Djóralæknatænastan

Varðagøtu 85 FO-100 Tórshavn tlf 315273 fax 317819

e-mail: faroevet@post.olivant.fo

www.djoralaeknin.com

Information from the Faroe Islands to the NAMMCO Expert Group meeting on small whale killing, Copenhagen Nov. 15th to Nov. 17th 2011

The description on small whale killing is based on excerpts from the following documents with the addition of new data:

NAMMCO/99/WS/2, (Translation from Danish***)**
Killing Methods and Equipment in the Faroese Pilot Whale Hunt

* English translation of paper in Danish ("Om avlivningsmetoder og udstyr for færøsk grindefangst") - NAMMCO/99/WS/2 - presented to the NAMMCO Workshop on Hunting Methods, Nuuk, Greenland, 9 – 11 February 1999.

Draft report to NAMMCO Committee on Hunting Methods, Nov. 2011
Trials with new whale killing equipment in Faroese whaling

NAMMCO/2006/ Workshop on Struck and Lost in Seal, Walrus and Whale Hunting
A Study on Struck-and-Lost in the Whale Drive Hunt in the Faroe Islands June 2005 – September 2006
By Justines Olsen, Senior veterinarian,Veterinary service,Tórshavn,Faroe Islands

Present laws and regulations

Having an important role in Faroese society, the pilot whale drive hunt was subject to legislation from an early stage. Legislation has been continually adapted in line with social and technological changes. Current laws and regulations with relevance to whaling in the Faroe Islands are listed below:

" Parliamentary act No. 57 from 5 June 1984 on whale hunting, as amended with parlamentary act No. 41 from 2 May 1986, parliamentary act No. 92 from 13 June 1995 and parliamentary act No. 54 from 20May 1996"

"Executive order No. 72 from 6 June 2011 on Pilot Whaling"

"*Executive order No. 107 from 21 November 1989 on authorized whaling bays, with amendments in 1992, 1993 and 1994"*

"Executive order No. 19 from 1 March 1996 on exemption from protection of whales"

This last order stipulates which species of whales are exempted from the principal protection of all whales. These species are:

Pilot whale, bottlenose dolphin, white-sided dolphin, white-beaked dolphin and harbour porpoise.

The Ministry of Fisheries is the central authority responsible for the regulation of whaling. The Ministry has delegated the administration and supervision of the drive hunt at the 23 authorized whaling bays in the 6 districts to the districts administrators in each district.

In every whale bay four men are appointed as pilot whaling foremen and in addition there are two substitutes. These men are responsible for leading the pilot whale hunt if the district administrator is not present and in other ways assist the district administrators. They are appointed or elected for five years and can be re-elected. The foremen are elected amongst persons who have local knowledge regarding each whaling bay, such as weather conditions, tidal water and currents.

Whaling Bays

The Faroe Islands are divided into six districts with 23 whaling bays. The most important criterion for a whaling bay is that the sea bed slopes gradually up to the shore line. The whaling bays are authorised according to this criterion after a thorough scanning of the bottom conditions. Whaling bays which do not fulfil this criterion are either abandoned or improved so to fulfil this criterion. Apart from this it is also necessary to have space enough to do the work in connection with the killing of the whales.

Driving the pilot whales

Pilot whales can be sighted either from land or from sea or even from the air. Once the whales are sighted, the district administrator, the foremen or both have to decide to which whaling bay the school shall be driven. Once the decision is made where to drive the school, the boats form in a semi-circle behind the whales and stones are thrown into the water to make air bubbles, which help herd the whales in the desired direction.

Just before the school approached the whaling bay the boats are arranged by size, so the smallest boats, which can get closest to the beach, are in the front row, while the larger boats are kept behind. By this arrangement the school is beached or driven so close to the beach that people from land can wade out to the whales to secure them for the killing.

Killing method and equipment

The actual killing method has changed very little throughout the history of the hunt in the Faroe Islands. The main idea has been to secure the whales either directly by hand or with an iron hook, fixed in the whale's outer layer of blubber and muscle, after which the whale is cut across the back of the neck and down to the spinal cord, severing both the main blood supply to the brain as well as the spinal cord. Once this cut is made, the whale lies completely paralyzed and unconscious. The cut is made a hand's breadth behind the blowhole. For this the whaling knife – (in Faroese *grindaknívur),* is used. There are no specific formal requirements with respect to the whaling knife; but in most cases the length of the blade is between 16 and 19 cm.

Instead of the iron hook a new blunt hook was introduced in 1995 as equipment for securing the whale. It is used to insert in either of the vestibular air sacs of the blowhole. With this invention the whale is not wounded until the final cut over the back of the neck and total killing time is thereby reduced. Securing the whale with this new hook makes it much easier to guide the whales to the beach.

In the whaling regulation, the use of both the iron hook and the blunt hook are permitted for securing the whales. It is suggested that only the blunt hook will be allowed in the future and that the iron hook will only be used if special permission is given from the district administrator or whaling foremen in circumstances where the blunt hook cannot be used. At the present time trials are being carried out with a new spinal lance in connection with the slaughtering. The idea of this spinal lance is to make the final cut much swifter, and thereby reduce the killing time.

Duration of slaughtering entire schools of whales

At each drive hunt the total time for killing the entire school is recorded. These data are combined and presented as an overview in Table 1, (1995-1998) and table 2, (1999- 2006) which provides information on total duration of the killing stage in a number of whale hunts. If the duration is brief, this would indicate that the drive and hunt have been well organised. A longer duration does not, however, necessarily mean that the drive and slaughter were not successful. The number of whales in the school will have an influence on the total duration of the slaughter. Another essential factor is whether there are enough people involved in carrying out the work. This is not always the case.

	02-10 min	**11-20 min**	**21-30** min	**31-40 min**	**41-50 min**	**51-60 min**
Number of hunts	26	12	4	3	1	1
Percent of total	55%	26%	9%	6%	2%	2%

Table 1: Duration of slaughter of entire school in 47 pilot whale hunts in the period 1995-1998

	02-10 min	**11-20 min**	**21-30 min**	**31-40 min**	**41-50 min**	**51-60 min**
Number of hunts	22	17	9	1	3	2
Percent of total	41%	31%	17%	2%	5%	4%

Table 2: Duration of slaughter of entire school in 54 pilot whale hunts in the period 1999-2006

	02-10 min	11-20 min	21-30 min	31-40 min	41-50 min	51-90 min
Number of hunts	9	8	2	1	1	1
Percent of total	41%	36,5%	9%	4,5%	4,5%	4,5%

Table 3: Duration of slaughter of entire school in 22 pilot whale hunts in the period 2007-2011

Killing time for individual whales using the traditional whaling knife

The killing of the pilot whale can be divided in two phases. The first phase is the time from which the whale is secured with the traditional pointed whale hook or the newer blunt hook inserted into the vestibular air sac of the whale's blowhole. The second phase is the actual severing of the spinal cord and the surrounding blood vessels. The killing time consists of both these stages if the traditional hook is used, but only the second phase if the blunt hook is used, as this does not wound the whale.

In the period from 1995 to 1998, data on killing time was collected from several whaling locations. With the use of the traditional whaling hook, the average total killing time taken in the 199 whales recorded was 65.4 seconds, with a range of 8.0 to 290 seconds, and with 50% of whales killed in 55.3 seconds. With the use of the blowhole hook, recorded with a total of 52 whales, the average killing time was 29.2 seconds, with a range of 6 to 211 seconds, and with 50% of whales killed in 20.0 seconds. These results are shown in Tables 1 and 2 and Figures 1 and 2.

	a) Securing (using traditional whaling hook)	b) Slaughtering (spinal cut with whaling knife)	c) Total Killing time
Average	29,3	36.1	65.4
Minimum	0	3.5	8.0
Maximum	132	195	290
Median	23.9	25.2	55.3

Table 1. Total killing time in seconds (c)), divided according to securing (a) and slaughtering (b) times, recorded for 199 pilot whales with which the traditional whaling hook was used to secure before slaughter (see also Figure 1**)**

	a) Securing (using blunt, ”blowhole” hook)	b) Slaughtering (spinal cut with whaling knife)	c) Total Killing time
Average	20.1	29.2	29.2
Minimum	3	6	6
Maximum	90	211	211
Median	14.7	20.0	20.0

Table 2. Total killing time in seconds (b) and (c) recorded for 52 whales with which the blowhole hook was used to secure whales prior to slaughter (a) (see also Figure 2).

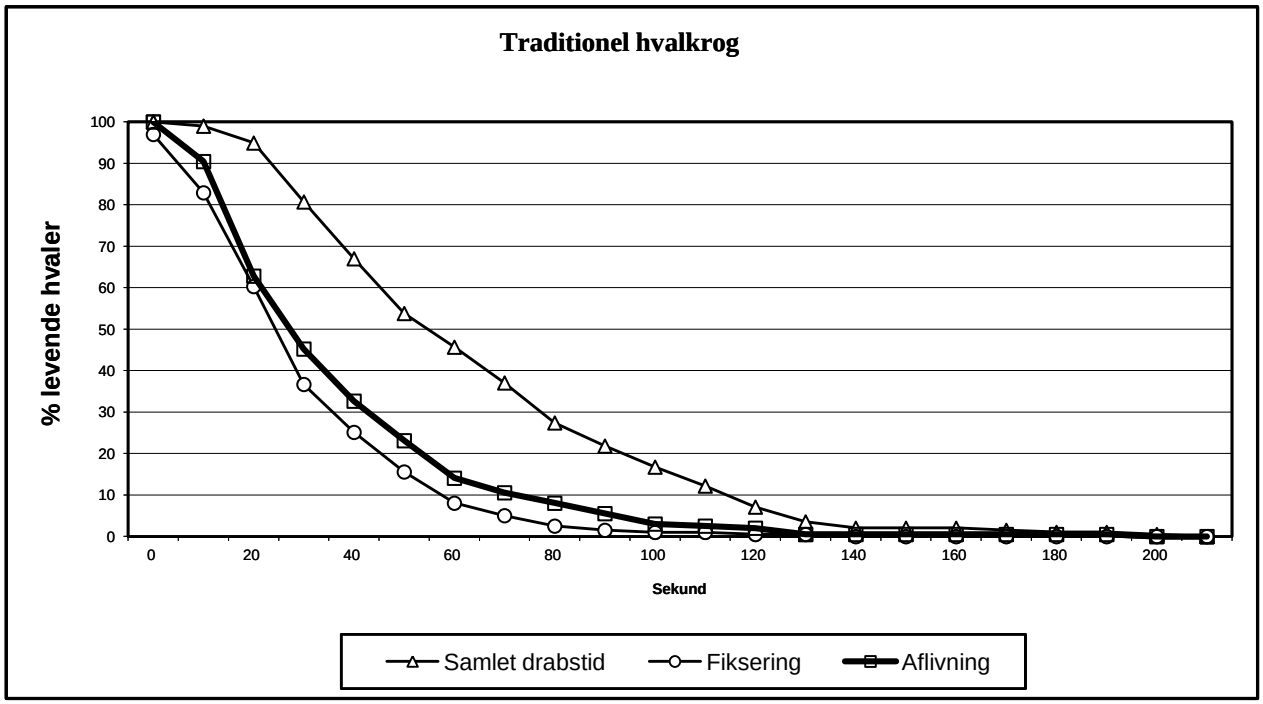

Figure 1. Killing time in Faroese pilot whale hunts in which the traditional whaling hook was used. Key to symbols: O - O: The time from which the whale is secured with the whaling hook until the first incision of the whaling knife; □ - □ : Slaughtering with the knife; Δ – Δ: Total killing time, (cf. Table 1). Vertical axis: % of living whales; Horizontal axis: Seconds

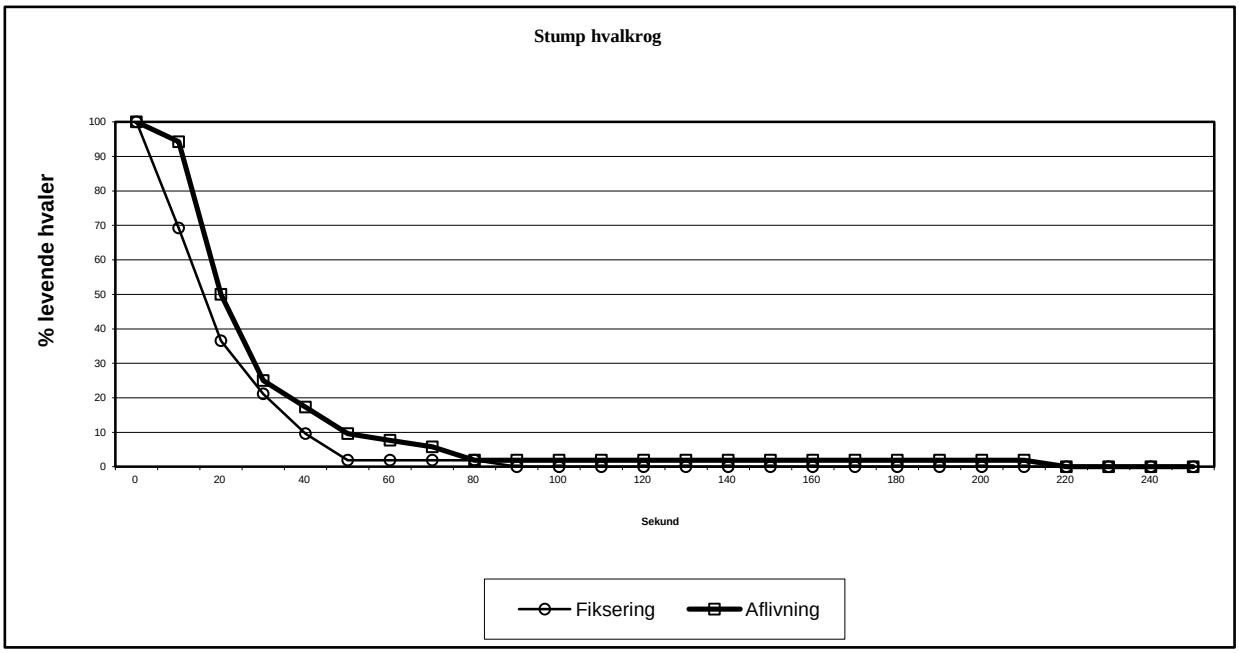

Figure 2. Killing time in Faroese pilot whale hunts in which the blowhole hook was used. Key to symbols: O - O: The time from which the whale is first secured with the blowhole hook until the first incision of the whaling knife; □ - □: Total killing time (cf. Table 2). Vertical axis: % living whales; Horizontal axis: Seconds

Killing time for individual whales using spinal lance

Trials with new killing equipment for pilot whales have been going on since 1998. A whaler came up with an idea and an invention to improve the killing method and make it quicker and also safer to use for the whalers.

The basic idea is instead of using the traditional whaling knife to severe the spinal cord and the surrounding blood vessels, it would be quicker and safer to use equipment that could obtain the same result with a single thrust. The first version of this tool was shaped like a spear and could be thrust into the spinal canal and the duration of this action is estimated to take 1-2 seconds. This equipment has been adapted into six versions and has ended up becoming a spinal lance with a sliding sheath fixed on its shaft. This equipment has generated widespread interest and support amongst whalers and the intention is to have this new equipment adopted into the whaling regulation. It is expected that this equipment will reduce the actual killing time from an average of 29 -36 seconds to 1-2 seconds.

Monitoring the killing time by means of stop watches has been considered. The killing time for this spinal lance consists of the time from the start of the incision until the spinal cord and the surrounding vessels are cut. The duration of this procedure, estimated to be is too short to allow reliable measurement of the killing time using stop watches.

The final prototype for the spinal lance has been finally accepted and the technical specifications recorded. The intention is that only this prototype shall be allowed in the hunt and that the whaling knife will only be used if special permission is given from the district administrator or whaling foremen in circumstances where the spinal lance cannot be used. It

is the intention that the spinal lance can only be used by whalers who have received instruction on its use, and have been issued a licence to use it.

Struck-and-Lost Factor in the Whale Drive Hunt in the Faroe Islands based on a study June 2005 – September 2006

It is only during the beaching that pilot whales can be wounded apart from the killing as such. They may hit the bottom and get skin scratches or wounds. If the whales are not all properly beached in the first attempt, some of the whales may swim in between the boats and can be hit by keels and propellers. If these whales are killed there will not be any loss for that reason. If not, they might escape wounded into open water. Sometimes it can be impossible to beach a school or part of a school and some of the whales or all have to be driven out again into open water. In such circumstances, some whales which are let out into the open water might be wounded. There is no information about how often this happens. The study below tries to highlight this problem.

Whales can also be lost after the killing is completed. Dead whales might slide from the beach out into deeper water in the whaling bay, and be swept out by tides. When the killing is over, the visibility in the bay is bad due to the blood in the sea water. It can take hours to wash out again. Because of this it can be very difficult to retrieve whales that have sunk.

After the killing, all the whales are hauled off the beach, attached to participating boats and towed to the nearest suitable harbour to be butchered on the quay, fig. 3. The distance from the whaling bay to the quayside may vary from a few hundred metres up to ten kilometres. During this towing, lines can break and whales can be lost. The same can happen when the whales are hoisted by crane on to the quayside
Dead whales that have sunk and are not retrieved immediately will float to the surface at a later stage and will be spoiled and for that reason are lost.

With respect to struck and lost elements a whale drive hunt can be presented as in the chart below:

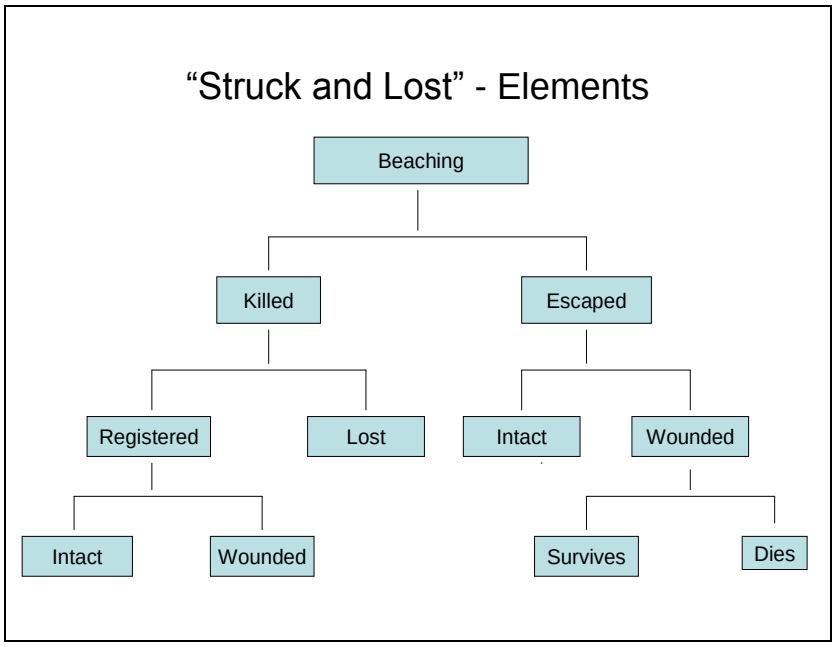

Chart 1: Schematic description of struck and lost elements in the drive hunt

Elements for investigations in the struck and lost study

During the period from June 2005 to September 2006 different elements with respect to the occurrence of struck and lost in the Faroese whale drive hunt were analysed. In this period it was possible to collect data from eight hunts with a total number of 762 whales killed and registered. In this period there were 24 drive hunts with a total number of 1800 whales, both pilot whales (902), as well as bottlenose dolphins, *Tursiops truncates*, and white-sided dolphins, *Lagenorhyncus acutus* (898).

Total number of whales registered in each single hunt.

Number of whales reported escaped in connection with the beaching.

Number of whales reported found after the butchering was completed.

Whaling bay	Date	Whale registered	Escaped during beaching	Lost atter killing	Wounded total	Killed with epidermal wounds	Killed with deeper wounds
Sandur	16.06.05	54	0	0	2	1	1
Húsavík	12.07.05	56	0	0	0	0	0
Gøtu	20.02.06	37	0	0	1	0	1
Gøtu	04.04.06	138	0	0	11	7	4
Gøtu	07.08.06	131	0	0	0	0	0
Leynar	06.09.06	141	0	0	6	3	3
Sandág.	19.09.06	176	0	0	9	5	4
Fuglafj.*	29.09.06	29	0	0	0	0	0
All bays		**762**	**0**	**0**	**29**	**16**	**13**

Table 1: Results of investigation of struck and lost elements in the Faroese whale drive hunt. * White-sided dolphins, *L. acutus,* only.

The analysis of eight whale drives in the Faroe Islands shows clearly that struck and lost is not a problem in this hunt. In total 762 whales were registered, no dead whale was reported as lost and no whale escaped during the beaching.