International Seminar on the Exchange of Ship Time

24-25 November 1987

Executive Summary

17 representatives of marine science organisations from 8 countries attended a two-day seminar organised by the UK Natural Environment Research Council to discuss prospects for the exchange of ship time. The list of attendees is attached.

The meeting heard from Dr John Woods, NERC's Director of Marine Sciences, that the increasing costs of operating research vessels had to be seen in the context of declining support for marine research and the growing international aspects of that research. He suggested that one possible solution to this problem might be to exchange seatime on a geographical basis. Mr Hinde, NERC's Director of Scientific Services, suggested that the meeting should exchange information on ships and programming, and explore possible mechanisms for exchanging shiptime.

In the ensuing discussion the following points were made:

- There may be a role for international agencies such as IOC and FAO in the formation of research vessel databases, but the most effective mechanism was likely to be bilateral exchange of shiptime, particularly if major equipment, such as SEABEAM or Multi-Channel Seismics, were on the vessel;
- There is a potential demand for about 8 shipyears for WOCE, only about half of which appears to be available:
- Funding agencies need to be satisfied that international capacity has been considered to meet scientific demand;

The representatives each gave an outline of their country's research vessel capabilities and programming arrangements using published material and presentational media. A note of these presentations and copies of the published material are available from the secretary of the meeting. In addition, Dr Skinner, from UK, reported briefly on interest shown by other countries invited to the seminar but unable to be present.

Dr Skinner then opened a discussion on the way forward, in which he drew attention to the established traditions of international co-operation in marine scientific research and made the point that the time was ripe for developing co-operation in research vessel operation. He outlined one possible mechanism for matching requirements with ships' programmes, that of the "electronic notice-board". Some of the representatives present pointed out some of the problems that they would face in trying to maintain a national database in view of the number of organisations operating ships in their countries, but M.Girard observed that these problems could be overcome given the will to do so.

Following the discussion, a number of actions were agreed. These included:

- Exchange of details of all ships >40m
- Examine the possibility of setting up one or two databases of ships programmes and scientific user requirements

- Continue and develop the exchange of information on an informal basis
- Arrange a second meetinq in summer 1988

Summary Notes

Present

Belgium	Prof J C J Nihoull University of Liege
Canada	Mr Steven B MacPhee Fisheries and Oceans
Finland	Dr Paavo Tulkki Finnish Institute of Marine Research
France	M. Dominique Girard M. Eric Isphording IFREMER
Germany	Prof. Dieter Kohnke Deutsches Hydroqraphisches Institut
Japan	Dr Hiroyuki Nakata JAMSTEC
USA	Dr J G McMillan National Science Foundation Prof J Williams Office of Naval Research
UK	Mr B J Hinde Dr L M Skinner Mr F P Verdon Dr S J White Dr J D Woods NERC
	Dr N Flemming CCMST
	Mr J Adams DAFS
	Dr S J Lockwood MAFF

1. Introductory Session

Following a welcome from Dr J D Woods, Mr Hinde outlined the purpose of the seminar. He said that at the present time most countries were experiencing a decline in the national budgets available for marine research and this combined with the ever increasing cost of operating research vessels made it necessary to seek economies by exploiting the feasibility of exchanges of shiptime on an international basis. One approach might be exchange seatime on a geographical basis so that teams of foreign scientists could participate in research in distant areas without the need for their own national vessel to travel to the area. Any development of this possibility should avoid bureaucracy and the transfer of funds between operators. Mr Hinde suggested that two areas of discussion that could usefully be explored at the seminar were an exchange of information on ships and programming, and an exploration of possible mechanisms for exchanges of both shiptime and

major equipment items.

In the opening discussion, the following points were made:

- There may be a role for international agencies such as FAO and IOC in the formation of research vessel databases, but the most effective mechanism was likely to be bilateral exchange of shiptime, particularly if major equipment, such as Seabeam or Multi-Channel Seismics were fitted to the vessel;
- There is a potential demand for about 8 shipyears for WOCE, only about half of which appears to be available. Ship operators need to be aware of this requirement;
- Funding agencies need to be satisfied that international capacity has been considered to meet scientific demand;
- At least one nation would like to offer shiptime as a quid pro quo for ODP contributions;

2. Position Statements

(Each delegate outlined his countries research vessel capabilities and programming arrangements using visual aids. The brief notes following give only the bare outlines of those presentations.)

2.1 Belgium

"Belgica" was the only national civil research ship, but was constrained by the Government to operate in the North Sea. It was likely that the ship could be made available to other users with a strong scientific case, and Belgian scientists had used ships from UK, USA, France and Germany in the past.

The University of Liege operated a smaller ship for coastal research, but it was presently underutilised.

Some research had been carried out from naval vessels, but the extent of this had declined in recent years.

2.2 Canada

Marine research was carried out from ships of the Navy, the Coastguard, and the Fisheries and Oceans Department, the last being the only civilian organisation permitted to operate ships. The ships were programmed for three areas -the east (Atlantic), the west (Pacific), and central. For the programme year April-March, requests for cruises are invited in the preceding August, and a programme prepared by the January. Demand has so far always exceeded supply (for finacial reasons). In 1990, Australia and Canada are to co-operate in carrying out one or two Pacific transects for WOCE, and this indicated a return to operating in international waters after a spell of 5 years operation in Canadian waters.

Whilst it is theoretically possible for the scientific institutions who run the ships to use funds allocated for ship operation on chartering-in a vessel, the actual savings by not operating the home-based ship are marginal, and Canada favoured a ship-exchanqe scheme.

2.3 Finland

Finland currently operated one (1953) research ship, and were planning for a new 59m icebreaker vessel for delivery in 1989. The new vessel would operate mainly in the Baltic, but it was also intended for use in higher latitudes in both the northern and southern hemispheres. It would have a 2m square moonpool, which could be closed on the bottom. It would be possible for non-Finnish scientists to use the vessel with some

conditions.

2.4 France

In addition to the operation of a number of research vessels, IFREMER's strength lay in the operation of submersibles, of which four -SAR, Epaullarde, Cyanna, and Nautile -were mentioned. Several co-operative missions had been undertaken with other countries, and the US-France cooperation involved the sharing of ships, submersibles and results. Recent activities included the recovery of an Italian DC9, and the Titanic exercise, both of which produced funding that allowed other operations to take place.

France required about one year's notice of any international requirement for shiptime, but this could be shortened if funds were provided to run the vessel! The suggestion that international sharing of ship resources might be encouraged by an "Announcement of Opportunity" approach was welcomed.

2.5 Germany

Germany operates three classes of research vessels - naval ships, research ships operated by the navy, and research vessels operated by government agencies and universities. A fourth type of ship used almost exclusively in resource exploration was typified by the Sonne and Mintopp, operated by the Federal Ministry of Science and Technology.

Of the civil research ships, the Meteor had operated in the Indian and-Atlantic Oceans and the Antarctic, whereas the smaller vessels were restricted to the North and Baltic Seas. The Institute for Polar Research in Bremerhaven operates the Polarstern, which can break up to 5m of ice!

German scientists were particularly interested in the prospects of exchanging ship time in order to work outside the North and Baltic Seas, and opportunities for scientists from other countries to work on German ships were indicated in the publication which lists the cruises and occupancy of all 17 research vessels from February each year.

2.6 Japan

Dr Nakato spoke principally about the Japan Marine Science and Technology Centre (JAMSTEC), although he indicated that there were a number of research vessels operated by the universities, including two by the Ocean Research Institute of the University of Tokyo. Jamstec operated the Shinkai 2000 - a submersible able to dive to 2000m - which is scheduled to make about 75 dives per year, and the Shinkai 6000 - able to dive to 6500m - which should be completed in l990.

There were few problems in accepting non-Japanese scientists as "observers" on research ships, provided the scientists concerned gave about two months notice of the requirement. Individual scientists could either utilise personal arrangements with fellow Japanese scientists, or could make use of inter-agency or inter-governmental agreements, where these existed. Some collaborative projects with China and Fiji were based upon these latter. For JAMSTEC, any collaborative agreement would be between the foreign organisation and the Science and Technology Agency (STA), whereas for the universities it would be with Monbusho (Ministry of Education, Culture and Science).

The planning timetable began in June, when JAMSTEC submitted its plans to the STA. The STA submitted its overall plan to the Finance Ministry in August, and the Ministry then submitted its overall plan to Parliament at the end of December. Although Parliament did not formally approve plans for the year beginning April until the end of March, the financial plans submitted in December were seldom changed, and cruise programmes for the upcoming year were regarded as finalised by the December statement.

2.7 USA

The USA reserach fleet was principally that of UNOLS - the Universities National Oceanographic Laboratory System - a loosely-organised body that co-ordinated the operational -aspects of the 23 ships run in support of oceanographic research. Of the total, financial constraints meant that in any year two or three of the ships would be laid up. However, UNOLS and NSF had recently produced a plan for the replacement of the fleet over a period of 30 years, with some of the funding being provided by the navy.

The individual scientist submitted his proposals (including shiptime requirements) to scientific and panel review; if the proposal were approved, NSF was obliged to provide him with the shiptime. Recent (November 1987) budgetary decisions in USA would have some impact on plans for 1988 and later years, but the full effect was not yet known.

USA had a number of exchange arrangements with countries represented at the seminar, and expected this form of sharing to increase as budgets became more constraining at a time when oceanographic science was becoming more global in its outlook. Examples of successful exchanges with France, UK and Turkey were cited.

2.8 UK

In the UK, five organisations - Department of Agriculture and Fisheries, Scotland (DAFS), Ministry of Agriculture, Fisheries and Food (MAFF), Minstry of Defence (MoD), Natural Environment Research Council (NERC), and one or two of the universities - run research ships. The programmes for each of the UK vessels are published by NERC annually in a small booklet provided to those present at the seminar. NERC also maintains a centrally provided and supported pool of scientific equipment valued at about #8m. This pool includes a Digital Multi-Channel Seismic System, Acoustic Doppler Current Profilers, and an in-house developed shipborne computer system. In addition, a towed side-scan sonar system - GLORIA - is available to scientists

For NERC, the programming cycle begins almost two years before the beginning of a specified programming year. This period is seen as necessary to allow the relevant scientific reviewing and preparation times, and also to allow for the minimum 6 month period that is now customarily required to obtain diplomatic clearances for operations in foriegn waters. Interest was expressed in collaboration in the North Sea Programme that NERC has planned to start in August 1988.

2.9 Other Countries

Dr Skinner reported briefly on some feedback that he had received from organisations invited to the seminar but for various reasons unable to attend. The Australian response was supportive of the aims of the seminar. Australia favoured the attachment of some notional value (in $) to any resource that might be exchanged, and also wished to explore the possibility of shiptime being offset against the country's contribution to ODP. The Dutch had a vessel that could carry a large number of containers, and they saw containerisation as a way forward in international exchanges. The Food and Agriculture Organisation (FAO) had developed an information sheet for ship operators to complete, so that their database on fisheries research vessels could be extended. It was also likely that their own fleet would be scaled down.

3 Discussions

Opening this session, Dr Skinner took the meeting through a paper entitled "The Way Forward", in which he drew attention to the established traditions of international scientific co-operation at all levels in

oceanographic research. He made the point that the climate was right for developing this cooperation into research vessel operation. He said that one mechanism that already existed for making known the availability of shiptime, and trying to match it with unsatisfied demand was the "Notice Board" on electronic mail systems, and he highlighted the "Sonic" system being developed by the University of Delaware on the US -OMNET' for WOCE. He said that, in principle, the problems of shiptime exchange could all be relatively easily handled, and most potential difficulties were bureaucratic in nature

Mr Hinde asked whether it would be helpful for databases of ships programmes and scientific requirements to be organised. Mr MacPhee pointed out the problems that Germany and Canada would face in trying to maintain a national database in view of the variety of organisations in each country involved in operating ships, but M. Girard stated that where there was a will a way round such problems could generally be found. Prof Kohnke agreed with this view, and he suggested that DHI might be able to act as the focus for such a database in Germany; M. Girard volunteered IFREMER for this role in France. Dr Nakato pointed out that he formally represented only JAMSTEC, not Japan in toto, and it might be some time before a co-ordinated Japanese view could be provided.

There followed considerable discussion on the possible ways that a database could be set up and maintained, including the extension of existing mechanisms - such as those of IOC or FAO.

4 Conclusions and Actions

Summing up, Mr Hinde said that a number of actions could usefully be placed on those present. These were:

1. Exchange details of ships (>40m) and major Allequipment;
2. Assemble a group of 3-4 experts to advise LMS on the setting-up of the relevant data- bases - nominees or volunteers welcomed;
3. Provide input to a database of ships programmes, with each country being responsible for the upkeep of their section
4. Provide input to a database of user requirements:
5. Maintain an informal information network of difficulties encountered in obtaining diplomatic clearances:
6. Collate information on arrangements for bilateral exchanges;
7. Write up the meeting, with an executive summary;
8. Provide details of addresses, telephone numbers, etc. for all present:
9. Seek nominations for contact point in each country represented;
10. Arrange a second meeting in Amsterdam in 6-8 months time.