

THE IOC EXECUTIVE COUNCIL MEETING, PARIS, MARCH, 1988

The Intergovernmental Oceanographic Commission holds a full meeting every two years. In alternate years, such as 1988, the Executive Council of the Commission meets to carry out business and to prepare for the full meeting. This year's meeting was held in Paris at IOC Headquarters during March 7-15.

A full U.S. delegation attended, with Paul Wolff, Assistant NOAA Administrator for Ocean Services, as Head of the Delegation. Wolff was assisted by alternates Robert Corell, Assistant Director for Geosciences of the National Science Foundation, and William Erb, Director of Marine Science of the Office of Science and Polar Affairs of the State Department. Other government representatives included Gregory Withee, Richard Podgorny, and Candyce Clark from NOAA, Louis Brown from NSF, and Dorothy Bergamaschi from the State Department. D. James Baker from Joint Oceanographic Institutions attended as an advisor.

The full report of the meeting is available from William Erb's office at the State Department. The meeting agenda covered ocean sciences, ocean services, reports from regional subsidiary bodies, cooperation with other groups, future plans, and recommendations for appointment of a new secretary of the commission.

In the area of Ocean Dynamics and Climate, the Executive Council strongly supported the on-going TOGA and WOCE programs. Angus McEwan, Chairman of CCCO, Gerold Siedler, President of SCOR, and George Needler, Director of the WOCE International Planning Office all reported on various aspects of these programs. There was general agreement that the IOC Technical Committee on Ocean Processes and Climate would have an important role to play in the implementation of WOCE. It was also agreed that there would need to

be an accelerated phase for the development of ocean services including IODE and IGOSS if programs such as WOCE and TOGA are to succeed.

In Marine Pollution Research and Monitoring, Neil Andersen, Chairman of the Scientific Committee for GIPME, reported on-going activities and noted the importance of the interaction of IOC programs such as GIPME with the Joint Global Ocean Flux Study and the International Geosphere-Biosphere Program. A cooperative program for the Black Sea was supported.

Michel Vigneaux, Chairman of the IOC/UN Guiding Group of Experts on Ocean Science in Relation to Non-Living Resources reported on the (mainly regional) activities during the past year. The Program has held a number of workshops, and Takahisa Nemoto, Chairman of WESTPAC, announced one on Margins of Active Plates to be held in conjunction with the International Conference on Asian Marine Geology in Shanghai next year. Peter Cook of Australia reported for the Joint Working Group on Post-IDOE Studies of East Asian Tectonics and Resources (SEATAR). He noted that the SEATAR Transect Study was now finishing with publication of the synthesized transects and a science review volume.

Kazuhiro Kitazawa of Japan and from the Secretariat reported on the Working Group on South Pacific Tectonics and Resources (STAR). The STAR study group on age dating has completed its task with the publication of more than 500 age-data from islands and seamounts in the south and central Pacific. The Soviet Union announced plans to send two oceanographic vessels into the western Pacific in late 1988 to investigate tectonics and hydrothermal processes at the Pacific Ocean floor.

As reported by Fernando Robles, an IOC Senior Assistant Secretary, the Ocean Science in Relation to Living

Resources program is continuing its focus on recruitment processes and has added a new thrust on red tides and ocean plankton blooms. This latest thrust builds on two recent workshops in Japan.

For Ocean Services, David Pugh of the IOC Task Team of Experts on the Global Sea-Level Observing System and Director of the Permanent Service for Mean Sea Level noted that considerable progress had been made in setting up a global sea level network in the Pacific and Indian Oceans. Globally, there has been a substantial increase in the number of observations made and stations reporting. The importance of the sea level network was emphasized by many delegates, and there was general agreement that this is one of the important tasks of the IOC.

Nick Flemming, Chairman of the IOC Technical Committee on International Oceanographic Data Exchange (IODE), reported progress in expanding and strengthening the IODE system. One of the important points raised in the discussion of data issues was the proposal presented by Greg Withee of NODC that the U.S. was willing to host a Workshop on Climate Data Management in May-June 1989. This proposal was accepted with enthusiasm by the Council.

Natalie Philippon-Tulloch of the Secretariat noted that a long-term strategic framework for the development of the FAO-IOC-UN Aquatic Sciences and Fisheries Information System is now being developed. The system is currently producing over 30,000 abstracts per year and the product is available on a compact optical disk (CD-ROM) as well as through the standard modes of publication. The departure of Yuri Oliouine of the USSR from the Secretariat was noted with regret by the Council. Dr. Oliouine has contributed greatly to the success of the IODE program.

Yves Tourre, Chairman of the IOC/WMO Working Committee for IGOSS reported that the IGOSS XBT Ship-of-Opportunity Program seems to be working well. A number of new lines have been identified. Almost 2500 good quality XBT profiles were entered for a Pacific Ocean subsurface thermal analysis during the period of November-December 1987 within the framework of the IGOSS Subsurface Thermal Structure Pilot Project headed by Warren White of Scripps. R. Hagemayer reported that the International Tsunami Warning System has now been upgraded to include tidal data collection by 27 satellite data-collection platforms, but

the East Asian part of the system remains substandard.

Regional IOC programs ranging from the Western Pacific (WESTPAC), the Southern Ocean (IOCSOC), the Caribbean (IOCARIBE), the North and Central Western Indian Ocean (IOC-INCWIO), and from the south-west Atlantic and the central eastern Atlantic reported on various activities and workshops that had been held. Dale Krause, the Director of the UNESCO's Marine Science Division, reviewed the Division's activities in promoting marine science in developing countries and cooperating with non-governmental marine science organizations.

Christophe Billard, Chairman of the Drifting Buoy Cooperation Panel, emphasized the importance of both the technical issues of drifting buoys (how well they work) as well as the legal issues (what happens when a buoy enters waters under national jurisdiction). These issues were debated at length by the Council and a number of recommendations made.

IOC funding has remained approximately level since 1981, and this has led to frustration among many members, who feel that this level of funding is insufficient to the needs of the Commission. Both the U.S. and the U.K., although no longer member states of UNESCO, have made voluntary compensatory payments. If IOC programs are to meet the needs of the new large programs for ocean services, then there will have to be budget increases. Whether these are likely is not certain in the current economic situation.

The Council urged member states to try to provide support for scientists from developing countries for participation in the Joint Oceanographic Assembly. The JOA will be held in Acapulco, Mexico in August of this year. Siedler noted that the JOAs are the only major interdisciplinary international congresses in marine science, and that this one will be the first to be convened in a developing country.

In preparation for next year's meeting, Manuel Murillo, First Vice-Chairman of the IOC, proposed that the theme of the Bruun Memorial Lectures was agreed to be the application of new technology in ocean monitoring. Four specific topics were proposed: Application of acoustic technology, applications of multi-beam scanners in ocean mapping, applications of remotely operated vehicles for the study of the ocean bottom, and the use of satellite-measured ocean color for study of biological productivity. Countries were asked to nominate speak-

ers and to agree to provide their travel to the meeting if the speaker were chosen.

Perhaps one of the most interesting aspects of the meeting were the consultations among delegations about the selection of a new secretary for the Commission. Dr. Ruivo will be retiring at the end of this year, and a number of candidates for the position have been identified. The U.S. delegation, in order to get to know the candidates better, invited each to lunch on different days.

A final decision will be made by the UNESCO Director-General, Frederico Mayor, within the next few months.

A highlight of the meeting was the (no-host) fiftieth birthday party for Lou Brown, held at the Nuit de St. Jean Restaurant. An international group gathered on March 11 to honor Lou and his many contributions to fostering international oceanography over the years.

In this observer's opinion, the discussions and actions taken at the meeting showed a healthy progress toward closer integration of intergovernmental mechanisms with the needs of the research community.

Table of Acronyms not defined in the text:

NOAA—National Oceanic & Atmospheric Administration
 TOGA—Tropical Oceans & Global Atmosphere
 WOCE—World Ocean Circulation Experiment
 SCOR—Scientific Committee on Oceanic Research
 IGOSS—Integrated Ocean Services System
 GIPME—Global Investigation of Pollution in the Marine Environment
 NODC—National Oceanographic Data Center
 FAO-IOC-UN—United Nations Food & Agriculture Organization/Intergovernmental Oceanographic Commission
 IOC/UN—Joint program between the Intergovernmental Oceanographic Commission and the United Nations Economics & Technology Branch
 IOC/WMO—Intergovernmental Oceanographic Commission/World Meteorological Organization
 UNESCO—United Nations Educational, Scientific & Cultural Organization
 CCCO—Committee on Climatic Changes & the Ocean

Contributed by D. James Baker, President, Joint Oceanographic Institutions, Inc.

THE COASTAL PHYSICAL OCEANOGRAPHY PROGRAM (CoPO)

During January, 1988, a contingent of about 120 United States coastal physical oceanographers and a few associates from other disciplines met to consider plans for the next decade and beyond. The group identified important major problems and sought ways to expedite their solution. Tentatively, the emphasis is on mass and momentum exchanges from the surf zone, across the shelf, and out to the open ocean on time scales of hours to years. A summary of the meeting is in preparation, and this report will be broadly circulated to the oceanographic community.

CoPO is only a first step in creating a coherent plan for coastal oceanography as a whole. A broader plan must be created that encompasses participation of meteorologists and biological, chemical, and geological oceanographers. Long-term measurement programs envisioned by CoPO present a natural opportunity for studies involving all of these disciplines. Over the next years, CoPO leadership will try to coordinate activities with large programs such as WOCE, and with the funding agencies. The detailed CoPO program must take on a focus reflecting high-priority science with substantial interdisciplinary content. These interactions will be initiated by circulation of the CoPO report and by encouraging small, informal workshops.

Further information can be obtained from Kenneth W. Brink, Chairman of the CoPO Science Steering Group, Woods Hole Oceanographic Institution, Woods Hole, MA 02543 (telemail K.BRINK).

WORKSHOP ON ATMOSPHERIC FORCING OF OCEAN CIRCULATION

The Workshop was conducted at Tulane University in New Orleans on January 5-7, 1988. Approximately 100 invited scientists from Great Britain, France, Germany, Canada, and the United States participated. The concept of the Workshop originated with the Institute for Naval Oceanography (INO), NSTL, MS. The Organizing Committee consisted of: Dr. James Scoggins, Texas A&M University (Chairman), Dr. Kenneth Davidson, Naval Postgraduate School, Dr. Robert Weller, Woods Hole Oceanographic Institution, Dr. Christopher N.K. Mooers, INO, Dr. Jagadish Shukla, University of Maryland, Dr. William Large, National Center for Atmospheric Research (NCAR), Dr. Frank O. Bryan, (NCAR), Dr. Jordan Alpert, National Meteorological Center, Mr. David Legler, Florida State University, and Mr. Robert Willems, INO. Committee members were chosen who could represent the WOCE and U.S. TOGA programs; both later became co-sponsors of the Workshop with INO.

It was recognized that before the atmosphere and the ocean could be understood as an interacting, coupled system, each part must be understood with emphasis on the air-sea interface. Specifically, the Workshop addressed how to measure and integrate fluxes of heat, moisture, and momentum at the air-sea interface into models, and how to improve the models and their interactions.

Objectives of the Workshop were: 1) Review present status of the prescription of atmospheric forcing of the ocean and needs for improvement for routine (operational) data, research data sets, and numerical models; 2) Define the scientific issues, including the status of algorithms and parameterizations; role of boundary layer models, unconventional data, and coupled atmosphere-oceanic models; and, clarify limiting factors; and 3) Recommend an overall plan of research on atmospheric forcing

of ocean circulation, taking into account the requirements of INO, WOCE, and TOGA.

The objectives were addressed by defining seven scientific issues, each of which was considered by a working group composed of about 15 scientists. The issues were: 1) Bulk Parameterization Schemes for Air-Sea Flux Computations; 2) Computation of Global Air-Sea Flux Climatology; 3) Atmospheric Forecast Model Data Assimilation and Air-Sea Flux Computations; 4) Ocean Model Sensitivity to Atmospheric Forcing; 5) Ocean Surface Boundary Conditions; 6) In Situ Networks; and 7) Satellite Missions.

The Workshop consisted of overview or position presentations, poster papers, and extensive working group sessions. The interaction of working groups was encouraged and topics were coordinated through plenary sessions held following

each series of working group sessions. Charges to the working groups provided guidelines for discussion.

Each working group was asked to review the status of its topic, define significant problems, and recommend a plan of research. A Workshop report detailing the position presentations, poster papers, and working group reports will be published by the INO by mid-summer. Copies of the report may be obtained by contacting Mr. Robert C. Willems, (601) 688-5737, INO, NSTL, MS, 39529.

The Institute for Naval Oceanography is sponsored by the Navy and administered by the Office of the Chief of Naval Research.

Contributed by James R. Scoggins, Chairman, Organizing Committee, and Professor and Head, Department of Meteorology, Texas A&M University.

OCEAN OPTICS IX CONFERENCE

The Ocean Optics IX conference was held as part of the Society of Photo-Optical Instrumentation Engineers (SPIE) Southeast Symposium from 4-6 April, 1988 in Orlando, Florida.

This meeting is generally held biennially and attendance has grown at a steady rate for each of the last four meetings. Approximately 150 scientists, engineers and program managers attended this year's conference. The conference was chaired by Marvin Blizard of the Office of Naval Research (ONR) and co-chairs conducted the following sessions: Concepts and Theory (George Kattawar, Texas A&M University), Ocean Optical Properties (Ros Austin, Scripps Institute of Oceanography), Instrumentation (Marvin Blizard),

Laser Bathymetry (G. Dan Hickman, NORDA), Particle Optics (Rick Spinrad, ONR), Imaging (Jules Jaffe, Woods Hole Oceanographic Institute), and Remote Sensing and Animal Vision (Henri Hodara, Tetra Tech, Inc.). Some 55 papers were delivered during the conference.

These talks will be published in about three months and copies of the proceedings (the specific volume will be number 925, entitled "Ocean Optics IX") will be available for purchase from the offices of SPIE (P.O. Box 10, Bellingham, WA 98227-0010, telephone 206-676-3290).

Contributed by Richard W. Spinrad, Program Manager for Ocean Optics, Office of Naval Research.