *SmartPilot Commissioning Guide*).

To make a **temporary** change to the response setting:

1. Display the RESPONSE screen by pressing the **-1** and **+1** buttons together.
2. Press **-1** or **+1** to change the response between levels 1 to 3.
3. Press **disp** or wait for 5 seconds to return to the previous display.

Note: You will lose these temporary changes to response level whenever the system is powered off. You can make permanent adjustments in User Calibration (see page 24).

Off Course warning



The SmartPilot warns you when you have been off course from the locked heading for longer than 20 seconds. It shows whether the deviation is to port or starboard.

Note: The default off course angle is set at 20°. You can adjust this angle in Dealer Calibration (see *SmartPilot Commissioning Guide*).

1. To cancel the off course warning, press **standby** to return to manual steering.
2. Check whether your boat is carrying too much sail, or whether the sails are badly balanced. You can usually significantly improve course keeping by improving the sail balance.

Note: The SmartPilot also clears the warning if the heading recovers or if you change course.

Chapter 2: Advanced Operation

2.1 How do I follow a route set on a Chartplotter?

CAUTION: Safety in Track mode

Track mode provides accurate track keeping even in complex navigational situations. However, it is still the skipper's responsibility to ensure the safety of their boat at all times through careful navigation and frequent position checks. Track mode assists precise navigation and removes the tasks of compensating for wind and tidal drift. However, you MUST still maintain an accurate log with regular plots.

In Track mode, the SmartPilot maintains a route between waypoints created on a navigation system. It makes any course changes necessary to keep your boat on course, automatically compensating for tidal streams and leeway.

Track mode is available only if you have connected the SmartPilot to a suitable navigation system providing SeaTalk or NMEA information. *(See SmartPilot Commissioning Guide for connection details)*

Your SmartPilot system can receive route information from:

- a SeaTalk navigation instrument or chartplotter.
- a navigation system transmitting data in NMEA 0183 format.

How do I activate Track mode?

CAUTION: Make suitable preparations for entering track mode

When you enter Track mode, the SmartPilot will bring the boat onto the track in a controlled way. The closer the boat is to the correct heading and track, the quicker it will settle the boat onto the new course. To avoid an unexpected turn, align the boat approximately with the required track before entering Track mode.

Starting with the SmartPilot in AUTO mode and your chartplotter following a route.

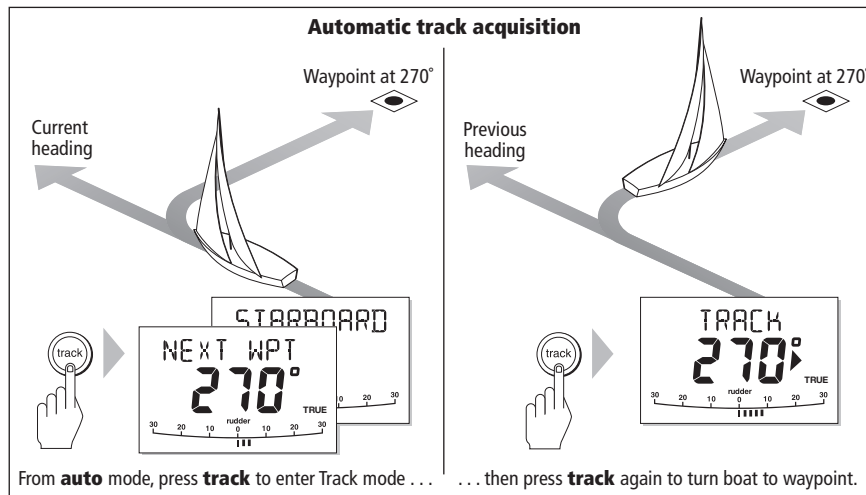
1. Press **track** to enter Track mode.
2. Wait for the warning to sound.

The display will show the bearing to the next planned waypoint and the direction in which the boat will turn to reach this waypoint.

3. If it is safe for the boat to turn onto the new course, press the **track** button:
- the SmartPilot will turn the boat onto the new course.
 - the display will show the heading required to achieve the required track.

Notes: (1) *The rate of turn when in Track mode is set using the TURN RATE calibration setting. Adjust this as appropriate for optimum comfort.*

(2) *If the boat is more than 0.3 nm from the track, the Large Cross Track Error warning will sound (see page 14).*



How do I leave Track mode?

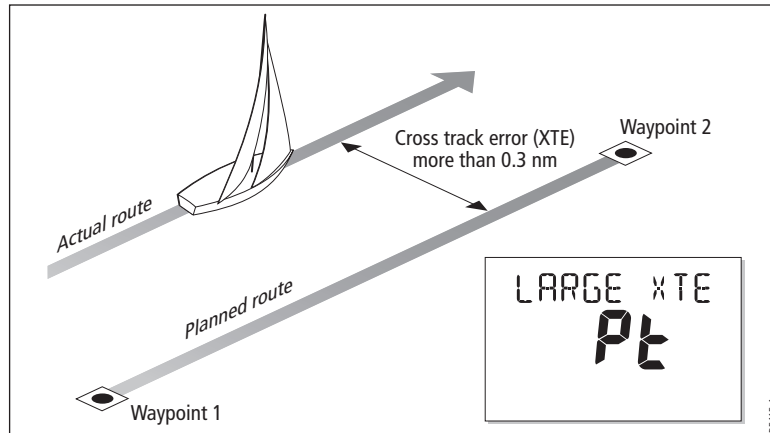
You can leave Track mode at any time by:

- pressing **auto** to return to Auto mode.
- pressing **standby** to steer manually in Standby mode.

What is Cross track error?

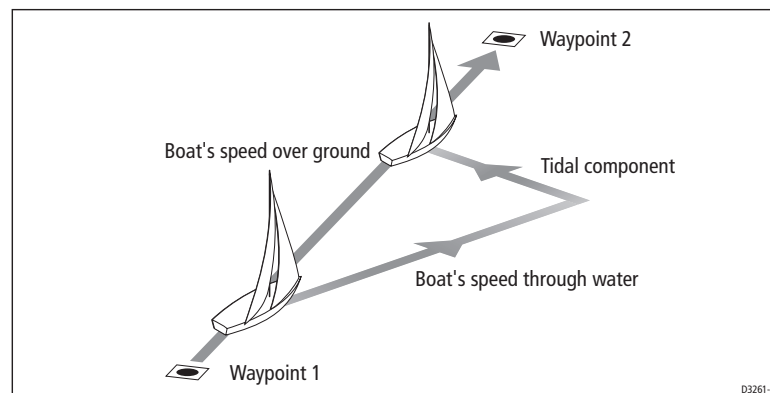
Cross track error (XTE) is the distance between the current position and a planned route. The SmartPilot receives the cross track error information from the navigation equipment, and displays the XTE in nautical miles (nm), statute miles (SM) or kilometres (km).

If the cross track error is greater than 0.3 nm, the SmartPilot will sound the Large Cross Track Error warning and show whether you are to the port (Pt) or starboard (Stb) of the planned track.



Tidal stream compensation

Under most conditions, the SmartPilot will hold the selected track to within ± 0.05 nm (300 ft) or better. It takes account of the boat's speed when computing course changes to ensure optimum performance.



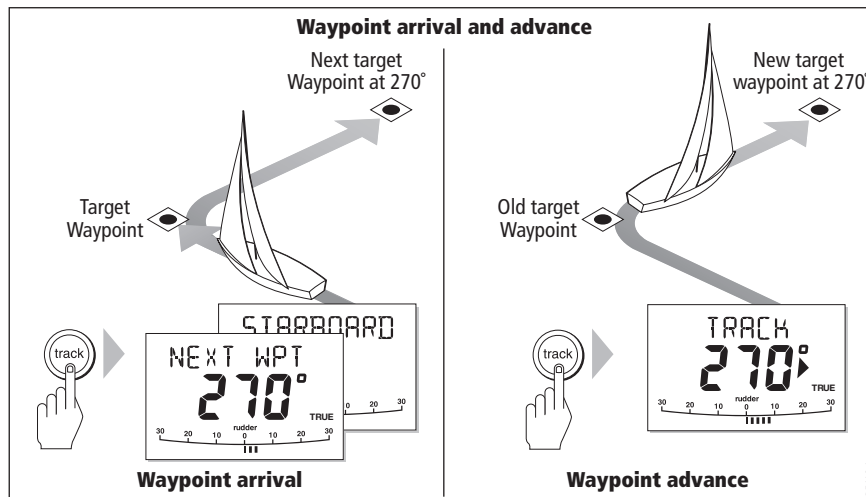
How do I dodge an obstacle in Track mode?

In Track mode you still have full control from the keypad. You can make a dodge maneuver by using the course change buttons (**-1**, **+1**, **-10** or **+10**) to select the desired course change.

On making a dodge maneuver, the autopilot will revert to AUTO mode. Once you are safely past the obstacle, reinitiate Track mode to continue on your planned route.

What happens when I arrive at a waypoint?

As the boat arrives at the target waypoint the chartplotter will select the next target waypoint and transmit this to the SmartPilot. It will then detect the new target waypoint name, sound a Waypoint Advance warning and display the Waypoint Advance (NEXT WPT) screen. This shows the new bearing to the next waypoint and the direction the boat will turn to acquire the new track.



How do I get to the next waypoint in a route?

When the Waypoint Advance warning sounds, the SmartPilot suspends Track mode and maintains the current boat heading. To advance to the next waypoint:

1. Check that it is safe to turn onto the new track.
2. Press the **track** button. This will cancel the Waypoint Advance warning and turn the boat towards the next waypoint.

Note: If you do not press **track** to accept the Waypoint Advance, the SmartPilot will maintain the current heading and continue sounding the warning.

How do I skip a waypoint? (SeaTalk chartplotters)

If you want to advance to the next waypoint **before** you have arrived at the target waypoint, you can skip a waypoint by pressing **track** for 1 second. The display will then show the Waypoint Advance screen for the next waypoint. Check it is safe to turn, then press **track** to turn the boat towards the next waypoint.

**WARNING: Ensure navigation safety**

Skipping a waypoint will take you straight to the next waypoint. Check your navigation before making the turn.

What is the Waypoint Advance warning?

The SmartPilot activates the Waypoint Advance warning (NEXT WPT?) in Track mode whenever the target waypoint name changes. This occurs when:

- you select automatic acquisition by pressing **track** from Auto
- you request waypoint advance by pressing **track** for 1 second in Track mode (with SeaTalk navigators only)
- the boat arrives at the target and the navigator accepts the next waypoint
- you activate the Man Overboard (MOB) function (see *page 22*)

When the warning sounds, the SmartPilot continues on its current heading but displays:

- the bearing to the next waypoint
- the direction the boat will turn to take up that bearing

How do I respond to a Waypoint Advance warning?

To respond to a Waypoint Advance warning:

- check that it is safe to turn onto the new **track**, then press track to accept the waypoint advance
- alternatively, you can cancel the warning without accepting the waypoint advance by pressing:
 - **auto** to continue on the same heading, or
 - **standby** to return to manual control

What happens when I get to the end of the route?

The SmartPilot displays the ROUTE COMPLETED warning when you have reached the last waypoint on a route in Track mode.

- press **auto** to continue on the same heading.
- or press **standby** to return to manual control.

Appendix 6
SPOT CONNECT DATA SHEET



Made for
iPod iPhone

SPOT CONNECT

No cell signal? No problem. Turn your Smartphone into a satellite communicator with the SPOT Connect device.

Today's Smartphones provide a level of social connection far beyond what we imagined just a few years ago. But when you go beyond the reach of the grid your Smartphone needs the help of SPOT Connect™ to keep you in touch with friends, family, and emergency personnel.

Simply pair your Smartphone with SPOT Connect, and get connected to a global satellite network that lets you send messages and GPS coordinates from virtually anywhere on the planet. Update Twitter and Facebook. Send email and text messages. Request non-emergency help from professional service providers. And in the case of a critical emergency, send an SOS message requesting emergency assistance.

FEATURES

- Send messages from virtually anywhere via satellite
- Type & Send custom messages (41 character) or Predefined message (120 characters) options*
- Track Progress mode*
- Integrates with SPOTadventures.com and popular social destinations
- Enable iPod touch (2nd or 3rd Generation) or iPad with GPS
- Smartphone app for operation and detailed status
- On-device SOS button for standalone emergency operation



Download the SPOT app and pair your smartphone with SPOT Connect via Bluetooth



SPOT Connect links your smartphone to communication satellites



Your smartphone is now a satellite communicator



Update Twitter and Facebook



Send short email messages



Send text messages



Send your GPS coordinates and emergency message to GEOS

MSRP \$169.99
Subscription required to activate service.

Made for iPod touch® (2nd, 3rd and 4th generation), iPhone® 4, iPhone 3GS, iPhone 3G
Also compatible with Android™ platform 2.0 or later.

*Additional charges apply for Type & Send and Track Progress service plans.

S.O.S.

GEOS

In a critical or life-threatening emergency, the SOS function notifies the GEOS International Emergency Response Coordination Center of your location every 5 minutes. GEOS alerts the appropriate agencies worldwide based on your location including public service agencies like SAR and private rescue contractors.

facebook

twitter

Don't lose the connection to your social networks when you venture off the cellular grid. SPOT Connect with the basic service package enables you to send Predefined messages to your favorite social destinations. The Type & Send function allows you to create short custom messages in the field, which you can send to social destinations or specific contacts via email or text message.



findmeSPOT.com

SPOT CONNECT SMARTPHONE APPLICATION

The SPOT application home screen provides immediate access to SPOT's most crucial features.



DEVICE SPECIFICATIONS

Device Specifics:

Size: 3" x 2.6" x 1.2" (7.6 cm x 6.6 cm x 3.2 cm)
Weight: 4.9 oz (w/ batteries)
GPS Lat. Long. Datum format: WGS-84

Operating Environment:

Temperature: -13°F to +140°F (-25°C to +60°C)
Altitude: -328 ft to 21,325 ft (-100 m to +6500 m)
IPX7 Waterproof: Up to a depth of 1 meter for up to 30 minutes
Bluetooth range: ~30 feet

Certifications:

FCC, IC, WEEE, SAR, RoHS, CE

Satellite Technology:

GPS accuracy: 32.8 ft (10 m) location accuracy
Commercial satellites (LEO): 1610-1620 MHz L-band frequency
Visibility: 1 to 4 at any one time
More satellites for SOS detection than anyone for faster signal detection.

Battery Specifications:

Type: 2 AA Energizer Ultimate Lithium 8X (LR1)

SERVICE FEATURES

International Emergency Response Coordination Center:

GEOS is operational 7 days/wk. 365 days a year, operating out of Houston, Texas (2 addl. backup locations).

Communication:

If no GPS fix is acquired SPOT Connect send distress signal without position to IERCC.

Google Maps™:

SPOT waypoints are displayed in Google Maps™ in your account and through Shared Pages for easy viewing.

Data History:

All messages are stored in your SPOT Account for up to 30 days for review, mapping, and sharing. Live data viewing available for up to 7 days.

Data Archiving:

Data can be exported for archiving in the following formats: CSV (spreadsheet), KML (Google Earth™), GPX (GPS data), and at www.SPOTadventures.com.

Shared Page:

Share messages and locations via a personal shared page (password protection optional) or SPOT Adventures account.



Never lose touch with loved ones. SPOT Connect lets you send messages via satellite from virtually anywhere to the important people in your life. Use Type & Send custom messages to provide up to the minute information, along with your GPS location. Peace of mind never came so easily.

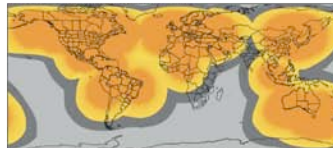


Social networks have become a favorite place to share adventures and accomplishments with friends and family. Now you can do this in near-real time, right from the scene of the action. Don't miss an opportunity to update Facebook, Twitter, or SPOT Adventures and keep your contacts updated.



GEOS provides SOS monitoring and emergency dispatch through the International Emergency Response Coordination Center (IERCC). The IERCC is staffed 24/7 with dedicated and highly trained professionals with access to emergency responders worldwide. They locate and notify an emergency responder, and will also keep your personal emergency contacts informed.

SPOT Satellite Global Coverage Map



Last updated 11/05/2009. Estimated Coverage Area. Actual coverage may vary.

spot
CONNECT™
findmeSPOT.com

SPOT Accuracy as a Positioning Device

Accuracy: SPOT, when it receives and then communicates a fix is HIGHLY accurate. It uses a standard GPS chip set, with a 'typical' accuracy of 15-meters/50 ft. and an accuracy as close as about 5 meters (16 ft.) horizontally with a clear sky view. SPOT actually claims "GPS accuracy: 32.8ft (10m) location accuracy". Empirically the SPOT track is at least reasonably accurate because it's so straight. If the fixes were inaccurate they would wander noticeably.

Reliability: SPOT Connect is however NOT highly reliable in receiving and then sending a fix. At the time of the SOS transmission, it did not receive a position fix prior to the transmission of the SOS message. In reviewing the SPOT track it is apparent that while the positions should be exactly every 10 minutes, there are longer gaps, often after a text message was sent, indicating it did not transmit a fix at the specified interval [see Appendix 13]. This suggests that SPOT Connect either had an internal conflict between transmitting the text message and receiving a position or did not successfully connect to receive a position fix and thus, had to acquire the position and resend.

EPIRB & SPOT Overview

and other SEND* devices

* **“SEND” = Satellite Emergency Notification Device = official terminology for any of several commercial SOS devices (like SPOT an Iridium) that is not part of SARSAT.**

COMPARISON TABLE

(Reviewed by USCG & GEOS):

EPIRB (SARSAT) advantages vs. SPOT/GEOS** (and other SEND's devices)

1. EPIRBs designed to float and function in the water - SPOT not
2. SAR Assets can RDF (home in on) EPIRBs signals - but not on SPOT signals
3. EPIRB generally water activated (not 100% of existing EPIRB's are water activated... some older CAT II beacons are only manual activated)- SPOT requires button to be pressed
4. EPIRBs function and the SARSAT system provides location data even without GPS position - SPOT needs both GPS and messaging satellite lock to function
5. EPIRB dedicated to mayday signal so battery not run down by other functions while SPOT may run down battery with tracking and messages before SOS (some SEND's devices are required to shut down at a certain battery level to ensure the SOS function is available)
6. EPIRB signal goes directly to RCC centers who control the SAR resources - SPOT adds an additional step (GEOS) adding the increased possibility of delay and human failure
7. USCG RCC assumes an EPIRB signal is positive until proven false. Upon receipt of a located alert, the Coast Guard will start the process to deploy SAR assets to that known position. These assets have 30 minutes (some are much quicker to get underway than others, and many take much less than 30 min to get underway) to get underway to the position, (and for the USCG it is viewed as easier to recall the assets rather than wishing you had sent them out earlier). While the SAR asset is preparing to get underway, the SAR controller attempts to gather more information about the alert (calling emergency contact in the registration data base, perhaps having local police knock on doors if no answer at contact or checking with marina, or looking at websites/blogs or doing other detective work) If the alert is determined to be non-distress, the asset is stood down or recalled. If the received alert is un-located but registered, the Coast Guard works with the emergency contact provided in the registration database to narrow down a search area. Once a reasonable search area has been determined, rescue assets are deployed. If the distress alert is un-located and unregistered, the Coast Guard will continue to evaluate and monitor. Additional satellite passes may be needed to determine a location so that an effective search area can be developed. While SPOT/GEOS has a narrower commercial/profit mandate (to call the emergency contact, and if there is a lat/long in the SOS signal to call the SAR/USCG). GEOS will continue to monitor an SOS signal until they get location data that they can forward to the USCG/SAR.
8. The EPIRB communication protocol is technically more robust and less likely to have dropped messages. You can see in the SPOT track that it regularly drops messages - they should be every 10 minutes but are not when a message gets dropped.

SPOT/GEOS (and other SEND's devices) advantages v EPIRB (SARSAT)

1. Some SPOT models (and other such devices) have some amount of 1 or 2-way messaging capability, which can provide useful information on the type of incident to the SAR assets - EPIRB has no messaging capability, only sends an alert.
2. SPOT does potentially have track position data available as backup if SOS signal does not get GPS fix while EPIRB could be quickly sunk attached to vessel so fast as not to create an accurate fix and there is no prior track to the look at.
3. SPOT has multi-functions, providing more day to day benefits to users.
4. The use of the day-to-day functions confirms the SPOT unit works; whereas it is always a bit unknown if the EPIRB will function when turned on (the self test function will ensure G-EPIRB's work; following website has good background on this:
<http://www.sarsat.noaa.gov/Beacon%20Testing%20Policy.html>).
5. Many EPIRB batteries are quite expensive to replace which SPOT uses everyday batteries.

Disadvantages of both

1. Difficulty of contacting emergency contact at night, and lack of knowledge by emergency contact, or incorrect or no registration information
2. Slow time to get fix by both units in case of fast sinking taking units with the ship (EPIRB should be mounted to float free)

** SPOT and GEOS are separate companies. SPOT makes the SPOT hardware and provides the non-emergency services. GEOS provides the emergency response service for SPOT and several other SEND devices.

Appendix 8a

ALCOAST 231/08

COMDTNOTE 16130

SUBJ: COMMERCIALY-BASED DISTRESS ALERTING DEVICES

1. ISSUE. PUBLIC USE OF COMMERCIALY-BASED DISTRESS ALERTING DEVICES (E.G., SPOT AND TRACME) IS BECOMING A POPULAR WAY TO ALERT AUTHORITIES OF A DISTRESS SITUATION.

A. SAR MANAGERS AND COMMAND CENTER CONTROLLERS SHOULD BE AWARE THAT THESE DEVICES ARE BEING MARKETING COMMERCIALY, HOW THEY OPERATE AND HOW THEIR DISTRESS ALERTS WILL BE RECEIVED AND DISTRIBUTED.

B. AT LEAST TWO COMMERCIALY-BASED DISTRESS ALERTING DEVICES ARE SIMILAR TO EMERGENCY POSITION INDICATING RADIO BEACONS (EPIRBs), EMERGENCY LOCATOR TRANSMITTERS (ELTs), AND PERSONAL LOCATOR BEACONS (PLBs) THAT ALERT THROUGH THE INTERNATIONAL COSPAS-SARSAT SYSTEM.

C. TWO TYPES, SPOT AND TRACME, ARE INTENDED FOR INDIVIDUAL USE AND CAN EASILY BE CONFUSED WITH PLBs.

2. BACKGROUND. COMMERCIALY-BASED DISTRESS ALERTING DEVICES ARE NOT COSPAS-SARSAT DISTRESS BEACONS AND DO NOT NORMALLY MEET NATIONAL AND INTERNATIONAL COSPAS-SARSAT MANUFACTURING SPECIFICATIONS REQUIRED FOR EPIRBs, ELTs AND PLBs. EXAMPLES INCLUDE:

A. SPOT. THE SPOT SATELLITE MESSENGER IS ADVERTISED AS A MULTI-PURPOSE SATELLITE MESSAGING TOOL THAT CAN BE USED AS A DISTRESS BEACON AS WELL AS FOR SATELLITE MESSAGING.

B. TRACME. THE TRACME DISTRESS ALERTING DEVICE IS A NON-SATELLITE BASED LOCATION BEACON THAT EMITS A SIGNAL TO ASSIST IN LOCATING A LOST OR INCAPACITATED PERSON. THE TRACME LOCATOR BEACON IS LICENSED BY THE FCC AS A FRS (FAMILY RADIO SERVICE FREQUENCY) DEVICE, OPERATING ON FRS CH.1 (462.5625 MHz) IN THE U.S. AND CANADA.

3. COMMAND CENTERS MAY RECEIVE TELEPHONE NOTIFICATIONS FROM REGIONAL CALL CENTERS NOTIFYING THE COAST GUARD THAT A DEVICE HAS SENT OUT A DISTRESS ALERT. THESE ALERTS MUST BE CAREFULLY EVALUATED AND RESPONDED TO IN ACCORDANCE WITH NORMAL SAR CASE EVALUATION PROCEDURES (UNCERTAINTY, ALERT, DISTRESS).

4. THIS ALCOAST AND ADDITIONAL INFORMATION WILL BE INCLUDED IN CHANGE (2) OF THE U.S. COAST GUARD ADDENDUM TO THE UNITED STATES NATIONAL SEARCH AND RESCUE SUPPLEMENT (NSS) TO THE INTERNATIONAL AERONAUTICAL AND MARITIME SEARCH AND RESCUE MANUAL (IAMSAR), COMDTINST M16130.2D (SERIES).

5. OFFICE OF SEARCH AND RESCUE COMDT (CG-534) POCS:

A. MR. RICH SCHAEFER, RICHARD.R.SCHAEFER(AT)USCG.MIL, 202-372-2079.

B. LCDR KATHY NILES, SARSAT LIAISON OFFICER, KATHERINE.M.NILES(AT)USCG.MIL, 202-372-2089.

6. RDML J.R. CASTILLO, DIRECTOR, RESPONSE POLICY SENDS.

7. INTERNET RELEASE AUTHORIZED

Appendix 9

Photo of Aegean Crew with Newport to Ensenada Race Trophy



Appendix 10

Photo of Aegean Crew with Newport to Ensenada Race Trophy



Appendix 11

Len Bose Article from Daily Pilot May 14, 2012

The Harbor Report: My take on the Aegean tragedy - Daily Pilot

http://www.dailypilot.com/opinion/tn-dpt-0505-bose-20120504_0...

dailypilot.com/opinion/tn-dpt-0505-bose-20120504_0_1248434_story

Daily Pilot

The Harbor Report: My take on the Aegean tragedy

By Len Bose

8:53 PM PDT, May 4, 2012

I have to assume you have read the Daily Pilot's reports regarding the sinking of the yacht Aegean, which claimed the lives of four crew members.

I first noticed the boat and crew on April 26, the night of the send-off party before the annual Newport to Ensenada Yacht Race at the Bahia Corinthian Yacht Club. I had volunteered as a gangway attendant that allowed boat owners and crews access to their boats while keeping the general public off the docks.

The crew of the Aegean was easily spotted with its blue shirts that read, "I am on a boat," and their blue hats.

The crew walked past me many times throughout the night. Because the boat was slipped next to the gangway, I was able to watch the crew step on and off its vessel many times throughout the night.

From 25 years of being a yacht broker, I can watch people approach a boat and see how they board one and tell whether they are very experienced or not.

My observations of this crew: This was not their first rodeo. They were having fun as a team and staying under control. In fact, I recall they all had returned to their boat by 9:30 the night of the send-off party.

I am not sure what happened to this crew but, if I were to guess, they probably had their dinner at 8 p.m. just west of the border. The wind had died down to under 5 knots at about 11 p.m., and the crew of the Aegean probably started its engine and reduced the watch to one person while the engine and autopilot did their work.

What happened next, we may never know, but if I were to continue with my conclusion, the one crew member left on deck probably grabbed his blanket and placed his back to the forward bulkhead of the cockpit and was facing aft.

He then would fall asleep, wake up, take a look around, and then fall asleep again. At least that's my speculation.

I know from experience if you allow yourself to fall into that routine you will fall into a deeper sleep each time. When I catch myself doing this, like on the delivery trip home the other day, I stand up and turn on my iPod.

For what's its worth, that's what I think happened. The crew member on watch fell asleep at the wheel, and the boat ran into North Coronado Island.

Tragic, yes, but this happens in cars every year. Nothing can be said to the family for their losses, other than, "From my family to yours, we wish you the best and are sorry for your loss."

LEN BOSE is an experienced boater, yacht broker and boating columnist.



The Harbor Report: My take on the Aegean tragedy

By Len Bose

8:53 PM PDT, May 4, 2012

I have to assume you have read the Daily Pilot's reports regarding the sinking of the yacht Aegean, which claimed the lives of four crew members.

I first noticed the boat and crew on April 26, the night of the send-off party before the annual Newport to Ensenada Yacht Race at the Bahia Corinthian Yacht Club. I had volunteered as a gangway attendant that allowed boat owners and crews access to their boats while keeping the general public off the docks.

The crew of the Aegean was easily spotted with its blue shirts that read, "I am on a boat," and their blue hats.

The crew walked past me many times throughout the night. Because the boat was slipped next to the gangway, I was able to watch the crew step on and off its vessel many times throughout the night.

From 25 years of being a yacht broker, I can watch people approach a boat and see how they board one and tell whether they are very experienced or not.

My observations of this crew: This was not their first rodeo. They were having fun as a team and staying under control. In fact, I recall they all had returned to their boat by 9:30 the night of the send-off party.

I am not sure what happened to this crew but, if I were to guess, they probably had their dinner at 8 p.m. just west of the border. The wind had died down to under 5 knots at about 11 p.m., and the crew of the Aegean probably started its engine and reduced the watch to one person while the engine and autopilot did their work.

What happened next, we may never know, but if I were to continue with my conclusion, the one crew member left on deck probably grabbed his blanket and placed his back to the forward bulkhead of the cockpit and was facing aft.

He then would fall asleep, wake up, take a look around, and then fall asleep again. At least that's my speculation.

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For what's its worth, that's what I think happened. The crewmember on watch fell asleep at the wheel, and the boat ran into North Coronado Island.

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LEN BOSE is an experienced boater, yacht broker and boating columnist.

1 of 1 5/14/12 9:48 AM

Appendix 12

NOSA Entries of 2012 Newport to Ensenada Race Cruising Classes GA and GB as of 04-25-12

2012 Newport To Ensenada Entries

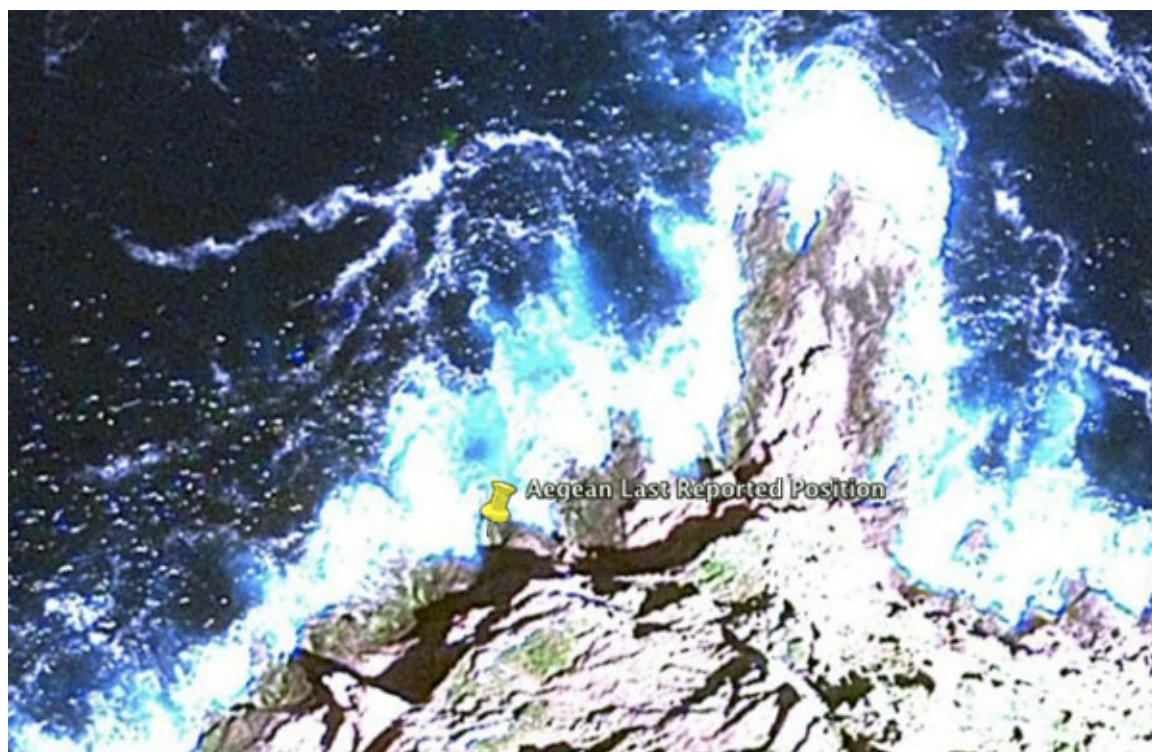
Class	Sail	Yacht	Rating	Skipper
CRUZ GA	138	TIME OUT CAT470T	105	MICHAEL SCHAU
CRUZ GA	46031	ENCHANTED LADY ROBTS55K	111	ANDY SIBERT
CRUZ GA	46406	SUMMER WINE CAT42	126	WALT GONZALES
CRUZ GA	46608	MAS ALEGRE CAT380	123	FRANK MADDOCKS III
CRUZ GA	46869	MISJUDGED II HUN460	123	PATRICK MAGERS
CRUZ GA	56206	MARISOL HUN410	123	STEPHEN RONK
CRUZ GA	56254	MED VIKING BEN411	117	BERNARD DEBBASCH
CRUZ GA	56699	RYLACADE HUN45CC	117	JONATHAN WHEELER
CRUZ GA	56711	OCEAN BLUE TAY55	84	JIM KINZY
CRUZ GA	5858	STELLA MARIS HYLAS46	87	TOM MADDEN
CRUZ GA	7188	RAGAMUFFIN CAT42	132	MIKE & GLORIA RICHARDS
CRUZ GA	7920	BRITANNIA II JNNU50DS	99	JASON CAVALLARO
CRUZ GA	97856	TENACIOUS HUN45	87	TED O'CONNOR
CRUZ GB	46175	ELATION 36' CUTR	237	PAUL GERST
CRUZ GB	46785	T.L.SEA WESL32	228	JOHN MILNER
CRUZ GB	56418	AEGEAN HUN376	162	THEO MAVROMATIS
CRUZ GB	56485	LANIKAI HUN382	141	ALLAN EMAS
CRUZ GB	56717	WAY COOL CAT34	174	KEN MILLER
CRUZ GB	56740	MOJO JNNU36I	138	JAMES MORRISON
CRUZ GB	56742	DELFINA BEN423	135	GARY GILPIN
CRUZ GB	56781	PANDA CAT36	156	ARNOLD ROWE
CRUZ GB	56844	MACCHALIS 3 BEN400	138	KEVIN SPAINHOUR
CRUZ GB	81228	STAR TOO LAN28	267	SIDNEY KARNEKE

Appendix 13
SPOT CONNECT Track from Aegean

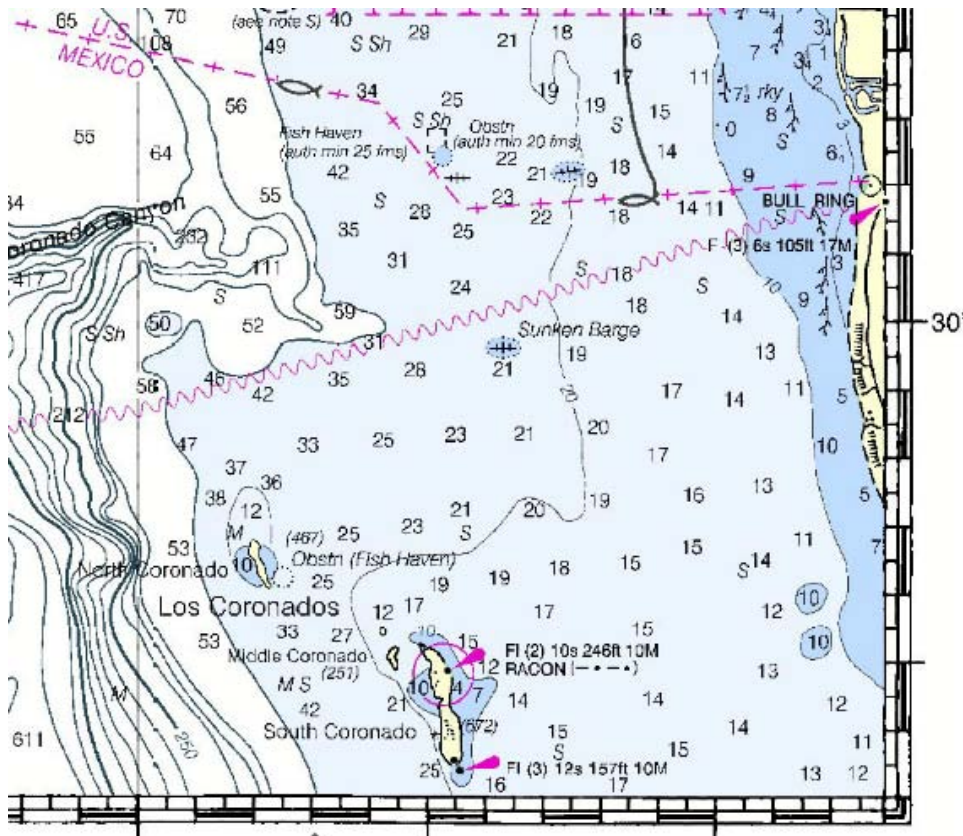
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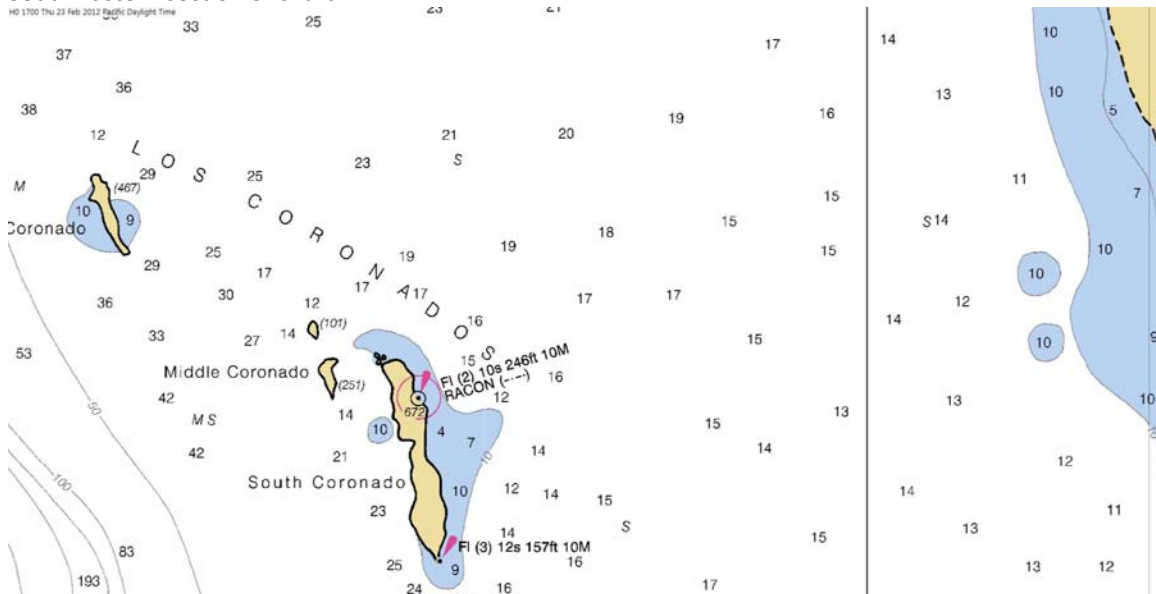
Appendix 14
SPOT CONNECT TRACK – Last position reported



Appendix 15
NOAA CHART # 18740 San Diego to Santa Rosa Island
South Eastern portion of chart



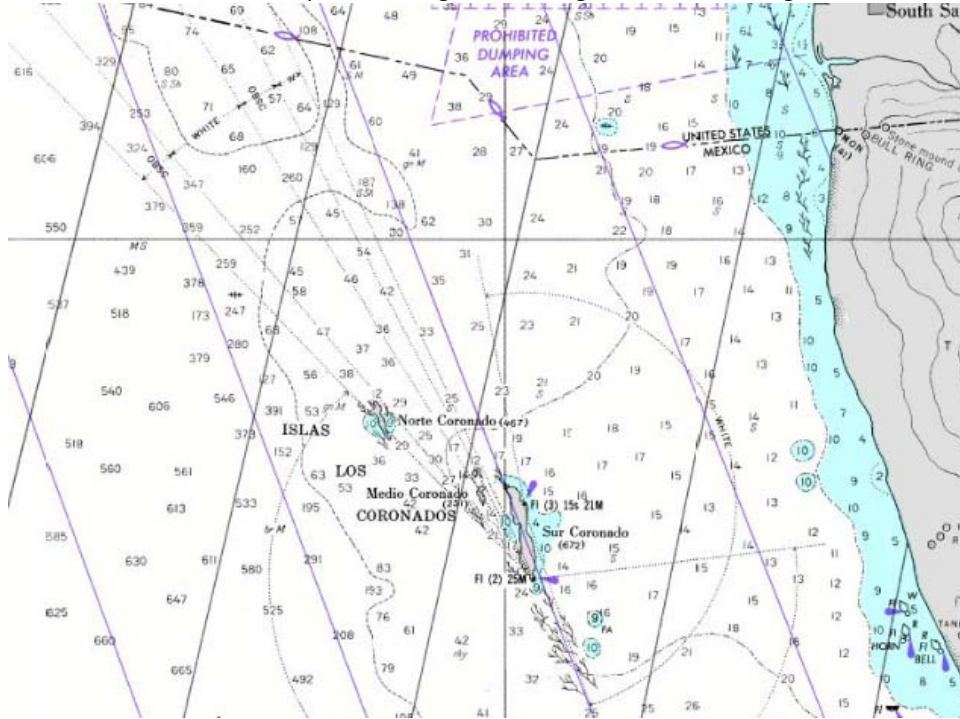
Appendix 16
NOAA CHART # 18765 Approaches to San Diego Bay
South Eastern section of chart



Appendix 17

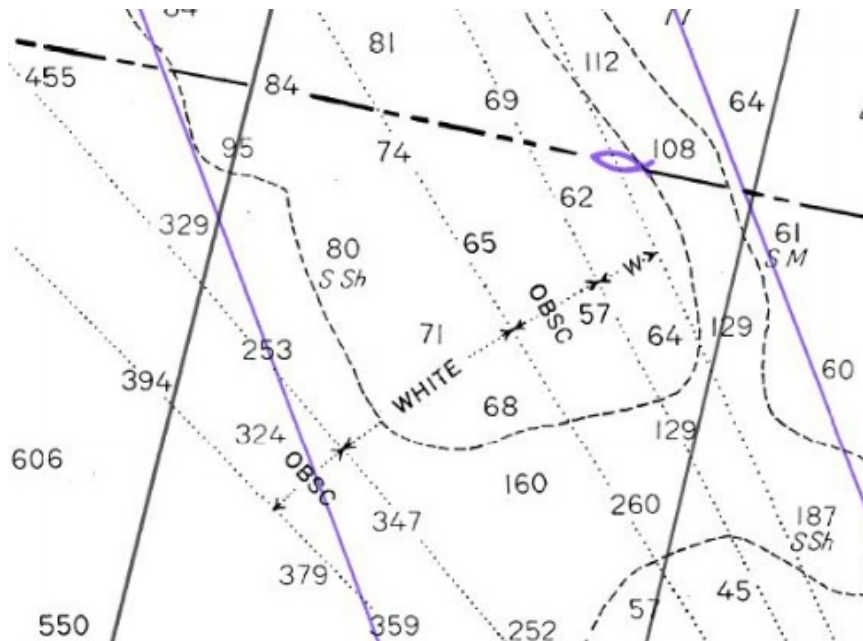
NOAA CHART # 18766 San Diego to Islas De Todos Santos

Northern center of chart copied showing obscured light zones for two lights on South Coronado Island.



Appendix 17a

Blow up of chart notation from NOAA Chart # 18766



Appendix 18

SPOT CONNECT Track overlay on Chart # 18740



Appendix 19

GEOS CALL LOG

0843 GMT 911 EMERGENCY NOTIFICATION RECEIVED. Call placed in pending. No GPS coordinates received.

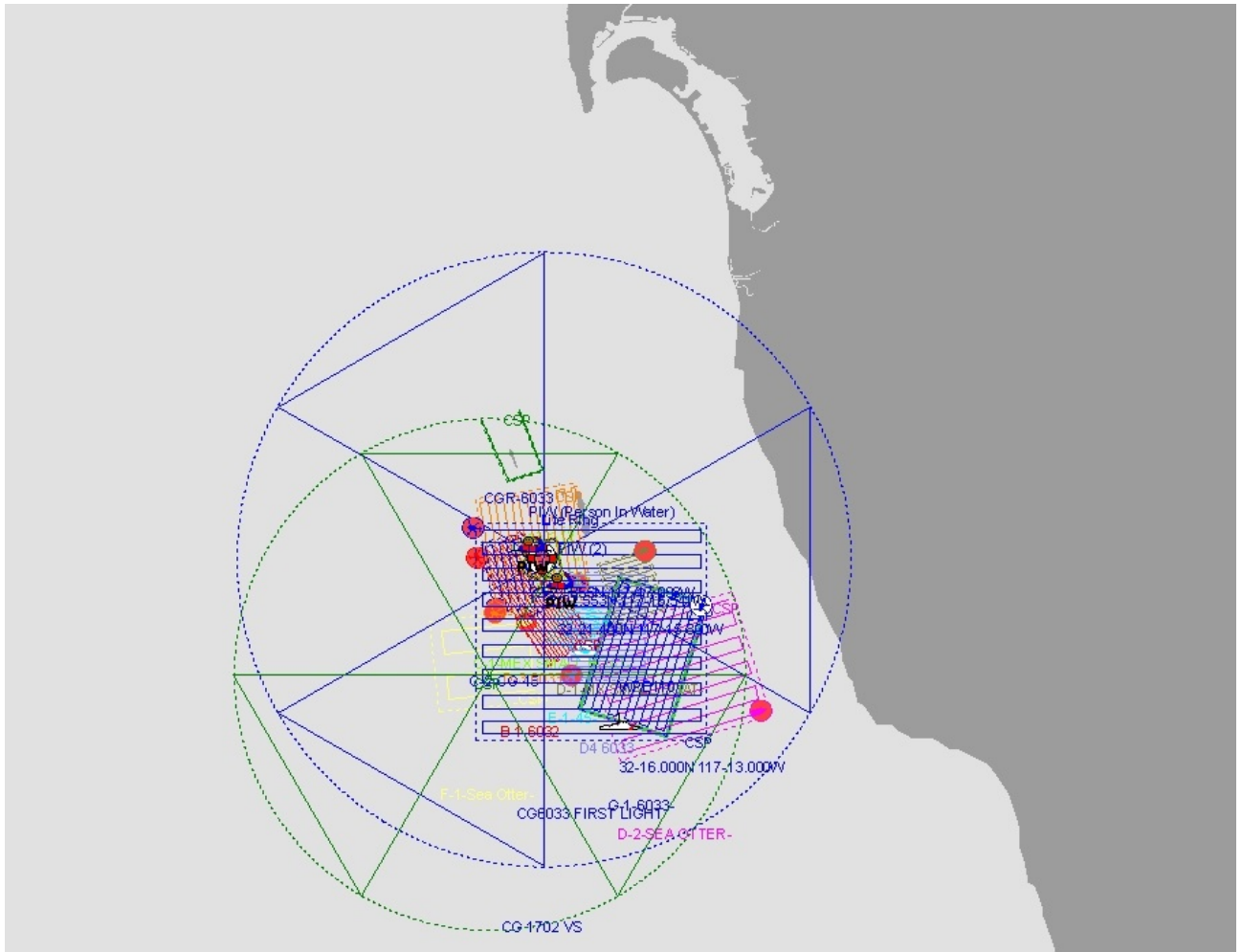
0844 GMT IERCC attempted to contact registered owner XXXX XXXXX at XXX---XXX---XXXX. Left Voicemail.

0845 GMT IERCC attempted to contact registered owner XXXX XXXXX at XXX---XXX---XXXX. Left Voicemail.

0847 GMT IERCC attempted to contact primary emergency contact XXXX XXXXX at XXX---XXX---XXXX. Left Voicemail.

0849 GMT IERCC attempted to contact secondary emergency contact XXXX XXXXX at XX X---XXX---XXXX. Left Voicemail.

Appendix 20
SAR Patterns from April 28, 2012



Appendix 21

USCG Photo – Partially inflated boat April 28, 2012



Appendix 22

USCG Photo of debris recovery April 28, 2012



Appendix 23
USCG Photos of Debris May 1, 2012



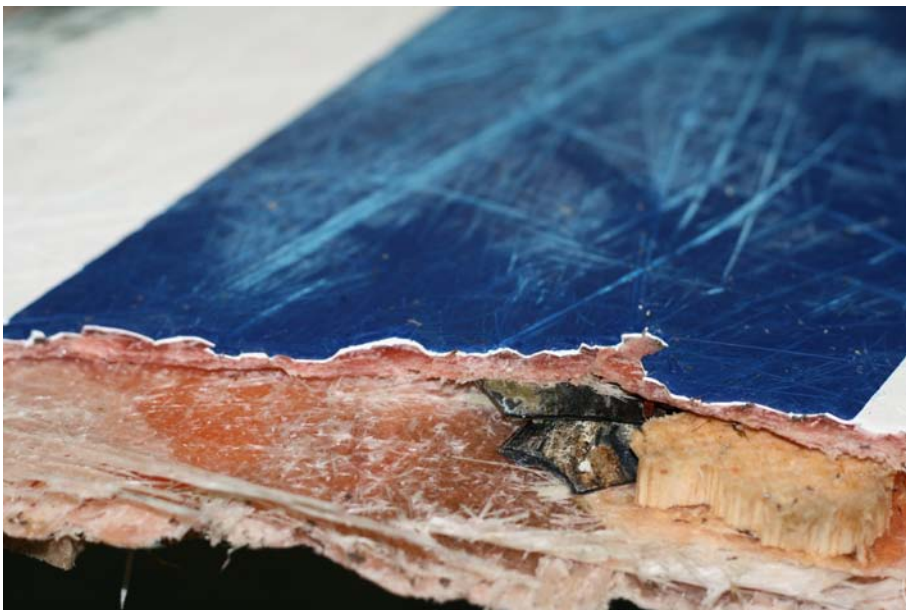
Appendix 24

USCG Photograph of Hull with Mussel Shell imbedded May 1, 2012



Appendix 24a

USCG photograph of close up of mussel shell imbedded in hull



Appendix 25

USCG Photographs of hull fragments found in cove at North West tip of North Coronado Island – Accident zone as shown by SPOT Connect track.

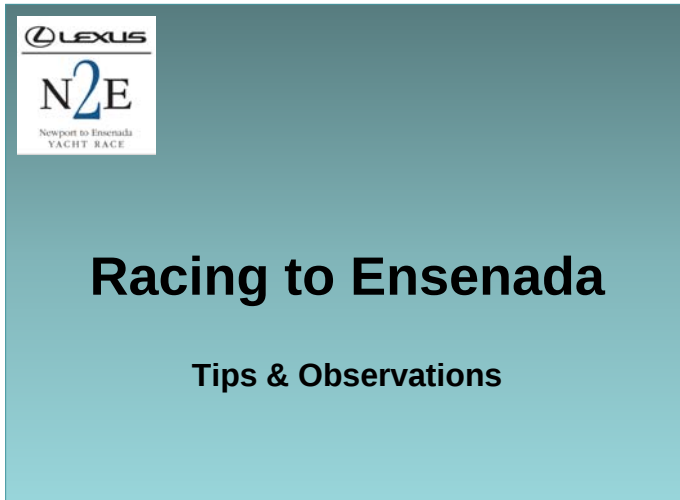
May 1, 2012



Appendix 26

John Walton Photo (Walton Environmental) taken from sea level of hull fragment found in small cove at North Western Tip of North Coronado (same location as USCG photograph) May 7, 2012





It Only Takes 1 Second to Win a Race

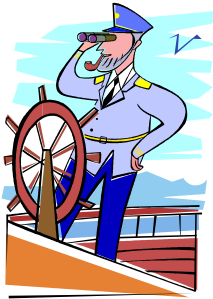


This seminar is aimed at helping you save many seconds

“Sail To Win”

The Challenge

- 125 miles
- Varying Winds
- Unfamiliar surroundings
- 1-2 nights at sea
- Not a typical “club race”



Be Prepared

CREW



RACE PLAN



EQUIPMENT



PRACTICE

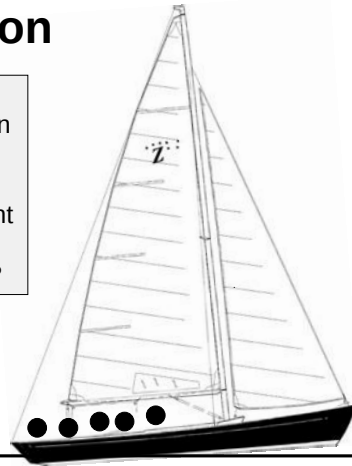


Crew Position

Too many crew in the cockpit will cause the stern to drag (SLOW)

Balance fore and aft weight

Where is crew sleeping ?



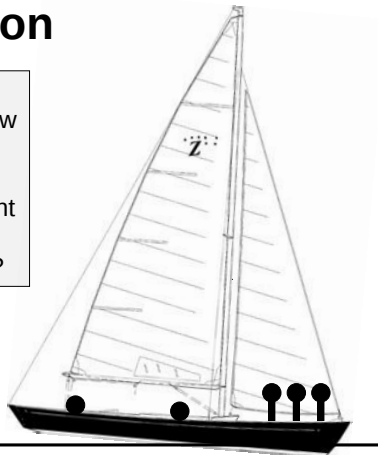
1000 lb of crew weight

Crew Position

Too many crew on the foredeck will cause the bow to dip (SLOW)

Balance fore and aft weight

Where is crew sleeping ?

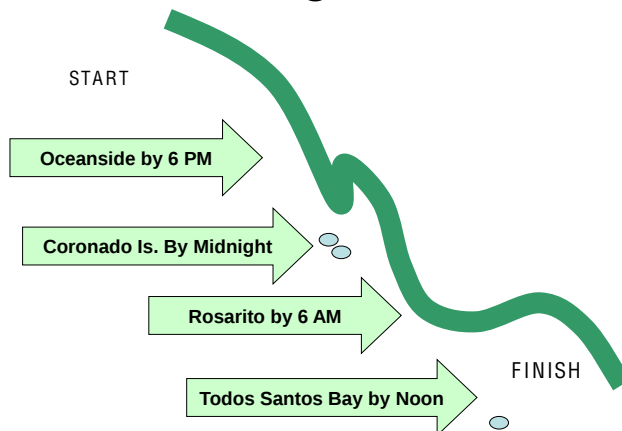


500 lb of crew weight

Race Plan

- Decide on which course you will take
 - Based on anticipated wind conditions, your boat's speed potential, your crew's experience, etc.
 - Inside, rhumbline, outside
- Share the Plan with all members of the crew
 - Watch Captains agree not to deviate unless the skipper approves.
- Establish your "Targets"★

Your Targets ?



Equipment

- All equipment required by your Fleet and by the US Coast Guard
- Show every member of your crew where every item of equipment is kept
 - Safety while underway
- Each Watch must know how to use the on-board GPS

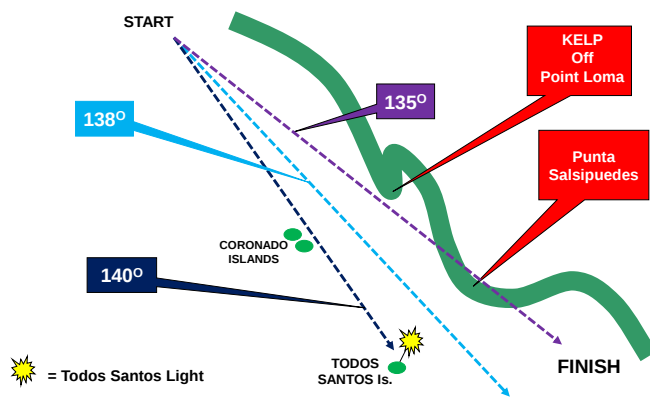
Prepare your GPS

- Enter Multiple Waypoints 
- Use It to Track Progress
 - SOG
 - COG
 - VMG

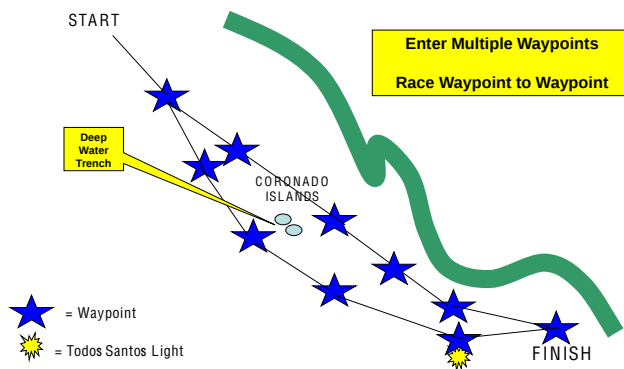


BIG HELP
Downwind
Swells
Light Air

A Hint...



Waypoints





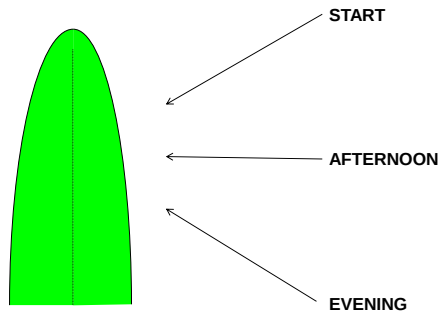
Practice At Night

- Sail once or twice at night...for at least 4 hours
- Change sails 2-3 times at night
- Find bell buoys at night via GPS
- Have more than one person steer to a compass heading/GPS at night
- Crew Overboard Drill

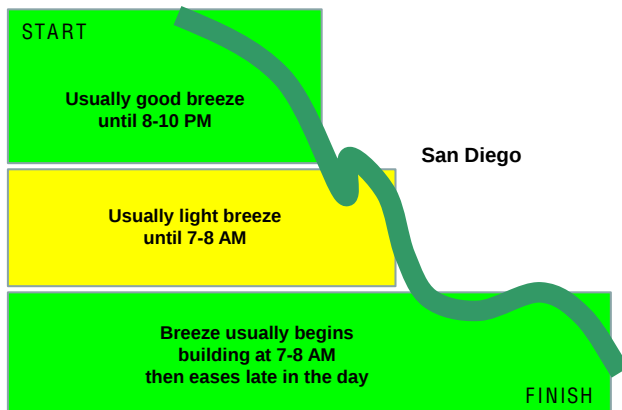
A Few More Tips

- Spinnaker can get set sideways
 - Mark the “TOP” (laundry pen or tape)
- Most boats are over-weight
 - Remove all but the essentials and required equipment
- Move anchors/rode to center-line – over the keel
 - Get weight out of the ends
- There is no such thing as “normal”...only “average”

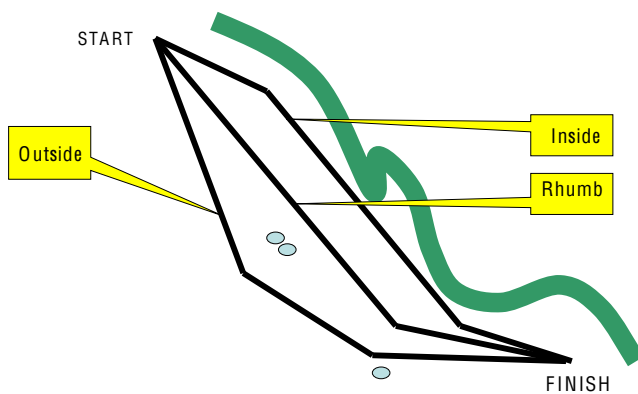
“Average” Wind Direction ?



“Average” Wind Speed ?



Inside or Outside ?



60 Year Average

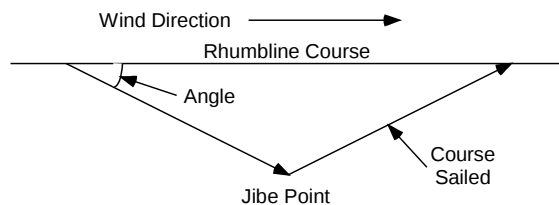
- RHUMB-LINE is faster than INSIDE most of the time
- OUTSIDE THE RHUMB-LINE (within reasonable limits) is often FASTER than on the rhumb-line
- Optimum boat speed is more important than sailing the exact course (within reasonable limits).

It's Called VMG

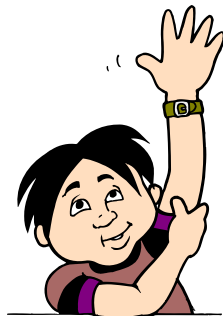
(Velocity Made Good)

How fast am I going towards my destination ?

Freeway or side streets ?

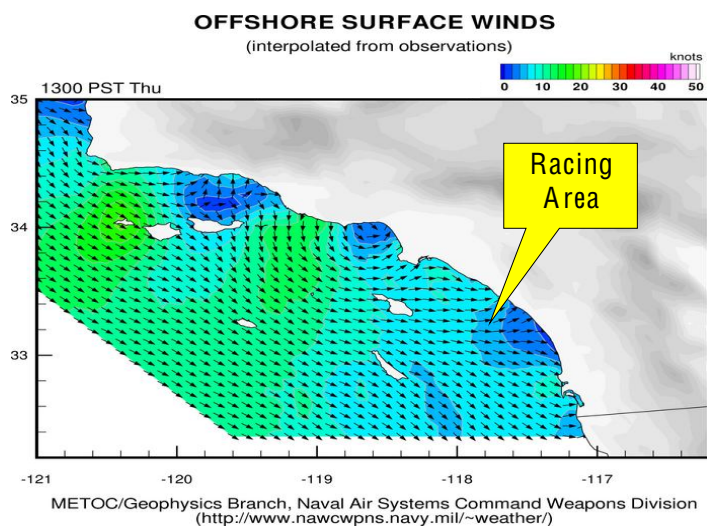


How do I know which course to take ?

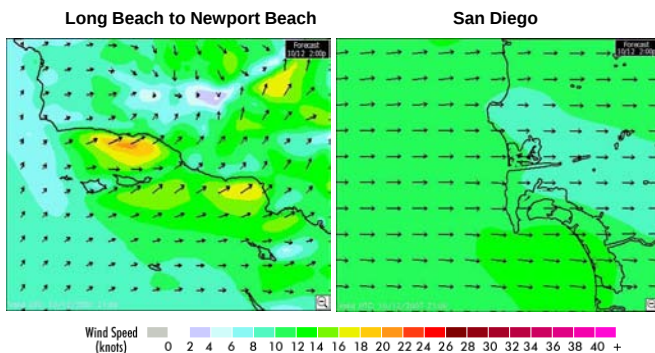


Sail Where the Wind Is

- For a few days and nights before the start, study what the wind is doing
- Visit “weather” sites on the Internet ★



SailFlow.com



Where would you sail ?

Ensenada Weather

<http://www.wunderground.com/global/stations/76050.html>

	Thursday - Clear. High: 66° F / 19° C. Wind WNW 15 mph
	Thursday Night - Clear. Low: 57° F / 14° C. Wind NNE 8 mph
	Friday - Clear. High: 68° F / 20° C. Wind WNW 15 mph
	Friday Night - Clear. Low: 57° F / 14° C. Wind NNW 6 mph
	Saturday - Clear. High: 68° F / 20° C. Wind WNW 13 mph
	Saturday Night - Clear. Low: 57° F / 14° C. Wind NW 8 mph
	Sunday - Scattered Clouds. High: 68° F / 20° C. Wind WNW 13 mph
	Sunday Night - Clear. Low: 57° F / 14° C. Wind NW 8 mph
	Monday - Clear. High: 68° F / 20° C. Wind WNW 15 mph



- Tuesday and Friday (race day)
- URL to sign up on NOSA website
- Detailed weather forecast
- Detailed wind forecast
- Easy to understand

Ready !

- Crew Plan – done
- Weather – have studied
- Race Plan – done
- Equipment – ready.....*including sails*
- GPS – multiple waypoints in

Race Day – Time To Go !

Push away from the dock early

Check In early

Go to the Starting Area and find your Start Line early

Settle down!



Start Line

- 2-3 knot current may drive you over the line

- What is the favored end of the line ?

- Line skew ←
- Wind direction and strength
- Clearest air
- Least amount of congestion

HINT

Line may be skewed to give inshore end an advantage

- Do not get caught in an “over-early” situation
 - It is **VERY** difficult to return and re-cross the line



NOTICE – “barger”, spinnaker pole ready, boat middle of line, OCS, boat going back

Boom...And We're Off

(Now What ?)

- Concentrate on getting into clean air
 - Boats in front, to side, and coming from behind
 - Lift out of the traffic jam
 - Avoid “sight-seeing” – pay attention
- Follow the leaders (for a while)
- Pick your course (your Race Plan) and trim to it

15-30 Minutes Later



Remember...

- This is a long race (marathon versus a 5K)
- Concentration is easily lost in the excitement...and in the early morning hours
- Race from waypoint to waypoint
- 125 miles of constant trimming ★ ★

3 PM

- Wind clocking more
- Is spinnaker ready to go
- Genoa halyard clear for take-down
- What's the competition doing
- Bearing to next waypoint 
- Impact on VMG

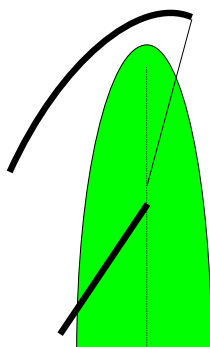


Reaching, spinnaker pole not ready, sheets not run

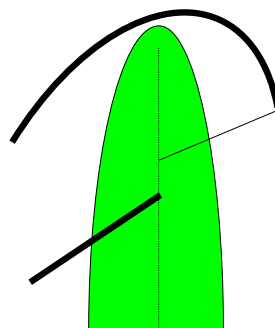
Hint...

- Genoa/spinnaker may get “wet” during the night and “droop” in the light air
 - Tell tails might “stick” to sail
- Consider changing to #2 or a “light air” spinnaker
- Change to lighter sheets too

Spinnaker Trim



CLOSE REACH
Pole forward
Mid-Afternoon



OFFWIND
Pole back
Late Afternoon

An “A+” for Trimming



NOTICE – poles level, parallel with boom, boats at good angle of heel

An F



Correct Trim Adjustment ?

Use your boat's knot meter 
...or the GPS

Check before adjustment

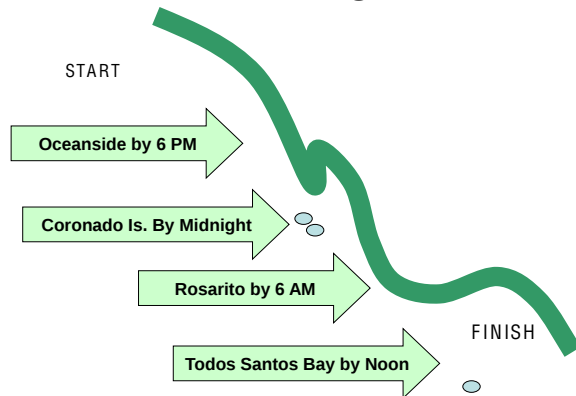
Check after adjustment

Did Adjustment increase
or decrease boat speed ?

REMEMBER - At night, you
can't see the tell tails !



6 PM – On Target ?



Time for Dinner

- Serve a hot meal before dark. Crew needs fuel !
- Every crew should also bring a thermos of hot water or coffee, soup, etc.
- Remember crew position during dinner



Start Watch Schedule

- Easy to say, but hard to do
- Crew needs to rest before it gets dark
- Save energy for the big push at night !



Enjoy the Sunset

(Now the Real Fun Begins)



The Race Is Won At Night

- Concentrate !
 - Rotate Helm and Crew
 - Keep trimming★
 - Use the GPS (VMG)
 - Use the Knotmeter
- It's dark out there !
 - You may become a little disoriented
 - Keep the land to the left



Moon



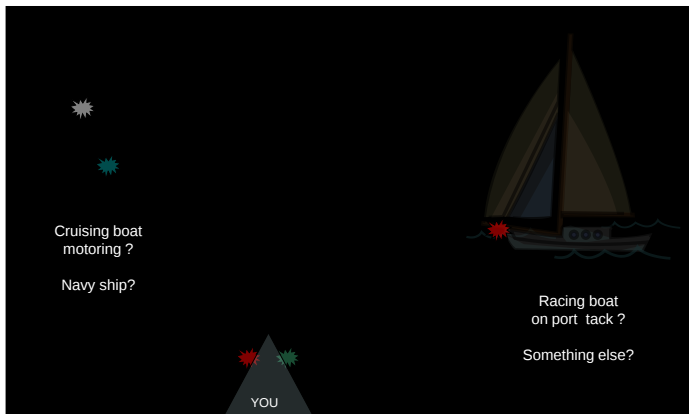
April 27
33%



April 28
42%

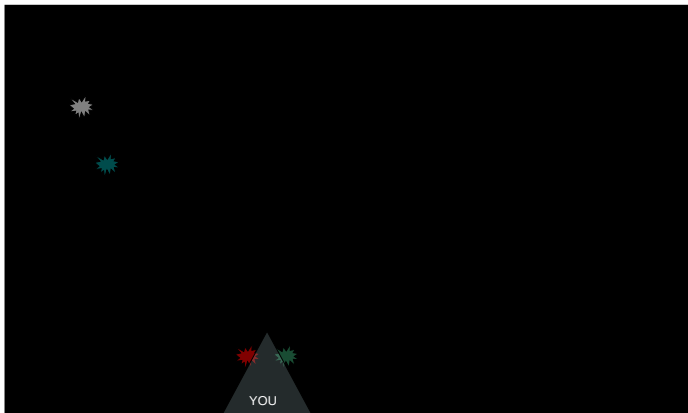
Watch For Running Lights

25% of the Fleet are new racers...they may not know the Rules

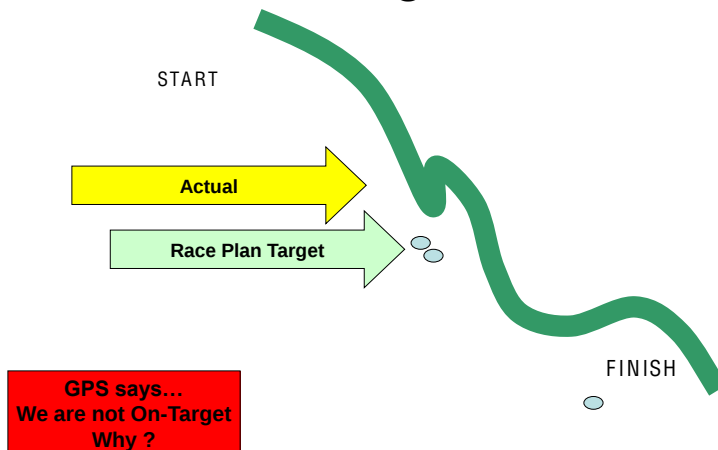


Is There More Wind Over There ?

(Or is that Cruising boat motoring)



Midnight



Going Too Slow ?

Not “On Target” ?

- The #1 reason is the sails are trimmed in too much...
 - Particularly true in light air
 - Remember the wind usually clocks aft
 - Trim at Midnight is different than at 10 PM
- “When In Doubt...Ease It Out” ★
 - Check the knot meter & GPS

Donuts Are Bad

(Particularly At Night)

- In “zero” wind, don’t get fooled by waves causing “apparent” wind
- You can generate apparent wind by steering in circles
- BUT...you aren’t moving down the course



Remember VMG



- Are you moving the boat toward your destination
- Are you focused on where the wind is and how you will take advantage of it
- “Race” your best between 2-6 AM
 - Gain distance on the competition
 - This is when the race is won
 - Target Rosarito Beach (or further) by sunrise

Should I Motor ? (CRUZ boats only)

If boat speed is 2.0 knots or more, don't motor

The Engine Use Penalty will eat away any gains you might achieve

1 hr motor = >2 hrs penalty

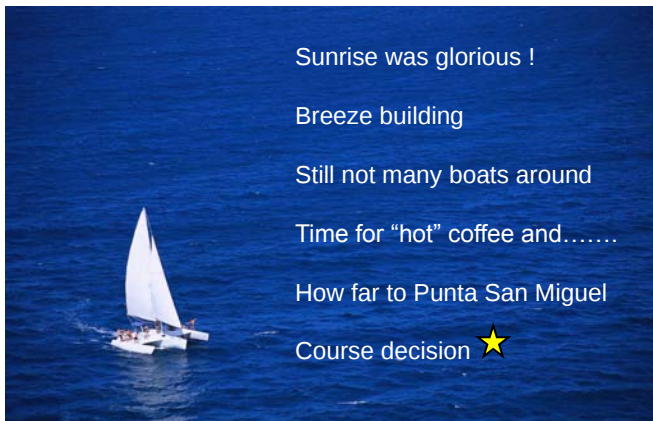


Good Morning, Rosarito Beach

Great Effort by 2-6 Watch – No Donuts – Passed 5 Boats



Breakfast Is Now Being Served



Sunrise was glorious !

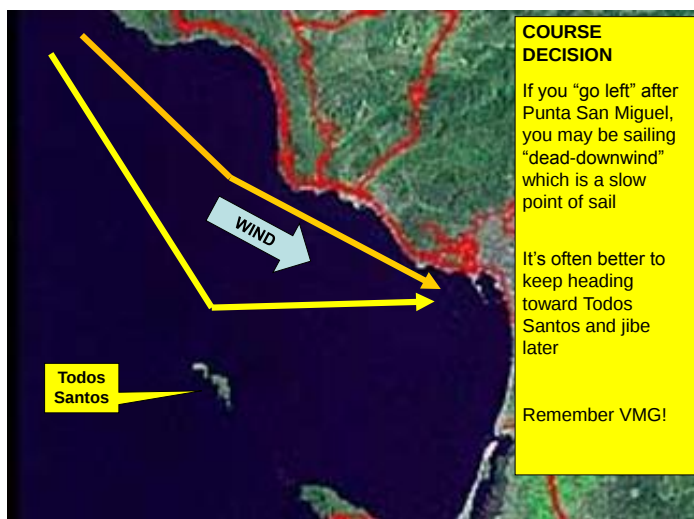
Breeze building

Still not many boats around

Time for "hot" coffee and.....

How far to Punta San Miguel

Course decision ★

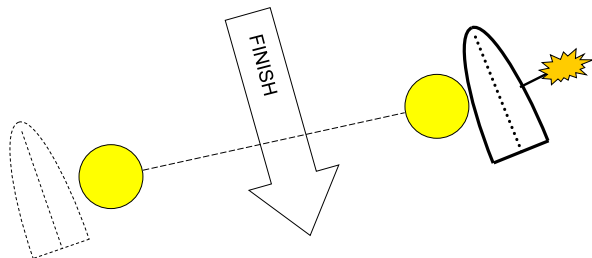


Finishing at Night

- Ensenada is a BIG CITY. Don't be fooled into heading for the lights of El Sauzal
- The wind often drains down the cliffs at night to give a bit of an offshore breeze, but there are rocks and kelp near shore
- Look for the strobe light on the Finish Boat
- Shine a light on your Sail Numbers

Finish Line

- Finish Line is between two yellow inflatable marks
- "Inshore" Finish Boat may have amber strobe light
- May be 2nd boat





A Few Seconds Before Finishing

TGIF



You're Not Done Yet !

- Record your Finish Time on the "Finish Card" – use GPS time
- Note the boats in front and behind
- Turn the Card in at HQ
- And then.....**PARTY!**



Saturday, April 28

Party at Hotel Coral

Special pricing

See NOSA website for details

Enjoy!

THE BEATLES
ABBEY ROAD TRIBUTE

APRIL 28TH

Abbey Road Tribute from Los Angeles with the Brevards Classical Orchestra

Welcome event for all participants starts at **6:30 pm**
Urban Mexican food festival and live music starts at **8:00 pm**
The concert starts at **9:00 pm**
Cash bar available

Ticket prices	
VIP LOUNGE \$42.00 USD (\$350 PESOS)	VIP CHAMPAGNE \$31.00 USD (\$260 PESOS)
CABERNET AREA \$27.00 USD (\$225 PESOS)	MERLOT AREA \$15.50 USD (\$130 PESOS)

All tickets will have the special price of \$18 USD (\$150 pesos) in the best available area. Restrictions may apply.
Each ticket will be receive free complimentary concert tickets for the VIP champagne area.

To receive the special participant price, log your ticket before April 15th, 2012 using your special code.

Tickets will be on sale from February 28th, 2012

INFORMATION:
1 (800) 862 9020
lizette.sanchez@hotelcoral.com
hotelcoral.com

65th Annual Newport to Ensenada International Yacht Race

HOTEL CORAL
BYD MARINA

vive MEXICO
FOLLOW US ON

Sunday - Trophy Presentation

Remember to Dress Nice !



Hi Mom !



- Winning skippers in primary classes will receive a pair of Revo polarized sunglasses
- See NOSA website for details



- Lexus will award the skipper with the Best Corrected Time a two-year lease of a 2013 GS350
- All boats, except Cruising Class, are eligible
- Boats racing in a classes-within-classes (i.e. Double-Handed, All-Female, etc.) are eligible in their primary class only



Please
Visit
Our Sponsors



Appendix 28

Course and Speed calculated from SPOT Connect Track

Time	Latitude	Longitude	Bearing	Range nm	Speed
956	32 47.001n	117 37.289w			
1006	32 46.054n	117 36.442w	131°	1.19	7.14
1016	32 45.115n	117 35.578w	130°	1.19	7.14
1026	32 44.158n	117 34.724w	131°	1.2	7.2
1036	32 43.225n	117 33.872w	130°	1.18	7.08
1046	32 42.321n	117 33.058w	131°	1.13	6.78
1056	32 41.375n	117 32.203w	131°	1.19	7.14
1106	32 40.468n	117 31.363w	130°	1.15	6.9
1116	32 39.572n	117 30.463w	128°	1.17	7.02
1126	32 38.692n	117 29.574w	128°	1.16	6.96
1138	32 37.655n	117 28.558w	128°	1.34	6.7
1146	32 36.891n	117 27.836w	129°	0.98	7.35
1156	32 35.992n	117 26.967w	129°	1.16	6.96
1206	32 35.101n	117 26.081w	128°	1.16	6.96
1216	32 34.207n	117 25.186w	128°	1.17	7.02
1226	32 33.296n	117 24.286w	128°	1.19	7.14
1236	32 32.371n	117 23.393w	129°	1.19	7.14
1246	32 31.441n	117 22.479w	128°	1.21	7.26
1256	32 30.484n	117 21.563w	129°	1.23	7.38
106	32 29.527n	117 20.645w	129°	1.23	7.38
116	32 28.557n	117 19.718w	129°	1.25	7.5
126	32 27.559n	117 18.787w	130°	1.27	7.62
136	32 26.719n	117 17.999w	130°	1.07	6.42