

uate students. John Knauss obtained his PhD on the basis of expeditions to study the equatorial undercurrent in the Pacific."

But by then Roger was deeply involved in the formation of what is now the University of California at San Diego. Henry Charnock quotes Roger that an oceanographic institution not linked to a university would survive only one generation. Therefore his continuing activity as SIO director and his efforts on behalf of the new campus were not in conflict. But many conflicts arose during the creation of the new university; and, when

it came time to appoint the first chancellor, Roger was passed over. He moved first to become science advisor to Secretary of the Interior Morris Udall in the Kennedy Administration, then the Richard Saltonstall Professor of Population Study at Harvard University. In 1975 he returned to SIO; among his many activities was the first chairmanship of the SCOR/IOC Committee on Climatic Changes and the Ocean, the group that fostered the development of many large coordinated climate studies in place today.

Throughout his career, when questioned about his profession, Roger would reply, "I am an oceanographer." But this was hardly restrictive; on more than one occasion he was heard to define the profession of oceanography as "whatever anyone at Scripps does." He published over 200 papers and earned most of the awards and medals relevant to his work. Perhaps Henry Charnock said it best: "For an informed view on Earth science, and on its repercussion on the human predicament, he was in a class of his own." We will miss him. □

NEWS & INFORMATION

TOMOGRAPHY IN OCEAN MODELS

By Michael S. Foster

THE INSTITUTE FOR NAVAL OCEANOGRAPHY (INO) has conducted a workshop to discuss the applications of tomographic data in ocean models. The workshop was sponsored by the Office of Naval Research (Applied Oceanography and Acoustics Division) and was held at the University of Southern Mississippi Conference Center in Long Beach, Mississippi, from October 10-12, 1990. More than 30 experts, mostly oceanographers, from several disciplines participated in the three-day meeting. Significantly, the workshop allowed valuable interaction between ocean modelers and acoustic tomographers.

The principal objective was development of a "roadmap" for the advancement of acoustic tomography from its current experimental state to a capability for assimilation into ocean models and, ultimately, into future ocean monitoring and prediction systems. In addition, the workshop evaluated present capabilities, highlighted new approaches and techniques, and provided a forum for dis-

ussing the problems associated with four-dimensional ocean model data assimilation in general. A Steering Committee (B. Cornuelle, S. Foster, B. Howe, J. Mitchell, R. Passi, P. Rizzoli, D. Thompson, and R. Willems) was established to coordinate recommendations and develop approaches for marshaling scientific talent to achieve an ocean monitoring system, including assimilated tomographic data.

Several recommendations were developed by consensus among the attendees. In the near term, tomographic data from the Applied Tomography Experiment (ATE) 90-92, the Synoptic Ocean Prediction (SYNOP) program, and other data-collection efforts should be incorporated into verification schemes for ocean prediction systems. As a five-year goal, tomographic data-assimilation schemes should be merged with existing schemes. In ten years, a network of transceivers should be deployed in the North Atlantic Ocean and Arctic region.

The "roadmap" developed by the workshop is based on the Data Assimi-

lation Research and Transition (DART) program (Naval Oceanographic and Atmospheric Research Laboratory) and the Optimal Thermal Interpolation System (OTIS) (Fleet Numerical Oceanography Center). It consists of modules as follows: 1) data assimilation (including tomographic data), 2) ocean model, 3) data verification, 4) model verification, 5) system verification, 6) simulation studies, and 7) the future ocean monitoring/prediction system. Closed loops between the various modules allow the feedback and interaction necessary to evaluate modifications within the system. The INO, through its Experimental Center for Mesoscale Ocean Prediction (EC-MOP), expects to make a major contribution within the scope of each module by offering facilities for testing and evaluating existing and future ocean models.

A report on the workshop has been published and is available by contacting the Institute for Naval Oceanography, Stennis Space Center, MS 39529-5005, (601) 688-3525. □