



IEEE Council on

OCEANIC ENGINEERING

NEWSLETTER



EDITOR: HAROLD A. SABBAGH

JUNE 1982 (USPS 420-910)

PRESIDENT'S COMMENTS

May 10, 1982

Mr. Harold A. Sabbagh
Analytics, Inc.
2634 Round Hill Lane
Bloomington, IN 47401

Dear Hal:

About 1969 the IEEE formed an Oceans Coordinating Committee which was to represent the professional interests of IEEE members whose work was involved in oceanic environment. This Committee organized annual conferences and initiated a newsletter. Several years later, in 1975, an IEEE Journal of Oceanic Engineering was founded. The next evolution that occurred was the transformation of the coordinating committee to a Council on Oceanic Engineering, COE for short. Also at about this time cooperation with the Marine Technology Society grew and joint annual conferences were held. We have also participated, representing the IEEE, in the Off-shore Technology Conference each year. Our major international conference now attracts over 1,000 attendees and about 100 exhibitors. Our Journal is now a vigorous publication with an editor-in-chief and six associate editors.

This level of interest and activity requires a considerable number of workers particularly in those locales where our annual conferences are organized. Since the Council does not and cannot organize local chapters we find that each year we must build the organization for our annual symposium from scratch. This has become inhibitory and an almost unbearable burden.

It has become clear therefore that we must begin to develop a grass roots organization. Discussion in our Council, which now has representatives from 20 societies, has led us to the strong realization that we must move to a societal status within the IEEE. At the meeting of the Council in Houston just a few days ago a resolution was passed which directed me to appoint a committee to write a constitution and bylaws for an IEEE Society on Oceanic Engineering.

I want to advise you of this and also to indicate that because of the broad and interdisciplinary interests of the IEEE members who subscribe to our Journal and participate in our activity, the Council felt that it was important that a certain mechanism be found to retain the interaction between the various societies where members who have a substantive interest in the oceans environment and the new proposed society.

Please advise me if you have questions or comments on our plans.

Sincerely yours,

Donald M. Bolle

**Industry
Government
Education
Partners
in
Progress**



oceans 82

Advance Program

**Shoreham Hotel
Washington, D.C.
September 20-22, 1982**

OCEANS '82

"Industry, Government, Academia—Partners in Ocean Progress"

Advance Program

Conference Sponsored by: The Marine Technology Society
IEEE Council on Ocean Engineering

September 20-22, 1982
Shoreham Hotel
Washington, D.C.

PARTICIPATING SOCIETIES AND ORGANIZATIONS **(As of April 9, 1982)**

Acoustical Society of America	American Society of Naval Engineers, Inc.	New England Estuarine Research Society
American Association for the Advancement of Science	Center for Oceans Law and Policy University of Virginia	Sea Grant Associations
American Geophysical Union	Geological Society of America	Shipbuilder's Council of America
American Institute of Aeronautics and Astronautics	National Association of Corrosion Engineers	The Society of American Military Engineers
American Oceanic Organization	National Energy Resources Organization	The Society of Naval Architects and Marine Engineers
American Petroleum Institute	National Ocean Industries Association	Members of IEEE and MTS and any of the organizations listed above qualify for "Member" registration (see page 27).

Plenary Session

"Industry, Government, and Academia—Partners in Ocean Progress" expands on the OCEANS 81 theme of the ocean as a workplace. We must engage our human and physical resources toward meeting the challenges of applying our technical and political skills to describe this ocean domain for its rational use and promote its economic development. The interdependent roles of industry, government and the academic community should be enhanced as each

supports and contributes to the needs of an economically and politically stable nation and community of world nations. This Plenary Session along with the subsequent technical papers and discussion sessions is dedicated to:

- 1) examining the needs of the United States and the nations of the world for solutions which marine technology may provide,
- 2) highlighting technological potentials and problems where successful realization could make

significant contributions to the peoples of the world,

- 3) illuminating deficiencies in research and development, and
- 4) proposing methods to foster ocean development.

The participants in this Session are the Honorable Malcolm Baldrige, Secretary of Commerce, Senator Ted Stevens of Alaska, Carl H. Savit, Western Geophysical Company of America, Houston, Tex., and Dr. E. A. Trabant, president of the University of Delaware.

Technical Sessions

The Oceans 82 Conference, under the Chairmanship of Dr. John V. Byrne, Administrator of NOAA, and Vice Chairman Admiral Herbert R. Lippold, Director of the National Ocean Survey, will stress the partnership of Industry, Government, and Academia in progress toward a fuller understanding and more effective stewardship of the world's ocean resources.

Nine parallel programs of five sessions each have been planned in which major subject areas will be addressed through a series of carefully selected papers. In addition, major sessions on Offshore Operations and Structures, the exciting new polymetallic sulfide mineral deposits, and Arctic studies are scheduled. Of added interest is an OTEC workshop (not part of the official OCEANS 82 program) planned following the 3-day

Conference, for which some attendees may wish to stay, and a special workshop on marine education. As can be seen from the preliminary program schedule, we can all look forward to an outstanding selection of speakers and papers.

Clifford E. McLain
System Planning Corporation
Chairman, Technical Program

Conference Record

The OCEANS 82 Conference Record containing approximately 300 papers presented at the technical sessions will be furnished to registered Confer-

ence attendees (except student and one day registrants). Additional copies are available at the Conference for \$85 (Society members) or \$90 (non-members). Mailing service is available for \$5 per copy. After the

conference, copies of the Record will be available from Marine Technology Society Headquarters (1730 M Street N.W., Washington, D.C. 20036) or IEEE Service Center (445 Hoes Lane, Piscataway, NJ 08854).

Social Functions

Chairman's Luncheon

The Chairman will host the participants of the conference at a luncheon on Monday, September 20. The speaker will be announced later. (Monday, September 20, 1130. Included in package registration; otherwise, \$15 per person.)

Buffet Luncheon

A buffet hosted by the exhibitors will be held on Tuesday, September 21. This will provide a further opportunity for conferees and exhibitors to meet and discuss mutual problems and

solutions. (Tuesday, September 21, 1100. Included in registration.)

Oceans 82 Banquet

The OCEANS 82 banquet, highlight of the social activities, will be held on Tuesday evening. The featured speaker will be a prominent member of the oceans community. (Tuesday, September 21, 2030. Included in package registration; otherwise, \$25 per person.) A no-host reception precedes the banquet, starting at 1915.

President's Awards Luncheon (IEEE/COE—MTS)

Dr. Donald M. Bolle, president of the IEEE Council on Oceanic Engineering and Dr. Arthur E. Maxwell, president of the Marine Technology Society will present awards to their respective society members for outstanding achievement in marine science, engineering and technology. Awards to be conferred by IEEE Council on Oceanic Engineering include the Distinguished Service Award and the Distinguished Technical Contribution Award. The MTS will confer MTS/Lockheed Award for Ocean Science Engineering, the Compass Distinguished Achievement Award and the Compass Industrial Award. (Wednesday, September 22, 1130. Included in package registration; otherwise \$25 per person.)

Special Activities

Ocean Energy Workshop

The Ocean Energy Committee of the Marine Technology Society will sponsor a special Ocean Energy Workshop immediately following the OCEANS 82 Conference:

Date: September 23, 1982
8:30 A.M. - 5:00 P.M.

Place: Shoreham Hotel
Washington, D.C.

This special Workshop will supplement the Ocean Energy sessions to be held on the final day of OCEANS 82 and provide a forum for leaders in ocean energy to present the current status of technology and plans for the future. This Workshop takes place at a particularly appropriate time, as initiative and responsibility for ocean energy development begins a transition from Government to Industry. Since the Department of Energy will not be sponsoring a separate Ocean Energy Conference in 1982, OCEANS 82 and this Workshop will be the principal opportunity for the ocean energy community to exchange information and to interact with their associates in other areas of marine technology.

The Ocean Energy Workshop will provide an update on the 40 MWe Proof of Concept designs being developed

by General Electric and Ocean Thermal Corporation under a cost-shared Contract with DOE, as well as a status report on ocean engineering technology. The program will also highlight technical, legal and financial developments leading to near-term commercialization of ocean energy, as indicated in the following tentative agenda:

Keynote Address

Speaker to be Announced

General Electric Proof of Concept Conceptual Design Update

General Electric Company

Ocean Thermal Corporation Proof of Concept Conceptual Design Update

Ocean Thermal Corporation

Status of Ocean Engineering Technology

G. Lee

OTEC: The Government Framework for Development

Richard D. Norling
NOAA, Office of Ocean Minerals and Energy

Environmental Research for Facilitating OTEC Commercialization

Edward P. Myers
NOAA, Office of Ocean Minerals and Energy

OTEC - Status and Potential of Private Funding

Evans J. Francis,
Dennis Richards;
Applied Physics Laboratory,
Johns Hopkins University

Organizing and Financing an OTEC Venture

Samuel A. Bleicher
Blank, Rome, Comisky & McCauley

Conceptual Design of 100 and 400 MWe OTEC Systems—An Update

William P. Deuchler,
Kenneth G. Picha;
Gibbs & Cox, Inc.

OTEC Methanol

W. H. Avery,
Dennis Richards;
Applied Physics Laboratory,
Johns Hopkins University

Update on Developments in Wave Energy Technology

Dr. M. McCormack
U.S. Naval Academy

We cordially invite all members of the marine and ocean energy community to attend both Sessions E5 and E6 of OCEANS 82 and this special Ocean Energy Workshop. There is an additional charge for this workshop (see page 27). Further information may be obtained from Robert J. Scott of Gibbs and Cox, Inc. (703) 979-1240.

Tour of NOAA-NESS and NASA-GSFC—September 23, 1982
 Thursday following the OCEANS 82 conference, James Gallagher, satellite remote sensing chairman, is organizing a tour of the National Oceanic and Atmospheric Administration's National Earth Satellite Service (NOAA-NESS) and the National Aeronautics and Space Administration's Goddard

Space Flight Center (NASA-GSFC). NASA is only able to accommodate a tour of a small group of people; therefore, we will assign seats on a first-come first-served basis. To cover the cost of hiring a bus, an on-site fee of \$10 will be charged (check the registration form on page 27 if interested). It is a requirement of NASA that non-U.S. citizens obtain written authoriza-

tion from their respective embassy or consulate certifying that they are a citizen of that country and are not affiliated with any subversive group. Additional information will be made available at the registration desk of the Shoreham Hotel. If you have any questions regarding this tour please contact Arabel Allfrey at (202) 659-3251.

OCEANS 82 PROGRAM SCHEDULE

	(A) Diving/Vehicles	(B) Acoustics	(C) Instrumentation	(D) Remote Sensing	(E) Engineering	(F) Buoys/Ships	(G) Sciences	(H) Marine Law and Policy	(I) Marine Pollution	(J) Special Sessions (K) Workshops
P L E N A R Y S E S S I O N										
20 September Monday Morning										
Monday Afternoon	(A2) Diving/Vehicles	(B2) Acoustics Systems and Hardware	(C2) Instruments	(D2) Geodesy	(E2) Cables	(F2) Buoys I	(G2) Fisheries	(H2) Ocean Coastal Management Policy	(I2) Ocean Disposal (I2A) Dredged Material I (evening)	(J2) Structures Offshore Operations Marine Education (evening)
21 September Tuesday Morning	(A3) Diving/Vehicles	(B3) Underwater Acoustics	(C3) Instruments	(D3) Oceanographic Remote Sensing	(E3) Marine Materials	(F3) Buoys II	(G3) Ocean Sciences	(H3) Legal Regime—Hard Rock Minerals	(I3) Dredged Material II	(J3) Funding Crises in World Ocean Resource Development
Tuesday Afternoon	(A4) One-person Vehicles	(B4) Numerical Modeling	(C4) Data Acquisition Techniques	(D4) Coastal Marine Remote Sensing	(E4) Corrosion Engineering	(F4) Seafloor Engineering	(G4) Wave Experiments	(H4) Marine Education	(I4) Deep Ocean Disposal	(J4) Poly-metallic Sulfides
22 September Wednesday Morning	(A5) Manned Submersibles	(B5) Numerical Simulation	(C5) Current Measurements	(D5) Microwave Remote Sensing	(E5) Ocean Thermal Energy Conversion	(F5) Oceanographic Ships I	(G5) Waves/ARSLOE I	(H5) Coastal Hazards	(I5) Waste Disposal (Concurrent sessions)	(J5) Economic Development of Ocean Resources
Wednesday Afternoon	(A6) Remotely Operated Vehicles (ROV)	(B6) Navigation-Communications	(C6) Underwater Photography and Imaging	(D6) Management of Marine Remote Sensing	(E6) OTEC	(F6) Oceanographic Ships II	(G6) Waves/ARSLOE II	(H6) State/Federal Decision Making	(I7) Great Lakes Pollution, Disposal and Monitoring (Concurrent sessions)	(J6) Arctic Studies

OCEANS 82 Technical Program



PROGRAM P

Plenary Session

Chairman: John V. Byrne, NOAA
Administrator

The Plenary Session will be as described in the Advance Program. The participants in this Session are the Honorable Malcolm Baldrige, Secretary of Commerce, Senator Ted Stevens of Alaska, Carl H. Savit, Western Geophysical Company of America, Houston, Texas, and Dr. E. A. Trabant, President of the University of Delaware.

PROGRAM A DIVING/VEHICLES

Chairmen: Carl Griggs, (CMDR)
U.S. Navy OP23 (Diving)
William I. Milwee
Searle Consortium Ltd. (Diving)
Roger Cook
Harbor Branch Foundation, Inc. (Vehicles)

Monday afternoon, September 20 and
Tuesday morning, September 21

SESSION A2, A3 DIVING

Chairman: William I. Milwee
Searle Consortium Ltd.

The U.S. Corps of Engineers Diving Activities and Training Program

Frank Trent
Gilbert L. Case
U.S. Army Corps of Engineers
Diver Education of the Future
Glenn J. Butler
Andre Galerne
International Underwater Contractors, Inc.

Minimum QA Documentation for Civilian Procurement of Dive Systems

Paul E. Purser
Consulting Engineer
An Analysis of U.S. Operational Diving Fatalities 1970-81
John McAniff
University of Rhode Island

Military Diving Safety (U.S. Navy Diving Safety Program)

Raymond P. Swanson (LCDR)
U.S. Navy

The Role of the Association of Diving Contractors

John T. Johnson
Oceaneering International

Polluted Water Diving: Current Status, Techniques and Equipment

J. Morgan Wells
NOAA, National Ocean Survey
William Phoel
NOAA, National Marine Fisheries Service
Altantis Deep Tri-Mix Research Dives
Peter Bennett
Duke University

The Western Regional Undersea Laboratory: A New Research Facility for Temperate Water Marine Scientists

Robert R. Given
Institute for Marine and Coastal Studies, University of Southern California

The Application of Potassium Super Oxide (KO₂) Life Support System—Present and Future

Yi-Shen Li
Lockheed Missiles and Space Co., Inc.

Deepwater Liveboating

William G. Tressler
Ocean-Tec, Inc.

Diver Optimisation Using Technological Development

Nigel F. Mathers
Heriot-Watt University (Scotland)

Association of Diving Contractors—Past, Present and Future

Carl Helwig
Sub Sea International, Inc.

NOAA's Diving Program

Robert V. Smart (CMDR)
John W. Blackwell (LTJG)
NOAA, National Ocean Survey

Analysis Requirements for Active Diver Thermal Protection for the Navy Diver

Max Lippitt
M. L. Nucklos
Naval Coastal Systems Laboratory

Tuesday afternoon, September 21 SESSION A4 ONE PERSON VEHICLES

Chairwoman: Sylvia Earle
Deep Ocean Technology, Inc.

Introduction to Atmospheric Diving Systems

Sylvia Earle
Deep Ocean Technology, Inc.

History of Atmospheric Diving Systems

Phil Nuytten
Can-Dive Services, Oceaneering International

Commercial Applications of Atmospheric Diving Systems

Speakers to be Announced

Scientific Applications of Atmospheric Diving Systems:

- **Midwater Use**
Alice Alldridge
Bruce Robinson
University of California at Santa Barbara
- **Benthic Use**
Sylvia Earle
Deep Ocean Technology, Inc.

Material and Safety Considerations of Atmospheric Diving Systems

Vice Admiral Sir John Rawlins
Deep Ocean Technology, Inc., and Society of Underwater Technology

Graham Hawkes

Deep Ocean Technology, Inc.

The Future of Atmospheric Diving Systems; Special Reference—Manipulator Technology

Graham Hawkes
Deep Ocean Technology, Inc.

Wednesday morning, September 22
SESSION A5 MANNED SUBMARINES

Chairman: Roger Cook
Harbor Branch Foundation, Inc.

ALVIN Program Update

Robert P. Dinsmore (CAPT)
John D. Donnelly
Woods Hole Oceanographic Institution
Development of an Integrated Work Platform for Underwater Services in the Gulf of Mexico

Andre' Galerne
Booker T. Washington
International Underwater Contractors, Inc.
2000M Deep Submergence Research Vehicle 'SHINKAI 2000'

Michimasa Endo
Mitsubishi Heavy Industries, Lt.
Silver-Zinc Battery Power for 2000M Deep Submergence Research Vehicle 'SHINKAI 2000'

Tsutomu Kawahara
Japan Storage Battery Co., Ltd.
Recovery of a One Atmosphere Transfer System from 2000 Feet

Timothy Askew
Harbor Branch Foundation, Inc.

Wednesday afternoon, September 22
SESSION A6 REMOTELY OPERATED VEHICLES (ROV)

Chairman: Robert Wernli
U.S. Navy, Naval Oceans Systems Command

Towed Unmanned Submersible (TUMS) System

M. Schweitzer
Sperry Systems Management
Fiber-Optic-Tethered Unmanned Submersible for Searching Submarine Cables

Yashinao Iwamoto
KDD Laboratories (Japan)
Experience with the Use of an ROV for Cleaning and Inspecting High-Stress Areas of Complex Offshore Structures

Eric Rygh
Continental Shelf Institute (Norway)
Utilization of ROVs for Fish Standing Stock Assessments

M. John Thompson
Russell E. Putt
David A. Gattleson
Richard M. Hammer
Robert C. Stevens, Jr.
Continental Shelf Associates, Inc.

Conceptual Design Study of an Undersea EOD Vehicle (ROV-EOD)

Kenneth H. Rogers
Interstate Electronics Corporation
The Use of Tethered Vehicles in Oil Field Applications
Robert J. Decesari
Hydro Products

PROGRAM B ACOUSTICS

Chairman: Anthony I. Eller
Naval Research Laboratory

The four sessions devoted to acoustics represent a wide variety of theoretical and experimental investigations as well as engineering applications. Topics emphasized are numerical modeling and simulation, and acoustic systems.

Monday afternoon, September 20

SESSION B2 ACOUSTICS SYSTEMS AND HARDWARE

Chairman: Edward W. Early
Applied Physics Laboratory, University of Washington

A Bit-slice Microprocessor for In-Situ Fish Target Strength Measurement

John Ehrenberg
Applied Physics Laboratory, University of Washington
Leonard Yee
Boeing Company

Acoustic Navigation—New Microcomputer Generation

G. Vijayakumar
Benthos, Inc., Massachusetts

Acoustic Control System

Hans P. Jacobsen
Karstein Vestgard
Finn T. Knudsen
SIMRAD Subsea A/S, (Norway)

Evaluation of Spatio-Temporal Variability of Sound Velocity

Rodney Coates
A. Woodward
Marine Technology Research Group, University College of North Wales, U.K.

Acoustic Telemetry for Underwater Control

Dennis J. Garrod
Norman D. Miller
Honeywell, Inc., Seattle, Wash.

A Precision Short-Range Acoustic Distance Measuring Equipment

Rodney Coates
A. Piggitt
Marine Technology Research Group, University College of North Wales (U.K.)

Side Scan Sonar - Comparison with Photographic Pictures

Patrick Borot
Centre National pour L'Exploitation des Oceans, Base Oceanologique de Mediterranee (France)

A High-Power, Depth-Compensated, Low-Frequency Projector

Bruce A. Armstrong
Defense Research Establishment Atlantic, Nova Scotia
R. Lloyd A. Gorling
Sparton of Canada, London, Ont.

Tuesday morning, September 21

SESSION B3 UNDERWATER ACOUSTICS: ESTIMATION AND ALGORITHMS

Chairman: Martin L. Cohen
Raytheon Company

Towed Array Shape Estimation

George S. Egeland
U.S. Navy Underwater Systems Center
Acoustic Scattering Analysis for Sensing of Manganese Nodule Deposits

Allen H. Magnuson
Karl Sundkvist
Yushieh Ma
Rahul Sen
Aerospace and Ocean Engineering Dept., VPU & SU.

Sonar Target-Identification by Means of an Acoustic Spectroscopy Scheme

Donald Brill
U.S. Naval Academy, Annapolis
Guillermo Gaunard
Herbert Uberall
Naval Surface Weapons Center, Maryland
Ocean Propagation Loss Via Real-Time Signal Processing of Underwater Explosive Sound Sources

Ronald L. Earp
Western Electric Company
Optimal Parameter Estimation for a Heave Response Model

Ferial El-Hawary
Department of Electrical Engineering, Technical University of Nova Scotia
Estimation of Acoustic Impedance Profiles for Subbottom Sediments from Shallow Seismic Reflection Responses

William J. Vetter
Adam Zieliński
Dwight Howse
Faculty of Engineering and Applied Science, Memorial University of Newfoundland

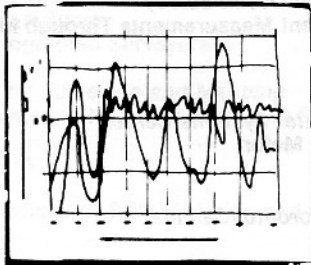
Performance Characteristics of a Three-Dimensional Array Shape Estimator

Douglas C. Gilbert
Analysis & Technology, Inc.

Tuesday afternoon, September 21
SESSION B4 OCEAN/ACOUSTICS NUMERICAL MODELING
Chairman: William A. Kuperman
NORDA

Ocean/Acoustics Numerical Modeling

William A. Kuperman
NORDA, NSTL Station
Numerical Models of Sound Propagation in Real Oceans
F. B. Jensen
SACLANT SAW Research Centre, La Spezia (Italy)
Forecasting The Oceanic Environment
Steve A. Piacsek
NORDA, NSTL Station
Satellite-Model Interaction
Jeffrey D. Hawkins
NORDA, NSTL Station
Peter G. Black
NOAA, National Hurricane Research Laboratory
Instrumentation for Ocean Acoustic Tomography
Robert C. Spindel
Peter Worcester
Douglas C. Webb
Albert M. Bradley
Kenneth R. Peal
Woods Hole Oceanographic Institution
**Calculations of the Spatial Coherence and Array Noise
Gain of Wind-Generated Noise**
Frank Ingenito
Naval Research Laboratory
**Recent Progress in Modelling Bottom-Interacting Propagation
with Parabolic Equations**
Ding Lee
Naval Underwater Systems Center
Kenneth E. Gilbert
NORDA, NSTL Station
Seismic Structure Modelling in the Arctic Ocean
Arthur B. Baggeroer
Gregory L. Duckworth
Massachusetts Institute of Technology
Fluctuations and Bottom Limited Environments
H. DeFerrari
F. Tappert
University of Miami
**The Symptoms Are More Important than the Causes: Some
Comments on the Philosophy of Ambient Noise**
R. Wagstaff
SACLANT ASW Research Centre, La Spezia, Italy
Applications Modeling - Status and Trends
Richard B. Lauer
NORDA, NSTL Station



Wednesday morning, September 22
**SESSION B5 SIMULATION AND NUMERICAL MODELING FOR
SONAR ANALYSIS**
Chairman: Stanley G. Chamberlain
Raytheon Company

**Simulation and Numerical Modeling for Sonar Systems
Analysis—An Overview**
Stanley G. Chamberlain
Raytheon Company
Generic Sonar Model
Henry Weinbert
Naval Underwater Systems Center
Evaluation of Ocean Acoustic Reverberation Models
Anthony I. Eller
H. Joseph Venne, Jr.
Science Applications, Inc.
David W. Hoffman
Naval Ocean Systems Center
REVGEM, High-fidelity Simulation of Sonar Signals
Robert P. Goddard
David W. Princehouse
Applied Physics Laboratory, University of Washington
Techniques of Modeling a Sonar Guidance System
Allan M. Berlinsky
Raytheon Company
Multipath Modeling for Acoustic Communication
D. Howse
A. Zielinski
Faculty of Engineering, Memorial University of Newfoundland
**A Simulation of an Acoustic Data Link Between Underwater
Transducers and a Moored Buoy**
James K. Thompson
Louisiana State University
Performance Prediction Based on the Ray-Mode Duality
Michael Serotta
Harold Loomis
Raytheon Company

Wednesday afternoon, September 22
SESSION B6 NAVIGATION-COMMUNICATIONS
Chairman: Arthur S. Westneat
University of New Hampshire

Use of GPS in Ocean-Bottom Control
Muneendra Kumar
Defense Mapping Agency
Narendra Saxena
University of Hawaii
A High Accuracy Long Distance Range Measurement System
Dale L. Paquette
AT&T Technical Services, Inc.
Improving Navigation Accuracy Through Kalman Filtering
Stephen G. Swift
JMR Instruments Canada Ltd.
Oceanographic Data Telemetry by Meteor Burst
Don Sytsma
Meteor Communications Corporation
GPS Ship Navigation: The 'Fonts 82' Experiment
Srinivas N. Mohan
California Institute of Technology
A Precision Underwater Navigation System
D. R. Blidberg
A. S. Westneat
University of New Hampshire

PROGRAM C INSTRUMENTATION

Chairmen: Thomas M. Dauphinee
Consultant, Canada
Barry Oakes
Applied Physics Laboratory, John Hopkins University

The purpose of this program is threefold: to acquaint the attendee with the current proof-of-principle concepts in instrumentation technology in oceanography; introduce new instrumentation as it becomes available on the market; and address issues in technology applications, particularly data acquisition systems.

Monday afternoon, September 20
SESSION C2 INSTRUMENTS, Part 1

Co-Chairmen: Thomas M. Dauphinee
Consultant (Canada)
Barry Oakes
Applied Physics Laboratory, Johns Hopkins University

Miniature, Sensitive Fluorometer for Oceanographic Tracer Studies

Allan B. Fraser
Robert P. H. Lee
Applied Physics Laboratory, Johns Hopkins University

Optical Sounding for Internal Waves in the Ocean Thermocline

Ronald E. Walker
Science Applications, Inc.
Allan B. Fraser
Larry Mastracci
Applied Physics Laboratory, Johns Hopkins University

Tuesday morning, September 21
SESSION C3 INSTRUMENTS

Co-Chairmen: Thomas M. Dauphinee
Consultant, Canada
Barry Oakes
Applied Physics Laboratory, Johns Hopkins University

Solidstate Array Spectroradiometer for Ocean

Stephen Stewart
Rodney Buntzen
U.S. Navy, Naval Oceans Systems Command

Multimode Fiber Optic Sensors

William B. Spillman, Jr.
Donald H. McMahon
Sperry Research Center

Use of a Fibre-Optic Cable with a Free-Fall Microstructure Profiler

Michael C. Gregg
Wayne E. Nodland
Eric A. Aagaard
Dale H. Hirt
University of Washington

Instrumental Progress in the Profiling In-Situ Plankton

Collector During the Last Year and Report on Remarkable Results from Recent Field Trials
Werner Kroebele
Hans Baumann
University of Kiel (Germany)

Tuesday afternoon, September 21

SESSION C4 OCEANOGRAPHIC DATA ACQUISITION TECHNIQUES

Chairman: Jack E. Jaeger
Hydro Products

Computers in Oceanography—Tradeoffs and Trends

Lawrence J. Rosenblum
J. D. Clamons

Naval Research Laboratory

A Dual Microprocessor Digital Acquisition Recording System

Jerry H. Ross
U.S. Naval Oceanographic Office

A Flexible Low-Power Data Acquisition System

Bruce P. Ambuter
U.S. Geological Survey
John J. Godley
Eliason Data Services

A Comparison of CMOS Microprocessors and Single Chip Microcomputers

Ted Fryberger
Applied Physics Laboratory, Johns Hopkins University

Improving Digital Sensor Accuracy by Inserting Random Noise

Lawrence M. Gorham
Analysis and Technology, Inc.

Computer-Assisted Acquisition and Application of Hydrographic Survey Data on National Ocean Survey Nautical Charts

Gregory R. Bass
NOAA, National Ocean Survey

Wednesday morning, September 22

SESSION C5 CURRENT MEASUREMENTS

Co-Chairmen: William Woodward
NOAA, Office of Ocean Technology and Engineering Services
Geoffrey Morrison
Neil Brown Instrument Systems

Dynamical Characteristics from a Lagrangian Study

David Tolmazin
Janet P. Herring
Marine Sciences Institute, University of Connecticut

Modelling the Response of Freely Falling Velocity Profilers

Edwin F. Ford
Consultant

Stanley P. Hayes

Hugh B. Milburn

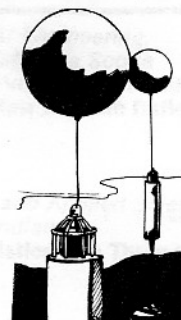
NOAA, Pacific Marine Environmental Laboratory

Circulatory Measurement Data Processing System

James A. Johnson
NOAA, National Ocean Survey

Improved Current Measurements Through Modeling Mooring Motion

James Syck
Gary Griffin
Naval Underwater Systems Center
Ocean Current Meter
B. Sukhov
B. Boetes
University of Toronto (Canada)



Wednesday afternoon, September 22
SESSION C6 UNDERWATER PHOTOGRAPHY AND IMAGING
Chairman: Sheldon Phillips
Eastman Kodak

Introduction

Sheldon Phillips
Eastman Kodak

Remote Mapping of Seafloor Topography, Sediment Type, Bedforms and Biology

Larry F. Boyer
Joseph D. Germano
Donald C. Rhoads
Marine Surveys, Inc.
Charles A. Menzie
John Ryther, Jr.
EG&G Environment Consultants

The Application of Optical Fibres to Structural Integrity Monitoring

Kenneth F. Hale
National Maritime Institute, England

Arc Light

Salomon Vulih
Harbor Branch Foundation, Inc.

Underwater Flow Visualization Experiments

James R. McGrath
Clifford M. Gordon
David Greenewalt
Naval Research Laboratory
Underwater Photographic Reconnaissance of the HMS Breadalbane
Christopher Nicholson,
Benthos, Inc.

PROGRAM D REMOTE SENSING

Chairman: James Gallagher
Naval Underwater Systems Center

Frequent broad, synoptic views of time-varying ocean surface features, provided by satellite remote sensing technology, are finding increasing acceptance and applications in the marine field. This dynamic technology is characterized by many and frequent challenges to data acquisition, processing, and communication requirements and methods. Accordingly, this program will include discussions of new sensor evaluations, research and development, and operational applications, coordination with in situ data acquisition and telecommunications, and program management considerations.

Monday afternoon, September 20

SESSION D2 GEODESY

Chairman: Scott Drummond (CAPT)
SEACO, Inc.

Review of Navy Activities and Plans in Oceanography, Hydrography, and Geodesy

John B. Mooney (RADM)
U.S. Navy

Comments on the Role of International and Professional Organizations

Robert C. Munson (RADM)
NOAA, National Ocean Survey

Certification of Hydrographic Surveyors

J. Collins
American Congress on Surveying and Mapping

The National Observatory: The Silent Partner in Surveying and Navigation

John L. Hammer (CDR)
U. S. Navy

Hydrographic Applications of SWATH Ships and SWATH Survey Systems

Scott E. Drummond
SEACO, Inc.

Ocean Geodetic Control Systems

Muneenora Kumar
Defense Mapping Agency

Narendra Saxena
University of Hawaii

NOSAP—A Tool for Ocean Surveys

Leslie H. Perry
NOAA, National Ocean Survey

Scientific and Hydrographic Use of the Bathymetric Swath Survey Systems

Richard B. Perry
NOAA, National Ocean Survey

Tuesday morning, September 21

SESSION D3 NASA's OCEANOGRAPHIC REMOTE SENSING PROGRAMS

Co-Chairmen: Lawrence McGoldrick
NASA, Goddard Space Flight Center
Lee Dantzer (LCDR)
Office of Naval Research

The Promise of Satellite Oceanography

Lawrence McGoldrick
NASA, Goddard Space Flight Center

Applications of Satellite Altimetry to Global Ocean Circulation

Robert Cheney
James March

NASA, Goddard Space Flight Center

Analysis of Satellite Scatterometer Data and Its Impact on Weather Forecasting

Robert Atlas
NASA, Goddard Space Flight Center

Location and Data Collection Systems

Charles Cote
NASA, Goddard Space Flight Center

Satellite Relayed In-Situ Ocean Observations

Robert Kirk
NASA, Goddard Space Flight Center

Progress Toward Synoptic Sampling of Oceanic Biological Features

Wayne Esaias
NASA Langley Research Center

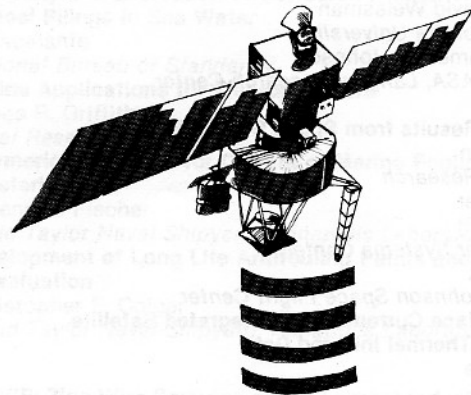
Toward Global Measurements of Ocean Wave Spectra

Frederick Jackson
W. Travis Walton
NASA, Goddard Space Flight Center

Paul Baker
Computer Sciences Corp.

NASA's Oceanic Remote Sensing Program: An Implementation Approach

W. F. Townsend
NASA Headquarters



Tuesday afternoon, September 21

SESSION D4 COASTAL MARINE APPLICATIONS OF REMOTE SENSING

Co-Chairmen: Victor Klemas
College of Marine Studies, Univ. of Delaware
William Philpot
Cornell University

Results of the CZCS Validation Program

Warren Hovis
NOAA, National Earth Satellite Service

Remote Sensing of Tidal Wetlands: Mapping and Beyond

David Bartlett
NASA, Langley Research Center

Airborne Laser Remote Sensing of Water Depth and Water Surface/Column Constituents

Frank Hoge
NASA Wallops Island

Roger Swift
EG&G

Satellite Infrared Observations of Ocean Surface Thermal Patterns

Richard Legeckis
NOAA, National Earth Satellite Service

Satellite Detection of Estuarine Plumes

Michael Fedosh
John Munday
Virginia Institute of Marine Science

Techniques for Enhancing and Interpreting Satellite Images to Describe the Circulation of the Arabian Sea

Robert Whritner
Scripps Institution of Oceanography

Ben Cagle
Office of Naval Research

Variations in the Atmospheric Drag Coefficient Due to Changes in Sea State

H. Michael Byrne
NOAA, Pacific Marine Environmental Laboratory

Evaluation of Forward Looking Infrared (FLIR) As a Coast Guard Search and Rescue (SAR) Sensor

Gary Hover
Thomas Mazour
Analysis and Technology, Inc.

Stephen Osmer (LCDR)
U.S. Coast Guard Research and Development Center

An Evaluation of Shallow Water Depth Measurements Utilizing Photometric Techniques

John W. Cutler, Jr.
Science Applications, Inc. (Poster)

Wednesday morning, September 22

SESSION D5 ACTIVE MICROWAVE REMOTE SENSING MARINE APPLICATIONS

Co-Chairmen: David Weissman
Hofstra University
James W. Johnson
NASA, Langley Research Center

Oceanographic Results from Space Shuttle Flights

Robert Stevenson
Office of Naval Research
Paul Scully-Power
Jon Maley (LCDR)
Naval Underwater Systems Center
John Kaltenback

**NASA, Lyndon Johnson Space Flight Center
Gulf Stream Surface Currents from Integrated Satellite Altimeter and Thermal Infrared Data**

H. Michael Byrne
Patricia Pullen
NOAA, Pacific Marine Environmental Laboratory

Computation of the Marine Geoid from Satellite Altimeter Data

Bruce Douglas
NOAA, National Ocean Survey
Ocean Tide Measurement by SeaSat Altimeter Data
R. D. Brown
Phoenix Corp.

Identification of Ocean Bathymetric Features Using Satellite Altimeter Data

David Sandwell
NOAA, National Ocean Survey

A Global Swell Climatology from GEOS-3 Wind and Wave Measurements

E. LaCour
Exxon Corp.
Marshall Earle
Joseph Bishop
Marine Environments Corporation

A Sea-Surface Height Estimator Using SAR Complex Imagery

Robert Harger
University of Maryland

Wednesday afternoon, September 22

SESSION D6 COMMERCIAL AND GOVERNMENT MANAGEMENT CONSIDERATIONS FOR MARINE REMOTE SENSING TECHNOLOGY

Co-Chairmen: James Gallagher
Naval Underwater Systems Center
John Fueschel
National Ocean Industries Association

Commercial Future of Satellite Remote Sensing

S. W. McCandless
User Systems Engineering
Paul Maughan
COMSAT General Corp.

Navy Requirements for Space-Sensed Atmospheric and Oceanographic Data

David Honhart (CMDR)
U.S. Naval Observatory
Global Satellite Remote Sensing for Energy, Minerals, and Other Resources

Frederick Henderson III
GEOSAT Committee

A Private Sector International Remote Sensing Satellite Program

Normal MacLeod
American Science and Technology Corp.

A Regional Approach to the Effective Use of Remotely Sensed Data in New England

Martha McClure
James Griffin
University of Rhode Island

The Use of Satellite Observations of the Ocean Surface to Commercial Fishing Operations

Donald Montgomery
Jet Propulsion Laboratory
P. Wolff
W. Hubert
R. Williams
Ocean Data Systems

PROGRAM E ENGINEERING

Chairman: Robert J. Scott
Gibbs and Cox Inc.

The Ocean Engineering Program begins with a broad overview of generic technology developments in submerge power and communications cables, and materials applications unique to the Marine Environment. The program then concentrates on Ocean Thermal Energy Conversion (OTEC) with presentation on recent developments in platforms and cold water pipes, heat exchanger corrosion and biofouling and OTEC power cables. A special Ocean Energy Workshop will follow OCEANS '82 as described elsewhere.

Monday afternoon, September 20

SESSION E2 CABLES

Chairman: Lee H. S. Roblee
Simplex Wire and Cable Company

Dynamic Analysis of Mooring Lines Using Perturbation Techniques

Michael Triantafyllou
Antoine Bлек

Massachusetts Institute of Technology

OTEC Submarine Cable Environmental Characteristics and Hazards Analysis

Chingmiin Chern

Walter J. Tudor

Naval Facilities Engineering Command

A Motion Compensated Cable Handling System

Ian Sanderson

Techwest Enterprises Ltd. (Canada)

Equivalent Spring Constant of a General Cable

Jan W. Crane

Naval Coastal Systems Center

Design of Hawaii Deep Water \pm 250 KVDC Power Cable

R. T. Traut

J. E. Soden

J. P. Kurt

Simplex Wire and Cable Company

Catenary Ocean Mooring Systems: Approaches to Analysis and Testing

Tobin R. McNatt

Gianoti & Associates, Inc.

Range Cables

Harry M. Brinser

Simplex Wire and Cable Company

Tuesday morning, September 21

SESSION E3 MARINE MATERIALS

Co-Chairmen: Robert A. Sulit (CAPT)
Naval Sea Systems Command
Herbert Herman
New York University at Stony Brook

Panel: Approach to Life Cycle Management, and Scope and Format of Panel. Four invited papers by technology, acquisition, and user managers in the Navy, marine industries, and academia to present and hold an open discussion on material requirements; their development, test, and evaluation; their manufacture, fabrication, and quality control in acquisitions or initial construction; and their maintenance, repair, and overhaul during service use. The panel includes RADM Thomas M. Hopkins, USN, Deputy Commander for Ship Systems, Naval Sea Systems Command; Peter Palermo, Executive Director, Ship Design and Integration Directorate, Naval Sea Systems Command; Hans H. Vanderveldt, NAVSEA Materials R&D Program Manager, and Professor Herbert Herman.

MATERIAL PROPERTIES

Chairman: Herbert Herman
New York University at Stony Brook

Introduction and Summary of the National Materials Advisory Board report on thermal spray coatings for marine corrosion-control applications.

Titanium in the Marine Environment

Harry W. Rosenberg

TIMET

A Review of Two Advanced Metal Fabrication Methods for Lightweight Naval Structural Applications

William A. Palko

David Taylor Naval Ship R&D Center

Linear Composite Materials for Marine Instrumentation Tower Structures

David E. Roth

Armand F. Lewis

Lake Erie Institute for Marine Science

Tuesday afternoon, September 21

SESSION E4 MARINE MATERIALS II; CORROSION ENGINEERING & NDE

Chairman: Herbert Herman
New York University at Stony Brook

Marine Corrosion

Alistair G. S. Morton

David Taylor Naval Shipyard, Annapolis Laboratory

Thermal Nondestructive Examination Method for Thermal Sprayed Coatings

Donald R. Green

Hanford Engineering Development Laboratory

Mark D. Schmeller

Puget Sound Naval Shipyard

Robert A. Sulit (CAPT)

Naval Sea Systems Command

Underwater Ultrasonic Nondestructive Inspection of Corroded Steel Structures

Anmol Singh

R. R. McClintock

Southwest Research Institute

Flame Sprayed Aluminized Propulsion Plant Valves on USS William H. Standley (CG-32), A Final Report

Albert J. Grubowski

David Taylor Naval Shipyard, Annapolis Laboratory

Durability and Evaluation of Corrosion Protection Systems for Steel Piling in Sea Water

E. Escalante

National Bureau of Standards

Marine Applications for Fluoropolymers

James R. Griffith

Naval Research Laboratory

Polymeric Pesticides for Control of Marine Fouling and Deterioration

Eugene C. Fischer

David Taylor Naval Shipyard, Annapolis Laboratory

Development of Long Life Antifouling Paints and Shipboard Evaluation

Christopher F. Colger

David Taylor Naval Shipyard, Annapolis Laboratory

MOVIE: Zinc Wire Spraying of the Largest Industrial Thing, A Whole Suspension Bridge

Wednesday, morning, September 22

SESSION E5 OCEAN THERMAL ENERGY CONVERSION (OTEC)

Chairman: Joseph R. Vadus

NOAA, Office of Ocean Technology and Engineering Services

OTEC Ocean Engineering Technology Development

Joseph R. Vadus

NOAA, Office of Ocean Technology and Engineering Services

OTEC Cold Water Pipe (CWP) At-Sea Test Program

Terence McGuinness

NOAA, Office of Ocean Technology and Engineering Services

Frank McHale

Hawaiian Dredging & Construction Company

Hydrodynamic Loading of Slope Mounted OTEC Pipelines:

A Review of Offshore Design Experience and Model Test Data Requirements

George M. Hagerman, Jr.

Gibbs & Cox, Inc.

Moored Pipe/Mobile Platform: An Innovative Approach to the Floating OTEC Plant

Jonathan M. Ross

Joan L. Watts

Giannotti & Associates, Inc.

Ocean Thermal Energy Conversion (OTEC): Temperature Increase System (TIS) Assisted

Allan F. Reid

State University of New York at Genesco

Albert H. Halff

Halff Associates

In-Situ Corrosion Tests of Zinc Protected Aluminum OTEC Evaporator Tubes

Donald S. Sasscer

Center for Energy & Environmental Research, University of Puerto Rico

Thomas J. Summerson

Center for Technology, Kaiser Aluminum & Chemical Corporation

Wednesday afternoon, September 22

SESSION E6 OTEC

Chairman: Eric A. Midboe

Gibbs and Cox, Inc.

Progress in the Development and Testing of OTEC Riser Cables

James E. Soden

Simplex Wire & Cable Company

Russel Eaton

U.S. Department of Energy

J. Paul Walsh

VSE Corporation

Environmental Monitoring at Kahe Point, Oahu, Hawaii for OTEC Pilot Plant Development

Eric Hartwig

Mary S. Quindy-Hunt

Pat Wilde

Lawrence Berkeley Laboratory

Lloyd Lewis

Department of Energy

Geothermal-Enhanced OTEC (GEOTECH) Resources, Plant Concepts, and Estimated Costs

Gordon L. Dugger

Luigi L. Perini

Dennis Richards

Applied Physics Laboratory, Johns Hopkins University

Conceptual Details of a 100 MWE Baseline Floating OTEC Plant

Benjamin W. Dambly

Sea Solar Power, Inc.

Electrical Power Conditioning and Cable/Platform Interface for OTEC Plants at 40MW, 100MW, and 400MW

Thomas C. Dalton

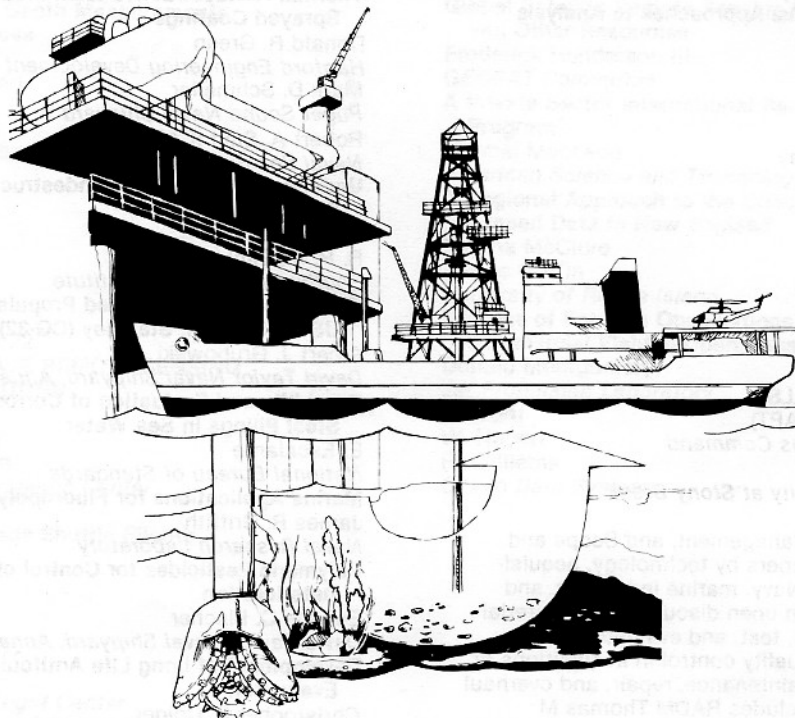
Gibbs and Cox, Inc.

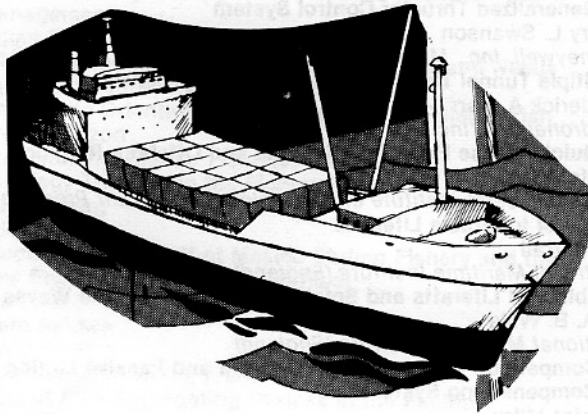
A Test for Buoyancy OTEC Concept

Nai-Kuang Liang

Chung-Ching Chien

Institute of Harbor and Marine Technology (Republic of China)





PROGRAM F BUOYS AND SHIPS

Chairmen: Richard E. Swenson
National Space Technology Laboratory
 Robert P. Dinsmore
Woods Hole Oceanographic Institution

Monday afternoon, September 20

SESSION F2 BUOYS Part 1

Chairman: Richard E. Swenson
National Space Technology Laboratory

As the cost of using ships as data acquisition platforms increases, buoys become more attractive as cost effective alternatives. The buoys sessions will address current buoy technology and development in light of today's economic climate and its impact on marine data acquisition.

Development of a Value Engineered NOMAD Buoy

Gerald Timpe (LT)
U.S. Coast Guard
 William O. Rainnie, Jr.
NOAA Data Buoy Office, NSTL Station

Elastic Tethering Techniques for Surface and Near-Surface Buoy Systems

David M. Wyman
Buoy Technology

The UEK, An Energy Intensification Device

Edward P. April
April Engineering Corporation
 Philippe Vauthier
UEK Corporation

A Medium-Range System for Tracking Drifting Buoys Automatically

Hugh A. J. Roddis
Orion Electronics Limited (Canada)

The SYNARGOS Ambient Noise Measurement Buoy

Samuel P. Burke
 Beaumont M. Buck
Polar Research Laboratory
 Chuck A. Luther
Office of Naval Research

High Energy Density Lithium Batteries for Oceanographic Applications

Robert M. Murphy
 Paul W. Krehl
 C. C. Liang
Electrochem Industries Inc.

Tuesday morning, September 21

SESSION F3 BUOYS Part II

Chairman: Richard E. Swenson
National Space Technology Laboratory

Uncertain Wave Spectra: Calibrating Large Buoys for Wave Measurements

Joseph E. Murphy
University of New Orleans
 Kenneth E. Steele
NOAA Data Buoy Office, NSTL Station

A Buoy System for Directional Wave Spectra

Louis C. Adamo
Louis C. Adamo, Inc., California

Technique for the Measurement of Hull Azimuth Angles in NDBO Directional Wave Measurement Systems

Kenneth E. Steele
NOAA Data Buoy Office, NSTL Station
 Joseph C. Lau

Computer Sciences Corp.

Ernest L. Burdette

Triton Systems, Inc.

The Design of Drifting Buoy Systems

Warren B. Wilson
Computer Sciences Corp.

Edmund G. Kerut

NOAA Data Buoy Office, NSTL Station

Fourier Transform of Wave Data on Argos Buoys

William R. Whitehead
Bristol Aerospace Ltd. (Canada)

The Measurement of Wind Direction with Drifting Buoys

Warren B. Wilson
 Richard F. Garrard
Computer Sciences Corp.

Tuesday afternoon, September 21

SESSION F4 SEA FLOORING ENGINEERING

Chairman: Adrian Richards
Lehigh University

Dynamic Analysis of Shells of Revolution Submerged in an Acoustic Medium by the Finite Element Method

Jack Y. K. Lou
Texas A&M University
 Chi King Ng
Brown & Root

Modifications for Increasing Recovery and Penetration in an Open Barrel Gravity Corer

Michael A. Abrams
Exxon Company

Wave Interaction with Arbitrarily Shaped Large Submerged Cylinders

N. Jothi Shankar
 T. Balendra
National University of Singapore

Chan Eng Soon
Massachusetts Institute of Technology

Underwater Inspection Program of Navy's Waterfront Structures

Philip T. Scola
Washington Navy Yard

Laboratory Simulation of a Deep Ocean In-Situ Heat Transfer Experiment

C. Mark Percival
Sandia National Laboratories

Flotation Stability Analysis of the Precast Reinforcement Concrete Immersed Tube in Kaohsiung Harbor Cross Tunnel

Su-Zon Dan
 Chin-Seng Kao
China Engineering Consultants, Inc. (Republic of China)

Estimation of Iceberg Draft

Mona El-Tahan
 Hussein El-Tahan
MacLaren Plansearch, Newfoundland

Wednesday morning, September 22

SESSION F5 OCEANOGRAPHIC SHIPS, Part 1

Co-Chairmen: Robert P. Dinsmore
Woods Hole Oceanographic Institution
William D. Barbee
University of Washington

The purpose and conduct of Oceanographic Ships Sessions F5 and F6 will be to listen to and discuss papers presented dealing with research ship operations, designs, shipboard equipment, and improvements to research ship capabilities and applications to shops in general. Each session will have a panel program with invited panelists and open forum for the discussion of selected issues facing research ships from the standpoints of economy, regulation, and technology.

Use of Small Vessels for Short Term Research Work

A. T. A. Wride
National Maritime Institute (England)
90 Foot Bermuda Based Research Vessel
Anthony Knapp
Bermuda Biological Station for Research
A Successful Endeavor

Clifford A. Buehrens
Marine Office, University of Rhode Island
The Small Waterplane Area Twin Hull (SWATH) Designed Ship for Hydrographic and Oceanographic Surveys
Lawrence Benen

Naval Sea Systems Command
Raytheon/SSSCO Oceanographic SWATH Ship Design
Thomas Lang

Semi-Submerged Ship Corporation
Offshore Preplanning for Motion Sensitive Operations
N. Starsmore

Atkins Research and Development
Simulation and Analysis of Disabled Tanker Towing
Michael M. Bernitsas
Department of Naval Architecture & Marine Engineering, University of Michigan

SESSION F6 OCEANOGRAPHIC SHIPS, Part II

Co-Chairmen: Robert P. Dinsmore
Woods Hole Oceanographic Institution
William D. Barbee
University of Washington

Panel Discussion: Developing technology at sea and its effects on the design and operations of research vessels.

A Generalized Thruster Control System

Terry L. Swanson
Honeywell, Inc., Marine Systems Operations
Multiple Tunnel Thruster Systems for Ship Control
Roderick A. Barr
Hydronautics, Inc.

A Quick-release Hook for Lifeboats and Offshore Rigging
Clifford A. Goudey
Massachusetts Institute of Technology, Sea Grant Program
Trials of Inflatable Liferrafts

A. Morrall
National Maritime Institute (England)
Stability of Liferrafts and Small Vessels in Wind and Waves
J. A. B. Wills
National Maritime Institute (England)
A Comparison Between Active/Passive and Passive Motion Compensating Systems

Raafat Mitry
Techwest Enterprises Ltd. (Canada)
Oceanographic Technicians and Shared-Use Equipment—Is Standardization Possible?
William B. Hahn
Graduate School of Oceanography, University of Rhode Island

PROGRAM G SCIENCES

Chairman:

Monday afternoon, September 20

SESSION G2 FISHERIES

Chairman: Robert Edwards

*NOAA, National Marine Fisheries Service***Ocean Monitoring in Support of Fisheries Research and Management**

Douglas R. McLain

Tracking Marine Mammals by Satellite: Status and Needs

Jacqueline G. Jennings

Geomagnetic Orientation and Navigation by Pelagic Fish

Andrew E. Dizon

*NOAA, National Marine Fisheries Service***Technology Transfer to the Fishing Industry**

Donald Ekberg

Wil Seidel

Productivity in the Gulf of Mexico Shrimp Fishery and the New England Fish Otter Trawl Fleet

Morton Miller

William Belows

Richard Surdi

*NOAA, National Marine Fisheries Service***Review of Fish Aggregating Devices in the Pacific**

Richard Shomura

Walter Matsumoto

Evaluation, Harvesting and Management of Fluctuating Stocks

Taivo Laevastu

Richard Marasco

*NOAA, National Marine Fisheries Service***Mensuration Instruments to Measure Performance of Resource Assessment Trawls**

Fred Watney

William West

*NOAA, National Marine Fisheries Service***Mathematical Simulation Procedures for Net and Cable Structures in Water**

Tuesday morning, September 21

SESSION G3 OCEAN SCIENCES

Chairman: Kurt Stehling

*NOAA, Office of Ocean Technology and Engineering Services***Tsunami Observations**

Eddie N. Bernard

*NOAA***Intercomparison of Directional Wave Spectra from an NDBO****Discus-Hulled Buoy and a Wavestaff Array**

Ernest L. Burdette

*Triton Systems, Inc.***Sea Ice Lineaments**

Philip B. Chandler

*Geoscientific Systems and Consulting***The Bathymetric Mapping Program of the National Ocean****Survey**

Carl Fefe

*NOAA, National Ocean Survey***Finite Element Modeling of Tides and Currents in the New York****Bight**

Frank D. Malone

*Lamont-Doherty Geological Observatory***Discharge-Displacement Calculations for Tidal Flushing**

James W. Stork

Humboldt State University Foundation

Steven L. Costa

Florida Institute of Technology

Mary C. Landsteiner

Terry C. Gould

*Brown and Caldwell***Two Calibrated Technical Methods for Predicting Shoaling of Maintained Inlet Channels**

Thomas J. Campbell

*Arthur V. Strock & Associates, Inc.***Oceanographic and Meteorological Observations During Extreme Events on the Louisiana Inner Shelf**

Henry R. Frey

*NOAA, National Ocean Survey***Phytoplankton Populations and Distribution Patterns Over the Northeastern Continental Shelf of the U.S.**

Harold G. Marshall

Old Dominion University

Myra S. Cohn

*NOAA, National Marine Fisheries Service***Aquatic Biomass Production on Sand Using Seawater Spray**

Henry W. Moeller

*HydroBotanicals Co.***Geophysical and Biological Seafloor Mapping of Four Oil and Gas Lease Blocks in the South Atlantic Georgia Embayment**

David A. Gattleson

Richard M. Hamner

Russell E. Putt

Continental Shelf Association

Tuesday afternoon, September 21

SESSION G4 WAVE EXPERIMENTS

Chairman: Gene Russin

*NOAA, Office of Ocean Technology and Engineering Services***Results of Regional Coastal Waves Workshops**

Billy L. Edge

Cubit Engineering, Ltd.

Jon T. Moore

Ledolph Baer

*NOAA, National Ocean Survey***Importance of Phase Corrections to Waverider Data**

Robert W. L. Thomas

E. Scott Stickles

EG&G Inc.

Lloyd C. Huff

*NOAA, National Ocean Survey***Development of the Fetch-limited Directional Wave Spectrum**

Edward J. Walsh

David W. Hancock III

Donald E. Hines

NASA

James E. Kennedy

*Naval Research Laboratory***End-to-End Testing of NOAA Data Buoy Office Directional Wave Measurement Systems**

Joseph C. Lau

Computer Sciences Corporation

Kenneth E. Steele

NOAA Data Buoy Office

Ernest L. Burdette

*Triton Systems***Is Your Wavebuoy Really Calibrated?**

A. G. Parker

*National Maritime Institute (England)***Strapped-Down Accelerometer Effects on NDBO Wave Measurements**

Marshall D. Earle

*Marine Environments Corporation***Storm Generated Waves in the Gulf of Mexico**

Bryan Pearce

*University of Maine***A Monte Carlo Method for Statistical Derivatives of Arbitrary Spectra**

Leonardo Pérez y Pérez

California State University (Poster)

Wednesday morning, September 22

SESSION G5 WAVES/ARSLOE, Part 1

Chairman: Ledolph Baer

NOAA, National Ocean Survey

Atlantic Remote Sensing Land Ocean Experiment (ARSLOE)

Ledolph Baer

NOAA, National Ocean Survey

Analyses of Elements of the Marine Environment of the ARSLOE

L. D. Burroughs

Intercomparison of the Offshore Wave Measurements During ARSLOE

Michael W. Szabados

NOAA, National Ocean Survey

Calibration of Accuracy and Data Correction for Waverider Buoys Deployed During ARSLOE

Richard L. Ribe

NOAA, National Ocean Survey

Storm Directional Wave Spectra Measured With a Single Buoy (ARSLOE)

L. R. Leblanc

F. H. Middleton

Ocean Engineering Department, University of Rhode Island

Comparison of SCR Microwave Measurement of Directional Wave Spectra with ARSLOE In-Situ Sensors

Edward J. Walsh

D. W. Hancock

D. E. Hines

NASA

J. E. Kennedy

Naval Research Laboratory

CODAR Measurement of Ocean Surface Parameters at ARSLOE: Preliminary Results

Belinda Lipa

CODAR Research

Donald Barrick

NOAA, Wave Propagation Laboratory

Remote Sensing Wave Measurements (ARSLOE)

D. E. Lichy

U.S. Army, Corp of Engineers

A Comparison of Radar Imagery of Ocean Waves to Buoy Measurements

D. Ross

W. McLeish

NOAA, Atlantic Oceanographic and Meteorological Laboratory

Results of the Aircraft Delta-K Ocean Wave Spectrometer

Experiment Conducted During ARSLOE

D. E. Weissman

Hofstra University

J. W. Johnson

NASA, Langley Research Center

Wednesday afternoon, September 22

SESSION G6 WAVES/ARSLOE (Part 2)

Chairman: C. L. Vincent

U.S. Army, Corps of Engineers, CERC

Field Intercomparison of Nearshore Directional Wave Sensors

W. G. Grosskopf

D. G. Aubrey

M. G. Mattie

M. Mathiesen

R. J. Seymour

U.S. Army, Corps of Engineers

Microwave Measurement of Sea Surface Velocities from Pier and Aircraft

W. C. Keller

W. J. Plant

Naval Research Laboratory

J. W. Johnson

NASA

Comparison of Two Numerical Models for Calculation of Shallow Water Wave Spectra with ARSLOE Data

J. McTamany

C.L. Vincent

U.S. Army, Corps of Engineers

Fetch Limited Wave Growth Observed During ARSLOE

J. R. Rottier

C. L. Vincent

U.S. Army, Corps of Engineers

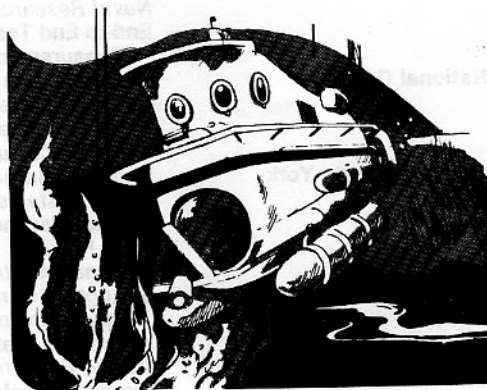
Transformation of Storm Wave Spectra in Shallow Water Observed During the ARSLOE Storm

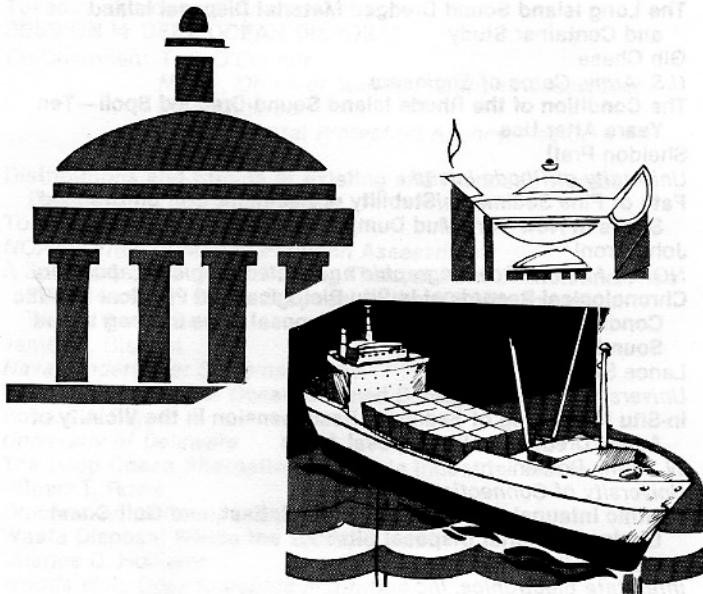
C. L. Vincent

W. G. Grosskopf

J. M. McTamany

U.S. Army, Corps of Engineers





PROGRAM H MARINE LAW & POLICY

Chairman:

Monday afternoon, September 20

SESSION H2 OCEAN & COASTAL MANAGEMENT POLICY

Chairman: John Norton Moore
University of Virginia

Coastal Zone Management Theory and Policy: A Critical Evaluation

Alfred G. Cuzan
University of West Florida

Utilization of Marine Resources in Developing Coastal States: A Cooperative International Marine Policy Program

Robert Knecht
Woods Hole Oceanographic Institution

The New Federalism and the Management of Ocean Resources

Cynthia E. Carlson
Lewis and Clark Law School

Soil Loss in Developing Countries and Its Relationship to Marine Resources: Examples from East Africa

Daniel P. Finn
Woods Hole Oceanographic Institution

Tuesday morning, September 21

SESSION H3 LEGAL REGIME OF HARD ROCK MINERALS AND THE 200 MILE ECONOMIC ZONE

Chairman: Myron H. Nordquist
Nossaman, Krueger & Marsh

The panel discussion will focus on the legal and policy issues facing the development of seabed minerals located within 200 miles were the United States to declare a 200 mile exclusive economic zone. The discussion will be chaired by Mr. Myron H. Nordquist of the law firm of Nossaman, Krueger & Marsh. The panel will be composed of key federal officials who can produce valuable perspectives on the evolution of national and international policies regarding offshore hard rock mining. The panel will include Mr. Theodore Kronmiller, Deputy Assistant Secretary of State for Oceans and Fisheries Affairs; Mr. Robert McManus, General Counsel to the National Oceanic and Atmospheric Administration; and Mr. David C. Russell, Deputy Assistant Secretary of the Interior for Land and Water Resources.

Tuesday afternoon, September 21
SESSION H4 MARINE EDUCATION

Chairman: Robert Shephard
NOAA, Research and Development/Sea Grant

United Kingdom Educational Resources In Marine Technology

Rodney Coates
School of Electronics, University College of North Wales (UK)

Minorities In Marine Affairs

James Hannaham
Naval Observatory

Air-Ocean Sciences Curricula At the Naval Post Graduate School, Monterey, California

Carl B. Ihli (LCDR.)
U.S. Navy

Marine Curriculum: A Pragmatic Learning Technique

Jagdish J. Bhatt
Community College of Rhode Island

What Kind of Questions Are Asked in Marine Science

John D. Hunt
Texas A&M University

Wednesday morning, September 22

SESSION H5 COASTAL HAZARDS

Chairman: Peter N. Gibson
NOAA, National Ocean Survey

Long Term Consequences of Oil Spilling and Coastal Vulnerability

Laurent D'Ozouville
Serve Berne
Centre Oceanologique de Bretagne, France

Monitoring of Alternative Erosion Control Devices

Reinhard E. Flick
Scripps Institution of Oceanography

A Cost-effective Beach Maintenance and Repair Technique

Yu-Hwa Wang
Texas A&M University

Shoreline Movements: Studies of the National Ocean Survey and the Coastal Engineering Research Center

Craig Everts
Coastal Engineering Research Center, U.S. Army Corps of Engineers

Peter N. Gibson
NOAA, National Ocean Survey

Wednesday afternoon, September 22

SESSION H6 EFFECTIVE STATE PARTICIPATION IN FEDERAL DECISION MAKING

Co-Chairmen: Langdon S. Warner
Norbert P. Psuty
Rutgers University

Panel Discussion: A Panel of industry representatives and State and Federal participants in the OCS leasing process.

Moderator: Norbert P. Psuty
Rutgers University

Lesson From the Mid-Atlantic: New Jersey's Role in Influencing OCS Mineral Leasing Decisions

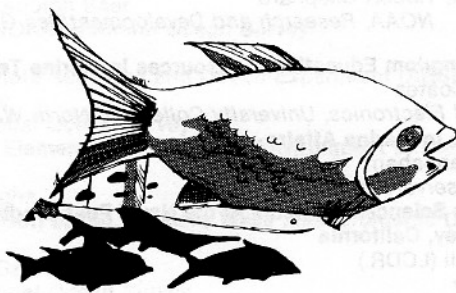
James Brosius
Norbert P. Psuty
Rutgers University

Oil Spill-Fisheries Impact Assessment Modeling: Possible State Application

Mark Reed
Applied Sciences Associates

Outer Continental Shelf Geohazards: A Legitimate State Concern?

(Speaker to be Announced)
Resolving Multiple Use Conflicts on the OCS
(Speaker to be Announced)



PROGRAM I MARINE POLLUTION

Michael Champ
NOAA, Office of Marine Pollution Assessment

A series of special sessions that focus on ocean disposal of municipal and industrial wastes in the United States.

Monday afternoon, September 20

SESSION 12 OCEAN DISPOSAL OF MUNICIPAL AND INDUSTRIAL WASTES IN THE NEW YORK BIGHT

Co-Chairmen: Joel O'Connor
NOAA, Office of Marine Pollution Assessment
Charles G. Gunnerson
International Bank for Reconstruction and Development

Movement of Sewage Sludge in the New York Bight, as Determined by *Colstridium perfringens* Spore Densities

Victor J. Cabelli
Deana Pedersen
University of Rhode Island

Predicted Swimming-Associated Gastroenteritis at New York Bight Bathing Beaches

Victor J. Cabelli
University of Rhode Island

Monitoring Fates and Effects of Contaminants in Benthos of the New York Bight

Robert N. Reid
John E. O'Reilly
Donald Gadbois
NOAA, National Marine Fisheries Service

Dissolved Oxygen in the New York Bight: A Seasonal Study

Roland Hemmett
Randy Braun
Billie Jo Johnson
Environmental Protection Agency, Region II

Coal Combustion Wastes as Material for Artificial Reef Construction

H. R. Carleton
I. W. Duedall
P. M. J. Woodhead
J. H. Parker
State University of New York at Stony Brook
Disposal of Coal Ash at the 106-Mile Ocean Waste Disposal Site
Kurt Rose

Energy Resources Company

Vincent dePass
Robert Keegan
Consolidated Edison Co. of NY

Burial of Dredged Sediment Beneath the Floor of New York Harbor

Henry Bokuniewicz
State University of New York at Stony Brook

Monday evening, September 20

SESSION 12A DREDGED MATERIAL DISPOSAL IN U.S. COASTAL REGIONS, Part 1

Co-Chairmen: Gib Chase
U.S. Army, Corps of Engineers
Millington Lockwood
NOAA, National Ocean Survey

The Long Island Sound Dredged Material Disposal Island and Container Study

Gib Chase
U.S. Army, Corps of Engineers

The Condition of the Rhode Island Sound Dredged Spoil—Ten Years After Use

Sheldon Pratt
University of Rhode Island

Fate of Fine Sediments/Stability of Sediment Cap on Dredged Spoils in New York Mud Dump

John Proni
NOAA, Atlantic Oceanographic and Meteorological Laboratory
Chronological Records of In-Situ Biological and Physical Benthic Conditions at Dredge Material Disposal Sites in Long Island Sound

Lance Stewart
University of Connecticut

In-Situ Monitoring of Sediment Resuspension in the Vicinity of Active Dredge Spoils Disposal Areas

W. Frank Bohlen
University of Connecticut

Benthic Infaunal Communities in West, East, and Gulf Coast Dredged Material Disposal Sites

Randy McGlade
Interstate Electronics, Inc.

Benthic Resources Assessment Technique, A Method for Quantifying the Effects of Benthic Community Changes on Fish Resources

David R. Kendall
John Lunz
U.S. Army, Corps of Engineers

Tuesday morning, September 21

SESSION 13 DREDGED MATERIAL DISPOSAL IN U.S. COASTAL REGIONS, Part II

Co-Chairmen: Gib Chase
U.S. Army, Corps of Engineers
Millington Lockwood
NOAA, National Ocean Survey

Mississippi Sound Dredged Material Disposal Studies—Physical Modeling

Drew Barrineau
U.S. Army, Corps of Engineers

Mississippi Sound Dredged Material Disposal Studies—Biological

Susan Iverter
U.S. Army, Corps of Engineers

Environmental Studies at a Proposed Mid-Atlantic Dredged Material Disposal Site

Raymond W. Alden, III
Daniel M. Dauer
J. H. Rule

Old Dominion University

Baltimore Harbor Deepening Project and Related Monitoring Studies

Larry Lower
Bob Blama
U.S. Army, Corps of Engineers

Experiences in Confined Disposal Facilities in the Great Lakes

Phil McAllister
U.S. Army, Corps of Engineers

The Planning, Management and Reporting of an Ocean Dredged Material Disposal Site Designation Study

James Reese
U.S. Army, Corps of Engineers
Dredged Materials in Louisiana—Not for Coastal Enhancement
Robert J. Tait
Interstate Electronics, Inc.

Tuesday afternoon, September 21
SESSION 14 DEEP OCEAN DISPOSAL

Co-Chairmen: Tom O'Connor
NOAA, Office of Marine Pollution Assessment
Pete Anderson
Environmental Protection Agency, Region II

Distributions and Effects of Existing and Proposed Wastes Dumped into the Deep Ocean

Tom O'Connor
NOAA, Office of Marine Pollution Assessment

A Summary of Factors Affecting Thermal Stratification and Their Effect on Deep Ocean Disposal at the 106-Mile Industrial Waste Dumpsite

James J. Bisagni
Naval Underwater Systems Center

Particle Dynamics of Ocean Dumped Sewage Sludge

Ronald J. Biggs
University of Delaware

The Deep Ocean Alternatives for Toxic Industrial Wastes

Gilbert T. Rowe
Brookhaven National Laboratory

Waste Disposal Within the 200 Mile Limit

Charles D. Hollister
Woods Hole Oceanographic Institution

The Potential of the Puna Submarine Canyon for Slurry Disposal of Manganese Nodule Tailings

John Charles Wuiltshire
University of Oceanography

Subseabed Disposal: Systematic Application of the Site Characterization Plan

L. E. Shepard
Sandia National Laboratories

J. E. Damuth
D. E. Hayes
Lamont-Doherty Geological Observatory

G. R. Heath
Oregon State University

E. P. Laine
University of Rhode Island

B. E. Tucholke
Woods Hole Oceanographic Institution

Wednesday morning, 8:20-10:00 AM, September 22
SESSION 15 MUNICIPAL AND INDUSTRIAL WASTE DISPOSAL ON THE WEST COAST

Co-Chairmen: Alan Mearns
NOAA, Office of Marine Pollution Assessment
Walter Spofford
Resources for the Future

Commencement Bay: Resource-use Conflicts at a Marine Superfund Site

Edward Long
NOAA Puget Sound Project, Office of Marine Pollution Assessment

Sand Island, Oahu: Assimilative Capacity at a Tropical Ocean Outfall

S. Dollar
University of Hawaii

The California Ocean Plan

J. Huddleson
California State Water Resource Control Board

Seattle: METRO's Toxicant Pretreatment Planning Study

J. Simler
METRO

Ocean Disposal in British Columbia

D. Ellis
University of Victoria (Canada)

Wednesday morning, 10:20-Noon and 1:20-2:00 PM, September 22
SESSION 16 WASTE DISPOSAL IN THE GULF OF MEXICO

Co-Chairmen: Roy Hann
Texas A&M University
Edward Klima
NOAA, National Marine Fisheries Service

Oil Spill Transport and Control as Experienced in Texas in 1979

Roy W. Hann, Jr.
Harry N. Young, Jr.
Environmental Engineering Program, Texas A&M University

Tracking of Salinity Plumes Generated by Brine Discharges at Two Locations in the Gulf of Mexico

Ronald Randall
Ocean Engineering Program, Texas A&M University

A Comparison of the Near Bottom Velocity Characteristics at Two Gulf Brine Disposal Sites Based on Long-Term Current Measurements

Francis J. Kelly, Jr.
Environmental Engineering Program, Texas A&M University

Pre- and Post-Disposal Monitoring of Benthic Macroinvertebrate Assemblages at Two Brine Discharge Sites from Solution Mining from the Bryan Mound Salt Dome

Don Harper
Larry McKinney
Department of Marine Science, Texas A&M University

Biological Attributes of the West Hackberry Brine Disposal Site

Dennis Casserly
M. Vecchione

G. Gaston
D. Weston

R. Ilg
R. Maples

McNeese University
Impact of Brine Disposal on Shrimp Fisheries Resources in the Gulf of Mexico

William Jackson
Maurice Renaud

Charles Caillouet
Ed Klima

NOAA, National Marine Fisheries Service
Environmental Implications of Zero-Discharge Exploratory Drilling in Mobile Bay, Alabama

Barry A. Vittor
Vittor and Assoc., Inc.

James Helis
Mobil Oil

Wednesday afternoon, 2:00-5:00 PM, September 22
SESSION 17 GREAT LAKES POLLUTION—PAST, PRESENT, AND FUTURE

Co-Chairmen: Andrew Robertson
NOAA, Office of Marine Pollution Assessment
William C. Sonzogni
NOAA, Environmental Research Laboratories

Pollution Inputs to the Great Lakes

Ronald Drynan
International Joint Commission

Degradation of Laurentian Great Lakes Biota—Causes and Effects Through 1970

Robert A. Sweeney
Ecology and Environment, Inc.

Water Quality Objectives for the Great Lakes

Andrew Robertson
NOAA, Office of Marine Pollution Assessment

Environmental Improvements in Lake Erie During the Past Decade

Charles E. Herdendorf
Center for Lake Erie Research, Ohio State University

Great Lakes: A Look to the Future

William C. Sonzogni
NOAA, Environmental Research Laboratories

Confined Disposal Program for Polluted Maintenance Dredging in the Great Lakes

Phillip McCallister
Richard J. Kavalar
U.S. Army, Corps of Engineers

Wednesday, 8:00 AM-Noon and 1:00-5:00 PM, September 22
SESSION 18 WASTE DISPOSAL AND MONITORING STRATEGIES

Co-Chairmen: George Peter
NOAA, Office of Marine Pollution Assessment
R. Lawrence Swanson (CAPT)
NOAA, Office of Marine Pollution Assessment

The Tragedy of the Oceans—The 1981 Ocean Dumping Deadline Revisited

H. Suzanne Bolton
U.S. House of Representatives, Merchant Marine and Fisheries Commission

Richard A. Schwabacher
Office of Rep. Hughes, U.S. House of Representatives
Legal and Political Requirements for Monitoring Ocean Waste Disposal

James S. Mattson
Mattson and Pave

Unreasonable Degradation of the Marine Environment—What Is It?

R. Lawrence Swanson (CAPT)
Joel O'Connor
NOAA, Office of Marine Pollution Assessment

Ocean Waste Disposal Monitoring: Can It Meet Management Needs?

Douglas A. Segar
SEAMOcean, Inc.

Meaningful Measures of Marine Pollution Effect: Report on a Workshop

Harris White
NOAA, National Ocean Survey

Andrew Robertson
NOAA, Office of Marine Pollution Assessment

Water Quality in the Mid-Atlantic Bight: A Monitoring Tool

Catherine E. Warsh
Bernard W. Gottholm
NOAA, National Ocean Survey

Terry E. Whittledge

Sue A. Oakley
Brookhaven National Laboratory

Is Monitoring the Answer to the 301(h) Question?

Don J. Baumgartner
Joseph Easley
Environmental Protection Agency
Southern California POTW Strategies Under EPA's 301(h) Waiver Program

Irwin Haydock
Janet Stull
Los Angeles County Sanitation Districts

The Role of Agencies, Scientists, and the Public in Planning Dredged Sediment Disposal

H. Bokuniewicz
K. Minsch
State University of New York at Stony Brook

Side Scan of Massachusetts Bay Low Level Radioactive Waste Disposal Site

Millington Lockwood
Melvyn Grunthal (CDR)
NOAA, National Ocean Survey

Monitoring Technologies for Ocean Disposal of Radioactive Waste

Mark B. Triplett
RAND Corporation
Kenneth A. Solomon

Charles B. Bishop
Robert C. Tyce
Scripps Institution of Oceanography

How to Increase the Utility of Monitoring Information for Various Management Needs

George Peter
NOAA, Office of Marine Pollution Assessment

Monday afternoon, September 20
PROGRAM J2 STRUCTURES AND OFFSHORE OPERATIONS
Chairman: John H. Clotworthy
Joint Oceanographic Institute

The interrelationship between environmental loading and design factors associated with fixed and floating offshore structures is examined with particular emphasis on frontier area operations.

Experimental Analysis of a Reduced Size Offshore Structure

Joao Luis Roehl
Elisa D. Sotelino
Pontificia Universidade Catolica do Rio de Janeiro

High Speed Ice Structure Interactions

Michael Rojansky
The Environmental Design Aspects of a Deep Water Exploration Structure in Canadian Arctic Waters

C. Roger Pilkington
Beauford Sea Construction Group, Dome Petroleum, Ltd.

Design of Damage Tolerant Offshore Structures

Farrokh Mistree
University of Houston

Explorer Conversion for Scientific Drilling

William F. Perkins
Lockheed Missiles and Space Co.

Frederick A. Agdern
National Science Foundation

Daniel H. Reudelhuber
SEDCO

Development of Ice Load Sensors for Arctic Caisson Island

Deborah Dumka
Arctec Canada, Ltd.
Peter Noble
Roger Pilkington
Dome Petroleum Ltd.

Tuesday afternoon, September 21
PROGRAM J4 POLYMETALLIC SULFIDES
Chairman: Alexander Malahoff
NOAA, National Ocean Survey

This special session will be dedicated to the new frontier of polymetallic sulfides: their location, chemical and physical development, their relationship to similar continental deposits, the animal life associated with the active vents and the techniques used in mapping their distribution on the ocean floor. We anticipate that the special session will be a definitive coherent review of our state-of-the-art knowledge of submarine polymetallic sulfides.

Wednesday afternoon, September 22
PROGRAM J6 ARCTIC STUDIES
Chairman: Leonard Johnson
Office of Naval Research

This session will present an overview of the most recent advances in arctic ocean engineering and technology. The issue of technology application to arctic ocean operational problems will also be addressed.

Monday evening, September 20
PROGRAM K MARINE EDUCATION WORKSHOPS
Chairman: Robert Shephard
NOAA, Research and Development/Sea Grant

This special program will address the question of marine education development; where it has been and where it is going. Four concurrent workshops will address this question at the following levels:

- Workshop 1: Kindergarten - 12th grade
- Workshop 2: Vocational/Technical and Community College
- Workshop 3: Adult Education
- Workshop 4: Undergraduate and graduate

Partial List of Exhibitors (as of April 9, 1982)

Aanderaa Instruments, Inc.
 Albany International-Precision
 Components Division
 Amatek Straza Division
 Beckman Instrument
 Bell & Howell/CEC Division
 Benthos, Inc.
 Blake Wire & Cable Co.
 Brantner & Associates, Inc./Sea-Con
 Ben-Tronics, Inc.
 Buoy Technology, Inc.
 Canflex Manufacturing, Inc.
 Cortland Cable Company
 Custom Cable Company
 Del Norte Technology, Inc.
 Department of Industry (London)
 Digicourse
 Diving Unlimited International, Inc.
 Dukane Corporation
 E.P.C. Labs
 EDO Western
 EFCOM
 EG&G Consultants
 EG&G Environmental Equipment
 Division
 EG&G Sea Link Systems
 Electrochem Industries
 Emerson & Cuming
 Encyclopaedia Britannica
 ENDECO
 Engineering Service Associates, Inc.
 Epco, Inc.
 Fryling Technical Services
 Gans & Pugh Associates, Inc.
 General Oceanics, Inc.

Giannini Petro Marine
 Gould Government Systems-
 Chesapeake Instrument Division
 Grundy Environmental System
 Heckerman Corp.
 Helle Engineering Inc.
 Hiab Cranes & Loaders
 Hydra Search Co., Inc.
 Hydro Products, Inc.
 Inner-Space Technology, Inc.
 Institute for Marine & Coastal Studies
 Instruments, Inc.
 I.T.T. Cannon
 Interocean Systems, Inc.
 J.M.R. Instruments, Inc.
 Klein Associates, Inc.
 Krupp Atlas Elektronik
 Location Technology, Inc.
 Lucker Manufacturing Co.
 Magnavox
 Military Sealift Command
 Motorola Position Determining System
 National Oceanic & Atmospheric
 Administration
 National Oceanic Industries
 Association
 National Sea Grant Program/Maryland
 Sea Grant Program
 Neil Brown Instruments System
 Neredies
 D. G. O'Brien, Inc.
 Ocean Research Equipment Inc.
 ODEC
 ODOM Offshore Surveys, Inc.
 Optelecom, Inc.
 Osprey Electronics Ltd.
 Photosea
 Pollock, Ken & Associates

Pollock Research & Design
 Preformed Marine
 Raytheon Ocean Systems Co.
 Rebikoff Products, Inc.
 C. A. Richards
 The Rochester Corporation
 Schonstedt Instrument Company
 Sea Bird Electronics
 Sea Data Corporation
 Simplex Wire & Cable Company
 Sonatech, Inc.
 Special Marine Products, Inc.
 Submersible Products,
 Jupiter Beach, Fla.
 Sutter, Ed
 Teledyne Energy Systems
 Teledyne Taber
 Telstar
 Tension Member Technology, Inc.
 Tracor Marine
 Turner Designs, Inc.
 U.S. Coast Guard
 U.S. Naval Institute
 Van Norstrand Reinhold Company, Inc.
 Wall Industries, Yale Cordage Division
 Whitehill Manufacturing Corp.
 Will-Burt Co.
 Winston, Ed, & Company

Exhibit hours: Monday, September 20,
 and Tuesday, September 21, 0900-2100;
 Wednesday, September 22, 0900-1500.
 There will be coffee available at mid-
 morning and mid-afternoon each day.
 The Buffet Luncheon described else-
 where, will be in the exhibitors' area.

Registration

Registration at the Conference will
 take place in the Caucus Room (off
 the West lobby) of the Shoreham
 Hotel, during the following hours:

Sunday	September 19	1200-2100
Monday	September 20	0730-2100
Tuesday	September 21	0730-2100
Wednesday	September 22	0730-1200

Registration for the Ocean Energy
 Workshop will occur at the above

times and also on:

Thursday September 23 0730-0930

All those desiring to attend the Con-
 ference technical sessions and exhi-
 bits must register and receive badges.

Package Registration includes admis-
 sion to the technical sessions and
 exhibits, the Conference Record, the
 Chairman's Luncheon, the Buffet
 Luncheon, OCEANS 82 Banquet, and
 the Presidents' Awards Luncheon.

Regular Registration includes only
 admission to the technical sessions,
 exhibits, Buffet Luncheon, and the
 Conference Record.

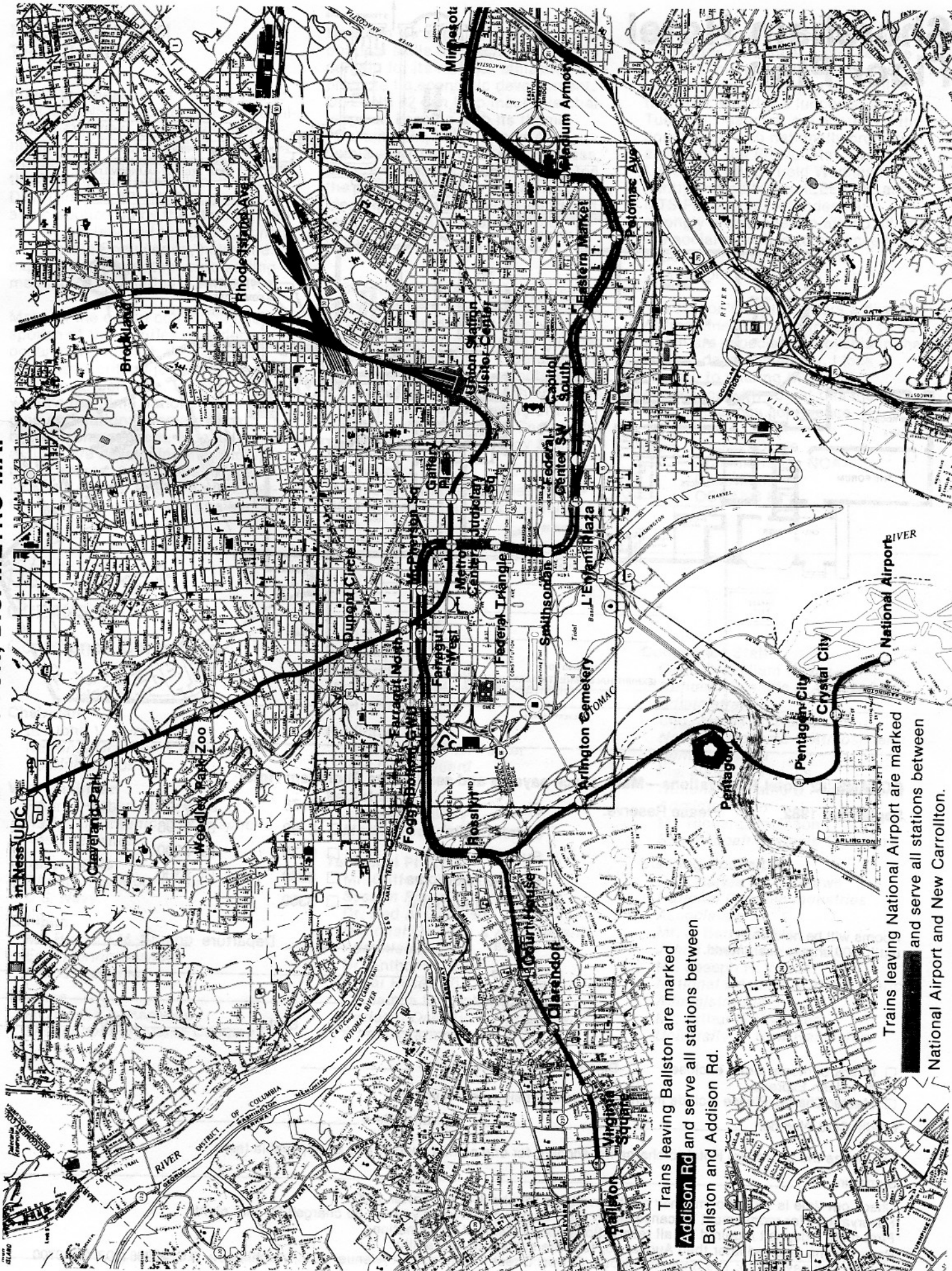
Spouses of registrants will be pro-
 vided badges for free entrance to the
 technical sessions and exhibit area.

Single luncheon or banquet tickets
 may be purchased at the Conference,
 if desired.

Advance Registration postmarked by
 September 3, 1982 is less costly than
 registration at the Conference, as
 shown by the enclosed registration
 form.

Those registering by mail can pick up
 badges, tickets, and other registration
 materials at the Advance Registration
 Booth.

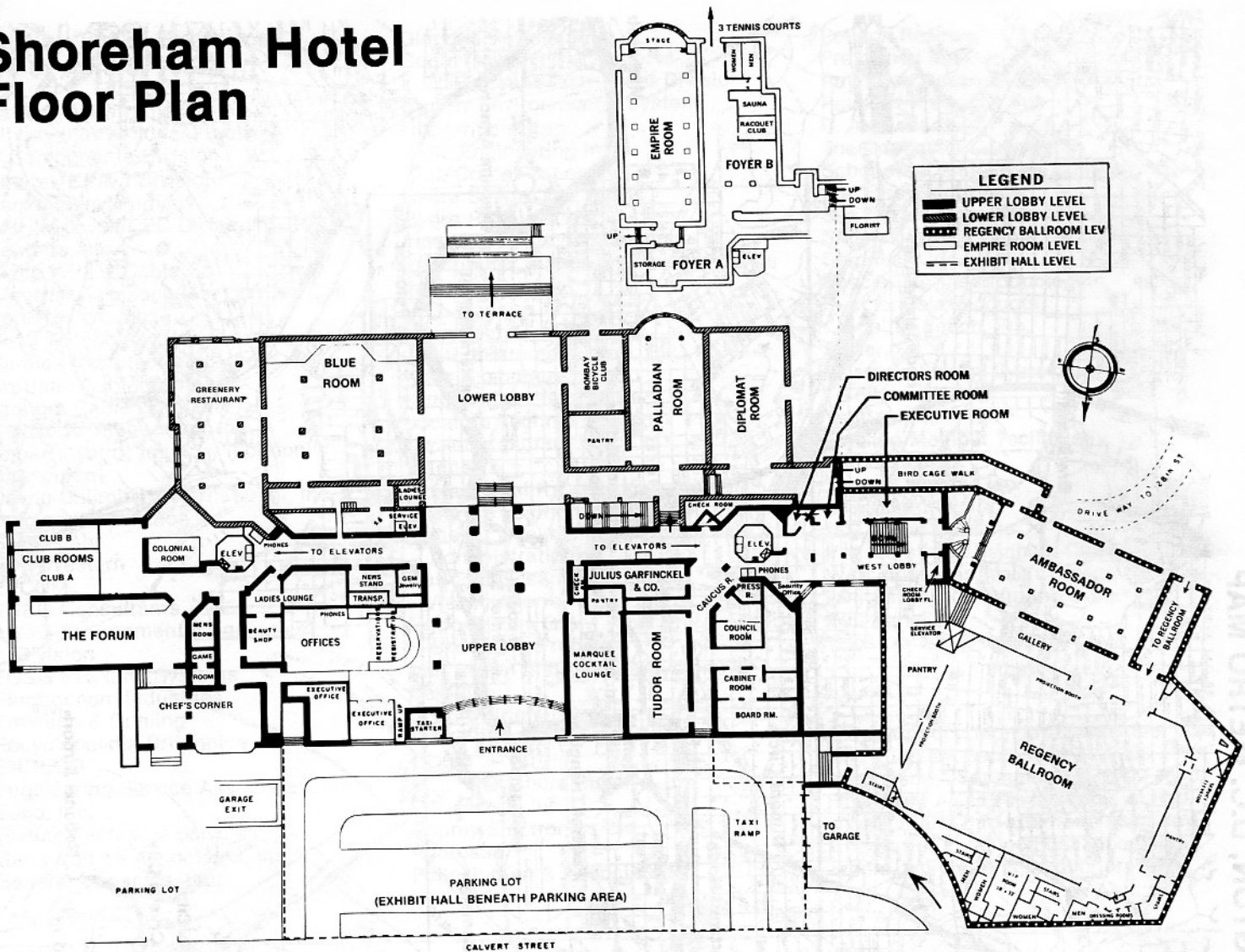
WASHINGTON, D.C. METRO MAP



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Shoreham Hotel Floor Plan



OCEANS '82 Hotel Reservations—Make check payable and send to the Shoreham Hotel

September 1982	Please Reserve:	Single	<input type="checkbox"/> \$ 78	<input type="checkbox"/> \$ 84
		Twin/Double	<input type="checkbox"/> \$ 90	<input type="checkbox"/> \$ 96
		Suite-1 bedroom	<input type="checkbox"/> \$175	<input type="checkbox"/> \$200
		Suite-2 bedrooms	<input type="checkbox"/> \$250	<input type="checkbox"/> \$300
		Presidential Suite	<input type="checkbox"/> \$350	

Rooms will be held only until 1800 unless guaranteed.

Arrival _____ Departure _____
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Check or money order enclosed Diners Club Amount \$ _____
 American Express Visa
 Master Charge (Please include Interbank # directly below card number)
 Credit Card Number _____ Expiration Date _____

I authorize the Shoreham Hotel to charge my account for one night's deposit and all applicable taxes.
 Signature _____

Check out time is 1300. Rooms may not be available for check-in until after 1500.
 Reservations for rooms must be cancelled by 1600 on day of arrival or you will be charged for that night.
 First night's deposit required for all reservations upon receipt of confirmation.
 Reservations received later than August 18, 1982 are subject to availability.
 Make check payable to: The Shoreham Hotel, Calvert Street & Connecticut Avenue, N.W., Washington, D.C. 20008 (202) 234-0700

MESSAGE FROM THE CHAIRMAN

I have the pleasure of inviting you to the OCEANS 82 Conference and Exhibition. This next conference, in the highly successful OCEANS series, will be held September 20-22, 1982, at the Shoreham Hotel in Washington, D.C. This year's conference, once again sponsored by the Marine Technology Society and the IEEE Council on Oceanic Engineering, holds the expectation of another outstanding meeting of the marine community.

Many in the ocean community have spoken of the eighties as a decade of ocean development. We find ourselves at a critical juncture in our use of the sea. Certainly, for many of the world's maritime nations, ocean margins and national domain have become one concern. Independent actions are developing into multiple-use conflicts. As we meet in the Nation's capital to share our expertise, we are presented a challenge.

How can we apply our technical and political skills to describe this ocean domain for its rational utilization and promote its economic development. OCEANS 82 can help meet this challenge. In keeping with its theme, "Government, Industry and Academia—Partners in Ocean Progress," the conference provides a forum for the exchange of information and ideas to improve understanding and technology transfer among the partners.

OCEANS 82 will present a full and varied program with over 300 papers to be presented in lecture-style, poster and special sessions grouped under the nine topical programs, and over 100 exhibitors to complement the presentations. The conference is, in part, the annual meeting of the IEEE Council of Oceanic Engineering and the Marine Technology Society.

Members of these societies are invited and encouraged to participate in

the various professional group and committee meetings. A new feature planned this year will be a buffet luncheon on Tuesday in the Exhibition Hall. Monday's luncheon and Tuesday's banquet are hosted by the conference with nationally prominent speakers. The Presidents' Awards Luncheon will be held Wednesday, jointly hosted by the IEEE/COE and MTS Presidents. Attendees are strongly encouraged to attend all of the social activities to enhance their experience through informal discussion.

The Nation's capital offers a diversity of free-time activities for every taste which are especially enjoyable in the waning days of summer. I look forward to sharing this total experience with you at this marine high-technology conference.

John V. Byrne
Administrator, NOAA
Chairman,
OCEANS 82

OCEANS 82

Conference Committee

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Dr. John V. Byrne
National Oceanic & Atmospheric Administration

Vice Chairman

RAdm. Herbert R. Lippold, Jr.
National Oceanic & Atmospheric Administration

Arrangements

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U.S. Navy

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Finance

Mr. Morris A. Ransone
Shenandoah Systems Company

Publications

Margaret E. Courain
National Oceanic & Atmospheric Administration

Publicity

RAdm. Harold W. Parker
U.S. Coast Guard

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Arabel M. Allfrey
Marine Technology Society

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Dr. Anthony I. Eller
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National Oceanic & Atmospheric Administration

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Mr. Joseph R. Vadus
National Oceanic & Atmospheric Administration
Mr. Arthur S. Westneat
University of New Hampshire

OCEANS '82—September 20-22, 1982
Advance Registration (Postmarked by September 3, 1982)

MESSAGE FROM
 THE CHAIRMAN

Current IEEE-MTS Membership
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 MTS
 Both IEEE-MTS
 Neither IEEE-MTS
 Participating Organization _____

Name _____
 Company Affiliation _____
 Street _____
 City _____ State _____ Zip Code _____
 Telephone Number () _____

Session Chairman Speaker Committee Chairman
 Spouse to Attend Name _____

		Regular ⁽¹⁾	Package ⁽²⁾	
REGISTRATION (\$15 additional on-site)	Member (see pg. 3)	<input type="checkbox"/> \$ 90	<input type="checkbox"/> \$130	_____
	Non-Member	<input type="checkbox"/> \$115	<input type="checkbox"/> \$155	_____
TECHNICAL SESSIONS ONLY	Daily	<input type="checkbox"/> \$55		_____
	Student (3 days)	<input type="checkbox"/> \$25		_____
	Student (1 day)	<input type="checkbox"/> \$13		_____
ADDITIONAL CONFERENCE RECORDS	Member	<input type="checkbox"/> \$85		_____
	Non-Member	<input type="checkbox"/> \$90		_____
	Mailing (4th class)	<input type="checkbox"/> \$ 5		_____
SOCIAL FUNCTIONS	Monday, Sept 20	<input type="checkbox"/> \$15	Chairman's Luncheon	_____
	Tuesday, Sept 21	<input type="checkbox"/> \$25	Banquet	_____
	Wednesday, Sept 22	<input type="checkbox"/> \$15	President's Awards Luncheon	_____
OCEAN ENERGY WORKSHOP (\$15 additional on-site)	Thursday, Sept 23	<input type="checkbox"/> \$45		_____
NOAA/NASA TOUR	Thursday, Sept 23	<input type="checkbox"/> Yes, I am interested		_____
MTS MEMBERSHIP	<input type="checkbox"/> New <input type="checkbox"/> Renewal	\$35		_____
				Total _____

NOTES:

1. Includes conference record
2. Includes conference record and social functions

Make checks payable to OCEANS '82
 Refunds must be claimed by September 15, 1982
 Mail to: OCEANS '82
 1730 M Street, NW, Suite 412
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 (202) 659-3251

1983 OFFSHORE TECHNOLOGY CONFERENCE ABSTRACT SUBMISSION FORM



Deadline for Receipt — September 15, 1982

Note: All information requested on the abstract submission form must be included in order to be considered by the OTC Program Committee. Specific details regarding the nature of the work will be given priority consideration by the Program Committee.

GUIDELINES FOR AUTHORS

All Sponsoring Societies of the Offshore Technology Conference will participate in developing the technical program for the 1983 Conference. The Program Chairman for the Conference Technical Program Committee is Captain Don R. Wells.

Individuals interested in submitting an abstract or manuscript for consideration by the 1983 Conference Program Committee should review carefully the material included in this document. Specifically, potential authors should note that **a manuscript will be required for inclusion in the Proceedings Volumes for each paper accepted for the 1983 Conference Program.**

The OTC Program Committee will evaluate papers solely on the basis of information supplied on this form. Authors must provide specific information on the paper proposal in each of the areas of the abstract section.

OTC provides complimentary registration **only** for presenting authors who register on special author registration cards. OTC assumes no obligation for any other expenses incurred by authors for travel, lodging, food, or other incidental expenses.

SUBMITTAL OF PAPERS

Solicitation of technical papers for the 1983 Conference will be made primarily with this Abstract Submission Form. The form contains space for the abstract that must be included for all proposed papers. This system permits the selection of papers for the program before manuscripts are written. Additional copies of this form will be supplied by the OTC Headquarters Office on request.

ABSTRACT: An abstract, containing 200-300 words, must be provided. Develop the abstract by addressing the major aspects of the paper as described below:

Description of the Paper: Summarize the scope and nature of the work upon which the paper will be based. Note the relative emphasis of components such as field data, laboratory data, design, analysis, field operations, research or system development. Note difference from other past or current related work being done in this area. If the paper is a review paper, carefully state the extent of the coverage.

Application: Describe the possible application of knowledge provided in this paper to a particular area of offshore resource development and recovery. If the paper is a review paper, carefully state the extent of the coverage.

Results, Observations, Conclusions: Describe results to be presented in the paper and state specific conclusions of work. Describe how these differ from results or conclusions of previous work in the same or similar subject. If the paper describes hardware, or operation of a system, or describes an event, state specific new information revealed. Also state whether or not results of field data, laboratory test data or calculated computer work will be included in the paper.

Significance of Subject Matter: Briefly state the most significant aspect of the subject matter.

Subject Categories are listed below. Please indicate by number the most appropriate Primary and Secondary Category designation on the abstract form where indicated.

- | | | |
|---|--|--|
| 1. Marine Geology & Geochemistry | 15. Welding & Fatigue | 28. Marine Riser Systems |
| 2. Exploration & Production Geology | 16. Wire & Synthetic Rope | 29. Offshore Pipelines |
| 3. Geophysical Interpretation | 17. Mobile Offshore Drilling Units | 30. Manned & Unmanned Submersible Systems |
| 4. Geophysical Data Gathering & Data Processing | 18. Construction, Support & Service Vehicles | 31. Diving, Salvage, & Repair Operations |
| 5. Seafloor Surveying & Mapping | 19. Position Control & Stabilization of Vessels | 32. Arctic Logistics |
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