

Eleventh International Research Ship Operators Meeting

6-7 October 1997, Instituto de Ciencias del Mar, Barcelona, Spain

Attendees

Summary notes

Country	Representative	Organisation
Belgium	Mr. M.A. Pollentier	MUMM, Oostende
Canada	Dr. J. Elliot	BIO, Dartmouth
CEC	Mr. G. Ollier	DG XII, Brussels
Chile	Mr. E. Aranda	IFOP, Valparaíso
	Mr. G. Pereira	SdP, Valparaíso
Denmark	Mr. M. Busse	FRL, Kopenhagen
Finland	Ms. E. Lahdes	FIMR, Helsinki
France	Dr. D. Girard	IFREMER, Paris
	Mr. J.X. Castrec	IFREMER, Centre de Brest
	Cpt. A. Le Strat	GENAVIR, Paris
Germany	Dr. D. Strohm	RFG, Bremen
	Prof.dr. G. Kortum	IM, Kiel
Japan	Mr. T. Miyazaki	JAMSTEC, Yokosuka
	Mr. M. Shirai	JAMSTEC, Yokosuka
	Mr. H. Yamada	JAMSTEC, Yokosuka
	Mr. M. Zaitusu	NME, Yokosuka
	Mr. T. Tsuji	GODI, Yokosuka
Netherlands	Mr. C.N. van Bergen Henegouw	NIOZ, Texel - Secretary
	Ms. M.J. Rietveld	NIOZ, Texel
OCEANIC	Ms. K. Bouton	Delaware, USA
South-Africa	Mr. P.Goosen	SFRI, Cape Town
Spain	Ms. R. Flos	CSIC, Barcelona
	Mr. J.I. Diaz	CSIC, Barcelona - Chairman
	Dr. C. Massó	IEO, Barcelona
	Mr. A. Dicenta	IEO, Barcelona
	Dr. J.A. Sáchez	Cabeza Univ. of Barcelona
UK	Dr. C.W. Fay	NERC-RVS, Southampton
	Mr. A. Louch	NERC-RVS, Southampton
USA	Dr. D. Heinrichs	NSF, Arlington

Prof. D. Nixon
Ms. S. Millick

Univ. of Rhode Island, Kingston
ONR, Arlington

Apologies for absence

Country	Representative	Organisation
Indonesia	Ms. A. Kustantiny	AAAT, Jakarta
Italy	Mr. D. Daniels	UN-FAO, fisheries division
Netherlands	Dr. J.H. Stel	GOA, The Hague
Norway	Dr. R. Vaage	IMR, Bergen
UK	Mr. J. Ramster	MAFF, Lowestoft
USA	Ms. D. Dieter	NSF, Arlington
	R-Admiral W.L. Stubblefield	NOAA, Silver Spring

1. Welcome

This years chairman Mr. José Diaz, head of the department Polar and Ship management of the Instituto de Ciencias del Mar, welcomed all 30 participants from 13 countries and 2 international organisations to the eleventh ISO-Meeting. Dr. Rosa Flos, director of the institute, thanked all participants for their involvement in this years meeting and introduced the marine research institute. She invited the participants to visit the institute the next day. Especially welcomed were the new international members from Denmark (Mr. M. Busse), Japan (Mr. T. Tsuji) and the US (Ms. S. Millick). Because of the new members the chairman asked the participants to briefly introduce themselves.

2. Review of Minutes of Tenth Meeting

The preliminary draft minutes were send to all participants in June of this year. The latest version will be available on the ISOM Web site. The minutes were accepted as a true record of the tenth meeting held in Southampton, UK, on 2 and 3 October 1996.

3. Delegates Reports of Activities

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

Mr. Louch (UK) reported on operations of four multi-role research vessels - RV's Discovery, Charles Darwin, Challenger and James Clark Ross (British Antarctic Survey). There have been no changes in ships, but there have been improvements to their capabilities, for example: 1) High speed data communications and e-mail at 66 kbps installed throughout (except Challenger), 2) Deep tow fibre optic/electrical cable (10km) on Darwin, 3) Giant Piston Coring facility on Discovery and 4) Completion of second TOBI

The major change to the management structure of RVS has been the retirement of the NERC Director, Scientific Services (Mr Brian Hinde). The functions of ship programming and international liaison responsibilities have been taken over by Superintendent, RVS (Charles Fay) at the Southampton Oceanography Centre.

During 1997 RVS have run some 20 cruises on the three ships with disciplines roughly divided down thus: 8 Geology and Geophysics, 5 Marine Physics, 5 Biology, 1 Atmospheric Chemistry, 2 Equipment trials, and 1 Training. Of these, some 6 cruises have been picked up as what we would define 'Charter Cruises' from Commercial companies rather than from projects funded by NERC to education and research establishments and it is felt that this trend will continue into the future. 1997 has seen RRS Discovery operating for 9.5

months, RRS Charles Darwin for 11 months and RRS Challenger 6 months. Apart from the 'Darwin cruise to the Middle East, 1997 has seen the ships exclusively operating in the North Atlantic and North Sea with Vigo in NW Spain being used extensively for the series of cruises on RRS Discovery off the Iberian Peninsular - the first use of this port by RVS for several years. We have built up very good relations with our ships Agents in Vigo and have found it to be a suitable port to meet our needs albeit a little expensive. One new development is a training cruise specifically for University students to understand the problems of seagoing science.

During February, a Giant Piston Corer and its associated handling equipment was successfully commissioned and trailed on RRS Discovery with a subsequent cruise obtaining an 18m long sediment core, believed to be a record in the UK. RRS Discovery was also used for 2 biology cruises as part of the BENGAL European Thematic Programme which involved multi-national participation to investigate the benthic biology in an area of the NE Atlantic to the SW of the UK. The ship also carried out a cruise to the Mid-Atlantic ridge investigating the hydrothermal vent field south of the Azores and has recently completed a WOCE cruise which saw a CTD transect from west of Finnisterre to SE Greenland.

RRS Charles Darwin successfully completed a multi-disciplinary cruise to the Gulf of Oman and Arabian Gulf after the original cruise to the Southern Red Sea was cancelled because of hostilities in the region. She also undertook a charter cruise for University of Bergen utilising the SOC TOBI vehicle as part of an experiment to investigate the geology in the northern North Sea, before undertaking a survey cruise as part of the BENBO Thematic Programme working to the west of the UK and Ireland.

The new CEFAS (Centre for Environment, Fisheries and Aquaculture Science) ex Ministry of Agriculture, Fisheries and Food Laboratory still operate two fisheries research vessels RV Corystes, and RV Cirolana. For some years they have been seeking to replace Cirolana, but yet to have funding approved. Their operation has been reduced to one crew per ship, so reducing sea work to 65% of full capacity.

The Scottish Office Agriculture, Environment and Fisheries Department Laboratory in Aberdeen continues to operate their old RV Scotia, but have a new vessel (also RV Scotia) just launched and being outfitted. The UK Defence Evaluation Research Agency have just had a major refit of RV Colonel Templar and she is now operational on civilian and military research around the UK.

Ms. Rietveld (Netherlands) reported on the 1997 operations of the multi purpose RV Pelagia. Research cruises were mainly in the North Atlantic on the Hebrids, Rockall, and Iberian Margins for the international programmes OMEX and ENAM, both EU funded, and PROCS and the WOCE-related programme TRIPLE-B. The vessel was also involved in training cruises for university students. As to the new trend of more or less commercial charters the vessel was successful in obtaining same. Pelagia cruised for a period of 10 month in total. On major facility changes, NIOZ submitted an application to its funding agency for a major investment on novel technology for sea floor research, which if granted would mean a substantial upgrading in bottom sampling equipment and lander technology. Mr. Van Bergen Henegouw added that for two research projects funded by the Netherlands Geosciences Foundation Russian research vessels were chartered, Professor Lochachev and Akademik Boris Petrov. Together with the Danish research vessel Dana the RV Professor Lochachev was involved with the execution of a geological programme near Greenland. The RV Akademik Boris Petrov was involved in a geological programme in the Mediterranean Sea.

Mr. Castrec (F) reported that RV l'Atalante sailed back from Pacific through Panama in April 97. She will operate in the Atlantic ocean and the Mediterranean sea until the end of 1998. During the cruise FLORES (l'Atalante + Nautille), on July 11th 1997, Alvin and Nautille worked together with success for the first time at 2500 m depth. The RV Nadir underwent major maintenance of her deck. The scientific committee board approved the upgrading of RV Le Suroit. The areas reserved for scientific work will be extended and refitted at the beginning of 1998. She will be equipped with a medium depth multi-beam sounder. The RV Thalassa has had a very full programme of cruises. She has carried out the two cruises PELACUS-97 and CANIGO-97

for our partner IEO. The first trials of ROV Victor 6000 will be carry out on RV Thalassa in Mediterranean sea in December 1997.

Mr Busse (Denmark) reported that the cruise plan for the Danish research vessel Dana in 1997 covers 16 cruises in 215 days total. 13 cruises (152 days) were carried out for the Danish Institute for Fisheries Research (DIFRES) and 3 cruises (63 days) were chartered by other Danish research institutes. Two DIFRES cruises in the North Sea and in the Baltic Sea, were standard cruises and co-ordinated by ICES. Two cruises in the Northeast Atlantic Sea were part of an EU-funded TASC-project. (Trans Atlantic Study of Calanus finmarchicus). Other cruises were parts of current DIFRES research projects. Two chartered cruises were carried out in the North Atlantic Sea as well as a chartered cruise in the Kattegat. There are no plans for changes of major facilities in 1997. In 1998, RV Dana will be equipped with a 75 KHz ADCP for deep-sea applications.

Mr. Yamada (Japan) reported on two new JAMSTEC multi-disciplinary research vessels Kairei and Mirai. RV Kairei is the mother ship for the 10,000m class remotely operated vehicle Kaiko and RV Mirai is one of world's largest oceanographic research vessels. RV Kairei was commissioned in March 1997. The vessel is equipped with a wide range of advanced research equipment, including a multi-channel seismic profiler, which is capable of exploring complex structures in plate subduction zones and studying sea-bed surface layers at extreme depths, along with the analysis of faults and geological morphologies in deep trenches and other sea-bed features. RV Mirai was commissioned in September 1997, and started sea trails in October 1997. It carries a large amount of research equipment, including sophisticated marine observation and sampling devices. After confirming RV Mirai's operating capabilities and implementing appropriate crew training programmes, JAMSTEC plans to start using RV Mirai for regular ocean observation and research activities in autumn 1998. JAMSTEC expects that organisations in Japan and across the world will collaborate to exploit RV Mirai's enormous research potential. Meanwhile JAMSTEC has established a branch office in RV Mirai's home port of Sekinehama, Mutsu City, Japan. JAMSTEC anticipates that RV Mirai will 1) contribute to international efforts to better understand and predict ocean phenomena, 2) develop, maintain and recover ocean observation buoys for the Triangle Trans Ocean Buoy Network (TRITON), 3) conduct Arctic Ocean data acquisition activities in severe weather conditions, and 4) undertake extensive data and sample collection, together with rapid and accurate on-board analysis. At the meeting, Mr. Yamada distributed copies of the 1997 "KAIREI" and "MIRAI" Operations Schedule, which contains further information about the above vessels.

Dr. Elliot (Can) reported that in Canada the infrastructure responsible for the management of the scientific fleet continues to adjust to the incorporation of the Canadian Coast Guard under the new Department of Fisheries and Oceans. The prime objective for this merger of the fleets was the increased efficiency to be gained through multi-tasking of vessels. Experience to date has shown that benefits can occur when "science vessels" are given a patrol or surveillance role. The reverse is less easy to achieve because of the usual significant requirement by a science programme for special deck equipment and crew and officers with necessary cross-training. We have also experienced some difficult decisions when a Search and Rescue request overrides and disrupts a scientific programme, and the new arrangement potentially increases this possibility. We are exploring ways to keep a fair balance. Part of the solution is in the program management approach being implemented. When the full costs of vessels are included in the funding, in principal science will receive full service.

On the west coast, the CCGS Tully has been occupied 100% with science programmes. We anticipate increased demand for this vessel due to requests from the Canadian Hydrographic Service wishing to undertake a major offshore mapping program. The Department of National Defence's vessel Endeavour continues to work on the east coast as replacement while the Quest undergoes refit. Future multinational planning interests by the west coast oceanographic community is now directed toward work with JAMSTEC. Options are being discussed for exchange of personnel, and in particular for programs on the Japanese vessel MIRAI.

Recent budget reductions have had a significant impact on the planning for east coast oceanographic programmes. The community will have, after the current 1997-1998 season, one less ship year. Under present planning arrangements, this will be achieved through the transfer of the CCGS Parizeau to coastal patrol. The CCGS Hudson will remain as the core vessel for oceans work over the next two years.

During this two year period, Canada will modify an 1100 Class icebreaker to replace the Hudson. Engineering reviews and field trials are encouraging and we feel that much of the Hudson capability will be maintained. A decision has not yet been reached as to whether the modification will be made to allow operation in sea temperatures above 25°C, thus limiting the vessel to northern waters.

There has been a revitalised interest in Arctic programs in Canada, and major multi-year programmes are under review. The main vessel available is the CCGS Louis S. St. Laurent, currently part of the SHEBA project. Canadians are interested in having international partnerships for other similar northern programmes.

Ms. Lahdes (Finland) reported that during 1997 15 cruises have been successfully carried through. Only one extended outside the Baltic Sea in the framework of Nordic WOCE in the Denmark Strait. However, 10 out of 15 cruises had connections with such international research programmes as ADRO, BASIS, BASYS, BMP, DIAMIX, DYNAMO, IMSI, RADARSAT and VEINS. On some cruises up to 64% of the expedition participants were non-Finnish scientists. Especially project BASYS under MAST III concerning the transport of sediments and cycle of nitrogen in sediment got attention. Annual cruises on biological and chemical monitoring programme of the state of the Baltic Sea (BMP) were again included in the cruise schedule. The work for improving the sound proofing and the functioning of laboratories which started in November 1996 was finished in February 1997.

Mr. Goosen (SA) reported that the three research ships (Africana, Algoa and Sardinops) only operated along the South African coast line and the Antarctic supply ship, Agulhas, is scheduled for her routine cruises to the Southern Atlantic. Major changes to facilities were only made on Africana and Algoa. On both ships the CTD's were upgraded to Mark III C to comply with WOCE standards. Upgrades to the acoustic equipment was as follows: The echo integration system consisting out of Simrad EK400 and ES400 (38 and 120 kHz) split beam scientific sounders and an in house developed Acoustic Integration and Data Analysis system were replaced by a Simrad EK500 (38 and 120 kHz) split beam scientific sounder, logging and processing via Simrad EP500 software, computer network of two PC's running on WIN95 and Ether net linked for logging and processing and a CD-writer for archiving. The Simrad EKS18 and EQ50 (18 and 50 kHz) fishing sounders were replaced by a ES500 with the same transceivers. On the Agulhas the A frame was modified to make the helicopter landing deck save for the change from Puma to Oryx choppers.

Mr. Pollentier (Belgium) reported that MUMM - Ministry of Science Policy continues to operate the research vessel Belgica. As in previous years the Belgica operates with one crew, and is kept at sea for about 200 days per year. Most of the cruises take place in the North Sea for national research programs. However, in the framework of the EC MAST II-III programs CORSAIRES, ENAM, OMEX II, several cruises have been conducted in the North Atlantic (Porcupine basin), the Gulf of Biscay and the upwelling region in front of the Spanish coast. Recently an oceanographic winch with 1100 m ROV type umbilical (power conductors, multiple control and data channels, full fairing) for deep tow geophysical research and seabed investigations (continental slope processes) and associated modular seabed seismic source unit and 100 m multi-channel hydro-phone array have been acquired. In the near future a multi-beam system for shallow water and continental slope water depths will be installed.

Mr. Aranda (Chilli) thanked ISOM, on behalf of the Subsecretaría de Pesca- Chile, for the invitation to participate in this meeting. For the Chilean Government, in special for the national fishing sector, the oceanographic fishing research constitutes an essential element in the political decisions. In the oceanographic fishing research developments, the availability of three vessels (Abate Molina, Carlos Porter and Vidal Gormaz), is an important factor to increase the efficiency as well as to complement the information obtained

from other sources and for decisions making. For the Chilean government the importance of the research fleet is shown in the funds given annually for these ships, which is incorporated to items in the general budget of the nation. Only for the Abate Molina this budget is one million dollars for 1998 which considers about twenty percent for equipment maintenance and replacement. Together with the specific budget for vessels, a special research fund exists that finances oceanographic fishing research cruises through the development of scientific projects.

Prof. Kortum (FRG) reported that within Germany from 1 January 1998 the six medium-size research vessels Poseidon, Alkor (both IfM Kiel), Valdivia (Hamburg University), Heincke (BAH/AWI), A. v. Humbolt (IOW) and V. Hensen (AWI) will be pooled. A steering committee will be responsible for all applications for ship time according to specific rules. However, the vessels will continue to be affiliated to the institutions they belong to. It is planned to form an organisational and financial pool for this category ships in the future. RV Polarstern, Meteor, and Sonne as well as the coastal vessels will not be part of this pool. RV Valdivia will be decommissioned in 1999. In case it will be decided to withdraw another medium-size vessel from service, there are plans to replace this ship by a new vessel. The Biologische Anstalt Helgoland (BAH) will continue to work under the administrative roof of the Alfred Wegener Institute (AWI). The headquarters will be moved to Bremenhaven.

Mr. Heinrichs (USA) reported that the planned upgrade of the UNOLS fleet was anticipated to be complete with the delivery of the AGOR 25 - Atlantis. The ship will support the National Deep Submergence Facility, including the Alvin and the Remote Operated Vehicles (ROV). The facility is over subscribed for 1997 and 1998. Although the original plan for the fleet modernisation has been completed

additional ships continue to be proposed. Two 30 m. ships (Urraca and Savannah) are currently being added to the fleet. The new US Coast Guard Icebreaker Healy will be available for Arctic research in late 1999. And ONR has recently put out a solicitation to determine the operator of the new global research vessel that is expected to be of a SWATH design. NSF ship time for the UNOLS fleet was down slightly in 1997 and is expected to decline an additional 600 days in 1998 due to declining budgets and the winding down of large global programs. It is anticipated at least two ships will be laid-up in 1998.

Ms. Millick (USA) reported that the US Navy took delivery of the RV Atlantis in March 1997. This is the last planned addition to the Navy's oceanographic research fleet. The Atlantis is the support vessel for the submersible Alvin and the ROV Jason. The current Navy-owned oceanographic fleet consists of the research vessels; Moana Wave, Knorr, Melville, Thompson, Revelle, and the Atlantis. We also own the DSV Alvin and the research platform Flip. The US Navy has recently announced plans to retire the DSV Seaciff and the DSV Turtle, both manned deep submergence assets. In addition, they are also considering the lay-up of the Advanced Tethered Vehicle (ATV) and ROV. The Office of Naval Research in conjunction with other US federal agencies is evaluating the value of acquiring such assets for the academic research fleet. The Office of Naval Research (ONR) is also studying a recurring problem with Z-drives in its fleet. The five class I UNOLS vessels, have LIPS Z-drives as main propulsion units. In the past five years of operations, the fleet has suffered 5 failures of the gear teeth in the Z-drive units. ONR and NSF are studying this problem and hope to come to a resolution and adopt a preventive/monitoring maintenance plan. We also plan to contact LIPS and discuss the frequency of the failures. Last, ONR plans to construct a replacement vessel for the Moana Wave. Funds have been appropriated for the vessel, and the design phase will begin in a couple of months. A solicitation for the selection of the operator for this vessel has also been issued. There is a possibility that the hull form will be a Swath.

Mr. Diaz (Spain) presented the news about the RV Hesperides. She was successfully operating past season (October 96 - June 97) in the Mediterranean, Antarctica and Caribbean. Most of the cruises (4) have been focussed on Marine Geology and Geophysics. Only the first cruise in the western Mediterranean Sea was focussed on oceanography; so logistics related to the seismic multi-channel system was much more easy. The last cruise was developed in close co-operation with the personnel of the United States Geological Survey in

the Puerto Rico area. Recently, the schedule for the next season has been fixed: October 97 - August 98 in the Caribbean, Antarctica, Alboran Sea and Central Atlantic. A priority has been given to allow 6 MAST cruises (Matter and Canigo projects) to be developed until 1999 during summer time. A visit to the EXPO98 in Lisbon has been finally scheduled for late July next year. An HRPT system to receive sea surface water temperature pictures from NOAA 12 and 14 satellites was installed on the RV Hesperides in September the past year. It was successfully tested in a MAST cruise in the Alboran sea. An undulated CTD system Nu-Shuttle is going to be received in November. Technical staff supporting scientific activities on cruises has grown now up to 23 people, although consolidation of such structure has not been achieved yet.

3.2. Ship Time Barter/Exchange

The 1997 Triangular Liaison Group/ Marine Facilities Tripartite Group (FRG, UK, F) met in Kiel on board RV Littorina on 3-4 July 1997 to discuss current affairs of mutual interest. Mr. C. Fay reported on the Tripartite developments. The major research ship operators within Europe have established a Tripartite Working Group whose primary objective is to make research ships and major marine scientific facilities more available to scientists within these countries. This is enabled through a system of barter-exchange between the countries. To facilitate this arrangement, each country has now synchronised its annual programming machinery and in June/July each year, representatives meet to look at (and agree) bartering possibilities. Since the costs of operating the major facilities still falls to the owner, a bartering scheme which ensures a like-for-like value in exchanging facilities has been devised. The fundamental principle of the bartering scheme is that no money is exchanged between countries. Within each country an appropriate scheme of banking and equivalence has been devised to support this process.

Mr. Louch (UK) reported that RVS is currently in the final stages of planning a cruise for Dr Roland Rihm from GEOMAR, Kiel, on RRS Charles Darwin as part of the Germany-France-UK Tripartite Group. RVS have supported a major geophysics cruise for BAS on RRS James Clark Ross around the South Sandwich Islands involving the RVS Multichannel Array and an large airgun array. Due to the limited shipping facilities to the Antarctic, the Multichannel Winch was loaded on board the ship in the UK in September and discharged in Grimsby some six months later. It is the intention that RRS Discovery will visit Lisbon, Portugal in August 1998 as part of EXPO and this visit is timed to coincide with a port call by R/V Meteor since there is a need to transfer some items of equipment between vessels for overlapping cruises. RRS James Clark Ross is participating in a major geology cruise during March/April 1998 to the SW Indian Ocean Ridge and joint participants are Dr Henry Dick of WHOI and Paul Robinson from Canada using the latter ROPOS system. To enable the funding to be made available for this large scale exercise, NSF have contributed the equivalent of 30 days ship time (20 days actual at an agreed rate of 1.5:1 ship days equivalent for JCR) which has resulted in the UK/US Barter bank balance being reduced to 45 days owed by NERC to NSF.

Bartering is seen as a good method of enabling cruises to be run in areas where 'host nations' own vessels are not currently operating and the resultant effect of it not being cost effective to run a single cruise involving long passage times to/from the work area.

Mr. Castrec (France) reported the ship time exchange with Germany, Spain and USA. The RV Le Suroit has provided 17 days for the university of Berlin. The RV Thalia, a coastal vessel, has provided 11 days for the university of Marburg (FRG). Early 998 we will carry out *Odpnaut* cruise (USA) with RV Nadir and *Nautile* for 6 dive-days. The RV l'Atalante will provide in November 97 during the cruise *CALMAR* (Mediterranean sea) 2 days of coring for Spain.

Mr. Goosen (SA) reported that financial constraints forced South Africa to limit sea time on its ships for 1997 to only the absolutely essential cruises necessary for the setting of Total Allowable Catch's for her commercially important marine resources. Total sea time allocations for 1997 were limited to: Africana 132 days, Algoa 62 days and Sardinops 146 days. Although requests were received from WOCE, MRAG, Ghana

and local research organisations to charter the ships, all the requests were turned down as a result of financial position (charter fees are not paid into the Sea Fisheries budget but must be paid into central Treasury). At the end of 1997 the Agulhas will do a Southern Oceans cruise as a joint venture with Sweden and at the end of 1998 with New Zealand.

After the presentations a discussion was started by a question of Mr. Ollier (EC) on the availability of marine facilities from the bigger countries for smaller countries. Through the EC MAST programme scientist within Europe do have access to marine facilities of other countries.

3.3. Staff Exchanges

Mr Castrec (France) and Mr. Diaz (Spain) reported that Pedro Jornet, the senior mechanics of CSIC (Spain), was on board the RV l'Atalante during the cruise *ESSNAUT* from Brest to Ponta Delgada participating on in trials of Cyana. The experience has been considered as a success.

Mr. Goosen (SA) reported that the NORAD funded Nansen programme provided opportunities to scientists of the SADC to participate on research cruises in the waters of these countries. Next year with the start of the Benguela Environmental, Fishing, Interaction and Training (BENEFIT) programme ongoing staff exchanges among the SADC countries will take place.

3.4. Equipment lost

Ms. Lahdes (Finland) reported the loss of a sedimentation trap (Technicap) with ODAS-buyo and cables in the Baltic Proper. Six current meters (Project VEINS) in the Denmark Strait were not found either.

Mr. Castrec reported that during the F. Hotline cruise on the RV Atalante in the Ocean Pacific, a Scampi was lost.

Mr. Goosen (SA) reported that in August 1997, during a Hake Biomass cruise, the trawl winches on Africana failed (mainly due to inexperienced crew and poor maintenance due to a lack of funding) and all the trawl gear (doors, net and 2 x 3200m warp) was lost in 200m of water. An successful attempt to recover this gear was made in November and all gear were retrieved.

Mr. Yamada (Japan) presented a brief paper on the equipment losses of the past year. In this paper also an indication was given, if known, on the probable cause of the loss.

4. Insurance of Research Ships

4.1. US developments

Prof. Nixon, the Risk Manager and Legal Advisor for the US UNOLS (University National Oceanographic Laboratory System) gave presentations on the progress of the group insurance programme he has been developing for the US (and ISOM) fleet and on the impact of the International Ship Management Code on international research vessel operations (see agenda item 11). The group insurance program, run by the Global Special Risks division of the international broker Willis-Corroon, enjoyed a very successful first year in the US market. Four operators joined the group rather quickly and saw significant rate reductions with an improved level of service. Two additional operators received competitive bids from GSR at a much lower level of premium which their existing underwriters decided to match. The net savings to the fleet in reduced insurance costs for these six operators was \$216,000US. As a result of this first year's excellent results, at least four more institutions are requesting bids for next year. Thus we hope that that the downward trend will

continue next year as well. Unfortunately, rates available to the European operators have not yet been low enough to attract business away from local national carriers. Ms. Rietveld (NL) noted that she would continue to push the issue in Europe with the hope that GSR could produce a more favourable rate for vessels operating outside the notorious US liability law system.

4.2. EU developments

Ms. Rietveld (Netherlands) presented the recent developments on the issue within Europe starting from the situation in 1995 (see attached schedule). Most ISOM members have been active to reach the goal of the agreed minimum standard for P&I insurance. However, some different situations can be discerned.

Being a governmental organisation, like in Finland, means that legislation may prohibit insurance. In the UK it stays unclear what risks are already covered under the government's non-insurance policy. To investigate these questions takes its time. Spain started inquiries on the possibilities of P&I insurance for Hesperides, and hopes to succeed. For non-governmental organisations, like in France, the policy is to take coverage for general and public liabilities only, and have crew and personnel onboard insured. In Germany, on the contrary, Dr. Strohm is attempting to harmonise the insurance's of research vessels and pursuing complete P&I coverage for all of them. Some nasty case with considerable claims increased the urgency of the topic. After some discussion it came out that it could be advisable for France to investigate what risks could be incurred under the present system, for instance by oil spill. The amount of fuel even of a research vessel is quite substantial and could cause considerable damage when spilled. Belgium (governmental) and the Netherlands (non-governmental) having their respective research vessel completely insured, Hull and Machinery (H&M) and P&I as well as 'over the side' equipment, both went through the process of making a comparison between the existing policies and the new group insurance programme developed in the US. As to the P&I part as well as equipment the result was not in favour of the latter even when trying to neutralise the awful US liability law system. However, an interesting feature of the GSR P&I-offer is that it is split up in different layers. This perhaps could open perspectives for partly government insured organisations like in the UK. On the H&M side the comparison can work out favourable, but ship operators should take into account the general downward trend at present on the insurance market. To encourage ISOM members on the insurance issue Ms. Rietveld promised to further review and send ISOM members the results.

Mr. Zaitzu (Japan) explained that in his presentation in Southampton last years he mentioned a limitation of our P&I insurance of 4 million USD for RV Yokosuka. This was incorrect. This limitation is for countries that ratify International Convention to the Limitation of the Liability. The limitation for other countries is about 4.25 billion USD. It can be said almost unlimited.

5. Report of Working Group on Legal Liabilities of Autosubs by C. Fay

6. International Marine Technicians Workshop 1998

Dr. Heinrichs presented the tentative plans for the INMARTECH 98. The USA organisers are planning of running INMARTECH 98 in conjunction with their annual RVTEC Meeting. The 1998 meeting is planned in San Diego in October. Mr. Van Bergen Henegouw presented the results of the questionnaire, which was filled in by the participants of INMARTECH 96. In general the reactions were positive and 90% considers to participate in 1998. The fact that the 1998 workshop could be organised in the US was known to the participants. Comments were given on some organisational aspects; 1) work with smaller groups in parallel sessions, and 2) use poster and other presentation tools to enhance contacts within smaller groups. The topics mentioned for the 1998 workshop were; 1) data management (on board processing, (inter)calibration), 2 long term mooring deployment (design, material selection, sharing of experience), and 3) over the side equipment handling (safety procedures, cables and winches).

The chairmen concluded that the planning of INMARTECH 98 should be continued and the Secretary was asked to work closely together with the US co-ordinators also to apply for and imbed an EC contribution. The EC grand for INMARTECH 96 was for co-ordination, making a report, accommodation of the meeting (participants paid only their travel), translation facilities, and travel and accommodation for guest speakers.

7. UN International Year of the Oceans / Expo 1998; a ISOM planning programme?

The memo of Dr. J. Stel (NL) on the Year of the Ocean / OCEAN98 was discussed.

The initiative was received positively, but most ISOM participants agreed that direct involvement should be established on bilateral contacts between the organisation of OCEAN98 and ship operators. However, it was agreed to create a Internet page on the ISOM site with information on research vessel visits to Expo98 in Lisbon.

(Note: The WWW page is ready and can be found on the ISOM pages)

Furthermore, the participants agreed to up-date their ship schedule in the OCEANIC data base for 1998 as soon as possible. In this way the OCEAN98 organisation might be able to contact the ship operators individually in case they found a cruise of interest for the International Year of the Ocean.

8. Oceanic Database and Research Planning

Ms. Bouton presented an overview of the ISOM ships on the WWW. Of the 19 participating ISOM countries 15 have WWW ship sites of which only seven have up-to-date schedules on-line. Only half of the ISOM countries have up-to-date schedules on OCEANIC. Furthermore, Ms. Bouton presented the OCEANIC template for ship schedule. When ISOM members would use this template to put their schedule on their own WWW site, it can easily be used for OCEANIC as well. It was again emphasised that an up-to-date schedule is an important tool for ship time barter/exchange as well as opening possibilities for scientists to seek for ships of opportunities in geographical areas normally not easy accessible.

9. Implications of ISM code

The International Safety Management Code was addressed by Prof. Nixon, and ISOM was informally surveyed about the progress each operator had made towards compliance. Experience in preparing for the implementation of the Code was highly mixed, although most experienced an increase in awareness of all the issues involved after reviewing an educational video prepared on the subject by a Swedish P & I Club. It is important to note that the ISM Code represents a fundamental shift in admiralty law, redistributing power and responsibility for safety from captains to shore side managers (the marine superintendents). It will be enforced by port state control, not flag state, and some vessels which are classed to carry passengers will be subject to inspection for ISM compliance after 1 July 1998. It is unlikely that the bulk of the US fleet will be in compliance until 2002, when non-passenger vessels must comply. The British experience with compliance was discussed extensively, since they have devoted substantial resources to bringing their fleet into full ISM certification. NERC-RVS Marine were awarded accreditation to ISO 9002 this year after much hard work and it is hoped that the required documented management system will be in place for the organisation to be audited for ISM Certification in April 1998. Also the Japanese experience was given in a copy of their Safety Management Manual, in which the Nippon Marine Enterprises, Ltd. extracted their efforts to bring their fleet into ISM certification.

10. Regulation on working with isotopes on Research Vessels

The chairman introduced Dr. J.A. Sanchez-Cabeza. He gave a presentation on radioactive operations on board research vessels (see reports). After this presentation a discussion evolved on this topic. It became clear that national legislation was adapted and sometimes adjusted to certify laboratories on board. Most of the time it was easier to certify containerised laboratories to work with isotopes on board research vessels. However, a major problem might occur when a containerised laboratory of one country is put on board a research vessel of another country. Mr. Tsuji (Japan) presented the JAMSTEC regulations on working with isotopes. Prof. Kortum (FRG) distributed a document in which the German regulation was described extensively. This document could well be a guideline for countries who did not have a regulation yet.

The discussion was concluded with the remark of Dr. Fay that the ISM-code might be a solution for an international regulation on working with isotopes on research vessels. It was suggested that this topic could be discussed during the INMARTECH 98 workshop.

11. Update on Scientific Diving

This issue is postponed till next years meeting.

12. Any other business

Ms. Rietveld (Netherlands) asked to put the issue of diplomatic clearances on next year's agenda. Ms. Dieter raised the question last year, explaining the growing trend in problems with obtaining same. The report of the Independent World Commission on Oceans (IWCO) due for next year, that will contain an inventory on the issue may well serve as a starting point. IWCO aims at harmonization of legislation in maritime affairs.

Dr. Girard (F) asked to open a discussion on the loss of towed systems. France lost a towed array and a SAR in 1982 and a Scampi in 1995. It was mentioned that the principle of lost equipment was discussed in previous meetings and that the efforts of recovering lost equipment is dependent of the value (money wise and/or scientific wise) of the item lost. The best way is to prevent losses as best as possible by addressing the operating procedures. This could be as topic included in the INMARTECH 98 workshop. As in previous meeting minutes equipment losses should be also part of the ISOM agenda because "discussions on lost equipment which occurred in the past would assist the ship operators to anticipate on problems in future" (see 1994 meeting minutes).

Furthermore, the chairman informed ISOM that this meeting will be the last one for Dr. Dominique Girard before his retirement. On behalf of ISOM the chairman thanked Dr. Girard for his long and strong contribution. In a few well chosen words Dr. Girard sketched the start and continuation of ISOM and hoped that the ISOM participants kept on sharing their problems and learning from each others solutions.

13. Continuation of ISOM?

Dr. Girard advised the participants to continue ISOM at least another year. This advise was accepted by all participants.

14. Date and Place of Next Meeting

Dr. Heinrichs (USA) invited on behalf of the National Science Foundation all participants to the meeting in San Diego at Scripps Institution of Oceanography next year. The planned dates are 5 - 7 October 1998.

Mr. Miyazaki (Japan) indicated that JAMSTEC would be candidate for the 1999 meeting. The director of

JAMSTEC will be formally invite ISOM during next years meeting.

Ms. Rietveld (Netherlands) announced that the Netherlands would be happy to host ISOM in 2000.