

## Annex F

# Report of the Working Group on Whale Killing Methods and Associated Welfare Issues

Monday 13 June 2005, Ulsan, Korea

The list of participants is given in Appendix 1. The Working Group was established to review information and documentation available with a view to advise the Commission on whale killing methods and associated welfare issues (*Ann. Rep. Int. Whaling Commn.* 2000:17).

### 1. INTRODUCTORY ITEMS

#### 1.1 Appointment of Chair

Esko Jaakkola (Finland) was appointed Chair of the Working Group.

#### 1.2 Appointment of rapporteurs

Roger Eckert (USA) was appointed as Rapporteur.

#### 1.3 Review of documents

The Chair reviewed the list of documents available to the Working Group (see Appendix 2) and drew attention to specific documents to be addressed under Agenda Items 3 and 4. Japan noted that IWC/57/WKM&AWI 11 addresses both Agenda Items 3 and 4.

The Chair noted that the following countries have become members of the Commission since IWC/56: Mali, Kiribati, the Czech Republic, the Slovak Republic, and Luxembourg. He welcomed their participation in the Commission.

### 2. ADOPTION OF AGENDA

The Agenda given in Appendix 3 was adopted by consensus. Japan made the following statement: 'Japan considers that the whale killing methods and associated welfare issues are outside the competence of the IWC. Therefore, its contributions, including provisions of data and attendance at the Working Group are made on a voluntary basis.' The UK stated its belief that the Commission has a moral responsibility to consider welfare issues.

### 3. DATA PROVIDED ON WHALES KILLED

Documents presented under this Agenda Item were provided to meet the request of IWC Resolutions 1999-1 and 2001-2.

The Chair noted that the Secretariat has updated the form used for reporting information on whale killing methods, in compliance with Resolution 2004-3.

Denmark (IWC/57/WKM&AWI 4 and IWC/57/WKM&AWI 6) offered detailed information regarding the 2004 Greenland hunt of minke and fin whales. New Zealand indicated that it would be helpful if the time to death information for the different killing methods could be separated in order to determine any differences between them. Denmark indicated that it will consider this for the next meeting. Australia asked about the availability of

assistance in validating the data, and questioned whether the minimum calibre of the rifles was adequate to ensure humane killing. Denmark responded by indicating that day to day management of the resources is the responsibility of the Greenland Home Rule government, but that it would provide additional assistance pertaining to veterinary issues, if requested. In addition, it would be difficult to have complete veterinarian coverage of the hunt due to limited space in whaling vessels. New Zealand stated that Denmark, not Greenland, is a signatory to the Convention, and is accountable for the hunt as a matter of international law. Denmark indicated that the question of animal welfare is important, and that Greenland has done much to improve the humaneness of the hunt over the years. Norway also indicated that there has been a huge effort in Greenland over the past 20 years to improve the hunt, that there are safety concerns for the hunters, and that it would be difficult to place a veterinarian in all boats because of their small size. Sweden asked whether there were obligatory shooting tests for hunters, and whether the minimum calibre size should be 9.3mm, as in Norway. Denmark indicated that there are shooting tests, but not a yearly obligation to take the test, and that the minimum calibre requirement is 7.63mm. Denmark expressed its confidence in the efforts of the Greenland Home Rule government, and does not plan to interfere with regard to the calibre of the rifles used in the hunt.

Japan presented document IWC/57/WKM&AWI 11, a summary of the 2003/2004 and 2004/2005 Japanese Whale Research Programme under Special Permit in the Antarctic (JARPA), and the 2003 and 2004 Japanese Whale Research Programme under Special Permit in the western North Pacific (JARPNI). Japan indicated that it had made significant efforts to improve whale killing methods, successfully reduced average time to death of minke whales to less than two minutes, and increased the instantaneous death rate. Japan stated that it will continue to reduce time to death by improving killing methods. The UK asked if there was any time to death data on sperm whales, and noted that the data in table 2 of IWC/57/WKM&AWI 11 pertaining to number of minke and sei whales killed did not add up. Japan responded that the number of sperm whales harvested is statistically too small to evaluate time to death data, and that it will provide data in an appropriate manner when enough become available. Also with regard to table 2, Japan indicated that the secondary killing column includes the number of whales taken using each secondary killing method, thus addition of each number results in a double-count of animals caught using both harpoon and rifle. New Zealand indicated that it should be easy to collect data on sperm whales and that animal welfare concerns are increased for sperm whales because of their larger size. New Zealand asked if there were any differences in the harpoon cannons and the grenade used to

kill different species. Japan commented that the purpose of collecting data is primarily for improvement of whale killing methods, and that it will share data with cooperating countries when enough data become available. However, Japan stated that it does not intend to provide data for the purpose of criticizing whaling countries. Japan also explained that there could be bias in sperm whale data given the small sample size. Regarding the whaling devices, Japan indicated that the cannons used to kill different species are the same size, but for larger species, the powder in the penthrite grenade is increased and a delayed-time fuse system is used. The UK asked about harpoons used as the secondary killing method. Japan indicated that a cold harpoon is used as the secondary method for killing minke whales and an explosive harpoon is used to kill large species. Australia noted that the instantaneous death rate for minkes varies between 35-44% but that the instantaneous death rate for Norway's commercial whaling is 80%. Japan expressed irritation that the same questions were asked every year. However, Japan indicated that there are two reasons for the differences. First, Japan could not approach whales unnoticed under its random sampling method, whereas Norwegian whalers approach whales unnoticed. Second, the sea areas and conditions differ in that Japan's research is conducted in the open ocean, whereas Norway's hunt is coastal. New Zealand indicated that Japan's desire not to share data with countries that oppose commercial whaling is a non-sequitur because we all share a common objective, and that, in the past, New Zealand has collaborated with Japan on improving whale killing.

Norway presented document IWC/57/WKM&AWI 5 regarding Norwegian minke whaling in 2003 and 2004. The UK asked if the 19 struck and lost whales were hunted down, given that no whales were reported to have escaped wounded. Norway stated that most whales were lost after they were dead. If large swells occur while the animals are hanging in the harpoon line alongside the boat, i.e., before they are strapped and hauled on board, the harpoon might break or be torn loose if the whale is hoisted above water during swelling. If the harpoon breaks loose while the animal is still alive, the hunters normally chase down and kill the animal using another grenade. The UK expressed sadness that Norway's humane killing research programme was halted, and indicated that ongoing collection of data is necessary. The UK further stated that blue boxes cannot collect all data on killing methods.

The UK presented IWC/57/WKM&AWI 10, a summary review of Norwegian research on the humaneness of whale killing. The UK indicated that while the histological and pathological sample methodology was accurate, it took issue with the sampling reported and the conclusions of Dr. Knudsen's research. The UK also indicated that the research may not be representative of Norwegian commercial whaling as a whole. The UK stated that it would circulate a transcript of a film of a Norwegian commercial whaling vessel. The filmed hunt was undertaken in less than ideal sea conditions. The UK stated that the time to death of the whale killed in the film (14 minutes), and the number of rifle shots (7), indicate a need for observers and specified ocean conditions for a hunt. Norway stated that the UK paper should have been presented to an IWC forum of experts, as the Working Group is inappropriate for reviews of scientific papers. In addition, Norway did not appreciate the UK's last minute

submission of the report. Norway stated that two other well respected reviewers of Dr. Knudsen's work had concluded that she had been too conservative in her use of histological preparations to diagnose death. Norway also said that her research thesis studied potential brain damage as a result of harpoon hits and grenade explosions in different parts of the whale body, and was not intended to be a statistically random sample of whale brains from the Norwegian hunt, as suggested by the UK's reviewers. Norway also stated that the variations in Instantaneous Death Rate (IDR) from Dr. Knudsen's study and the reported IDR of 80.7% from the 2002 hunting season was mainly a result of the different grenades used in her study and the grenades used in 2002. Dr. Knudsen's sampling of brains was mainly carried out before the final version of the Norwegian grenade was introduced. With regard to the 46% of whales that had been re-shot with rifles, Norway stated that many hunters routinely re-shoot the whales with rifles in order to be certain that the animal is dead, but that the number of animals actually requiring a second shot is much lower. With regard to the film, Norway indicated that a 14 minute time to death only occurs in about 2% of the animals. It also indicated that, for some reason, the hunters in the film did not follow standard advice in that they did not haul the whale to the boat immediately after it was shot. Finally, Norway noted that it had always been open in providing data from its hunting activities. The UK indicated that it would have distributed the document sooner if it could have. The UK then proposed that the Working Group recommend holding a workshop in 2006 on whale killing methods and associated welfare issues.

The Russian Federation (IWC/57/WKM&AWI 4) gave a detailed presentation of the Chukotka hunt in 2004 after indicating that whale killing methods and associated welfare issues are outside the competence of the IWC, but that it was providing this information voluntarily. The hunt consisted of 110 gray whales and 1 bowhead whale. Concerning estimates of time to death, Russia stated that the mean time to death for gray whales was 29.3 minutes and the time to death for the bowhead whale was 30 minutes. Germany thanked Russia for its detailed information, but expressed concern about the killing methods used, and stated that a workshop in 2006 is needed. Germany would also like more information from Russia on its work to reduce time to death. Russia indicated that because of small boat size it was difficult to place scientists or non-hunters on boats in order to estimate time to death. Furthermore, it is generally difficult to determine time to death. Sweden asked if Russia has been able to lower the number of hunting accidents over the years. Russia indicated that hunter safety is a priority, and that the safety of hunters depends on the hunters themselves and their level of expertise. Russia also indicated that it has received assistance or advice from Norway, Japan, the Netherlands, and the Alaska Eskimo Whaling Commission (AEWC) to improve whale killing methods.

The USA reported the passing of Thomas Napageak, Chairman of the AEWC, on 6 May, 2005, and then gave a presentation of the Alaska Eskimo bowhead hunt for 2004 (IWC/57/WKM&AWI 4). Among other things, the efficiency of the Eskimo hunt was 84% last year, which is above the 75% efficiency goal set several years ago. The USA also indicated that there was no gray whale hunt in 2004 due to the need for the Makah Indian Tribe to satisfy domestic legal requirements. The USA referred to the

Working Group's 2002 report for a description of Makah hunting techniques.

The USA indicated that two initiatives of the AEWC are largely responsible for the improved efficiency in the bowhead whale hunt: regular hunter training and an extensive weapons improvement programme. Time to death is difficult to estimate in the bowhead whale hunt, in part because environmental conditions under which hunts are conducted are treacherous. Moreover, there is a need to protect hunter safety. The Eskimos use small boats made of seal or walrus skin and the bowheads are very large (averaging about 10m in length). Eugene Brower, Chairman of the AEWC's Weapons Improvement Committee and President of the Barrow Whaling Captains' Association, underscored the dangers of the bowhead subsistence hunt. A few years ago, a large pan of shore-fast ice where many crews had set up camp, broke off and drifted more than 20 miles out to sea off Pt. Barrow. But for the North Slope Borough Search and Rescue, 164 people would have been lost. Four people from the village of Gambell died in the hunt this year when they went out on a calm sea to help tow a bowhead. The weather changed suddenly, with high winds, the sea became rough, and the boat was swamped before it could get back to shore. Mr. Brower summarised the weapons improvement programme and efforts to determine time to death. The weapons improvement programme has three goals: the quick and humane death of harpooned whales, increased efficiency, and hunter safety. The AEWC hopes to achieve these goals through the introduction of the penthrite grenade into the hunt for use with the hand-held darting gun, the primary weapon in this hunt. With regard to the difficulty of collecting time to death information, Mr. Brower emphasised that the IWC mandate to report an accurate 'time to death' is extremely difficult to fulfil during the bowhead whale hunt, in part because sea, ice and weather conditions can be treacherous and there is an overriding need to protect hunter safety. Further, the small boats must be very close to a whale in order to use the darting gun, and crews must quickly move to a safe distance after striking a whale, then must wait for some time to ensure that the whale is in fact dead. In an incident several years ago, approximately 30 miles offshore of Cross Island, a whale was struck by a crew from the Village of Nuiqsut. The whale turned on its back, and was presumed killed; the crew waited half an hour, prayed, and then attached a tow line from the lead boat to the whale. As the boat was getting underway, the whale righted itself and dove, pulling the boat and its five crew members under the water. The crew members were recovered by other boats in the area, but the boat and all gear were lost. Therefore, time to death must be evaluated from a distance, with the whale partially or completely under the water. Mr. Brower indicated that a significant number of strikes with the new penthrite grenade appear to have resulted in a rapid cessation of movements. Finally, Mr. Brower stated that the weapons improvement programme has taken a number of years to develop, with design, production, and bench trials in Norway and field trials in Barrow. Norway stated that one of the explosive components needed for the penthrite grenade is produced in France. Unfortunately, France has refused to allow the export of this component because of an incorrect legal conclusion regarding its use. Norway indicated that this might delay implementation of the Alaska Eskimo's weapons improvement programme and

increase the costs, contrary to the goals of the Commission. France indicated that it will investigate this matter and would like more information on the company and on which ministry was contacted.

Germany, noting that most of the whaling countries gave reports on whale killing methods, stated that it would like to see data from Iceland and from St. Vincent and The Grenadines as well. Iceland indicated that it is using the same methods as the Norwegians, that there was no need to repeat the discussion, and that training has been provided. Germany asked if the Working Group could get data from Iceland on time to death. Iceland repeated that the killing method used is the same as the one used in Norway. Further, Iceland has not taken enough whales in its research programme for there to be statistically reliable results. Iceland indicated that it is continually trying to improve the effectiveness of its whaling killing methods and that the discussion on how to improve the methods that are used in Iceland and have been developed in Norway would not be facilitated by the small amount of data from Iceland. New Zealand asked whether Iceland believed it was under no obligation to report this information, or whether it considered it unnecessary to report this information. New Zealand also noted that Russia had presented detailed information on each whale taken. Iceland stated that it uses the same method used in Norway, based on Norwegian research, and that if it can improve whale killing methods it will do so. The UK indicated that it would be helpful to have Iceland's data, and given that Japan's research has resulted in higher time to death than Norway's operations, whether this is also true with Iceland's research methods. Iceland repeated that the numbers are too low to be statistically significant, but that it will revisit this matter in the future. Iceland pointed out that the relevant resolutions not only encourage governments to submit information regarding whaling but also comparative data from the killing of other large animals. Iceland noted that those countries who were calling for Iceland to submit data that has no significance in improving whale killing methods, had themselves not submitted the data they have available and is called for in IWC resolutions on whale killing methods and associated welfare issues. Returning to Germany's original question, St. Vincent and The Grenadines indicated that whale killing methods employed in the Vincentian hunt have not changed, and that its hunters catch about one whale per year. Further, St. Vincent and The Grenadines indicated that the hunters have very small boats and that it would be difficult to place observers on them. However, St. Vincent and The Grenadines would welcome help to improve the time to death.

#### **4. INFORMATION ON IMPROVING THE HUMANENESS OF WHALING OPERATIONS**

The Chair noted that Japan, the USA and Russia had already addressed Agenda Item 4 in their presentations under Agenda Item 3.

Denmark (IWC/57/WKM&AWI 7 and IWC/57/WKM&AWI 8) reported on improvements in whale hunting methods in Greenland. Among other things, the harpoon cannon renovating programme was finished in 1998. In 2004 there were 65 (not 73 as indicated in IWC/57/WKM&AWI 8) harpoon cannons on the west coast of Greenland authorised to apply for a license to go

whaling. The harpoon cannons are inspected every 2 years – reducing the risks for the hunters to a minimum and maximizing the efficiency when killing whales. During July and September of 2004, two courses on the handling and instruction of the use of the penthrite grenade were held.

Norway (IWC/57/WKM&AWI 5) gave a presentation on improving the humaneness of its commercial whaling operations in 2003 and 2004. Norway has been conducting projects on hunting and killing methods for whales for nearly 25 years. Norway has given numerous training courses and has developed new technology. The research and development has been laborious and costly. However, the instantaneous death rate is over 80%. Norway has discontinued the research in this field for the time, and the hunting and killing of whales will be controlled using periodic or random checks when necessary.

### 5. ADDRESSING REQUESTS MADE IN RESOLUTION 2004-3

The UK (IWC/57/WKM&AWI 9) reported on two workshops on determining criteria for insensibility and death in stranded cetaceans. The UK stated that while much work has been done on the effects caused by harpoons and other devices used to capture whales, there needs to be additional work on the criteria for determining the time of onset of permanent insensibility in whales. The UK reported that significant work has been accomplished in this area, and that the existing IWC criteria are not among the suitable measures for determining unconsciousness and death in cetaceans. The UK stated that the overall consensus of experts who examined this matter was that a package of measures will provide the most accurate assessment of the state on sensibility of a whale, questioning the validity of the existing, single-measure IWC approach for determining death in a harpooned whale. Norway stated that the IWC criteria lead to an over-estimation of time to death, and that the IWC data should be used in conjunction with post-mortem data in order to give better estimates. Norway stated that during strandings it is easy to get close enough to the whales in order to examine them as suggested by the UK. However, during hunting it is impossible to perform such detailed

examinations. The UK responded by stating that there is no intention to risk human life, and that new technology may be developed to allow measurements to be taken from a distance. St. Lucia agreed with Norway and stated that life would be put at risk to implement the recommendations described by the UK.

The Chair concluded that the Working Group would not be able to advise the Commission on matters identified in IWC Resolution 2004-3, and that several of these matters require further work and expert knowledge.

### 6. OTHER

The Chair noted that several countries had indicated the need for a workshop on whale killing methods and associated welfare issues. Australia indicated that there are elements of the discussion that would benefit from a workshop, perhaps prior to IWC/58. Dominica inquired as to the cost of a workshop. Norway indicated that it could support a workshop if it was held in conjunction with IWC/58. New Zealand indicated that the last whale killing methods workshop was held in Berlin in 2003, that it was helpful, and that it is appropriate to have another workshop. The USA expressed the desire for any workshop agenda item to include consideration of the practical needs of aboriginal subsistence hunters, particularly with regard to estimating time to death. The UK indicated that it will coordinate with other countries and develop an IWC Resolution on this. Dominica indicated that it would like the workshop to consider costs to aboriginal subsistence hunters. Denmark indicated that the workshop should be in relation to IWC/58 and that there needs to be work on possible terms of reference. The Working Group recommended a workshop on whale killing methods and associated welfare issues to be held at the next annual meeting of the Commission. The UK will consult with other countries on possible terms of reference for the workshop.

### 7. ADOPTION OF THE REPORT

The report was adopted by the Working Group on 17 June 2005.

---

## Appendix 1

### LIST OF PARTICIPANTS

#### Antigua & Barbuda

Tricia Lovell

#### Argentina

Miguel Iñiguez

#### Australia

Pam Eiser

Conall O'Connell

Gillian Slocum

#### Austria

Andrea Nouak

Michael Stachowitsch

#### Belgium

Koen Van Waerebeek

#### Denmark

Henrik Fischer

Leif Fontaine

Ole Heinrich

Amalie Jessen

Peter S. Olsen

#### Dominica

Andrew Magloire

#### Finland

Esko Jaakkola (Chair)

#### France

Vincent Ridoux

**Germany**

Peter Bradhering  
Marlies Reimann

**Iceland**

Stefan Asmundsson  
Asta Eingsdottir  
Kristjan Loftsson  
Gisli A. Víkingsson

**Italy**

Caterina Fortuna

**Japan**

Hiroshi Hatanaka  
Hajime Ishikawa  
Akihiro Mae  
Joji Morishita  
Seiji Ohsumi  
Midori Ota  
Haruo Tominaga

**Luxemburg**

Pierre Gallego

**Mexico**

Lorenzo Rojas-Bracho

**New Zealand**

Alan Cook  
Mike Donoghue  
Al Gillespie  
Geoffrey Palmer

**Norway**

Elisabeth Droyer  
Halvard P. Johansen  
Anniken R. Krutnes  
Egil O. Øen  
Jorn E. Pedersen  
Lars Walløe

**Republic of Korea**

Chiguk Ahn  
Zang Geum Kim  
Hyun-Jin Park  
Sung Kwon Soh

**Russian Federation**

Rudolf Borodin  
Vladimir Etylin  
Valentin Ilyashenko  
Olga Ipatova  
Gennady Inankeuyas  
Vlalilen Kavry  
Igor Mikhno  
John Tichotsky

**Saint Lucia**

Jeannine Rambally

**South Africa**

Herman Oosthuizen

**Spain**

Santiago Lens

**St Vincent and The Grenadines**

Sophia Punnett

**Sweden**

Bo Fernholm  
Anna Roos

**Switzerland**

Bruno Mainini

**UK**

Andrew Butterworth  
Richard Cowan  
James Gray  
Laurence Kell  
Jennifer Lonsdale  
Trevor Perfect  
Mark Simmonds  
Chanaka Wickremasinghe

**USA**

George Ahmaogak  
Eugene Brower  
Harry Brower, Jr  
Robert Brownell  
Roger Eckert (rapporteur)  
Maggie Hayes  
Keith Johnson  
Cheri McCarty  
Micah McCarty  
Daniel J. Morast  
Nate Pamplin  
Rolland Schmitt  
Diana Weigmann

---

**Appendix 2**
**LIST OF DOCUMENTS**

|   | Agenda<br>item |
|---|----------------|
| IWC/57/WKM&AWI  |                |
| 1 Draft Agenda  |                |
| 2 List of documents   |                |
| 3 Report on the use of the penthrite projectile in the 2000 through 2004 bowhead whale subsistence hunts in Barrow, Alaska (submitted by the USA)                                 | 4              |
| 4 Reports from Contracting Governments. Summary of activities related to the Action Plan on Whaling Killing Methods: Information on whales killed                                 | 3              |
| 5 Norwegian minke whaling 2003 and 2004 (submitted by Norway)   | 3, 4           |
| 6 A note regarding information encouraged in the IWC-Resolution 1999-1 with Appendix 1: 2004 quota allocation to individual municipalities (submitted by Denmark (Greenland))     | 3              |
| 7 Report on improvements in aboriginal subsistence whaling in Greenland (submitted by Denmark (Greenland))  | 4              |
| 8 Status for Greenland Action Plan on Whale Hunting Methods, 2004 (submitted by Denmark (Greenland))  | 4              |
| 9 Report of the United Kingdom and New Zealand workshops on determining criteria for insensibility and death in stranded cetaceans (submitted by the UK)                          | 5              |
| 10 Review of Norwegian research on the humaneness of whale killing (submitted by the UK)  | 3              |
| 11 Improvement of the time to death in the Japanese Whale Research Programme in the Antarctic Sea (JARPA) and Northwestern Pacific Ocean (JARPNI and JARPNI) (submitted by Japan) | 4              |

---

**Appendix 3****AGENDA**

1. Introductory items
    - 1.1 Appointment of Chair
    - 1.2 Appointment of Rapporteurs
    - 1.3 Review of Documents
  2. Adoption of the agenda
  3. Data provided on whales killed
  4. Information on improving the humaneness of whaling operations
  5. Addressing requirements made in Resolution 2004-3
  6. Other
  7. Adoption of the report
-