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THE INSTITUTE OF MARINE ENGINEERS

Founded 1889 and incorporated by Royal Charter 1933

Patron: Her Majesty The Queen

THE ANNUAL REPORT OF THE COUNCIL AND FINANCIAL STATEMENTS FOR THE YEAR ENDED 30 SEPTEMBER 1990 will be presented to members of the Institute at THE ANNUAL GENERAL MEETING to be held at the Institute's headquarters The Memorial Building, 76 Mark Lane, London EC3R 7JN on Thursday 7 March 1991



ANNUAL REPORT OF THE COUNCIL AND FINANCIAL STATEMENTS

1990

# **SERVICE TO THE MARITIME INDUSTRY SINCE 1889**

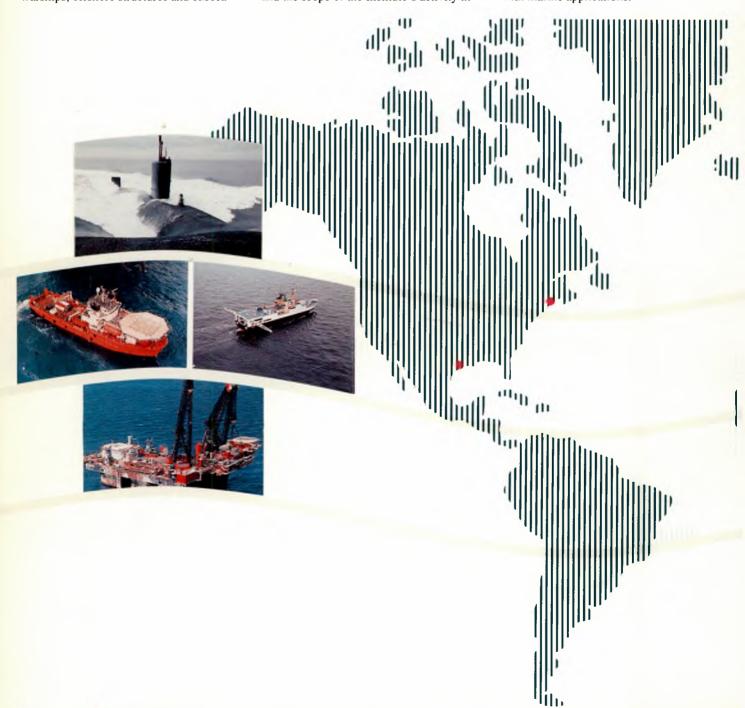
Traditionally marine engineering has been associated with ships machinery and equipment necessary for the propulsion and safety of the hull, the care and handling of cargoes and the care, comfort and safety of the passengers and crew.

Today marine engineering may be described as the combination of art, science and experience in the provision, management and maintenance of engineering systems, structures and equipment in, or on anything that operates in the marine environment. This embraces the design, construction, operation and maintenance of all types of merchant ships, warships, offshore structures and subsea vehicles. Modern marine engineering encompasses a multiplicity of engineering disciplines and the application of information technology has had considerable impact. Computer aided engineering and management feature prominently in today's world of high marine technology.

An infrastructure of shore based industry, educational establishments, government departments and classification societies employ marine engineers to deal with the necessary research, development, manufacture, survey and approval of the complex systems and equipment required and the scope of the Institute's activity in recent years has been broadened to reflect the ever increasing technological demands of the maritime industries.

With over a century of technical service to the marine industries, The Institute of Marine Engineers is dedicated to developing maritime engineering as an important force in today's world of high technology.

Membership spans the whole range of maritime engineering disciplines including marine engineering, naval architecture, offshore/subsea engineering and structural/ civil/mechanical/electrical engineering with marine applications.



IMarE is a Nominated and Authorised body empowered by the Engineering Council to nominate members for registration as Chartered or Incorporated Engineers or as Engineering Technicians, and to accredit academic and training courses, and arrangements for assessment of responsible experience, provided by education establishments and employers in the UK and elsewhere, so that students completing them may be accepted for Engineering Council registration at an appropriate level and stage.

A full programme of technical meetings with preprints and Transactions is presented at headquarters; branches organise their own programme of technical meetings with help from headquarters. At least two major conferences are mounted in the UK each year; conferences are also organised overseas, both from headquarters and by the larger branches. The Institute publishes a monthly journal (Marine Engineers Review) with news and feature articles on the latest developments in marine technology, and a range of technical publications. An important service available to members is that provided by the Marine Information Centre based on an extensive specialised library and its own computer database of information on marine engineering.

There are seven classes of Institute membership, full details of which may be obtained from the Manager - Professional Affairs, The Memorial Building, 76 Mark Lane, London EC3R 7JN.

# FOREWORD BY THE PRESIDENT

It is always a pleasure to be a messenger carrying good news and this year is no exception. A review of this report will confirm that your Institute is standing steadfast on very firm foundations.

Membership has continued to expand, maintaining the trend of the past three years with emphasis on young, academically well-qualified engineers eager for professional guidance and information which membership brings. We look forward to their participation in the ongoing development of this great Institute.

New branches have been incorporated in Bangladesh, Houston (USA), Isle of Man and Korea, bringing the total around the world to 40 which, with a membership spread across 81 countries, gives us a unique and powerful position unmatched by any other similar professional institution.

A review of the financial statements will show that, in spite of the economic turndown affecting the world economy, sound management of your assets has resulted in a relatively healthy position. It is because of this general wellbeing that members enjoy probably the lowest annual fees pro rata of any similar professional organisation - not forgetting the benefit of FREE membership for all those on courses accredited by the Institute leading to Stage 1 registration at CEng and IEng levels.

Care, however, must be exercised regarding the financial position of your Institute. As those of you who have visited the City of London could not fail to notice, considerable construction is taking place of high-quality business premises within close proximity to Mark Lane.

As a substantial proportion of our income is due to leasing the Memorial Building at competitive rates, the Board of Marine Management (Holdings) Limited has had and will continue to secure our financial future by adding as appropriate and financially possible to our reserves; then around the turn of the century, if not before, we should be in a position to undertake a substantial modernisation of the building, involving the need to spend several million pounds.

This requirement is thought to be necessary in spite of the substantial sums spent over the years in maintaining the innate quality of the conference centre, offices and associated environment.



Ray Thompson, President

"a membership spread across 81 countries, gives us a unique and powerful position unmatched by any other similar professional institution."

**R** V Thompson



Financial prudence is considered to be of primary importance if we are to survive as a first class professional institution for a further century!

You will be pleased to note that members' services have been substantially increased in volume and also quality over the past few years and every effort is being made to assess and upgrade wherever possible.

Worldwide restructuring proposals are being evaluated for possible implementation, with all related suggestions being clearly presented for discussion and ratification by Council.

Of course, a major issue before Council has been the proposal for a merger with The Royal Institution of Navał Architects, which it has been decided to recommend to our members - a report on progress during the year appears in the following pages. If the members endorse this recommendation when called upon to vote it could have farreaching implications for the worldwide reputation and influence of the newlymerged institution, representing as it will the combined strengths of two related engineering disciplines.

You will be interested to learn that discussions have taken place with other national institutions representing the marine fraternity in an effort to achieve common academic and professional standards so that marine engineers will have mutual and immediate recognition anywhere in the world. Much interest has been shown, particularly in the Pacific Nations and China, in the suggestion that a world federation of professional marine engineering institutions should be formalised with the express purpose of meeting these aims.

It is regretted that by the time you read this, I will be close to relinquishing this post which I have held sometimes with trepidation, often with anxiety but always with immense pride. The good news is that Admiral Vallis will be exercising his immense talent, energy and ebullient goodhumour on your behalf as President - the affairs of THE Institute of Marine Engineers could not be in better hands.

Finally, my wife and I have been made most welcome everywhere throughout the world, particularly by Branch Chairmen and members who form the backbone of this Institute. I wish to record my heartfelt thanks to you all.

# **REPORT OF THE COUNCIL 1989**

When the year began in October 1989 the Institute was still enjoying its Centenary year. The headquarters events were in the past, but the latter part of the year, and to a lesser extent the beginning of 1990, were marked by celebratory events around the world, which will feature in the reports from the branches later in this review.

The Centenary appeal to raise funds for a Mersey Class lifeboat for the Royal National Lifeboat Institution progressed satisfactorily during the year, at the end of which it stood at £194,000 received and promised. However, the development of this new class of boat having taken longer than anticipated, delivery and the naming ceremony had not yet taken place.

With the Centenary finally behind us, the spotlight turned on negotiations for a merger with the Royal Institution of Naval Architects (RINA). The most significant step forward was the decision of the Councils of the two Institutions to recommend a merger to their respective members. The decision as far as IMarE was concerned was taken only after considerable discussion, to the extent that an extra Council meeting was convened for the sole purpose of debating this vital topic. It was finally reached at a Council meeting in June 1990 after carefully weighing up both the advantages and disadvantages, professional, administrative and financial, that such a merger would bring to our members.

Agreement in principle was reached with RINA on the draft of a report to be sent to both memberships, which had been devised with a view to enabling them to make an informed judgement before voting in a referendum seeking their views, after which the final decision - to merge or not to merge - would be taken. After the June Council meeting a new Steering Group composed of members of both institutes was formed to consider certain matters still to be agreed upon. At the same time a similarly consitituted Working Party was formed to develop the By-Laws that would be put before the Privy Council in the event a merger was proceeded with. Such a merger would in any event be subject to approval by the Privy Council, and preliminary notification of the proposals was given to that body, resulting in valuable guidance being received.



Captain Nils Dellgren, President of ICMES, accompanying the Lord Mayor to the Newcastleupon-Tyne Civic Centre Reception on the occasion of ICMES 90 Conference.



The future RNLB Marine Engineer during successful self-righting trials at Cowes, Isle of Wight,



W A O'Neil, Secretary-General, IMO, giving the Opening Address at the IMAS 90 Conference.



A particularly heavy programme of travel was undertaken by the President during the year, much of which will emerge from the branch reports. November saw the biennial tour of the Australia/New Zealand Division, and this was followed by attendance at Centenary functions in Singapore and Hong Kong: thus far he was accompanied by the Secretary. The President then continued on to Shanghai, where he attended Marintec China, and Beijing, to meet with officers of CSNAME (Chinese Society of Naval Architecture and Marine Engineering). Another visit outside the usual pattern was to South Africa, partly to revive relationships with SAIMENA (The South African Institute of Marine Engineers and Naval Architects) and also to meet as many as possible of our own members.

Pursuant with its policy of advertising the Institute's professional and publishing activities at key maritime and offshore exhibitions, stands were taken at the following:

1989 November: Europort, Amsterdam 1990

February:	Singaport '90, Singapore
May:	Offshore Technology
	Conference, Houston
June:	Posidonia, Athens
September:	SMM '90, Hamburg

Each of these attracted a large number of enquiries about membership, and aroused interest in our publications, not least from existing and potential advertisers.

Continued involvement in the affairs of WEMT (West European Conference on Marine Technology) resulted in attendance by the President and Secretary at WEMT Council meetings in October and February. A survey was carried out by the Institute into the potential for expanding membership of WEMT throughout Europe, taking into account the opening up of the countries of Eastern Europe to greater contact with the West. This formed part of a wider study into greater co-operation between member organisations.

In September the President hosted a luncheon in the Memorial Building for the Lord Mayor of London, which was attended by eminent representatives of the marine engineering profession.

# LEARNED SOCIETY ACTIVITIES

#### Papers and Conferences

Learned Society activities were organised by headquarters and the branches. The 1989/90 headquarters technical programme included seventeen evening meetings, two afternoon seminars, one full day seminar and two international conferences. The programme organised by the branches included a major international conference organised by the Wellington Branch. Details of the branch programmes will be found later in this report.

The IMAS '90 conference was held in London with the title "Marine Technology and the Environment" and addressed the developments and related problems associated with marine technology and the environmental aspects of implementing the MARPOL Convention. The second conference entitled "Maritime Systems Integrity" was held at the University of Newcastleupon-Tyne. It was organised by the Institute on behalf of the International Co-operation on Marine Engineering Systems (ICMES) organisation, which comprises specialists from twenty-three countries and four continents engaged in research and development work associated with all aspects of marine engineering systems and their impact on ship operations. A most interesting range of high quality technical papers was presented and discussed at both these conferences and the proceedings are now available from the Institute's Book Sales Department.

As a result of discussions that took place between the Institute and ICMES a joint agreement was signed which provides for the Institute to assume responsibility for the Secretariat of ICMES with effect from 1 November 1990. Under the terms of the agreement the Institute will organise all ICMES Standing Committee meetings, conferences and seminars and will administer and maintain the accounts and all monies of the ICMES organisation.

A third conference was planned under the title "Combustion Chamber Materials for Heavy Fuel Operations" but for various reasons did not take place. However, a most interesting collection of papers prepared for this conference has been published by the Institute on the practical use of new component materials and designs including a number of papers describing the work and test results of a joint UK industry/ DTI sponsored collaborative project on valve materials. The Technical Papers and Conferences Committee met on four occasions, the Marine Electrical Sub-Committee twice and the Joint Offshore Group Committee on four occasions during the year and a comprehensive programme of evening meetings, seminars and international conferences is planned for the forthcoming year. The Publications Working Group continued its work in updating existing publications and commissioning new titles.

### Information Services

Information Technology is now important in all areas of Institute operations - accounting, membership records, publishing, marketing and advertising. Over the past four years this commitment to IT has enabled the Secretariat to improve the services provided to members, generate more income and yet contain costs. During the past year the Institute has adopted an open systems approach through the implementation of a Novelle network linking the personal computers, desk top publishing equipment and a state-of-theart UNIX based mini-computer system. This move has simplified the transfer and sharing of data and files throughout the Institute and given dramatic increases in processing speeds.

Publishing activities have been maintained at a high level. Proceedings of four Institute conferences and the book "Diesel Motor Ships' Engines and Machinery" by Christen Knak were published during the year in addition to MER, the Bulletin and the Transactions. As a result of this increased activity sales of Institute publications have exceeded expectations.

The increasing influence of the marine engineer in the offshore industry is reflected in the regular offshore supplement that appears each month. Other supplements produced during the year were the Diesel Engine Directory and a directory of BMEC members and their products.

A survey of MER readers provided valuable information on their reading habits, interests and spheres of influence. This survey has been used to prepare a readership profile which it is hoped will result in even more advertising support. The survey has emphasised the high standing and impressive purchasing influence of marine engineers. Encouragingly it has shown that 90% of the membership read at least half of every issue of MER. With a 15,281 circulation and influential readership, it is easy to understand why the advertising revenue achieved for the year was the highest ever and exceeded budget by 32%.

#### Marine Information Centre

Steady progress is being made in abstracting past IMarE, RINA, SNAME and NECIES Transactions and transferring the abstracts into the Institute's database of marine engineering. The database now contains details of IMarE Transactions from 1950 and MER from 1970. Work is in progress to capture details of IDGTE Transactions. With 230 additions to the library through the year the full collection now exceeds 7000 books, 1000 conference proceedings and 5000 volumes of journals and transactions. During the year there were 2144 visitors to the library and over 2800 enquires.

A new initiative from MIC has been to compile a database of forthcoming exhibitions, conferences etc of importance to the marine industry. This database is used to publish a monthly events calendar.

#### **DIVISIONS AND BRANCHES**

#### Australia/New Zealand Division

The Australia/New Zealand Division maintained its high level of activity during the year, with the Divisional Council Meeting being held in Auckland in November 1989. All branches within the Division were represented and delegates entered into lively and vigorous debate on matters concerning the operation of the Division.

The Divisional President attended meetings of the Council at headquarters in his capacity as a Vice President for the purpose of expressing the views of the Division on the proposed merger with RINA.

At the suggestion of the Division, the IMarE. Council agreed to give serious consideration to the proposal that a system of regionalisation of membership be instituted, and that the structure and meeting frequency of Council, together with the eligibility of members to represent on Council, be urgently reviewed to reflect the needs of this an international institute.

## Branches

Headquarters continued to provide the usual support services to branches, which are funded on a budget basis, with the exception of joint branches which receive a basic and per capita grant.

The annual meeting of Branch Honorary Officers was held in March 1990 at headquarters, and all the UK branches were represented with the exception of the Southern Joint Branch. Also in attendance were representatives from Cork, Dublin, Greece, Malta and The Netherlands. The meeting maintained the format introduced the previous year, being divided into two sessions, the first of which was chaired by the Secretary and dealt with purely administrative matters. The second session, chaired by the President, concentrated on a number of subjects including representation on the Council, future Institute policy, the offshore industry, and the proposed RINA/IMarE merger.

The Institute continued to expand its activities with the formation of four new branches in the Isle of Man, Bangladesh, Houston (USA) and Korea, the latter jointly with RINA.

#### **MEMBERSHIP**

The Membership Committee met regularly throughout the year, assessing applications for election and transfer to the various categories of membership and nominating members with suitable academic qualifications, training, experience and responsibility for registration as Chartered Engineers, Incorporated Engineers and Engineering Technicians with the Engineering Council. The Professional Review has continued to operate smoothly due to the co-operation of branch members whose efforts in this respect are greatly appreciated.

Over 1120 applications for election and transfer were considered and it is gratifying to record that the Institute's efforts to increase membership are continuing to be rewarded with the total membership standing at 16,372 at the year end.

Members continued to seek registration on the Group 1 Register of the European Federation of National Engineering Associations (FEANI) with subsequent registration as European Engineers. Registration is open to all members registered as Chartered Engineers with the Engineering Council, and those wishing to avail themselves of this should apply to the Membership Officer for the application forms.

# **Employment Register**

This service to members has continued to be appreciated by those seeking reemployment or changing jobs, with a total of seventeen placements ranging from technical managers, consultants, surveyors and superintendent engineers to short term contract work.

## Subscriptions

It was decided by the Council that subscriptions for certain categories of membership should be increased for 1990/91 to partially alleviate the effect of rising costs in providing members' services. The general structure of the subscription charges based on category, length of membership, age and country of residence was retained. Free membership to students following fulltime accredited/approved courses leading to CEng or IEng Stage 1 registration with the Engineering Council is being continued.

Full details of the IMarE subscription rates and Engineering Council fees for 1990/91 are to be found on page 21.

# **EDUCATION AND TRAINING**

The Professional Affairs and Education Committee (PAEC) held four meetings during the year when various papers, working group reports and Engineering Council documents were discussed and acted upon. Those considered included:

- Mutual Recognition Directive 89/48/ EEC. (European Directive on Mutual Recognition of Qualifications).
- Attaining Competence in Engineering Design.
- IMarE/RINA Education and Training Forum. May 1991.
- Strategic Policy Committee (Merchant Navy Training Board) Developments.
- Possible Marine Training Association links.
- Extension of National Vocational Qualifications above Level IV.
- Engineering Council "5-19" Liaison National Co-ordinating Committee.
- Standards and Routes to Registration (SARTOR) Update.

- Periods of study spent abroad on accredited courses.
- Report on the Washington Accord (acceptance of degree courses accredited by national bodies in Australia, New Zealand, USA, Canada and Eire for Corporate membership and Chartered Engineer registration).

During 1989/90 the PAEC assessed and accredited the following qualifications for Engineering Council registration:

- (a) At Stages 2 and 3 of the Incorporated Engineer Register and Associate Membership.
  - Royal Navy SD Marine Engineer Officers (MESM) Nuclear Submarine.
  - (ii) Royal Navy SD Marine Engineer Officers (SDME) Surface Vessels.

Applicants with the above qualifications are also exempt from the Professional Review.

- (b) At Stages 2 and 3 of the Engineering Technician Register and membership as an Associate if applicants possess a Marine Charge Qualification (MCQ).
  - (i) Royal Navy Marine Engineer Artificer Career Course.

Following assessment by the PAEC, the following courses were recommended to and subsequently accredited by the IMarE/RINA Joint Assessment Panel for Engineering Council registration:

- (a) At Stage 1 of the Chartered Engineer Register:
  - (i) RNEC Manadon. BEng Hons (Engineering) Pass degree at Honours level.
  - (ii) Universiti Teknologi Malaysia. Bachelor of Mechanical Engineering (Marine Technology).

Each satisfied the academic standard for Corporate and Graduate membership

- (b) At Stage 1 of the Incorporated Engineer Register:
  - (i) Royal Navy SD (MESM)
     Officers (Nuclear Submarine).
     Post Graduate Diploma in
     Nuclear Reactor Technology.
  - (ii) Royal Navy SD Marine Engineer Officer (SDME) Surface Vessels. (BTEC, HNC, Marine Engineering)

- (iii) Institute of Technology, Surubaya, Indonesia. Bachelor of Mechanical Engineering (Marine Technology).
- (iv) Singapore Polytechnic. Diploma in Marine Engineering.

Each satisfied the academic standard for Associate Membership.

- (c) At Stage 1 of the Engineering Technician Register:
  - Royal Navy Marine Engineering Artificer Career Course BTEC National Diploma. HMS Sultan.

Satisfied the academic standard for election as an Associate.

# **ENGINEERING COUNCIL**

The Engineering Council Executive Group Committee 5 (EGC5) met on four occasions during the year and a number of important issues were addressed, including two European Directives on the mutual recognition of qualifications and the impact they will have on the freedom of movement of engineers in the European community post 1992; the Engineering Council relationship with the National Council for Vocational **Oualifications** (NCVO), the government body appointed to secure the specification of standards of competence for industry, and the confusion this may cause in the context of engineering standards already established by the Engineering Council and the various Nominated and Authorised Bodies; the Washington Accord, and an EC draft Policy Statement on a "National System for Continuing Education and Training".

The Institute took an active part in the Engineering Council negotiations over the affiliation agreement between the Institution of Civil Engineers and the Hong Kong Institution of Engineers. In the best interest of members working in Hong Kong the Institute chose to be associated with this agreement, together with five other chartered engineering institutions.

# SOCIAL EVENTS

The customary Conversazione was held in December 1989 in the Ballroom at Grosvenor House. Carols were sung by the choir of Guildford Cathedral, and a marching display was given by the Band of the Royal Marines C-in-C Fleet. The 87th Annual Dinner took place in the Great Room, Grosvenor House in March 1990, the principal guests being Michael Neubert MP, Parliamentary Under Secretary for Defence Procurement and Alderman Francis McWilliams.

# **FINANCE**

The Financial Statements on pages ten to sixteen show the costs of services provided to, or on behalf of, members in a more distinctive manner than past years. As an adjunct to this a new Note 2 Gross Income, has been shown on page 12 giving details of receipts in relation to the various activities of the Institute.

Another change on the Consolidated Revenue Account is the introduction of an annual provision of £220,843 for the loss of rentals during future refurbishment of the Memorial Building. The purpose of this is to ensure there is a fund of money available towards the time when rents will not be forthcoming during extensive refurbishment work.

During the year it was decided to sell Government Stocks and place the proceeds on cash deposit until such time as it was considered propitious to reinvest. With interest rates so high the dividends and interest received were some £195,442 higher in 1990 than 1989.

After accounting for the amortisation of the Memorial Building, providing for property maintenance and the aforementioned refurbishment provision, the surplus transferred to reserves was £793,770.

Indications at present are that the surplus in 1991 will be in the region of £600,000 after deducting all currently known provisions.

# **COUNCIL ADVISORY GROUPS**

#### Office Bearers Affairs

Nominations for office holders of the Institute were approved and representatives on external organisations appointed.

## Policy Affairs

Recommendations to effect a saving in costs in respect of Council and Committees were considered.

#### By-Laws

Alterations and amendments to the By-Laws of the Institute to allow for the introduction of a new class of Corporate membership to be known as Associate Members (Corporate) and to provide for greater opportunities for investment of the Institute's funds were approved by the membership at an Extraordinary General Meeting in September 1990. These are now being considered by the Privy Council.

# **MEMORIAL BUILDING**

The Building Maintenance Committee met on three occasions during the year to plan the forward maintenace of the Memorial Building in an economical manner.

# **CITY CONFERENCE CENTRE**

January 1990 saw a new company providing all the Institute's catering needs in the first floor Conference Centre. The high standard of food, the quality of service and presentation have been most impressive.

A recent attempt to widen the marketing base for the Conference Centre resulted in a number of new clients, including three based in the United States. A New York firm of legal advisors used the Centre as a convenient way to present themselves to the London insurance market, whilst a Californian conference organiser held a reception for over 100 Energy Consultants.

1989/90 was a successful year for the Conference Centre, and can be summed up by a letter received from the chief executive of the TSB Group, who said "how delighted we were with the arrangements" due in no small part to "your excellent Lecture Theatre."

# HONOURS AND AWARDS AND PRIZES

#### **New Year Honours**

R W S Easton CBE Knight	Bachelor
(Fellow)	
Commander W H Maxwell RN	OBE
(Fellow)	
Commander A C Moore RN	OBE
(Member)	
S W Nicholls	MBE
(Fellow)	
Birthday Honours	
Commander J A Bolger RN	OBE
(Member)	
G H Dodd	OBE
(Fellow)	

Lieutenant T F Elliott RN	OBE
(Member)	
E S Gill	MBE
(Member)	
Australia Day Honours	
Rear Admiral D G Holthouse	AO
(Fellow)	

#### Institute Awards and Prizes

During the year the Institute undertook an extensive review of the various Institute awards and the procedures adopted for the evaluation of technical papers for these awards.

Of particular note were wide ranging modifications in respect of the Stanley Gray Award to make more effective use of funds in accordance with the Will of the late Stanley Gray. Under the new arrangements a sum of £500 and a Certificate is to be awarded to each of the most worthy papers read to the Institute on marine technology, offshore technology and marine electrical technology and a similar sum to be awarded to the most worthy paper read at each Institute conference. There will also be a branch prize for the most worthy paper read to Institute branches.

In addition the Institute is to award Stanley Gray Fellowships of up to  $\pounds 2,000$  each per year to students to enable them to follow post graduate studies or research in approved maritime technology subjects. Details of all awards may be obtained from the Technical Secretary.

## **1990 Silver Jubilee Medal**

Awarded to Lieutenant P I Baldwin RN - the most outstanding marine engineer officer in training at the Royal Naval Engineering College, Manadon.

**1990 Bi-Centenary Silver Medal** Awarded biannually to the most outstanding marine engineering officer in training in the Royal Australian Navy:

Lt Commander R C Basford RAN Sub Lieutenant M E Dunne RAN

**1989 W W Marriner Extra First Class Certificate of Competency** K G Miller

**1989 William Theodore Barker Award, Class 1 Certificate of Competency** B J Turner

**1989 W.W. Marriner Memorial Prize, Class 2 Certificate of Competency** M A Matin

1989/90 Scholarship Awards			
University of Surrey	S K Manda		
	S M Russell		
Liverpool Polytechnic	H S C Eastman		
	B R Forth		
Hong Kong University	Kam Dik Chiu		
	Fong Yiu Fai		
1989/90 Book Awards			

University of Newcastle	e-upon-Tyne J A
	J Cullen
University of Surrey	G Park
Liverpool Polytechnic	E D H Cato

#### 1989/90 Marine Engineer Cadet Prizes

1 1 1205	
South Mersey College	J P Meenaghan
Southampton Institute	
of Higher	
Education, Warsash	B R Walker
Glasgow College of	
Nautical Studies	A J Percy
South Tyneside College	R Nind
Plymouth Polytechnic	
South West	C M Lewis

Other prizes and awards are detailed in branch reports

# Supplementary Grants

Support was given to fifty-three members suffering financial hardship whilst studying courses accredited for registration at Stage 1 of the Engineering Council Chartered Engineer Register through supplementary grants to the value of £33,000.

### **Degree Courses**

Degree oourses	
University of Newcastle-upon-Tyne	27
University of Surrey	2
Liverpool Polytechnic	11
Sheffield University	1
Aberdeen University	1
Heriot-Watt University	1
Sunderland Polytechnic	3
Robert Gordon's Institute of	1
Science & Technology	
Humberside College	1
Plymouth Polytechnic	2
Extra First Class Certificate of Competency	
South Tyneside College	1
Engineering Council Part 2 Examination	
Southampton Institute of Higher Education	2

# **R V Thompson** (President)

J E Sloggett (Secretary)

# FINANCIAL STATEMENTS FOR THE YEAR ENDED 30 SEPTEMBER 1990

# **Consolidated Revenue Account**

N	Note		1990		1989
Income from Members		£	£	£	£
Members subscriptions and entrance fees			£573,347		£550,696
less: Costs of services provided to members, less income	2				
Aeetings and Transactions	1	61,338		162,081	
onferences and Proceedings		20,321		12,906	
ournals	2	04,311		207,060	
ook sales		(2,815)		3,977	
larine Information Centre		87,983		84,226	
Divisions and branches	_	89,171		75,602	
			560,309		545,852
Less: Costs of services provided on behalf of members, less inco					
Education and Training (including accreditations)		41,500		53,284	
Educational grants and prizes		32,022		37,487	
Membership and maintenance of register	1	22,260		122,317	
			195,782		213,088
Less: Administrative costs					
Development, including public relations		12,803		110,168	
Council and committees		40,953		95,818	
dministrative staff costs		25,830		220,775	
verheads, including occupancy costs		15,956		371,184	
		95,542		797,945	
ess: Administrative costs of other income - see below	2	03,720		116,284	
			791,822		681,661
			£ <u>1,547,913</u>		£ <u>1,440,601</u>
Excess of expenditure over income from members			£974,566		£889,905
nvestment income	2 2.2	52 BCA		1 500 471	
roperty, including Conference Centre, less costs Dividends and interest	· · · · ·	52,064		1,599,471	
pyloends and interest		47,602 99,666		252,160 1,851,631	
rofit on sales of investments and fixed assets		14,088		63,655	
for on sales of investments and fixed assets		13,754		1,915,286	
ess: Administrative costs - see above		03,720		116,284	
Provision for property maintenance		85,619		58,060	
Amortisation of The Memorial Building		91,000		390,000	
Provision for loss of rentals during future	5	- 1,000		550,000	
refurbishment of the building	10 2	20,843			
	_		1,812,572		1,350,942
urplus on ordinary activities			838,006		461,037
Extraordinary items - Centenary events			44,236		362,873
surplus for the year transferred to reserves			£793,770		£98,164
Sur plus for the year transferred to reserves					

# **Consolidated Balance Sheet**

			1990		1989
	Note	£	£	£	£
Fixed assets					
Tangible assets	6		25,764,350		26,141,387
Investments	7		4,836,961		2,975,353
			30,601,311		29,116,740
Current assets	8	823,827		1,154,474	
Creditors: Amounts falling due within one year	9	795,163		704,444	
Net current assets			28,664		450,030
Total assets less current liabilities			30,629,975		29,566,770
Provisions for deferred liabilities	10		1,310,075		1,040,640
			£29,319,900		£28,526,130
Represented by:					
General Fund	11		6,163,652		5,015,465
Revaluation Reserve	11		23,156,248		23,510,665
			£29,319,900		£28,526,130
The Institute Balance Sheet					
Fixed assets					
Tangible assets	6		25,561,641		25,943,325
Investments	7		4,836,961		2,975,353
Investment in subsidiary			30,000		30,000
			30,428,602		28,948,678
Current assets	8	769,759		1,111,966	
Creditors: Amounts falling due within one year	9	568,386		493,874	
Net current assets			201,373		618,092
Total assets less current liabilities			30,629,975		29,566,770
Provisions for deferred liabilities	10		1,310,075		1,040,640
			£29,319,900		£28,526,130
Represented by:					
	11		6,163,652		5,015,465
Represented by: General Fund Revaluation Reserve	11 11		6,163,652 23,156,248		5,015,465 23,510,665

J. McNaught (Honorary Treasurer)

# **Report of the Auditors**

To the members of The Institute of Marine Engineers

We have audited the financial statements on pages 10 to 16 in accordance with Auditing Standards.

In our opinion the financial statements give a true and fair view of the state of affairs of the Group and of the Institute at 30 September 1990 and of the Group income and expenditure and source and application of funds for the year then ended and have been properly prepared in accordance with the Companies Act 1985.

Kreston House, 8 Gate Street, London WC2A 3HJ FINNIE & CO Chartered Accountants 11 December 1990

# 1 Accounting policies

# a Basis of accounting

The financial statements are prepared under the historical cost convention as modified by the revaluation of the leasehold property.

# b Basis of consolidation

The financial statements incorporate the results of the wholly owned operating subsidiary for the year to 30 September 1990.

# c Format of financial statements

As permitted by Section 228(7) of the Companies Act, 1985 a separate Revenue Account of the Institute is not presented as part of the financial statements.

# d Amortisation and depreciation

Leasehold property is amortised so as to write off the revalued cost of the property over the remaining life of the lease. Equipment is depreciated on a straight line basis, at annual rates of 15% to 25%, to write off the cost of assets over their estimated useful lives.

# e Stocks

Stock and work in progress are stated at lower of cost and net realisable value.

## f Foreign currency

Bank balances held abroad are translated at the rates of exchange ruling on 30 September 1990. All gains or losses arising on translation have been dealt with in the Revenue Account.

## g Subscription income

Subscription income is included in the financial statements on a receipts basis adjusted for subscriptions received in advance. No credit is taken for arrears of subscriptions.

## h Investment income

Dividends and interest are included in the financial statements on a receipts basis.

# i Pension Costs

Details of the pension scheme are set out in Note 14.

# j Rental and service charge income

Rental and service charge income is included in the financial statements on a receivable basis.

#### k Leasing

Rentals paid under operating leases are charged to the Revenue Account on an accruals basis.

#### I Taxation

The Institute is a registered charity and is not subject to taxation. Its subsidiaries are subject to Corporation Tax.

#### m Rental Provision

Provision is made for an anticipated loss in rental income during the future refurbishment of the building.

# n Prior year adjustment

Following legal advice on the matter all provisions for anticipated expenditure on the leasehold property are now included as deferred liabilities and any monies held for this purpose are included in investments. Comparatives have been restated to accord with this treatment.

2	Gross Income	1990	1989
		£	£
	Meetings and Transactions	13,810	14,439
	Conferences and Proceedings	68,172	88,282
	Journals	326,720	261,421
	Book Sales	30,538	24,034
	Property, including Conference Centre	3,174,065	2,395,673
		£3,613,305	£2,783,849
3	Dividends and interest		
	Income from fixed assets investments	124,521	140,528
	Other interest receivable	323,081	111,632
		£447,602	£252,160
4	Surplus for the year is stated after charging		
	Depreciation	87,774	85,900
	Auditor's remuneration	23,000	20,000
	Amortisation	391,000	390,000
	The surplus dealt with in the financial statements of the Institute amounted to £793,770 (1989: £102,374)		

Staff costs	£	£
Wages and salaries	817,251	747,619
Social security costs	63,926	55,683
Other pension costs	131,645	107,630
	£1,012,822	£910,932
The average number of employees during the year was made up as follows:		
The average number of employees during the year was made up as follows:	Number	Number
Publications	16	16
Administration	14	14
Other direct and indirect costs	12	10
Property	13	13
	55	53
No member of Council or Committees receives remuneration from the Institute in respect of their office.	=	=

#### 6 Tangible Fixed Assets

The Group	Long Leasehold Property £	Equipment £	Total £
Cost or valuation	~	~	~
At 1 October 1989	26,327,477	612,093	26,939,570
Additions	24,601	79,708	104,309
Disposals		(8,905)	(8,905)
At 30 September 1990	26,352,078	682,896	27,034,974
Accumulated depreciation:			
At 1 October 1989	390,000	408,183	798,183
Disposals	_	(6,333)	(6,333)
Charge for the year	391,000	87,774	478,774
At 30 September 1990	781,000	489,624	1,270,624
Net book value:			
At 30 September 1990	£25,571,078	£193,272	£25,764,350
At 30 September 1989	£25,937,477	£203,910	£26,141,387
Tangible Fixed Assets			
The Institute			
Cost or valuation			
At 1 October 1989	26,327,477	125,160	26,452,637
Additions	2,211	10,665	12,876
At 30 September 1990	26,329,688	135,825	26,465,513
Accumulated depreciation			
At 1 October 1989	390,000	119,312	509,312
Charge for the year	391,000	3,560	394,560
At 30 September 1990	781,000	122,872	903,872
Net Book Value			
At 30 September 1990	£25,548,688	£12,953	£25,561,641

At 30 September 1989

The Memorial Building was valued at  $\pounds 26,300,000$  for the purpose of the 1988 accounts.

The historical cost of the Memorial Building at 30 September 1990 was  $\pounds 2,487,528$  (1989:  $\pounds 2,462,927$ ) and the net book value on this amount would have been  $\pounds 2,450,945$  (1989:  $\pounds 2,426,812$ ).

£25,937,477

£5,848

£25,943,325

7 Investments				
The Group and The Institute	Quoted C	Quoted Cash held for		
	Investments re	e-investment		
	£	£	£	
Cost at 1 October 1989	1,888,149	1,087,204	2,975,353	
Additions	292,451	1,893,306	2,185,757	
Disposals	(324,149)		(324,149)	
	£1,856,451	£2,980,510	£4,836,961	

The quoted investments consist of Gilt-Edged Stocks and equities which are listed on a recognised Stock Exchange, and unit trusts. The value of the listed investments at 30 September 1990 (using middle market prices) was £1,811,520 (1989: £2,194,797) being £44,931 below cost (1989: £306,648 above cost).

3 Current Assets	T	The Institute		
	1990	1989	1990	1989
	£	£	£	£
Stocks (see below)	115,662	35,958	-	-
Debtors	257,404	407,423	102,835	294,549
Rent and service charges in arrears	89,973	281,133	89,973	281,133
Prepayments	54,846	48,916	41,275	13,350
Cash at Bank and in hand	246,033	323,976	220,439	282,601
Cash at Bank held overseas	59,909	57,068	59,909	57,068
Amounts due from subsidiary company	-	-	255,328	183,265
	£823,827	£1,154,474	£769,759	£1,111,966
Stocks and work in progress (see Note 1 (e), page 12)				
Stock of books and publications	59,748	20,000		
Stock of paper for journals	14,827	3,524		
Sundry consumables	18,088	12,434		
Work in progress	22,999	-		
	£115,662	£35,958		
Creditors: amounts falling due within one year	T	he Group	The	Institute
Citutors, amounts ranning due within one year	£	£	£	£
Creditors	340,800	349,314	131,519	151,147
Rents and service charges in advance	328,517	200,895	328,517	200,895
Subscriptions in advance	66,850	48,332	66,850	48,332
Accruals	58,996	105,903	41,500	93,500
	£795,163	£704,444		£493,874

# 10 Provisions for deferred liabilities

Provision for property ma	aintenance
---------------------------	------------

	The Group a	nd the Institute
	£	£
At 1 October 1989	1,040,640	960,983
Transfer from Revenue Account	85,619	58,060
Receivable from tenants	83,596	82,196
	1,209,855	1,101,239
Less: Expenditure incurred during the year	120,623	60,599
At 30 September 1990	£1,089,232	£1,040,640
Provision for loss of rentals during further refurbishment of the building		
Charge to Revenue Account for the year	220,843	
Total deferred liabilities	£1,310,075	£1,040,640

Reserves		
	General	Revaluation
	Fund	Reserve
The Group	£	£
Balance at 1 October 1989	5,015,465	23,510,665
Surplus for the year	793,770	-
Release of amortisation on Revaluation Reserve	354,417	(354,417)
Balance at 30 September 1990	£6,163,652	£23,156,248
The Institute		
Balance at 1 October 1989	5,015,465	23,510,665
Surplus for the year	793,770	-
Release of amortisation on Revaluation Reserve	354,417	(354,417)
Balance at 30 September 1990	£6,163,652	£23,156,248

	1990	1989
Expenditure contracted for but not provided in the Financial Statements		
Expenditure authorised but not contracted for	£39,330	£60,795

#### 13 Operating Leases

At 30 September 1990 the group has annual commitments under operating leases which expire:

	Land &	
	Buildings	Other
	£	£
within one year	-	1,292
in the second to fifth years inclusive	-	1,283
over five years		17,834
	-	20,409

# 14 Pensions

During the year the Institute operated a non-contributory pension scheme providing benefits based on final pensionable pay. The assets of the scheme were held separately from those of the Institute being invested with insurance companies. Contributions by the Institute to the scheme were charged to the Revenue Account so as to spread the cost of pensions over employees' working lives with the Institute. The contributions were determined by a qualified actuary on the basis of triennial valuations using the projected unit method. The most recent valuation was at 1 October 1989. The assumptions, as subsequently modified, which have the most significant effect on the results of the valuation are those relating to the rate of return on investments and the rates of increase in salaries and pensions. It was assumed that the investment returns would be 9% per annum, that salary increases would average 8% per annum and that present and future pensions would increase at the rate of 3% per annum.

The pension charge for the year was £131,645 (1989: £107,630).

The most recent actuarial valuation showed that the market value of the scheme's assets was £499,000. On 1 October 1990 the scheme assets were transferred to a money purchase scheme. The contributions of the Institute are 20% of earnings.

# 15 Subsidiary Companies

The wholly owned subsidiary companies, which are both registered in England, are: Marine Management (Holdings) Limited - engaged in activities largely related to the needs of the Marine Engineer. Marine Activities Management Limited - dormant.

# 16 Approval of Financial Statements

These Financial Statements were approved by Council on 11 December 1990.

# 17 Awards Funds

The Institute manages as Trustees a number of Awards Funds as indicated below:

	Income Accounts					
	Balances	Income	Expenditure	Balances	Capital	Total
	1.10.89.		-	30.9.90.	Balances	Balances
	£	£	£	£	£	£
Herbert Ackroyd Stuart	2,041	556	-	2,597	699	3,296
W.W. Marriner	4,288	1,578	450	5,416	4,163	9,579
Denny Gold Medal	228	441	-	669	734	1,403
Frank Roberts	255	77	-	332	221	553
Percy Jackson Diesel Engine	2,005	540	-	2,545	954	3,499
William Theodore Barker	10,659	2,611	250	13,020	3,000	16,020
Stanley W.H.Gray	91,506	21,595	-	113,101	28,654	141,755
5	£110,982	£27,398	£700	£137,680	£38,425	£176,105

The assets representing the Awards Funds comprise cash £160,324 (1989: £49,312) and quoted securities at cost £15,781 (1989: £100,095). The quoted securities, which are Gilt-Edged Stocks, have been valued at 30 September 1990 at middle market prices and on this basis their market value at that date was £616 below their cost (1989: £7,048 above their cost).

# **Consolidated Statement of Source and Application of Funds**

For the year ended 30th September 1990			1990		1989
	Note	£	£	£	£
Source of Funds	TOLE	-		~	
Generated from operations	1	1,609,154		931,342	
Proceeds of sales of investments		335,434		868,911	
Proceeds of sales of fixed assets		5,375		-	
Decrease in net working capital	2	346,264		-	
			2,296,227		1,800,253
Application of Funds					
Additions to leasehold property		24,601		27,477	
Purchase of investments		292,451		274,996	
Purchase of equipment		79,708		66,822	
Property maintenance expenditure		37,027		20,737	
Centenary events costs		44,236		362,873	
Increase in net working capital	2	-		134,428	
C I			478,023		887,333
Increase in cash resources (including cash he	ld for re-investme	nt)	£1,818,204		£912,920
Notes:					
1 Generated from operations:					
Surplus for the year on ordinary activitie	S		838,006		461,037
Adjustments for items not involving the	movement of fund	s:			
Provision for loss of rentals			220,843		-
Provision for property maintenance			85,619		58,060
Amortisation			391,000		390,000
Depreciation			87,774		85,900
Profit on sales of fixed assets			(14,088)		(63,655)
			£1,609,154		£931,342
2 (Decrease)/Increase in net working capita	ıl:				
Stock			79,704		(8,294
Debtors and Prepayments			(335,249)		386,999
Creditors and Accruals			(90,719)		(244,277
			£(346,264)		£134,428

# **TECHNICAL MEETINGS AND CONFERENCES 1989/90**

# **TECHNICAL PAPERS**

"To fly to float a half life in research and development" by Professor R V Thompson (President IMarE), 10 October 1989.

"Ship fires in practice" by K Harvey, Salvage Association, 24 October 1989.

"Investigation into optimized design of flexible riser systems" by A Soltanahmadi et al, Zentech, 7 November 1989.

"Development of the Doxford engine from 1960" by F Orbeck, Orian Systems, 21 November 1989.

"Development of a ship-wide control and surveillance\_system for fleet replenishment vessels" by C T Marwood, Hawker Siddely Dynamics and Engineering Limited, 5 December 1989.

"Lower cost hydrocarbon production: an achievable objective utilising ROV tooling systems" by J White, Fuel Subsea Engineering Limited, 19 December 1989.

"Developments in marine refrigeration" by R D Heap and G R Scrine, SRCRA, 9 January 1990.

"Review of the marine steam turbine over the last 40 years" by D G Nicholas, GEC Turbine Generators Limited, 23rd January 1990.

"RFA Argus - the conversion of the roro/ container vessel to an aviation training ship" by K Walsh and N A J Wells, H&W Belfast, 6 February 1990.

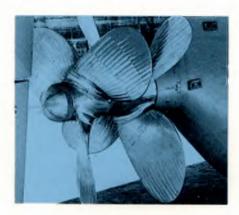
The Rolls Royce spey marine gas turbines" by J Ferrie, Rolls Royce, 20 February 1990.

Seminar: "Unconventional propulsion systems" (5 papers) 5 March 1990:-

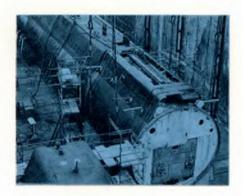
- a) "The multi-fuel diesel engine" by O Grone, MAN B&W Diesel A/S.
- b) "The Sulzer RTA-series dual-fuel marine engine" by B Engesser, Sulzer Diesel Ltd.
- c) "Closed cycle diesel propulsion systems" by A Fowler, University of Newcastle-upon-Tyne..
- d) "The KMAB stirling air independent power system" by O B Person, Kockums Marine AB.



RFA Argus on sea trials, the subject of an evening lecture at the Institute.



Contra rotating propeller system.



Modular design and construction for installation of the Stirling system.



e) "The development of a contrarotating propeller system for large ships" by K Takekuma et al, Nagasaki Research and Development Centre, Nagasaki Shipyard and Machinery Works, Mitsubishi Heavy Industries Ltd.

"Ship construction and safety" by J G Beaumont, Lloyd's Register of Shipping, 19 March 1990.

Seminar: "Offshore safety and reliability" (5 papers), 26 March 1990:-

- a) "Design environmental criteria what are the consequences of exceedance?" by N Lynagh, Noble Denton Weather Services Ltd.
- b) "The analysis of vessel operability and downtime" by G Standing, BMT Fluid Mechanics Ltd.
- c) "API RP2A practice for the 1990s
  a step forward" by P A Frieze, AME Ltd.
- d) "Bayesian techniques in remaining life calculations for welded joints of jacket structures" by A H S Wickham and P A Frieze, AME Ltd.
- e) "Failure mode and effect analysis of a subsea production system" by F J Deegan, RM Consultants Ltd and D J Burns, W S Atkins.

"Advances in meteorological services to the shipping industries" by J Hopkins, Meteorological Office, 27 March 1990.

"Design and development of the fast carriage lifeboat" by F D Hudson, RNLI, 3rd April 1990.

"Harmonic problems and calculations on offshore platforms" by R Yacamini et al, University of Aberdeen, 10 April 1990.

"Development trends in marine bunker fuel properties and their impact on marine diesel engine performance" by J S Mills, Shell UK Oil and B Heron, Shell International Trading Co, 24 April 1990.

"Current and potential opportunities for fibre reinforced composites offshore" by M Seamark, Balmoral Group Ltd, 1 May 1990.

"Power plant development for underwater vehicles up to 3000 tonnes displacement" by Lt J G Hawley RN, RNEC Manadon, and Professor G T Reader, University of Calgary, 22nd May 1990. Seminar: "The impact and economic effect of 1992 on the shipping and marine industries" (6 papers), 1 June 1990:

- a) "Completion of the internal market: the shipping dimension" by R G Jones, Department of Transport.
- b) "The engineering profession in Europe" by P J Hector, British International Committee for International Engineering Affairs.
- c) "1992 the implication for British shipping" by P Le Cheminant (GCBS).
- d) "What will 1992 mean to the EEC shipping in the world context?" by Sir Frederick Bolton, President, British Maritime League.
- e) "Opportunities arising from the European market for the marine industry" by Rear Admiral P G Hammersley, Director BMEC.
- f) "1992 opportunity or threat" by A Keddie, Department of Trade and Industry.

# **INTERNATIONAL CONFERENCES**

# Maritime Systems Integrity - ICMES '90

19-21 September 1990. 28 papers.

"Advanced health monitoring systems for marine medium-speed diesel engines. A naval and merchant view" by C Elliott and K Banisoleiman, MOD and Lloyd's Register

"A study on the diagnosis techniques of rotating machinery using vibration signals" by Dr Y J Kim and Prof H J Jeon, Korea Research Institute of Ships and Ocean Engineering and Korea Maritime University

"Ship reliability investigation system in Japan" by Prof H Tamaki, Shinshu University

"Maintenance engineering: optimisation of maintainability from design stage to scrapping and benefits to system availability, reliability and safety" by Ir P Kloppenburg, Techno Fysica BV

"Lower maintenance cost through maintenance optimisation in design and operation" by Prof M Rasmussen, The University of Trondheim

"Experiences from integrated logistic support in ship design" by E Reinholds, Kockums Marine AB "Liner wear and fuel particle concentration – evaluation of some shipboard measurements" by Prof Dr-Ing G Großmann, TU Berlin

"Fuel related wear mechanisms in heavy oil-fuelled diesel engines as exemplified by the first piston ring" by R Behrens, Motoren-Werke Mannheim AG

"Efficiency of cleaning devices – report on a research project" by Prof Dr-Ing H Meier-Peter, Research Institute for Ship Operation

"Waste handling on board ships" by G J Deerberg, Deerberg Systems

"Knowledge-based control and monitoring of machinery systems" by B W Jaspers, Prof J Klein-Woud, H A Schaap and §G Veenstra, NEVESBU, TU Delft, LOGOS Industrial Automation and §Stork Wärtsilä Diesel

"Integrated bridge control" by S Kristiansen, L E Mathisen and M Villabø, Norwegian Institute of Technology and Norwegian Marine Technology Research Institute A/S (MARINTEK)

"Diesel engine waste heat recovery – possibilities and limitations" by J P Hansen, Aalborg Marine Boilers & Engineering A/S

"Computer-aided design of marine machinery systems" by B Meek-Hansen, Norwegian Marine Technology Research Institute A/S (MARINTEK)

"Design procedures for the reliability of integrated marine systems" by Prof J Stefenson, Chalmers University of Technology

"Rotatable thrusters for propulsion" by O Hermansson and L Larberg, KaMeWa AB

"Control of propulsion systems" by L R Hansen, MAN B&W Diesel A/S

"Total ship integrated controls" by Prof M Blanke and K Jensen, Aalborg University and Søren T Lyngsø A/S

"Requirements to interface specifications and project management for integrated ship control" by M Berglund Simonsen and G Lund, Logimatic Marine Consultants AS

"A method of fault diagnosis for shafting by vibration spectrum" by M Zhao and Prof Z H Luo, Shanghai Jiao-Tong University "Vibration signals and their use in the diagnosis of engine component faults" by Prof Y Zhou, Y Peng and Z Li, Wuhan University of Water Transportation Engineering

"A theoretical and experimental investigation of propeller damping and transient torsional resonance response" by L Bryndum, S B Jakobsen and M Matosevic, MAN B&W Diesel A/S and Uljanki Engineering Company Ltd

"Shipboard noise prediction with spreadsheet programs" by Dr Jae S Kim and Hyun J Kang, Korea Research Institute of Ships and Ocean Engineering

"Practical suggestions for the design, construction and maintenance of vessels with high acoustical performances" by P Calcagno and E Rizzuto, CETENA and University of Genoa

"Propeller excited noise on board ships" by PT Hynnä, Technical Research Centre of Finland (VTT)

"On sound paths from resiliently mounted machinery" by MJAM de Regt, TNO Institute of Applied Physics

"Noise and vibration criteria for ships and offshore constructions" by E Brubakk, Det Norske Veritas Classification A/S

# Diesel Engine Combustion Chamber Materials for Heavy Fuel Operation

Volume published in 1990. 14 Papers.

"Development trends in marine bunker fuel properties and their impact on marine diesel engine performance" by B Heron and J S Mills, Shell International Trading Co and Shell UK Oil

"Review of operating experience with current valve materials" by M G Kingston Jones, J R Thomas and A S Radcliff, Ricardo Consulting Engineers Ltd and Shell Thornton Research Centre

"Problems caused by burning heavy fuels in diesel engines" by R Behrens and Prof Dr-Ing K Groth, University of Hanover

"Materials selection and R&D programme requirements" by D R Holmes, A Strang and C H White, Consultant, National Corrosion Service, National Physical Laboratory, GEC Alsthom Turbine Generators Ltd and INCO Alloys Ltd

"Hot corrosion tests on candidate diesel valve materials" by J R Nicholls and

D J Stephenson, School of Industrial Science, Cranfield Institute of Technology

"Hot wear tests on candidate materials" by M P Johnson, P Moorhouse and J R Nicholls, NEI – International Research & Development Co Ltd, Late of NEI – International Research and Development Co Ltd and School of Industrial Science, Cranfield Institute of Technology

"The physical and mechanical properties of valve alloys and their use in component life evaluation analyses" by S K Sinha, A Strang and C H White, Ruston Diesels Ltd, GEC Alsthom Turbine Generators Ltd and INCO Alloys Ltd

"The problems associated with burning heavy fuels in diesel engines: a study of blow-by through exhaust valve seats as a result of burning heavy fuels in diesel engines" by T Takaishi, M Zama, S Kawanami and K Takasaki, Mitsubishi Heavy Industries Ltd

"Development and production of valves for engine tests" by S Grainger, Z Rudevics, P Walter and §C H White, Deloro Stellite Ltd, TRW Valves Ltd, Wall Colmonoy Ltd and §INCO Alloys Ltd

"Ceramic coatings' influences on medium speed diesel engine performance and reliability" by I Kvernes, O Nørholm and J Svartdal, IKT (Norsk Hydro)

"Combustion chambers to accommodate the use of low grade heavy fuels" by R Herrmann, SEMT Pielstick

"The influence of fuel composition on lives of current valve materials for diesel engines – metallurgical and mechanistic studies" by S R J Saunders, S J Spencer and J R Nicholls, National Physical Laboratory and Cranfield Institute of Technology

"The influence of fuel composition on lives of current valve materials parametric equations for valve life prediction" by J R Nicholls and D A Triner, Cranfield Institute of Technology and Lloyd's Register

"Engine tests and assesment of results" by E S Hannan, S K Sinha, A B Keighley, §J R Nicholls and —Z Rudevics, Mirrlees Blackstone (Stockport) Ltd, Ruston Diesels Ltd, NEI Allen Ltd, §Cranfield Institute of Technology and —TRW Valves Ltd

# IMAS "90 - Marine Technology and the Environment

23-25 May 1990 25 papers

"Regulatory and environmental aspects of marine pollution" by Dr J Cowley, The Maersk Company (IOM) Ltd

"Voyage data recorders – operating with safety and efficiency" by D W Robinson, Lloyd's Register of Shipping

"Oil and the marine environment" by Y Sasamura, International Maritime Organization

"Environmentally sensitive areas and special areas under MARPOL 73/78" by Andren and D Liu, International Maritime Organization

"Double hulls and the prevention of oil spills" by A McKenzie, Tanker Advisory Centre Inc

"Technology, MARPOL and tankers – successes and failures" by M G Osborne and J M Ferguson, Shell International Marine Ltd and Lloyd's Register of Shipping

"Shipboard transport of packaged dangerous goods and a summary of MARPOL 73/78 Annex III" by H Brathaug, International Maritime Organization

"The practical implications of the carriage of an Annex II Category 'A' cargo" by I J McLeod, Snowden McLeod & Associates Ltd

"Transport of irradiated reactor fuel from Japan to Europe" by R D Cheshire and D J Boyer, British Nuclear Fuels plc

"Emission control of two-stroke lowspeed diesel engines" by O Grøne, MAN B&W Diesel A/S

"Emission control for marine mediumspeed engines" by G Hellen, Wärtsilä Diesel International Ltd

"Environmental concerns and their impact on marine diesel engines" by Dr R M Halleen, Caterpillar Inc

"Marine diesel engine exhaust emissions when operating with variable quality fuel under service conditions" by J S Carlton, Lloyd's Register

"The effects of the Montreal protocol on the use of CFCs" by R D Heap, Shipowners Refrigerated Cargo Research Association

"Salvage and pollution" by Capt A D Marshall, The Salvage Association "Oil spill clean-up" by B S Goodland, Texaco Ltd

"Treatment of contaminated sediments" by B J Visser, Serasea bv

"TBT free anti-fouling – their effect on ship operations" by P Redwood, International Paint Ltd

"The ship as a vector in biotic invasions" by J Schormann, Dr J T Carlton and M R Dochoda, Nutak Horizons Inc, Williams College and Great Lakes Fishery Commission

"International and regional regulations for shipboard generated waste disposal" by H Cygan, International Maritime Organization

"Aspects of RN pollution control" by Lt J M Newell RN and A J Tillin, Ministry of Defence (Procurement Executive)

"Shipboard generated waste – treatment and disposal – operational experience on passenger cruise vessels" by R H Vie, International Shipping Technical Services Inc

"Waste handling on board of ships" by G J Deerberg, Deerberg Systems

#### Singapore Branch 9th biennial seminar

# A Decade of Development in Marine Engineering

23-24 November 1989 12 papers

"Advances in high output marine diesel lubrication technology" by L Lim Kfe Liat

"A survey of automatic navigation" by Dr M J Dove and J Chudley

"Crane technology - developments for improved cargohandling" by J E Forsberg

"High technology for practical marine engineers - computers in machinery monitoring and diagnosis" by Ho Hiang Kwee

"Overview of developments in maritime training - a change overdue" by J C Thompson and S L Handa

"Review of classification procedures and changes over the last decade" by C L Foo

"Marine autopilot development" by Dr M J Dove, J Chudley, C Wright and R Cheesley

"First aid for - fuels" by M Evans

"Developments over the past ten years in marine engineering" by Professor R V Thompson, President, IMarE

"Marine surface coating technology - a decade of development" by B Sykes

"Fuel treatment techniques over past ten years" by R Carrick

"Operational experience with Mitsubishi UEC75LSII diesel engine" by Y Wakatsuki

#### Martec '89 Marine Symposium

# Wellington, New Zealand

## 6-7 November 1989. 14 papers.

"Marine technology - growth or despair?" by Professor R V Thompson, President, IMarE

"The development of packaging, storing and transportation systems for refrigerated export produce from New Zealand during the past 100 years" by J G Fleck, Blueport ACT (NZ) Ltd "Classification society certificates, their function and effect" by G Cedercreutz, Det Norske Veritas, Sydney

"Adapting to change" by K D'Souza, Maritime Transport

"Application of integrated logistic support" by L Prandolini, Secretary, Sydney Branch, IMarE

"Quality assurance and the NZ ship repair industry" by P J C Clarke, Caple, Price, Downer Engineering Ltd

"Reduction method of propeller shaft vibration of ships" by K Aoyagi, NKK Corporation, Hayama, Tokyo University

"International maritime regulations participation and enforcement by a small country with limited resources" by D J Eyres, Maritime Transport

"The reduction of ship motions: a historical overview" by J E Sloggett, Secretary, IMarE

"Logistic support for the Royal New Zealand Navy" by Commander J F Lowen, Deputy Director of Supply, Defence Headquarters RNZN

"Automatic testing in the RNZN and RAN" by R A Bolton, Deputy Manager, Electrical HMNZ Dockyard and Lt S P O'Brien, RAN, Director Naval Engineering Requirements, Sydney

"Quality assurance and motivational matters in the New Zealand shipping industry" by P J C Clarke, Cable, Price, Downer Engineering Ltd and M Wall, Audit Office

"Preliminary design of trawlers using a compromise design support problem technique" by P Pal, University of NSW, Sydney

"A change in management to manage change" by J Seaton, Australian Maritime College, Launceston



W A O'Neil, Secretary-General, IMO, in discussion with Dr J Cowley, Past President of the Institute, at IMAS 90.

# SUBSCRIPTION RATES1990

# **INSTITUTE SUBSCRIPTION RATES FOR 1990/91**

Class	Annual Subscriptions	Annual Subscriptions *Certain Countries
		·Certain Countries
Fellows	£55.00	£37.00
Members	£48.00	£32.00
Associate Members		
age 30 years and over	£42.00	£31.00
age 25-29 years	£24.00	£20.00
age 23-24 years	£13.00	£13.00
Graduate Members/Associates/Consociates		
age 30 years and over	£42.00	£31.00
age 25-29 years	£24.00	£20.00
age 22-24 years	£13.00	£13.00
age under 22 years	£ 7.00	£ 7.00
Retired Members		
with over 45 years membership receiving full services	Free	Free
with under 45 years membership receiving full services	£25.00	£25.00
with 20 years membership receiving MER & Bulletin only	£ 9.50	£ 9.50
with 20 years membership receiving Bulletin only	£ 4.00	£ 4.00
Affiliates	£25.00	

\*Bangladesh, Burma, Egypt, Gambia, Ghana, India, Indonesia, Kenya, Lebanon, Malawi, Nigeria, Pakistan, Peoples Republic of China, Philippines, Sierra Leone, Sri Lanka, Yemen, Zambia. Members residing in India and who are currently members of both The Institute of Marine Engineers and The Institute of Marine Engineers (India) are subject to a subscription rate of £3.

Members who have retired from remunerative employment are eligible to apply for the reduced subscription rate of £25 p.a. for which they are entitled to receive the full membership services including Technical Transactions, Marine Engineers Review and the Bulletin. Those members who have similarly retired and who have been on the Membership Roll for more than 20 years are entitled to a reduced rate of £9.50 p.a. or £4.00 p.a. and receive respectively MER and the Bulletin or the Bulletin only.

Any member suffering financial hardship may apply to the Membership Committee to be considered for a reduction in the annual subscription. Members making such an application are assured that it will be treated with complete confidentiality. Students studying on full-time courses leading to an honours degree or similar qualification accredited with the Institute are also eligible to apply for a reduced subscription rate.

All members elected to the membership roll with suitable qualifications and wishing to register with the Engineering Council are required to pay an entrance fee as listed; this payment, however, includes the annual registration for the first year. Retired members who are registered with the Engineering Council must pay approximately 50% of the annual registration fee.

Those members belonging to two or more professional engineering institutions and registered with the Engineering Council need only pay one annual registration fee through one institution of their choice. Such members should ensure that the institution through which they wish to make payment is made aware of this, and that the other institutions are notified of the member's choice. Failure to ensure that this fee is paid can result in a member being removed from the Engineering Council Register.

# **ENGINEERING COUNCIL FEES 1990/91**

	Registration	Entrance	Annual Registration	Retired Members
Class	Сатедогу	Fee	Fee	Fee
Fellows	C.Eng.	£21.00	£10.70	£5.00
Members	C.Eng.	£21.00	£10.70	£5.00
Associate Members	I.Eng.	£17.00	£9.00	£4.00
Associates	Eng.Tech.	£ 7.00	£4.50	£2.00

# MEMBERSHIP STATISTICS

# Analysis of membership classes as at 30 September 1990

	United Kingdom	Overseas	Address Wanted	Total	Change
Fellows	3067	1743	181	4991	-85
Members	3437	1777	120	5334	-3
Associate Members	1835	1385	68	3288	+201
Graduate Members	67	30	3	100	+24
Associates	345	300	25	670	+18
Consociates	1137	603	94	1834	+99
Affiliates	- -	155	_	155	+10
Total	9888	5993	491	16372	+264
Grand Total 16,372	9000	3993	491	10372	T

Excluding Past Presidents 2 Honorary Fellows 2 Companions 1

# Branch membership as at 30 September 1990

			Associate	Graduate				
United Kingdom	Fellows	Members	Members	Members	Associates	Consociates	Total	Change
Aberdeen Maritime Joint	81	132	61	4	9	51	338	+14
Devon & Cornwall Joint	124	173	82	9	30	39	457	+9
Kingston-upon-Hull & Humber	95	100	84	2	11	46	338	-36
North East Coast	293	333	215	3	21	240	1105	+69
Northern Ireland Joint	56	39	46	1	9	11	162	+3
North Midlands	60	88	57	-	9	28	242	+1
North West England	336	367	227	7	46	162	1145	-11
Scottish	329	382	261	10	42	146	1170	+13
South East England	395	383	157	2	34	97	1068	+3
Southern Joint	350	379	203	3	53	88	1076	+15
South Wales	101	97	65	-	12	15	290	-3
Western Joint	116	131	59	2	18	28	354	+2
West Midlands	101	118	62	1	9	39	330	+9

			Associate	Graduate				
Overseas	Fellows	Members	Members	Members	Associates	Consociates	Total	Change
Eire-Cork	15	15	25	-	7	68	130	+64
Eire-Dublin	22	29	25	2	4	10	92	0
Australia-Canberra	12	15	2	-	2	2	33	0
Australia-Newcastle	35	22	40	-	13	11	121	+8
Australia-Queensland	60	63	43	-	25	24	215	+4
Australia-Sydney	144	101	60	1	25	35	366	-11
Australia-South	24	22	16	-	7	8	77	+7
Australia-Victoria/Tasmania	99	76	46	-	14	44	279	+22
Australia-Western	53	48	49	-	22	20	192	+21
New Zealand-Auckland	65	63	35	1	6	6	176	-6
New Zealand-South Island	31	8	14	-	6	6	65	+2
New Zealand-Wellington	39	25	20	2	1	3	90	-7
Bangladesh	3	2	45	-	5	14	69	0
Greek Joint	50	57	32	4	1	27	171	+9
Hong Kong Joint	70	225	116	9	37	90	547	-9
Isle of Man	17	12	9	-	5	2	45	+5
Korean Joint	5	6		-	1	-	12	0
Malaysia Joint	4	45	55	2	6	22	134	+13
Malta Joint	12	11	9	-	-	3	35	+1
Netherlands	47	26	22	-	4	8	107	-2
Nigeria	6	22	22	-	4	6	60	+15
Pakistan	30	27	63	-	7	1	128	+18
Singapore	57	147	105	2	20	30	361	+20
Sri Lanka	11	21	87	-	14	5	138	+7
United Arab Emirates	17	18	23	1	1	1	61	+7
USA-Eastern States	89	47	37	2	4	37	216	+19
USA-Houston (Gulf Coast)	19	12	-	-	-	10	41	0

# Areas (excluding branches) with 25 or more members as at 30 September 1990

			Associate	Graduate				
Area	Fellows	Members	Members	Members	Associates	Consociates	Total	Change
Africa Central & West	11	15	32	-	10	5	73	+4
Canada	203	121	32	-	6	20	382	-18
Channel Islands	10	7	10	-	1	2	30	0
Far East	30	26	35	-	3	6	100	-13
France	11	14	6	1	3	3	38	+2
India	126	197	122	-	9	11	465	0
Italy	20	14	2	-	-	1	37	+1
Near & Middle East	46	35	35	1	12	22	151	+3
Norway	9	22	2	-	-	-	33	-4
Portugal	17	5	11	-	-	2	35	-2
South Africa	68	38	9	-	3	3	121	-1
South America	16	6	9	1	1	4	37	5
Spain	16	11	12	-	-	3	42	-2
USA (excluding Eastern States & Hous	ston) 26	27	12	-	3	7	75	-28
Germany	17	15	12	1	-	4	49	0
West Indies	11	6	7	-	2	6	32	+3

# Institute membership 1981 to 1990

Year	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Corporate members	12,352	11,966	11,725	11,496	11,235	10,760	10,472	10,506	10,413	10,325
Non Corporate members	5,497	5,362	5,284	5,325	5,311	5,220	5,294	5,425*	5,695*	6,047*
Total	17,849	17,328	17,009	16,822	16,546	15,980	15,766	15,931	16,108	16,372
Excluding Past Presidents 2 Honorary Fellows 2 Companions 1.										

\*includes Overseas Affiliates

# Members who Qualified for Certificates of Forty-five Years Service.

Name	Area	Name	Area
A W Baldwin(Member)	Scottish	G W Lascelles(Fellow)	South East England
A G Bancroft(Fellow)	South East England	H Lawless(Fellow)	Ireland
R Bartlett(Fellow)	South East England	M Macdermott(Fellow)	London & Home Counties
J Bartley(Fellow)	North West England	E W Marshall(Member)	London & Home Counties
F H Bland(Fellow)	New Zealand	G Miller(Member)	South Africa
T Cockburn(Consociate)	North East Coast	W F Moore(Consociate)	Western Joint
G H Cornish(Fellow)	West Midlands	R Morrison(Fellow)	Scottish
A L Covell(Fellow)	South East England	R E Plews(Fellow)	Southern Joint.
W L Crosbie(Consociate)	Southern Joint	J B Ramsay(Fellow)	London & Home Counties
E M Dawes(Member)	Queensland, Australia	J Rennie(Fellow)	Scottish
R Elliott(Fellow)	South East England	G Robertson(Fellow)	Scottish
F J Everest(Consociate)	Address wanted	T Rowan(Fellow)	South East England
D C Fendick(Member)	Southern Joint	T W Sanderson(Fellow)	Canada
H R Fowler(Fellow)	Kingston-upon-Hull & Humber Area	T Shannon(Fellow)	Canada
H Gerrard(Fellow)	NSW, Australia	C A Sinclair(Fellow)	South East England
M J Gilbert(Member)	Southern Joint	J Simpson(Member)	Southern Joint
G Hassan(Member)	South East England	D M Spiller(Fellow)	Scottish
J D J Hawksley(Member)	Southern Joint	D B Stables(Fellow)	London & Home Counties
B V Hill(Fellow)	South Africa	J Thomson(Fellow)	Address wanted
W J Hipwell(Fellow)	Malta	L Tranberg(Fellow)	Norway
J F Howey(Fellow)	North East Coast	P C Trotter(Fellow)	NSW, Australia
E P Hunt(Fellow)	Victoria, Australia	M Trounce(Fellow)	Southern Joint
L Irvine-Brown(Fellow)	West Midlands	J H Turner(Member)	Canada
E P C Kelly(Member)	Western Joint	A G Wareing(Fellow)	Devon & Cornwall
A W Kemp(Fellow)	Kingston-upon-Hull & Humber Area	B L Watkins(Member)	London & Home Counties
C N Lamb(Fellow)	Southern Joint	R A Watson(Fellow)	London & Home Counties

# **REPORTS OF THE BRANCHES 1990**

#### Aberdeen Maritime Joint

During the year a total of five technical meetings were held at the Treetops Hotel, Aberdeen and at the National Hyperbaric Centre, Aberdeen. The chosen subjects were selected to cover as wide a range of marine and offshore related topics as possible. The meetings were well attended and were as follows:

# 2 October 1989

Update on the steam trawler "Explorer" by J Edwards, Aberdeen Museums Department. Diving support vessel/ National Hyperbaric Centre" by S Roberts, Stena Shipping and T Emmerson, NHC.

#### 4 December 1989

"Well stimulation vessel" by M Norris, Dowell Schlumberger.

#### 5 February 1990

"Mobile offshore units/classification" by C Keene, Global Marine and M Brogan, DNV.

#### 5 March 1990

"Flexible pipes" by G Guy and R Hislop, Coflexip.

#### 2 April 1990

"Fixed installations/certification" by R Gilbert, Chevron and W McLaren, Lloyd's Register of Shipping.

A now traditional Burns Supper was held in the Westburn Park Lounge, Aberdeen in January 1990 attended by members, wives and friends. The principal speaker for the evening was G Mason who gave a delightful and entertaining speech.

The Annual Dinner Dance was held at the Treetops Hotel, Aberdeen in September 1990 with members and guests attending. The branch was honoured to welcome the President, Professor R V Thompson and his wife. A most enjoyable evening was had by all and the function was considered a huge success.

# Devon and Cornwall Joint

The Centenary Year programme suffered setbacks ranging from vagaries of the weather, through changes of venue on security grounds to freak interference from a foreign radio station disturbing the public address system during the actual Centenary Lecture! The first meeting of the year suffered from the abrupt change of venue resulting from more restrictive security procedures at the original site being suddenly applied at short notice. The worst weather in living memory, if not on record, disrupted one meeting by almost drowning out the speaker with its noise. Then some of the best weather tempted a potential audience away from our final lecture, being combined with lengthening days.

The social events and technical visits enjoyed better fortune in being less bothered with gremlins. A visit to Hinkley Point nuclear power station was particularly successful and notable for a collection of £45 towards the Institute's Lifeboat Appeal. The other Centenary event, the Dinner Dance, was honoured by the presence of several distinguished guests among their number being the President, Professor R V Thompson and his lady. Arising from appeals to local firms for gifts to be won in a raffle during the dinner were two high value prizes which necessitated organising a lottery involving members nationwide and which raised about £5,900 toward the Lifeboat Appeal.

Only two branch prizes were awarded this year, no doubt reflecting the falling numbers of students entering the maritime scene. Membership of the Western Alliance of Professional Organisations has led to a wider dissemination of information about meetings and lectures between local groups and the branch Committee is pleased to continue with the association. Representation on ECRO has been maintained and this is expanding to include Project UNCLE in addition to Neighbourhood Engineers. Schools in the area are slowly becoming aware of the value of these two links.

The Annual General Meeting continued the successful blend of business and pleasure followed in previous years by enjoying a Buffet Supper with ladies and other guests after official business concluded.

Technical programme:

#### 10 October 1989

"The re-engining and subsequent operation of QE2" by S L Hare, Chief Engineer. Joint meeting with Institution of Electrical Engineers.

14 October 1989 Technical visit to Hinkley Point nuclear power station.

#### 24 October 1989

"The high cube containers". Junior lecture presented by A Speed, R Evans and C Johnson, undergraduates in marine technology at Polytechnic South West. 14 November 1989

IMarE Centenary Lecture. "I K Brunel then and now" by Professor J B Caldwell, University of Newcastle-upon-Tyne. Joint meeting with the Institution of Civil Engineers.

#### 5 December 1989

"The physical and environmental problems of oil pollution" by Cdr K Bywater RN, Marine Pollution Control Unit, and K Partridge, RSPCA Oiled Sea Bird Unit, Plymouth.

# 30 January 1990

"Designing yachts for the America Cup and other contests" by E Dubois, Dubois NA Ltd. Lymington. Joint meeting with Nautical Institute.

#### 13 February 1990

"The trireme project - construction and testing of an ancient Greek warship" by J F Coates.

#### 6 March 1990

"Commercial diving" by A Bax, Diving School, Fort Bovisand. Joint meeting with Institution of Civil Engineers.

### 18 April 1990

Technical visit to R N Dockyard and South Yard Museum.

# 8 May 1990

"The SS 'The Great Britain', her history, salving and reconstruction" by Dr B Greenhill, lately Director, Greenwich Maritime Museum.

# 21 June 1990

Technical visit to the Navigation Simulator, Polytechnic South West.

## Kingston-Upon-Hull and Humber Area

The branch has been well supported by members and guests for all the activities arranged. The technical lectures continued to be held at the Post House Hotel, Hull, where the facilities for both the lecturer and audience were excellent.

A party of members and their wives enjoyed a visit to the British Gas rough field gas reception and process facility at Easington where a video presentation and then a guided tour proved most interesting.

The 39th Annual Dinner was held at the Guildhall, Hull, in November 1989, the Toast to the branch was proposed by Rear Admiral M A Vallis, Deputy President, and the response given by the Chairman. The Toast to the City of Kingston upon Hull was given by J Prescott MP, Shadow Transport Secretary and the response was given by the Lord Mayor of Hull. The Annual Dinner Dance was held at the Willerby Manor Hotel, Hull, where again the tombola raised a magnificent sum which was divided equally between the Institute Guild of Benevolence and the Newland Childrens Home. On Remembrance Sunday the Chairman laid a wreath at the Hull Cenotaph in remembrance of the men of the Merchant Navy who died during the World Wars.

Technical papers presented by the branch were as follows:

28 September 1989 "Quality assurance and certification offshore" by P Neal, British Gas Plc.

9 November 1989 "Sinking and then the discovery of the "Titanic" by G G Connor.

7 December 1989

"The significance of balancing rotating and reciprocating machines" by B H Thomas, Vibration Consultants & Instrumentation Ltd. Joint lecture with I Mech E.

22 February 1990 "The dispersal of gases in offshore platforms" Flakt Indoor Climate A B.

22 March 1990 "Marine insurance now and in the future" by A S Nunn, The Scottish Lion Insurance Co Limited.

26 April 1990 "Marine and public safety" by Dr J Cowley, Britship (I O M) Limited.

# North East Coast

The following technical meetings were held:

28 September 1989 Centenary Lecture "A history of marine engineering in the north east" by E P Crowdy.

9 October 1989 ECRO Prestige Lecture "The electrification of the east coast British Rail intercityline" by C N Schofield.

12 October 1989 "Independent taxation and financial planning" by P Parker.

26 October 1989 An overview of Morecambe gas field exploration by M Young.

1 November 1989 (Joint Meeting) "The new challenges for maritime industries in 1989" by J G Davis. 6 November 1989 (Joint Meeting) "Closed cycle diesel engines as underwater power generators" by Dr A Fowler.

23 November 1989 "Naval thrust bearings vickers marine engineering" by J Simmons and N Henderson.

14 December 1989 "Development of the doxford engine from 1960" by Dr F Orbeck.

25 January 1990 "Information technology in Lloyds Register" by C J J Beart.

22 February 1990 (Joint Meeting) Annual General Meeting "Marine insurance now and in the future" by A S Nun.

29 March 1990 "Conversion of R F A Argus at H and W Belfast" by K Walsh.

26 April 1990 "The Titanic" by G G Connor.

The Annual Dinner Dance was held at the Civic Centre, Newcastle-upon-Tyne in March 1990 when members and guests attended. The Toast to the Institute was proposed by M Hobdell, Institution of Mechanical Engineers and the response was given by Professor R V Thompson, President of the Institute. The branch Chairman proposed a toast to the guests. A raffle conducted on behalf of the Guild of Benevolence raised £790.

# Northern Ireland Joint

The session commenced with the 16th Annual Dinner being held at the Culloden Hotel, Cultra. The guest of honour was E D Mackie, Managing Director, Kvaerner Govan Limited. The Institute was represented by Rear Admiral M A Vallis, Deputy President, and A Rogan deputised for the President of The Royal Institution of Naval Architects. A most informative and enjoyable evening was had by members and visitors.

The lecture on 28 November 1989 was given by L A Graves, Installation Controller, MacGregor Navire (GBR) Limited and was entitled "Life of single pull hatch cover system". Mr Graves gave a comprehensive review of the construction process and installation of these covers and their mechanism. The talk was accompanied by some very fine slides and the lecture was followed by a lively question session. The lecture on 23 January 1990 was given by A F Harrold, Past President of the Institute, and was his presidential address entitled "Development of merchant ship propulsion machinery over the past 25 years". Mr Harrold was no stranger to Belfast and his talk was extremely well received, especially when dealing with the H & W, B & W type of engines. The illustrations were well presented and a most lively discussion ensued at the end of the lecture.

The Annual Dinner Dance was held in February 1990 at the Culloden Hotel, Cultra and the branch were honoured with the presence of Professor R V Thompson, President of the Institute, and Mrs Thompson. A most enjoyable evening was had by all and a tombola in aid of the Guild of Benevolence raised the sum of £100.

The Annual General Meeting was held in Engineering House, the headquarters of the Engineering Council Regional Organisation, Northern Ireland Region, Belfast, on 13 February 1990.

The lecture on 13 March 1990 was of a special type and originated from a chance remark made to the lecturer D R Cusdin who was closely connected with Harland and Wolff at that time on a special project. He presented a most informative and illustrated lecture on "Gas carriers." The history of these vessels was traced from inception to present day design and technology. The audience was especially interested since LNG and LPG carriers had in recent times been constructed in Belfast. Mr Cusdin, Development Co-ordinator of Shell International Marine, was faced with a most enthusiastic and probing question time at the conclusion of the lecture.

On 8 June 1990 a party of members, friends and their families once again enjoyed an evening cruise in Belfast Lough on board M.V. "Balmoral" of Waverley Excursions. This has now become an annual event and luckily the weather was kind.

The lecture on 25 September 1990 was given by B Cunningham, District Controller, H.M. Coastguard Maritime Rescue Sub- Centre, Belfast. The lecture entitled "Maritime search and rescue" dealt with this topic in an expert and direct manner. The members present were especially interested in some graphic slides and film clips of the dramatic rescue of passengers from M.V. "Antrim Princess" when she lost power completely shortly after leaving Larne Harbour on a stormy winter's morning and nearly grounded off the coast just south of Larne.

This was a severe test of the work of the Coastguards under extreme conditions and the co-ordination and rescue left nothing to criticism. The use of helicopters was highlighted in this incident and the audience showed their gratitude for the service the Coastguards provide.

## North Midlands

Following the branch Annual General Meeting at the Waggon & Horses, Langset, S. Yorks on 14 October 1989, members and their wives visited the nearby Bretton Hall sculpture park.

On 22 November 1989 G G Connor, Mycon Marketing gave a well illustrated lecture entitled "The Titanic a voyage in time" followed by a buffet at the Wellersly Hotel, Leeds.

The branch Annual Dinner was held at Dam House, Crooks Park, Sheffield in April 1990 with good support from members and friends.

19 May 1990 a joint visit was made to the North Yorkshire Moors Railway, Pickering. A coach party from Derby collected members at Leeds and joined members from the North West and North East Coast branches on the rail journey.

On 18 August 1990 a coach party of members from Leeds and Derby visited the Thames Barrier, the previous Centenary Year visit reported by the Chairman as an overwhelming success ensured good support for this excellent visit.

The final event was a lecture on 25 September 1990 at Messrs. Rolls Royce & Associates, Derby, given by Lt J G Hawley R N, Royal Naval Engineering College, Manadon on "Power plant for underwater naval vehicles up to 3,000 tonnes (small submarines)". As in previous years the members supported the local ECRO events.

## North West England

Attendance at this year's lectures again showed a slight increase on the previous year. Seven lectures were arranged as follows:

2 October 1989 "Condition based monitoring" by S Drew, YARD. 23 October 1989 Prestige lecture for Centenary year. "Marine engineering over 140 years viewed from Merseyside" by J L Snowdon.

6 November 1989 "The solution of machinery problems by field investigations" by F Kunz, Lloyds Register.

4 December 1989 "The MAK C engine & engine diagnosis system" by D Bull and A Phillips, Krupp Mak London Ltd.

15 January 1990 Lecture arranged in conjunction with LADSIRLAC. "The evolution of lubricants for marine propulsion systems" by R F Thomas, British Petroleum.

5 February 1990 "Marine & public safety" by Dr J Cowley, Britship (IOM) Ltd.

#### 5 March 1990

"Some experiences with the ship of the future" by K H Paetow, Howaldswerke Hamburg.

The lecture given by J L Snowdon was arranged in conjunction with the Merseyside & North Wales Branch of the IMechE and was held at the Merseyside Maritime Museum. Rear Admiral M A Vallis, Deputy President was guest of honour.

ECRO continues to receive the support of branch members on their committees and the branch is pleased to be able to report that the Professional Engineers of South Cumbria (PESC) has now become a sub-group of the North West Region of ECRO. The Neighbourhood Engineer Scheme continues to be supported by branch members.

A social outing to the North Yorkshire Railway at Pickering was held. The weather on the day was excellent and those who went enjoyed themselves. On the way home a diversion was made to the famous Harry Ramsdams to try the cuisine.

### Scottish

The following papers were presented:-

3 October 1989 "Some aspects of modern lifeboat design" by D Hudson, Chief Technical Officer, Royal National Lifeboat Institution. 7 November 1989 "Oil eating, fuel swiggin, metal munching microbes" by T Hill, Managing Director, Echa Microbiology Ltd.

#### 5 December 1989

"The application of quality assurance standards to ship equipment" by D W Smith, Principal Surveyor, Bureau Veritas. Joint meeting with the Institute of Quality Assurance, West of Scotland Branch.

#### 9 January 1990

"Application of a cost effective cylinder oil" by H Smith, International Marine Manager, Castrol (U.K.) Ltd.

#### 16 January 1990

"Assessment and repair of existing platforms" by W J Winkworth, Principal Surveyor, Lloyd's Register of Shipping. Joint meeting with the Institution of Engineers and Shipbuilders in Scotland.

## 6 February 1990

"Latest development of Allen diesel engines" by J Kitchenman, Technical Manager, W H Allen.

#### 5 March 1990

"History of yachting" by I McAllister. Secretary, Royal Northern Yacht Club. Joint meeting with the Greenock Association of Engineers and Shipbuilders.

The Annual Dinner Dance was held at the Albany Hotel, Glasgow in November 1989 with members and guests attending. A most enjoyable evening was had by all and it was considered a huge success. Through the tombola the guests contributed a generous amount towards the Guild of Benevolence.

The 36th Annual Dinner was held at the Hospitality Inn, Glasgow in February 1990 and was attended by members and their guests. The main speaker and guest of honour was Professor D T H Weir, Director & Professor of Organisational Behaviour, Chairman, Glasgow Business School. Replying on behalf of the guests was D Geddes, Chief Executive, Scotway Group.

The Spring 1990 golf outing was held over Cathcart Castle golf course and as always the competition for the prizes was keen. The "Anchor Trophy" was won by D J Jack and the "Shell Salver" by D Shields.

The Autumn 1990 golf outing was held at Caldwell Golf Club. The "Beattie Cup" was won by J M Taylor and the "Hamworthy Rose Bowl" by N Hunter. An enjoyable day was had by all competitors.

The branch award winner for 1989/90 was I Ross a student on the HND engineering course at Glasgow College of Nautical Studies for a project entitled "Fire detection systems in ships". The award was presented to Mr Ross by the branch Chairman, and the Denholm Bronze Medal by J M Brown, Denholms Technical Director.

# South East England

The branch arranged nine senior technical meetings in the course of the year, but it was not possible to arrange a junior meeting in this period because of the current state of facilities for students of marine engineering in the area. Following an approach from a company, plans are now being made to present a suitable lecture to their trainees. The senior meetings included joint lectures with the Institution of Mechanical Engineers, Institute of Measurement and Control, the Welding Institute and the Colchester Engineering Society. The meetings were held in Gravesend, Dover, Brentwood and Colchester.

A technical visit by members and their guests was made on 29 September 1990 to the Crofton pumping station on the Kennet and Avon canal to see the beam engines under steam.

The Annual Dinner Dance in October 1989 and the Annual Dinner in May 1990 were both well attended. A spontaneous gesture by the assembled company at the Annual Dinner to donate the proceeds of their speech sweepstakes to the Centenary Lifeboat Appeal added the sum of £605 to that cause.

# Southern Joint

The following papers were read during the year:

3 October 1989 "The design of fast sailing catamarans" by D Alan-Williams.

# 18 October 1989

"The combined services Whitbread challenge" by A Claughton, C Satchwell and P Rudling.

2 November 1989 "Large marine diesels on resilient mountings" by G Donath.

15 November 1989 "Some machinery failures and their causes" by R F Munro 7 December 1989 "Development of high speed passenger catamarans" by J Davies. (Joint meeting with Hovercraft Society)

18 January 1990 "Recent developments in marine gearing" by K H Merk.

31 January 1990 "Design and operation of dredgers" by R J Gardner.

14 February 1990 "Monitoring health and hygiene on ships" by N Howard.

27 February 1990 "Atlantic record attempts, past-presentfuture" by D Pike and P Birkett.

15 March 1990 "Cross channel ferry operations" by I A Carruthers.

The winner of the Southern Joint Branch Prize for the best student in part III of the Ship Science course at the University of Southampton was K W V Wong. The prize for the best student in the Yacht and Boat Diploma course at the Southampton Institute of Higher Education was won by S R Foster.

The branch organised two successful social functions. The President's Supper was held at the Meon Valley Country Club in May 1990. The Annual Dinner was held at the Post House Hotel, Southampton in September 1990. Both functions were well attended. Office bearers from the parent Institutions kindly graced the latter occasion.

#### South Wales

The branch activities during the year were well supported by members and their guests.

A joint meeting with sister organisations was held at the South Glamorgan County Headquarters. The Sir Hugh Ferguson Jones Annual Memorial Lecture continues each year to provide an opportunity for members of the Honourable Company of Master Mariners, the Nautical Institute, the Royal Institute of Navigation, the School of Maritime Studies and the British Maritime League to meet with members at this prestigious event.

Close links with the Western Joint Branch have been maintained with members travelling to Bristol Polytechnic for a joint meeting. All other meetings were held at the South Glamorgan Institute of Higher Education, Llandaff.

The Annual Dinner was held at the Park Hotel, Cardiff, when members entertained their distinguished guests. The evening was quite memorable with excellent speeches, good food and wine plus traditional fellowship.

The branch continued to support the South Wales Engineering Council Regional Organisation both on committee and at the ECRO lectures and meetings.

#### West Midlands

The programme of events included:

October 1989 In conjunction with the Maritime Trade Association of Great Britain the branch arranged for company Corporate members of those associations and representatives from maritime engineering companies to meet in the West Midlands to hear experts discuss the future of our industry into the 21st century. Unfortunately at the very last moment this prestigious seminar was cancelled, through no fault of the Committee, but it is hoped to reinstate this event at a later date.

November 1989 The 37th Annual Dinner was the best attended in the history of the event. Headquarters were represented by Deputy President, Rear Admiral M A Vallis, and Assistant Secretary, P M Buckton. The main speaker was the Reverend Canon Smith of Bury who totally captivated the audience with his portfolio of funny stories. He received a standing ovation at the conclusion of his talk. The approximate sum of £600 was raised in the raffle and this was evenly divided between the Institute's Guild of Benevolence and the RNLI Lifeboat Appeal. With money already in the Committee's possession a cheque for £700 was sent to the latter charity.

#### January 1990

T Parsons of the PowerGen organisation gave a talk on renewable energy. This was an exceptionally interesting lecture as the speaker traced the history of power generation from the end of World War II through to the present time. He highlighted the benefits of wind, wave and solar power sources and discussed problem areas such as acid rain, air pollution and the warming of the globe.

#### February 1990

Following the Annual General Meeting, the branch broke new ground by organising a wine tasting event for members, their partners and friends. A good evening was had by all.

# March 1990

The excellent talk given by N Swindells was entitled "A short history of North American Steamships". The author covered ships from the Savannah in 1819 right through to the "Queens" and from paddle through to steam turbines.

#### May 1990

For the branch annual summer outing members, partners and friends visited the Merseyside Museum in Liverpool. They thoroughly enjoyed its unique blend of floating exhibits, craft demonstrations, working displays and historical maritime events.

# September 1990

A most absorbing and informative talk entitled "Development of Fast Ferries for the 90's" was given by M McSorley, Marketing Manager, FBM Marine Ltd, Isle of Wight. The talk covered a brief history of the fast ferry industry to date coupled with the prospects for the 1990's, introducing hovercraft, jet foils, catamarans and monohulls, operating in all parts of the world. The talk concluded with a video of sea trials on a fast displacement catamaran.

### Western Joint

Technical meetings held were as follows:

2 October 1989 "The Channel Tunnel" by J Grant, MOH, Hay and Anderson.

6 November 1989 "The torpedo, the devils device" by M Stradling, Admiralty Research Establishment (Portland).

4 December 1989 "Marine applications of the stirling engine" by Lt F Barnes, Royal Naval Engineering College, Manadon.

8 January 1990

"Technical developments in the navies of world war one" by D K Brown, RCNC.

5 March 1990

"Modern propulsion for cruise liners" by B P Sharman, Lloyd's Register of Shipping.

#### 2 April 1990 "Modern G R P minehunter construction" by A L Dorey

construction" by A L Dorey, Vosper Thorneycroft.

The joint lecture with the South Wales Branch this session was held at Bristol Polytechnic on 5 March 1990 followed by a buffet supper. Members were also invited to attend a civic reception at the Pump Room, Bath, on 16 October 1989, hosted by the Mayor of Bath and Councillor Anne McDonagh. The Annual Dinner Dance was held at the Bath Hilton Hotel in March 1990, which was attended by the President of the Institute and other distinguished guests.

# AUSTRALIA/NEW ZEALAND DIVISION

#### Canberra

Technical meetings held and attended by members and guests were:

13 March 1990 Visit to Port Kembla steelworks and the Sydney Harbour Tunnel Casting Basin.

14 March 1990 "Marine applications for fluorocarbon polymer coatings" by J O'Neill.

20 June 1990 "The Sydney harbour tunnel" by I Muirden.

25 September 1990 "Development of ship machinery control as experienced by the marine engineer" by B Hansen.

In November 1989 the branch celebrated the Centenary of the Institute with a luncheon at the National Science and Technology Centre. Those who attended had the opportunity to meet the President of the Institute, Professor R V Thompson and Mrs Thompson and to view the displays at the centre. The combined Annual Dinner was hosted by RINA at the Great Hall, ANU in July 1990.

The branch is indebted to the Forestry Department of the ANU for their cooperation in allowing the use of their lecture theatre and facilities during the year.

#### Newcastle

A very active year, commencing with the visit to Newcastle by the Secretary of the Institute in November 1989 with a cruise on the Paddle steamer "William the Fourth", followed by barbecue at Blackbull Reserve.

The technical programme comprised:

17 November 1989 "Reduction of ship motion - a historical overview" by J E Sloggett.

24 January 1990 Technical visit to the antarctic research vessel 'Aurora Australis'.

16 February 1990 "Power without glory or being screwed for money" by A Watkins.

27 March 1990 Technical visit to Newcastle Morning Herald newspapers.

20 April 1990 "An introduction to dredging for the mariner" by W Stuart

18 May 1990 Visit to Newcastle Branch by Division President A Budd and Divisional Secretary K M Murray, LNG Ship Construction and the North West Shelf LNG Project.

# 12 June 1990

Combined meeting with Company of Master Mariners on "The coal industry, waterfront reforms and the greenhouse effect", by B Thompson

20 July 1990

"Highlights of vessels built at Carrington Slipways, their specialities, their problem vessels and the future of Australian shipyards" by D Laverick.

21 September 1990 "Underwater surveys in lieu of drydocking" by J Lawlor.

The branch presented prizes to the local TAFE Marine Engineering College and to the Australian Maritime College for best student and for best technical reports presented for final year students.

The branch raised nearly \$2,700 from sales of the Institute Centenary crocks of port - the proceeds going to the Centenary Lifeboat Appeal.

#### Queensland

The year was a full one with nine technical meetings/visits:

1989 Annual General Meeting at HMAS Moreton.

21 February 1990 "Non destructive testing in industry" by J Wilson, X-Ray Industrial Pty. Ltd.

22 March 1990 Proposed RINA/IMarE merger, K M Murray, Aust./N.Z. Divisional Secretary.

# 18 April 1990

Site visit to Carlton United Brewery, Brisbane, T Daniels, Carlton United.

16 May 1990 "Power without glory", by A Watkins.

20 June 1990 "Modern developments in marine insurance" by G Duncalf.

# 18 July 1990

"Water and its treatment" by C Williams, Marford Feedwater Engineering.

22 August 1990 "The stockman's hall of fame" by D Hill.

19 September 1990

"North sea salvage" by Captain B Lewis, Queensland Tug & Salvage P/L.

The branch were very pleased to welcome J E Sloggett, IMarE Secretary, to the Annual General Meeting, following which there was a lively discussion about the proposed merger with The Royal Institution of Naval Architects. Members present generally supported the idea and approved of the actions being taken by the Council in London.

The branch were pleased to welcome the Hon. David Hamill, Minister for Transport in the new Queensland Government, as Principal Guest at the Annual Dinner held at the Brisbane Milton Hotel in July 1990. Also present was the Divisional President, A L Budd and his wife as guests of the branch.

Each year the branch awards a prize to the Queensland member achieving the highest marks at the School of Marine Engineering at Newcastle Technical College. The winner this year was D McDiarmid (Associate Member).

# South Australia

The nineteenth Annual General Meeting of the branch was held on 25 October 1989 at the Australian Mineral Foundation, followed by the first technical meeting of the year.

G Simpson, Managing Director of ENACO (Australia) Pty. Ltd., addressed the meeting on the subject "Heat induction pipe bending", which was most interesting and informative on its advantages and potential cost savings with respect to the fabrication of pressure pipework from 25 mm diameter to 1050 mm diameter. During the year, the following technical meetings held at the Australian Mineral Foundation, and visits were arranged:

31 January 1990 "Computer aided design and drafting" by Mrs K Sutton, Sales Manager for South

Mrs K Sutton, Sales Manager for South Australia, Qikdraw Systems Pty. Ltd.

# 14 March 1990

Visit to T O'Connor & Sons Pty. Ltd., pressure vessel manufacturer, Gepps Cross, where an inspection was made of facilities for rolling of plates, the fabrication of large pressure vessels and heat exchangers along with their heat treatment.

#### 2 May 1990

"Common practices in design related to warships" by J Patterson, Project Manager, Eglo Engineering Pty. Ltd., Osborne, Port Adelaide.

# 11 July 1990

"The greenhouse effect" by A Lothian, Manager, Environmental Policy, South Australian Government Department of Environment and Planning.

#### 5 September 1990

Visit to Petroleum Refineries (Australia) Pty. Ltd., Port Stanvac. A most interesting and enlightening tour of this petroleum refinery complex which has recently undergone a modernisation programme increasing its capabilities and output.

In addition to the aforementioned meetings, a special technical meeting was held at the Hilton International Hotel, Adelaide on 20 November 1989 for members to meet with the IMarE Secretary, J E Sloggett who spoke on the Institute's activities as regards increasing membership, services, publications, its finances, the success of the Centenary year functions and the establishment of new branches overseas in keeping with making the Institute more internationally orientated.

The branch was also visited by the Divisional Secretary, K Murray, for whom a technical meeting was arranged on 9 January 1990, when he addressed the meeting on the lengthy talks still proceeding in London concerning the proposed merger of the Institute with The Royal Institution of Naval Architects, membership and its promotion within the Australia/New Zealand Division, the Institute's involvement with the Australian Maritime College, Launceston and the success of the publication "Workhorses in Australian Waters". He also showed two videos on the hatchless container ship developments.

The Annual Dinner was held in November 1989 at the Customs House Restaurant, Semaphore, and was well supported with a most enjoyable evening being had by all.

A social get-together was held in March 1990 at the Buckingham Arms Hotel, Walkerville and again this venue proved ideal for some good fellowship and exchange of ideas amongst members and their wives.

Throughout the year at the aforementioned technical meetings, the branch were again privileged to have most informative and capable speakers who presented papers on the current and future trends in the marine and industrial fields, with a good response from members and guests at question time clearly demonstrating the interest generated by the speakers.

# Sydney

Technical and social meetings were as follows:

25 October 1989 "Marine works associated with the Sydney Harbour Tunnel" by L Bathgate, Public Affairs Manager, The Sydney Harbour Tunnel Co.

16 November 1989 Centenary Dinner

28 February 1990 "Environmental control of shipboard waste water" by P Maslan, General Manager, Smith & Loveless.

13 March 1990 Visit to Port Kembla steelworks & Sydney Harbour Tunnel Casting Basin.

28 March 1990 "Design of bass trader replacement" by M Hartman, Technical Manager, Carrington Slipways.

8 April 1990 Combined golf day, Wyong Golf Club.

#### 28 April 1990

"Fast car ferries" by P Hercus, Managing Director, International Catamaran Designs Pty Ltd.

# 9 May 1990

"The hedemora diesel submarine engine" by O Flyorg, Manager, Hedemora Australia.

#### 16 May 1990

"Design & operation of a MIDC ship" by G Quine, Project Manager & P Bendy, Manager Marine Engineering, Caltex Tanker Co.

23 May 1990 "Waterfront reform" by P Brown,

Executive Director, Association of Australian Marine and Port Authorities.

27 June 1990"The ship repair industry" byJ Weatherby, Chief General Manager,Forgacs Group.

21 July 1990 Picnic day at Camden Airport Scout Association.

24 July 1990 Visit to State Transit Authority Dry Dock.

25 July 1990

"Progress report on the submarine project" by Captain G Rose, Submarine Project Manager, Department of Defence (Navy).

22 August 1990 "Design & construction of the ANZAC frigates" by S Granger, Construction Manager, AMECON.

26 September 1990 "Experience in commissioning the first LNG carrier for the north west project" by A Taylor, Manager Project Development, BHP Transport.

The following prizes and awards were presented:

G I D Hutcheson Memorial Prize for the most improved student at TAFE Sydney - S Thomson.

R A Fenwick Award to the best student for First Class Part A Engineers Certificate at TAFE Sydney - S Mohotty.

Sydney Branch Award to the highest pass for the First class Engineers Certificate at TAFE Sydney - A Kimmorley.

W W Marriner Award to the best academic record for Year One Bachelor of Technology Course (Marine Engineering) at the Australian Maritime College - J Brajevic.

W W Marriner Scholarship to a member studying either for the Extra First Class Engineers Certificate or an engineering degree - P Menere.

# Victoria/Tasmania

During the year the Victoria/Tasmania branch held thirteen technical meetings, eleven in Melbourne and two in Tasmania. The meetings included two technical visits. All meetings were joint meetings with members of RINA and were as follows:

20 October 1989 "Major damage and repair of a VLCC" by G L Cunningham.

27 October 1989 Visit to the ex Sydney ferry, SS South Steyne

17 November 1989 Annual General Meeting followed by a technical open forum, with contributions by members G C Beggs, J F Crane, A H Taylor and others.

16 February 1990 "The evaluation of sea trials" by A H Taylor, Manager Project Development, BHP Transport.

16 March 1990 Visit to Newport Power Station.

20 April 1990 "Waterfront reform" by C A Kittel, General Manager, Port of Launceston Authority.

15 May 1990 "Conversion of the CSIRO vessel Southern Surveyor" by H A Van der Doe, Divisional Engineer, CSIRO Marine Laboratories.

16 May 1990 Students' annual meeting at the Australian Maritime College. "Affordable technologies for small shipyards" by J van Doorn, Managing Director, Launceston Marine Industries.

18 May 1990 "Design and installation of Australia's first gravity based platforms" by S French, Consultant, Wholohan Grill & Partners.

15 June 1990 "A new generation of harbour tugs" by D N Fleck, Barnes & Fleck Pty. Ltd.

20 July 1990 "Australian antarctic ship Aurora Australis" by A J Baillie, by A J Broadbent and H R Selby, P & O Australia.

17 August 1990 Films of maritime interest. 21 September 1990 "Design and construction of the ANZAC frigates" by S Granger, Construction Manager, AMECON.

The following prizes and awards were presented:

Institute Silver Medal to L Sinclair for his paper "Means of attaching a marine propeller to its tailshaft" presented in 1989.

Victoria/Tasmania Branch prize for the best guided study project in year three of the BApSc (Marine Engineering) at the AMC to A Kupfer.

Two socials were held with the Melbourne Branch of the Company of Master Mariners: A barbecue on board the Barque Polly Woodside in February 1990, and the Annual Dinner Dance at the Danish Club in July 1990.

#### Western Australia

Seven meetings were held, six at the Flying Angel Club Fremantle and one at the construction site of the replica of H M S Bark Endeavour. In addition a visit was made to Australian Shipbuilding Industries where three small ships were being built for the State Shipping Service. The papers covered a variety of topics and the meetings were reasonably well attended.

Two prizes were given by the branch for excellence in marine engineering. A Marsh, Fremantle College of T A F E and P Carter, T A F E External Studies College. The prizes were presented at the annual awards evening of the two Colleges.

The exhibition "100 years of marine engineering" organised by the branch in conjunction with the W A Maritime Museum was an outstanding success. Following the exhibition the branch was invited to work with the museum in the setting up of a permanent exhibition of marine machinery and work on this project has commenced. Once established it is envisaged that members who are able to devote the time will take an active part in the maintenance and running of the machinery.

Members of the branch attended the annual seafarers service held in St Johns Church Fremantle. The branch Chairman lead the congregation in the prayer for the guidance of designers, builders and engineers. An official visit was made by the President, Professor R V Thompson, who attended the Annual General Meeting. He spoke on the changes within the industry and the Institute's role. He also gave a brief resume of the proposed merger with the RINA.

Programme of meetings held:

# 21 February 1990

"Research done prior to commencement of construction of the Endeavour replica and the subsequent construction of the vessel" by D White, Naval Architect. The talk was followed by an inspection of the vessel.

21 March 1990

"Shell's experience with the shipbuilding application of GRP" by P Low, Technical Director, Shell Seatech.

16 May 1990

"New generation B & W engines" by P Sorenson, Senior Manager Marketing MAN, B & W.

# 17 May 1990

Visit to Australian Shipbuilding Industries to view construction and installation of machinery in State ship.

20 June 1990

"Commercial application to industrial disputes" by J Kenfield, Institute of Arbitrators.

#### 18 July 1990

"Salvage and restoration of the engine of the S S Xanthos" by M McCarthy, Curator, Marine Archeology, W A Maritime Museum.

18 August 1990

"Propellers and propeller repairs" by W Carrigan, Manager, Teignbridge Propellers.

#### Auckland

The branch programme for the year included the following lectures and events:

#### 12 October 1989

Annual General Meeting, at the conclusion of which B McCallin, Superintendent Technical, Union Shipping Group presented a paper "Conversion of Union Rotoit from gas turbine to diesel power generation". The paper dealt with the operating experience of the machinery after a long period of service in the Trans Tasman Trade. 9 November 1989

Centennial Dinner at Romfords, Tamaki Yacht Squadron, attended by Professor R V Thompson and J E Sloggett and honoured guests.

11 April 1990

"Marine Lubrication towards the year 2000" by J Raffe, Chief Engineer, G Heath, Senior Staff Engineer and S McFarlane, Lubrication Engineer, Mobil Oil New Zealand. This paper was based on the data provided at the symposium held by the Institute in London and at a later Symposium held in Sydney.

19 April 1990

Joint meeting with the Naval Architectural Society. "Non destructive testing" by G Lowe.

## 31 May 1990

"Pulverised coal and fluidised bed boilers" by B Cairns, Coal Research Association.

### 18 July 1990

Technical visit to the Manukau Polytechnic. The visit included a tour of the CAD laboratory CAD/CAM and CNC facilities, mechanical engineering laboratories and the maritime studies department.

#### Wellington

In November 1989 the branch organised a major international Centenary conference, MARTEC '89, on marine technology, transportation, cargo handling and management. It was opened by the Governor General of New Zealand, and the Mayor of Wellington welcomed the delegates. Papers were presented by the President, the Secretary, and the Honorary Secretary, Sydney Branch; one of the sessions was chaired by the Divisional Secretary, K M Murray. The closing address was given by the President. Preprints of all papers were provided, and proceedings were subsequently published.

At the symposium dinner the speakers were the New Zealand Secretary for Transport and the Chairman of the Australian Shipping Commission.

The year has seen another successful series of technical meetings conducted within our usual venue of the Shell House Theatrette. A programme of six topics were dealt with as follows: 28 March 1990 "Offshore gas facilities and related industrial plant" by W Sevenson.

26 April 1990 "Women in the Royal New Zealand Navy" by Lt. Cdr. L Somerville RNZN.

23 May 1990 "Revenue & superannuation matters" by W Creech, M P Wairarapa.

27 June 1990 "Interesting rudder & steering gear repairs" by J Fleck, Superintendent, N Z Line.

22 August 1990 "I M A S 90 Initial Report" by H Ewens, Honorary Secretary, Wellington Branch.

26 September 1990 "Anzac frigate project" by Commander G R Buchan, RNZN.

The main thrust of the branch activities has been towards increasing membership. Changes occurring within the local scene as befits marine engineers, have given considerable potential for achieving this aim.

# **Other Branches**

## Cork

During the year the following meetings were held:

19 October 1989

"Health monitoring of marine machinery" by G Thomas, VCI.

# 24 November 1989

Visit to Irish Naval Service vessel Le Ciara, Haulbowline. Members and students attended to be briefed on this Peacock class vessel.

# 24 January 1990

"RMS Titanic - voyage in time" by G G Connor. Combined meeting with the Master Mariners and was of particular interest because of local connections.

22 March 1990 "Ship's electrics surve

"Ship's electrics - surveyor's viewpoint" by D Sing.

# 29 March 1990

"Hydraulic systems & the east link bridge" by R Connolly, followed the Annual General Meeting.

#### 17 June 1990

Annual picnic in East Ferry. Members and children enjoyed the boat trip, Barbequeing and a fiercely competitive game of "rounders".

#### 12 September 1990

Visit by the President, Professor R V Thompson. A lunch in his honour was organised by the Naval Service at Haulbowline. Afterwards a visit was made to the Le Ciara which was in drydock. Professor Thompson's lecture "Marine transportation - growth or despair?" was given in the Cork Harbour Commissioners offices. It was well attended and included both master mariners and Maritime Institute members.

#### Isle of Man

The work of the Steering Committee was finally brought to fruition with the Inaugural Meeting of the branch on 24 July 1990. An encouraging response was received from the members present and the branch Committee and Honorary Officers were duly elected.

General matters regarding venues, co-operation and meetings with other bodies, sea-going membership, branch membership and funding were discussed.

It is the intention that branch meetings should be held in conjunction with the Nautical Institute and negotiations are currently in hand to obtain speakers. The first joint meeting of the 1990/91 session will be a talk on the work of the Salvage Association.



IMarE stand at Posidonia 90, Piraeus, visited by many local branch members

# Bangladesh

The following meetings were held:

12 June 1990 Formation of branch.

29 July 1990 Visit to Marine Academy, Chittagong for open discussion with Phase III

engineering cadets on marine refrigeration.

2/3 September 1990 Workshop on corrosion and coating applied to the marine industry, during visit of P Tiwari, Area Manager (South Asia) and P Onn, Technical Manager, Sigma Coating.

#### Eastern USA

During the year the following technical meetings were held:

20 October 1989 "The emery rice's back-acting steam engine" by Rear Admiral L McCready, USMS.

5 December 1989 "QE-2 follow-up-service philosophy and practice" by E A Waryas, American MAN Corporation.

22 February 1990 Joint meeting with ASNE, "MHC-51 minehunter design and construction" by B Eccles, Ship Design Manager, Intermarine USA.

24 May 1990 "Fundamentals of optical fibres" by G D Stoute, Senior Applications Engineer, Corning Inc.

#### Greek Joint

The following activities were organised during the year:

1 March 1990 "Risk assessment techniques with maritime applications" by P S Katsoulis.

29 March 1990 "Predictive marine machinery maintenance" by P Sioutis.

29 March 1990 "Some new computer applications, ship details movements, casualties and collisions" by J Walsh.

26 April 1990 "Cassiot ship owners, their place in world shipping, some technical aspects of their ships" by M D Komninos.

31 May 1990 "Tank cleaning concepts of the '90s" by F Hansen.



Deputy-President, Rear-Admiral M A Vallis, unveiling the IMarE Notice Board at the Federal Fisheries School, Victoria Island, Lagos.

# Hong Kong Joint

The following technical meetings were held:

9 November 1989

"Combustion problems in medium speed engines due to long ignition delay fuels a method of predicting fuel behaviour" by Dr G Armstrong, University of Newcastle- Upon-Tyne.

23 November 1989 "Ship construction trends" by J N McKay, Principal Surveyor, Lloyd's Register of Shipping.

#### 7 December 1989

"Container ships - computation evolution for challenging the future" by Mr De Livois, Senior Principal Surveyor for the Far East, Bureau Veritas.

# 5 March 1990

"A quiet revolution - the future implementation of international requirements relating to sub-division and damage stability of dry cargo ships including ro-ro ships" by C Duong, Senior Principal Surveyor, Bureau Veritas.

29 March 1990

"The application of quality evaluation using vibration techniques on new buildings, ships in service and offshore structures" by Dr B H Thomas and M Holderness, Vibration Consultants and Instrumentation Ltd.

### 9 April 1990

"The new Hong Kong register of ships" by Dr F S B Chao, Vice-Chairman, Hong Kong Joint Branch.

# 20 June 1990

"Uncover the invisible - a might vision presentation" by Captain Odd V Vollene.

The Annual Ball was held in November 1990 at the Victoria Hotel. The guest of honour was Dr H Sohmen and the branch was privileged to have among its guests the President, Professor R V Thompson and Mrs Thompson, and J E Sloggett, the Secretary.

A delegation of six, led by Dr F Chao, attended a meeting in Shenzhen in July 1990 with the Guangdong SNAME representatives.

# Houston (Gulf Coast) USA

The inaugural meeting of the branch was held on 9 May 1990 and coincided with the Offshore Technology Conference in which the Institute participated. A programme of technical meetings is being arranged for the 1990/91 session, to include the presentation of papers on "Discussion of equipment investment" and "The development of diverless subsea production systems".

#### Korean Joint

After nearly a year of preparatory work by an interim committee, formal approval for the formation of the Korean Joint Branch was given by the two parent bodies at the end of 1989.

The first branch meeting on 25 November 1989 was a tour of the Ro-Ro ship Baltic Eider which was nearing completion at the Hyundai heavy industries shipyard in Ulsan. A party of members and their guests were shown around the ship by the Captain, Chief Engineer and Chief Officer.

The inaugural meeting was held at the Diamond Hotel in Ulsan on 13 March 1990. The Chairman gave a brief introductory speech and read a short note to members of the parent bodies from the President of RINA, Viscount Caldecote. Following the Chairman's speech H Iversen, Kvaerner Rosenberg, gave a presentation in English on "Vital features in the development of the Kvaerner Moss spherical tank LNG carrier design". The presentation concentrated on the Kvaerner Moss LNG carrier design which is now applied in 31 LNG carriers, including development features and experience.

Members of the Committee have been very active during the year in establishing the branch and arranging the first meetings. In prospect for the next session is the first Annual General meeting and a programme of meetings with speakers from Europe and Korea.

#### Malaysia Joint

The following technical papers and talks were presented during the year:

21 March 1990

"Condition assessment programme of ships hull" by Lui Wai Yuen, Principal Surveyor and Marketing Manager, Det Norske Veritas, Singapore.

# 21 April 1990

"To fly, to float - a half life of research and development" by Professor R V Thompson, President, The Institute of Marine Engineers.

12 September 1990 "Marine technology" by Professor Chengi Kuo, Stratchelyde University.

#### Malta Joint

During the year the branch organised five technical presentations:

23 January 1990 "Foundry and melting practice" by N Kouloughli and S Belkacem, Entreprise National des Fondres and Entreprise National Des Vehicles Industrieles respectively.

# 20 February 1990

Seminar "Anchor chains, stud link chains and tendering systems" in conjunction with Amalgamated Engineers' Supplies. The Seminar was conducted by D A Timmington Chairman, Griffin Woodhouse Limited.

#### 14 March 1990

"Sulzer engines - history and developments" by K Meier, Sulzer, Winthertur with the kind assistance of Sea Services Limited.

# 21 March 1990

"Shafting vibration and alignment" by Mr Jones, Senior Surveyor, Lloyds Register of Shipping.

# 3 April 1990

"CO2 and halon fire extinguishing systems" by Mr Haworth, Fire Fighting Enterprises (UK) Limited with the kind assistance of Alberta Trading Limited.

#### 8 May 1990

"Cathodic protection and corrosion control for ships" by Captain A J Seymour, Wilson Walton International with the kind assistance of Wilson Walton (Malta).

The Annual Dinner was held at the Malta Hilton in May 1990 with Dr D Attard, Head IMO Maritime Institute, as guest of honour. Professor R V Thompson, President of the Institute also attended the event. It was a tremendous success, guaranteeing the support of industry in the marine sector in Malta.

#### The Netherlands

The branch has again been successful in arranging or assisting in the setting up of lectures, together with the NVTS and KIVI. Lectures presented covered topics on fire- fighting on board ships, training for the fire-fighting and RMS Titanic voyage in time, by G G Connor. The latter lecture was attended by many ladies who found it very interesting.

The newsletter, a new source of information, has been very well received. The third edition has also been sent to members residing in Belgium.

The Institute's stand was well visited during the Europort exhibition in November 1989, and the reception following the event was also well attended.



Visit to Nepa's electricity generating station, EGBIN.

#### Nigeria

The year opened with the Annual General Meeting on 21 October 1989 at the Federal Fisheries School, Victoria Island, Lagos.

The Deputy President, Rear Admiral M A Vallis and the Secretary, J E Sloggett visited the branch in January 1990. Admiral Vallis delivered a Centenary lecture to a large audience of members and Nigerian navy officers at the Naval Training Command Auditorium, while Mr Sloggett flew to Port Harcourt to visit and attend activities at the Rivers State University of Science and Technology.

Admiral Vallis and Mr Sloggett made courtesy calls on the Chief of General Staff, Vice Admiral Augustus Aikhomu; the Chief Executive of Nigerdock Nigeria Ltd, Engr H V Ozobia; the Federal Fisheries School where the Deputy President unveiled the IMarE notice board. Admiral Vallis and Mr Sloggett also attended the Nigeria Branch Centenary Dinner at l'Hotel Eko Meridien. It was a very enjoyable and fruitful visit, an appropriate climax to the Centenary celebrations by the branch.

# Singapore

In November 1989 the branch held its 9th Biennial Seminar - "A decade of development in marine engineering", organised jointly with The Society of Naval Architects and Marine Engineers, Singapore. The guest of honour was the President of the Association of Singapore Marine Industries. The IMarE President read a paper, "Developments over the past ten years in marine engineering".

The seminar was followed by a Centenary Dinner Dance, at which the President and his wife were guests of honour, and which the Secretary also attended. It was an outstanding event and a lively evening.

During Singaport '90, in February, the branch had the opportunity of discussions with the Secretary and the Manager, Professional Affairs on a number of points including routes to Chartered Engineer status and the accreditation of marine engineering courses.

The President passed through Singapore briefly en route to Malaysia on an accreditation visit, when the opportunity was taken for a meeting with branch officials.

### Sri Lanka

The Secretary paid a brief visit to the branch in February 1990 when a number of matters pertinent to the branch were discussed with senior branch officers. He attended a dinner for members and their wives at which the new branch officers were installed.

# Recent branch activities:

#### 15 September 1990

Marine engineering students accompanied by members of the Committee visited the Ceylon Petroleum Corporation Refinery. The programme included a lecture by the Senior Chemical Engineer of the plant, a conducted tour of the refinery and a visit to the laboratory where a demonstration of the basic tests was given for the benefit of the students.

#### 18 September 1990

Seminar organised in association with Chevron International Oil Co. Open to the shipping fraternity in Colombo in addition to those associated with the usage of marine lubricating oils. The programme covered the following topics:

Marine lubricants product line, Engine damages case histories, Fuel oil classification & specifications, Chevron used oil analysis programme, Vessel lube charts and qualifications testing, Metal wear.



Seminar organised in association with Chevron International Oil Co.

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	Dr. R. C. F. Dye (non-member)
	(University of Manchester)
CIL/20/6	H. Rush
PSE/4	Identification of pipelines, cables
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	J. G. Kersey
PEL/93	Electrical Installations in Ships
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EPC/1/2	Traffic and Noise
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* 1957	Sir Ronald Garrett	* 1940
1958	E. L. Denny, B.Sc.	* 1941
* 1959	Sir William Wallace, C.B.E.,	* 1942
10/0	LL.D.	* 1943
1960	Rt. Hon. Viscount Simon, C.M.G.	* 1944 * 1945
* 1961	C. C. Pounder	* 1945 * 1946
1962	His Royal Highness, The	* 1947
	Prince Philip, Duke of	* 1948
	Edinburgh	* 1949
1963	Sir Nicholas Cayzer, Bt.	* 1950
* 1964	A. Logan, O.B.E.	* 1951
* 1965	Sir John Hunter, C.B.E., B.Sc., J.P.	* 1952 * 1953
* 1966	B.Sc., J.P. Sir Stewart MacTier, C.B.E.,	* 1953 * 1954
1700	M.A.	* 1955
* 1967	Vice-Admiral Sir Frank	* 1956
	Mason, K.C.B.	* 1957
1968-69	F. B. Bolton, M.C.	
1970	M. A. Sinclair Scott, C.B.E.	1958
1971 * 1972	R. Munton, C.B.E., B.Sc. Vice-Admiral Sir George	* 1959 * 1960
17/2	Raper, K.C.B.	* 1960 * 1961
1973	Dr. S. Archer	* 1962
* 1974	Dr. A. W. Davis	
1975	T. Kameen	1963
19 76	G. Victory	
1977	G. McNee, B.Sc.	* 1964
* 1978	D. H. Alexander, O.B.E.,	* 1965 * 1966
	F.C.G.I., M.Sc., Wh.Sc.	* 1966

979	J. McAfee	
980	L. D. Trenchard	
981	J. McNaught	
982	Commander E. C. Pidgeon,	
	R.N.	
1983-84	B. Hildrew, C.B.E., M.Sc.	
985-86	Dr. J Cowley, C.B.E.	
987-88	A. F. Harrold, B.Sc.	

# Past Chairmen of Council

Past C	nairmen 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 * 1915	J. Hallett
1715	George Adams
* 1916 * 1917	H. A. Ruck-Keene
* 1918	A. Boyle 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. Farenden
* 1929	R. T. Wilson (to 2nd
	September) then J.Nicol
* 1930-31	H. J. Vose
* 1932	James Carnaghan
* 1933 * 1934	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 * 1948	W. Sampson
1710	R. K. Craig, C.B.E.
* 1949 * 1950	A. Logan, O.B.E. 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.
	Clemitson, C.B.
1958	R. Munton, C.B.E., B.Sc.
* 1959	R. Cook, M.Sc.
* 1960 * 1961	W. R. Harvey, O.B.E.
* 1961 * 1962	B. P. Ingamells, C.B.E. Vice-Admiral Sir Frank
1902	Mason, K.C.B.
1963	Cdr. F. M. Paskins, O.B.E.,
1705	R.D., R.N.R.
* 1964	W. Young, C.B.E.
* 1965	H. N. Pemberton
* 1966	R. R. Strachen, 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

# 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.

\* Deceased

# GUILD OF BENEVOLENCE

Since the preceding report the Committee have held nine meetings at London and Littlehampton. Fifty-seven applications for assistance were discussed and financial aid was granted to fourteen. A summary of the applicants to whom relief has been granted is set out in the Guild Annual Report. Letters of appreciation from recipients of relief are continually received by the Committee.

Decorations and improvements have been made at Guild House, including one room being made en-suite and attracting holiday guests from Great Britain and abroad. Double glazing was installed in the flatlets, replacing existing windows which were in very poor condition. The Guild were greatly indebted to King George's Fund for Sailors for their financial support in these achievements.

Mrs Hearth continues as Matron and the Committee would like to express appreciation of her capable organization during what has been a very busy year,





Typical residential rooms

with residents becoming increasingly frail and in need of more care and attention. The support of her excellent staff is greatly appreciated.

S.Speed

(Chairman)

# **GUILD COMMITTEE**

S Speed (Chairman) J McNaught (Hon. Treasurer) J E Sloggett, BSc. (Secretary) F Bown P M Carr R F Clarke, BSc. (Hons) C A Creber, MSc. **LER Ellison** L J Glover N Harrison G R Hodge, B.A. R Munton, C.B.E., B.Sc. M Nash S G Pratt S W Raydon Cdr E C Pidgeon, O.B.E. E D Stephenson

R Webster, Mrs, (Clerk to the Guild)



Guild House, Littlehampton



