

Progress Report on the Killing Method of Whales in the Second Phase of Japanese Whale Research Program in the Antarctic Sea (JARPAII) and Northwestern Pacific Ocean (JARPNI)

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Japanese Whale Research Programs have been conducted since the 1987/88 season in the Antarctic Sea (JARPA and JARPAII) and since the 1994 season in the Northwestern Pacific Ocean (JARPNI and JARPNI). Since these programs adopt lethal methods, whale killing methods have been examined and improved with a special interest in reducing the time-to-death (TTD) and increasing the instantaneous death rate (IDR) of whales. This document reports major efforts and results on the whale killing method mainly from 2005 to 2009 season in the Japanese whale research (JARPAII and JARPNI).

DATA COLLECTION, ANALYSIS and TRAINING of GUNNERS

Improvement of the whale killing method has been conducted based on the IWC Action plan developed at the workshop on whale killing method in 1992 (revised in 1995 and 1999). This action plan especially encouraged improving whaling equipment and methods to reduce TTD.

Data collection

Japan has been collecting catch records including the TTD for all whales taken by sampling vessels (catcher boats). The catch records include all firing time of a whaling cannon, detail of grenade used and the IWC criteria used for death confirmation of the whale. All firing time of a rifle and type of bullets are also recorded, if the secondary killing (back up) method is used. Necropsies (gross anatomical observation) of whale carcasses have been conducted by a veterinarian or an experienced biological researcher on the research base ship. The necropsy record* includes the hit point and internal track of the whaling harpoon, explosive point of the grenade, examination of the harpoon wounds and the effect of bullets used for the secondary killing method.

*From 2008/10 season, the necropsy record of Antarctic minke whales was simplified to record the hit point and internal track of the explosive harpoon.

Data feedback system and data analysis

In mother-ship type operation of the whale research, it is difficult for a gunner to examine a whale carcass shot by him. Therefore, during the research cruise, the necropsy records obtained by a researcher on the research base ship are sent to the gunners on the sampling vessels as soon as possible so that they can review in detail the results of their shots while their memories are still fresh. When the whale did not die instantaneously, the gunners learn the reason of prolonged TTD and make good use of data to correct their shooting in next time.

Firing accuracy has been improved as gunners gain knowledge about the most preferable firing angles and shooting areas in the whale body by combining their experience with the anatomical and medical data from a researcher on the research base ship. This rapid-analysis and data-feedback system has been considered as the main reason for the successful improvement of the TTD and IDR in the Japanese whale research (Ishikawa, 1999). All data was accumulated and analyzed so as to improve killing method of whales. Gunners and crews of sampling vessels are briefed at a pre-cruise meeting on the analysis of the past research for the killing methods and are encouraged to achieve the shorter TTD and higher IDR.

Recruitment of new gunners

Cadets for gunners were recruited in 2004. These excellent crew of the sampling vessel were selected as gunner trainees and were getting experience year by year. The gunner cadets are on board with regular gunners and are allocated a number of firing opportunity. The regular gunners are responsible for the training of the cadets and report progress of training to their company in every cruise.