

Ref.	Recommendations	FO	GL	IS	NO	Council /CHM
WORKSHOP 1999 - on Hunting Methods						NAMMCO AR 1998, 5.1.2, p 25 Council agreed to proposal from CHM to hold WS on Hunting methods WS-1999. NAMMCO AR 1999, item 5, p. 27 Council endorsed all recommendations from the WS-1999.
	1. Faroe Islands: hunting of long-finned pilot whale		NA	NA	NA	
	The WS notes that the pointed hook is still in use and recommends that further effort be made to replace this with the new blunt hook for securing the animals.	The Ministry of Fisheries produced and distributed 620 blunt hooks to the different whaling bays. In addition, whalers can buy it various places. (NAMMCO AR 2001, p. 62.)				
	2. Faroe Islands: killing of stranded northern bottlenose whale Stranded bottlenose whales are killed in the same way as pilot whales. Questions were raised whether this is an adequate method of killing such a large animal, and it was recommended that rifles with adequate ammunition be used for killing stranded whales of this species.	The rifle, calibre .458 round nosed full metal jacket ammunition is placed at the sheriff's office in Suðuroy, where stranding of bottle nose whale happens most frequently. (NAMMCO AR 2001, p. 62) Shooting tests on dead bottlenose whales show that calibre .458 round nosed full metal jacket ammunition is satisfactory (NAMMCO Annual Report 2002, p. 64)				

3. Greenland: hunting of small cetaceans	NA		NA	NA	
<p>3a. Full metal jacket, pointed bullets are used to kill harpooned small whales (beluga and narwhal). Investigations show that full metal jacket, blunt-nosed bullets penetrates bone better. The Workshop recommends that Greenland initiates studies in co-operation with the hunters, testing both pointed and blunt bullets on whale carcasses to determine the best ammunition for use in the hunt.</p>		<p>No systematic study has been carried out, because the studies done in other NAMMCO countries has been available and used for the recommendations.</p> <p>Recommendation on ammunition in Greenland has to be based on animal welfare, availability in all parts of Greenland and economy.</p> <p>The commercial company distributing ammunition and weapons in Greenland are only able to make the most common types of ammunition and calibres available at affordable prices. See also rec. 3 from WS-2001.</p>			<p>CHM 01.2007: the guidelines developed by Olsen and Øen in 2006 may function as a model on how to perform the shooting tests in a standardised way. A prerequisite would be to have enough heads of small cetaceans for the trials.</p>
<p>3b. It was further recommended that Greenland develop objective descriptions of hunting methods, equipment and how efficient these are in small cetacean hunting, considering regional variations.</p>		<p>EGM-2011. Manual SW developed based on the EGM report and hunters comments. Manual distributed in hard copy to all hunters of small cetaceans and available online on Greenland's Governments webpage and NAMMCO.</p>			<p>CHM 01.2007: this would encompass an extensive study and therefore more suitable as a topic for a Master's thesis, encouraged NAMMCO to work towards finding the necessary funding. EGM-2011 and Manual SW.</p>
<p>3c. Greenlandic hunters had started developing a new handheld harpoon to improve the efficiency of beluga, narwhal, walrus and seal hunting. The Workshop views this as a positive initiative and recommends that Greenland continue to support this project.</p>		<p>In 2003 the new handheld harpoon (the steel lance) had been developed and could be ordered for production at the shipyards in Greenland. (NAMMCO AR 2002, p. 64). EGM-2011 and the Manual SW describes the improvements the hunters have experienced with the iron harpoon.</p>			

<p>4. Baleen whale hunting</p> <p>4a. A Norwegian hunter initiated the development of a new whale harpoon that can be adjusted for each individual harpoon canon. The Workshop recommends that Norway continues to support this project.</p>
<p>4b. Concern that Greenland hunts minke whales using rifles and handheld harpoons as the only weapons. An in-depth discussion revealed significant disagreement. (WS- 1999, page 12). The Workshop recommends that this hunting method be subject to a critical analysis and an objective description of methods and equipment, with the goal of determining necessary adjustments.</p>
<p>4c. The Workshop recommends that Greenland continue to work towards the goal of using the harpoon grenade in all hunts for baleen whales. It is, however, a source of concern that the penthrite harpoon grenade is so costly in Greenland that many hunters cannot afford to use it. The Workshop recommends that Greenland initiate an enquiry into the reasons for the price policies and work towards a price change.</p>

<p>Analysis of TTD and S/L rates for the different hunting methods have been presented to the IWC. Detailed analyses of S/L rates have been presented to the WS 2006 , and TTD to the EGMs (2010 and 2015). Improvements in data reporting and hunting efficiency in both TTD and S/L rates were shown together with updated relevant legislation (EO No 12 of 16. July 2010 on Reporting from Hunting of Large Whales) based on the EGM recommendations. The legislation EO No. 10 of 13 April 2005 on Hunting of Large Whales with later amendments limits the collective hunt of minke whale to areas where boats with harpoon canon cannot cover the local need of whale meat. The Riffle hunt is limited to minke whales and is the only available hunting method in East Greenland and North Greenland.</p> <p>From 2005 the price to the distributors in Greenland and Norway is the same in both countries. The Greenland Home Rule supports hunters with a 40-50 % subside in the purchase of harpoon grenades.</p>
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<p>The harpoon was qualified through shooting trials set up by ballistic experts and approved for hunting in 1999.</p>	<p>EGMs on TTD for large whales (2010 and 2015).</p>
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<p>4d. Greenland has carried out a number of improvements on weapons and equipment used in whale hunting with the harpoon canon. In addition, the hunting regulations for large whales have been developed and improved. The Workshop notes with approval that Greenland has made these improvements and recommends the work to be continued in the future.</p>	<p>The last EO that was approved was No. 12 of 22. December 2014 (replacing No. 10 of 13 April 2005, replacing No. 10 of 17 April 2009, replacing No 11 16 July 2010) on Protection and Hunting of large whales. Courses on the handling and use of harpoon grenades are given regularly. A new course on the mounting and maintenance of harpoon guns was held in Nuuk in November 2006.</p> <p>Visit to the mechanical tool-shop making the grenade and canon took place in 2015 for having a direct connection between the company and the relevant authority in Greenland and getting a thorough introduction to the involved people.</p> <p>This was followed up by making an introduction video together with the company on the Whale Grenade-99 to be used in the courses for the hunters.</p>		
<p>4e. Hunters were not able to buy the ammunition determined by experts to be the most efficient for killing whales, because it was not available in Greenland. The Workshop finds it questionable that market considerations have higher priority than professional judgement and justification and recommends that Greenland investigate the situation.</p>	<p>It is difficult to know which market considerations need to be investigated because it has not been established which ammunition is ideal in terms of efficiency; cost and associated rates of struck and lost (see recommendation 3a above).</p>		
<p>5. The Workshop notes with approval that the Greenlandic Parliament has decided to formulate an animal protection law, and in this manner create an authoritative body that can introduce the element of animal protection in hunting regulations.</p>	<p>Both the Home Rule Act No. 25 of 18 December 2003 on Animal Welfare, and the Home Rule Act No. 29 of 18 December 2003 on Nature Protection have been approved.</p>		
<p>6. In conclusion the Workshop agreed that the meeting had been valuable, in professional terms, and that it was desirable to plan a similar meeting in the future, but with a focus on particular hunting methods.</p>			<p>The NAMMCO Council endorsed the recommendation (NAMMCO AR 2000, p.27) and by 2007 three related Workshops have been organised by the CHM.</p>

WORKSHOP-2001

NAMMCO AR 2000, 5.1.3, p 27 Council agreed to proposal from CHM to hold WS on ammunition and ballistics WS-2001. NAMMCO AR 2001, item 5, p. 26 Council endorsed all recommendations from WS-2001.

<p>1. The target groups for the Workshop were hunters, administrators and scientists. The Workshop strongly emphasised the usefulness the hunters' knowledge and experience for the conclusions drawn at the meeting. The Workshop recommends that the hunters' knowledge and experience are utilised in future workshops.</p>		<p>The Government of Greenland covers the price of the participation of Greenlandic hunters, to make sure that they are able to participate from different regions of Greenland.</p>			<p>The recommendation to include hunter's knowledge and experience has been followed-up in all Workshops organised under the CHM.</p>
<p>2. The Workshop acknowledged the work on upgrading, maintenance and standardisation of the harpoon canons and other whale hunting equipment in Greenland in the past years, and of the continued follow-up efforts, including the establishment of a permanent control system. This work has resulted in considerable improvements in personnel safety and has also increased the efficiency in the killing of fin- and minke whales. The Workshop acknowledged the major economic costs that are associated with this work.</p>		<p>A new course on the mounting and maintenance of harpoon guns was held in Nuuk in November 2006. Personnel from the main boat yards of West Greenland were trained. See also recommendation 4d WS-1999.</p>			
<p>3. The Workshop referred to the follow-up work of the Faroe Islands with respect to shooting tests of different weapons and ammunition types on dead pilot whales. This information was very useful and can be utilised in standardising methods for similar studies on other species. The Workshop recommended that NAMMCO encourage the member countries to undertake more controlled and standardised studies on other species, and if necessary during ordinary hunting activities. The Workshop advised the NAMMCO Committee on Hunting Methods to develop guidelines for such studies and to make recommendations for target species.</p>	<p>Years 1999/2000 testing of blunt hook and beginning to develop what later became the spinal lance.</p>				<p>Implemented. "Shooting trials on heads of dead pilot whales – Guidelines to test the efficiency of rifle ammunition used for hunting and euthanasia of small whales" by Olsen and Øen was presented to the NAMMCO Council at its annual meeting in March 2006 (NAMMCO AR 2005, p.30).</p>
<p>4. The presentations and discussions under the weapons and ammunitions theme indicated a great variation, between the member countries, with respect to the requirements for weapons and ammunitions used in hunting adult seals. The Workshop regarded it as beneficial to investigate the possibilities for harmonising the weapons and ammunition types for each species, with due considerations to the variations in hunting conditions in the NAMMCO member countries. In this regard it would be important to utilise the experience held by the hunters, and the Workshop urged that necessary studies be undertaken in order to support the harmonisation scientifically.</p>		<p>Greenlandic legislation on sealing EO No. 16 of 12. November 2010 on protection and hunting of seals is based on the paragraphs on methods on EGM-2009 and CHM recommendations.</p>			<p>The WS-2004 was organised as a follow-up of this recommendation.</p>

WS-2001

<p>5. At the previous workshop on hunting methods in Nuuk in 1999, it was noted that the ammunition determined by experts to be the most efficient, was not always available in the stores. This remains a problem in several of the NAMMCO member countries. The Workshop repeated that it is questionable that market considerations still have higher priority than scientific and professional judgement and considerations.</p>		<p>See comment in the section related to WS-1999, 3a and 4e.</p>			
<p>6. Results from Norwegian studies on rifles used as secondary weapons in the minke whale hunt were presented at the Workshop. These results showed that full metal jacket, round nosed ammunition from calibre 9.3 mm and larger, was very efficient for killing minke whales with a shot to the brain. The Workshop recommended that when weapons are replaced this is taken into consideration.</p>		<p>In Greenlandic legislation, caliber .30.06 has been set as the minimum calibre for a secondary weapon in the minke whale hunt.</p>	<p>In Iceland full metal jacket, round nose ammune from calibre 11,6 mm has been set as the minimum calibre for a secondary weapon in the minke whale hunt from, included in regulation on whale hunting no. 163/1973, with subsequent amendments.</p>	<p>In Norway calibre 9.3 mm has been set as the minimum calibre in the minke whale hunt from 1993. (Regulation 31 March 2000 on the conduct of minke whaling).</p>	
<p>7. The Workshop referred to the "Report of the NAMMCO Workshop on Hunting Methods, February 1999" and recommended that the recommendations from that Workshop not yet considered must be followed-up.</p>					<p>Done (NAMMCO AR 2006, p 21)</p>
<p>8. The Workshop acknowledged that the introduction of the new whale grenade has resulted in greater security for the hunters and has also increased the whale killing efficiency. The Workshop further emphasised the importance of including both the hunters' safety and the animal welfare aspects in official hunting regulations, including those pertaining to hunting methods.</p>		<p>These aspects have been incorporated in the EO No. 10 of 13 April 2005 on Hunting of Large Whales, later replaced by EO No. 12 of 22. December 2014 on protection and hunting of large whales. Furthermore it is the background for the Manual LW.</p>	<p>Hunter safety and animal welfare issues are included in regulation on whale hunting no. 163/1973, with subsequent amendments. Introduction to these issues and regulation are included in mandatory seminars for minke whale hunters.</p>	<p>Incorporated in the mandatory courses given to hunters.</p>	

WORKSHOP 2004 - on Seals and Walrus

NAMMCO 2001, item 5, p. 26, Council agreed to recommendation from CHM to organise a WS on seal and walrus WS-2004. NAMMCO AR 2004, item 5.2 p. 33 Council endorsed the recommendations from the WS-2004.

<p>Hunter training</p> <p>The Workshop recognised the continuing importance of hunter training for the improvement of hunter safety, reducing unnecessary suffering to animals, minimising struck and lost animals, maximising utilisation of the harvest, and equipment selection, manufacture and maintenance. Hunter training should be a priority for all hunts.</p> <ul style="list-style-type: none"> The Workshop recommended training for inexperienced hunters in particular and that such training should be a continuous process for all hunters in general. The Workshop recommended that information is provided to hunters on new and improved equipment that is presently available. 		<p>This is the background for the Manual LW and the Manual SW. There are no required training courses on how to shoot or where to aim at the animal in Greenland. Knowledge is passed on from generation to generation and between captain and crew. Manuals sent out to all hunters reporting a catch of a small cetaceans for the last five years. (CHM Doc-01-2018). The manual is also sent out to all whaling captains.</p>		<p>Sealers must participate in a biannual mandatory course which includes written tests. Captain and inspectors have an obligation to participate annually in these courses. The shooters must take a shooting test annually prior to the hunt.</p>	
<p>Struck and Lost Estimates</p>					
<p>Workshop presentations and discussions demonstrated a lack of accurate and reliable estimates of "struck and lost" (S/L) for seal and walrus hunts. The Workshop recognised that reliable estimates of S/L are urgently required to allow better conservation and management and enable us to target hunts where S/L can be reduced. It was also recognised that reducing S/L benefits hunters because of potential higher catches, less unnecessary suffering to animals and a better public image. Struck and loss estimates are a priority for open water seal and walrus hunts.</p>				<p>Prohibited to shoot seals in the water during sealing operations.</p>	<p>NAMMCO AR 2015, item 8.2, p. 18-20: to reduce S/L Council tasked CHM to look at underlying reasons for S/L. CHM 02.2016 began the work, and it is ongoing (2018). Elements investigated are: known rates in different hunts, description of different hunts to identify reasons for S/L, how to collect S/L data, how to calculate S/L rates, which hunts to priorities etc. CHM 01-2017: information sheet for web on factors reducing S/L finalised. Agreed that collection of S/L data for large whales was controlled and that the challenge was small whales and seals. CHM 01-2018: agreed to develop table with overview of S/L rates in the different regions and hunts as working tool. Agreed on the following prioritising for collecting of S&L endorsed by the member countries (NAMMCO AR 2017, item 5.1, p 10):</p> <ul style="list-style-type: none"> • For Greenland, to collect S&L data on narwhal and beluga • For Iceland, to collect S&L data on harbour and grey seal • For Norway, to collect S&L data on harp seal
<ul style="list-style-type: none"> The Workshop recommended that studies of S/L should be done in cooperation between researchers and hunters. 		<p>An estimate of S/L on harp seals, based on questionnaire surveys was made for WS-2006.</p>			
<ul style="list-style-type: none"> The Workshop recommended the methods, techniques and equipment to reduce S/L should be developed and applied at the local level to ensure that these are appropriate to local conditions. 		<p>In order to reduce S/L, EO No.20 of 27 October 2006 on the Protection and Hunting of Walrus requires that the animals should be harpooned before firing the final lethal shot.</p> <p>Furthermore interviews with hunters from different parts of Greenland have been made on walrus hunting, 2010-2015 and is taken into consideration of the advice from NAMMCO SC.</p>			

<p>Minimise Animal Suffering</p> <ul style="list-style-type: none"> The Workshop recommended that the hunters should make every effort to reduce unnecessary suffering by hunted animals, by minimising killing times and avoiding letting injured animals escape. Such efforts should have priority for all hunts. 	<p>EO No 100 of 5 July 2015 on pilot whale drive describes the requirement that considerations of animal welfare etc be taken before giving the go ahead for a drive.</p>	<p>All regulations pertaining to sealing and whaling have incorporated the principles of humane killing from the Act number 25 of 18 December 2003 on animal welfare in combination with other relevant Greenlandic legislation.</p> <p>In addition, regulations exist on technical requirements (winch, harpoon, use of back—up rifle etc.)</p>	<p>Animal welfare Act no. 55/2013. Included in regulation on whale hunting no. 163/1973, with subsequent amendments.</p>	<p>All regulations pertaining to sealing and whaling have incorporated the principles of animal welfare for the killing of animals, including requirements of competence, laid down in the Act of 19 June 2009 on Animal Welfare.</p>	
<p>Calibre and Bullets</p> <p>The Workshop recognised that there is a need to establish minimum requirements for firearms and ammunition for seal and walrus hunts. It was further recognised that specific recommendations on selection of calibre and bullet types for different species and hunts are difficult to make because little information is available. These observations and recommendations apply to all hunts.</p>		<p>Minimum requirement for ammunition when going sealing is regulated by law:</p> <p>EO No 16 of 12 November 2010 on protection and hunting of seals.</p> <p>EO No.20 of 27 October 2006 on the Protection and Hunting of Walrus.</p>		<p>Minimum requirements for weapons and ammunition are included in the regulations pertaining to the conduct of sealing.</p>	
<ul style="list-style-type: none"> The Workshop therefore recommended that objective studies on terminal ballistics of various calibre and bullet types in seal and walrus hunting are carried out. It was recommended that these studies be done in cooperation with the hunters. 		<p>No plans for own studies but use what comes from the NAMMCO work through WS and Expert group.</p>		<p>Study on comparison of the efficiency of different rifle bullet types in harp seals is - ongoing.</p>	
<p>There is a need to consider what types of firearms and ammunition are presently available in remote communities and the Workshop urged the stores to make available the ammunition determined to be appropriate for the various hunts.</p>		<p>See comment in the section WS-1999, 3a and 4e and 5.</p>			

Full Utilisation					
<p>The Workshop agreed that the fullest possible utilisation benefits hunters because of more returns from the harvest, preservation of traditional skills and a better public image. This applies to all hunts. The Workshop recommended the following:</p> <ul style="list-style-type: none"> • That all hunting should occur within safe conservation limits. • That all hunts should work towards the fullest possible utilisation of harvested animals. <p>That new uses and markets for seal and walrus products should be pursued</p>	<p>Intentionally killed as nuisance animals around fish farms (CHM Doc 01-2018).</p>	<p>The Executive Order no.20 of 27 October 2006 on the Protection and Hunting of Walrus limits the hunt and establishes quotas, hunting areas and hunting seasons. A management plan based on the gradual reduction of quotas for the period 2007 – 2010 has been approved. These steps are necessary to achieve a hunt within safe conservation limits .</p> <p>Both of the EOs on seal and on walrus requires that all meat, skin, blubber and other usable parts are brought from the hunting place or destroyed.</p> <p>With respect to the sealing industry attempts are made to develop the marked possibilities, latest attempt by the Industry is the QR-label information initiative.</p>	<p>No quotas are set for the seal hunt. (CHM Doc-01-2018)</p>	<p>The quotas are set within safe conservation limits. It is not an optimal utilisation of harvested animals in Norway. With respect to the sealing industry attempts are made to develop the marked possibilities</p>	
Hunter Safety					
<p>The Workshop recognised that the safety of the hunters should be a priority in all hunts.</p>					
<ul style="list-style-type: none"> • The Workshop recommended that the safety of the hunters must be considered in any regulatory measures or technical innovations to equipment and techniques. 		<p>The incorporation of hunters safety is mandatory when considering new regulations and in the implementation of regulations regarding equipment and techniques.</p>	<p>Hunters safety is considered when regulations are revised and in the implementation of regulations regarding equipment and techniques.</p>	<p>The incorporation of hunter's safety is mandatory when considering new regulations and in the implementation of regulations regarding equipment and techniques.</p>	
<p>In particular, the Workshop recommended special attention to: hearing loss due to noise and the need for ear protection, bullet ricochet endangering people and property and protective gear for extreme cold and harsh conditions.</p>		<p>This is not regulated legally but optional for the hunters. However, the use of this kind of protection gear is increased among the hunters.</p>	<p>Act on Working Environment, Health and Safety in Workplaces No. 46/1980.</p>	<p>This is not regulated legally but optional for the hunters. However, the use of this kind of protection gear is increased among the hunters.</p>	

WORKSHOP 2006 - on Struck and Lost

NAMMCO AR 2004, item 5. p. 31 Council agreed to recommendation from CHM to hold WS on struck and lost WS-2006. NAMMCO AR 2006, item 6.1, p. 21-2 Council endorsed all recommendations from WS-2006.

1. General recommendations WS Struck and lost					
1.1 Minimise animal suffering					
The Workshop recommended that the hunters should make every effort to reduce unnecessary suffering by hunted animals, by minimizing killing times to the extent that is feasible. However, this must be balanced by consideration of the safety of the hunter, and the risk of losing the animal.	Included in law and regulations.	Included in relevant Greenlandic legislation and regulations and also in text on the species specific licenses. (Species specific EO, Home Rule Act No. 25 of 18 December 2003 on Animal Welfare, and the Home Rule Act No. 29 of 18 December 2003 on Nature Protection)	Animal welfare Act no. 55/2013. Included in regulation on whale hunting no. 163/1973, with subsequent amendments.	All regulations pertaining to sealing and whaling have incorporated the principles of animal welfare for the killing of animals laid down in the Act of 19 June 2009 on Animal Welfare. In addition, regulations exist on technical requirements for whaling and sealing (winch, harpoon, use of back—up rifle etc, rifle calibre, ammunition, secondary weapons etc).	
1.2 Monitoring					
The Workshop noted that the present information on struck and lost is outdated or inadequate for several species and areas, and that accurate estimation of struck and lost is important for effective management and essential to improve hunting practices. The Workshop recommended that new monitoring programmes that are appropriate for local conditions should be developed that could produce accurate information that will be accepted by hunters and managers. Such monitoring programmes should be developed in full cooperation among hunters, managers and researchers.		All marine mammals under a quota system based on the species specific EO has mandatory S/L reporting system in place. The self-reporting system Piniarneq has since 2013 had the possibility of reporting S/L for any species when reporting online, hereby including all seal species and cetaceans. Further improvement for validating the data reporting is constantly developed. Any one wishing to hunt in Greenland is required to obtain a hunting lincense and report all catches incl. struck and lost animals, the database Piniarneq has data from 1993 and onwards.			See Council/CHL comment under WS-2004 S/L recommendation. CHM 01-2017: CHM concurred with the SC conclusion that the best method for collecting S/L data was using observers in the different types hunts, as S/L rates vary between species and hunts. Like the SC, CHM acknowledged that this would be logistically challenging and costly and would therefore perhaps not represent a prioritised parameter for improving assessments.
1.3 Proper training of hunters					
The Workshop recommended that hunters should be trained in both the theoretical and practical aspects of hunting, and that training materials and programmes should be appropriate to local conditions.	Manual PW. New legislation was introduced in 2015 obliging hunters to follow an accredited course in pilot whaling to be entitled to kill whales. The course includes a review of the Manual PW. (CHM Doc 01-2018)	See comment WS-2004 - hunters training. Manual LW and SW.	Manual LW.	Sealers must participate in a biannual mandatory course which includes written tests. Captain and inspectors have an obligation to participate annually in these courses. The shooters must take a shooting test annually prior to the hunt. New whalers have to attend a mandatory theoretical course and a written test. The shooters must take a shooting test annually prior to the hunt, this applies both for the canon and the back-op rifle. Maunal LW are forwarded to all whalers, and can be found on the NAMMCO website.	Manuals LW, SW, PL accessible on the website.

1.4 Hunting equipment					
The Workshop recommended that hunters should always carry weapons and equipment appropriate to the target species and local hunting conditions, and that the equipment should be properly maintained and renewed when necessary.		Relevant species specific Greenlandic legislation specifies the relevant weapon and equipment, often based on NAMMCO recommendations.		The use and maintenance of adequate weapons for the killing of animals is laid down in Act of 19 June 2009 No 97 - Animal Welfare.	
1.5 Cooperative management					
The Workshop recommended that the hunters should be involved in the marine mammal management process, including the development of regulations pertaining to hunting. The Workshop furthermore recommended that the design, development and testing of new weapons and hunting equipment should be done in cooperation with hunters.		As part of the democratic hearing process all citizens in Greenland including the hunter's organisation KNAPK will have access to and be included in new drafting of legislation and can submit comments or suggestions of revisions.			
1.6 Sharing of technology and knowledge					
The Workshop recommended that there should be open exchange and sharing of information about new weapons, equipment and hunting techniques, and that this should be done on both the national and international levels.					All reports from WS and WGMs are public and on the website. Furthermore these have been presented to hunters and their associations in NAMMCO countries and elsewhere.
1.7 Hunter Safety					
The Workshop recognised that the safety of the hunters should be a priority in all hunts.		See comment under WS-2004 on Hunter Safety	See comment under WS-2004 on Hunter Safety	See comment under WS-2004 on Hunter Safety	Laid down in the ToR for CHM.
The Workshop recommended that the safety of the hunters must be considered in any regulatory measures or technical innovations to equipment and techniques.					
In particular the Workshop recommended special attention to: hearing loss due to noise and the need for ear protection, bullet ricochet endangering people and property and protective gear for extreme cold and harsh conditions.					
2.1 Seals	Intentionally killed as nuisance animals around fish farms (CHM Doc 01-2018).				
2.1.1 Hunter training					
<ul style="list-style-type: none"> Develop suitable training materials for each area and hunt. These could use various media, e.g. audiovisual presentations on DVD or broadcast locally; written materials, and internet sites. In areas where hunting is practiced, courses in hunting should be available in the school curriculum. This is already the practice in some areas, e.g. Finland. A comprehensive and advanced hunting education programme is under development in Greenland. In Norway it is mandatory to undertake a training course set up by the authorities before going hunting. 	No specific training. According to the weapon legislation, completion of a firearms training course and possession of a firearms license are required to be entitled to handle weapons. (CHM Doc 01-2018)	A school for hunting and fishing was established in 2008 in North Greenland. Furthermore several boarding schools have as part of the curriculum hunting and fishing as a course.	There are no regulatory training courses on how to shoot or where to aim at the animal in Iceland, though a normal firearms license must be attained. (CHM Doc 01-2018)	Mandatory training course prior to hunting season. For the coastal hunt the hunter must pass an annual shooting test. (CHM Doc-01-2018)	

<p>2.1.2 Techniques and equipment</p>					
<ul style="list-style-type: none"> The type of equipment that is suitable depends on the area, species, season and local environment. Descriptions of suitable equipment for each situation should be developed by local authorities, and made available to hunters and educational institutions. 					
<ul style="list-style-type: none"> Hunters should always have suitable equipment, in good working order, readily available when hunting. 					
<ul style="list-style-type: none"> In situations when seals usually sink after death, it may be advisable to use small-calibre weapons and shoot to injure, not to kill. The injured seal can then be secured using a hook or harpoon, and then killed. This technique is effective in reducing struck and lost, but does likely result in greater animal suffering. 	<p>No specific legislation pertaining hunting, but permission was granted to kill seals with rifles of minimum calibre 6.5 mm using hollow pointed bullets. (CHM Doc 01-2018)</p>	<p>EO No 16 of 12 November 2010 on protection and hunting of seals.</p>	<p>Harbour seal pups hunted by netting. The seal pups are then clubbed and subsequently bled. Grey seal pups are killed on land either a seal club or by shooting. Adult grey seals hunted using calibre rifles (.222 -243 calibre). Culling around fish farms: adult harbour seals are killed in the river mouth, and the method used is shooting, usually by .22 calibre rifles. (CHM Doc 01-2018)</p>	<p>The weapon requirements are generally laid down in the Act 19 June 2009 on Animal Welfare, and are detailed in the regulations on the conduct of sealing in the West Ice and East Ice, on coastal seal hunt, and on minke whaling.</p>	
<p>2.1.3 Regulatory measures</p>					
<ul style="list-style-type: none"> In some areas it may be advisable to stipulate the minimum equipment that must be at hand when hunting. This is already done in most areas. 					
<ul style="list-style-type: none"> In some areas, seasonal closures could be used to forbid hunting in seasons when seals usually sink after death. Such closures are used in Norway and Finland, but may not be suitable in areas where hunters must take seals year-round. 				<p>See above point 2.1.2.</p>	

<p>2.1.4 Monitoring</p> <p>Independent observers and governmental inspectors have been effective in monitoring hunts for harp and hooded seals in Canada and Norway. However, it is not possible to use independent observers to monitor all seal hunts. The following alternatives were recommended:</p> <ul style="list-style-type: none"> • Self-reporting systems such as <i>Pinniarneq</i> in Greenland could possibly be modified to provide information on struck and lost; • In other areas, community-based monitoring using post-hunt interviews, as used in Chukotka, may be effective; • A programme using “index” hunters, trained and contracted to provide information on their hunting activities, which is later extrapolated to the entire hunt, may be effective in some situations. 	<p>Fish farms are obliged to report the number of seals that are shot to the Ministry of Fisheries. According to the weapon legislation, completion of a firearms training course and possession of a firearms license are required to be entitled to handle weapons. (CHM Doc 01-2018)</p>	<p>The self-reporting system Piniarneq has since 2013 had the possibility of reporting S/L for any species when reporting online.</p> <p>Further improvement for validating the data reporting is constantly developed. (See under 1.2 for further information on catch reporting systems)</p>	<p>Hunters are not required to report their catches. Hunt statistics are collected by MFRI by direct contact with the hunters. (CHM Doc 01-2018)</p>	<p>National veterinary inspectors have been present on every sealing vessels (pack-ice hunt) since the late 1980-ies. Self-reporting of catches in the coastal hunt. There is no mandatory reporting of TTD or IDR for either of the two hunts. (CHM Doc-01-2018)</p>	
<p>2.2 Large whales</p>					
<p>2.2.1 Hunters training</p>					<p>Manual LW.</p>
<ul style="list-style-type: none"> • To encourage training, in practice and in theory with: experienced hunters, experts on weapons and experts on anatomy; 			<p>Manual LW.</p>	<p>See above point 1.3.</p>	
<ul style="list-style-type: none"> • To produce educational material, including anatomical charts designed for whaling; 		<p>Manual LW. An exchange of experience and knowledge incl anatomical charts, between whalers from Alaska and Greenland was organised through many meetings and a visit to Barrow, Alaska before the start to hunt the bowhead whale in Greenland.</p>			
<ul style="list-style-type: none"> • In order to learn and improve, feedback to whalers should be improved, including feedback on: successful kills, problematic kills, cases of struck and lost and their causes. 		<p>As part of the reporting explanations has to be given in case of S/L or TTD above 30 minutes. The authorities will contact hunters for further information in such cases.</p>			
<p>2.2.2 Techniques and equipment</p>					
<ul style="list-style-type: none"> • To ensure that adequate equipment for securing and killing is well maintained, functioning and at hand; 					
<ul style="list-style-type: none"> • Time to death should be as short as possible, once the whale has been effectively secured; 		<p>EO No 12 of 16 July 2010 on reporting from hunting and strike of large whales.</p>			
<ul style="list-style-type: none"> • In order to prevent whales sinking when using harpoon gun, it is recommended to: 		<p>EO No 12 of 22. December 2014 on protection and hunting of large whales describe prescribed equipment.</p>			
<p>1) Cause instantaneous death</p>					
<p>2) Keep the back-up rifle at hand</p>					
<p>3) Keep harpoon and attachment points well maintained</p>					
<p>4) Use forerunners of adequate strength</p>			<p>Manual LW.</p>		
<p>5) Replace forerunners at regular intervals</p>					
<p>6) Keep a back-up forerunner ready</p>					
<p>7) Use the air pump to inflate the whale where legally feasible</p>					
<p>8) Use grappling irons to secure the carcase.</p>	<p>NA</p>				
				<p>See above point 2.1.2</p>	
				<p>Regulation No 163, May 30, 1973 on whaling with recent ammendments describe prescribed equipment.</p>	
				<p>EGMs in 2010 and 2015.</p>	
				<p>Not permitted in Norway.</p>	
				<p>NA - all whales are winched on board the vessels.</p>	

<ul style="list-style-type: none"> To improve the Norwegian penthrite grenade used for hunting fin whales in Iceland and in Greenland, in order to increase the rates of instantaneous death or unconsciousness. 		Improvement of the penthrite grenade (Whale grenade-99) for use on large whales in Greenland has been done, resulting in a modified grenade, 2010.	Improvement of penthrite grenade (Whale grenade-99) for use on fin whales in Iceland has been done.	NA	
<ul style="list-style-type: none"> To facilitate access to good weather forecasting for whalers working from small boats; 					
<ul style="list-style-type: none"> To avoid killing the whale before it has been secured sufficiently. This is especially true when using small boats to hunt whales that may sink. 					
<ul style="list-style-type: none"> To develop a gun to deploy harpoons attached to floats. This would shorten the time needed to secure whales that may sink when hunting from boats without a harpoon cannon. 					
2.2.3 Regulatory measures					
<ul style="list-style-type: none"> To strengthen international cooperation in order to facilitate: a) access to information and technology and b) purchase and transport of equipment, including weapons and explosives. 		Visit to mechanical tool-shop in 2015. EGMs in 2010 and 2015. See comment 1.2 above.			All WS are open for all and are based upon sharing of information on methods and equipment.
<ul style="list-style-type: none"> Development and implementation of ways to reduce struck and lost should be done in close collaboration with the whalers. 			S/L animals are reported by the whalers to the Directorate of Fisheries.	S/L animals are reported by the whalers to the Directorate of Fisheries.	CHM 03-2016: CHM agreed to advice Iceland and Norway to address their hunters with the aim of finding out why the harpoon line breaks.
2.2.4 Monitoring					
<ul style="list-style-type: none"> Reporting of the causes of struck and lost is needed to provide feedback to whalers. 		EGMs in 2010 and 2015			CHM 03-2016: CHM agreed to advice Iceland and Norway to address their hunters with the aim of finding out why the harpoon line breaks. CHM02-2018: line in propel caused by direction of boat and whale. Occurs rarely and no obvious actions to prevent it.
2.3 Small whales			NA	NA	
2.3.1 Hunter training					
<ul style="list-style-type: none"> Training is paramount – it should be community based and species specific. Local experienced hunters who are familiar with local environment should be employed to train. 	Manual PW.	See comment WS-2004, hunters training. Manual SW.			
<ul style="list-style-type: none"> Traditional knowledge should be taught in high schools. 		See comment provided under 2.1.1.			
<ul style="list-style-type: none"> Ways have to be found to counteract the negative effects of diminishing quotas and hunting restrictions on the acquisition of hunter skills in future generations. 		See comment under 2.1.1 above and WS 2004 Hunters training.			
2.3.2 Techniques and equipment					
<ul style="list-style-type: none"> Using more efficient equipment still does not necessarily diminish struck and lost. Thus, a combination of suitable equipment and training is needed in the use of rifles and appropriate ammunition. 		EO No 1 of 15 January 2016 on protection and hunting of beluga and narwhal describe prescribed equipment. Manual SW. EGM 2011.			
<ul style="list-style-type: none"> Methods of improving access to long-range forecasting of weather conditions need to be found as weather is a very important factor in affecting struck and lost. 	NA				

• Develop a weapon that could improve the range of strike, e.g. an air gun that could be modified to incorporate firing of a harpoon head. This could improve the firing / strike range and the securing of the whale.



Manual SW.

<ul style="list-style-type: none"> In hunting communities, suitable ammunition designed for marine mammals should be made more readily available. 		See comments WS 1999, 3a and 4e and 5.	NA	NA	
<ul style="list-style-type: none"> Use of high velocity rifles can result in hearing loss and steps should be taken to minimise this problem and disseminate technical information for user safety. 		See comment WS 2004 - Hunter safety.			
2.3.3 Regulatory measures					
<ul style="list-style-type: none"> The users (hunters) should be involved in decision-making processes concerning the hunt such as the planning of hunting quotas and in the areas of operation. User knowledge should be used in management in conjunction with science. 		See comment under 1.5 above.			
<ul style="list-style-type: none"> Establishing formal meetings with local government officials on all aspects of hunting - equipment, safety, training, etc. where reduction of struck and lost can also be discussed. These meetings could establish local hunting rules and regulations, the required equipment, etc. that would help to mitigate struck and lost. 		Next round of meetings planned end of 2018. Previous meetings took place in different parts of Greenland, approximate every second to third year. CHM 02-2018: no new information.			
2.3.4 Monitoring					
<ul style="list-style-type: none"> All parties (hunters, administrators, managers, biologists) have to get together to find a way forward on the matter of recording and reporting struck and lost. One route could be to establish local sub-committees to work out an acceptable and appropriate monitoring system in hunting areas. 					See WS-2004 - struck and lost estimates, WS-2006, recommendation 1.2.
2.4 Walrus	NA	EO No 20 of 27 October 2006 on protection and hunting of walrus.	NA	NA	
2.4.1 Hunter training					
<ul style="list-style-type: none"> Walrus hunters should be properly trained and their training should be appropriate for the local environment. Such training can occur through traditional methods, formal schooling and other media such as video and the internet. It was specifically emphasized that inexperienced hunters should accompany experienced hunters on hunts. 					
2.4.2 Hunting techniques					
<ul style="list-style-type: none"> When hunting walrus on ice floes, the hunter should approach as closely as possible before shooting. The hunter should shoot animals in the centre of the group first so that killed animals won't be pushed into the water by the others. 					
<ul style="list-style-type: none"> In open water hunts, it is best to harpoon before shooting, but this is not always feasible. It may be necessary to shoot the walrus in the body and lungs to disable it so that it can be harpooned, and then shoot it lethally. This will reduce the incidence of struck and lost and the chance of the walrus attacking the hunter. 		Before the killing shot is delivered against the walrus, it must be harpooned. The harpun used must be attached to one or more buoys so that catch loss is avoided.			
<p>Hunters should obtain the best available forecasts before setting out, only initiate hunting if the weather conditions are right, and abandon hunting if the weather deteriorates.</p>					

2.4.3 Hunting equipment

- Hunting equipment is often specific to particular regions and seasons, and is adapted to local conditions. Local authorities should compile descriptions of equipment suitable for each area and make these available to hunters and teachers.

- Hunters should ensure that proper equipment is available and well maintained.

- Technological innovation could reduce the incidence of struck and lost in some hunts. A harpoon gun that would be effective at a range of 10-15 m would be particularly effective in walrus hunting.

2.4.4 Monitoring

- The importance of monitoring must be explained to hunters so that they can “buy in” to a monitoring programme.

- A monitoring system should provide feedback to hunters so that they can improve their hunting techniques.

- Community-based monitoring, based on a combination of hunt observation and post-hunt interviews, has been effective in Chukotka and could be adapted to other areas.

- A system based on “index hunters” may be effective in some areas.

Catch of walrus must be done using a rifle with a minimum calibre 30.06 (7.62 mm). Only pointed bullets (full metal jacket) is allowed. The use of automatic and semi-automatic rifles is not permitted.

The self-reporting system Piniarneq has since 2013 had the possibility of reporting S/L for any species when reporting online.

Further improvement for validating the data reporting is constantly developed. (See under 1.2 for further information on catch reporting systems)

EXPERT GROUP MEETING 2009 - on Best Practices in Hunting and Killing of Seals

Organised on request from Council (NAMMCO AR 2007-2008, page 20). NAMMCO AR 2009, item 7.2, p. 20 Council endorsed all recommendations EGM 2009.

<p>Firearms Firearms and ammunitions used should have the capacity to achieve the intended effect. Noting that new types of ammunition have been developed for hunting, the EGM recommends further studies on the use of ammunition for hunting seals of different species and age groups in order to determine their capacity to achieve the intended effect</p>		<p>EO No 16 of 12 November 2010 on protection and hunting of seals covers all recommendations from the EGM-2009. Interviews with hunters from different areas has been undertaken and used in the legislation.</p>		<p>Studies on ammunition for hunting seals in the Norwegian harp seal hunt are ongoing.</p>	
<p>Hakapik and club</p> <p>When using the blunt projection of the hakapik the hunter's relative position to the animal is less important than a stable platform.</p> <p>When using the spike of the hakapik it is recommended that the hunter is positioned behind the seal in order to achieve maximum effect. The intended effect of the curved spike is to penetrate and damage the deep parts of the brain (including the brainstem) in order to achieve irreversible damage to these vital areas.</p> <p>The use of the hakapik and clubs on seals in water should only occur when the primary tool has not rendered the animal unconscious.</p> <p>Different types of hakapiks and clubs are used and known to be effective tools to stun young seals. Factual information is required to explain the effectiveness of hakapiks and clubs as stunning tools, through evaluation of the force delivered in relation to the damage produced and the relative solidity of the skull, which may vary among species.</p>	<p>NA</p>	<p>NA</p>	<p>NA</p>	<p>The proper use of the hakapik is gone through in detail during the course for seal hunters. It is mandatory to practice on the use of the hakapik prior to the hunt, under the supervision of the inspector.</p>	
<p>Bleeding out</p> <p>The EGM discussed different processes of bleeding out seals, and its significance in relation to the criteria for death.</p> <p>Legislation pertaining to some large scale seal hunts requires bleeding as soon as possible after stunning/killing.</p> <p>The EGM recognises that bleeding is a precautionary measure to ensure death in all animals.</p>	<p>Description no recommendations.</p>				

<p>Recommendations</p> <p>The EGM recognises the value of determining the duration (average and range) of bleeding in seals when axillary (brachial) blood vessels on both sides are cut, which represents the bleeding method currently and commonly used. This information should be available for different species as differences may exist. Other bleeding methods (e.g. carotid arteries and jugular veins) could also be investigated.</p>				<p>Studies on the duration of bleeding in harp seals when axillary arteries on both sides are cut, are ongoing.</p>	
<p>Combination of methods used for stunning and killing of seals</p>					
<p>Canadian and Norwegian legislations both prescribe a three-step process for killing in their large scale hunts of seals.</p>	<p>Only description of existing hunting methods - no recommendations.</p>				
<p>In both countries firearms are the main primary tool to stun/kill seals in the large scale hunt. In both hunts the hakapik/club used as primary tool can only be used to stun/kill young seals (less than 1 year) and shooting in the brain/neck with firearms is the mandatory primary method for all seals older than 1 year (1+ year).</p>					
<p>In the Norwegian large scale hunt when using the hakapik as primary tool, the young seal shall first be struck with the blunt part of the hakapik (step 1), then immediately after be struck with the spike of the hakapik (step 2) so that it penetrates deeply into the brain before the seal is bled (step 3). When the firearm is used as primary tool the seal is shot (step 1) and immediately reshot if necessary, then struck in the brain with the spike of the hakapik as soon as possible (step 2) and then bled (step 3).</p>					
<p>In the Canadian large scale hunt Step 1 is the same as in the Norwegian hunt when the hakapik/club is used as primary tool. However, step 2 differs as it requires that the sealer immediately checks by palpation the cranium of the animal (step 2) to confirm that it is completely crushed by the primary tool before bleeding out for a period of one minute (step 3) as soon as possible after step 2. When the seal is shot (step 1) the sealer must observe the seal for directed movements and shoot the seal again if necessary, check by palpation the cranium of the animal (step 2) as soon as possible after step 1, and then bleed out for a period of one minute (step 3) as soon as possible after step 2.</p>					
<p>Conclusion</p>					
<p>The EGM recognises the value of a three-step killing process in large scale seal hunts.</p>					

<p>Training and education</p> <p>The EGM wishes to emphasize the fundamental importance of information, education and training for seal hunters and inspectors in order to carry out the hunt in an appropriate manner with respect to animal welfare. Important elements of such education could include: animal behaviour, anatomy, physiology, ballistics, ethics, legislation, handling of carcass, etc</p>				<p>Included in mandatory courses held prior to pack-ice sealing.</p>	
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EXPERT GROUP MEETING 2010 - 1st Assessment of TTD in large whales

The 1st TTS EGM-2010 was in response to a proposal from CHM to Council (NAMMCO AR 2009, p. 20).

Norway	NA	NA			
<p>Data have not been sampled in the last 8 years. The EGM recommended a sampling of Time to Death (TTD) in the same way as was done in previous years so that the data are comparable – either on all boats or in a random sample of boats</p>				<p>TTD data collection carried out 2011 and 2012, results assessed at the 2nd EG meeting in 2015.</p>	
<p>Iceland</p>					
<p>Minke whale</p>					
<p>The EGM recommended that in the future, Iceland reports for minke whales whether the whales are killed instantaneously and if not, the TTD.</p>			<p>Implementation of reporting followed up. TTD collection carried out 2014, 2015 and 2017, preliminary results assessed at the EGM-2015.</p>		
<p>Fin whale</p>					
<p>The EGM recommended that in the coming season, data of killing efficiency - TTD and Instantaneous Death Rate (IDR) should be collected and analyzed with covariates (estimated distance and angle of harpoon gun shot, hit region and detonation area) for the sake of improving hunting methods.</p>		<p>NA</p>	<p>TTD collection carried out in 2014, results assessed in EGM-2015. TTD estimated by necropsy reports from 2014.</p>		
<p>It was noted that a development programme for the fin whale hunt has started in Iceland. In 2010 the second prototype of a new penthrite grenade designed for the fin whale hunt with 90 mm harpoon guns will be tested. The EGM acknowledged the work and encouraged continuation and completion of this work.</p>					
<p>The EGM furthermore encouraged the specialist examination of organs and tissues to better understand how the whales die.</p>			<p>Incorporated in the TTD work carried out in 2014</p>		
<p>The EGM recommended an examination of the potential use of acoustic monitoring of grenade detonation in order to enhance human safety during flensing.</p>			<p>Acoustic monitoring of grenade detonation installed on all active hunting vessels.</p>		

Greenland
Minke whale - harpoon hunt
In Greenland and Iceland, TTD is estimated by the hunters but they have no necropsy reports to confirm TTD. In addition, the current IWC criteria used tend to overestimate TTD. The EGM recommended Greenland to present the data and analyses in a statistically more informative way than is being done now.
It was furthermore recommended the organisation of a practical training course for gunners. There should, as stated by the hunters, be a debriefing at the end of the season in order to exchange information and experiences from the season.
Minke whale - Rifle hunt
There is a risk of a longer TTD and higher "struck and lost" in the rifle hunt than in the grenade harpoon hunt.
The Greenlandic hunters stated that there is a clear difference in efficiency of killing between different geographical regions in Greenland.
The EGM recommended that experienced hunters should meet with less experienced hunters to exchange information. It is especially important to focus on where to aim the first shot and the aiming of the shot that kills the whale after the floats have been attached.
More data are needed with reference to the body position where the whale is hit and TTD. Norwegian anatomical figures of the position of the brain of minke whales can be used for training purposes and be handed out to the hunters.
Fin whale
The EGM acknowledged the improvement of TTD in recent years in Greenland. This improvement is probably the result of increased hunter experience.
Bowhead whale
The EGM recommended that shooting trials are set up to study the trajectory of the harpoon through the water and on this basis give advice on how to approach and where to aim at the whale.
Fin whale and bowhead whale
The EGM agreed with Greenland's recommendation to increase the current penthrite charge for the fin and bowhead hunts and also to investigate a potential increase in the propellant charge.

NA

Recommended data analysis methods and presentation implemented from 2015 as a result of the NAMMCO seminar - see response column Council/CHM.
Courses on the use and maintenance of the harpoon canon have been held. Organised practical training courses for gunners have not been held. Video of how the Whale Grenade-99 is put together was developed in 2016.
EO No 12 of 16 July 2010 on reporting from hunting and strike of large whales.
Description no recommendations.
Meetings between hunters take place in a self-organised manner. NAMMCO manual on large whales.
Reporting on strike location was implemented in EO No 12 of 16 July 2010 on reporting from hunting and strike of large whales. Manual LW.
Description no recommendations.
Shooting trials following the NAMMCO directions was set up in 2010 and the hunters were advised on how to approach the whales and where to aim at the whale.
No changes in propellant charge, but work undertaken on the grenades explosive amount.

NA

NA

NAMMCO organised a seminar on statistics and analysis in 2016. Greenland and Iceland participated.

Fin, humpback and bowhead whales
The EGM recommended that the same modified penthrite grenade be used for the three large species – in fin, humpback and bowhead whale hunts.
It was furthermore recommended that hunters be trained to measure and report on strike location, detonation location and distance between the two.
Assessment and comparison of different hunts
Minke Whale
Processing of data:
The EGM recommended collecting TTD for whales that do not die instantaneously. The purpose is to analyse the reasons for differences among different hunts in order to improve efficiency.
Information on IDR for all hunts is probably biased low and TTD is biased high and these biases are probably greatest for the Greenlandic hunt. This especially concern hunts where the TTD are estimated by the hunters and are not corrected by <i>post-mortem</i> examinations.

CHM 2012. Shooting trials had been set up and the hunters had been advised on how to approach the whales and where to aim at the whale. A new grenade with 45 g of penthrite was introduced for the hunt of fin, bowhead and humpback whales in Greenland. Simultaneously the trigger rope was reduced from 110 cm to 90 cm which detonate the grenade at a depth of 110 cm.			
Difficult to get the information from hunters and wildlife officers– training started but data feedback minimal.			
TTD data is part of the self-reporting mandatory information all whalers are required to report. It is collected in the same standardised way with reference to the body position where the whale is hit in relation to TTD both for the riffle and the harpoon. Data analysis work in progress not finalised, is resource depending.	Measurements on TTD have been made for the minke whale hunt in Iceland by inspection during the hunt and post-mortem examination for the 2014, 2015, 2017 and 2018 seasons. In total 24 measurements have been collected. Results have not yet been reported, due to few samples, but preliminary results are available.	This is already included in studies on minke whale killing efficiency.	
Description no recommendations.			

Education and training
Regular training and exchanging of information is very important to achieve more efficient hunts and to improve animal welfare.
The EGM recommended that NAMMCO develop a handbook for hunters giving relevant information inter alia on weapons, killing techniques and animal welfare.
The EGM emphasised the importance of combining theoretical education with physical meetings in order to exchange information and experiences, including sampling and recording of data.
Monitoring
Monitoring serves at least three important purposes: <ul style="list-style-type: none"> • Ensures that the hunt is carried out according to laws and regulations; • Provides information relevant for the management of the stocks; • Provides information on killing efficiency and animal welfare.
The EGM recommended standardizing the TTD criteria used across hunts. It was acknowledged that the hunters are doing the monitoring in addition to many other responsibilities – therefore a balance will have to be achieved between hunting activities and monitoring /collecting information.
The EGM recommended that a small group be formed to prioritise the needed monitoring information.

Manual LW is part of the training course for hunters on handling of the Whale grenade-99 and it is sent out to all whaling captains.	Manual LW.	Manual LW.	Manual LW.
Meetings with hunters from different regions to exchange information and discuss the EGM recommendations are under planning.			
Hunters locally hold debriefing meetings that is not organised by the Ministry.			
Description - no recommendations			NAMMCO Observation Scheme is a mechanism to oversee compliance to regulations. It does not give full coverage but never the less represents monitoring of the hunts that are being observed, at the time they are observed.
TTD criteria same as the one used in IWC.	TTD criteria same as the one used in Norway.	TTD criteria same as the one used in Iceland.	
			NAMMCO AR 2015, page 20: The need to organise a workshop on alternative methods for collecting standardised TTD data that are less expensive, thus making it easier to compare TTD between countries. CHM discussions ongoing.

EXPERT GROUP MEETING 2011 - On small whale hunting

As a follow up from the EGM-2010 on a recommendation by CHM, Council endorsed to (NAMMCO AR 2010, p. 22): 1) Convene EGM-2011 on small whales, 2) Develop manuals for maintenance and use of weapons (finalised 2014).

Drive hunt - Faroe Islands		NA	NA	NA
The EGM noted that the introduction of the spinal lance has entailed significant improvements in the TTD for the Faroese pilot whale hunt. The EGM also noted the extensive advances that had been made in the development of the lance.	Parliamentary Act No 56 of 19 May 2015 on pilot whales and other small whales, most recently amended by Parliamentary Act No 44 of 6 May 2016. Executive order No 100 of 5 July 2015 on pilot whale drive.	NA		
The EGM recommends:				
<ul style="list-style-type: none"> An illustrated manual is developed to document the technique, gear and bays certified for drive hunts. A manual could add credibility to the science behind the improvements, facilitate uniform practice among bays and also assist in exporting the knowledge to other hunting communities. 	Manual PW.			
<ul style="list-style-type: none"> The spinal lance has proven efficient in reducing the TTD and reducing the number of cuts, and therefore the standardized lance should be made mandatory for use in the Faroese drive hunt. 	Use of spinal lance and blowhole hook included in new regulation. See Drive hunt above.			
<ul style="list-style-type: none"> Adopting this lance as a standard should not preclude further improvements of the lance. 	Design of lance revised after 2015 season (CHM 01-2017).			
<ul style="list-style-type: none"> Any damages from the use of the newly designed blunt tipped hook should be further explored. 				
<ul style="list-style-type: none"> TTD should be measured from the first use of the blunt hook. 	TTD is measured from the first use of the blunt hook .			

<p>Hunting of pilot whales, dolphins and porpoises - Greenland</p> <p>The EGM recommends that regulations on equipment and hunting methods are developed for harbour porpoises, white-sided and white-beaked dolphins, pilot whales and killer whales and that efficiency, struck and lost rate and TTD are documented for the involved species. It is recommended that data are gathered in a standardized manner making comparison between hunts and development over time possible.</p>	<p>NA</p>	<p>It is mandatory to report any catch and S/L of small cetacean.</p> <p>Drafting of regulation in the form of a species specific executive order is in progress.</p> <p>TTD will be collected in the same standardised way as for the large whales with reference to the body position where the whale is hit in relation to TTD both for the riffle and the harpoon.</p> <p>S/L animals are mandatory to report and possible to report the through an online self-reporting system since 2013 (data goes into the database Piniarneq)</p>
<p>Hunting of beluga and narwhal - Greenland</p> <p>The EGM appreciates Greenland's effort to improve the data collection on struck and lost and to initiate data collection on TTD. It is recommended that data are gathered in a standardized manner making comparison between hunts and development over time possible.</p>		<p>TTD is collected in the same standardised way as for the large whales with reference to the body position where the whale is hit in relation to TTD both for the riffle and the harpoon., S/L is mandatory to report and possible to report both through the special reporting (særmeldingsskema) and the online self-reporting</p>
<p>Netting - Greenland</p> <p>The EGM noted that netting of beluga and narwhal is prohibited in most areas in Greenland, but is allowed in East Greenland and one location in North West Greenland. This method is used when there is no other available option. The EGM noted that netting is likely to cause stress for the animals associated with the capture and the prolonged time to death and recommends that every attempt should be made to develop alternative catching methods.</p>		<p>Resources economically and timewise have not been available given other priorities to collect data from the two area specific hunts in Greenland.</p>

NA

NA

<p>Hunter training</p> <p>The EGM recommended that hunters should be trained in both the theoretical and practical aspects of hunting, and that training materials and programmes should be appropriate to local conditions.</p>	<p>Manual PW.</p>	<p>See comment WS-2004 - hunters training, WS-2006, 1.3 and 2.2.1</p>
<p>The EGM recommends the development of a training manual for hunters, to include such topics as hunters' safety, anatomy of the relevant species with emphasis on target sites likely to minimise TTD and S/L, required equipment, such as weapons, ammunition and secondary equipment, approaches to efficient utilisation of carcasses, and other topics to be identified. The EGM recommends a small working group be identified to explore the feasibility of developing such a manual, fully identify its components and develop a plan of human and other resources needed to produce it.</p>		<p>Manual SW sent out to all hunters who have reported catch of small cetacean the last 5 years – approx. 2 500 copies.</p>
<p>STRUCK AND LOST IN SMALL CETACEAN HUNTING</p>		
<p>The issue of struck and lost (S&L) was not on the agenda for the meeting but was raised at the beginning of the meeting. It was agreed to discuss the issue if time permitted. However due to lack of time the Expert Group recommended that Greenland and Canada in cooperation discuss the issue. The following statement was submitted for inclusion in this report from Greenland and Canada:</p> <ul style="list-style-type: none"> • It was noted that Canada did not present new or recent information on rates of struck and loss of small cetaceans. • It was noted that Greenland reports a loss rate of 0 on a reported catch of 179 narwhals and 86 belugas. <p>Canada and Greenland delegates agree that an exchange of information and experience on the collection of struck and loss rates in the harvesting of marine mammals would be beneficial to both the resource harvesters and the management decision process.</p>	<p>NA</p>	<p>Some exchange of information is given through the joint JCNB meeting.</p> <p>Different trials have been undertaken on S&L issues:</p> <p>Information from hunters on scars observed on narwhal and beluga as a way of trying to establish a survival rate and not set S&L as a 100 % death rate. Limited data has been received.</p> <p>Instead of all S/L animals being subtracted from the quota and the licence is considered used, a trial is planned for walrus, where S/L reports do not result in quota reducing, and the license can be used for a new animal, when the S/L has been reported to the municipality. This is an approach to get an estimate of S/L rates in different part of Greenland. CHM 02_2018: requires a change in current EO - expected to come into force in early 2019.</p>

EXPERT GROUP MEETING 2015 - 2nd Assessment of TTD in large whales

Council (NAMMCO AR 2014, p. 15) tasked the CHM to
 1) Convene EGM-2015 on large whale TTD, 2)
 Organise a seminar to focus on data collection,
 analysis and presentation.

<p>Norway The EGM acknowledges the completion of data gathering that has been done since 2010 and also the improvement in the quality of the hunt over the past few decades.</p>	<p>NA</p>				
<p>The EGM recommends that Norway repeat monitoring of the hunt with regard to TTD and IDR at 10-year intervals unless important issues arise that require more frequent monitoring.</p>				<p>Next should be in 2022.</p>	
<p>Iceland</p>					
<p>Minke whale</p>					
<p>The EGM acknowledges the work that has been done since 2010. The EGM encourages Iceland to try again to gather data on TTD and IDR and increase the sample size in order to obtain more robust information. A sample size of 25-30 animals should be adequate to obtain statistically reliable data for some types of comparisons.</p>		<p>NA</p>	<p>Collection of TTD undertaken in 2014, 2015 and 2017. TTD have been collected for 19 animals. TTD will continue in 2018 with the aim to collect assessment of TTD for at least 25 animals, as suggested by EGM-2015.</p>		
<p>There has been no training course arranged since 2003. A new course for the hunters should be arranged.</p>			<p>Training course held 2016 – mostly theoretical as regulations does not require a practical shooting test before each season.</p>		
<p>Fin whale</p>					
<p>Recommendations from 2010 are fully completed and the EGM acknowledges this.</p>					
<p>The EGM recommends that Iceland repeat monitoring of the hunt with regard to TTD and IDR at 10-year intervals unless important issues arise that require more frequent monitoring.</p>			<p>Next should be in 2024</p>		

Greenland
Minke whale - harpoon gun hunt
There has been an improvement of the grenade hunt of minke whales. The EGM acknowledges this, and also the low struck and lost rate. The IDR is lower, and the TTD greater than in Norway, and the aim should be to improve the hunt efficiency. The recommendations from 2010 to present the data and analysis in a statistically more informative way will be fulfilled in the near future. Analysis of strike location should be informative of why Greenlandic hunts have lower IDR than Norwegian hunts and the EGM recommends that the result of this analysis be presented to hunters in future trainings.
It was furthermore recommended to organise a practical training course for gunners. There should, as stated by the hunters, be a debriefing at the end of the season in order to exchange information and experiences from the season.
Minke whale -rifle hunt
Data show that there is a longer TTD and higher struck and lost rate in the rifle hunt than in the harpoon hunt.
The EGM learned that the proportion of minke whales hunted in the collective hunt has been increasing in recent years as compared to the number of whales hunted with deck-mounted harpoon gun. Noting that rifle hunts are increasing, the EGM encourages Greenland to evaluate the current sequence of the use of rifle and harpoon to catch the animals and also the efficiency of the harpoon in this sequence. It also encourages review of other types of harpoons.
The Greenlandic hunters stated that there is a clear difference in efficiency of killing between different geographical regions in Greenland. The EGM reiterates the recommendations that experienced hunters should meet with less experienced hunters to exchange information.
The EGM acknowledges that Greenland has gathered data pertaining to the body position where the whale is hit and TTD, and looks forward to analysis and interpretation of these data to be made available.

Data analysis work in progress not finalised, is resource depending.
No practical courses for gunners held. Hunters locally hold debriefing meetings that are not organised by the Ministry.
Description no recommendations.
Resources economically and timewise have not been available given other priorities to collect data from the hunts in all of Greenland.
Meetings with hunters from different regions to exchange information and discuss the NAMMCO EG recommendations are under planning.
The dataset awaits analysis depending on resources.

NA

Council 2015 endorsed CHM concern that (NAMMCO AR 2015, p. 20) :
The rifle hunt in Greenland seems to be increasing, as a result of demand for meat that is not being met by the harpoon grenade hunt.

Fin whale
The EG acknowledges Greenland for the change in the charge of the grenade that has resulted in a higher IDR for the fin whale hunt. The IDR is lower and the TTD greater than in the Icelandic fin whale hunt and the aim should be to improve the efficiency bearing in mind the differences in equipment used.
Data are needed with reference to the body position where the whale is hit in relation to TTD, and the EGM looks forward to analysis and interpretation of these data to be made available.
Bowhead
The EGM acknowledges that shooting trials to study the trajectory of the harpoon through the water have been performed.
Data are needed with reference to the body position where the whale is hit in relation to TTD, and the EGM looks forward to analysis and interpretation of these data to be made available.
Fin, humpback and bowhead
The EGM recommends that hunters be trained to measure and report on strike location, detonation location and distance between the two in order to evaluate the efficiency of the hunts.
GENERAL
Accepting that struck and lost is an inevitable part of all whaling operations the EGM recommends that there be a review of the underlying reasons for struck and lost with the aim of decreasing it.
The EGM recommends that the data be analysed by the statistical methods recommended in 2010. These analyses should include analysis of the efficiency of the backup (secondary) killing methods.

The dataset awaits analysis depending on resources.			
Very few whales caught (2018), so a limited dataset, that has not been analysed yet.			
Difficult to get the information from hunters and wildlife officers— training started but data feedback minimal.			
			NAMMCO AR 2015, p. 20: Council endorsed CHM recommendations and tasked CHM to advice on how to best deal with:
			The need to review the underlying reasons for struck and lost, with the aim of decreasing rates. Work ongoing in CHM.
The dataset awaits analysis depending on resources.			Organised a seminar in 2016 on statistical analyses- Greenland and Iceland participated.

Monitoring				Developed a protocol for collection of TTD data in whale hunts with deck mounted harpoon gun. 2015
The EGM recommends that all hunts be monitored with regard to TTD and IDR at 10-year intervals unless other important issues arise that require more frequent monitoring.		Next should be in 2024.	Next should be in 2022.	NAMMCO AR 2015, page 20: Council meeting 2015 endorsed CHM recommendation to monitor TTD and IDR at 10-years intervals unless other important issues arise requiring more frequent monitoring.
The EGM recommends a workshop to look into alternative, and if possible, more economical methods for collecting standard TTD data that may also facilitate more frequent collection of data.				The need to organise a workshop on alternative methods for collecting standardised TTD data that are less expensive, thus making it easier to compare TTD between countries. CHM discussions ongoing.
Education and training				
The EGM emphasises the importance of the angle of the shot relative to the animal's long axis in the harpoon gun hunts. The recommended angle, based on the Norwegian data, is from 45 to 135 degrees relative to the animal's long axis and aiming the shot at the thorax. This information should be considered in training programmes for gunners.	NAMMCO manual on large whales	Included in the Icelandig courses.	These issues are emphasised in the Norwegian course for hunters.	The importance of increasing, through training, hunters' awareness of the influence of the shooting angle relative to the animal's body in order to reduce TTD.
Regular training and exchange of information is very important to achieve more efficient hunts and to improve animal welfare.				
The EGM emphasises the importance of combining theoretical information with actual meetings in order to exchange information and experiences, including sampling and recording of data.				

Note that harpoon gun and harpoon cannon are terms relating to the same weapon.

References:

NA Not applicable

WS-1999 Workshop on hunting methods 9-11 February 1999

WS-2001 Workshop on Marine Mammals: Weapons, ammunition and ballistics, 13-15 November 2001

WS-2004 Workshop on Hunting methods for seals and walrus, 7-9 September 2004

WS-2006 Workshop on Struck and Lost in seal, walrus and whale hunts, 14-16 November

EGM-2009 Expert Group meeting on best practices in hunting and killing seals, 24-26 February 2009

EGM-2010 1st Expert Group meeting on TTD in large whales, 17-18 February 2010

EGM-2011 Expert Group meeting on small whale hunting, 15-17 November 2011

EGM-2015 2nd Expert Group meeting on TTD in large whales, 4-6 November 2015

NAMMCO AR xxx NAMMCO Annual Report year in question

CHM x.xx Report of the Committee on Hunting Methods, meeting number, year in question

CHM Doc 01-2018 OVERVIEW OF MARINE MAMMAL HUNTING METHODS INC. NATIONAL REGULATIONS, MONITORING/OBSERVATION IN NAMMCO MEMBER COUNTRIES

Manual LW Manual on maintenance and use of weaponry and equipment deployed in hunting of baleen whales in NAMMCO member countries

Manual SW Manual on small whale hunting in Greenland

References	CHM requests/recommendations	Council responses/decisions
Report of Council 1, Sep. 1992, p. 6		Council 1 established an Ad hoc Committee on Hunting Methods (CHM) (ToR 6.1)
Year 1993		The ad hoc WG meet in January and September 1993
NAMMCO AR 4 - 1994, item 6, p. 11	Unclear status of the Group "Ad hoc Committee" or "WG"? Reporting under who? Proposed that the "WG/Committee" become a permanent independent WG, reporting to Council.	Council 4 decide on a permanent WG on Hunting Methods (WGHM) under Council and adopted RoPs. The role of the WG would be to provide advice on hunting methods for those species of marine mammals relevant to NAMMCO member countries upon request from the Council, individual member countries, WG members or non-member government.
NAMMCO AR 1995, item 6, p. 24	Reporting on activities	No decision taken
NAMMCO AR 1996, item 6, p. 31	Up to now functioned as a forum for exchange of information, lists of references on hunting methods and regulations in members countries developed. Proposed that the WG expand by discussing standards for equipment for similar methods occurring in two or more member countries. Also monitor developments in IWC and ISO on criteria and standards for humane killing.	Council 6 endorsed the recommendations of the WGHM for how to proceed in its work.
NAMMCO AR 1997, item 5, p. 29	No meetings	No decision taken
NAMMCO AR 1998, item 5.1.2, p. 25	1) recommended to hold a WS on hunting methods in 1999 and proposed ToR for the WS 2) requested advice from Council on no-member countries participation in WS's	Council 8 endorsed holding WS and approved ToR for WS: - to review existing marine mammal hunting methods in member countries, including technical developments with respect to equipment and methods, with the view to providing a technical evaluation of different methods of hunting (fin and minke whaling; hunting of small whales; seal and walrus hunting); - to examine possibilities for technical innovation and further enhancement of efficiency and safety in hunting methods, with a view to providing recommendations for improvements, where relevant. Council 8 agreed that participation should encompass all relevant expertise, also from non-member countries.
NAMMCO AR 1998, 5.1.3, p. 25	Proposed amendments to RoP on frequency of meetings - from at least once a year to once a year (4.1) Publication of report technical edit.	Council 8 endorsed the amendment.
NAMMCO AR 1999, item 5, p. 27	CHM recommended to endorse the recommendations from the WS-1999. CHM identified that basic knowledge on ammunition types and ballistics are lacking and want to pursue this topic further.	Council 9 endorsed the Recommendations from the WS-1999. Council 9 noted the valuable contributions of the hunters to the Workshop, and stressed the importance maintaining the involvement of the hunters in future meetings Council 9 endorsed this intention.
NAMMCO AR 2000, item 5.1.3, p. 27	Hold a Workshop on Weapons and Ammunition (WS-2001).	Council 10 agreed to the recommendation of CHM Council 10 agreed that the goals of the WS would be to increase the understanding of weapon types, ammunition and ballistics for hunters, administrators and other personnel, and to develop a minimum set of requirements pertaining to weapons and ammunition types with regard to the different species.
NAMMCO 2001, item 5, p. 26	The CHM recommended the following: 1. To develop guidelines for methods used to undertake more controlled and standardised studies of the effect of different weapons and ammunition on different species. 2. To harmonise weapons and ammunition types for different species with due consideration to variation in hunting conditions in the different countries. 3. To focus on seals and seal hunting. 4. To organise a workshop focussing on seals and seal hunting.	Council 11 agreed that the list of regulations should be translated into English and that list of references should include the working papers presented at the WS-1999. Council 11 endorsed the recommendations from CHM and tasked the CHM with continuing their planning of the WS, likely to be organised in 2004.
NAMMCO AR 2002, item 5, p. 33		Council 11 endorsed all recommendations from the WS-2001. Council 12 endorsed holding a WS in 2004 on seal hunting methods with following ToRs: - to review existing seal hunting methods known - to evaluate methods used in seal hunting in relation to killing efficiency and struck and loss rates - to examine possibilities for technical innovation and further enhancement of efficiency and safety of hunting methods, with a view to providing recommendations for improvement where relevant - if possible, determine minimum requirements for safe and efficient killing of different seal species, considering variations in hunting methods.
NAMMCO AR 2003, item 5 p. 29		Council 13 did not endorse new actions only noted progress on ongoing issues.
NAMMCO AR 2004, item 5, p. 31-2	- to finalise the work on standardising guidelines for methods used to undertake more controlled and standardised studies of the effect of different weapons and ammunition on different species. The work is two-fold, first to conduct the report of the shooting trials on heads of pilot whales in the Faroe Islands in September 2004, and second to finalise the guidelines to be presented to the Council at its meeting in 2006. - to convene a workshop on "struck and lost" in whale and seal hunting, tentatively in the autumn of 2006, bearing in mind the three previous NAMMCO Workshops in 1999, 2001 and 2004 arranged by CHM. The aim will be to elucidate and to analyse the problem of "struck and lost" in whale and seal hunting and make very specific recommendations on how to reduce this problem.	Council 14 agreed to CHM's recommendation on future priorities:
NAMMCO AR 2004, item 5.2 p. 33		Council 14 endorsed the recommendations from WS-2004 on seals and walrus.
NAMMCO AR 2005, item 5.1, p. 30		Council 15 endorsed CHM's intention to compile all WS proceedings into one publication. This was redrawn by Council 16 (2007).
NAMMCO AR 2006, item 6.1, p. 21-2	CHM suggested convening a new workshop with the working title: "Handling, processing and utilisation of hunted marine mammals" with the ToR - to maximise the quality and quantity of the products obtained from hunting through exchange of information regarding handling, processing and utilisation and to make relevant recommendations. Suggested timing was first half of September 2008. Japan informally requested to submit whale killing data to NAMMCO for review. CHM agreed to carry out this given approval for Council should Japan forward a request.	Council 16 approved CHM proposal to hold this WS. The HoDs agreed in June 2010 not to hold the WS. Council 16 endorsed all recommendations from the WS-2006. Council 16 endorsed this procedure.

<p>NAMMCO 2007-2008, item 7.1, p. 20</p>	<p>CHM made suggestion for how to proceed with the requested work to focus on best practices in sealing (NAMMCO/17/8, Item 7.1; Section 1.2),</p>	<p>Council 17 endorsed the following work plan and terms of reference:</p> <ul style="list-style-type: none"> • The work should build upon the knowledge and experiences already gathered in previous workshops organised by the Committee and possible new developments emerging since the last workshop held in 2006. • The work should be undertaken in a focussed group of specially invited experts with experience in seal hunting practices from sealing nations and communities. • The EG will critically assess different seal hunting methods within their contexts, addressing such questions as: <ul style="list-style-type: none"> * The use of specific hunting methods and equipment in particular settings * Training requirements for hunters * Control and monitoring of hunting methods * Research needs to improve the basis for further assessment. • The EG will develop recommendations on best practices based on state of the art in sealing today and identify where and how specific improvements can be made. • As background information for the work of the expert group, the Secretariat, in cooperation with CHM, will prepare a collation of relevant information and recommendations on seal hunting methods from previous NAMMCO workshops and other relevant and up-to-date sources of information on sealing practices. <p>Council endorsed that efforts be made to disseminate the work of CHM and its workshops more widely. The focus should be on the valuable exchange of expertise and information between hunters and technical experts through NAMMCO, which aims to ensure the best possible humane killing methods in different forms of whaling, sealing and walrus hunting.</p>
<p>NAMMCO AR 2009, item 7.2, p. 20</p>		<p>Council 18 endorsed the report and the conclusion of the 2009 EG on Best Practices in Hunting and Killing of Seals</p>
<p>NAMMCO AR 2009, item 7.3, p. 20</p>		<p>Council 18 requests the CHM to organise a WG in February/March 2010 to undertake a review and evaluate the whale killing data submitted to NAMMCO by Japan in 2009, as well as data and information on recent and ongoing research on improvements and technical innovations in hunting methods and gears used for the hunting of large whales in NAMMCO countries.</p>
<p>NAMMCO AR 2010, item 7.3, p. 21</p>	<p>CHM recommended that:</p> <ul style="list-style-type: none"> • A manual for hunters on weaponry, etc. is planned and an editorial committee is established for the content. the CHM will act as reviewers for the handbook. Eventually the manual will be issued in all languages of NAMMCO countries. Currently there is a need for external funding for this project as well as input from NAMMCO. CHM will develop a budget for this project. • A further workshop addressing killing times and methods in small cetacean hunts, also involving external experts from USA, Canada, and other countries is desirable; possibly in spring 2011. • A new workshop for large whales be scheduled in 3-4 years including processing methods, but discussion can be delayed until the next NAMMCO meeting in 2011. <p>Postponement and ultimate cancellation of the originally planned handling workshop was regretted, but was explained due to the original goals being too ambitious. CHM recommends that hunters should always be invited to participate in workshops as their input is invaluable.</p>	<p>Council 19 endorsed the recommendations of CHM.</p>
<p>NAMMCO AR 2011, item 7.1, p. 19</p>		<p>Council 20 reiterated its endorsement of the WS on Hunting methods for small cetaceans with the following ToRs:</p> <ol style="list-style-type: none"> 1. Review and assess current hunting and killing methods for small cetaceans. 2. Review and assess information on recent and ongoing research on improvements and technical innovations in hunting methods and gear used for hunting of small cetaceans. 3. Review and assess time to death (TTD) data on the killing of small cetaceans. 4. Give recommendations with respect to possible improvements.
<p>NAMMCO AR 2012, item 7.2, p. 19</p>		<p>Council endorsed all the recommendations from the EG 2011 for improvement on killing methods. These included developing a manual for the Faroese pilot whale hunt and developing a training manual for hunters.</p>
<p>NAMMCO AR 2013, item 7.2, p. 19</p>	<p>With respect to collection and presenting TTD data, CHM recommended that all member countries use the same methods and form for reporting of TTD data. It was suggested to use the Norwegian method as a standard.</p>	<p>Council endorsed the recommendations from the CHM, noting especially that future voluntary reporting of TTD data to the Committee should be modeled around the Norwegian manner of presenting these kinds of data, and tasked the CHM to organize a seminar to focus on data collection, analysis and presentation.</p>
<p>NAMMCO AR 2014, item 7.2, p. 14</p>	<p>That NAMMCO organise an expert group meeting in line with the one held in 2010 to review and assess large whale killing methods. Also hunting nations like USA, Canada, Japan and Russia will be invited to inform about their hunting practises and present data from their large whale's hunt. The following terms of reference was agreed upon:</p> <p><i>"The expert group meeting shall undertake a review and evaluate the whale killing data submitted to NAMMCO by member countries and associated hunting nations, as well as data and information on recent and ongoing research on improvements and technical innovations in hunting methods and gears used for the hunting of large whales."</i></p> <p>CHM will organise a practical hands on seminar on analysing and presenting TTD focusing on Greenlandic and Icelandic datasets, just prior to a TTD expert group meeting.</p>	<p>Council 23 endorsed the recommendations from CHM.</p>
<p>NAMMCO AR 2015, item 8.2, p. 18-20</p>	<p>CHM discussed at length the problems related to by-catch, strandings and entanglement of live whales. It recognised that its ToR focused on direct takes, but at the same time acknowledged that these issues have great animal welfare consequences which is of concern to the Committee. CHM asked advice from Council on how best to address these questions.</p> <p>CHM drew the attention of Council to the following issues arising from the conclusions and recommendations of the EG meeting on TTD data:</p> <ul style="list-style-type: none"> • The concern that the rifle hunt in Greenland seems to be increasing, as a result of demand for meat that is not being met by the harpoon grenade hunt. • The importance of increasing, through training, hunters' awareness of the influence of the shooting angle relative to the animal's body in order to reduce TTD. • The need for monitoring TTD at 10 years intervals. • The need to organise a workshop on alternative methods for collecting standardised TTD data that are less expensive, thus making it easier to compare TTD between countries. • The need to review the underlying reasons for struck and lost, with the aim of decreasing rates. 	<p>Council 24 agreed that a discussion be initiated in NAMMCO, on the background of both the Norwegian preparatory work and guidelines and the IWC recommendations and conclusions. Such discussion should enlighten how to best apply locally the recommendations brought forward.</p> <p>Council 24 decided to ask CHM to review its ToR and to come up with suggestions on how best to deal with the animal welfare concerns related to by-catch, entanglements and strandings in the NAMMCO framework.</p> <p>Council 24 endorsed the recommendations of the Committee. It agreed to</p> <ul style="list-style-type: none"> • Express concern to Greenland that the rifle hunt is increasing. • Recommend to monitor TTD at 10 years intervals • Recommend to enhance hunters' awareness of the impact of the shooting angle on the TTD. <p>Council 24 agreed to organise a workshop for developing alternative means of collecting standardised TTD and to the need of reviewing underlying reasons for struck and lost.</p> <p>Council 24 tasked CHM to return to Council with a proposal for how these recommendations best can be dealt with, including budget implications.</p>

NAMMCO AR 2016, item 8.2, p. 18-20	<p>With regards to animal welfare concerns related to by-catch, entanglements and strandings, the CHM recommended to Council to establish a new committee. It also strongly recommended not to limit the ToR of the committee to issues specifically related to by-catch, entanglements and strandings, but to make them general to non-hunting related welfare issues and able to encompass situations not foreseen today.</p>	<p>Council 25 decided not to follow CHM recommendations but those of FAC and to establish a Working Group directly under Council to deal with animal welfare issues solely related to by-catch, entanglements and live strandings. The name of the WG shall be NAMMCO WG on By-catch, Entanglement and Live strandings.</p>
	<p>Upon request from FAC, the Committee had also drawn Rules of Procedure for this new committee (NAMMCO/25/11, Section 3).</p>	<p>Council 25 furthermore agreed to the following terms of reference, as proposed by FAC:</p> <p>1) The WG shall upon request from the Council or individual member countries, provide advice on welfare issues related to by-catch, entanglement, and live strandings, affecting marine mammals. The WG shall ensure that such advice is based on the best available scientific findings, technological developments and traditional knowledge, with due consideration given to safety requirements for humans</p> <p>2) Members of the WG may raise specific questions for discussion during meetings of the Working Group. The Working Group may make proposals to the Council for specific tasks to undertake within its terms of reference</p> <p>3) Non-member governments with observer status in NAMMCO may request advice from the WG through the Council</p> <p>4) The Committee may seek outside expertise if it considers this necessary and appropriate. The WG will nominate its Chair in agreement with FAC</p>
NAMMCO AR 2017, item 8.2, p. 10	<p>CHM agreed to forward the following recommendations to Council for future work:</p> <ul style="list-style-type: none"> • Looking further into the possibility of implementing self-reporting methods to describe the killing efficiency of the hunt • Convening a workshop on alternative methods to collect data on the efficiency of the hunt • Finalising the narrative to the video on the handling of the penhrite Whale grenade-99 for the use of all interested NAMMCO countries 	<p>Council 26 endorsed the recommendations forwarded by CHM</p>