

Review of ship strike with whales in Japanese waters

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Abstract

In order to contribute to the Committee's work on ship strikes and identify possible cases that could be included in the IWC database, the available literature was collected and reviewed for ship strike records around Japan. Twelve incidents between 1978 and 2012 were identified. All the documented cases of confirmed or possible ship strikes with whales around Japan involved jetfoil vessels.

Very few shipping companies keep records of cetacean sightings or appear to record collisions with cetaceans unless the collision caused injury to passengers or crew. Other types of vessel may well have been involved in collisions with cetaceans but are less likely to have suffered damage than high speed jetfoils. Even when a collision took place that was believed to be with a cetacean there was often no information on the species involved. In two thirds of the incidents reviewed pieces of meat or blubber were found suggesting potential for DNA analysis to identify species in future cases if samples are collected and appropriately preserved.

Background

As a country surrounded by sea, there is considerable shipping activity around the coast of Japan. Data from October 2009 show that for passenger ships alone, there were 9 international routes between Japan, Korea, and China, operated by 12 companies with 17 vessels (MLIT 2013). As of April 2013 there were also 1,682 domestic passenger ship routes operated by 950 companies with 2,274 vessels. Among these, super high-speed vessels known as jetfoil are used by 7 operators on 11 routes using 16 vessels. These are mainly domestic except for one operator which uses 3 jetfoil vessels on an international route to South Korea. One company which started jetfoil operation in 1977 between Niigata on Honshu Island and Sado Island (37°50' - 38°20' North, 138°10' - 33' East) in the Sea of Japan has kept records of whale sightings. Those reports were compiled by researchers and reported regularly.

Methods

Various web searches for literature regarding possible ships strikes to whales were conducted including the Journal of Japan Cetology Research Group, and official documents by Ministry of Land, Infrastructure, Transport and Tourism (MLIT) on accident investigation reports.

Results

The following list of incidents were found;

On 17th September 1978, collision off Sado Island, 2 pieces of meat, 1 kg, found at hydrofoil. Author judged those were from whale from cancellous bone. (Honma et al 1997, Honma 2003)

On 4th January 1985 a collision occurred off Sado Island, a short-finned pilot whale injured by contact was caught in net 5 days later. (Honma et al 1997, Honma 2003)

On 9th September 1992 there was a collision, off West Niigata; pieces of blubber and meat were observed floating around the site. (Honma et al 1997, Honma 2003)

On 31st October 1994 there was a collision off Sado Island, 193 g of pieces of muscle and bone were in water intake pipe. By histological observations, authors concluded it was a whale greater than 4 m in length and 4 tons in weight. (Honma et al 1997, Honma 2003)

On 25th November 1995 following a collision off West Niigata, underwater video was used to try to salvage parts of the vessel from the sea bed. This video recorded objects around 150 m from vessel parts which the author believed were the tail parts of a large whales. (Honma et al 1997, Honma 2003)

On 2nd March 1997, collision off Sado Island with unknown object. The ferry company discovered small piece of muscle with skin in intake pipe of the vessel. The day after the collision, a female beaked whale stranded on a beach about 100 km from the collision point (Honma et al 1999). These authors used histology and genetic identification methods to compare both samples. From genetic identification, they concluded both samples were from the same individual and that the species was Stejneger's beaked whale.

On 8th March 1998, a moderate collision occurred in mid Sado Strait. Pieces of internal organ and bone from water intake pipe were found. By histological method, authors concluded the bone seems to be from a small cetacean, such as a small toothed whale. (Honma et al 2001)

On 29th October 2004, a vessel had a mild collision near West Niigata port. No damage was reported. Next, in port, a small piece of animal tissue which seems like whale skin and blubber was found. However it was old and decomposed tissue, and thus disposed of without DNA analysis. (Honma and Kogawara 2005)

On 15th May 2005, around Oki Island, Shimane Prefecture, Sea of Japan, a jetfoil collided with what was reported to be a whale. However, a piece of meat was scavenged by birds. (Honma and Kogawara 2005)

On 15th June 2005, the same ship collided with something that looked like whale near Oki Island. (Honma and Kogawara 2005)

On 9th April 2006, near Cape Sata (30°59'N, 130°39'E) Kagoshima, a jetfoil of Tane Yaku Jetfoil company struck an object that looked like a whale. (Osumi 2006)

On 22nd April 2012, near Cape Sata, a jetfoil was involved in a collision. The incident investigation report by Japan Transport Safety Board (Marine division) stated the cause was thought to be a collision with a whale. The chief engineer saw a black body with dissected mark and red sea surface; the captain and first mate saw red sea surface and thought it was a whale. A passenger saw a whale and blow right after the strike, and many other passengers also saw the blow and or red sea surface. In the same report, the National Maritime Research Institute state a dead humpback whale was later found about 60 km away. The Institute considered humpback whale or sperm whale as likely species based on the impact to the vessel but didn't come to any firm conclusion (Report of Japan Transport Safety Board (Marine division), 2013)

Discussion

Although most of above incident list cannot be fully confirmed as a collision with a whale, the evidence suggests that a cetacean was hit in many of these cases. It is likely that many cases have not been noticed or reported. Even Sado Liner which keeps sighting records and works with researchers missed the case of a possible strike on 29th October 2004. Although it is not reported in media, in reality, it likely that similar accidents are frequent on a cargo ships and the fishing ships (Osumi 2006). Jetfoils are much more likely to notice and report collisions than other types of vessel because of the potential for damage to the vessel in a collision in addition to the high speed of the vessel.

In many cases there were cases pieces of skin or muscle found from vessel after collision. It is important to conduct DNA analysis wherever possible to confirm a ship strike and identify the species involved. Mariners also need to be made aware of the importance of reporting even minor ship strikes.

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Fig. 1 Map of Japan with 3 ship strike places

