

A Review of Strikes of Whales by Sailing Yachts: A serious problem for whales, sailors and yachts

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Abstract

Sailing yachts come in all shapes and sizes from tiny dinghies to cruising yachts of various sizes to fast moving, sleek and technologically advanced racing yachts capable of travelling around the world in a single non-stop journey. Possibly hundreds of thousands of yachts safely sail the seas and oceans every year. An unknown few are involved in collisions with whales.

Racing across oceans or cruising the seas, sailors are exposed to the risk of collisions with whales. In addition to threatening the lives of unknown numbers of whales from depleted and more plentiful populations, it can cause serious and sometimes catastrophic damage to sailing vessels, threatening the lives of those aboard.

This review provides examples of incidents experienced by sailors of strikes and situations that presented increased risks of strikes. It proposes the need to work with stakeholders involved in the sailing industry to increase awareness of this threat, increase reporting of incidents and develop a range of mitigation measures to significantly reduce the risk and cost of collisions between whales and sailing yachts.

Methods

Information and reports of strikes and concerns about potential strikes were obtained from the author's personal contacts, the internet, ocean race and sailing websites and people who participate in cruising and racing sailing yachts.

Results

Examples of Potential Problems Associated with Yacht Cruising

Sailing around Baja California¹

The proprietor of Commodore Yachting reported 3 incidents when cruising a 52ft ketch off San Diego, USA and La Paz, Baja California, Mexico.

1. About 40 miles south of San Diego, late afternoon in mid July 2008 with sea state slight with good visibility and weather. Suddenly the yacht was surrounded by about 7 blue whales within 50–100m with others further away.

Not quite knowing what to do, anxious not to strike a whale or separate a calf from its mother and concerned that an anxious mother might charge the yacht, the vessel was halted to allow the whales to pass.

Had weather conditions been rough or had they been sailing in the dark it would have been impossible to spot the whales.

2. Between Los Muertos and La Paz, Mexico in the Cerralvo Channel, early morning in November 2008 with moderate seas state and good visibility and

weather. A single whale – probably a fin whale – surfaced directly in front of the yacht.

Fortunately the yacht was under motor and it was possible to put the engine hard astern. Had it been under sail it would not have been possible to avoid the whale.

3. Los Islotes in the Espiritu Santos National Park north of La Paz in the morning in early December 2008 with flat seas and good visibility and weather. A single whale – probably a fin whale – swam under the yacht. The yacht was stopped when the whale was spotted surfacing about 100m away.

The owners of the vessel noted that one of their main concerns when sailing around Baja is to avoid striking a whale and they therefore keep a look out as best they can. When ever whales are seen near the yacht, the engine is disengaged so as to avoid striking a whale with the propeller. With each of the 3 incidents described, had it been dark, the seas rough or had the vessel been under sail there would have been an increased possibility of striking a whale. They suggested that some sort of advanced sonar device would be helpful in alerting sailors to the presence of a whale.

Sailing in the Antarctic²

Skip Novak the proprietor of Pelagic Expeditions – a veteran of numerous successful round the world yacht races - reported that when operating in the Antarctic, he is obliged to follow the International Association of Antarctica Tour Operator (IATTO) guidelines wildlife watching³. The Guidelines and Resources link on the website provide a very good explanation of how cruise ships and yachts have been educated for at least the Polar Regions. This must apply to all areas of high density, which is certainly essential for humpbacks feeding on krill stocks during the Antarctic summer.

He noted that when travelling on the high seas on a sailing vessel it is not really possible to take mitigating measures to avoid a potential strike because there is no way to keep a constant lookout for whales that are hovering just below the surface and occasionally blowing, especially when the yacht is travelling at speed.

Sailing from Naples, Italy to Le Canet en Roussillon, France⁴

Clive Lonsdale reported that when delivering a Hansa 46 sailing vessel from Naples to Le Canet en Roussillon, France in July 2010, a fin whale and a sperm whale and calf were spotted about 150m from the vessel west of Corsica (5° East). A careful watch was taken during the day to avoid collisions but at night this was impossible.

Examples of Strikes by cruising vessels

Forty-Ton Whale Lands on Yacht during Cape Town Sailing Trip⁵

In July 2010, a 33ft steel hulled sailing boat was sailing between Robben Island and Blouberg, off Cape Town, South Africa. A young southern right whale was spotted about 100m from the vessel. It then appeared by the vessel and the couple aboard assumed it would pass underneath. However it breached on the port side and landed on the vessel.

The whale slipped back into the water, reportedly leaving skin and blubber on the deck but an assessment of the extent of its injuries was not possible. The vessel was badly damaged with mast and rigging broken but it was able to return to the shore.

The owner noted that had the hull been made of fiberglass rather than steel the damage would have been much greater.

British couple's yacht sunk by whale in Caribbean⁶

In June 2009, a couple were sailing their 47ft sailing vessel in rough seas near the British Virgin Islands. In the early morning a yacht struck a whale creating hole in the hull.

The couple had to abandon their yacht and be rescued. There is no information on the injuries sustained by the whale.

Sailing vessel strikes whale 400 miles East of Guadeloupe⁷

About 400 miles east of Guadeloupe, the vessel was sailing under spinnaker at a speed of about 10 knots when it struck a whale with the keel and ruder. The vessel was undamaged but the owner reported a significant amount of blood around the water. The species is unknown but was thought to be dark blue in colour with a back fin and around 6m in length. He was unable to assess the injury to the whale.

Baja Ha-Ha XVI Cruising Rally⁸

At the end of October 2009, 165 sailing boats and 601 sailors participated in the 760 mile Baja Ha-Ha XVI Cruising Rally from San Diego, California to Cabo San Lucas on the southern tip of Baja California, Mexico. The participating vessels ranged from 24ft to about 94ft in length.

On 29th October the J120 40ft yacht *J/World* was sailing at about nine knots under a small jib and reefed main. Winds were 15-20 knots, gusting 25 to 30 knots. The seas were about 5m with large swells.

When on the crest of a swell a member of the crew spotted a humpback whale about 60m to port. Shortly after, a second whale was spotted on the starboard side. Another 2 whales were spotted about 15m away from the vessel but before any diversionary action could be taken, the *J/World* struck a whale with the keel which felt like the vessel had run aground.

Almost immediately afterwards the vessel's shaft and propeller struck the whale and blood was seen in the water. The owner believed the whale then struck the vessel with its tail, jamming the rudder post up and aft, creating a hole in the transom area.

The vessel sank within 45 minutes of the strike. The crew were rescued by the US Coast Guard having abandoned the yacht and taken to the life raft. There is no information to assess the injury to the whale.

Examples of Strikes of whales during Ocean Sailing Races

Artemis Transat Solo Trans Atlantic Sailing Race – May 2008⁹

24 IMOCA¹⁰ Open 60s and Class 40s crossed the start line for this race across the Atlantic on 11th May 2008. Several vessels reported striking a whale although one was possibly a whale shark. 2 of the strikes were catastrophic for the vessels.

1. On Day 5 of the race, 600 miles NNE of the Azores and 180 miles west of the Mid-Atlantic Ridge Open 60 *Foncia* struck a whale. The skipper was uninjured but the impact caused concern for the structural integrity of the boat. The starboard daggerboard had struck the whale and broken. With the boat

instantly rendered uncompetitive, the skipper retired from the race and made the 1,000 mile voyage back to Brittany.

2. On Day 10, 360 miles SSW of Newfoundland the skipper of Open 60 *PRB* felt a violent but soft shock but no carbon crack. He saw two objects emerge from the back of the vessel and believed the vessel had cut a whale shark into 2 pieces. Damage to the vessel and harsh weather ahead resulted in the skipper seeking rescue and the vessel was abandoned.
3. Two days later, approximately 40 miles north-west of the *PRB* collision, Open 60 *Roxy* travelling at no more than 7 knots, was subject to a loud bang and the vessel came to an abrupt halt. A whale had been struck by the dagger board causing it to pivot in its casing. The leading edge of the board had hit the deck causing damage. The skipper was able to continue the race as the dagger board casing and hull were not damaged.
4. On Day 9 of the Open 40s race the skipper of Akilaria 40 *Mistral Loisirs* reported striking a whale. The keel bulb appeared to be embedded in the side of the whale and blood surrounded the vessel. The whale released itself and there was no damage to the vessel.
5. On day 15 about 300 miles south of Newfoundland, Open 40 *Custo Pol* encountered a brutal collision which immediately halted the vessel. The skipper speculated that it was probably a whale struck on the skull. The vessel appeared to incur no damage.

*Portimão Global Ocean Race*¹¹

6 yachts crossed the starting line in October 2008 for the first ever round the world race for 40ft yachts. 2 yachts reported striking a whale.

1. On 19th October 2008 at 13h:20 local time at 21:45N and 18:43W, *Kazimir Partners* lurched to a halt with a loud crash having been travelling at 8 knots. The skipper reported that the boat had struck a whale with the front of the keel. The whale could not been seen and the vessel suffered no damage.
2. Off the Azores, the 2 crew members of *Desafio Cabo de Hornos* reported that they were frequently sighting whales and were concerned about the danger of a collision. During the day it was possible to keep a constant watch for whales but at night this was impossible and they were trying not to think about the threat.

Despite constant vigil, *Desafio Cabo de Hornos* sailing at about 15 knots under spinnaker struck something that felt like running aground in soft sand and the vessel broached out of control. The yacht suffered no damage and the skipper presumed it had struck a whale with the keel bulb.

The skipper noted that had the vessel struck a whale on the surface at 15 knots, the impact at the waterline could have had extremely serious consequences with potential structural failure to the yacht, personal injury and possible mast damage, or dismasting from the whiplash shock of slamming to an abrupt halt from 15 knots boat speed.

*2008 Vedee Globe Race*¹²

On November 9th 2008, 30 IMOCA 60 foot Class Rules 2008 sailing boats crossed the start line for this single handed non-stop race without assistance.¹³ 2 yachts struck whales.

1. The skipper of *Safran*, reported that around noon on 1st December 2008 his yacht had struck a whale near the Kerguelen Islands approximately 23:56W and 31:10S in the mid-South Atlantic. The vessel came to an abrupt halt from a speed of about 20 knots. A large whale was spotted writhing on the surface in a great deal of pain.

The rudder became detached and the damaged daggerboard had to be replaced. With some repairs the vessel was fit to continue the race. However, on the 9th February, off the Azores, the keel fell off the vessel. The skipper concluded that this was the result of damage from the collision with the whale several weeks previously. He managed to sail the vessel to the finish line without the keel.

2. On 9th January 2009 the skipper of IMOCA Open 60 *Veolia Environment* reported that a whale had been struck about 800 miles off the coast of Argentina. He was woken by a violent shock in the early evening. At first he thought he had lost one of his red sails but soon realised it was blood from a whale that he saw swimming away.

The vessel suffered cracks around the keel box and the compartment at the foot of the mast bulkhead. Repairs were essential or the mast would have fallen through the hull. The skipper was able to continue the race.

On 29th January, it was reported that *Veolia Environment* had lost its keel bulb – probably a result of the damage from the whale strike 3 weeks earlier. The skipper retired from the race and was able to sail into the Azores. It was noted that had the weather been bad the consequences for the skipper could have been very difficult.

Discussion

Strikes of whales by sailing vessels appear to be random and unpredictable. The damage to a yacht involved in a strike can vary from minimal to catastrophic whether the yacht is cruising or racing.

Possibly hundreds of thousands of yachts sail the seas and oceans every year and only a very few suffer a collision with a whale. A strike of a whale by a sailing yacht, however, has the strong potential to injure or put at risk the lives of sailors due to the force of the impact and the structural damage caused by it. Sailors having to abandon their yacht are at increased risk, particularly if they have to take to a life raft. In addition strikes can occur in very isolated areas of ocean where rescue is difficult to immediately achieve.

Repeatedly very experienced racing and cruising sailors have reported that whilst they are aware that striking a whale is a real possibility that could cause catastrophic damage to their yacht, it is not possible to keep a 24 hour watch for whales, even at times where there are whales in an area they are sailing through. A very experienced ocean racing sailor noted *"This is almost a taboo subject as we prepare for our forthcoming race. We know it is a serious problem but we cannot do anything to prevent it."*¹⁴

It would appear that when sailing in rough seas, spotting whales can be very difficult. At night it is almost impossible. In addition it would appear that whales are not able to see or hear sailing yachts moving through their direction of travel.

Further analysis of the structure of racing vessels may be useful in finding solutions to this problem. As discussed by Ritter (2009)¹⁵ the shallow hull and a slim dagger

shaped, bulb tipped keel of up to about 4.5m in length may well be “invisible” to a whale swimming beneath the vessel or towards it. Some of the reports of the strikes in this review suggest that the whale was struck by the keel bulb. One whale was seen with the keel bulb embedded in its side for a short time.

Very little information is reported on the species of whale struck and in some cases the whale was not seen and there was no blood visible in the water. This may be because the whale had not surfaced until the yacht moved out of sight.

It is almost impossible to assess the physical impact of a strike on an individual whale. Considering a strike can bring a 60ft sailing vessel to an abrupt halt from travelling at a speed of up to about 15 knots, it can be assumed that the whale will be seriously and quite possibly mortally injured. It can also be assumed that some animals may not die instantly and will suffer for some considerable time from their injuries. There are therefore serious welfare implications for whales struck by sailing vessels.

Damage and loss of vessels as a result of strikes have considerable financial cost implications for the owners, sponsors and the insurers. Incidents of strikes also have the potential to create unfavourable publicity for race organisers and participants.

Many sailors report that they would like to see the development of a device that could warn whales of the presence of a sailing vessel. Some also suggest development of a device that could give sailors better warning of whales that are in the vicinity of their vessels.

Greater engagement with race organisers and cruising associations could result in increased reporting of detailed descriptions of collision cases that would contribute to greater understanding of the problem.

In addition engagement by those involved in the conservation and welfare of cetaceans with relevant stakeholders including owners, sailors, sponsors, event organisers, yachting associations, yacht designers and builders, and insurers could have significant benefits. These include identifying specific problems and development and implementation of mitigating measures that could reduce the risk of whale strikes by yachts.

Conclusions

Whilst only a very small percentage of sailing yachts strike a whale, this is a serious problem for cruising and racing sailors, event organisers, yacht designers and builders, insurance companies and those concerned with the conservation and welfare of whales.

Cruising and racing sailing yachts have the potential to randomly and unintentionally strike a whale, with the potential to cause serious or life threatening injury to the whale and the crew members. Damage to a yacht can be catastrophic and has significant cost implications.

It is almost impossible to assess the extent of the injury to a whale at the time it is struck. It is possible that the injury could cause extended suffering or death. Whales from threatened and more plentiful populations can be affected.

Many sailors, particularly those involved with ocean racing, seem to be generally aware and concerned that striking a whale is a problem and a possibility. However increased outreach to the yachting community is required to increase reporting of incidents.

It is reported to be virtually impossible to keep a watch for whales 24 hours a day, particularly at night even when whales are prevalent in an area. In addition it would appear that whales are frequently unaware of the presence of yachts travelling towards them or in their path for a number of reasons.

Suggestions have been made that development of technical devices that could alert sailors of the presence of whales in their vicinity and whales to the presence of yachts may have the potential to mitigate this problem.

Recommendations

The problem of strikes of whales by sailing vessels has serious implications for the sailing industry and insurers and has significant welfare and conservation implications for whales.

1. Reporting detailed descriptions of collision cases is essential to try to assess the extent of the problem, hotspots and reasons why collisions occur.
2. The dialogue with the sailing industry is only just beginning. Greater engagement with cruising and racing organisations is essential to ensure increased reporting and data analysis.
3. Development of a coordinated dialogue between the relevant stakeholders including the IWC and other MEAs¹⁶, NGOs, cruising and racing organisations, individual sailors, yacht designers and builders and insurers is essential if solutions are to be found that will significantly reduce this risk.

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