

**Fifteenth International Research Ship Operators Meeting**  
**19-20 September 2001, Hobart, Tasmania**

**Attendees**

Country	Representative	Organisation
Australia	Mr. Dick Burgess	P&O, Hobart
	Dr. Andrew Forbes	CSIRO, Hobart
	Dr. Rudy Kloser	CSIRO, Hobart
	Cdre. Kim F. Pitt	AAD, Kingston
	Dr. John Wallace	CSIRO, Hobart – Chair
Belgium	Mr. Andre Pollentier	MUMM, Oostende
Denmark	Cpt. Frode R. Larsen	DFU, Copenhagen
Finland	Ms. Eila Lahdes	FIMR, Helsinki
Japan	Mr. Masato Chijiya	JAMSTEC, Yokosuka
	Dr. Nobuo Ito	JAMSTEC, Yokosuka
	Cpt. Akio Nakagawa	GODI, Yokosuka
	Mr. Masatake Okawara	NME, Yokosuka
	Cpt. Masataka Zaitsu	JAMSTEC, Yokosuka
Netherlands	Ms. Marieke J. Rietveld	NIOZ, Texel –Secretary
New Zealand	Mr. Neville Ching	NIWA, Wellington
	Mr. Fred Smits	NIWA, Wellington
Norway	Ms. Anne Lien	IMR, Bergen
	Mr. Per Nieuwejaar	IMR, Bergen
UK	Mr. Edward Cooper	SOC/UKORS, Southampton
	Mr. Jeff Ford	Europort Consult Ltd, London
	Mr. Paul Stone	SOC/RSU, Southampton
	Dr. Mike Webb	NERC, Swindon
USA	Mr. Douglas White	OCEANIC, Delaware

**Apologies for absence**

Country	Representative	Organisation
<b>Due to the terrorist attacks of 11 September 2001 and the subsequent travel restrictions</b>		
USA	Ms. Dolly Dieter	NSF, Arlington
	Dr. Sujata Millick	ONR, Arlington
	Prof. Dennis Nixon	URI, Kingston
<b>Due to the grounding of Ansett Australia and the subsequent travel limitations</b>		
Australia	Dr. Matt Tomczak	NFSC (FUSA), Sydney
Chile	Mr. Enrique Aranda	IFOP, Valparaíso
Germany	Dr. Dieter Strohm	RF, Bremen
	Mr. Falck von Seck	RF, Bremen
France	Cpt. Armel Le Strat	GENAVIR, Paris
	Mr. Jean-Xavier Castrec	IFREMER, Brest
Spain	Mr. José Díaz	CSIC-UGBOIP, Barcelona
<b>Apologies beforehand</b>		
Canada	Mr. Steve Peck	DFO-CCG, Ottawa
ESF	Mr. Laurent d'Ozouville	ESF, Strasbourg
EU	Mr. Gilles Ollier	CEC-DG XII, Brussels
France	Mr. Allan Cressard	IFREMER, Paris
	Mr. Gérard Jugie	IFRTP, Brest
Germany	Prof.dr. Gerhard Kortum	IfM, Kiel
Italy	Cpt. Massimiliano di Bitetto	IGM-CNR, Sardinia
	Cpt. Claudio Viezzoli	So.Pro.Mar, Rome
Ireland	Mr. Michael Gillooly	Marine Institute, Galway
NATO	Dr. Chris Gobey	NATO, Ispra – La Spezia
Scotland - UK	Mr. John Morrison	SEERAD, Aberdeen
South Africa	Mr. Eric Walker	Smit Pentow Marine, Cape Town
Sweden	Cpt. Per.O. Bengtson	U/F ARGOS, Gothenburg
USA	Commander Elizabeth White	NOAA, Silver Springs

## **1. Welcome**

*Dr John Wallace*, Ships Manager of CSIRO Marine Research and this year's Chairman, opened the meeting and recalled the terrible events of the 11<sup>th</sup> of September. Although he had considered to cancel this ISOM, the conclusion was that the best thing to do to stand up to terrorist attacks is to go on with business, and not to cancel the meeting. Still shaken and horrified by the massacre, he invited the participants to pay their respect to the thousands of victims and stand up head down in silence. So all did.

*Dr. Andrew Forbes*, on behalf of the Chief of CSIRO Marine Research then welcomed the 23 participants from 10 countries to the fifteenth ISO-Meeting organised and hosted by CSIRO and co-hosted by NIWA, New Zealand. He invited all participants to participate in the excursion on 21 September and visit the CSIRO Institute and work shops and the R/V SOUTHERN SURVEYOR as well as the INCAT Shipyard.

*Dr. John Wallace* announced that as NIWA is co-hosting this meeting, Mr. Fred Smits would chair the meeting on the second day.

*Ms Marieke Rietveld (Netherlands), as acting Secretary*, brought forward the apologies for absence of a number of members, many of those because of the recent events. Some had submitted a written report. These reports will be brought forward during the meeting and will be incorporated in the minutes. The Chairman invited all participants to briefly introduce themselves.

## **2. Review of Minutes of fourteenth Meeting**

With some adjustments the minutes were accepted as a true record of the fourteenth meeting held in Amsterdam, The Netherlands, 10 - 12 October 2000. The final version of the minutes will be made available on the ISOM web site. (<http://www.nioz.nl/isom/>)

## **3. Delegates Reports of Activities**

### **3.1. Fleet Activities and Changes (incl. major facilities)**

*Cdre. Pitt (AAD, Australia)* introduced himself and the Australian Antarctic Division (AAD). He will give a presentation on the AAD work later in the meeting also reporting on the seven voyages of the R/V AURORA AUSTRALIS, the ice-breaker chartered from P&O for the marine science and general services of the AAD.

*Dr. Wallace (CSIRO, Australia)* reported on the R/V FRANKLIN and R/V SOUTHERN SURVEYOR, owned and operated by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) through its Division of Marine Research (CMR), based in Hobart, Tasmania.

The R/V FRANKLIN (55m) is a National Facility available to Australian scientists and their international collaborators through a competitive bidding process. The vessel was purpose built for oceanographic research but in recent years has undertaken "light" geoscience work following disposal of the Australian Government Survey Organisation's RV Rig Seismic.

In the past year R/V FRANKLIN operated for 210 days and steamed more than 21,000 nautical miles. Its area of operation included tropical and temperate Australian waters, as well as parts of the Indian and Pacific Oceans. The oceanic cruises were full-depth repeat ocean measurements to resolve decadal time-scale changes in the structure of the oceans around Australia. The data will be used to test model predictions of the rate of climate change.

The R/V SOUTHERN SURVEYOR (66m) is a multi-purpose, dynamically positioned vessel that has in the past been mainly involved in CSIRO research. Increasing operating costs and a shrinking budget have reduced its utilisation to the extent that over the past year the ship has been laid-up in Hobart.

Attempts to obtain adequate funding to operate both R/V FRANKLIN and R/V SOUTHERN SURVEYOR have proved unsuccessful. As a consequence, it has been decided to transfer the National Facility function to the larger and more versatile R/V SOUTHERN SURVEYOR, and to sell the R/V FRANKLIN. This change will occur in September 2002. Further details on CMR and its vessels are available from: [www.marine.csiro.au](http://www.marine.csiro.au)

*Mr. Pollentier (Belgium)* "Mr Pollentier (Belgium) reported on the activity of R/V Belgica operated by MUMM - Royal Belgian Institute of Natural Sciences - Belgian Federal Office for Scientific, Technical and Cultural Affairs. The R/V Belgica 2001 program is fully occupied by some 32 cruises conducted mainly in the Southern Bight of the North Sea and the English Channel (9 geological research, 6 fisheries research, 10 environmental monitoring, 10 biological and chemical research programs). One geological research cruise, combined with a study on biodiversity, has been conducted in the Porcupine Basin. During this cruise research was done on the carbonate coral reefs in the framework of a Belgian program with the partnership of the GEOMOUND, ECOMOUND, ACES and DEEP-BUG projects and in preparation of the deep sea-drilling program "ODP". A second program mainly aiming at studying the structural biodiversity of the hyperbenthos has taken place on the Spanish continental shelf (Galicia Bank).

During the dry-dock period (summer 2001) the Kongsberg-Simrad Multibeam echosounder EMS 1002 has been upgraded with a deep water option (1000 meter) including a mechanical pitch compensator system installed on the

multibeam-transducer. Also a RD Instruments Workhorse Mariner WH300 hull mounted (in a sea chest) acoustic Doppler current profiler has been installed.

From *Mr. Peck (DFO - Canada)* a written report was received and he was happy to say that the new Fleet Director of DFO is very supportive of ISOM. He believes there will be a physical Canadian presence at next year's meeting. The person who attends will be the best representative based on the Agenda and our own viewpoints here. This year, the Canadian Coast Guard is operating 110 vessels in support of the Department of Fisheries and Oceans' (DFO) Icebreaking, Marine Navigational Aids, Search and Rescue, Fisheries Conservation and Protection, and Science programs.

Scientific support extends to other government departments with marine or freshwater research programs, such as Natural Resources Canada (marine geology) and Environment Canada (limnology and atmospheric science), and Canadian universities with established marine and limnological research programmes. The following table summarizes the Sea Days provided to Science activities:

Vessel Type	Number	Days
Offshore Research and Surveys	5	917
Offshore Fisheries Research	4	917
Inshore Research and Surveys	6	791
Inshore Fisheries Research	8	1570
Arctic Survey Vessel	1	66
Total	24	4261

#### Arctic Research Activities:

Since 1996, and in response to DFO's contribution to budget reductions, the Coast Guard's Icebreaking Program has reduced its level of service. The icebreaker CCGS SIR JOHN FRANKLIN has been subsequently removed from active service. This ship is identical to the DES GROSEILLIERS (SHEBA Project 1997-98) and the PIERRE RADISSON (North Water Project 1998, 1999 and 2000).

Canada, through Laval University and DFO, is looking into re-commissioning the FRANKLIN to support the international Canadian Arctic Shelf Exchange Study (CASES). The immediate hurdle is that of the cost of a major refit (including scientific requirements) to the ship, at a time when budgets are already overextended for operational Fleet units.

If the Coast Guard and the Science program of the Department of Fisheries and Oceans are successful in our funding strategy, Canada would be able to offer an icebreaker dedicated to Arctic research (six months of the year) and available to the international research community.

*Mr. Larsen (Denmark)* reported on the activities of the Danish R/V DANA that is operated by the Danish Institute for Fisheries Research (DIFRES). DIFRES is a research institution which carries out research, investigations and provides advice concerning sustainable exploitation of live marine and fresh water resources. R/V DANA is a 78 m ice strengthened research ship that operates world wide. About half of the time for fisheries research and fish stock assessment, and half for other, mostly multidisciplinary marine research that is often embedded in international programmes and performed by many different institutions and universities. In 2001 most cruises were in the North Sea and Baltic Sea. R/V DANA was at sea for approx. 200 days in 2001. DIFRES also charters smaller crafts – up to 50 m – for research operations.

*Ms Lahdes (Finland)* reported on R/V ARANDA operated by FIMR. In 2001 R/V ARANDA has completed 11 cruises so far and 3 more are still coming. This year the operational area is solely the Baltic Sea, covering most of the Baltic, excluding Danish Straits. The work at sea included the annual biological and chemical HELCOM monitoring, physical oceanography, e.g. hydrography and energy exchange between sea, air and ice, long term changes of zoobenthos, benthic processes as well as nutrient limitation studies and processes of the microbial loop. As previous years several foreign scientists participated in the cruises.

No major changes have taken place concerning R/V ARANDA itself. The external ISM audit was successfully past last November as also the survey and inspection of the shaft (which is performed every 4 years). In the navigation the available official EGDIS-charts have been connected with VECTOR and have been tested during this year (Integrated navigation system). The close-down of the operation of NMT (Nordic Mobile Telephone) will be a problem next two years. This system is a very practical and relatively cheap communication system which covered most of the Baltic area. Its range is much larger than the corresponding range of GSM system. Also on land it was very useful for people living and trekking in remote areas.

The annual drills on FIRST AID and RESCUE under guidance of experts will be arranged in October. It is a joint activity for the crew of the vessel and scientists and technicians of FIMR. It is a practical safety drill with 'dummy' victims, immersible suits and life-rafts. Of course, minor scale drills are arranged before every cruise. The new rule to allow smoking only in limited areas has worked well.

A considerable share of information on the Baltic Sea comes from automated facilities on passenger ferries and other merchant ships (ship-of-opportunity technique). Continuous plankton recorder (CPR) is operated between Finland and Germany and water and phytoplankton studies between Finland and Sweden, Finland and Germany and Finland and Estonia. This technique produces almost real-time information of sea surface parameters that is a welcome complement to the research vessels' results.

*Mr. Chijiya of JAMSTEC (Japan)* gave an introduction on the JAMSTEC organization and the relation with NME and GODI. As an intro to the reports on the JAMSTEC fleet, he mentioned the installation of a new Auto-nowcaster and the successful development of the deep-sea ROV BENKEI. This new development will be presented later during the ISOM.

*Mr. Okawara of NME (Japan)* reported on the JAMSTEC fleet activities in the fiscal year 2001 (April 2001 – April 2002). Nippon Marine Enterprises manages the operation of four research vessels.

The support vessel NATSUSHIMA supported the dives of the manned submersible SHINKAI 2000 and ROV DOLPHIN-3K. R/V NATSUSHIMA is scheduled to carry out deep tow research in February 2002.

R/V KAIYO operated the ROV HYPER-DOLPHIN in Japanese waters off Sanriku and Nansei Islands. KAIYO is involved in deployment of Long-term Deep Seafloor Observatories, Tomography buoys and Multi Channel Seismic survey. KAIYO will cruise the Western Tropical Pacific and to the Central Equatorial Pacific for TOCS.

The support vessel YOKOSUKA supported the dive of SHINKAI 6500 in Japanese waters and the AUV operations of URASHIMA. YOKOSUKA is scheduled for dives with SHINKAI 6500 in the Indian Ocean.

In the first half of the year the deep sea research vessel KAIREI supported the dives of ROV KAIKO and alternately performed surveys with the 120 channel Multi Channel Seismic instrument (MCS). KAIREI and KAIKO were involved in the support of the salvage operation of the EHIME MARU near Hawaii. In the Mid Pacific the recovery is scheduled of the Tomography Buoy System this October. The Operations Schedule of the fiscal year 2001 of the research fleet was made available as a hand-out.

*Cpt. Nakagawa of GODI (Japan)* reported on the large size oceanographic research ship MIRAI that is managed by GODI. MIRAI's activity area is the North Pacific (from Equatorial up to high latitude) and the Indian Ocean. Last year R/V MIRAI conducted Tropical Ocean Climate Study cruises in the Indian Ocean for the first time to deploy buoys. This year, in an identical cruise MIRAI will actually deploy oceanographic observation buoys (TRITON-buoys) in the Indian Ocean as well as in the Pacific equatorial waters. In the 2001 fiscal year R/V MIRAI will be at sea for 286 days completing 6 long term cruises with 202 scientists and marine technicians onboard.

*Ms. Rietveld (Netherlands)* reported on the operations of the multi purpose R/V PELAGIA. The first half of 2001 (3 January – 5 June) R/V PELAGIA cruised for 154 days (23 weeks) 22.000 nautical miles around Africa for the Pelagia Around Africa 2001 programme: 10 legs, pillar projects/programmes: MARE-3/MARE-4 and ACSEX-2/ACSEX-3 (both CLImate VARiability) and PASS (Palaeoceanography: Sapropels, gashydrates and mudvolcanoes in the Mediterranean), further combinations with EU projects (ACES- cold corals in the Atlantic, AIRWIN/COMET- biological communities and persistent pollutants/dissolved organic matter interaction with metals and UV in river/ocean systems), and other multidisciplinary projects in biological oceanography, marine chemistry, pelaeoceanography, marine ecology, physical oceanography. The Program had again much public attention, and enjoyed a lot of publicity. Clearance problems only with Egypt (clearance refused).

In the 2nd half of 2001 (12 June – 7 December) cruises are performed in the North Sea and North Atlantic. Sailing days: 134 (22 weeks) for the Dutch national programme, and for the EU programmes ECOMOUND/GEOMOUND. Also as a charter by SOC for TOBI work, and a cruise for IFREMER in the framework of an exchange of shiptime (bartering agreement) for the recovery of 9 moorings for the POMME programme. For testing instruments a 4 day survey will take place early November. In total R/V PELAGIA is sailing the year round (325 days). Next year R/V PELAGIA will be committed to cruises in the North Sea and North Atlantic for the whole year. After a motor revision in January cruises start in February until December.

Major equipment/changes: A new deep sea winch (Kley France) is under construction – a test will be performed end of October beginning November. The moveable lander proposal (MOVE!) has been successful and is now under development. A new XRF Core Scanner (CORTEX) is under construction.

Peer Review follow up: An advisory committee (CMF) Committee Marine Facilities has been installed to advice the Netherlands Research Council NWO on the long term policy as to Marine research facilities and equipment investments.

*Mr. Smits (New Zealand)* reported that NIWA's vessels R/V TANGAROA and KAHAROA had a very busy schedule during the 2000-2001 fiscal year. TANGAROA (70 m) completed a total of 322 sea days, including 174 for fisheries research (mainly acoustics and trawling) and 102 days for marine sciences, comprising ocean fronts and ocean variability studies and marine geology. In February-March a 41 day combined hydrographic and biodiversity study was performed in the sea area between Cape Hallett and the Balleny Islands in the Western Ross Sea of Antarctica. The main objective of this voyage was the first data collection phase for a new hydrographic chart of shipping lanes in this areas. The cruise was funded by the Land Information New Zealand (LINZ), the New Zealand Government department responsible for the official hydrographic charts as well as by

the Ministry of Fisheries for the biodiversity component. During the 1960's the New Zealand Government had accepted the responsibility for the nautical charting of this Antarctic region and, with the increasing number of tourist and research vessels visiting the region, the charting of the shipping lanes had become high priority. Since September 2000 LINZ requires full ensonification of the seabed for all hydrographic surveys and NIWA therefore installed a SIMRAD EM300 multi-beam echosounder on TANGAROA. NIWA leased this system, built in 1997, and formerly installed on the Canadian Coast Guard Vessel R/V OCEAN ALERT, from C&C Technologies in the USA. C&C supported NIWA with the installation of the system, which was completed in less than 10 days. The Western Ross Sea Voyage was highly successful and the second data collection phase will be completed during the Antarctic summer of 2003. *Mr. Smits* illustrated the Western Ross Sea Voyage later in the meeting with power point pictures.

A considerable spin-off of the installation of the EM300 is the greatly increased accuracy of the data collected by TANGAROA's ADCP, which now obtains its heading from the TSS POS MV system (part of the EM300 installation), instead of the redundant Ashtead system, that had been installed during 1997.

NIWA expects to complete some 338 days at sea on TANGAROA during the coming year, with the vast majority of work again for the New Zealand Government. This will include a 35 day survey for the delimitation of eastern boundaries of New Zealand's continental shelf for LINZ and a 44 days Antarctic Voyage for the Japanese National Institute of Polar Research during February and March 2002. Improvements to the vessel will include a further 4 berths, increasing the total ships complement to 44, as well as a new 24-bottle, CTD system with a 6,000 m 10.5 mm diameter cable.

RV KAHAROA (28m) completed a total of 247 sea days, comprising 79 for fisheries stock assessment and 168 for hydrographic surveys. The hydrographic survey of the Three Kings Islands, completed between May and August 2000 required only single beam echo-sounding but since then NIA has fitted KAHAROA with a Reson SeaBat 8101 multi-beam echosounder to carry out a hydrographic survey of the Foveaux Strait shipping lane. The latter survey started in April 2001, is still ongoing and is carried out as a collaboration between NIWA and Thales (Geosolutions) Australia Pty (formerly Racal Australia). Improvements of KAHAROA for the coming year will be made to the accommodation.

*Mr. Nieuwejaar (Norway)* reported on the fleet of the Institute of Marine Research (IMR) in Bergen, Norway. IMR operates a research fleet consisting of seven research ships and is the largest Norwegian marine research institution with over 500 employees. IMR is also the research arm for the Ministry of Fisheries. The research ships owned and managed by IMR are:

- R/V JOHAN HJORT - LOA 64.4 m built 1990
  - R/V G.O. SARS – LOA 70 m built 1970, to be replaced soon (see below)
  - R/V MICHAEL SARS – LOA 47.5 m, built 1978/79 for coastal surveys
  - R/V G M DANNEVIG – LOA 28 m, shallow draft, built 1979 and stationed in Arendal.,
- The IMR Research vessel department is responsible for the manning, maintenance and operation of the ships owned by the institute, in addition to
- R/V HAKON MOSBY – LOA 47 m, built 1980, owned by the University of Bergen and mainly used for geological and seismic surveys
  - R/V DR.FRIDJOF NANSEN – LOA 57 m, built 1993, owned by NORAD (Norwegian Agency for Foreign Aid) which so far year has been working off the West Coast of Africa between Morocco and South Africa, having Walvis Bay, Namibia as her 'home base'.

Further the R/V department manages the small R/V FANGST - LOA 15 m, built 2000, for coastal fisheries research, which is commercially owned, and in addition commercial fishing vessels are rented approx. 1000 days per year. IMR also supplies and maintains the scientific equipment and fishing gear for the seagoing research. Standard scientific equipment comprises fisheries acoustics (sonar, echosounders and post processing computer system), CTD rosette samplers, ADCP, thermosalinographs, multinet plankton samplers and automatic weather stations. Most ships have a drop keel. The main research area is Northern North Atlantic up to 80° N and 40° E.

The ships in the Norwegian fleet have in general followed the planned cruise program, but IMR suffered severe clearance problems with the Russian authorities for the Barentz Sea. The R/V G O SARS had a very successful cruise to the Irminger Sea, west of the British Isles, in May 2001, testing a deep towed body for stock assessment of fish on 500 – 800 m depth. An EK 60 echo sounder was used mounted on the towed body, operating at 38 and 120 kHz. All signal processing was done in the towed body and the echograms were sent to the ship via fiber optic cable.

Mr. Nieuwejaar reported on the Project "New G O Sars"

A contract for the building of a new R/V at Flekkefjord Slip & Maskinfabrikk in Norway was signed on 22 December 2000. The ship will replace the existing R/V G O SARS and will be used by both IMR and the University of Bergen. Tasks to be performed by the new vessel are: surveying of marine resources, marine environment, seismic surveys, bottom contour mapping and oceanography. Characteristics: LOA 77.5 m, width 16.4 m, 3800 GRT, speed 17 knots, 50 tons pull, diesel-electric propulsion and very low radiation of underwater noise in order to meet the ICES requirements. The building of sections of the hull started at a yard in Gdansk, Poland in August 2000, but the completion of the hull and the following outfitting will be done in Flekkefjord, Norway. The ship will be launched in August 2002 and delivered in February 2003.

*Mr Stone (RSU/SOC – NERC, UK) and Mr. Cooper (Ocean Engineering Division – SOC/UKORS, UK)* reported on Fleet activities and changes including major facilities in the period from October 2000 – September 2001. The Research Ship Unit has continued to provide RRS DISCOVERY (90m) and RRS CHARLES DARWIN (70m) as marine platforms, with the technical staff and equipment in support of the scientific projects being supplied from UK Ocean Research Services.

Initial cruise scheduling and the cruise award process has and continues to be managed by Dr Mike Webb within the Marine Science Team, Science Programmes Directorate, Natural Environment Research Council, Swindon. His contact details are mweb@nerc.ac.uk, +44 (0)17 9341 1520.

Equipment and staff from UKORS have also been deployed in the support of other projects utilising equipment from the National Marine Equipment Pool aboard other vessels including RRS JAMES CLARK ROSS, R/V PELAGIA and R/V HESPERIDES.

In July, Mr Geraint West took up the appointment as Head of UK Ocean Research Services. His contact details are g.west@soc.soton.ac.uk, +44 (0)23 8059 6147.

Between October 2000 and September 2001 RRS DISCOVERY has undertaken 6 science cruises and a refit period. The cruises were undertaken in the North Atlantic ranging through the disciplines of marine physics, geophysics, chemistry and biology with the series commencing with an equipment trial.

Between October 2000 and September 2001 RRS CHARLES DARWIN has undertaken 6 science cruises with further passages within the Indian Ocean or to that area from the United Kingdom. In November 2000, the vessel was utilised on a commercial / academic geophysics exercise off the coast of Angola, this necessitated a passage to and from the UK. In March 2001 the vessel mobilised for four exercises and transited to the Indian Ocean with a brief scientific coring exercise en route. Since April the vessel has conducted a series of cruises in the following disciplines geology, biogeochemistry, geochemistry and biogeochemistry.

Last year *Mr Cooper* reported that two major awards of funding would benefit the National Marine Equipment Pool. The first of these awards to purchase modern fundamental equipment in support of marine scientists in the UK, has to-date provided a large number of modern systems with further items still to be procured. Examples of the equipment received so far include complete CTD systems (x4), CTD Cables (x2), Water Bottles (30l, 20l, 10l), Salinometers, Lowered and Self Contained ADCPs, Moving Vessel Profiler, a Moored Profiling CTD, a Scanfish Mk2, Fluorometers and Transmissometers with Loggers, Sediment Traps, Fast Repetition Rate Fluorometers, Stand Alone Pumps and two HRPT Satellite Receiving Stations. One of the CTD units has a titanium case for metal free work, the system is deployed in a titanium frame with ancillary components acceptable for trace metal research.

The second of the awards will provide an ROV facility with deep ocean capability, the procurement negotiations for this item are at an advanced stage and a contract for supply is anticipated soon. Mr Jan Paterson took up the appointment as the UK Deep ROV Facility Manager in June. His contact details are wjp@soc.soton.ac.uk, +44 (0)23 8059 6149. It is anticipated that the system will be available for sea trials in January 2003.

*Ms Rietveld* enquired after the possibility to borrow the ultra clean CTD system for trace metal work. *Mr. Cooper* told that this would be possible, but that the accompanying technician has to be paid. He recommended to contact Dr. Gerraint West to discuss this.

*Dr. Webb (NERC – UK)* reported that a draft NERC Research Ships Programme for 2002 is at an advanced stage of development. It shows a very intense programme for all the vessels. RRS DISCOVERY will operate in the NE Atlantic and RRS CHARLES DARWIN will continue the Indian Ocean campaign although following a refit in December 2001 there will be an excursion to the SW Atlantic. RRS JAMES CLARK ROSS will undertake the 60 days science available outside the immediate programme of the British Antarctic Survey.

For 2003 it is likely that RRS DISCOVERY will operate in the North Atlantic Ocean and adjacent seas. It is anticipated that RRS DISCOVERY will undergo an extended refit between February and April to allow for the installation of a new scientific winch system and other vessel enhancements. RRS CHARLES DARWIN will likely continue the NERC Indian Ocean campaign into 2003, with a return route yet to be postulated. RRS's JAMES CLARK ROSS and ERNEST SHACKLETON will operate principally in support of the British Antarctic Survey through the Antarctic/Southern Oceans, Arctic Ocean or Atlantic.

The NERC research ships programme for 2002 was available as a handout.

Funding has been awarded by the Natural Environment Research Council for the replacement of the current scientific winches, cables and some other enhancements onboard RRS DISCOVERY. The project is just underway with an anticipated implementation in the first half of 2003.

A recent decision coming from the NERC Research Vessel Advisory Panel is that the highest priority for Capital expenditure is to be placed on a "Seismic Source". To this end UKORS will procure a suite of airguns (circa 20), to replace the current assets which are now mostly over 25 years old and failing due to wear, fatigue and fracture of the main housings.

The business and science case for the replacement of the RRS CHARLES DARWIN has been endorsed by NERC Council. The new vessel is listed amongst a few NERC priorities for further consideration to be presented to the Office of Science and Technology under the next Spending Review in 2002. This sort of timeline would indicate a new vessel being available by 2006.

*Ms Dieter (USA/ NSF)* had sent in a written report after it became clear that she and Dr. Sujata Millick of ONR would be unable to attend. It should be kept in mind that it was written before the Tuesday 11 September Crashes and therefore was meant to be supplemented by Dr. Millick's and Ms Dieter's other presentations.

2001 has been a big year for the U.S. University National Oceanographic Laboratory System (UNOLS) fleet funded by NSF. The 29 ships operated by 21 institutions had one of the busiest years in four or five years with nearly 5700 operating days and no ships laid-up a full year. This is an increase of 600 days over calendar year 2000. Unfortunately 2002 will be back down to a more normal year with 5200 days projected. Although no ships are targeted for a full year lay-up in 2002 there will be 2 or 3 intermediate class vessels with partial year lay-ups. The six large ships will have modest to good schedules (between 250 and 325 operating days) but the intermediate and small vessels have light schedules.

Renewal and upgrade of the UNOLS fleet continues. The University of Georgia is replacing the BLUE FIN (72 ft) with the newly constructed SAVANNAH (90 ft) this month. The Office of Naval Research (ONR) is supporting the construction of a new 186 ft. SWATH for the University of Hawaii. It is expected to be operational mid-2002. The University of Alaska is designing a 225 ft. ice-capable ship to replace the 135 ft 35 year old ALPHA HELIX. The University of Rhode Island/Oregon State University is planning a conceptual design for a new super intermediate (approximately 225 ft) to replace the current intermediate class vessels.

The new USCG Ice Breaker Research Vessel HEALY has just finished a joint science program with the POLARSTERN to the North Pole. And finally the Long Range Fleet Plan is in Final Draft and should be in print by the end of this year.

NSF is attempting to upgrade equipment on the UNOLS vessels through the Shipboard Scientific Support Equipment Program. The program has been underway for over 10 years but the last couple of years we have been trying to leverage the funds through group purchases. The program funds equipment for all 28 ships through individual institution proposals. This often results in several institutions requesting the same piece of equipment from various vendors at various prices. In 1999 we started providing funds to one institution for a group purchase of a single piece of equipment provided to several institutions. The Group Purchases has worked well with the benefit of greater cost savings and standardized equipment throughout the fleet of higher quality. So far the Group Purchases have been used for Defibrillators, Lab Vans, Work Boats, Immersion Suits and GMDSS Radio Equipment.

The latest administrative changes at NSF include the return of Don Heinrichs as Interim Division Director for Ocean Sciences. Don will leave again in mid-October. Dr James Yoder from URI will become the new Division Director as of 1 October. Linda Goad (UMich) arrived in January and is the new Program Director for Ship Operations. Dolly Dieter is now the Program Director for Marine Facilities.

### **3.2. Ship Time Barter/Exchange**

*Ms Rietveld (Netherlands)* mentioned that R/V PELAGIA will perform a research cruise next October for IFREMER with a French scientific team to recover 9 moorings in the North Atlantic. This is a barter with the French R/V NADIR and submersible NAUTILE in 1998. A scientific team from NIOZ just boarded the New Zealand R/V TANGAROA that sailed our for deployment of the NIOZ benthic lander system ALBEX on the Chatham Rise.

*Dr Webb (NERC – UK)* is currently discussing a potential barter option for the RV EWING with NSF in the first quarter of 2003. He has two other projects for which he is keen to discuss availability options, one in the Eastern Mediterranean and one in the North Atlantic.

*Ms Dieter (NSF – USA)* mentioned in writing that the US did not participate in any barters in 2001. However, the US is currently discussing one/two Barters for 2002 with IFREMER.

### **3.3. Staff Exchanges**

*Mr. Cooper (SOC/UKORS - UK)* said that no formal staff exchanges have occurred. Mr. Cooper did however participate as an observer onboard L'ATALANTE in November 2000, project "ESSCOROV" during which the Victor ROV was being configured near the Canaries.

In December 2000, 4 staff from IFREMER involved in a ship specification visited RRS DISCOVERY and RRS CHARLES DARWIN whilst alongside in Southampton.

### **3.4. Equipment lost**

*Mr. Pollentier (Belgium)* reported the loss of a bottom mounted ADCP frame and the loss of the experimental miniaturised autonomous underwater vehicle "MAUVE" in front of the Belgian coast was reported. The MAUVE vehicle operated in the framework of the European SUMARE project was fortunately recovered by a scuba diver team several week later while it was drifting on the surface close to the Netherlands/Danish border

*Cpt. Zaitsu (JAMSTEC - Japan)* reported that no equipment losses had occurred. There will be a special report later during the meeting on the tragic loss and the salvage operation of the IHIME MARU, a training fishing vessel, taking with here nine lives.

*Ms Rietveld (Netherlands)* reported that during the ACSEX-2 cruise mooring recovery failed of 4 out of 7 moorings West of Madagascar, caused by crab anchors that functioned as a securing anchor. By a special dredging technique, called 'deep-sea sawing' all 4 moorings could be recovered in the end (2 ADCP, 8 current meter, 1 tilt meter, 2 acoustic releases) at the cost of 6 acoustic releases, 2 current meters, and 1 tiltmeter. The dredging earlier this year for a lost mooring West of South Africa was unsuccessful. Still NIOZ would welcome any possibility from colleague ship operators who pass or work in that neighbourhood for recovery by ROV for instance. Co-ordinates: 29° 51' 35" South and 02° 21' 88" East; depth 2700 metres (Mooring MST-14). In the Mediterranean, a mooring had to be dredged by the already mentioned 'sawing' procedure. However, the cable length was not sufficient to recover the sedimenttrap. Also 2 acoustic releases were lost. RV URANIA (Italy) would try again this summer, but did not by lack of time. Hopefully will give it another try next year. The newly developed CTD with special NIOZ closing mechanism as shown during INMARTECH, was lost during first test by breaking of the cable just before the CTD appeared at the surface. Position West of Ireland on the Porcupine Bank. By a remarkable recovery operation by the French L'ATALANTE with the ROV VICTOR, the CTD could be recovered. *Ms Rietveld* showed the recovery with some beautiful pictures, mostly taken by the ROV VICTOR. The instrument was undamaged and could be transported from Foynes in Ireland to Peterhead in Scotland to be operational in time for the Pelagia cruise that just had to start there.

*Mr. Smits (New Zealand)* reported the loss of some equipment and a Simrad 8 that was totally damaged during the Antarctica cruise. He also mentioned that a number of current meters and acoustic releases are 'hibernating' under the Antarctic ice.

*Mr. Cooper (SOC/UKORS - UK)* reported that an over side fish containing an EK500 transducer was lost from RRS Discovery when the Kevlar strength layer failed inside a brass towing sheath.

Depending on the definition of "equipment lost", he also reported on the degradation to the point of little use of the electro-optical 17mm conducting cable onboard RRS Charles Darwin. The deterioration of this facility had a severe impact on one science cruise (CD128), the cruise did continue with a modified sampling strategy. The intention is that a new 9000m cable is installed in October prior to CD134 where the optical waveguide is required.

Last year *Mr Cooper* reported on the loss of a significant number of OBS units (18), seven of eight units which were abandoned on the seabed have subsequently been recovered.

*Ms Dieter (NSF – USA)* mentioned that there has been equipment that was not retrieved, but none was reported to international colleagues.

#### **4. Special issues brought forward by the Australian host**

##### **4.1. Ship/air support for Australian Antarctic stations and research**

*Cdre Pitt, (AAD, Australia)* gave a presentation on the organization of the Australian Antarctic Division and showed the general operations for the Australian Antarctic Programme, the ANARE (Australian National Antarctic Research Expeditions). The AAD consists of five divisions, Policy, Science, Operations, Polar Medicine and Corporate Service. The Operations division takes care of Logistic Support, Engineering Support, Station Management, Field Operation, Stores Management, Expedition Liaison and Annual Planning. The AAD budget allocations for 2000/2001 for Operations amounts to AUD 35 million, over 50% of the total AAD budget. The goals of the ANARE are to enhance Australia's influence within the Antarctic Treaty System, to protect the Antarctic Environment, to understand the role of Antarctica in Global Climate Change, and for science – the Antarctic Research Programme is the one of the largest national programmes, and does work of practical, economic & national significance, such as: Antarctic Marine Living Resources, Astronomy, Atmospheric Sciences, Biology, Cosmic Ray Physics, Geosciences, Glaciology, Human Biology and Medicine, Human Impacts, and Oceanography

The facilities and infrastructure comprise: the AAD & ANARE Headquarters in Kingston, Australia, three Continental Research Stations (Casey, Davis and Mawson) in Antarctica, plus various field camps and bases, 1 x sub-Antarctic Research Station in Sub-Antarctic on Macquarie island, chartered vessels with a contract for helicopter support. Occasionally a small fixed wing aircraft (twin-otter) is used. When comparing the landmasses of Australia itself (7.6 million km<sup>2</sup>) and the Australian Antarctic Territory (6 million km<sup>2</sup>) to the total landmass of Antarctica (14 million km<sup>2</sup>) it is huge task of AAD is evident. The sub-Antarctic island Heard Island lies in the Southern Indian Ocean at approx. 75 E and Macquarie Island is South of Tasmania at 160 E. The distance from Hobart to the furthest station (Mawson) is almost 3000 nm and to Macquarie island over 800 nm. The distance between the three mainland stations varies from 200 to 500 nm. The vessels are the AURORA AUSTRALIS, the POLAR BIRD and the POLAR QUEEN (former ADMIRAL SHACKLETON). Sometimes Russian ships are chartered. Almost half of the research program is marine-based and as a consequence there are more scientists on

the ship each year than on the three Continental stations combined. Given that Australia has a significant and well established commitment to Antarctica the future will bring the need for more flexibility in support, and the use of more environmentally sensitive infrastructure with easier use of transportable and temporary facilities, also greater automation in winter, and bigger and more diverse summer programs. This future includes a strong commitment to the use of shipping for Marine Research and Logistic purposes. This could lead to a new type of charters with the ships possibly used as mobile "stations".

#### **4.3. P&O Marine Science and Research**

*Mr. Burgess (P&O, Australia)* outlined the P&O Maritime Services. P&O is an international Offshore and Shipping Company. Its business profile comprises offshore services, specialist cargo services, P&O Papua New Guinea, Carpentaria Shipping Services, Defence Maritime Services, chartering & agency, and marine science & research. P&O offers maritime support to the offshore oil & gas industry, ship operations, and ship manning. It operates in Australasia, North Sea, and Brazil. For Offshore Services P&O operates 10 vessels plus 4 new vessels in 2001. P&O PNG operates support services mainly to the mining sector. The Carpentaria Shipping branch is owner/operator of the "MV Aburri". Defence Maritime is a 50/50 Joint Venture with Serco Asia Pacific. Defence Maritime operates under a 10 year contract from July 1998 onward, operating approximately 300 craft (mainly small boats) at seven sites around Australia.

The Chartering & Agency branch consists of Anderson Hughes International shipbroking and chartering, dry bulk ship chartering, sale and purchase operations. The Agency - Beaufort Shipping ship agency operation, Beauforts Hobart specialists in Research, vessel agency. Lloyd's Agency.

For marine science P&O mainly performs Government operations in the Antarctic. P&O charters and manages the ice-breaker AURORA AUSTRALIS to the AAD. The contract is renewed for 3 years with 2 \* 1 year options.

Regarding science P&O manages CSIRO's marine research vessels: the FRANKLIN & SOUTHERN SURVEYOR. Further P&O undertakes Navaids Maintenance and Fisheries Surveillance with the SOUTHERN SUPPORTER (AFMA).

CSIRO vessel SOUTHERN SURVEYOR is currently being mobilized for a commercial charter using the Portable Remote Ocean Drilling (PROD) equipment of SOUTHERN SUPPORTER.

Apart from working for AAD the AURORA AUSTRALIS is for charter for others. It functioned this austral winter as accommodation vessel during installation works, moored to a Malampaya gas platform in the Philippines.

#### **4.2. SOUTHERN SURVEYOR utilisation for multi-disciplinary seabed mapping**

*Dr. R. Kloser (CSIRO, Australia)* gave an overview of the scientific work of CSIRO in the framework of the seascapes mapping for the huge Australian EEZ (16 million km<sup>2</sup>, which is about double the land surface of Australia). The research cruises undertaken used sophisticated echo-sounders and deep ocean video cameras, the research voyage was part of a study of marine resources that will underpin a new approach to ocean planning and management in southern Australian waters. Tools and techniques were evaluated to efficiently map and classify large areas of deep seabed and the determination of the living stock, what has to be conserved or what can be a suitable resource for sustainable development.

This was done in the South East Survey Project. Roughly in the area from Victoria around Tasmania till Adelaide. The SOUTHERN SURVEYOR is equipped with a wide range of instruments to do this, and will be sampling over a depth range of approximately 50 metres to 2 kilometers. Most time has been spent building detailed images of the seabed with a SIMRAD EM 1002 swath mapper. Data comes in at a rate of 3-4 Gb a day and is turned into fine-scale maps of seabed topography and texture. Contrasting areas are then target sampled with a range of other instruments (including cameras and sediment grabs) to "ground-truth" the maps. The video/photographic sampling proved the best tool for understanding the backscatter images and their relation to geological and biological attributes. Next to that the biomass of the orange roughy has been studied and its deep-water seamount habitat off the east coast of Tasmania. The orange roughy fishery remains the most valuable component of the South-East Fishery (SEF).

An overview of the research region is shown in **figure 1** in Annex 1 of the minutes.

Research Goals were to test and refine techniques for mapping and classifying marine benthic habitats and their biological communities using surrogate variables, and develop protocols for ground-truthing such assessments; map habitat and community substructure in key areas; and sample previously unsurveyed marine habitats and communities to enable extension of the existing regionalisations in this region (principally on the lower continental slope, 1500 - 2000 m).

Major findings and highlights: New species of fish and invertebrates not previously described by science - the number is still not known as specialists are still examining the collections.

Evaluating and refining techniques to use modern echo-sounders together with deepwater video and other instruments, to assess seafloor habitats and biodiversity.

Seafloor features such as large sand ripples, low-profile reefs, and the walls and floors of canyons, were seen in finer detail than we could ever detect before.

Deep video images of the seafloor in areas important for management, for example in key fishing areas, spectacular deepwater canyons and the Great Australian Bight marine park.

The positions of instruments on the seafloor were known with far greater precision than ever before. The voyage made the deepest sampling trawls and benthic sled samples so far conducted in Australian waters. Swarms of small fish and crustaceans were detected in the water column east of Bass Strait; these are the basis of the food supply for the South-east fishery, which supplies much of Australia's domestic fish market.

## **5. European RV Operators Workshop – Rome April 2001**

*Ms Rietveld (Netherlands)* reported on the ERVO meeting held in Rome 18-20 April 2001, which was hosted by the CNR of Italy. The meeting was chaired by Geoffrey O'Sullivan (Ireland) of the European Science Foundation (ESF). There were 15 participants of 9 countries. The items discussed were 1) the ISM Code with a presentation by Norway (Per Nieuwejaar) on the successful approach of IMR 2) the RV Classification – further steps to establish a special RV Class. Per Nieuwejaar will prepare an ERVO position paper on the issue. 3) Training and Exchange of personnel: target is that at least one core crew-member will be made free to go and join another ship as an observer within the next two years. Safety training and STCW will be on next year's agenda. ERVO was made aware of the existing UNOLS manuals. 4) Performance indicators – after a lengthy discussion, this issue was held on hold. The difficulty is to establish the criteria – is it the performance of the ship, or is it the output of science; and how to relate these two. 5) The report on the National Fleet of RV's in Europe, that figures on the ISOM agenda under item 6. 6) The allocation of shiptime procedures in different countries and 7) National equipment pools – an inventory and how to make them web accessible.

Next ERVO will be hosted by IMR in Bergen, Norway. The proposed dates are 25 – 26 April 2002.

Subjects will be: the EU 6<sup>th</sup> Framework Programme, Classification of RVs, STCW 95, ILO 180, equipping a new ship (both Ireland and Norway are in the process of building one). The minutes of ERVO are available on the ESF Marine Board website: <http://www.esf.org>

## **6. Future plans on research fleets**

### **6.1. US – Future Science Needs & Charting the Future**

As both Ms Dieter and Dr. Millick had to cancel their participation, *Ms Rietveld (Netherlands)* referred the attendees to the existing papers on the preparation of the Long Term Strategic Plan for renewal of the academic research fleet. These are available on the UNOLS website (<http://www.unols.org>). She mentioned the Report of the NSF Workshop held in Oregon on the Future Science Needs, the first draft of the Charting the Future document of the Federal Oceanographic Facilities Committee (FOFC), the subsequent enquiry within the UNOLS scientific community, and the report of the UNOLS Fleet Improvement Committee that came out in June, in response to the FOFC Charting the Future draft report.

[NB: the end report of the FOFC "Charting the Future for the National Academic Research Fleet" is now available on: [http://www.geo-prose.com/projects/projects\\_narf.html](http://www.geo-prose.com/projects/projects_narf.html)]

### **6.2. EU – National Fleet of Research Vessels in Europe**

*Ms Rietveld (Netherlands)* introduced the Report on the National Fleets of Research Vessels in Europe that was drafted by RF (Germany), IFREMER (France) and NERC (UK) in a co-operative project funded by the EU and issued in December 2000. It was more or less set up as an inventory of existing large/deep sea research ships and of wishes of the scientific community for the future. It came out that within the EU there are approx. 25 ships over 50 m. Most are 15 years old or older. The wishes of the scientific community are: multidisciplinarity, increased berth capacity for bigger scientific teams, capacity for heavier and more complex equipment, longer endurance (> 30 days), containerization of lab facilities, speed between 12 and 16 knots and a good manoeuvrability and station holding capacity, smooth satellite data communication.

The report is not yet a strategic plan for replacement of the fleet. At the discussion in the ERVO it was concluded that the existing IFREMER database on RVs will be updated and that plans and/or activities of new building or upgrading of ships will be reported to the ERVO secretariat at the Marine Institute, Ireland. The report of the NSF Workshop on Future Science Needs of the Academic Research Fleet, held in Oregon in August 2000 was copied and made available as a hand-out to ERVO participants.

The ESF Marine Board has issued a long term plan for marine science, named "Navigating the Future, towards a Marine European Research Area", in March 2001.

*Mr White (OCEANIC)* mentioned that the OCEANIC website provides a cross reference to both UNOLS and the ESF. *Ms Rietveld* added that the advanced UNOLS activities and the FIC and FOFC reports on renewal of the fleet could be of help when trying to develop a concerted European strategy for renewal of the fleet of RVs in Europe.

## **7. Oceanographic Research Ship data – a benchmarking model**

*Mr. Ford (Europort Ltd. - UK)* gave a presentation on vessel performance indicators, as a follow up on the subject that was introduced by Brian Hinde in 1996. *Mr. Ford* did observe from the reports of delegates on their activities of the last year, that everyone has his or her own way of presenting data or information. He would recommend a more standardized approach to make comparison more easy. He shortly introduced Europort Ltd as Management Consultants to Public Sector Shipping with a mix of public and commercial shipping expertise 'Helping to

'Convert Concepts into Concrete Solutions'. He addresses policy-makers, ship owners, and ship operators in the ocean science sector. His remarks are based upon a long history of working with ship owners/operators in UK and elsewhere. With the constatation that the former oceanographic research was mainly driven by national needs, and now is working in a more international setting, there is a greater opportunity to compare. In addition funding is constrained, for the building of new ships, for new equipment or for operational costs. That bestows the need for competing and improving service quality, reducing costs, and considering outsourcing of shipping service. There is a need to adopt an 'Arms-Length' approach. In this ambience we have to consider whether past science can help for future planning. The question how the existing assets are actually used, how cruise planning and review processes can be improved. The Benchmarking model is a suggestion for analysis of the performance and comparing it with others in an anonymized form within a comparable 'family' group. ISOM could be such a group. How is the Benchmarking Model set up? It is comprehensive, flexible and based on annual data submission with annual reporting and comparisons. It helps with the interpretation of the results. *Mr. Ford* showed some examples of the formats. The model has been built up by ship capacity data, operational cruise data, cruise technical data, operational activities completed, and 'Outputs' analysed. This refers to the type of science, types of 'user', and financial data.

General comments about the model are that outputs or performance is addressed, and not inputs. It refers to ship operations only. So far it does not include technical support services data, scientific services data, but this can be amended. The Model can help monitor planned performance and identify areas for improvement, even assist with ship replacement strategies. The next steps would be for ISOM members to consider the possible benefits.

*Mr. Stone* (SOC/RSU – UK) commented that it can help as a stimulus for scientists to produce better cruise plans. The formats shown can be sent electronically to members interested to receive such. Please send any enquiries to Mr. Ford at Europort Ltd. (e-mail md@europortconsult.co.uk)

## 8. Update on ISM Code – the implementation

*Mr. Nieuwejaar* (Norway) gave an update on the ISM implementation of the research fleet managed by the Norwegian Institute of Marine Research (IMR), Bergen, Norway.

IMR started from Practical Pack of Lloyds Register, using the floppy for drafting documents. He then transferred one of the captains from sea duty to office duty from August 2000 to April 2001 to take care of the ISM development and implementation in cooperation with sailing personnel and office personnel. A prerequisite for the Implementing person is to have a great deal of credibility. That person was on board during the cruises to talk with the people on board and to go with them through all the papers for comments/suggestions. He took the general ISM-course given by his trade union and he also participated in the ISM-workshop in London hosted by Lloyds. Further IMR hired an expert on ISM from Seatrans Company for approx. 30 hours. This expert had a couple of short meetings about ISM-implementation and certification with the Classification Company (DNV – Det Norske Veritas). The overall recommendation was to keep the manuals as simple as possible (3 very thin documents).

IMR started implementing in March 2001. Subsequently the internal revision (audit) was in June/July – it worked very good. On 22 August 2001 a professional audit was done by DNV and IMR received the ISM DOC.

Certification of each individual vessel will take place later this year.

*Mr. Nieuwejaar* perceived that there was a good and positive response from both crew and scientists!

The total costs were approx. 35.000 USD (300.000 NOK), including the salary costs of captain and consultant.

In the subsequent discussion that took place it was concluded that the question of the scientific operations was to be addressed in a later stage, in a iterative process, starting with the basic ship operations and proceeding towards the handling of heavy equipment and working on higher latitudes. This can be started from a Best Quality Assessment. The recommendation is also then to keep it as simple as possible. The key stays the change in culture.

A written comment was received from *Mr. Peck* (Canada) that reads as follows: One of the issues related to the implementation of the ISM Code raised at the 14th ISOM in October, 2000, is the "concern that the routine safety audits may discover problems that could then be used in a subsequent action against the vessel operator. The 'transparent' paper trail could be seen as a virtual invitation to litigation..."

The Canadian Coast Guard's experience has been that the number of reports has doubled since the implementation of auditing. This is seen as a positive development. Ships are reporting incidents or unsafe practices or conditions to their regional Designated Person Ashore (DPA), who ensures that there is follow-up action by Management. This, in turn, is seen by the ships' crews that there is willingness to correct problems as identified, all of which leads to a safer operation.

Another initiative undertaken by our Fleet Safety group is the establishment of Competency Profiles for all sea-going positions on all ships, as well as for all sea-going personnel. These profiles list the acceptable levels of experience required of an individual assigned to that position, which are defined for each ship using national guidelines agreed to by HQ and regional DPAs. The competency profile thus complements the professional qualifications for each position (in accordance with the Safe Crewing Regulations of the Canada Shipping Act).

## 9. Update on Piracy Problems

*Ms Rietveld* (Netherlands) introduced the update with recalling the incident with the MAURICE EWING on 31 August in the Gulf of Aden near Somalia. A message from Ms Dieter was distributed to all ISOM members

recently. She also described the measures that were taken on board R/V KNORR during her cruise in the same region. The increased piracy incidents in the Somalia region had forced NIOZ to change a cruise plan for deploying moorings along Somalia and in the Gulf of Aden, in accordance with the IMB guideline to stay at least 50 nm from the coast. Also because the French R/V MARION DUFRESNE had announced that the ship would not sail in between Somalia and Socotra for planned recovery of the Dutch mooring. During the PELAGIA cruise in April/May this year in the region no piracy incidents occurred.

The recent terrorist attacks in the US and the expected subsequent answers have as a consequence that all research cruises in the Arabian Sea are cancelled with immediate effect. *Mr. Nieuwejaar (Norway)* mentioned that he had heard that the International Chamber of Shipping were preparing new guidelines how to deal with terrorism in shipping. He observed that at the West African coast risks for piracy/robbery were greatest when going into port. *Mr. Burgess (P&O – Australia)* added that during her stay in the Phillipines, the AURORA AUSTRALIS had a constant piracy watch.

*Cpt. Nagakawa (GODI – Japan)* mentioned that during her transit to and from the Indian Ocean R/V MIRAI had all measures taken including the alarm devices as reported last year.

[NB: UNOLS has installed a most informative special page on its website regarding safety and security/piracy and terrorism issues at <http://www.unols.org/rvoc/rvocsecurity.html> and <http://www.unols.org/rvoc/security.html>]

## 10. Insurance and Liability - Update on world Insurance and Legal and Liability issues

*Prof. Nixon (USA)*, the Risk Manager and Legal Advisor for the US UNOLS fleet, who could not attend the meeting due to the terrorist attacks, sent a short summary in writing that was read out to the attendants.

It has been a fairly stable year in the insurance market, with increases in premiums averaging about 4%. ISM has had a few bumps in the road, but is generally seen to have improved safety and losses. There has even been less business for maritime lawyers! Unfortunately, the events of last week will have a serious impact on the international insurance market. This is the largest single property/casualty loss in world history. It will test the limits of the world's insurance market. Not only were lives lost and property destroyed, the interruption to business was insured as well. Early estimates are always dangerous, but the figure of \$50 billion was used yesterday, and is probably in the neighborhood. That sort of capital loss can only accelerate the potential for global recession, so the prediction for next year's insurance costs is uncertain but clearly worse than any situation ever experienced.

*Mr. Peck (Canada)* had submitted a written comment: While there are a few research vessels operated by or for Canadian universities, the DFO Fleet is Government-owned and operated. As such, its assets are self-insured, a term that is not always understood outside the maritime community. There is a cost of self-insurance to our Fleet, which would be better defined as the risk of not insuring a given vessel. This is illustrated as follows:

Over a long period the Canadian maritime insurance industry paid out \$.50 in total loss claims for every \$100.00 of value insured and \$.70 in partial damage claims.

The least cost Hull and Machinery premium would be 1% of the insured value, per annum. Thus a research trawler insured for \$30,000,000 would approximate \$300,000 (with \$100,000 deductible). The quantification of the risk of total loss of the vessel could be approximated as  $(50/50+70 \times 1\%) \times \$30,000,000$  or \$125,000.

We estimate Protection and Indemnity (third party) insurance would be an additional \$15,000.

Therefore, the total acceptable risk to the Department of Fisheries and Oceans of not insuring the research trawler would be \$140,000.

Taking into account the total value of our current fleet of 110 vessels from small patrol and lifeboats to large icebreakers, the total acceptable risk to the Department is substantial.

The commitment to implement the ISM Code was undertaken to increase the safety of our Fleet operations, thereby reducing the potential for accidents leading to damage to ships, personal injury or environmental damage, and the concomitant potential for liability to the Crown.

## 11. IMO Regulations in high latitudes (Arctic Rules)

*Ms Lahdes (Finland)* was asked to collect the latest information about the development of the so called Arctic Code for ships. The work has been going on for years and included at first both Antarctic and Arctic regulations. About two years ago it was decided in IMO to continue only with the Guidelines for the Arctic Ice covered waters. The latest draft from the Guidelines provided by the Finnish representative in the Sub-committee on Ship Design and Equipment (DE) which is responsible for the development of the Code has been copied and made available for the ISOM.

The last meeting of DE was in March this year but since the meeting nothing more than that the text is circulating in different IMO bodies. It is expected that the final ratification will take at least one another year.

*Ms Lahdes* went through some basic principles of the Guidelines. Compared to the earlier version from June 2000 the present version has been simplified and duplication of other rules e.g. by SOLAS and MARPOL has been avoided. The Guidelines will also follow the rules of IACS which are still under construction.

There were proposals for more detailed requirements concerning machine power and assistance of ice breakers, but the present draft was accepted. The classification is based on the IACS unified requirements which are not yet completed. A specific Polar Class has been introduced (PC-1 till PC-7). The Area of Application (page 5) is the

accepted area of application of the Guidelines. It mainly follows the latitude 60°North except north of Scandinavia where the warm Gulf Stream is affecting. Helsinki and Oslo situated at the same line as the southern tip of Greenland but luckily have not such harsh environmental conditions.

The Guidelines include General, Equipment and Operational parts presented in that order and each part is subdivided into chapters.

After some discussion it was decided that the issue will come back on next year's agenda. A representative from Canada and Finland will be invited to speak on the subject.

## **12. Update on Diplomatic Clearance**

*Ms. Rietveld (Netherlands)* introduced the update on diplomatic clearance issues, and mentioned that for this year's Pelagia Around Africa cruise most clearance procedures proceeded smoothly with a few exceptions.

The submission of the requests especially to the countries where difficulties could be expected was done well in time. Special activities were developed regarding contacts in the countries itself. With Egypt there were already appointments with the University of Alexandria and a ticket was arranged for a scientific observer. In the procedure the Embassy in Egypt as well as the Egyptian Embassy in the Netherlands were actively involved.

Notwithstanding there was a non-explained refusal at the last moment, when everything seemed to be okay. The refusal seemed to be caused by the Defense authorities. With Libya on the other hand, the extra trouble paid off, and permission was granted without any condition. From Yemen there was a requirement for payment of 1000 USD. Although this is quite unusual, after consultation with our Ministry of Foreign Affairs, NIOZ paid this amount. A last complication was met with Italy, from where we received the requirement that the application should be submitted in the Italian language. Pressure from the Embassy in Rome and the fact that last year the application was in English, and accepted without prejudice, that it was an EU Programme with Italy as main contractor, did not help. The requirement was implacable. With the help of our Italian scientific partners the application could be translated. *Mr. Wallace (Australia)* mentioned difficulties with the Pacific Islands. Papua New Guinea has installed a new committee for approval of the science in the application. CSIRO always aims at an observer from the science community, and of course the incurred costs for travel have to be borne.

*Mr. Ito (JAMSTEC – Japan)* added that the MOU that JAMSTEC has with India has been very helpful.

*Ms Lahdes (Finland)* reported that this year FIMR had contact difficulties and denials from Russia. The situation is worse than earlier. Also the condition having a military observer on board has caused delay of the cruises, because research was not allowed without the presence of the observer. She partly understands this practise because this area belongs to the Russian internal and external territorial zones. A new revised law with a new application form was introduced at the end of March 2001, which should now be used in diplomatic clearance procedure. These are in Russian and have to be submitted in Russian with extensive details on the work and the cruise stations. The President of Finland has been involved to discuss the issue with the Russian President. It is not yet known what came out of these discussion.

*Mr. Nieuwejaar (Norway)* mentioned the same sort of problems with Russia. IMR experienced severe problems with the Russian authorities regarding access to the Russian exclusive economical zone in the Barents Sea. The problem has been discussed and agreed upon on prime minister level, but it is the military who refuses to cooperate and they are not under the control of the prime minister, they report directly to the President of Russia. IMR was also denied entry to British waters to do whale counting this summer.

*Cpt. Larsen (Denmark)* mentioned that Lithuania and Poland regularly cause difficulties.

*Mr. Smits (New Zealand)* remarked that for permission in New Zealand's EEZ and huge continental shelf, he is the person to review the requests for the New Zealand Authorities. He urges the applicants to seriously obey the six months lead time.

*Ms Rietveld* concluded that the issue remains 'hot'. She mentioned that the IOC has started an enquiry after the procedures for obtaining and granting permission in all countries involved. This may be a step towards more harmonized and flexible procedures.

## **13. Standardization of laboratory vans/containers**

This issue was to be addressed by Ms Dieter of NSF/UNOLS. A reference can be made to the UNOLS web site, where a paper on the issue can be found. (<http://www.unols.org/council/cncmt111/append11.pdf>)

## **14. INMARTECH 2002**

*Dr. Nubuo Ito (JAMSTEC, Japan)* presented the plans of JAMSTEC for the INMARTECH 2002.

The workshop will take place from 7 – 11 October 2002. The Venue: Headquarters, Japan Marine Science and Technology Center (JAMSTEC) in Yokosuka, Japan.

JAMSTEC proposes the following key themes: (1) Data acquisition technology, (2) Handling and Operation of instruments and (3) Data Management with subsequent sub-items for every theme. These sub-items will be rearranged according to the input of participants and Organizing and Steering Committee. There is a local Organizing Committee with members from JAMSTEC, Nippon Marine Enterprises Ltd., Marine Works Japan Ltd., and Global Ocean Development Inc. The Secretariat is at JAMSTEC, with Takeshi Matsumoto as Secretary

General. An International Steering Committee will be formed, for which Ms Marieke Rietveld of NIOZ (Netherlands) and Mr. Edward Cooper of SOC (UK) are invited and have gladly accepted. For the US a member of RVTEC will be invited to participate (this has become Barrie Walden of WHOI); Chair: Nobuo Ito of JAMSTEC. The first circular will be distributed in October/November and the ISC meeting is planned to take place in February/March. ISOM members are included in the mailing list. All are invited to allocate the necessary funds, and encourage their marine technicians to contribute and participate in the Workshop. *Ms Rietveld (Netherlands)* offered to apply for financial support at the EU for the European participants. *Mr. Pollentier (Belgium)* offered to assist in this endeavor.

*Ms Rietveld (Netherlands)* informed ISOM on the hampered progress of the INMARTECH 2000 proceeding preparations and apologized for the serious delay.

## 15. OCEANIC Research Vessel Information and Schedules Database: Update and further possibilities

*Mr. White (OCEANIC - USA)* gave background information on Oceanic and the three main projects they are involved with; the World Ocean Circulation Experiment Data Information Unit-([www.wocedi.org](http://www.wocedi.org)), the Global Observing Systems Information Center-([www.gosic.org](http://www.gosic.org)), and the Research Ship Schedules and Information site-([Oceanic.cms.udel.edu/ships/](http://Oceanic.cms.udel.edu/ships/)). He then explained and demonstrated the new set-up of the research ship info and schedules data base. A mention was made that the NOAA vessels were taking their cruise schedules off the websites in response to the Sept 11 terrorist attacks on the World Trade Center. UNOLS was still evaluating whether they would take that step or not. Ship schedules are per calendar year. Specifications are available for 401 research ships from 49 countries and there are schedules online for 109 of those ships. Recommendations from ISOM 2000 for hyperlinks between ship specifications and ship schedules pages have been implemented. A calendar view option has been added for the ship schedules, with mouse-overs of an individual day's block displaying information about that cruise. An additional feature has been added to allow for the comparison of two ship schedules. The scheduled cruises would be overlaid on a common calendar view to show similarities and differences graphically. A new URL has been registered and implemented to make it easier to remember the address for the research vessel pages, it is now also available by browsing to ([www.researchvessels.org](http://www.researchvessels.org)) in addition to the previous URLs that have been in use. It was explained to the members that even though a research vessel has been taken out of service or it no longer belongs to a specific institution, its prior specifications and cruise schedules are still going to be made available online. This is to support researchers who are attempting to track down data, equipment used or PIs from past cruises. A preface in the ships name field will be added to indicate that the ship is out of service if that is the case. Another difficulty discussed was the practice of naming vessels with the same name, for example there are two RV Prince Madogs, a new one and one that is in the process of being disposed of. As in the previous example, a method must be developed for maintaining the old ships schedules and specifications for future reference. A mention was made of the International Hydrographic Bureaus (IHB) effort to review and revise an IHB list of oceans and seas. This is supposed to be completed by spring 2002. Potential additions to the website were described to the members for any feedback. They are: adding links to shipping agents, using IHB codes to describe the ocean or sea in which a cruise took place in lieu of the US Navy Grid system currently used, implementing active maps to make accessing data easier and more understandable, linking to a site with information about the PI, links to the data from a specific cruise if available, links to institutions involved with each cruise, adding an ISM Status field (but would that be for the institution or the individual ship?), adding a cruise description field for additional metadata, adding a "Charterable" field for those ships that are available to be chartered, adding an ISOM and/or ERVO section to the site.

## 16. Deep submergence Facilities

### 16.1 Developments in the US on manned submersible and remotely operated vehicle

*Ms Dieter (NSF – USA)* had sent in an overview of the developments within the US.

The US Deep Submergence vehicles are either undergoing major upgrade or a replacement is being proposed. The ROV JASON will finish calendar year 2001 and will then be dismantled. A new super JASON II is expected to be in service in early summer 2002. It will have increased power, greater depth and greatly enhanced sampling capability. The Deep Submergence Vehicle ALVIN has just completed an extensive major overhaul, as required by the U.S. Navy. The overhaul requires a complete tear down and rectification of all components by Navy. The overhaul takes 6-7 months. While ALVIN is down JASON is used where and as possible. A replacement ALVIN capable of depths of 6500 meters has been proposed. The engineering design is underway but construction funds have not been identified.

There was a leaflet available with an executive summary from the DESCEND workshop. The key recommendations are: to develop new sensors and tools; to accelerate development of AUV's; to construct a new, state-of-the-art, deep diving (> 6000 m\_ manned submersible; to plan for a new robust deep-diving (> 7000 m) ROV for science; to increase access to submergence vehicles and tools and to convene a submergence technology meeting.

### 16.2 Development of BENKEI (Borehole re-entry/observatory system) JAMSTEC

*Mr. Okawara (NME – Japan)* gave a presentation on the development of the Borehole re-entry and observation system BENKEI that started in 1998. The aim for the development is the scientific utilization of existing

boreholes. The BENKEI system will be loaded on the deep-sea research ship KAIREI, which is the mother vessel for the 10,000 m class ROV KAIKO. The borehole observatory package lowered with the cable from KAIREI will be led to the re-entry cone on the sea floor, and set up inside the borehole to carry out various measurements. It has two principle operation modes: one is real-time measurement with the borehole instruments connected via the telemetry cable to the KAIREI, and the other is the long-term measurement mode when the instruments are disconnected and left inside the borehole. The operational depth will be 6,000 m with a maximum working depth below the seafloor of 1000 m.

The name BENKEI refers to a monk that lived 800 years ago who behaved as a samurai, devoted to his master and prepared to die. But it also means shin-bone which may refer to a weak point when manipulating several arms. BENKEI consists of a Vehicle, a Monitoring station and a Re-entry cone with an Observatory and sensor. The vehicle is 5 x 2.6 x 2 m, the weight in air is 4.9 ton, in water 3.2 ton. It has a horizontal thruster suspended with a 18 mm suspension rope of 80 m. It is connected to the Observatory that is 2.3 m diameter and 2.75 m high. It weighs 3.5/2.5 ton respectively. It is powered by lithium batteries. The sensor cable has a maximum length of 1000 m and 17 mm diameter. The sensor's diameter is 0.2 m and it is 5.0 m long. It weighs 380 kg in water and can work at 7000 m depth. A dummy cone is used for testing the feasibility of the system.

### **16.3 Developments in Europe**

On request of Mr. Ollier of the EU *Ms Rietveld* draw the attention of the meeting to the GEOSTAR deep sea technology, an unmanned automatic observation and monitoring station that has been developed with financial support of the EU. Specifications were given in the press release that she had copied as a handout.

#### **16.3.1. SOC - UK**

*Mr. Cooper (SOC/UKORS - UK)* reported on two topics. Firstly the Deep Ocean ROV .

April 2000, the University of Southampton were awarded funding for the acquisition of a state-of-the-art remotely operated vehicle (ROV) for deep-sea exploration, to be based at Southampton Oceanography Centre as part of the National Marine Equipment Pool.

The ROV bid was led by Professor Paul Tyler (School of Ocean and Earth Science at SOC) and co-principal investigators Professor Chris German (Challenger Division at SOC) and Professor Gwyn Griffiths (Head of Ocean Engineering Division at SOC).

The award was funded from a national funding initiative the "Joint Infrastructure Fund" (JIF) which is a collaborative funding venture involving the Department of Trade and Industry, the Wellcome Trust, the Higher Education Funding Council for England and the Research Councils.

The actual funding award letter was not released to the University of Southampton (Southampton Oceanography Centre) until June 2001 in the meantime:-

The University of Southampton undertook a selection exercise having placed adverts to attract organisations capable or interested in satisfying an outline specification. (Nine expressions of interest were received).

Having undertaken some pre-selection four companies were invited to submit more detailed tenders. Each of the tenders was accompanied by a presentation at SOC.

Following the above stage a primary and a reserve supplier were selected. Dialogue with the primary supplier has continued towards the development of a contract that hopefully will be in place soon. The reserve supplier and the other unsuccessful companies are aware of the outcome and where requested have received debriefing meetings. Simultaneous to the supplier selection a recruitment exercise was conducted to appoint a Head of the UK Deep ROV Facility. The successful candidate now in post being Jan Paterson who has over 20 years experience with commercial operators in the design, development and operation of ROV's. Jan Paterson wjp@soc.soton.ac.uk + 44 (0)23 8059 6375. Recruitment of support engineers initially two to be involved with the build and development is underway. January 2003 is the current delivery date for sea trials on completion of a Factory Acceptance Test.

Secondly the activities of the Autosub AUV.

Autosub is a large vehicle at 6.8m long and 0.9 m in diameter. It can carry a payload volume of up to 1000 litres or up to 100 kg weight in water. Instruments can be carried either in the free-flooding nose or tail of the vehicle – the centre section is reserved for batteries and other key systems. This arrangement has been used successfully to carry sensors and instruments, some of them experimental and still rather ungainly. Autosub in recent years has been operated in conjunction with a dedicated launch and recovery gantry.

A standard instrument suite is based on off-the shelf sensors and consists of dual CTD, dissolved oxygen electrode, fluorometer, beam transmittance and attenuation, down-welling irradiance (PAR) and two 300 kHz broadband ADCP's.

Each campaign requires additional special-purpose sensors, some of these instruments are modified commercial instruments but some are novel.

The vehicle has excellent characteristics, such as low self-noise and vibration coupled with high stability – all of which are desirable for many measurements – speed, payload and power constraints impose restrictions on the measurements that can be made.

Autosub-1 pre 2000 – had a maximum depth capability of 500m and a maximum range of 260 km.

Autosub-2 – currently has a conservative self imposed depth rating of 1600m (more stringently 2500m), an 150 hour endurance and a 750 km range.

Improvement achieved by replacing the glass fibre reinforced plastic (GFRP) battery pressure vessel with seven, smaller diameter, but longer carbon fibre vessels. The increased volume and lower specific gravity allows a battery payload of 750 kg compared to 300 kg.

The science programme for Autosub-2 has continued including the experiment in the Strait of Sicily (RV Urania) from which a recovery operation was required in June/July 2000., since then acoustic trials have been conducted, missions have been undertaken in the Antarctic (RRS James Clark Ross) operating under sea ice and there has been further work off the Isles of Scilly in May 2001.

In 2002 a three-year programme of observation beneath polar ice shelves commences, beginning with investigations under the 79°N glacier in Greenland before progressing to Antarctica.

Missions to date (June 1996 – May 2001) have totalled 271 comprising 3596 km of track. Since the science programme commenced in July 1999 there have been 89 missions, utilising 6 different ships giving 550 hours of mission time, 2502 km of track of which 1812 km has been unescorted.

In January 2001 Halliburton Subsea and the University of Southampton signed an agreement giving Halliburton exclusive use, in the oil and gas subsea cable markets, of the technology and know-how associated with the Autosub development programme.

For further information on Autosub: <http://www.soc.soton.ac.uk/OED/Autosub/publications.php>

### **16.3.2. IMR - Norway**

*Mr. Nieuwejaar (Norway)* gave an illustrated presentation on the HUGIN-I and NUI Explorers. The development takes place in co-operation between the University of Bergen with the Norwegian Navy and the Statoil company. The foreseen applications are bottom contour mapping, ocean floor surveys, pipeline and cable inspections, search for and mapping of wrecks and other objects, and mapping of marine environment and marine resources. The HUGIN-I is the prototype under development since 1997. The NUI explorer is operational since 1998 in various versions. The NUI Explorer is more cost effective than a ROV and has greater speed. Fuel cells are installed in the NUI instead of the NiCadmium cells of the prototype. The technical data of the NUI Explorer are: Length: 4,8 m, Weight: 700 kg, Optimum speed: 4 knots, Endurance: 36 hours, Range: 250 km, Coverage: 1 km<sup>2</sup> pr hour, Surface navigation: DGPS, Subsurface navigation: HPR, HIPAP; Acoustical command, data and emergency links, Multibeam echosounder EM3000 (150 m width at 50 m height), 1.6 Gbyte harddisk for EM3000 and sensor data, Electrical propulsion < 300 W, Container: 40 feet ISO-container, 7 tons.

As to the operation: all equipment fits in a special container. Launching directly from the container from astern. The recovery is a simple procedure. The NUI is commanded to the surface via an acoustical signal, and then caught by a line and pulled in via a hydraulic driven winch.

The market potential is estimated at approx. 45 percent for marine research and at 54 percent divided evenly between survey and pipe inspection, environmental research, and cable inspection. Use for mineral exploration or military purposes is trifle.

Upgrading is planned for the CTD, the avoidance of obstacles and fisheries echosounding.

The HUGIN-I is now working quite successfully in the US. HUGIN works together with a mother ship, where you can see the data coming in every three seconds and follow its course, not in real time, but close. It is an Autosub, but quite controlled.

## **17. OD21 Progress and IODP (JAMSTEC)**

*Cpt. Zaitsu (JAMSTEC - Japan)* informed the attendees on the progress of the OD21 and IOPD (Integrated Ocean Drilling Program) - the follow-up of ODP - and the building of the Japanese riser deep sea drilling vessel. JAMSTEC started construction of the deep-sea drilling vessel with a inaugural (Shinto) ceremony at the Tamano Work. Prime contractor is Mitsubishi Heavy Industries (drilling equipment, subsea Equipment, overall management) and subcontractor Mitsui Engineering and Shipbuilding Co., Ltd (hull and engine). The schedule for is to start the construction in January 2002 and to shift to another shipyard in January 2003 for the outfitting.

For finding a name for the vessel a campaign was started. Every person could bring forward a suggestion at 8 museums and the JAMSTEC Headquarters between March 1st 2001 and May 15th 2001. On June 22nd the Screening Committee for the name of the Deep Sea Drilling Vessel choose from the 300 selected suggestions out of the 20 thousand applicants the two best, with the winning name: CHIKYU !! (pronounce shkjue !!), which means Planet EARTH.

*Cpt. Zaitsu* gave an overview of the proposed organizational structure and the money flow of IODP as visualized in **figure 2** of Annex 1 of the minutes. The iSAS Office (Interim Science Advisory Structure Office) started its activities since June 1st 2001. The main mandate of iSAS is: management of IODP science proposals and administrative and logistical support to iSAS panels and committees as well as communications (web site, international activities). *Cpt. Zaitsu* introduced the staff of the iSAS Office by showing a picture. In October 2003 it is planned that the SAS IODP will be operational.

## **18. Ship manning and crew training**

*Ms. Lahdes (Finland)* had brought forward the agenda item, and proposed to prepare a questionnaire. During the discussion that followed it appeared that the scientific work on board R/V's is quite different for different ship operators. In Finland e.g. the scientific team (with the marine techs) operates the winches, not the crew. With others, like in Norway and the Netherlands winches are operated by the crew, and over the side equipment by the crew and if needed in co-operation with the expert marine technicians for the specific equipment. The conclusion was that the issue will come back on the agenda next year. *Ms. Lahdes* and *Mr. Nieuwejaar* will prepare the issue and will invite a speaker.

A written comment was received from Mr. Peck (Canada) regarding the role of Labor Unions of Sailors in salaries, working times, etc. The Department of Fisheries and Oceans is a federal government department and therefore all of our sea-going personnel are federal civil servants.

Collective Agreements within the federal government are based on working in an office routine, which is obviously quite different from the 24/7 life in the maritime world. Our Ships Officers and Ships Crew belong to separate unions who negotiate separately with the Employer, which is the Treasury Board of Canada. The Department of Fisheries and Oceans and the Canadian Coast Guard can only advise Treasury Board, but they make the final decisions. Thus, we have to work with two different Collective Agreements with different provisions for each of four different crewing systems.

Neither side has the same interpretation of specific issues (such as the equivalence of days worked (and vacation earned)), which is compounded by a lack of understanding of the fundamental differences between working at sea and working in a regular office routine. When agreements are reached, the ramifications to the management of the fleet are not always appreciated.

While we do receive an increase in our salary reference levels from Treasury Board when a new pay rate is agreed to, this does not extend to the increase in overtime (most of which is non-discretionary) or other personnel costs. We must adhere to the provisions of the Collective Agreements, which could place us in an untenable situation. The only viable solution may be to lay up a major vessel and lay off ships officers and crew in order to pay the increase in overtime and hire additional relief to cover extended leave earned by the remainder of our sea-going personnel.

Regarding tasks of the crew in work other than sailing Mr. Pecks written comment reads:

For most of the research vessels operated by the Coast Guard on behalf of the Science program, the ships crew maintain and operate most deck machinery. Each ship has set up its set of procedures in this regard.

There are other Fleet units which are made available to scientists only on occasion. In these cases, winches are installed for the cruise and scientists or technicians may operate them if the crew are not trained in their use.

## **19. Any Other Business**

### **19.1. Search for objects left behind with ROV KAIKO at the sinking site of the EHIME MARU**

*Dr. Chijiya (JAMSTEC – Japan)* gave an illustrated presentation on the search for objects left behind at the sinking site of the fishery training vessel EHIME-MARU after the tragic collision with a US submarine off Hawaii. Many were rescued but 9 persons are still missing and were believed rest in the ship's hull. There was much public attention and it became a political issue to try to salvage the bodies. The search by JAMSTEC of objects on the sinking site was part of the salvage operation that was undertaken with the US Navy and the Dutch Salvage company Smit-Tak to recover the bodies of the nine persons (4 students, 2 teachers and 3 crewmembers) lost. The ship was lying on 600 m depth 10 nm South of Diamondhead off Oahu island near Honolulu. The recovery would involve lifting of the ship by the Salvage company to shallow waters (35 m) followed by the recovery operation with US Navy divers to recover the bodies and subsequent bringing the ship to a safe place where she would come to rest at 1800 m. There would be objects left behind at the sinking site after the ship has been lifted. RV Kairei with the ROV KAIKO searched that site to recover these objects. Locating the objects is not the difficult part, but wiring them to be lifted. The search is still going on in September.

## **20. Date and Place of Next Meeting**

All ISOM members present were in favour of continuation of ISOM.

*Ms. Lahdes (Finland)* announced that the FIMR is pleased and honoured to invite all members to Helsinki for the 16<sup>th</sup> ISOM. The dates probably would be in the second half of September. (Now fixed at 17 – 18 September after consultation with UNOLS).

*Mr. Smits (New Zealand)* raised the subject of a membership-fee for ISOM, to support the hosting country financially for organizing the meeting. Perhaps this could be limited to a contribution for the excursion day or an attendance fee. Especially for the smaller countries the financial consequences of being a host can be prohibitive. The issue will come back on the agenda next year. All members are invited to give the issue some thoughts beforehand.

After some words of thanks for the generous hospitality to the Australian and New Zealand hosts the meeting was adjourned.

ANNEX 1  
Figure 1.

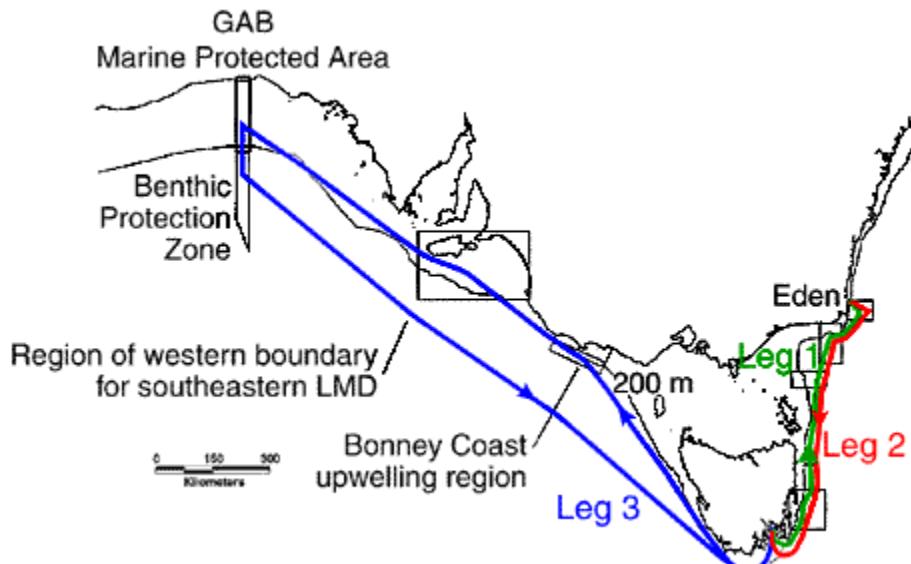


Figure 2.

