

THE INSTITUTE OF MARINE ENGINEERS

76 Mark Lane, London EC3R 7JN Telephone: 01-481 8493 Telex: 886841

SUPPLEMENT

TRANSACTIONS INDEX

Volume 95



**INDEX TO TRANSACTIONS OF TECHNICAL MEETINGS AND
CONFERENCES HELD IN THE 1982-1983 SESSION**

© MARINE MANAGEMENT (HOLDINGS) LTD. 1983

ISSN 0309-3948

Trans I Mar E
Vol. 95 Supplement

*Neither the Institute or the publisher hold themselves responsible for statements
made or for the opinions expressed in papers presented or published*

INTRODUCTION

This Index covers Volume 95 of the Transactions and the Proceedings of the Conferences held in the 1982-83 session. Conference Proceedings are not issued with the annual volume of Transactions but they are available for sale from the Institute. The three sections of the Index and instructions for use are described below.

SECTION 1. LIST OF PAPERS

This is a complete list of papers presented during the year at the Institute's Technical Meetings and Conferences. The Conferences do not form part of the annual volume of Transactions but they can be obtained from the Institute as separate publications. The entry for each paper consists of a full bibliographic description and a code number.

The code numbers are used in both the Author and Subject Indexes. Papers presented at the Technical Meetings have been given code numbers which indicate the volume number, the Technical Meeting designation and the number of the paper. An asterisk after the code numbers indicates a President's Address.

V95	/TM	(1)
Volume 95	Technical Meeting	Paper 1

Papers presented at Conferences have been numbered in one consecutive sequence, from C111 for the first Conference paper presented in the 1982-83 session to C122 for the last paper of the session. Next year's code number sequence will commence with paper C123. The ranges of code numbers allocated to each Conference are given below.

Code Number Range	Conference Title
C111-C115	Proceedings of the Conference on Marine Applications for Microprocessors
C116-C122	Proceedings of the Seminar on Marine Enquiries and Casualty Investigations

SECTION 2. AUTHOR INDEX

The authors of the papers are listed alphabetically; the codes which follow the names refer to the List of Papers (Section 1).

To find the paper written by a particular author:

1. Turn to the Author Index.
2. Note the code number adjacent to the name.
3. Look for the code number in the List of Papers; this will provide the full bibliographic description and the location.

SECTION 3. SUBJECT INDEX

The contents of each paper have been summarized as a series of keywords, either singly or in multi-word terms for concepts which require more explanation than a single keyword; or alternatively refer to several aspects of a concept discussed in the paper. Such terms are punctuated by the symbol '\$'; single keywords are separated by the symbol ':'.

For example, an entry for the paper 'Drinking water from the sea; reverse osmosis, the modern alternative', by J. T. Allanson and R. Chamby, reads:

**ECONOMICS \$ Desalination : Reverse Osmosis \$ Plant
Design : Membrane Types : Maintenance TM38**

This would indicate that the paper concerns the economics of desalination by reverse osmosis, and covers design and maintenance aspects with a discussion of membrane types. The full bibliographic citation, for locating or ordering the paper, can be found in the List of Papers (Section 1), as described above.

To find paper on a given subject:

1. Turn to the Subject Index
2. Think of the terms which best describe the subject: as a general rule it is better to work from the broadest to the most specific.
3. Note the code numbers.
4. Look for the code numbers in the List of Papers; this will provide full bibliographic descriptions and the locations.

SECTION 1. LIST OF PAPERS

TECHNICAL MEETINGS (TM)

- V94/TM(31)*** **PIDGEON, E. C. Cdr.**
Presidential Address.
Vol. 95 (TM), Paper 31.
- V95/TM(32)** **BALL, R.**
 STEPHENS, G. W.
Neutral earthing of marine electrical power systems.
Vol. 95 (TM), Paper 32.
Yard Ltd.
- V95/TM(33)+** **SLATTER, R. H.**
Aero-derived marine and industrial gas turbines.
Vol. 95 (TM), Paper 33.
+47th Parsons Memorial Lecture.
Rolls-Royce Ltd, Ansty.
- V95/TM(34)** **THORP, I.**
 ARMSTRONG, G.
The economic selection of main and auxiliary machinery.
Vol. 95 (TM), Paper 34.
Dept of Marine Eng., University of Newcastle upon Tyne.
- V95/TM(35)** **CASALE, D.G.**
 DAVIDSON, D.
 GRAHAM, M.
 THORNTON, R. H.
Some considerations on marine residual fuels.
Vol. 95 (TM), Paper 35.
Exxon International Company.
- V95/TM(36)** **TUNE, H. E.**
 MOTTRAM, D. J.
 HASLAM-JONES, R. C.
Modifications to the steam propulsion plant in the ACTA/
ANL large container ships.
Vol. 95 (TM), Paper 36.
Blue Star Line Ltd
- V95/TM(37)** **JONG, W. de**
Design and installation of ships' electrical systems to minimize
the effects from fire.
Vol. 95 (TM), Paper 37.
Lloyd's Register of Shipping, Rotterdam.
- V95/TM(38)** **ALLANSON, J. T.**
 CHARNLEY, R.
Drinking water from the sea; reverse osmosis, the modern
alternative.
Vol. 95 (TM), Paper 38.
Ames Crosta Babcock Ltd.
- V95/TM(39)** **ROYLE, D.**
A review of the quality of residual fuels supplied to motorships
world-wide.
Vol. 95 (TM), Paper 39.
Det Norske Veritas
- V95/TM(40)** **WARKMAN, D. C.**
BP's performance-monitoring system for marine diesel
engines.
Vol. 95 (TM), Paper 40.
BP Shipping Ltd.

- V95/TM(41)** **HORLICK, E. J.**
 Vice-Admiral Sir
Naval engineering achievements in the liberation of the
Falklands.
Vol. 95 (TM), Paper 32.
Ministry of Defence (N).
- V95/TM(42)** **HATLESKOG, J. T.**
Drill string compensators and riser tensioning systems for
offshore drilling.
Vol. 95 (TM), Paper 42.
Brown Brothers and Co. Ltd.
- V95/TM(43)** **SCOTT, A. J.**
Design of electrical systems for warships.
Vol. 95 (TM), Paper 43.
Ministry of Defence Procurement Executive.
- V95/TM(44)** **MILLS, J. S.***
 OLDHAM, R. C.**
Evaluation and prevention of electrostatic hazards associated
with oil tanker operations.
Vol. 95 (TM), Paper 44.
* Shell Research Ltd
** Shell International Marine Ltd.
- V95/TM/(45)** **BROWN, P. C.**
Storage and handling of coal for coal-fired ships.
Vol. 95 (TM), Paper 45.
Redler Conveyors Ltd.

CONFERENCES (C)

- CONFERENCE 14/C111-C115**
Proceedings of the Conference on
Marine Applications for Microprocessors.
The Institute of Marine Engineers, London,
18th November 1982.
- C111** **WILLIAMS, E. W. E.**
Microelectronics training for engineers.
Paper C111, pp. 1-5
Principal, Babcock-Bristol Training College.
- C112** **REED, A. W.**
The state of the art on microprocessor-based colour displays
for machinery surveillance and controls in merchant ships.
Paper C112, pp. 7-14.
British Ship Research Association.
- C113** **WOODLIFF, G. E.**
A versatile microprocessor system for marine and offshore
applications.
Paper C113, pp. 15-24.
GEC Electrical Projects Ltd.
- C114** **HARDWICK, A. M.**
Machinery surveillance systems in ships of the royal navy.
Paper C114, pp. 25-31.
Ministry of Defence, Foxhill, Bath.
- C115** **DRAFFIN, N. A.**
Development of a four-burner boiler management system for a
steam turbine VLCC.
Paper C115, pp. 33-39.
Shell International Marine PLC.

SECTION 2. AUTHOR INDEX

ALLANSON, J. T.	TM38	JONG, W. de	TM37
ARMSTRONG, G.	TM34	MILLS, J. S.	TM44
BALL, R.	TM32	MOTTRAM, D. J.	TM36
BROWN, P. C.	TM45	OLDHAM, R. C.	TM44
BRUCE, D. J. F.	C120	REED, A. W.	C112
CASALE, P. G.	TM35	ROYLE, D.	T39
CHARNLEY, R.	TM38	SCOTT, A. J.	TM43
COCKROFT, A. N.	C121	PIDGEON, E. C.	TM31*
DARLING, G. R. A.	C116	SINCLAIR, C. A.	C119
DAVIDSON, D.	TM35	SLATTER, B. H.	TM33+
DRAFFIN, N. A.	C115	STEPHENS, G. W.	TM32
FOY, D. B.	C117	THORNTON, R. H.	TM35
GRAHAM, M.	TM35	THORP, I.	TM34
HARDWICK, A. M.	C114	TUNE, H. E.	TM36
HASLAM-JONES, R. C.	TM36	WARKMAN, D. C.	TM40
HATLESKOG, J. T.	TM42	WILLIAMS, E. W. E.	C111
HORLOCK, E. J.	TM41	WILLIAMSON, B. L.	C118
IMO Secretariat	C122	WOODLIFF, G. E.	C113

SECTION 3. SUBJECT INDEX

- ACTIVE COMPENSATORS** : Crown Block Compensators : Travelling Block Compensators \$ Drill String Compensators : Riser Tensioning Systems \$ Offshore Drilling **TM42**
- AERO-DERIVED GAS TURBINES** : Gas Turbines \$ Marine Applications : Industrial Applications : Electricity Generation \$ Proteus Gas Turbines : Olympus Jet Engines : Spey Marine Propulsion Modules **TM33**
- ASSOCIATED CONTAINER TRANSPORT** (Australia) : Australian National Lines \$ Economics : Fuel Saving \$ Container Ships : Steam Propulsion Plant : Conversions **TM36**
- AUSTRALIAN NATIONAL LINES** : Associated Container Transport (Australia) \$ Economics : Fuel Saving \$ Container Ships : Steam Propulsion Plant : Conversions **TM36**
- AUXILIARY MACHINERY** : Energy Saving Devices : Main Propulsion Machinery \$ Variable Speed Pumps : Waste Heat Recovery : Shaft Driven Alternators \$ Economics : Selection Criteria : Life Cycle Costing **TM34**
- BOILERS** : Burner Management \$ Surveillance Systems : Sequencing Systems \$ Microprocessors : Solid State Controls **C115**
- BP SHIPPING SYSTEMS** \$ Performance Monitoring : Fuel Savings \$ Diesel Engines **TM40**
- BULKHEAD PENETRATION** : Electrical Systems : Electrical Cables \$ International Maritime Organisation : Safety of Life at Sea Convention 1974 \$ Fires : Safety Engineering **TM37**
- BUNKER FEEDERS** : Bunker Flow \$ Fuel Handling : Fuel Storage \$ Coal Fired Ships **TM45**
- BUREAU OF MARITIME AFFAIRS** \$: Liberia : International Maritime Organisation : Safety of Life at Sea Conventions \$ Marine Inquiries : Casualty Investigations **C120**
- BURNER MANAGEMENT** \$: Boilers \$ Surveillance Systems : Sequencing Systems \$ Microprocessors : Solid State Controls **C115**
- CABLES** : Controls : Power Systems \$ Electrical Systems \$ Royal Navy : Naval Vessels **TM43**
- CARGO PUMPING** : Inert Gas Operations : Tank Washing \$ Electrostatic Hazards \$ Oil Tanker Operations **TM44**
- CASUALTY DATA** : Casualty Reports \$ Marine Inquiries : Casualty Investigations \$ Safety **C121**
- CASUALTY INFORMATION** \$: Safety Regulations : Inquiry Findings \$ Casualty Prevention **C117**
- CASUALTY INVESTIGATIONS** \$: Marine Inquiries \$ Safety of Life at Sea Conventions \$ International Maritime Organisation : Maritime Safety Committee **C122**
 Marine Inquiries \$ Latent Defects : Human Error : Environmental Factors \$ Technical Factors **C119**
 Marine Inquiries \$ Liberia : Bureau of Maritime Affairs \$ International Maritime Organisation : Safety of Life at Sea Conventions **C120**
 Marine Inquiries \$ Safety \$ Casualty Data : Casualty Reports **C121**
- Marine Inquiries \$ United Kingdom : Panama \$ Legal Requirements : Commercial Interests **C118**
 Wreck Inquiries \$ United Kingdom : Department of Trade and Industry \$ Statutory Requirements : Merchant Shipping Acts **C116**
- CASUALTY PREVENTION** \$ Safety Regulations : Inquiry Findings : Casualty Information **C117**
- CASUALTY REPORTS** \$: Casualty Data \$ Marine Inquiries : Casualty Investigations \$ Safety **C121**
- CATALYTIC CRACKING** : Thermal Cracking : Uisbreaking \$ Fuel Standards : Fuel Quality : Fuel Availability \$ Residual Fuels : Refinery Processes **TM35**
- CLASSIFICATION SOCIETY REQUIREMENTS** : Electrical Systems \$ Solid Neutral Earthing : High-Resistance Neutral Earthing : Inductive Neutral Earthing \$ Neutral Earthing : Insulation **TM32**
- COAL FIRED SHIPS** \$ Bunker Flow : Bunker Feeders \$ Fuel Handling : Fuel Storage **TM45**
- COLOUR DISPLAYS** : Visual Display Units \$ Machinery Surveillance \$ Microprocessors : Display Software **C112**
- COMMERCIAL INTERESTS** \$: Legal Requirements \$ Marine Inquiries : Casualty Investigations \$ United Kingdom : Panama **C118**
- COMPUTER SYSTEMS** : Control Systems : Fault Diagnosis \$ Education : Training \$ Microelectronics **C111**
- CONTAINER SHIPS** : Steam Propulsion Plant : Conversions \$ Australian National Lines : Associated Container Transport (Australia) \$ Economics : Fuel Saving **TM36**
- CONTROL SYSTEMS** \$ Ship Manoeuvring : Dynamic Positioning : Position Controls \$ Microprocessors \$ Fault Diagnosis : Computer Systems \$ Education : Training \$ Microelectronics **C111**
- CONTROLS** : Power Systems : Cables \$ Electrical Systems \$ Royal Navy : Naval Vessels **TM43**
- CONVERSIONS** : Container Ships : Steam Propulsion Plant \$ Australian National Lines : Associated Container Transport (Australia) \$ Economics : Fuel Saving **TM36**
 Merchant Ships \$ Naval Engineering : Logistics \$ Falklands War : Royal Navy **TM41**
- CROWN BLOCK COMPENSATORS** : Travelling Block Compensators : Active Compensators \$ Drill String Compensators : Riser Tensioning Systems \$ Offshore Drilling **TM42**
- DEPARTMENT OF TRADE AND INDUSTRY** \$: United Kingdom \$ Statutory Requirements : Merchant Shipping Acts \$ Wreck Inquiries : Casualty Investigations **C116**
- DESALINATION** : Reverse Osmosis \$ Plant Design : Membrane Types : Maintenance \$ Economics **TM38**
- DESTROYERS** : Naval Vessels : Frigates \$ Royal Navy \$ Propulsion Systems : Maintenance Philosophy **TM31**

- DIESEL ENGINES** \$ BP Shipping Systems \$ Performance Monitoring : Fuel Saving **TM40**
- DISPLAY SOFTWARE** : Microprocessors \$ Visual Display Units : Colour Displays \$ Machinery Surveillance **C112**
- DRILL STRING COMPENSATORS** : Riser Tensioning Systems \$ Offshore Drilling \$ Crown Block Compensators : Travelling Block Compensators : Active Compensators **TM42**
- DYNAMIC POSITIONING** : Position Control \$: Ship Manoeuvring \$ Microprocessors \$ Control Systems **C113**
- ECONOMICS** \$ Desalination : Reverse Osmosis \$ Plant Design : Membrane Types : Maintenance **TM38**
 Fuel Saving \$ Container Ships : Steam Propulsion Plant : Conversions \$ Australian National Lines : Associated Container Transport (Australia) **TM36**
 Selection Criteria : Life Cycle Costing : Main Propulsion Machinery : Auxilliary Machinery : Energy Saving Devices \$ Variable Speed Pumps : Waste Heat Recovery : Shaft Drive Alternators **TM34**
- EDUCATION** : Training \$ Microelectronics \$ Computer Systems : Control Systems : Fault Diagnosis **C111**
- ELECTRICAL CABLES** : Bulkhead Penetration : Electrical Systems \$ International Maritime Organisation : Safety of Life at Sea Convention 1974 \$ Fires : Safety Engineering **TM37**
- ELECTRICAL SYSTEMS** \$ Royal Navy : Navy Vessels \$ Power Systems : Cables : Controls **TM43**
 Classification Society Requirements \$ Solid Neutral Earthing : High-Resistance Neutral Earthing : Inductive Neutral Earthing \$ Neutral Earthing : Insulation **TM32**
 Electrical Cables : Bulkhead Penetration \$ International Maritime Organisation : Safety of Life at Sea Convention 1974 \$ Fires : Safety Engineering **TM37**
- ELECTRICITY GENERATION** : Marine Applications : Industrial Applications \$ Proteus Gas Turbines : Olympus Jet Engines : Spey Marine Propulsion Modules \$ Gas Turbines : Aero-Derived Gas Turbines **TM33**
- ELECTROSTATIC HAZARDS** \$ Oil Tanker Operations \$ Tank Washing : Cargo Pumping : Inert Gas Operations **TM44**
- ENERGY SAVING DEVICES** : Main Propulsion Machinery : Auxilliary Machinery \$ Variable Speed Pumps : Waste Heat Recovery : Shaft Driven Alternators \$ Economics : Selection Criteria : Life Cycle Costing **TM34**
- ENVIRONMENTAL FACTORS** \$: Latent Defects : Human Error \$ Technical Factors \$ Marine Inquiries : Casualty Investigations **C119**
- FALKLANDS WAR** : Royal Navy \$ Merchant Ships : Conversions \$ Naval Engineering : Logistics **TM41**
- FAULT DIAGNOSIS** : Computer Systems : Control Systems \$ Education : Training \$ Microelectronics **C111**
- FIRES** : Safety Engineering \$ Electrical Systems : Electrical Cables : Bulkhead Penetration \$ International Maritime Organisation : Safety of Life at Sea Convention 1974 **TM37**
- FRIGATES** : Destroyers : Naval Vessels \$ Royal Navy \$ Propulsion Systems : Maintenance Philosophy **TM31**
- FUEL AVAILABILITY** : Fuel Standards : Fuel Quality \$ Residual Fuels : Refinery Processes \$ Uisbreaking : Catalytic Cracking : Thermal Cracking **TM35**
- FUEL HANDLING** : Fuel Storage \$ Coal Fired Ships \$ Bunker Flow : Bunker Feeders **TM45**
- FUEL QUALITY** : Fuel Availability : Fuel Standards \$ Residual Fuels : Refinery Processes \$ Uisbreaking : Catalytic Cracking : Thermal Cracking **TM35**
 Statistical Review \$ Residual Fuels \$ Fuel Testing Services : Fuel Standards **TM39**
- FUEL SAVING** : Economics \$ Container Ships : Steam Propulsion Plant : Conversions \$ Australian National Lines : Associated Container Transport (Australia) **TM36**
 Performance Monitoring \$ Diesel Engines \$ BP Shipping Systems **TM40**
- FUEL STANDARDS** : Fuel Testing Services \$ Fuel Quality : Statistical Review \$ Residual Fuels **TM39**
 Fuel Quality : Fuel Availability \$ Residual Fuels : Refinery Processes \$ Uisbreaking : Catalytic Cracking : Thermal Cracking **TM35**
- FUEL STORAGE** : Fuel Handling \$ Coal Fired Ships \$ Bunker Flow : Bunker Feeders **TM45**
- FUEL TESTING SERVICES** : Fuel Standards \$ Fuel Quality : Statistical Review \$ Residual Fuels **TM39**
- GAS TURBINES** : Aero-Derived Gas Turbines \$ Marine Applications : Industrial Applications : Electricity Generation \$ Proteus Gas Turbines : Oympus Jet Engines : Spey Marine Propulsion Modules **TM33**
- HARDWARE CONFIGURATION** \$: Software Development \$ Microprocessors \$ Royal Navy : Machinery Surveillance **C114**
- HIGH RESISTANCE NEUTRAL EARTHING** : Inductive Neutral Earthing : Solid Neutral Earthing \$ Earthing : Insulation Electrical Systems : Classification Society Requirements **TM32**
- HUMAN ERROR** : Environmental Factors \$: Latent Defects \$ Technical Factors \$ Marine Inquiries : Casualty Investigations **C119**
- INDUCTIVE NEUTRAL EARTHING** : Solid Neutral Earthing : High-Resistance Neutral Earthing \$ Neutral Earthing : Insulation \$ Electrical Systems : Classification Society Requirements **TM32**
- INDUSTRIAL APPLICATIONS** : Electricity Generation : Marine Applications \$ Proteus Gas Turbines : Olympus Jet Engines : Spey Marine Propulsion Modules \$ Gas Turbines : Aero-Derived Gas Turbines **TM33**
- INERT GAS OPERATIONS** : Tank Washing : Cargo Pumping \$ Electrostatic Hazards \$ Oil Tanker Operations **TM44**
- INQUIRY FINDINGS** : Casualty Information \$: Safety Regulations \$ Casual Prevention **C117**
- INSULATION** : Neutral Earthing \$ Electrical Systems : Classification Society Requirements \$ Solid Neutral Earthing : High-Resistance Neutral Earthing : Inductive Neutral Earthing **TM32**
- INTERNATIONAL MARITIME ORGANISATION** : Maritime Safety Committee \$ Marine Inquiries : Casualty Investigations \$ Safety of Life at Sea Conventions **C122**
 Safety of Life at Sea Convention 1974 \$ Fires : Safety Engineering \$ Electrical Systems : Electrical Cables : Bulkhead Penetration **TM37**

- Safety of Life at Sea Conventions \$ Marine Inquiries :
Casualty Investigations \$ Liberia : Bureau of Maritime
Affairs **C120**
- LATENT DEFECTS** : Human Error : Environmental Factors
\$ Technical Factors \$ Marine Inquiries : Casualty
Investigations **C119**
- LEGAL REQUIREMENTS** : Commercial Interests \$ Marine
Inquiries : Casualty Investigations \$ United Kingdom :
Panama **C118**
- LIBERIA** : Bureau of Maritime Affairs \$ International
Maritime Organisation : Safety of Life at Sea Conventions \$
Marine Inquiries : Casualty Investigations **C120**
- LIFE CYCLE COSTING** : Economics : Selection Criteria \$
Main Propulsion Machinery : Auxilliary Machinery : Energy
Saving Devices \$ Variable Speed Pumps : Waste Heat
Recovery : Shaft Driven Alternators **TM34**
- LOGISTICS** : Naval Engineering \$ Falklands War : Royal
Navy \$ Merchant Ships : Conversions **TM41**
- MACHINERY SURVEILLANCE** \$: Royal Navy \$ Software
Development : Hardware Configuration \$ Microprocessors
C114
Microprocessors : Display Software \$ Visual Display Units
: Colour Displays **C112**
- MAIN PROPULSION MACHINERY** : Auxilliary Machinery :
Energy Saving Devices : Variable Speed Pumps : Waste Heat
Recovery : Shaft Driven Alternators \$ Economics : Selection
Criteria : Life Cycle Costing **TM34**
- MAINTENANCE PHILOSOPHY** : Propulsion Systems \$
Naval Vessels : Frigates : Destroyers \$ Royal Navy **TM31**
- MAINTENANCE** : Plant Design : Membrane Types \$
Economics \$ Desalination : Reverse Osmosis **TM38**
- MARINE APPLICATIONS** : Industrial Applications :
Electricity Generation \$ Proteus Gas Turbines : Olympus Jet
Engines : Spey Marine Propulsion Modules \$ Gas Turbines :
Aero-Derived Gas Turbines **TM33**
- MARINE INQUIRIES** : Casualty Investigations \$ Safety of
Life at Sea Conventions \$ International Maritime
Organisation : Maritime Safety Committee **C122**
Casualty Investigations \$ Latent Defects : Human Error :
Environmental Factors \$ Technical Factors **C119**
Casualty Investigations \$ Bureau of Maritime Affairs \$
International Maritime Organisation : Safety of Life at Sea
Conventions **C120**
Casualty Investigations \$ Safety \$ Casualty Data : Casualty
Reports **C121**
Casualty Investigations \$ United Kingdom : Panama \$
Legal Requirements : Commercial Interests **C118**
- MARITIME SAFETY COMMITTEE** \$: International
Maritime Organisation \$ Marine Inquiries : Casualty
Investigations \$ Safety of Life at Sea Conventions **C122**
- MEMBRANE TYPES** : Maintenance : Plant Design \$
Economics \$ Desalination : Reverse Osmosis **TM38**
- MERCHANT SHIPPING ACTS** \$: Statutory Requirements \$
Wreck Inquiries : Casualty Investigations \$ United Kingdom :
Department of Trade and Industry **C116**
- MERCHANT SHIPS** : Conversions \$ Naval Engineering :
Logistics \$ Falklands War : Royal Navy **TM41**
- MICROELECTRONICS** \$ Computer Systems : Control
Systems : Fault Diagnosis \$ Education : Training **C111**
- MICROPROCESSORS** \$ Control Systems \$ Ship
Manoeuvring : Dynamic Positioning : Position Control **C113**
Royal Navy : Machinery Surveillance \$ Software
Development : Hardware Configuration **C114**
Display Software \$ Visual Display Units : Colour Displays \$
Machinery Surveillance **C112**
Solid State Controls \$ Boilers : Burner Management \$
Surveillance Systems : Sequencing Systems **C115**
- NAVAL ENGINEERING** : Logistics \$ Falklands War : Royal
Navy \$ Merchant Ships : Conversions **TM41**
- NAVAL VESSELS** : Frigates : Destroyers \$ Royal Navy \$
Propulsion Systems : Maintenance Philosophy **TM31**
Royal Navy \$ Power Systems : Cables : Controls \$
Electrical Systems **TM43**
- NEUTRAL EARTHING** : Insulation \$ Electrical Systems :
Classification Society Requirements \$ Solid Neutral Earthing :
High-Resistance Neutral Earthing : Inductive Neutral
Earthing **TM32**
- OFFSHORE DRILLING** \$ Crown Block Compensators :
Travelling Block Compensators : Active Compensators \$ Drill
String Compensators : Riser Tensioning Systems **TM42**
- OIL TANKER OPERATIONS** \$ Tank Washing : Cargo
Pumping : Inert Gas Operations \$ Electrostatic Hazards
TM44
- OLYMPUS JET ENGINES** : Spey Marine Propulsion Modules
: Proteus Gas Turbines \$ Gas Turbines : Aero-Derived Gas
Turbines \$ Marine Applications : Industrial Applications :
Electricity Generation **TM33**
- PANAMA** \$: United Kingdom \$ Legal Requirements :
Commercial Interests \$ Marine Inquiries : Casualty
Investigations **C118**
- PERFORMANCE MONITORING** : Fuel Saving \$ Diesel
Engines \$ BP Shipping Systems **TM40**
- PLANT DESIGN** : Membrane Types : Maintenance \$
Economics \$ Desalination : Reverse Osmosis **TM38**
- POSITION CONTROL** \$: Ship Manoeuvring : Dynamic
Positioning \$ Microprocessors \$ Control Systems **C113**
- POWER SYSTEMS** : Cables : Controls : Electrical Systems \$
Royal Navy : Naval Vessels **TM43**
- PROPULSION SYSTEMS** : Maintenance Philosophy \$ Naval
Vessels : Frigates : Destroyers \$ Royal Navy **TM31**
- PROTEUS GAS TURBINES** : Olympus Jet Engines : Spey
Marine Propulsion Modules \$ Gas Turbines : Aero-Derived
Gas Turbines \$ Marine Applications : Industrial Applications :
Electricity Generation **TM33**
- REFINERY PROCESSES** : Residual Fuels \$ Uisbreaking :
Catalytic Cracking : Thermal Cracking \$ Fuel Standards : Fuel
Quality : Fuel Availability **TM35**
- RESIDUAL FUELS** \$ Fuel Testing Services : Fuel Standards \$
Fuel Quality : Statistical Review **TM39**
: Refinery Processes \$ Uisbreaking : Catalytic Cracking :
Thermal Cracking \$ Fuel Standards : Fuel Availability
TM35

- REVERSE OSMOSIS** : Desalination \$ Plant Design : Membrane Types : Maintenance \$ Economics **TM38**
- RISER TENSIONING SYSTEMS** : Drill String Compensators \$ Offshore Drilling \$ Crown Block Compensators : Travelling Block Compensators : Active Compensators **TM42**
- ROYAL NAVY** \$ Propulsion Systems : Maintenance Philosophy \$ Naval Vessels : Frigates : Destroyers **TM31**
: Falklands War \$ Merchant Ships : Conversions \$ Naval Engineering : Logistics **TM41**
: Machinery Surveillance \$ Software Development : Hardware Configuration \$ Microprocessors **C114**
: Naval Vessels \$ Power Systems : Cables : Controls \$ Electrical Systems **TM43**
- SAFETY ENGINEERING** : Fires \$ Electrical Systems : Electrical Cables : Bulkhead Penetration \$ International Maritime Organisation : Safety of Life at Sea Convention 1984 **TM37**
- SAFETY OF LIFE AT SEA CONVENTION 1974** : International Maritime Organisation \$ Fires : Safety Engineering \$ Electrical Systems : Electrical Cables : Bulkhead Penetration **TM37**
\$ International Maritime Organisation : Maritime Safety Committee \$ Maritime Inquiries : Casualty Investigations **C122**
\$: International Maritime Organisation \$ Marine Inquiries : Casualty Investigations \$ Liberia : Bureau of Maritime Affairs **C120**
- SAFETY REGULATIONS** : Inquiry Findings : Casualty Information \$ Casualty Prevention **C117**
- SAFETY** \$ Casualty Data : Casualty Reports \$ Marine Inquiries : Casualty Investigations **C121**
- SELECTION CRITERIA** : Life Cycle Costing : Economics \$ Main Propulsion Machinery : Auxilliary Machinery : Energy Saving Devices \$ Variable Speed Pumps : Waste Heat Recovery : Shaft Driven Alternators **TM34**
- SEQUENCING SYSTEMS** \$ Surveillance Systems \$ Microprocessors : Solid State Controls \$ Boilers : Burner Management **C115**
- SHAFT DRIVEN ALTERNATORS** : Variable Speed Pumps : Waste Heat Recovery \$ Economics : Selection Criteria : Life Cycle Costings \$ Main Propulsion Machinery : Auxilliary Machinery : Energy Saving Devices **TM34**
- SHIP MANOEUVRING** : Dynamic Positioning : Position Control \$ Microprocessors \$ Control Systems **C113**
- SOFTWARE DEVELOPMENT** : Hardware Configuration \$ Microprocessors \$ Royal Navy : Machinery Surveillance **C114**
- SOLID NEUTRAL EARTHING** : High-Resistance Neutral Earthing : Inductive Neutral Earthing \$ Neutral Earthing : Insulation \$ Electrical Systems : Classification Society Requirements **TM32**
- SOLID STATE CONTROLS** : Microprocessors \$ Boilers : Burner Management \$ Surveillance Systems : Sequencing Systems **C115**
- SPEY MARINE PROPULSION MODULES** : Proteus Gas Turbines : Olympus Jet Engines \$ Gas Turbines : Aero-Derived Gas Turbines \$ Marine Applications : Industrial Applications : Electricity Generation **TM39**
- STATISTICAL REVIEW** : Fuel Quality \$ Residual Fuels \$ Fuel Testing Services : Fuel Standards **TM39**
- STATUTORY REQUIREMENTS** : Merchant Shipping Acts \$ Wreck Inquiries : Casualty Investigations \$ United Kingdom : Department of Trade and Industry **C116**
- STEAM PROPULSION PLANT** : Conversions : Container Ships \$ Australian National Lines : Associated Container Transport (Australia) \$ Economics : Fuel Saving **TM36**
- SURVEILLANCE SYSTEMS** : Sequencing Systems \$ Microprocessors : Solid State Controls \$ Boilers : Burner Management **C115**
- TANK WASHING** : Cargo Pumping : Inert Gas Operations \$ Electrostatic Hazards \$ Oil Tanker Operations **TM44**
- TECHNICAL FACTORS** \$ Marine Inquiries : Casualty Investigations \$ Latent Defects : Human Error : Environmental Factors **C119**
- THERMAL CRACKING** : Visbreaking : Catalytic Cracking \$ Fuel Standards : Fuel Quality : Fuel Availability \$ Residual Fuels : Refinery Processes **TM35**
- TRAINING** : Education \$ Microelectronics \$ Computer Systems : Control Systems : Fault Diagnosis **C111**
- TRAVELLING BLOCK COMPENSATORS** : Active Compensators : Crown Block Compensators \$ Drill String Compensators : Riser Tensioning Systems \$ Offshore Drilling **TM42**
- UNITED KINGDOM** : Department of Trade and Industry \$ Statutory Requirements : Merchant Shipping Acts \$ Wreck Inquiries : Casualty Investigations : **C116**
: Panama \$ Legal Requirement : Commercial Interests \$ Marine Inquiries : Casualty Investigations **C118**
- VARIABLE SPEED PUMPS** : Waste Heat Recovery : Shaft Driven Alternators \$ Economics : Selection Criteria : Life Cycle Costing \$ Main Propulsion Machinery : Auxilliary Machinery : Energy Saving Devices **TM34**
- VISBREAKING** : Catalytic Cracking : Thermal Cracking \$ Fuel Standards : Fuel Quality : Fuel Availability \$ Residual Fuels : Refinery Processes **TM35**
- VISUAL DISPLAY UNITS** : Colour Displays \$ Machinery Surveillance \$ Microprocessors : Display Software **C112**
- WASTE HEAT RECOVERY** : Shaft Driven Alternators : Variable Speed Pumps \$ Economics : Selection Criteria : Life Cycle Costing \$ Main Propulsion Machinery : Auxilliary Machinery : Energy Saving Devices **TM34**
- WRECK INQUIRIES** : Casualty Investigations \$ United Kingdom : Department of Trade and Industry \$ Statutory Requirements : Merchant Shipping Acts **C116**

The Institute of Marine Engineers

76 Mark Lane, London EC3R 7JN



NOTICE OF MEETING

NOTICE IS HEREBY GIVEN that the Ninety-fourth ANNUAL GENERAL MEETING of THE INSTITUTE OF MARINE ENGINEERS will be held at 76 Mark Lane, London, E.C.3. on THURSDAY, 10 MARCH 1983, at 17.30 hours for the following purposes:—

1. To receive and consider and, if thought fit, adopt the Annual Report of the Council and the Accounts for the year ended 30 September 1982.
2. To re-appoint Messrs. Finnie Ross Allfields as Auditors to hold office until the conclusion of the next Annual General Meeting.
3. To authorise the Council to fix the remuneration of the Auditors.
4. To consider the following Special business.
 - (a) To note the appointments by the Council of the President, Deputy President(s), and Vice-Presidents.
 - (b) To note the report of the Scrutineers and the result of the elections to the Council of the Honorary Treasurer, Fellows, Member, and Associate Members.
 - (c) To appoint Scrutineers for the year 1983/84 to be at the counting of the votes in connection with elections to Council.

BY ORDER OF THE COUNCIL

J. STUART ROBINSON

Director and Secretary

The Institute of Marine Engineers

Founded 1889 and incorporated by Royal Charter 1933

PATRON: HER MAJESTY THE QUEEN

PAST PRESIDENTS

- *1889 ASPLAN BELDAM
- *1890 G. W. MANUEL, R.N.R.
- *1891 PETER DENNY, LL.D.
- *1892 RT. HON. LORD KELVIN, G.C.V.O., LL.D., F.R.S.
- *1893 SIR W. H. WHITE, K.C.B., LL.D., F.R.S.
- *1894 SIR THOMAS SUTHERLAND, G.C.M.G.
- *1895 ENG. VICE-ADMIRAL SIR A. J. DURSTON, K.C.B.
- *1896 SIR EDWIN SANDYS DAWES, K.C.M.G.
- *1897 SIR J. FORTESCUE FLANNERY, Bt., M.P.
- *1898 JOHN INGLIS, LL.D.
- *1899 RT. HON. LORD INCHCAPE, G.C.M.G., K.C.S.I., K.C.I.E.
- *1900 COLONEL J. M. DENNY
- *1901 JOHN CORRY, J.P.
- *1902 D. J. DUNLOP
- *1903 SIR JOHN GUNN, Kt.
- *1904 THE HON. SIR CHARLES A. PARSONS, O.M., K.C.B.
- *1905 RT. HON. LORD BEARSTEAD OF MAIDSTONE
- *1906 RT. HON. VISCOUNT PIRRIE, K.P., P.C.
- *1907 SIR JAMES KNOTT, J.P.
- *1908 JAMES DENNY, J.P.
- *1909 JAMES DIXON (died July 1909)
- *1909 JAMES DENNY, J.P. (from August 1909)
- *1910 SIR DAVID GILL, K.C.B., D.Sc., F.R.S.
- *1911 HIS GRACE THE DUKE OF MONTROSE, K.T., C.B., C.V.O.
- *1912 SUMMERS HUNTER, C.B.E.
- *1913 SIR THOMAS L. DEVITT, Bt.
- *1914-15 SIR ARCHIBALD DENNY, Bt., LL.D.
- *1916 SIR JAMES MILLS, K.C.M.G.
- *1917 R. H. GREEN
- *1918 J. T. MILTON, D.Sc.
- *1919-20 RT. HON. VISCOUNT WEIR OF EASTWOOD, G.C.B., P.C., D.L.
- *1921 RT. HON. LORD MACLAY OF GLASGOW, P.C., LL.D., J.P.
- *1922 ENG. VICE-ADMIRAL SIR GEORGE G. GOODWIN, K.C.B., LL.D.
- *1923 RT. HON. EARL HOWE, C.B.E., P.C.
- *1924 SIR WESTCOTT S. ABELL, K.B.E., M.A.
- *1925 RT. HON. LORD INVERFORTH, P.C.
- *1926 RT. HON. LORD KYLSANT OF CARMARTHEN, G.C.M.G.
- *1927 ENG. CAPT. W. ONYON, M.V.O., R.N.
- *1928 SIR ALAN G. ANDERSON, G.B.E.
- *1929 ENG. VICE-ADMIRAL SIR ROBERT B. DIXON, K.C.B., D.Eng.
- *1930 LIEUT. CDR. SIR AUGUST B. T. CAYZER, Bt., R.N.
- *1931 SIR FREDERICK E. REBBECK, K.B.E., D.Sc., D.L., J.P.
- *1932 CDR. SIR C. W. CRAVEN, Bt., O.B.E., R.N.
- *1933 SIR S. GEORGE HIGGINS, C.B.E.
- *1934 JOHN H. SILLEY, O.B.E.
- *1935 SIR MAURICE E. DENNY, Bt., K.B.E., S.B., J.P.
- *1936 RT. HON. LORD CRAIGMYLE OF CRAIGMYLE
- *1937 SIR STEPHEN J. PIGOTT, D.Sc., J.P.
- *1938 SIR E. JULIAN FOLEY, C.B.
- *1939-41 SIR PERCY E. BATES, Bt., G.B.E.
- *1942 RT. HON. LORD MOTTISTONE, P.C., C.B., C.M.G., D.S.O.
- *1943-44 ENG. VICE-ADMIRAL SIR GEORGE PREECE, K.C.B.
- *1945 SIR WILLIAM CRAWFORD CURRIE, G.B.E.
- *1946-47 SIR AMOS L. AYRE, K.B.E., D.Sc.
- *1948 CDR. SIR ROBERT MICKLEM, C.B.E., R.N.
- *1949 RT. HON. LORD ROTHERWICK
- *1950 SIR A. MURRAY STEPHEN, M.C., B.A.
- *1951 S. F. DOREY, C.B.E., D.Sc., Wh.Ex., F.R.S.
- *1952 RT. HON. LORD HOWARD DE WALDEN
- *1953 SIR GILMOUR JENKINS, K.C.B., K.B.E., M.C.
- *1954-55 H. A. SILLEY
- *1956 SIR DONALD F. ANDERSON
- *1957 SIR RONALD GARRETT
- *1958 E. L. DENNY, B.Sc.
- *1959 SIR WILLIAM WALLACE, C.B.E., LL.D.
- *1960 RT. HON. VISCOUNT SIMON, C.M.G.
- *1961 C. C. POUNDER
- *1962 HIS ROYAL HIGHNESS THE PRINCE PHILIP, DUKE OF EDINBURGH
- *1963 SIR NICHOLAS CAYZER, Bt.

PAST PRESIDENTS (Continued)

- 1964 A. LOGAN, O.B.E.
- 1965 SIR JOHN HUNTER, C.B.E., B.Sc., J.P.
- 1966 SIR STEWART MAC TIER, C.B.E., M.A.
- 1967 VICE-ADMIRAL SIR FRANK MASON, K.C.B.
- 1968-69 F. B. BOLTON, M.C.
- 1970 M. A. SINCLAIR SCOTT, C.B.E.
- 1971 R. MUNTON, C.B.E., B.Sc.
- 1972 VICE-ADMIRAL SIR GEORGE RAPER, K.C.B.
- 1973 DR. S. ARCHER
- *1974 DR. A. W. DAVIS
- 1975 T. KAMEEN
- 1976 G. VICTORY
- 1977 G. MCNEE, B.Sc.
- 1978 D. H. ALEXANDER, O.B.E., F.C.G.I., M.Sc., Wh.Sc.
- 1979 J. MCAFEE
- 1980 L. D. TRENCHARD
- 1981 J. MCNAUGHT

PAST CHAIRMEN OF COUNCIL

- *1889-97 J. H. THOMSON
- *1898 S. C. SAGE
- *1899-00 A. BOYLE
- *1901-06 W. C. ROBERTS
- *1907-08 W. LAWRIE
- *1909-12 J. T. MILTON, D.Sc.
- *1913-14 J. HALLETT
- *1915 GEORGE ADAMS
- *1916 H. A. RUCK-KEENE
- *1917 A. BOYLE
- *1918 J. SHANKS
- *1919 B. P. FIELDEN
- *1920 JAMES M. DEWAR
- *1921 H. A. RUCK-KEENE
- *1922 J. CLARK
- *1923 JAMES CARNAGHAN
- *1924 B. P. FIELDEN
- *1925 F. M. TIMPSON
- *1926 R. S. KENNEDY
- *1927 A. H. MATHER
- *1928 W. E. FARENDEEN
- *1929 R. T. WILSON (to 2nd September) then J. NICOL
- *1930-31 H. J. VOSE
- *1932 JAMES CARNAGHAN
- *1933 S. N. KENT
- *1934 J. HAMILTON GIBSON, O.B.E., M.Eng.
- *1935 T. R. THOMAS, B.Sc.
- *1936 H. S. HUMPHREYS
- *1937-38 R. RAINIE, M.C.
- *1939 A. F. C. TIMPSON, M.B.E.
- *1940 F. W. YOULDON
- *1941 T. A. CROMPTON
- *1942 H. J. WHEADON
- *1943 J. CALDERWOOD, M.Sc.
- *1944 S. A. SMITH, M.Sc.
- 1945 W. LYNN NELSON, O.B.E.
- *1946 J. A. RHYNAS
- *1947 W. SAMPSON
- 1948 R. K. CRAIG, C.B.E.
- 1949 A. LOGAN, O.B.E.
- *1950 G. ORMISTON, C.B.E.
- *1951 JAMES TURNBULL, O.B.E.
- *1952 R. W. CROMARTY
- *1953 STEWART HOGG, O.B.E.
- *1954 J. P. CAMPBELL
- 1955 W. J. FERGUSON, M.Eng.
- *1956 T. W. LONGMUIR
- *1957 REAR-ADMIRAL F. E. CLEMISTON, C.B.
- 1958 R. MUNTON, C.B.E., B.Sc.
- *1959 R. COOK, M.Sc.
- *1960 W. R. HARVEY, O.B.E.
- *1961 B. P. INGAMILLS, C.B.E.
- 1962 VICE-ADMIRAL SIR FRANK MASON, K.C.B.
- 1963 CDR. F. M. PASKINS, O.B.E., R.D., R.N.R.
- 1964 W. YOUNG, C.B.E.
- *1965 H. N. PEMBERTON

*Deceased.

PAST CHAIRMEN OF COUNCIL (Continued)

*1966 R. R. STRACHAN, C.B.E.
 1967 J. MCAFEE
 1968 CAPTAIN W. S. C. JENKS, O.B.E., R.N.
 1969 B. HILDREW, M.Sc.
 1970 H. E. UPTON, O.B.E.
 1971 W. MCCLIMONT, B.Sc.
 *1972 R. L. RAWLINGS

*Deceased.

PAST HONORARY TREASURERS

*1889 J. W. DOMONEY
 *1890-96 ROBERT LESLIE
 *1897-00 F. W. SHOREY
 *1901-03 G. W. KIDD
 *1904-05 JAMES BLAKE
 *1906-18 A. H. MATHER
 *1919-55 A. ROBERTSON, C.C.
 *1955-66 J. CALDERWOOD, M.Sc.
 *1966 H. J. WHEADON
 *1966-72 R. COOK, M.Sc.
 1973-79 J. MCNAUGHT
 1980-81 G. MCNEE, B.Sc.

HONORARY FELLOWS

H.R.H. THE PRINCE PHILIP, DUKE OF EDINBURGH, K.G.,
 K.T., G.B.E.
 SIR JAMES RAMSAY, K.C.M.G., C.B.E., D.S.C.

COUNCIL AND COMMITTEES AS AT 30 SEPTEMBER 1982**COUNCIL****President**

COMMANDER E. C. PIDGEON, R.N.

Deputy President

B. HILDREW, C.B.F., M.Sc.

Honorary Treasurer

J. MCNAUGHT

Fellows

S. N. CLAYTON
 C. A. CREBER, M.Sc.
 R. M. DUGGAN, M.A.
 M. FALCUS, M.Sc.
 C. R. FORD, M.Sc., B.Sc.
 G. W. FOX
 E. L. GREEN
 A. F. HARROLD
 F. A. HAY, B.Sc.
 J. HEIGHWAY
 J. HICKS
 N. C. HUNTER
 CDR. V. M. LAKE
 S. W. NICHOLLS
 P. S. ROSSETER
 A. B. SCRIMGEOUR
 C. A. SINCLAIR
 J. L. SNOWDON
 A. H. STOBBS (casual vacancy)
 D. A. TAYLOR
 A. J. WHARTON
 J. C. WOODHEAD

Vice-Presidents

DR. J. COWLEY
 R. CRAWLEY
 D. W. CROSBY
 J. E. GANDER
 J. H. GILBERTSON, M.B.E.
 W. N. JOHNSTON
 REAR-ADMIRAL P. R. MARRACK, C.B.
 COMMANDER M. B. F. RANKEN, R.N.
 S. SPEED

Members

E. J. BANNISTER
 A. J. COUCHMAN, B.Sc.
 CDR. R. A. A. DEAN, R.N.
 D. MCKINLAY

Associate Members

A. J. A. KEMERY
 LT. CDR. A. C. MOORE, R.N.
 C. J. TAYLOR

Past Presidents (by invitation)

J. MCAFEE
 L. D. TRENCHARD

The Chairman of the U.K. and Overseas Branches (by invitation)

E. T. H. SMITH (Aberdeen Maritime)
 A. J. BARRETT (Devon & Cornwall)
 R. S. PYWELL (Kingston upon Hull & Humber Area)
 W. H. MOORE (North East Coast)
 E. C. SIDES (Northern Ireland Joint)
 P. L. MILNE (North Midlands)
 J. A. MAHONEY (North West England)
 J. A. LAZARAS (Scottish)
 CDR. E. R. MAY (South East England)
 PROFESSOR G. J. GOODRICH (Southern Joint)
 J. E. HAMPTON (South Wales)
 T. A. MOGG (Western Joint)
 R. N. COOK (West Midlands)
 K. P. O'MAHONY (Cork)
 A. BOLGER (Dublin)
 L. S. KNIGHT (Canberra, Australia)
 J. McMILLAN (Newcastle, Australia)
 LT. CDR. A. W. HARRIS (Queensland, Australia)
 W. K. BURNSIDE (South Australia)
 L. J. PRANDOLINI (Sydney, Australia)
 D. C. BEWS (Victoria, Australia)
 D. R. AUSTIN (Western Australia)
 C. J. OLLIVER (Auckland, N.Z.)
 K. BEALE (South Island, N.Z.)
 K. L. D'SOUZA (Wellington, N.Z.)
 M. A. S. DAWOOD (Egypt)
 W. G. SOUTHERN (Hong Kong Joint)
 E. DEBONO (Malta Joint)
 J. W. HILLERS (Netherlands)
 REAR ADMIRAL M. I. ARSHAD (Pakistan Joint)
 C. PETRIE (Singapore)
 A. RANGUNATHAN (Sri Lanka)
 R. H. IMLAH (Eastern U.S.A.)

Honorary Vice-Presidents

T. W. BUNYAN, B.Sc.
 J. H. COLES
 R. K. CRAIG
 W. J. FERGUSON
 CAPTAIN W. C. S. JENKS
 W. McLAUGHLIN
 W. LYNN NELSON
 CDR. F. M. PASKINS, R.N.
 A. R. RIDDELL
 D. SKAE
 J. B. THOMSON
 H. E. UPTON, O.B.E.
 CAPTAIN M. A. VALLIS, R.N.

COMMITTEES**Council Advisory and Policy**

B. HILDREW, C.B.E., M.Sc.
 S. N. CLAYTON
 C. A. CREBER, M.Sc.
 DR. J. COWLEY
 R. CRAWLEY
 R. M. DUGGAN, M.A.
 C. R. FORD, M.Sc., B.Sc.
 J. E. GANDER
 F. A. HAY, B.Sc.
 A. F. HARROLD
 J. HEIGHWAY
 COMMANDER V. M. LAKE, R.N.
 J. MCNAUGHT
 C. A. SINCLAIR
 S. SPEED
 C. J. TAYLOR
 A. J. WHARTON

Office Bearers Nomination

B. HILDREW, C.B.E., M.Sc.
 DR. J. COWLEY
 C. R. FORD, M.Sc. B.Sc.
 R. M. DUGGAN, M.A.
 J. E. GANDER
 J. HEIGHWAY
 J. MCNAUGHT

C.E.I. Affairs

B. HILDREW, C.B.E., M.Sc.
 S. N. CLAYTON
 DR. J. COWLEY
 A. J. WHARTON

(By invitation)

COMMANDER E. C. PIDGEON, R.N. (President), (C.E.I. Board and Presidents' Committee)
 R. CRAWLEY (C.E.I. Committee C)
 C. A. CREBER (Alternate C.E.I. Committee F)
 A. F. HARROLD (Alternate C.E.I. Committee E)
 J. HEIGHWAY (Alternate C.E.I. Committee A)
 A. J. A. KEMERY (Alternate Committee C)
 S. W. NICHOLLS (Alternate C.E.I. Committee B and E.R.B. Educational Qualifications Committee)
 C. A. SINCLAIR (C.E.I. Committee E)
 C. J. TAYLOR (E.R.B. Technicians Section)

By-Laws

B. HILDREW, C.B.E., M.Sc.
 DR. J. COWLEY
 R. CRAWLEY
 J. E. GANDER
 J. MCNAUGHT

COMMITTEES (continued)

Marine Management (Holdings) Limited Board

CDR. E. C. PIDGEON, R.N. (Chairman)
 E. J. BANNISTER
 A. J. COUCHMAN, B.Sc.
 J. H. GILBERTSON, M.B.E.
 J. HICKS
 B. HILDREW, C.B.E., M.Sc.
 J. MCNAUGHT
 CDR. M. B. F. RANKEN, R.N.
 P. M. BUCKTON (Secretary)

Activities Division Advisory Committee

J. H. GILBERTSON, M.B.E. (Chairman)
 A. R. BENNETT
 F. C. BROWN
 T. W. BEWSEY
 CDR. A. J. CALVEY, R.D., R.N.R.
 R. F. CLARK, B.Sc.
 C. A. CREBER, M.Sc.
 G. W. FOX
 J. E. GANDER
 C. A. SINCLAIR
 L. J. SPENCER
 I. D. TRENCHARD
 A. J. WHARTON

Activities Division Social Events Committee

J. H. GILBERTSON, M.B.E. (Chairman)
 A. R. BENNETT
 F. C. BROWN
 CDR. A. J. CALVEY, R.D., R.N.R.
 G. W. FOX
 N. HARRISON
 L. J. SPENCER
 A. F. WHITE
 B. J. WOODHOUSE

Management Division Membership Committee

A. J. WHARTON (Chairman)
 D. S. ARIS, B.Sc.
 CDR. R. A. A. DEAN, R.N.
 J. A. DUNCAN
 F. A. HAY, B.Sc.
 LT. CDR. A. C. MOORE, R.N.
 S. W. NICHOLLS
 A. NORRIS
 A. B. SCRIMGEOUR
 N. S. SWINDELLS
 J. C. WOODHEAD

Management Division Professional Affairs and Education Committee

J. HEIGHWAY (Chairman)
 PROF. R. V. THOMPSON, B.Sc., M.Eng., Ph.D.
 T. E. BALMER, B.Sc.
 D. FARGIE
 M. FALCUS, M.Sc.
 W. FINDLAY
 A. T. SEDDON
 D. A. TAYLOR
 A. J. WHARTON
 J. K. WITHERINGTON
 J. C. WOODHEAD

Media Division Advisory Committee

E. J. BANNISTER (Chairman)
 E. M. ADAMS
 C. ARCHER
 R. BEAMS
 T. W. BEWSEY
 CDR. R. S. BLACKMAN
 E. A. BRIDLE, B.Sc.
 C. BROOKS
 M. F. CRAIG, B.Sc. (Co-opted)
 R. M. DUGGAN, M.A.
 M. FALCUS, M.Sc.
 C. R. FORD, M.Sc., B.Sc.
 A. GALLOWAY
 D. GAMBLES
 E. L. GREEN
 F. A. HAY, B.Sc.
 A. F. HODGKIN
 J. L. HUTCHINSON
 D. KINRADE
 G. S. MOLE
 S. W. NICHOLLS
 D. L. SAUNDERS-DAVIES, M.A.
 H. E. TUNE
 D. WARKMAN

<i>Director and Secretary:</i>	J. STUART ROBINSON, M.A.
<i>Technical Manager:</i>	R. G. BODDIE
<i>Council Officer:</i>	P. M. BUCKTON
<i>Finance Officer:</i>	P. KINGSTON
<i>Activities Manager:</i>	H. D. WILLIAMS
<i>Managing Editor, M.E.R.</i>	E. G. SEMLER, B.Sc.
<i>Registrar:</i>	B. A. HARRISON (MISS)
<i>Technical Information Officer:</i>	B. DENYER, B.A.

REPRESENTATIVES ON EXTERNAL ORGANIZATIONS

Council of Engineering Institutions

Board
 Executive
 Committee A (Education and Training)
 Committee B (Internal Affairs)
 Committee C (Home Affairs)
 Committee D (Regional Affairs)
 Committee E (International Affairs)
 Committee F (Technical Affairs including Health & Safety)
 Presidents' Committee
 Librarians' Committee
 Schools Liaison Staff Committee

CDR. E. C. PIDGEON, R.N.
 R. J. DANIEL (RINA)
 D. B. LYNCH (RINA)
 A. J. WHARTON
 R. CRAWLEY
 No representative required
 C. A. SINCLAIR
 S. N. CLAYTON
 CDR. E. C. PIDGEON, R.N.
 B. DENYER, B.A. (secretariat)
 B. A. HARRISON (MISS) (secretariat)

Engineers Registration Board

Chartered Engineer Section
 Technician Engineer Section
 Technicians Section
 Educational Qualifications Committee
 Panel of Accreditation Representatives

DR. J. COWLEY
 DR. J. COWLEY
 C. J. TAYLOR
 A. J. WHARTON
 A. J. WHARTON

Council for Environmental Science and Engineering

B. HILDREW, C.B.E., B.Sc.

Parliamentary and Scientific Committee

CDR. M. B. F. RANKEN, R.N.

Council of Science and Technology Institutes

CDR. M. B. F. RANKEN, R.N.

British Committee for E.C.O.R. (Engineering Committee on Oceanic Resources)

S. W. NICHOLLS

Watt Committee for Energy

C. ARCHER

British Nuclear Energy Society

C. ARCHER

REPRESENTATIVES ON EXTERNAL ORGANIZATIONS (continued)

British National Committee of the International Council of Combustion Engines (CIMAC)

British National Committee for Non-Destructive Testing

Lloyd's Register of Shipping Technical Committee

Merchant Navy College

Bath University Court

British National Committee on Materials

British Standards Institution

BS 799 Review of existing standard on oil burning equipment.

EPC/37/3 Methods of boiler water treatment

GEL/3/2 Ships Electrical Cables

MEE 104 Identification of pipelines, cables and conduits, etc.

PEL/93 Electrical Installations in Ships

SME Shipbuilding and Marine Standards Committee

SME/10 Ships Propellers and Shafts

SME/16 Air conditioning and Ventilation

WMS/3/4 Maintenance/Terotechnology—including handbooks

Institution of Electrical Engineers

IEE Ships Regulations Committee on Electrical and Electronic Equipment

J. H. GILBERTSON, M.B.E.

R. PORTER
(Lloyd's Register)

T. W. BUNYAN, B.Sc.
E. C. RANSON

R. S. MUNRO

W. H. SAMPSON

(to be appointed)

DR. R. C. F. DYE (non-member)
(University of Manchester)

D. R. EVANS

H. RUSH

J. G. KERSEY

H. RUSH

R. G. BODDIE
(secretariat)

T. A. WILKIN

H. G. STONEHAM

K. GRANT

H. RUSH

HONORARY SECRETARIES

United Kingdom Branches

ABERDEEN MARITIME: W. REID ESQ., Enterprise Sheet Metal Ltd., Craigshaw Drive, West Tullos Industrial Estate, Aberdeen.

DEVON & CORNWALL: D. MEIKLE ESQ., 296 Fort Austin Avenue, Crownhill, Plymouth, Devon.

KINGSTON-UPON-HULL & HUMBER AREA: A. D. CRAIG ESQ., 6 Braids Walk, Kirkella, Hull, North Humberside HU10 7PA.

NORTH EAST COAST: E. A. STOKOE ESQ., "Tyneholm", 14 Grosvenor Road, South Shields, Tyne & Wear.

NORTHERN IRELAND JOINT: E. E. HOPKINS ESQ., 41 Kingsway Park, Cherryvalley, Belfast BT5 7EW, Northern Ireland.

NORTH MIDLANDS: G. WILKINSON ESQ., 8 Arran Drive, Scotland Lane, Horsforth, Leeds, Yorks.

NORTH WEST ENGLAND: M. V. JONES ESQ., 124 Grosvenor Road, Claughton, Birkenhead, Merseyside L43 1UD.

SCOTTISH: D. J. JACK ESQ., Burmah-Castrol, 48 St. Vincent Street, Glasgow G2 5TW.

SOUTH EAST ENGLAND: R. H. LEWIS ESQ., Cobweb Cottage, Tumblefield Road, Stansted, Sevenoaks, Kent TN15 7PR.

SOUTHERN JOINT: N. H. C. BROMFIELD ESQ., Dept. of Mech. Eng. & Naval Arch. Portsmouth Polytechnic, Anglesea Road, Portsmouth PO1 3DJ.

SOUTH WALES: P. DURHAM ESQ., 4 The Broad Shoard, Cowbridge, Glamorgan.

WESTERN JOINT: K. E. PATTERSON ESQ., 108 Broadmoor Lane, Weston, Bath BA1 4LB.

WEST MIDLANDS: D. J. E. FRAZIER ESQ., 24 Hollyhurst Grove, Yardley, Birmingham B526 1AR.

Overseas Branches

CORK: LT. CDR. J. F. TROY, I.N.S., 4 Maryborough Avenue, Douglas, Cork, Eire.

DUBLIN: MR. J. M. A. DENHAM, 8 Stapolin Lawns, Baldoye, Dublin 13, Ireland.

AUSTRALIA/NEW ZEALAND DIVISION: MR. K. M. MURRAY, 96 Champion Road, Gladesville, N.S.W. 2111, Australia.

CANBERRA: MR. J. MCGREGOR, 84 Buvelot Street, Weston ACT 2611, Australia.

NEWCASTLE: MR. R. COLLINSON, 42 Rodway Parade, Kotara South, N.S.W. 2288, Australia.

QUEENSLAND: MR. O. M. WHEELAGHAN, 57 Sheehan Street, Kallangan, QLD 4503, Australia.

SOUTH AUSTRALIA: MR. J. C. NEALY, 12 Greenham Avenue, Magill SA 5072, Australia.

SYDNEY: MR. T. A. MASCARENNAS, 15 Chichester Street, Maroubra N.S.W. 2035, Australia.

VICTORIA: MR. P. BOSSEN, 71 Waimarie Drive, Mount Waverley, Victoria 3149, Australia.

WESTERN AUSTRALIA: MR. M. CAWTHORN, 10 Etna Place, Rossmoyne, Western Australia 6155.

AUCKLAND: MR. C. S. HARNETT, 28-30 Anzac Avenue, Auckland, 1, New Zealand.

SOUTH ISLAND: MR. K. H. NEWMAN, 10 Leslie Street, Upper Riccarton, Christchurch 4, New Zealand.

WELLINGTON: MR. D. SKINNER, 105 Tilley Road, Paekakariki, New Zealand.

EGYPT: DR. A. M. SALAMA P.O. Box 1424, Alexandria, Egypt.

GREEK JOINT: MR. P. S. KATSOUKIS, Lloyd's Register of Shipping, 87 Akti Miaouli, Piraeus (10), Greece.

HONG KONG JOINT: MR. T. RUXTON, Lecturer, Dept. of Mechanical Engineering, University of Hong Kong, Hong Kong.

MALTA JOINT: MR. N. A. BALDACCHINO, Villa Ike, Good Shepherd Avenue, Balzen, Malta.

NETHERLANDS: MR. G. DEN BAKKER, 62 Koningin Julianaweg, Maasland, Holland.

PAKISTAN JOINT: MR. H. ABBAS, E65 Block F, North Nazimabad, Karachi, Pakistan.

SINGAPORE: MR. R. M. PEREIRA, c/o Tech-Mar Consultants & Surveyors Pte, Marine Eng. Div., Dover Road, Singapore 0513.

SRI LANKA: MR. T. GUNASEKERA, c/o Ocean Marine Services Ltd., 20 First Floor Galle Face Court 2, Colombo 3, Sri Lanka.

EASTERN U.S.A.: MR. H. C. BLANDING, c/o American Bureau of Shipping, 65 Broadway, New York, N.Y. 10006, U.S.A.

CORRESPONDING MEMBERS

MR. W. H. KHANDJI, P.O. Box 1180, Latakia, Syrian Arab Republic.

MR. I. FELCZAK, Rua Nascimento Silva 170, Ap C-01, Rio de Janeiro, Brasil.

SR. GUILLERMO ESCALANTE, Montevideo 1985, Buenos Aires, Argentina.

MR. D. FOURIER, P.O. Box 33089, Haifa, Israel.

MR. F. MENZIES, 25/26 Edinburgh Gardens, Chaguanas, Trinidad, West Indies.

MR. C. A. W. RENNIE, Principal Surveyor for Portugal, Lloyd's Register of Shipping, Avenida 24 de Julho, 60-2° Esq., 1200 Lisbon, Portugal.

DR. ENG MOHAMED LOUTFRY BARAKA, Head of Engineering Studies Department, P.O.B. 1552, Sharjah, United Arab Emirates.

K. J. PILLAI, P.O. Box 62 Oron, Cross River State, Nigeria.

ING ANGEL VARGAS ZUNIGA, P.O. Box 2129 (Urdesa), Guayaquil, Ecuador.

J. CROZIER, Occidental Peruana Inc., Casilla 6226, Lima, Peru.

A. H. IJAM, Technical Manager, Arab Centre for Co-ordination and Maritime Consultations, P.O. Box 38141, Dahyat Abdula Al-Salem, Kuwait.

SR. J. GALLARDO NAVARRO, Lloyd's Register of Shipping, Apt. Postal 724, Vera Cruz, Mexico.

DR. ORIO DI BRAZZANO, Via Valdirivo 23, Trieste, Italy.

NABIL SHAHEEN, Medical City Administrative Office, King Faisa, Specialist Hospital & Research Centre, P.O. Box 27271 Riyadh, Saudi Arabia.

SR. JORGE PINOCHET, Casilla 1060, Viña del Mar, Chile.