

## Report of the planning meeting for the 2005-2006 IWC/SOWER cruise and future cruises

### 1. OPENING REMARKS AND WELCOMING ADDRESS

The meeting was held at the Tokyo University of Fisheries and Technology, 22-24 September 2005. The convenor, Kato, who had recently become a Professor at the University welcomed the participants.. It was the first time since 1991 that an IDCR/SOWER meeting had been held at a venue other than the Institute of Cetacean Research.

On behalf of the Japanese Government, Morishita welcomed all participants to the meeting, including visitors from overseas. The meeting was being held in a new and difficult context this year. As participants had recently been made aware, for financial reasons the Japanese Government's support had been diminished by reducing the number of available vessels from two to one. Morishita realised this was a difficult situation but hoped the opportunity would be taken to discuss new ideas and propose new directions. He looked forward to constructive discussions and wished everyone well in their deliberations.

Participants are listed in Annex A. The meeting noted that apologies had been received from Best, Butterworth, Childerhouse, Clark, Hedley, Gales and Palka.

### 2. APPOINTMENT OF CHAIRMAN AND RAPORTEURS

Kato was elected chairman.

Bannister and Ensor acted as rapporteurs, with assistance from Donovan and others where appropriate.

### 3. ADOPTION OF AGENDA

The agreed agenda is given as Annex B.

### 4. ORGANISATION OF THE MEETING

It was **agreed** that the first two days, 22 and 23 September, would be devoted to discussion of the 2005-2006 cruise (see Part A of this report) whilst options for the future SOWER programme, i.e. beyond 2005-2006, would be discussed on the third day, 24 September.

### 5. REVIEW OF AVAILABLE DOCUMENTS

A list of documents available appears as Annex C.

## Part A. The 2005-2006 Cruise

### 6. REVIEW OF PLANNING DISCUSSIONS FOR THE 2005-2006 CRUISE AT IWC 57

The meeting reviewed the Scientific Committee's discussions at the Ulsan meeting (IWC/57/Rep1) where four priority items had been identified:

- (1) experiments designed to address problems in comparing minke whale abundance estimates from the second and third circumpolar cruise series (CPII, CPIII) (BT mode, satellite tagging, collaborative research with icebreaker);
- (2) a feasibility study for fin whale research in latitudes north of 60°S, involving a sighting survey (incorporating adaptive line transect sampling), acoustic sampling and biopsy sampling;
- (3) continuation of blue whale research;
- (4) humpback whale biopsy sampling and photo-identification.

These were considered in detail during subsequent discussions.

## 7. AVAILABILITY OF RESEARCH VESSELS

### 7.1 Research vessels offered by Japan

In the context of only one research vessel being available this year the meeting was informed that

- (1) there was no possibility of increasing the number of researchers on board for the forthcoming cruise, and it would be very difficult to consider that possibility for future years;
- (2) the situation was unlikely to change in the foreseeable future, i.e. the assumption should be made that only one vessel would be provided in future

On behalf of the IWC, Donovan reiterated the Commission's considerable appreciation of Japan's most generous provision of two vessels in previous years. He recognised the financial difficulties currently encountered by the Japanese Government in maintaining that level of support, but both as a scientist and as one closely involved in planning IDCR/SOWER cruises over many years he was saddened by the reduction to only one vessel. However, he noted that even one vessel is one more than that provided by any other nation. In the circumstances, it would be necessary to radically review plans both for the forthcoming cruise, but perhaps more importantly for future cruises. Even with two vessels – the context in which planning had proceeded at IWC57 - it would have been difficult to meet the long-term research general objective, with respect to obtaining Antarctic wide estimates of abundance and trend (see Part B, Item 2 of this report). With only one vessel available, serious consideration will need to be given to whether it is possible at all to meet that objective. A complete re-evaluation of the research and the methods to be used will be necessary. In such circumstances the Scientific Committee will need to be informed of this meeting's conclusions as soon as possible by the circulation of the report of this planning meeting.

Bravington agreed that in the second part of the meeting, consideration should be given to the long-term feasibility of obtaining abundance estimates, and that this should be borne in mind for the coming cruise in terms of the need to decide: (a) where to go; (b) how much time should be spent looking for whales there; and (c) the protocols to be followed. An important item for discussion at this meeting would be the limits to achieving an abundance estimate with the reduction in effort.

Ohsumi reiterated Japan's very great contribution to the research over more than 25 years. In his view the time had come for other countries, such as the USA and Australia, to consider contributing to the programme by providing vessels. This is discussed further in Part B, Item 2.2.

The meeting **agreed** to keep the above concerns in mind in deciding on the details of this year's cruise.

### 7.2 Other possibilities

The meeting noted that a number of Antarctic cruises and programmes (e.g. CCAMLR and SO-GLOBEC) exist, some with cetacean researchers on board, and that existing IWC co-operation with such activities may need to be expanded in the light of the reduction in the Antarctic SOWER effort. Although it is probably too late to consider direct cooperation with such programmes this year, those activities could be borne in mind in deciding where the 2005-2006 cruise should occur. For example, Australia is to conduct an extensive Antarctic cruise in the area 035°-060°E, with cetacean observers aboard.

## 8. PRINCIPAL STRATEGY IN THE LIGHT OF ONLY ONE VESSEL BEING AVAILABLE

### 8.1. Proposal by Best

The meeting considered a 'straw man' (WP 16) proposed by Best for the forthcoming and future cruises. In the circumstances he proposed the option of redesigning the programme to address questions of stock identity and movement, issues central to Antarctic baleen whale stock management but for which answers are currently lacking for nearly all species and areas. A full suite of research approaches should be used, including genetics (biopsy sampling), satellite tagging, photo-identification and acoustics. The priority would be all baleen whales but with special attention to minke, blue, fin and humpback whales. The survey could then be planned according to known concentration areas for those species and time allocated accordingly. Addressing questions of stock identity and movement as the central objective would have a number of advantages: the circumpolar approach is an ideal strategy by which to address the issues, and if they were the sole objectives of the programme a substantial amount of data could be obtained in one cruise.

Best considered an alternative option, of retaining population monitoring as the principal objective, but converting the survey into a combined visual/acoustic census, e.g. by towing an acoustic array.

In considering Best's proposals, the meeting noted that at SC57 Donovan had been asked to investigate the availability of satellite tags for this year's cruise. He reported that he had made enquiries from Mate, Gales and Heide-Jørgensen but no tags would be available this year. Other members reported likewise from possible sources in USA and Australia.

In an extensive discussion of Best's proposals, various views were expressed, including the possibility of conducting a feasibility study for a combined visual/acoustic survey this year. The meeting recognised that the great importance of

understanding stock structure in order to interpret data on abundance, status and trends had been identified at last year's workshop on future surveys and endorsed by the Committee (SC/57/Rep1). However, the meeting recognised that any major departure from the Scientific Committee's recommendations for the forthcoming cruise would need to be confirmed by the Committee. In these circumstances, and especially given the lack of available satellite tags, the meeting **agreed** that planning for this year's cruise should be confined to determining the extent to which the Committee's priority activities (see Item 6 above) could be met using only one vessel.

## 8.2. Other proposals

Ohsumi suggested that given a single vessel this year, consideration should be given to moving the research area closer to the area covered by JARPA.

## 8.3 Conclusion

The meeting **agreed** to concentrate its discussions on the four priority topics already determined by the Committee (see Item 6). Those allowed for information to be obtained both towards resolving problems already encountered in the analyses of the results of previous cruises, and for planning for future cruises. It noted that the Committee had proposed fin whale research for the area 000°-030°E.

## 9. PRIORITIES FOR THE CRUISE

### 9.1 Overall priorities

The meeting **agreed** that the four general items agreed by the Scientific Committee (see Item 6) should be accorded high priority for the 2005/06 cruise, although the time restraints imposed by having only one vessel would need to be taken into account. Those items are:

- (1) experiments designed to address problems in comparing minke whale abundance estimates from the second and third circumpolar cruise series ;
- (2) a feasibility study for fin whale research in latitudes north of 60°S, involving a sighting survey (incorporating adaptive line transect sampling), acoustic sampling and biopsy sampling;
- (3) continuation of blue whale research;
- (4) humpback whale biopsy sampling and photo-identification.

### 9.2 Minke whale experimental work

The meeting reviewed those experiments, largely related to Antarctic minke whales, given a HIGH priority ranking by the Scientific Committee (IWC/57/Rep1, Annex G, p. 20).

It concluded/noted as follows:

*Satellite telemetry:* given the current unavailability of tags, this would not be possible this year.

*BT survey protocol:* To assist in establishing the relative priority of BT mode research in relation to the other cruise objectives, a small group under Bravington reviewed the sample size required for this experiment, with the aim of providing an estimate of the amount of research time required. The group reported that, assuming a similar sighting rate for minke whales as encountered in the area last year, it may be necessary to cover approximately 1000 n.miles of trackline to achieve a sample size of 50 tracked sightings.

It was **agreed** that this is feasible and that trials of this important experiment will be more efficient if conducted in areas of relatively high minke whale density. The aim of this experiment is to test the feasibility of the method not to obtain an abundance estimate for a particular geographical area. High-power binoculars will be necessary for additional trials of the BT mode options as used on last year's cruise and 'big eye' binoculars will be needed for a potentially better option (WP18). Palka has undertaken to lend high-power binoculars of similar specifications as those provided by Japan last year. (Palka's binoculars are already fitted with reticles while those used last year were not). Hammond will lend a pair of 'big eye' binoculars with fixed mounts; it is stressed that the method of mounting is critical.

*Direct data acquisition:* it was **agreed** that direct data acquisition will be the primary data recording system for this cruise; WinCruz will be used. Ensor and Donovan **agreed** to contact the South West Fisheries Science Center, La Jolla, to ensure that the existing software is modified to meet the cruise requirements (and, if possible to be made directly compatible with DESS).

*Icebreaker collaboration:* given that no helicopter will be available this year (see WP15), and that the icebreaker is unable to dedicate any ship time for cetacean research, it was **agreed** that this option should not be considered further.

The meeting then considered items ranked MEDIUM and LOW by the Committee.

*CPII-type survey*: given that only one vessel was available and the high priority to given to BT feasibility work and fin whale research, only limited coverage in the southern stratum might be achieved and that this would not provide useful results.

*Adaptive sampling*: while only LOW priority for minke whales, the Committee noted that it is a HIGH priority item for fin whales and it was **agreed** that this should form an important part of the cruise. A group under Bravington was requested to provide advice on the priority that should be given to adaptive sampling during the fin whale survey with respect to searching in NSC and IO mode. Although the available data were limited, it reported that there was concern that the sighting rate may be low, therefore what would be most informative for this feasibility study would be for as much as possible of the survey to be conducted in NSP mode with adaptive sampling.

*Other experiments*: although visual dive time experiments had been accorded LOW priority by the Committee, the meeting concluded that given last year's trials, which were mainly conducted in very good weather, information in less than perfect weather conditions would be valuable, and it **agreed** that such experiments should be undertaken if the opportunity arises.

A small group under Donovan was tasked with reviewing the areas to be covered and the time to be allocated to each of the priority items. Its conclusions were adopted by the meeting as a whole, and are included as appropriate in items 11 and 12.

## 10. REVIEW OF THE BUDGET

Donovan reported that the Commission had agreed to the reduced budget allocation of £80,000. However, he noted that the provision of only one vessel would mean that some allocation of monies under the various budget headings would be necessary.

The meeting **agreed** that Donovan, in consultation with the Steering Group, be authorised to allocate the remaining funds for appropriate expenditure within the amount available.

## 11. CRUISE PLAN

### 11.1 General priorities, areas and allocation of research effort

The plan (initially developed by the small group under Donovan, see item 9) was considered in the context of the priorities determined at SC57, as discussed under item 9, for the two major research components, minke whales and fin whales with additional time being allocated for blue whale research and humpback whale biopsy and photo-identification work.

For minke whales, it was **agreed** that the primary aim is to evaluate the BT survey mode protocol which potentially will provide data for estimation of  $g(0)$ . This method, using either 'big eye' binoculars or high-power binoculars is important in two ways: (i) for explaining differences between CPII and CPIII; and (ii) as possible methodology for use in future cruises. Given the need to efficiently obtain the appropriate sample size, the area chosen was 000°-020°E, close to the ice edge, based on the relatively good sighting rate observed in this area last year. Allowing for variable weather conditions, for the need to undertake the estimated distance and angle experiment, and for alternation of research modes to provide necessary rest time (as BT mode places similar demands on the crew as IO mode), a total of 20-23 days would be needed. With an additional four days' allocated to blue whale research (they are expected to be more common in the southern area), it was **agreed** to allocate a total of 27 days for research during the southern component of the cruise.

For fin whales, it was **agreed** that the primary aim of the feasibility study is to investigate methods to try to estimate abundance (which is primarily to the north of 60°S) and especially to try out adaptive sampling techniques to maximise the efficiency of sighting effort. In this context, the aim would be to try the method in areas of highest density. However, there has been relatively little previous recent sighting effort north of 60°S (e.g.WP13). The meeting therefore examined a number of indirect sources, including summaries from Japanese scouting boat data and especially historic catch data. From these, it appeared that historically at least, the highest densities (if catches can be taken as a proxy for density) during January, were in the area *circa* 55°-61°S, 0°-20°E<sup>1</sup> (see Fig. 1). While acoustics are potentially important in estimating abundance, the techniques for combining acoustic and visual data to obtain abundance estimates are still at an early stage of development; for the purposes of this cruise it was **agreed** that attempting to detect and triangulate on fin whale sounds would be sufficient. The feasibility of obtaining fin whale biopsy samples under Antarctic conditions should also be investigated. Taking account of all the above and noting that acoustics can be undertaken during periods of rest and bad weather, it was **agreed** to allocate a total of 23 days for the northern component of the cruise (17 days' survey and 3 days' biopsy for fin whales and up to 3 days' for humpback whale biopsy/photo identification work – humpback whales are expected to be more common in the northern waters).

---

<sup>1</sup> After the meeting, Donovan re-examined the data for the exact period of the cruise that the vessel was expected to be in the northern area, i.e. 25 December-19 January, i.e. a little earlier than the January period considered. He will provide a discussion document for the pre-cruise meeting that may suggest minor modifications to the area proposed in Fig.2.

## REPORT OF THE PLANNING MEETING, TOKYO, SEPTEMBER 2005

Estimated angle and distance training will also be undertaken near the beginning of the research.

Including 15 days' transit between Cape Town and the research area and return, the combined total for all the above is 65 days, Cape Town to Cape Town.

### 11.2 Itinerary

The following itinerary was confirmed:

DATE	EVENT
16 November 2005	Depart Setoda, Japan
17 December 2005	Arrive Cape Town, South Africa
20 December 2005	Depart Cape Town
25 December 2005	Arrive northern research area
19 January 2006	Transit to southern research area
21 January 2006	Arrive southern research area
14 February 2006	Complete research and commence transit to Cape Town
22 February 2006	Arrive Cape Town
25 February 2006	Depart Cape Town
29 March 2006	Arrive Shiogama, Japan

Following discussion under Item 11.1, this is based on approximately:

- 17 days for fin whale adaptive sampling;
- 3 days for fin whale biopsy collection;
- 3 days for humpback whale biopsy/photo identification;
- 27 days for minke whale research (BT mode, estimated angle and distance experiment, visual dive time);
- 4 days for blue whale research.

In addition, at the discretion of the Cruise Leader, biopsy sampling and photo-identification of other species may be undertaken on other species (see Item 12.2.1.4).

### 11.3 Survey area

Following discussion under Item 11.1, it was **agreed** that the southern research component will take place in the region near the pack ice edge between about 000° and 020°E. The latitudinal extent of the minke whale research area will probably be approximately equivalent to the width of a normal Southern Stratum (i.e. extending approximately 60 n.miles from the ice edge). The northern research area will include an area between about 55°S - 61°S and 000° - 020°E. However, emphasis will be placed on coverage of the area between 005°-020°E.

Given that the aim of the cruise is not to obtain abundance estimates *per se*, the meeting **agreed** that the Cruise Leader should have considerable flexibility with respect to cruise tracks and areas in order to maximise the chances of meeting the objectives of the cruise.

### 11.4 Research vessel

It was confirmed the research vessel *Shonan Maru No.2* will be provided by the Japanese Government for the 2005-2006 cruise.

### 11.5 Other matters

No other matters were discussed.

## 12. DETAILS OF THE CRUISE

### 12.1. Standard sightings

#### 12.1.1. Cruise track design and Itinerary

The cruisetrack for the minke whale component will be flexible and based on maximising the chances of achieving a successful outcome of the BT mode experiments.

An interim cruisetrack design for the fin whale survey was established as four legs joining positions 55°S 020°E, 61°S 015°E, 55°S 010°E, 61°S 005°E and 55°S 000° (Fig. 2). This design may be modified during the cruise based on the observed distribution of sightings. The length of the provisional trackline is too great to allow complete coverage in the allocated time (assuming 'normal' weather conditions). However, although ideally coverage should be distributed as evenly as possible over the four legs, a possible option is to cover only three of the legs.

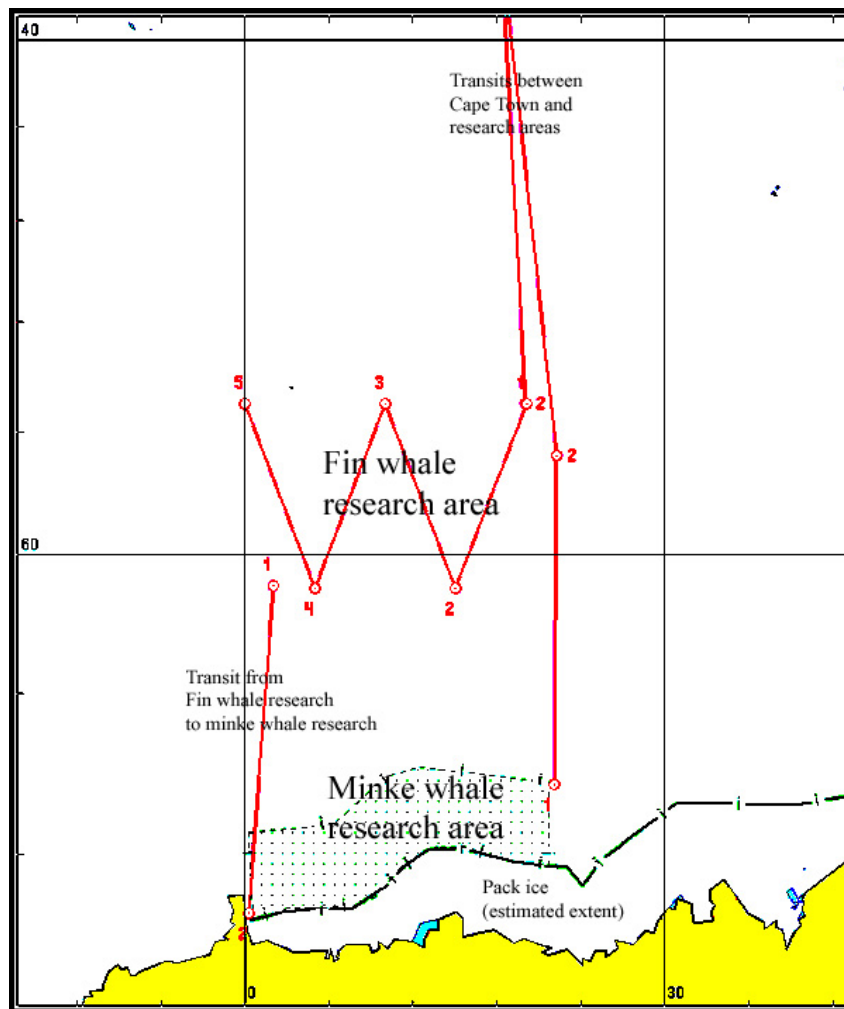


Fig.2 . Example cruisetrack for the entire cruise. Provisional transects are indicated in the fin whale research area. No transects are indicated in the minke whale research area since the cruisetrack design will be completely flexible.

*12.1.2 Survey mode and research hours*

**FIN WHALE RESEARCH**

The fin whale feasibility survey will be conducted in three research modes: (1) passing mode (NSP) with adaptive sampling, (2) independent observer (IO) mode and (3) closing mode (NSC). Since sighting rates are not anticipated to be high and in order to provide the best test of the adaptive sampling strategy, most of the trackline is to be covered in adaptive sampling mode. The NSP - adaptive sampling segments of the trackline will total 3/5 of the total length of each leg, while the NSC and IO segments will each make up 1/5. Each alternate segment will be covered in NSP - adaptive sampling. Research mode for the intermediary segments will alternate between IO mode and NSC mode using the scheme shown in Fig 3.

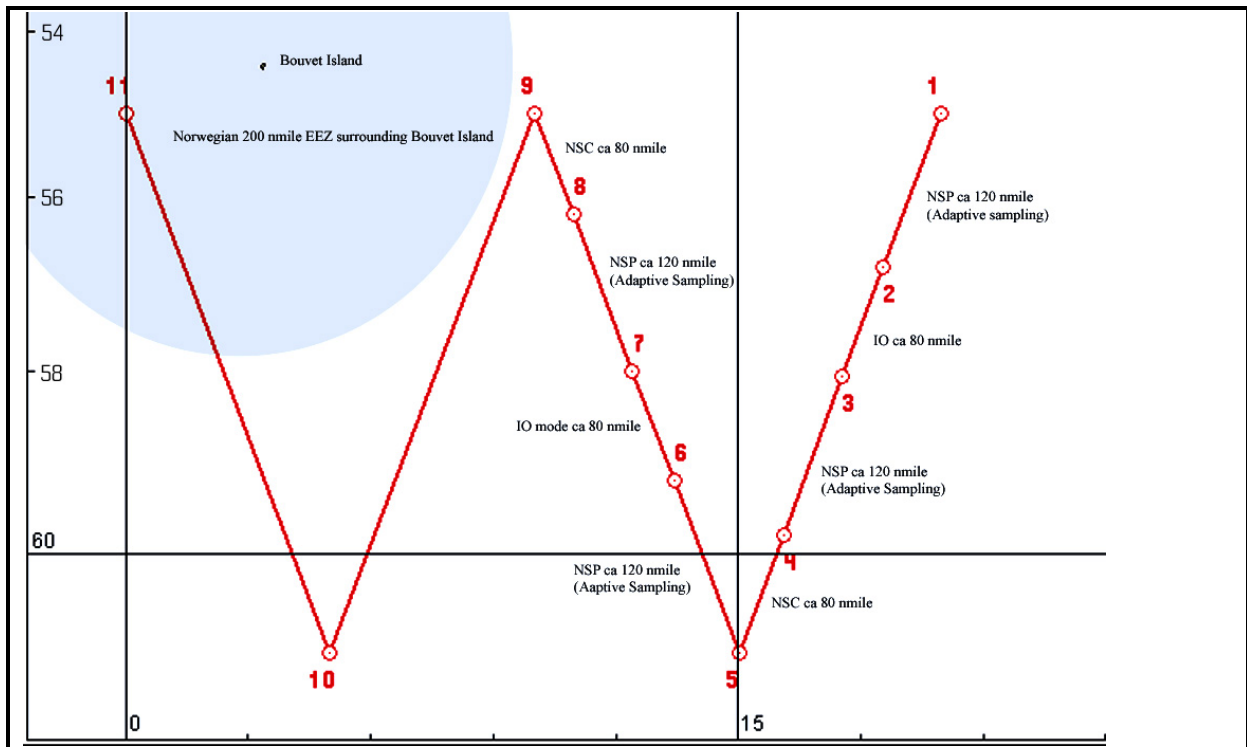


Fig. 3. Arrangement of research modes for the fin whale survey feasibility study. Mode change waypoints are indicated only for the first two legs, as are approximate inter-waypoint distances.

Last year, the adaptive sampling trials were conducted (for minke whales) in IO mode. Although it would have been desirable to conduct adaptive sampling during IO mode on this cruise also, NSP mode was selected because the lengths of the adaptive sampling segments exceed the maximum agreed limit for continuous survey in IO mode (100 n.miles) imposed by the extra burden IO mode places on the crew. The present strategy tries to maximise sample size whilst allowing reasonable wide survey coverage (to improve our knowledge of fin whale distribution). Estimation of  $g(0)$  for fin whales is of relatively low importance (it is expected to be close to 1 than for Antarctic minke whales). It is recognized, however, that a higher proportion of NSC mode to obtain more school size estimates may be desirable on future surveys.

The protocol for adaptive sampling will be modified from that used for minke whales on the 2004-2005 cruise particularly with respect to trigger thresholds for starting (and stopping) adaptive sampling cycles and options for leg lengths within cycles. The full protocol will be provided in the 'Instructions for Researchers'.

**MINKE WHALE RESEARCH**

The cruise track design during the minke whale research component will be completely **flexible** and this represents a major difference from previous SOWER surveys. The research is most likely to be conducted in the vicinity of the ice edge where the sighting rate for minke whales is expected to be higher. The strategy of a completely flexible cruisetrack design has been adopted for this cruise because the priority of the minke whale research is to test the BT approach and to try to obtain a good estimate of  $g(0)$ . The aim is thus to maximise the number of potential binary trials during BT mode and re-surveying areas of higher sighting rate is one acceptable approach to achieve this. It is important to stress that obtaining an abundance estimate of minke whales in the research area is not the main focus of this year's minke whale research.

With respect to the duties of the TOP and IOP observers, the protocol for the BT mode trials using 'big-eye' binoculars will be essentially the same as normal IO mode. The big eyes will be primarily operated by researchers. Therefore, with respect to the amount of time for continuous survey in this mode, normal IO mode guidelines will apply (i.e. no more than 100 n.miles surveyed continuously). BT mode will be interspersed with NSC mode, minke whale dive time experiments, humpback whale biopsy sampling, BB mode searching and blue whale research.

**RESEARCH HOURS**

Research hours during the cruise will be follow the same guidelines as on recent SOWER cruises. During days when survey is conducted in IO mode or BT mode, research will be scheduled between 0600-1900 hours and there will be provision for two meal breaks each of 30 minutes duration. When, due to conditions unacceptable for the sightings survey, the vessel is waiting on an IO mode or BT mode segment of the trackline, meal breaks will be treated in the same manner as if the vessel is surveying.

When surveying in NSC or NSP modes is the only activity of the day research will be conducted between 0600-1800 hours.

Limited night steaming may be conducted. Night steaming will be restricted to a maximum of 30 n.miles per day and should always be completed prior to midnight.

The research day in transits will begin 30 minutes after sunrise and end 30 minutes before sunset, with a maximum of a 12-hour research day.

Should they be necessary, time-zone changes will be in 30-minute intervals, coming into effect at midnight.

#### *12.1.3 Number of crew on effort*

Two crew members will be in the barrel whenever full searching effort is conducted. One crew member will be in the Independent Observer platform whenever the IO mode is conducted. One crew member will be at the helm on the Upper Bridge, regardless of the research mode. Also present on the Upper Bridge whenever the sighting survey is conducted, will normally be the captain and chief engineer (or an alternate).

This is the same number of observers per platform as on the 2004/05 cruise and again, in the interests of standardised data collection, the number of observers on the Upper Bridge is to be limited as above. As last year, observers should not search from the Upper Bridge during their scheduled rest periods. They may visit the Upper Bridge on a casual basis during their rest periods, but must not inform the on-effort observers of any sightings they may make, until such sightings have passed abeam, unseen by any of the on-effort observers.

There will be four researchers on the vessel. One of the researchers will be an acoustician. During the fin whale component this researcher will be responsible for dedicated acoustics research and thus the number of researchers searching from the Upper Bridge should be standardised at three.

However, during the minke whale research component when 'big eye' BT trials are conducted there may be four researchers on the Upper Bridge. During the minke whale component, acoustics recording will not be conducted on a routine basis (acoustics will generally be conducted only in the presence of blue whale sightings). The 'acoustics researcher' will be required *inter alia* to assist with survey on a rotational basis using 'big eye' binoculars.

#### *12.1.4 Navigation and research speeds*

The sightings survey in the research area will be conducted at an average of 11.5 knots. In NSC mode, each vessel will principally close to sightings at 15.0 knots.

Research during transit should also be conducted at an average speed of 11.5 knots.

It was **agreed** that during BT mode research using 'big-eye' binoculars, the Cruise Leader may decide to conducting trials at reduced research speeds to try to reduce vibration levels in order to improve the effectiveness of the binoculars.

#### **12.1.1.5 Routine and special research items**

Search effort for minke whales will be conducted only when sighting conditions are acceptable. Guidelines for acceptable conditions are that visibility (to see a minke whale) is greater than 1.5 n.miles and wind speed is less than 25 knots (in the vicinity of the ice-edge) and 20 knots (remote from the ice-edge); the sea state should be less than Beaufort 6.

For the intended fin whale research, guideline acceptable conditions for survey are that the wind speed is less than 25 knots and sea state (Beaufort scale) less than 6. This is the same as for blue whale search mode; BB mode (and different from the acceptable conditions for the standardized minke survey). Furthermore, during the NSC segments, as with BB mode, normally closure will only be completed to large baleen whales. (In this regard, it was noted that during IO and NSP mode segments, high powered binoculars (on board for BT mode) may be a useful aid for species identification).

##### **12.1.1.5.1 Estimated Angle and Distance training and Experiment**

The Scientific Committee has agreed that the estimated distance and angle training exercise and experiment will be conducted. The experiment is designed to calibrate and identify any biases in individual observers' estimation of angle and distance.

A training exercise should be conducted as a priority near the beginning of the fin whale component to familiarise the observers with distances, angles, and the use of reticle binoculars and angleboards. The exercise uses the estimated distance and angle experiment procedures, except that several observers can make estimates at one time, and the observers are informed of the radar values in each trial. The exercise should be done with the ship underway. The number of trials conducted is at the discretion of the cruise leader.

The experiment will again be conducted this year during the minke whale component following the same procedure as on recent cruises.

A large buoy with a radar transponder is used as the sighting target. At pre-determined distances and angles from the buoy (Table 1), visual observations by the observers are taken simultaneously with radar readings. Six trials per

observer, per sighting platform, are scheduled. Primary observers should be tested from platforms where they normally conduct sighting effort and should use the same procedures and equipment as in their normal sighting procedures. The experiment should be conducted during weather and sea conditions representative of the conditions encountered during the survey.

Table 1

The senior scientist for each ship should select, at random, distances from six of the following seven ranges:	Similarly the angles should be selected, at random, from six of the following seven trials:
(n.mile)	(degrees)
0.00 - 0.25	00 - 10 two trials
0.26 - 0.50	11 - 20 two trials
0.51 - 1.00	21 - 40 two trials
1.01 - 1.50	41 - 60 one trial
1.51 - 2.00	
2.01 - 2.50	
2.51 - 3.00	

***The training exercise and experiment should also be undertaken using the high-powered binoculars to be used for BT mode.***

*12.1.1.5.2 Special experiment*

*12.1.1.5.2.1 BT mode*

BT mode trials will constitute a major part of the research during the minke whale research component of this cruise.

BT mode clearly has two different possible uses

1. The potential to affect interpretation of abundance estimates from previous cruises (by providing independent evidence on  $g(0)$  robust to data and to difficulties such as responsive movement)
2. In designing future survey methods

BT mode trials scheduled for this cruise will focus primarily on point (1) above, and for this to work, it is crucial not to change the way that the Primary platform operates. There will be two main options for BT mode with this focus in mind (however additional trials to assess point (2) above may also be conducted –see below).

The two main options are:

1. ‘big eye’ protocol.
2. Option 1 from the 2004-2005 cruise

**‘BIG EYE’ BT**

The proposed method for ‘big eye’ BT will use mounted 25x binoculars on the Upper Bridge, which would thus be the Tracking platform. A distinct advantage of this method over the other options, is that the TOP and IOP platforms would be Primary platforms and both would operate as normal with the observers searching using 7x50 binoculars. The ‘big eye’ protocol is not intended as a replacement for the options used on last year’s cruise but an additional option to be evaluated.

However, this method may be problematic, since it is recognized that the use of the ‘big eyes’ may be difficult due to excessive vibration. Additionally, it may be difficult to separate the search areas of the tracker and primary platforms due to the much lower height of the Upper Bridge compared with the other platforms (and particularly compared to the TOP). It is suggested initially that researchers with previous ‘big eye’ experience operate and evaluate them.

*Other options for BT mode*

Further trials of last year’s BT mode ‘options 1, 2 and 3’ may also be conducted on this cruise in accordance with the recommendation of the Scientific Committee. The exact timing of these trials and the extent of the trials will be dependent on the effectiveness of the ‘big eye’ option.

The protocol for these BT trials is documented in the 2004-2005 Instructions for Researchers.

It was noted that Hammond has agreed to loan one set of ‘big eye’ binoculars and a matching stand for this research. The ‘big eye’ binoculars have reticles installed and the stand has a built-in azimuth ring for angle measurement.

Also, for this research, Palka has provisionally agreed to loan a pair of 20x60 binoculars equipped with reticles.

It was **agreed** that, if possible, attachment of the base for the ‘big eye’ binoculars on the Upper Bridge should be completed prior to departure of the vessel from Japan. Donovan will contact Hammond as soon as possible to

investigate the question of dispatching the equipment from the UK. It would also be desirable someone with experience with 'big eyes' and familiarity with the mounting requirements travel to Japan to oversee this work. Olson was suggested in this regard. Furthermore, it was noted that on 28 October the vessel would be conducting a sea trial following its annual dock repair work and this may provide an opportunity to test the effectiveness of the mounting.

*12.1.1.5.2.2 CPII design*

It was noted that no investigations of the effects of changing the survey design between CPII and CPIII would be undertaken during this cruise.

*12.1.1.5.2.3 Adaptive sampling*

Adaptive sampling will be integral to the design of the survey for the fin whale research component. A full protocol for adaptive sampling and guidelines for modifications will be provided by Kitakado prior to the cruise.

*12.1.1.5.2.4 Visual dive time*

The purpose of this activity is to collect data on the surfacing rate of minke whales for use in estimation of  $g(0)$ . Whilst VHF telemetry provides biological surfacing rate data for individual animals, visual recordings are useful since they provide data on cue availability in different weather conditions and for different school sizes, as well as on school synchrony and dive behaviour.

The dive time experiment will be conducted on an opportunistic basis during the minke whale research component. Dive time data collected on the 2004-2005 cruise were restricted to observations in good conditions only (mainly sea states 0, 1 and 2 (Beaufort scale). Therefore emphasis during this cruise should be on conducting trials on a range of group sizes in poorer conditions, within the standardized range of acceptable searching conditions (sea states 3 and 4).

The protocol for the visual dive time experiment will be as documented in the 2004-2005 Instructions for Researchers.

*12.1.1.6 Data format*

The survey will be conducted using essentially the same data forms as on the last cruise. However it was recognised that the implementation of direct data entry program will replace some of the data forms. There was a proposal for minor modifications to the sightings data form including an additional mode category (BT).

Also, following a suggestion by Nicol (Australian Antarctic Division) to record visual observations of surface krill swarms, a new data form will be necessary. Ensor undertook to provide a design.

Donovan will provide to ICR the Data Records and Usage notes as soon as possible.

*12.1.1.7 Computer Data Entry*

It was **agreed** that direct data entry using the Wincruz program would be undertaken on the forthcoming cruise. Donovan will negotiate with the Southwest Fisheries Science Center to facilitate the process of customising the program interface to match the current paper data records. Additionally, it was noted there would be a requirement for summary functions and also integration of Wincruz output files with IWC-DESS

*12.1.1.8 Other matters*

No other matters were discussed.

*12.1.2 Experiments*

*12.1.2.1 Collaboration with icebreaker*

It was noted there was to be no collaborative study with an icebreaker on this cruise.

*12.1.2.2 Satellite tag*

No satellite tagging will be undertaken.

*12.1.2.3 VHF telemetry*

No VHF tagging will be undertaken.

*12.1.2.4 Biopsy sampling*

Specific research time has been allocated to biopsy sampling of blue, fin, humpback and right whales during this cruise.

The importance of collecting samples from humpback whales and particularly from west of the longitude of South Africa was noted. There is considerable uncertainty concerning these stocks and the pattern of their migration. Three days have been allocated to humpback biopsy and photo-ID studies.

Opportunities should be taken for collection of biopsy samples from sperm and killer whales and other 'incidental' species during the normal process of confirming species identification and numbers, or if animals approach the vessel while off-effort.

Photo-identification studies should be conducted at the same time as the biopsy sampling.

Priority species are blue whale, humpback and right whales, in that order of priority.

Photographs of killer whales can also be taken on an opportunistic basis. Their purpose is not primarily for use in photo-identification studies but as an aid for the development of a visual recognition key for the three killer whale forms known to occur in the Antarctic. It is important to take photographs of animals from which biopsy samples are obtained, to determine their type.

A new digital camera will be available for this cruise. Black and white film will also be supplied by the programme for this study and the photographs will become the sole property of the IWC. Dedicated camera equipment will be supplied. (Researchers must use their own film and camera equipment for private photography).

Release of photo-identification photographs will be under the same guidelines as established by the IWC for release of photographs taken by researchers using their own film.

*12.1.2.5 Videotaping*

If biopsy and photo-identification studies of blue whales are attempted then video filming should also be conducted using the same procedures as in recent blue whale research.

A recommendation from last year's cruise was that the existing outdated video equipment be replaced. It was noted that The Far Seas Fisheries Institute, Shimizu will provide replacement equipment for this cruise.

*12.1.2.6 Oceanographic survey*

No oceanographic sampling will be undertaken, as on last year's cruise.

A request was made for deployment of three floats under the *Argo* oceanographic programme, outside the South African EEZ, at approximately 60°S, 59°S and 58°S. Deployment at the target latitudes would be made during the transit to (or from) the Antarctic. They would be placed on board in Japan.

The meeting **agreed** to cooperate in this internationally important programme, the results of which will become publicly available in due course.

*12.1.3 Acoustics*

The main focus of the acoustics research during this cruise will be during the fin whale research component particularly in the context of obtaining fin whale abundance estimates.

During the minke whale component, acoustics recording will normally be undertaken only in the presence of blue whale sightings (as the acoustics researcher will primarily be involved with BT mode trials).

Details of the equipment and protocols to be implemented will be provided later following consultation between Clark, Stafford, Donovan, Ensor and others. The equipment to be used will include sonobuoys.

**13. INTERNATIONAL RESEARCHERS AND ALLOCATION OF RESEARCH PERSONNEL**

**11.1 Number of researchers**

The single vessel available this year can accommodate four researchers.

**11.2. Nomination and allocation of researchers**

A subgroup under Bannister (Brownell, Bravington, Donovan, Ensor, Kato) reviewed possible candidates on the basis of their experience and expertise, while also taking account of other factors such as competence in Japanese/English.

This year, particular preference was given to those with proven expertise in use of 'big eye' binoculars. There was also the need to appoint an experienced acoustician. Previous experience on IDCR/SOWER cruises would also be an advantage. From the 14 applicants the subgroup recommended appointments as below:

<b>SM2</b>
Ensor (New Zealand ) - Cruise Leader Sekiguchi (Japan) Stafford (USA) (Big eye/Acoustician) Olson (USA) (Big eye)
Reserves - Morse (USA) (Big eye/Acoustician); Vazquez (Spain) (Big eye)

The meeting accepted the recommendations. Donovan undertook to inform all applicants of the outcome immediately, asking the appointees to forward necessary personal details, including passport numbers, to Shimada as a matter of

urgency. Dietary requirements are to be forwarded to Matsuoka. As in past years, letters of appointment will emphasise the need to follow the previously adopted technical and personal guidelines.

#### 14. GENERAL PREPARATIONS FOR THE 2005-2006 CRUISE

##### 14.1 Identification of home port organiser

*Best would be invited to act as home port organiser in Cape Town. With respect to the suggestion at SC57 that Durban be considered as an alternative home port, it was noted that considerable repair work was being undertaken at the Port of Durban resulting in delays to shipping. As it was unclear if this work would be completed by the time of the cruise, it was agreed that Cape Town would be the home port pre- and post- cruise.*

##### 14.2 Entry and other permits

South African port access permits and EEZ closing mode permits will be sought by the Fisheries Agency of Japan. Permits from Norway for research (including biopsy) in the EEZ surrounding Bouvet Island will also be sought. Hyugaji and Shimada agreed to be responsible from the Japanese side for undertaking these duties. Copies of permits should be sent from the Fisheries Agency of Japan to the IWC Secretariat, for forwarding to the South African and Norwegian Commissioners to IWC so they can request cooperation with the requests.

##### 14.3 Review of recommendations from the 2004-2005 cruise

###### *Minke Whale Visual Dive Time*

- 1) Revisions of dive time data forms and recording systems. These were noted however as dive time studies will only be a minor part of this cruise no changes will be made.
- 2) Replacement video recorders will be provided by The Institute of Far Seas Fisheries.

###### *Adaptive Line Transect Sampling:*

- 1) The revised protocol will attempt to cover all such contingencies.

###### *Direct Data Acquisition*

- 1) It was **agreed** that a direct data recording system is to be the primary system for this cruise.
- 2)
  - a) Location of direct data recording system: the Meeting **agreed** with the proposal.
  - b) Use of Wincruz mapping function: the meeting **agreed** with the proposal.
  - c) Direct data entry on the Upper Bridge: the meeting noted that while direct entry of some of the fields of effort, weather and visibility data may be recorded directly into the data acquisition program, on this cruise the bridge officers will also continue the data recording tasks as on recent SOWER cruise as there will be no ships computer system.
  - d) Use of reticle binoculars by all observers (including all 6 upper bridge observers): it was noted that these will be provided by ICR and Far seas Fisheries.
  - e) Networked Upper Bridge displays: noted, but no changes will be made for this year's cruise.

###### *BT Mode*

The BT mode trials will be continued and will include a new option using 'big-eye' binoculars. Hand-held 20x60 binoculars may potentially be used as last year and every effort will be made to make them more user-friendly. All binoculars will have reticles.

###### *General Recommendations*

1. Direction of survey in relation to general synoptic weather movement: noted, however it was not particularly relevant on this cruise owing to flexibility of trackline designs.
2. Distance limitation for identifying beaked whales: noted, however the meeting **agreed** that such a guideline was not necessary as species identification should be based on a scientific decision rather than a guideline.
3. Closure from abeam during IO mode: the meeting considered that there was already adequate provision for this.
4. Communication on the Upper Bridge of the vessels: noted, however no equipment changes will be made for this cruise.

5. Collection of biopsy samples from vessel while drifting: the meeting **agreed** that shipping the IWC-owned Paxarms equipment from New Zealand was probably not cost-effective for this cruise; however, a pole system will be made available.
6. Provision of one new digital camera and lens by the IWC: **agreed**.
7. Two replacement computers to be provided by the IWC: **agreed**.
8. Delayed recording of cues during standardized searching: the meeting **agreed** that the inaccuracy of such distance estimation was primarily an issue to be addressed during analysis. No changes to the current data recording protocols will be made.
9. Recording of secondary sightings during experiments: the meeting **agreed** with the recommendation.

## **15 IN TRANSIT SURVEY**

### **15.1 Japan to Cape Town**

As last year, in the absence of researchers, Closing mode sightings operations will be conducted by the crew. Such surveys would only be conducted outside any EEZs intersected.

### **15.2 Cape Town to Research Area**

Closing mode will be adopted unless there are schedule problems, when Passing mode will be substituted. Permits will be sought for survey in Closing mode (but excluding biopsy sampling) in the South African EEZ. Outside the EEZ, biopsy sampling and photo-identification may be undertaken during the transit, but with low priority.

### **15.3 Antarctic to Cape Town**

Closing mode will be adopted unless there are schedule problems, when Passing mode will be substituted. Permits will be sought for survey in Closing mode (but excluding biopsy sampling) in the South African EEZ.

Outside the EEZ, biopsy sampling and photo-identification may be undertaken during the transit, but with low priority.

### **15.4 Cape Town to Japan**

As for Item 15.1.

### **15.5 Necessary permits**

There is no requirement for CITES permits until after the vessel's return to Japan (see item 16.2).

Individual researchers are responsible for obtaining any permits required from their home countries to take part in the cruise.

## **16. TRANSPORTATION OF DATA, SAMPLES AND EQUIPMENT**

### **16.1 Details**

The meeting reviewed an equipment list (WP19) prepared by Matsuoka. ICR and The Institute of Far Seas Fisheries will supply many of the essential items for the cruise.

Other equipment-related items addressed were:

Ensor/Donovan: freight biopsy guns, ammunition, darts and crossbows from Fremantle to Cape Town:

Donovan/Hammond: 'Big eye' binoculars and Stand, freight to Japan.

Donovan/Olson/Ensor: installation of 'Big-eye' stand on vessel in Japan

Ensor/Palka: high powered binoculars

Donovan/Ensor/Olson: Wincruz programming changes and installation on suitable computer

Donovan: replacement computers

Donovan/Olson: Digital camera

Ensor/Clark/Stafford/Bravington/Donovan: Sonobuoys and acoustics equipment

Clark/Donovan/Stafford/Shimada/Ensor: develop acoustics research protocol

Ensor/Donovan/Bannister: rationalize equipment storage in Fremantle and Hobart

**16.2 Necessary Permits**

See item 15.5. No CITES permits will be required from Cape Town since samples, including blue whale and killer whale samples, will be retained on board for subsequent shipment from Japan to SWFC. Half samples will be retained in Japan; Shimada will be responsible for shipment.

CITES permits will be required for the onward shipment from Japan.

**16.3 Responsible persons**

The meeting noted the following: in Cape Town – Best; at sea – Cruise Leader.

The Cruise Leader and Japanese researcher will be responsible for data transport after the cruise.

**16.4 Other matters**

None were raised.

**17. COMMUNICATIONS**

**17.1. Safety aspects**

Formats and schedules for communicating between the research vessel and JARPA (*Nishiin Maru*), and with the cruise organisers, are shown in Annex D.

**17.2 Between Cruise leader and IWC**

The Cruise Leader will send a weekly progress report to the IWC Secretariat. The IWC Secretariat will forward the report to Kato (copied to Matsuoka). Matsuoka will distribute it to the remainder of the Steering Group (Bannister, Bravington, Brownell, Childerhouse, Clark, Donovan, Hedley, Palka). A report will also be sent after the completion of each phase of research as appropriate. Matsuoka will forward those reports to The Institute of Cetacean Research, the Fisheries Agency of Japan and Kyodo Senpaku Co. Ltd.

**17.3 Ice information**

This year, as the cruise tracks near the ice edge will be flexible in design, ice information will not be as important as in previous cruises. However when required, SSM/I ice data, obtained by the radio operator from the internet, will be transformed using computer programs on board the vessel.

**17.4 Other official communication**

Email, telephone and facsimile will be available. The vessel's email address will be available at a later date.

All official communications by the Cruise Leader relevant to the cruise, will be paid for by the IWC. Communications can be by radio, telephone, email, or fax.

**17.5 Private communications**

Researchers and crew may send and receive private communications, including email, at their own expense.

**17.6 Terms of payment of communication cost**

Accounts must be paid by researchers before leaving the vessel at Cape Town. Payment is required in US dollars. Payment for telephone and facsimile may be made by credit card. The researchers are requested to make payment if possible on the day prior to port entry.

**17.7 Other matters**

None were raised.

**18. MEETINGS**

**18.1 Pre-cruise Meeting**

A pre-cruise meeting will be held in Cape Town on 18-19 December 2005 at a venue to be arranged by Best. Sekiguchi will undertake translation to and from Japanese at the meeting. The cost of hiring transport for the researchers and crew while in Cape Town (e.g. to attend the meetings) will be met by the IWC.

Japanese translations of the Planning Report and the Data Records Usage Notes will be made available to the ship's crew before the meeting.

Attending the pre-cruise meeting will be: all researchers, plus the captain, boatswain, chief (or second) officer, chief operator, and chief engineer. The radio operator and chief engineer will probably be required for the first part of the meeting only. Best is also invited to attend.

**18.2 Post-cruise Meeting**

As there is only one ship this year, it should be possible to complete the Cruise Report during the transit from the Antarctic to Cape Town. Therefore a post-cruise meeting will only be necessary if that is not possible. If a post-cruise meeting is necessary, it will be held in Cape Town on 23-24 February 2006 at a venue to be arranged by Best. All researchers and the captain are required to attend. Best is also invited to attend.

### **18.3 Home port arrangements**

The vessel owners will consult with the home port shipping agents to make the necessary arrangements for berths for the research vessels.

### **18.4 Responsible persons**

Hotel reservations for all researchers in Cape Town will be made by Best. Donovan will inform him immediately of the names of the researchers for him to make provisional hotel bookings for the pre-cruise period 17-19 December. Donovan will ask researchers to confirm their arrival dates with Best as a matter of urgency. As early as possible during the cruise, the cruise leader will confirm the researchers' post-cruise reservation requirements and forward them to Best.

The home port contact details, including those for Best, are given in Annex D.

## **19. REPORTS**

### **19.1 Planning meeting report**

A copy of the final version will be emailed by the IWC Secretariat to the Steering Group, the Chairman of the Scientific Committee, ICR, the home port organisers, all researchers and reserves, and the South African and Norwegian Governments.

### **19.2 Cruise report**

A draft of the cruise report will be prepared, in accordance with the guidelines documented in IWC (1993), prior to arrival in Cape Town and as necessary, the draft will be reviewed during the Post-cruise Meeting (either on board the vessel or in Cape Town) – see Item 18.2.

The Cruise Leader will email the final report to IWC from Cape Town.

Copies of the final report will be forwarded by the IWC Secretariat to: all Steering Group members, all researchers, the captain, Borchers and Butterworth, also to the South African and Norwegian Governments.

## **20. OTHER LOGISTICS**

### **20.1 Press release**

The Cruise Leader, in consultation with Kato and the IWC Secretariat, will draft a pre-cruise press release for issue prior in Cape Town by the IWC Secretariat. The statement should be available in Cape Town at least one week prior to the ship's arrival. A press release will be sent by the Cruise leader to Best near the end of the cruise, so that it can be released in Cape Town prior to the ship's arrival. Copies of all press releases will be sent to the Steering Group and the IWC Secretariat, and placed on the IWC website.

Statements to the press during the cruise and while the ship is in port will be made only by the Cruise Leader.

The Japanese Consulate should be asked by the IWC Secretariat to assist as necessary with press relations in Cape Town.

### **20.2 Security**

Extra security, as provided on previous cruises, may be helpful in Cape Town. As on previous cruises, the display of "Research" on the side of the vessels and the display of the IWC flags are intended to help reduce security problems in port. Two large IWC banners for display on the ships when in port are also available. The IWC Secretariat is asked to contact the South African Government to request that adequate security arrangements be made for the vessels. The meeting noted that the Japanese Government may also contact the South African Government on the matter.

### **20.3 Accommodation and food costs**

The daily subsistence charge aboard the ships will be ¥2500 per day for each researcher. The IWC will make direct payment of these fees to the Institute of Cetacean Research for the IWC-funded researchers.

As last year, a charge for alcoholic drinks will be made except on special occasions.

### **20.4 Other matters**

The meeting noted that any change of plan, e.g. unavoidable delay in departure of vessels from port, be communicated to the Japanese authorities through Kato, with a copy to Matsuoka, by email beforehand.

## **B. Future Cruises**

### **1. TERMS OF REFERENCE**

At SC57 (see WP1 item 10.5.2.2) the Scientific Committee recommended that, time allowing, this planning meeting should produce an outline for a potential long-term plan for future SOWER research to be presented to SC58. At SC57 it was recognised that feedback from the fin whale feasibility study planned for the 2005-2006 cruise would provide information useful for the next step in planning. In addition, Committee members were encouraged to submit proposals to SC58 to assist in the process.

### **2. OBJECTIVES**

#### **2.1. General Objective**

At SC56, the Committee agreed that the objective of any future SOWER programme should be:

*to provide information to allow determination of the status of populations of large whales that feed in the Antarctic waters. The programme will primarily contribute information on abundance and trends in abundance (including of Antarctic minke whales), learning from both the successes of past IDCR-SOWER cruises and the difficulties in interpreting previous results (IWC, 2004: 35).*

#### **2.2. Sub-objectives**

Sub-objectives were developed at the 2004 Workshop on Future SOWER Cruises (WP7, item 8.3 and Fig 1). They fall into four major inter-related areas: methodological developments and improvements in abundance estimation and its interpretation; stock structure; abundance estimates; trends in abundance.

In the context of the change in circumstances since the development of those sub-objectives (i.e. the provision of only one vessel), Moronuki explained that he was unable to provide firm advice on future Japanese Government funding. It was unlikely there would be any further significant reduction in the near future, but he could not say there was any likelihood of any improvement.

#### **2.3. Discussion**

Consideration of items 2.1 and 2.2 proceeded on the assumption that only one vessel would be available for the foreseeable future.

However, the meeting **agreed** that the likelihood of meeting the general objective with only one vessel available would be very low or even nil in the long-term. Indeed, it has already proved difficult enough to achieve the objective with two vessels. The meeting therefore **recommended** that

- (i) the Japanese Government be strongly requested to consider whether it might in future be able to provide a second vessel, and
- (ii) other IWC member nations should be asked to contribute vessels, or equivalent ship time, to the programme.

The meeting understood that the second vessel is not likely to be used for another purpose. In that case an alternative to (ii) could be to seek sufficient funding for its operation. The current cost of sending one vessel to the Antarctic is believed to be some \$US3,000,000.

It was suggested that given the reduction in effort, one way forward might be to review the extent to which some of the existing research protocols could be redesigned to obtain the desired results. The general objective may well be unachievable with only one vessel, but that needs to be clearly demonstrated, by determining what the actual upper limits are using one vessel.

After some discussion the meeting **agreed** that it should review the priority items for short-term research already adopted (see WP7, item 9) against the availability of only one vessel. The review was in the context of the four short-term objectives and the short- and long-term priorities developed at the 2004 Workshop (WP7, Fig 1 and item 8.4). The priority species would probably remain as discussed at the Workshop (WP7, Item 8.5), although with reduced effort it might not be possible to consider more than priorities 1 (Antarctic minke and blue whales) and 2 (fin whales); the results of this year's fin whale feasibility study could be meaningful in that respect.

The results of the meeting's review were as follows:

#### *Priority item 1: Determining the proportion of whales in the ice*

The number of vessels available has no bearing on solving the problem. The analytical methodology still needs to be developed, and there are practical difficulties in using icebreaker information, particularly if no helicopter is available (as will be the case in 2005-2006). The meeting **recommended** that the IA sub-committee should be asked to address the theoretical and practical aspects of estimating whale abundance in the ice. In the meantime Shimada should be encouraged to present the results of last year's results to SC58.

#### *Priority item 2: determining the best way of estimating $g(0)$ and school size*

With only one vessel, school size can still be investigated, but there may be problems in obtaining a large enough sample size, both in IO and BT modes.

*Priority item 3: collecting data necessary to understand stock structure*

The amount of information available differs by species and area. There is good genetic information for some species (e.g. minke and humpback whales in Antarctic Areas IV and V) but almost none for others (eg blue and fin whales overall). With only one vessel, sample sizes obtained would be halved. It is important to obtain information from not only the feeding grounds but also the breeding grounds, and in that context satellite tagging (see Priority item 4) would be invaluable.

There may well be year-year variations in stock structure. With only one vessel it would be impossible to collect samples from two different areas in the same year. Assistance from other countries or organisations undertaking research in relevant areas would be very useful. Acoustics may also be valuable in this context: information could become available as a by-product of using acoustics to determine abundance.

*Priority item 4: development of satellite tags and attachment mechanisms*

Development of tags and their attachment is being undertaken independently of the SOWER programme.

*Priority item 54: development of new methods for analysis and design of surveys*

There is a particular need to determine what precision can be achieved for CVs where only one vessel is operating.

*Priority item 6: development of methods to integrate acoustics with sighting surveys*

Again, at least initially, integration of acoustics and sightings information is vessel-independent; theoretical studies are needed.

The meeting recognised that Items 3-5 had been given lower priority in WP7 than items 1-3, and it **agreed** that the ranking of all three items should be raised to the higher level.

### **3. METHODS TO ACHIEVE THE OBJECTIVES**

The meeting recognised that at least for the Priority items 1-3, as above, the fact that there is only one vessel makes the results even more important, yet there is only one vessel with which to investigate them. With only one vessel, progress is slowed down dramatically.

With only one vessel, the area investigated is reduced. For investigating fundamental questions, which, such as stock identity, need to be addressed before abundance estimation can be attempted, the question of what 'small areas' are appropriate has first to be resolved.

Fin whale investigations provide an example of the problems to be faced with only vessel operating: collection of biopsy samples and undertaking satellite tagging could take up all the time available in any one operating season. It was **agreed** however that in this context it would be important to have available the results of the fin whales studies proposed for this year's cruise.

The meeting **agreed** that it is necessary to devise ways of maximising observer efficiency and use of research time. It **recommended** that discussions be held between biologists and company representatives to determine how the time available for research during the cruise can be maximised, for example to take advantage of longer periods of good weather.

It also **recommended** that ways should be sought to cooperate with other organisations, such as CCAMLR and the Australian Antarctic Division, already planning or undertaking research in relevant regions.

### **4 TIMEFRAME AND INITIAL PROPOSAL**

The meeting **agreed** that the changed circumstances, with only one vessel now available, meant that it was at present unable to come to any conclusions on either the long or short-term timeframes for the future SOWER programme. Nor was it able at this time to come up with an initial proposal for the programme. However it **further agreed** that to address either question effectively, the results of the forthcoming 2005-2006 cruise must be made available as soon as possible for review.

To expedite those future deliberations, in addition to those recommendations already agreed it **recommended** that

- (i) high priority be sought for coding and checking the 2005-2006 BT mode and Adaptive Sampling data so that the results can be considered at SC58; if that proves impracticable, they must be available for review at the next Planning Meeting;

## REPORT OF THE PLANNING MEETING, TOKYO, SEPTEMBER 2005

- (ii) Stafford be encouraged to begin analysis of the 2005-2006 acoustics data as soon as possible after the cruise. She should be encouraged to cooperate as necessary with other researchers, e.g. at the Australian Antarctic Division;
- (iii) contracts be offered for analysing specific datasets, e.g. St Andrews to undertake analyses of BT mode data;
- (iv) Donovan immediately contact satellite tagging experts with a view to work being undertaken on the 2006-2007 cruise;
- (v) Pastene undertake a review of current information on Antarctic stock structure by species and area, to include hypotheses currently being tested;
- (vi) Bravington investigate the CV levels achievable with only one vessel operating.

The meeting re-emphasised that all the above is in the context of attempting to investigate sighting survey methodology for estimation of abundance where only one vessel is available.

### **C. Concluding remarks**

On behalf of the IWC, Donovan noted that the Commission has in the past regarded, and still regards, the cruises as an extremely important element of its scientific work. He expressed gratitude to Kato as chairman, to the President, Tokyo University of Marine Science and Technology and his staff, to Hatanaka and his staff at ICR, and to the Government of Japan, for their assistance and hospitality throughout the meeting. He thanked those crew members who had been able to attend, noting that the success of the cruises is very dependent upon the cooperation of crew and researchers. He asked the crew members present to convey the IWC's appreciation to all their colleagues. He thanked the scientists who had come to the meeting and who put in much time on the cruises' behalf between meetings, and who had contributed to the discussions with good humour despite the difficult circumstances this year. In particular, he thanked the interpreters for undertaking their most difficult task so cheerfully and efficiently.

Captain Komiya responded on behalf of his colleagues. He expressed appreciation to all members for their keen participation in the meeting, especially those from overseas. With this year's changed situation a great responsibility will be placed on his officers and crew to meet new challenges. He confirmed that all crew members would unite in ensuring the success of the cruise, and he looked forward to the cooperation of all researchers.

Kato expressed his personal thanks to all participants. This was the first occasion on which such a meeting had been held at the University. He wished everyone a safe journey home, and the forthcoming cruise every success.

The meeting concluded at 1730 hrs on 24 September.

### **Annexes**

#### **A. List of participants**

- B. Agenda
- C. List of documents
- D. Communications and agent

## **Annex A**

### **List of participants**

John Bannister	Western Australian Museum, Australia
Mark Bravington	CISRO, Australia
Robert Brownell	Southwest Fisheries Science Center, U.S.A
Greg Donovan	Head of Science, IWC, United Kingdom
Paul Ensor	Cruise Leader, New Zealand
Joji Morishita	Fisheries Agency of Japan, MAFF
Hideki Moronuki	Fisheries Agency of Japan, MAFF
Jiro Hyugaji	Fisheries Agency of Japan, MAFF
Hiroyuki Shimada	National Research Institute of Far Seas Fisheries
Hidehiro Kato	Tokyo University of Marine Science and Technology
Toshihide Kitakado	Tokyo University of Marine Science and Technology
Hiroshi Hatanaka	The Institute of Cetacean Research
Seiji Ohsumi	The Institute of Cetacean Research
Yoshihiro Fujise	The Institute of Cetacean Research
Shigetoshi Nishiwaki	The Institute of Cetacean Research
Luis Pastene	The Institute of Cetacean Research
Koji Matsuoka	The Institute of Cetacean Research
Hiroto Murase	The Institute of Cetacean Research
Hirohisa Shigemune	Kyodo Senpaku Co., Ltd.
Kenichi Hosone	Kyodo Senpaku Co., Ltd.
Masaomi Tsunekawa	Kyodo Senpaku Co., Ltd.
Hiroyuki Komiya	Kyodo Senpaku Co., Ltd., Captain
Takehisa Koyanagi	Kyodo Senpaku Co., Ltd., Second Officer
Yasunari Tsuda	Kyodo Senpaku Co., Ltd., Chief Operator
Kenji Wakazuki	Kyodo Senpaku Co., Ltd., Boatswain
Kozo Hasebe	Kyodo Senpaku Co., Ltd., Quartermaster
Kiyoko Matsuse	Interpreter
Hiroko Yasokawa	Interpreter

## **Appendix B**

### **Agenda**

## REPORT OF THE PLANNING MEETING, TOKYO, SEPTEMBER 2005

### A. The 2005-2006 Cruise

1. Opening remarks and welcoming address
2. Appointment of chairman and rapporteurs
3. Adoption of agenda
4. Organisation of the meeting
5. Review of available documents
6. Review of planning discussions for the 2005-2006 cruise at IWC 57
7. Availability of research vessels
  - 7.1 Research vessels offered by Japan
  - 7.2 Other possibilities
8. Principal strategy in the light of only one vessel being available
  - 8.1. Proposal by Best
  - 8.2. Other proposals
9. Priority of the cruise
10. Review of the budget
11. Cruise plan
  - 11.1 Itinerary
  - 11.2 Survey area
  - 11.3 Research vessel
  - 11.4 Other matters
12. Details of the cruise
  - 12.1 1. Standard sightings
    - 12.1.1.1 Cruise track design and Itinerary
    - 12.1.1.2 Survey mode and research hours
    - 12.1.1.3 Number of crew on effort
    - 12.1.1.4 Navigation and research speeds
    - 12.1.1.5 Routine and special research items
      - 12.1.1.5.1 Estimated Angle and Distance training and Experiment
      - 12.1.1.5.2 Special experiment
        - 12.1.1.5.2.1 BT mode
        - 12.1.1.5.2.2 CPII design
        - 12.1.1.5.2.3 Adaptive sampling
        - 12.1.1.5.2.4 Visual dive time
      - 12.1.1.5.2.3 Adaptive sampling
      - 12.1.1.5.2.4 Visual dive time
    - 12.1.1.6 Data format
    - 12.1.1.7 Computer Data Entry
    - 12.1.1.8 Other matters
  - 12.1.2 Experiments
    - 12.1.2.1 Collaboration with icebreaker
    - 12.1.2.2 Satellite tag
    - 12.1.2.3 VHF telemetry
    - 12.1.2.4 Biopsy sampling
    - 12.1.2.5 Videotaping
    - 12.1.2.6 Oceanographic survey
  - 12.1.3 Acoustics
13. International researchers and allocation of research personnel

- 13.1 Number of researchers
- 13.2. Nomination and allocation of researchers
14. General preparations for the 2005-2006 cruise
  - 14.1 Identification of home port organiser
  - 14.2 Entry and other permits
  - 14.3 Review of recommendations from the 2004-2005 cruise
- 15 In transit survey
  - 15.1 Japan to Cape Town
  - 15.2 Cape Town to Research Area
  - 15.3 Antarctic to Cape Town
  - 15.4 Cape Town to Japan
  - 15.5 Necessary permits
16. Transportation of data, samples and equipment
  - 16.1 Details
  - 16.2 Necessary Permits
  - 16.3 Responsible persons
  - 16.4 Other matters
17. Communications
  - 17.1. Safety aspects
  - 17.2 Between Cruise leader and IWC
  - 17.3 Ice information
  - 17.4 Other official communication
  - 17.5 Private communications
  - 17.6 Terms of payment of communication cost
  - 17.7 Other matters
18. Meetings
  - 18.1 Pre-cruise Meeting
  - 18.2 Post-cruise Meeting
- 18.3 Home port arrangements
- 18.4 Responsible persons
19. Reports
  - 19.1 Planning meeting report
  - 19.2 Cruise report
20. Other logistics
  - 20.1 Press release
  - 20.2 Security
  - 20.3 Accommodation and food costs
  - 20.4 Other matters

### B. Future Cruises

1. Terms of reference
2. Objectives
  - 2.1. General Objective
  - 2.2. Sub-objectives
  - 2.3. Discussion

3. Methods to achieve the objectives
4. Timeframe and initial proposal

### C. Concluding remarks

**Annex C**

**List of documents**

**SOWER/05/WP**

1. Extract from 57th IWC/SC report
2. Extract from Report of the Sub-committee on In-depth Assessment (IA) (57th IWC/SC report, Annex G)
3. Report of small group for future SOWER planning
4. Southern fin whales: the need for assessment and the role of a future SOWER-type cruise programme (SC/57/IA13)
5. Fin whale sightings during IDCR-SOWER surveys and transits (SOWER/WP1)
6. 2004-2005 International Whaling Commission-Southern Ocean Whale and Ecosystem Research (IWC-SOWER) Cruise, Area III (SC/57/IA1)
7. Report of the IWC Workshop on Future SOWER Cruises, Tokyo 1-4 October 2004 (SC/57/Rep1)
8. IWC SOWER Circumpolar Cruise 2004/2005 Information for Researchers
9. Report of the Planning Meeting for the 2004/2005 IWC/SOWER Circumpolar Cruise, Tokyo, 29-30 September 2004
10. 2005/06 IWC-SOWER Crew List
11. Agent List
12. IWC-SOWER Cruise equipment
13. Sightings of fin whales from IDCR/SOWER survey data
14. January sea ice extent and concentration in Area III from 1979 to 2005
15. Survey plan to explore minke whale abundance within ice field by the Ice Breaker, Shirase in 2005/06
16. E-mail from Peter Best
17. Adaptive line transect survey for harbor porpoises
18. Proposal for a "new" option for BT mode during the 2005-2006 IWC-SOWER cruise
19. Required equipment

ANNEX D  
COMMUNICATIONS AND AGENT

**COMMUNICATIONS WITH OTHER VESSELS**

For safety reasons the Captain will communicate daily with the vessels operating under the JARPA programme.

**E-MAIL, TELEPHONE AND FACSIMILE VIA INMARSAT**

These will be available aboard the vessel (researchers will be informed of these prior to the cruise).

**SHIPPING AGENT:**

**Cape Town**

*Agent*

Freightmarine Shipping

*Person in charge*

Carl Bainbridge

*Address*

No. 1 Thibault Square

19<sup>th</sup> Floor Cape Town 8001

South Africa

*Email addresses*

[CarlB@rennies.co.za](mailto:CarlB@rennies.co.za)

[ctn@rennies.co.za](mailto:ctn@rennies.co.za)

*TEL*

27-21-4198550

*FAX*

27-21-4216984

**CONTACT PERSON**

**Cape Town**

*Name*

Dr Peter Best

*Address*

University of Pretoria

MRI Whale Unit, c/o South African Museum

PO Box 61

Cape Town 8000

South Africa

*Email*

[pbest@iziko.org.za](mailto:pbest@iziko.org.za)

*TEL*

(work) (27) 21 481 3800; (home) (27) 21 689 3257 [**check**]

*FAX*

(27) 21 481 3993