

Third International Ship Operators Meeting

10 October 1989, Washington DC, USA

| Country | Representative | Organisation |
|-------------|----------------------------|-----------------------------|
| UN | Mr. E. J. de Boer | FOA, fisheries dept., Italy |
| France | Mr. P. Rouzaud | IFREMER, Toulouse |
| Germany | Prof. D. Kohnke | DHI, Hamburg |
| Japan | Mr. Y. Hasegawa | JAMSTEC, Yokosuka |
| Netherlands | Dr. J. Stel | SOZ, The Hague |
| | Mr. C. van Bergen Henegouw | SOZ, The Hague |
| UK | Dr. J. Crease | OCEANIC |
| | Dr. C .W. Fay | NERC, Barry |
| | Mr. B. Hinde | NERC, Swindon |
| | Mr. F. Verdon | NERC, Barry (secretary) |
| USA | Dr. N. Anderson | NSF, Washington |
| | Ms. E. Dieter | NSF, Washington |
| | Dr. D. Heinrichs | NSF, Washington (chairman) |
| | Ms. L. Lynch | NSF, Washington |
| | Dr. K. Kaulum | ONR |
| | Mr. L. Stevens | JOI |
| (pm only) | Dr. H. Ducklow | WHOI (JGOFS) |

Apologies for Absence

had been received from Mr. J. Adams (DAFS, UK), Ms. E. Lahdes (FIMR, Finland), Mr. S. MacPhee (BIO, Canada), and Prof. Pichot (Belgium).

1. Introduction and Welcome

Dr. Heinrichs welcomed attendees to the meeting, and introduced Ms. Dieter, who had taken over John MacMillan's post at NSF.

2. Review of Minutes of Second Meeting

The minutes were accepted as a true record. Mr. Verdon reported that he had not prepared the book(let) giving principal particulars of larger ships because of overlapping activities by EEC and FAO, both of which would be described later.

3. EEC Activities

Mr. Rouzaud outlined the principal points in the study that he had undertaken for Directorate-General XII (DGXII). These were that three European countries (France, Germany and UK) operated 75% of all the research ships and owned 100% of all major marine research equipment, and that these countries could not necessarily afford to operate these facilities full time. This indicated that there was a case for closer co-ordination among all the European countries.

Mr. Rouzaud then drew attention to another part of the EEC study which had examined the possibility of simplifying clearance procedures between member states of the EEC. He also said that he had made a rudimentary comparison of OMNET and EUROKOM, and had concluded that an electronic mail system was

not essential to the communication of information about ship schedules between ships managers.

He indicated that the "final" version of his report would be completed in November, and he would ask Dr. Boissonnas (the convener of the EEC Group) to send a copy to NSF. The annexes to the report would include a full set of ship details as provided by the operators.

Mr. Hinde expressed reservations about having too complete an inventory of ships, as this could be misinterpreted by administrators. He suggested that ship numbers should be related to demand, and that any inventory should address the questions - "are there sufficient ships to meet the demand?", and "are funds sufficient to operate those ships?", He then said that he hoped that clearance procedures could be simplified initially at least for European operators.

Mr. Hinde concluded his comments by suggesting that the choice of electronic mail system would be made pragmatically by the users - i.e. they would use the system which provided them with the service they required.

Dr Stel agreed with this last point, and also suggested that any inventory should include the age of the vessel. Dr. Heinrichs said that the US oceanographic community would be staying with OMNET for some years yet.

4. FAO Activities

Mr. de Boer said that the FAO had been phasing out its own fleet of vessels since 1982; from an initial fleet of 21, the numbers had been reduced to 4 at present, and would be down to zero by end-1990. He said that FAO would aim to meet user-state requirements by co-operative use of research ships, and in order to match ship time with these requirements, FAO had begun in 1987 to assemble a "database" in co-operation with IOC. Currently all this information was on paper, since FAO's intention was to aid developing countries, who might not have access to electronic communication.

He said that FAO currently had information on some 300 ships, of which about 160 have indicated that they can be made available for short or long hire periods. He commented that the co-operative use of research vessels must be fully operational by the time that the FAO fleet has reduced to zero. One aspect of this would be a UNEP publication on Mediterranean research vessels, another would be the EEC information.

Dr. Crease asked what information was provided about ship availability. Mr. de Boer agreed that this was a difficult area for respondents to give precise dates. He added that FAO currently had approximately 34 ships operational.

5. Clearance Problems

Mr. Stevens said that clearance problems persisted for all states, and State Department figures for 1988 showed that cruise applications stood only a 50% chance of being granted clearance. He said that there did not appear to be a common thread to the rejections.

Commenting on specific countries, Mr Stevens noted:

Brazil - new decree on marine science requires formal collaboration with Brazil Scientific Institute, some formal constraint on publication, plus a military observer.

Venezuela - position similar to Brazil's.

India - as far as can be determined, no clearance approval has been granted for the past decade, and applications have virtually ceased.

USSR - clearances are beginning to be approved with the change in the political climate.

Several countries which formally reject UNLOSC are trying to abide by its conditions. Professor Soons had recommended a formal study by an independent body of whether countries submitting clearance requests were following UNLOSC procedures, and then whether recipient countries were also doing so. Soons would be gathering data for European countries, he (Stevens) would be doing so for other countries.

Reporting on the recent UN workshop on UNLOSC, Mr Stevens said that the aim had been to try to achieve broad agreement on guidelines for UN endorsement. The reports to the workshop had generally been very positive, and the UN office were working on draft guidelines for approval.

New Marine Science technologies would undoubtedly impact clearance procedures, and Mr. Stevens touched upon two or three areas.

- Drifting buoys should present no problem, and Dr. Heinrichs confirmed that the WOCE community was of the same mind.
- Running of PES when ship is transiting should not be a problem as it was impractical to get clearance for every EEZ that might be crossed during a cruise.
- Long-running ROVs, such as the UK 's DOGGIE and DOLPHIN developments, might raise real problems.

It was clear that custom gave legitimacy to some operations -e.g. remote sensing - that were beyond the control of the coastal state, but it was unclear whether ROVs subject to the vagaries of currents could be classed in the same category. The two key issues appeared to be whether there is physical contact with the water column, and whether the device is under the control of an operator. The potential for conflict with free-swimming devices appeared high, with the greatest problem appearing if the device ended its "voyage" in the EEZ of a state from whom clearance had not been obtained.

He recommended more research on the topic.

Dr. Heinrichs raised a problem - if a country signs on to a global research programme, has it given de facto clearance? Mr. Stevens said that, under UNLOSC, once a programme had been signed "a four-month clock starts ticking", and within that period, a country had a right to withdraw clearance; if it did not do so, clearance was assumed. However, he pointed out that the position of countries not signatory to UNLOSC was questionable.

Mr. Hinde questioned the validity or value of a detailed database of clearance problems, but said that UK would be happy to contribute to a statistical summary.

6. OCEANIC (SONIC)

Dr. Crease welcomed the support from this meeting for an extension to the work that University of Delaware were already undertaking for the WOCE community. He felt that there was much in the current developments that would be of interest to UNOLS. He handed out some descriptive literature that showed that OCEANIC (the current name for what had been called the SONIC database) comprised a number of elements, of which two -ship particulars and ship schedules - were of interest to this group. He commented that the schedules were of greatest use when they were related to a longish time span, and pointed out that Germany provided outline plans for METEOR up to 1993/94. He felt that other countries' plans for this time frame, no matter how provisional, would enhance the value of the database. Mr. Hinde said that beyond March 1991, UK had only bar-chart outlines, but Dr. Crease said these would be useful.

Dr. Heinrichs took up Mr. Rouzaud's comments about exchanging information on paper, and suggested that that method did not work effectively. Prof. Kohnke said that there was a need to co-ordinate the efforts of

FAO, EEC and this group. Dr Crease said that any technical solution was "possible", but he and Mr. Hinde pointed out that any database that did not include US, Japanese and Canadian cruises would not be very useful. Dr. Crease added that he thought European marine scientists would be "unwise" to try to ignore OMNET.

Dr. Heinrichs and Dr. Fay suggested that a small sub-group of this group get together to recommend ways for cross-fertilisation with the EEC group and FAO, and Dr. Fay proposed Mr. Verdon from UK. Dr. Stel thought that such a cross-fertilisation could offer opportunities for scientific benefits, and he proposed Mr. Van Henegouw. Dr. Heinrichs nominated Miss Lynch. Other members felt that the sub-group was probably adequately represented by these three, at least initially. The first task of the sub-group would be to prepare some terms of reference, and to obtain some "hands on" experience of the modifications proposed to OCEANIC. (FPV note; After the meeting, the three of us agreed to set up a meeting late-November, probably in UK. Any input from others would be most welcome.)

It was also agreed after some discussion that the group members would draw the attention of their communities to OCEANIC, and encourage its use.

7. Fleet Changes

Dr. Kaulum produced illustrations and photographs showing the design changes proposed, and progress with, the mid-life modernisation of Knorr and Melville. He said that the expected improvements resulting from the modernisation were a more reliable propulsion system, less acoustic noise, and continuance of the ships' manoeuvrability. For the Bernier, Dr. Kaulum said that the work involved removing the helicopter pad, and building on new laboratories and working areas.

Mr. Hinde outlined the provisional plans for Discovery (provisional because an announcement about government funding is not expected until end-November). He referred to folders of drawings given to each attendee, and noted that NERC too planned to increase the length of the ship by 10 metres as well as providing new accommodation and laboratories. He pointed out that NERC had very firmly linked this refurbishment of the ship to the needs of the WOCE programme.

Mr. Hinde then confirmed that NERC had placed an order with Swan Hunter Shipbuilders - a UK company - for the construction of a new ice-strengthened vessel, to be known as RRS James Clark Ross, for NERC's British Antarctic Survey. The vessel, due for completion in 1991, would be 99m loa, 18.85m beam, and with a draft of 6.3m. She would carry a total complement of 77, including scientists on passage to Antarctica. A brief descriptive leaflet about the new ship is attached.

Mr. Rouzaud announced that IFREMER had been allocated 50 Million French Francs each year for the next 10 years for ships. Currently, a replacement for Charcot was being built, and would be ready in 1990. The new ship was lightly larger than the present one, and would be fitted with a multi beam swath bathymetry system. For the future, France, was thinking in terms of offering a contribution to a European "geophysical ship", to which other EEC members would contribute towards both capital and recurrent costs, although IFREMER had offered to operate it on behalf of the EEC. The fishing vessels Thalassa and Crios would also be replaced, probably by one slightly larger vessel as the two present ships were not fully employed.

Professor Kohnke said that Germany was in the process of replacing the 30m research cutter Alkor with a 55m vessel which would carry the same name.

8. "Barter" Agreements

Opening the discussion, Mr. Verdon said -that the aim of this agenda item was to elicit information about possible bilateral arrangements that might have arisen as a result of the meetings of the group. Mr. Rouzaud said that he had originally been in favour of some form of formal agreement, but he now recognised that this was not supported. Dr. Heinrichs commented that he was unsure whether international programmes would involve "Barter".

No further information on new bilateral barter arrangements was produced.

9. Technical Support

Dr. Fay gave a presentation on the way that RVS provides technical support for a wide range of civil marine scientists, both by way of equipment and staff support. He said that on the four "general purpose" research vessels operated by NERC, the technical support staff comprised some 25-30% of the total number of scientific berths available on each ship. He then went on to identify some of the roles of the technical support staff. In computing specifically, RVS staff had developed a ship borne computing system that was independent of the hardware used to implement it, and had recently upgraded the original (1982-84) design from 68000 hardware to SUN workstations.

Dr. Fay suggested three areas for possible future collaboration among members of the group. These were:-

- exchange of ship time with major facilities (such an arrangement already exists as "barter");
- exchange mobile scientific systems; a possible corollary to this would be a need to standardise on fittings and services to 20' ISO containers, in which much such equipment is mounted nowadays;
- exchange technical staff on either secondment or short-term exchange arrangements, to give such staff a wider range of experience.

Mr. Rouzaud said that Dr Fay's presentation was interesting, but that in France there was not such a clear distinction between scientists and technical staff. Also, the crew operated winches on board.

Prof. Kohnke said that in Germany scientific teams brought their own computing system(s) with them, and Dr Kaulum asked how the RVS computing system handled a sophisticated piece of equipment. Dr Fay said that RVS was used to groups bringing their own computing systems on board, and could provide appropriate interfacing and time stamping to cope with a wide range of instrumentation.

Mr. Hinde pointed out that marine research seemed to be changing from individually led cruises towards "directed" programmes. The advantage of a unified computing system was that data was not only available to the PI at the end of a cruise but could also be deposited in a central repository within two days of the cruise finishing. Dr. Heinrichs noted that the WOCE community were exerting pressure to upgrade current met and CTD packages to record on ship borne computing systems.

10. Global Programmes

Before beginning his presentation proper, Dr. Ducklow dwelt for some minutes on the problems of communication between ships and scientists involved in the sort of collaborative programme typified by JGOFS. He noted the specific instance of the spring 1989 exercise where RRS Discovery, RV Atlantis II and RV Meteor had to establish direct (personal) contact before appropriate radio communication could be established between the three ships, and said that some improvement on that technique had to be possible. Dr. Fay suggested that the expertise of the NERC Radio Officers might be utilised.

Dr. Hugh Ducklow then gave a presentation on the aims of JGOFS, a programme designed to last through the 1990s. The overall aim was to be in a position at the end of that time to be able to use satellite data to forecast

the complete carbon cycle. To do this, the data-gathering component would require "a lot of ship time over all the world", and in this respect JGOFS would be in direct competition with other global programmes.

Mr. Hinde and Dr. Heinrichs expressed their joint concern about the probable demands for ship time over the next decade; both feared that the scientific requirements would be constrained by funding limitations. In response to a question from Dr. Fay as to whether there were sufficient scientist and technicians to support three major global programs. Dr. Heinrichs said that if funding for the major programmes were not provided, the community would be "over shipped". However, he agreed that a sizeable minority of the community seemed to think that the programmes would be manpower limited, particularly those parts that involved numerical modelling. Dr. Ducklow expressed the view that if manpower was a limiting factor, then cruise proposals would not get written.

Dr. Heinrichs said that RIDGE (Ridge Inter-Disciplinary Geophysical Experiment) would present no problems to the US community.

Dr. Heinrichs then suggested that when specific ships/operators have been allocated to given global programmes, the operator(s) should consider visiting other operational centres throughout the world that are participating in that particular programme. It was then agreed that the questions of total capacity and of communications between operators/ships should be put on the agenda for the 1990 meeting.

Mr. Hinde then suggested that the JGOFS and WOCE communities be advised of the existence of this group, and asked if it could be of assistance on any topic. Dr Heinrichs agreed to write to those communities, and to the national steering committees "before Thanksgiving".

11. Arctic Oceans Studies Board

Dr. Heinrichs said that AOSB had become aware of the activities of this group, and were seeking advice on setting up some form of "cruise availability" mechanism for the Arctic. He suggested that AOSB should be pressed to use OCEANIC, and that Finland -a member of this group - should be encouraged to use OCEANIC fully. It was agreed that this was the proper way forward, and that Mr. Hinde and Dr. Heinrichs would write to AOSB identifying the list of national contacts and seeking a contribution of \$5,000 towards continuance of OCEANIC.

12. Widening of Membership

It was agreed that the group would extend an invitation to USSR to attend the 1990 meeting. Dr. Heinrichs would notify Mr Verdon of the appropriate individual to whom to write.

13. Next Meeting

Professor Kohnke said that he would examine the possibility of holding the next meeting in Germany, and Mr. Rouzaud made the same offer from France. After some discussion, it was agreed that wherever the venue, the next meeting would be held on TUESDAY 9 OCTOBER 1990.

Dr. Stel questioned whether it was essential that the "host" nation should meet the all costs of the meeting except members' travel, and there was general acceptance of this change. However, neither Professor Kohnke nor Mr. Rouzaud felt it necessary to implement it before 1991.

Frank P. Verdon 17 October 1989