

Transactions of the
INSTITUTE of MARINE ENGINEERS

FOUNDED 1889.

INCORPORATED BY ROYAL CHARTER, 1933

To Advance the Science and Practice of Marine Engineering.

Patron: HIS MAJESTY THE KING

Vol. LI



Session 1939-40

President: Sir PERCY E. BATES, Bt., G.B.E.





The President.
SIR PERCY E. BATES, Bt., G.B.E.

Portrait by]

[Dorothy Wilding.

SIR PERCY E. BATES, Bt., G.B.E.

Sir Percy Elly Bates was born at Liverpool on May 12th, 1879, son of the second Baronet and Constance, daughter of the late Mr. S. R. Graves, M.P., of Liverpool. He was educated at Winchester, and began his career in 1898 as an apprentice with Wm. Johnston & Co., Ltd., shipowners of Liverpool. Since 1900 Sir Percy has been a partner in the firm of Edward Bates & Sons, Merchants, of Liverpool, of which concern he is now principal. He was elected a director of the Cunard Steam Ship Co., Ltd., in 1910, deputy-chairman in 1922 and chairman in 1930; since 1934 he has served as director and chairman of Cunard White Star Ltd. He has other business interests as chairman of Charles Howson & Co., Ltd., and deputy-chairman of Thos. & Jno. Brocklebank, Ltd., and as a director of Port Line, Ltd., Midland Bank, Ltd., Cunard House, Ltd., Midland Bank Executor & Trustee Co., Ltd., Great Western Railway and Hudson's Bay Co. Overseas Settlement, Ltd.

Sir Percy has a record of distinguished public

service and during the war of 1914-1918 he served with the Ministry of Shipping as Director of Commercial Services. From 1908 to 1910 he was a member of the Mersey Docks and Harbour Board, and from 1920 to 1921 he served as High Sheriff of Cheshire, of which county he was appointed a Justice of the Peace in 1924. His services have been recognised by the distinctions of Knight Grand Cross of the Order of the British Empire, Officer of the Legion of Honour, and Commander of the Order of the Crown of Italy.

In 1903 Sir Percy succeeded his brother and became the fourth Baronet. In 1907 he married Mary Ann, daughter of the late Very Revd. W. Lefroy, Dean of Norwich. They have one son, Edward Percy, aged 25. Sir Percy's favourite sports are salmon-fishing, curling, shooting and golf, and his clubs are the Beefsteak, Oriental, Windham's, The Flyfishers' and The Royal Automobile. He holds the rank of Captain in the Royal Naval Reserve.

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SESSION
1939.



Vol. LI
Part 13.

President: Sir PERCY E. BATES, Bt., G.B.E.

FIFTY-FIRST
ANNUAL REPORT AND FINANCIAL STATEMENT.
AND MINUTES OF
ANNUAL GENERAL MEETING

Held on Friday, March 15th, 1940, at 12 noon, at the Connaught Rooms,
Great Queen Street, London, W.C.2.

PAPERS READ AND DISCUSSIONS HELD DURING THE SESSION

JANUARY 1ST TO DECEMBER 31ST, 1939.

CONTRIBUTIONS BY CORRESPONDENCE.

INSTITUTE NOTES.

TECHNICAL PRESS ABSTRACTS.

TECHNICAL PRESS EXTRACTS.

Editor: The Secretary.



THE INSTITUTE OF MARINE ENGINEERS

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SESSION 1939.

President: SIR PERCY E. BATES, Bt., G.B.E.

Chairman: ‡A. F. C. TIMPSON, M.B.E.

Vice-Chairman: †F. W. YOULDON.

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| | | |
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- Technical Committee on Documentation—B. C. CURLING.
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- Sub-Committee ME/12/6, Anchor Chains }

THE INSTITUTE OF MARINE ENGINEERS.

INCORPORATED BY ROYAL CHARTER.

PATRON: HIS MAJESTY THE KING.

PROGRAMME OF THE
FIFTY-FIRST ANNUAL GENERAL MEETING
HELD
FRIDAY, MARCH 15th, 1940, at 12.0 noon
at the CONNAUGHT ROOMS, LONDON, W.C.2.

Chairman . . . SIR PERCY E. BATES, Bt., G.B.E.

Introductory—THE CHAIRMAN.

Scrutineers retire to examine Voting Papers.

Annual Report—THE SECRETARY.

Financial Statement—THE HONORARY TREASURER.

Adoption of Reports—

Proposed by A. W. RICHARDSON.

Seconded by G. SPECK.

Presentation of Awards by the Chairman—

Denny Gold Medal—C. C. POUNDER, (Member).

Institute Silver Medals—T. SWINDEN, D.Met. and F. B. CAWLEY, M.Met.

Extra First Class Engineer's Medal—J. E. RUNDLE, (Associate Member).

Stephen Award—G. A. DAY, (Member)

Murdoch and Robertson Award—R. A. COLLACOTT, (Student).

Vote of thanks to the PRESIDENT—

Proposed by A. F. C. TIMPSON, M.B.E. (Chairman of Council).

Seconded by F. W. YOULDON, (Vice-Chairman of Council).

Report of Scrutineers—

A. E. WHITESIDE and G. B. FLOWS.

Vote of thanks to Scrutineers and Honorary Auditors, and appointment for 1940—

Proposed by H. A. GARNETT.

(Honorary Auditors, 1939—W. D. HECK, B.Sc. and H. J. VOSE).

Other business.

Vote of thanks to Council and Officers—

Proposed by W. S. BURN, M.Sc.

Reply by A. F. C. TIMPSON, M.B.E. (Chairman of Council).

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Part 13.

President: Sir PERCY E. BATES, Bt., G.B.E.

Minutes of Proceedings AT THE ANNUAL GENERAL MEETING

MARCH 15th, 1940.

CHAIRMAN: THE PRESIDENT.

The fifty-first Annual General Meeting of The Institute was held at Connaught Rooms, Great Queen Street, London, W.C.2, on Friday, 15th March, 1940, at 12 noon.

The President, Sir Percy E. Bates, Bt., G.B.E., presided over a large gathering of members, and was supported on the platform by the Chairman of Council, Mr. A. F. C. Timpson, M.B.E., the Vice-Chairman of Council, Mr. F. W. Youldon, the Honorary Treasurer, Mr. Alfred Robertson, C.C., and the Secretary, Mr. B. C. Curling.

The President, opening the proceedings, was warmly welcomed. After a brief introductory speech he proceeded to the business of the meeting by asking the Scrutineers, Messrs. A. E. Whiteside and G. B. Plows, to retire for the purpose of examining the voting papers and of reporting to him in due course. The Scrutineers thereupon retired.

The President next called upon the Secretary to read the Annual Report as follows:—

Annual Report of the Council.

The past year has seen the prospects of peaceful reconstruction, upon which we speculated hopefully in the introduction to our last Annual Report, shattered by the outbreak of war. We then asserted that no members of the industrial community were likely to benefit more than marine engineers from such peaceful reconstruction; conversely, in war as waged by our present enemy, and as already the events of the war at sea have shown, the conditions in which the sea-going personnel of the Royal and Merchant Navies carry out their duties are perhaps the most acutely hazardous and

sea-going and overseas members how much they appreciate the stimulus of being kept up-to-date in technical developments by the regular receipt and perusal of the TRANSACTIONS.

Apart from the war-time cancellations of the lecture meetings, and notwithstanding the difficulties consequent upon the removal of the office staff to High Wycombe, it has been the Council's aim and endeavour to maintain the essential functions of the Institute, and they hope that the following Report and Accounts will be accepted as evidence that they have not failed in that object.

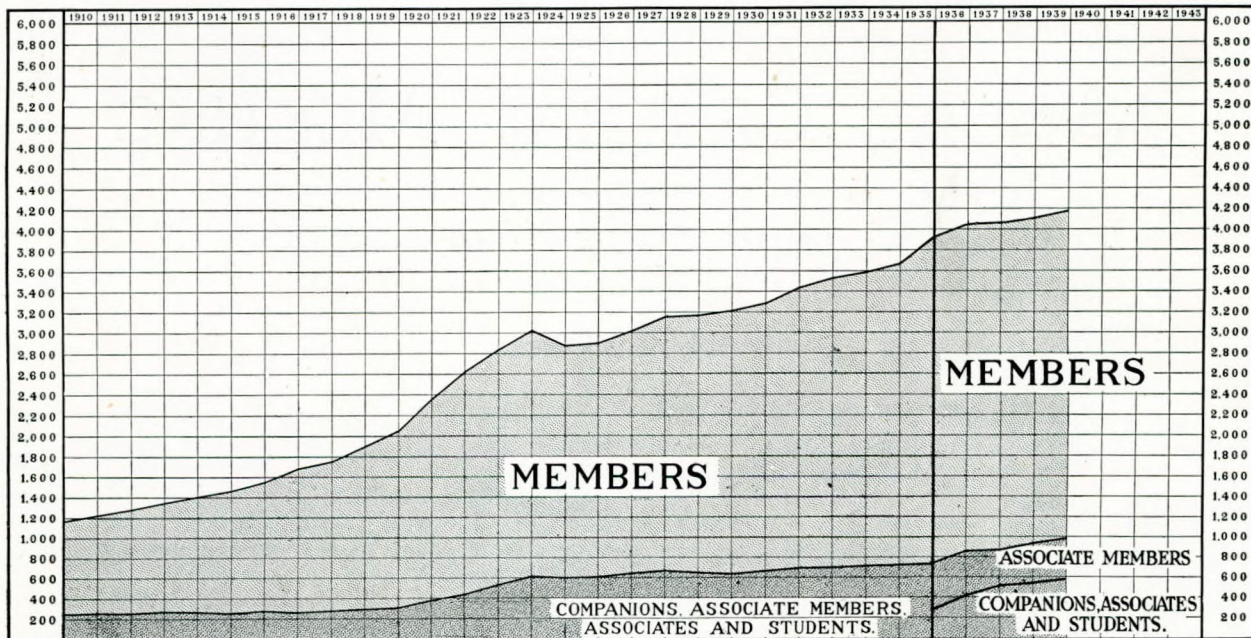
| Grade. | 1st Jan., 1939. | Transfers | | Elected. | Died. | Resigned. | Lapsed. | Total 31st Dec., 1939. |
|----------------------|-----------------|-----------|-----------|------------|-----------|-----------|-----------|------------------------|
| | | From | To | | | | | |
| Past Presidents ... | 10 | | | 1 | 1 | | | 16 |
| Hon. Members ... | 3 | | | | 1 | | | 2 |
| Members ... | 3,159 | | 8 | 135 | 35 | 62 | 28 | 3,177 |
| Companions ... | 57 | | | 1 | 1 | 1 | | 56 |
| Associate Members... | 420 | 2 | 4 | 11 | 1 | 8 | 8 | 416 |
| Associates ... | 359 | 9 | 19 | 82 | 1 | 9 | 9 | 432 |
| Students ... | 96 | 20 | | 26 | | 4 | 11 | 87 |
| Totals ... | 4,110 | 31 | 31 | 256 | 40 | 84 | 56 | 4,186 |

nerve-wracking of those of all combatants.

In these circumstances the Council realise the importance of keeping in touch, through the TRANSACTIONS and by correspondence, with members wherever they may be in the world-wide theatre of war. They have been glad to hear from numerous

Membership.

In spite of the difficulties associated with the recruitment of new members since the outbreak of hostilities, the changes in the Membership Roll during the past year, as detailed in the accompanying table and chart, show a net increase of 76 in the



Membership Chart at December 31st, 1939.

numerical strength of the Institute.

It is hardly necessary to emphasize the difficulty of increasing or even maintaining the membership at its present strength in the prevailing abnormal circumstances, and to urge upon Members the importance of their co-operation in ensuring a plentiful flow of suitably qualified candidates for membership.

The losses by death recorded at the end of this report, including several due to enemy action, will be noted with regret and with renewed sympathy towards the bereaved relatives. Among the deceased are several who will be specially remembered for their past services to the Institute, namely, Eng. Vice-Admiral Sir Robert B. Dixon, K.C.B., D.Sc. (Past-President), Mr. Summers Hunter, C.B.E. (Past-President), Eng. Vice-Admiral Sir Henry John Oram, K.C.B., F.R.S. (Honorary Member), and Mr. Llewelyn Roberts, C.B.E. (Vice-President).

Re-Nomination of the President.

The Council unanimously resolved to invite Sir Percy Bates to accept nomination for a second year of office as President, and his consent has given the Council much satisfaction.

Vice-Presidents.

The following appointments have been made to fill casual vacancies, and are subject to confirmation at this meeting:—

London.—G. J. Isaac, vice G. Adams (deceased).

Sunderland.—F. H. Reid, B.Sc., Wh.Ex., vice G. J. Isaac (removed to London).

Calcutta.—C. S. McCaskie, vice S. Border (resigned).

Merchant Navy.—W. C. Sutcliffe, vice Llewelyn Roberts (deceased).

Royal Navy.—Engineer Rear Admiral F. R. G. Turner, vice Engineer Rear Admiral A. G. Crousaz (resigned).

Poll on Special Resolution to increase Membership Subscriptions.

The report of the Scrutineers on the voting on the Special Resolution to increase the membership subscriptions was as follows:—

| | | |
|--------------------|--------|-----|
| For the Resolution | ... | 798 |
| Against | | 83 |
| Spoilt papers | | 2 |

The Privy Council subsequently approved the amendments to the By-Laws necessitated by the passing of this Resolution, and Corporate Members have since been notified that the increased subscription rates would become effective on January 1st, 1940.

Cancellation of Fixtures.

On the outbreak of hostilities in September the Council decided to cancel the fixtures arranged for the 1939/40 Session, including the lectures and social functions. The meetings of Committees were

also temporarily suspended, but the Committees are now functioning normally and meetings are held to deal with all business that arises.

Papers.

During the first half of the session the following papers were read and discussed at the Institute, and have been published in the TRANSACTIONS:—

| Date. | Subject. | Author. |
|------------|---|---|
| Jan. 10th. | Some Recent Diesel Installations and their Characteristics. | C. C. Pounder (Member). |
| Feb. 14th. | Joints for Steam Pipe Lines. | F. J. Cowlin (Associate Member) and J. P. Chittenden. |
| Mar. 14th. | The Acid Bessemer Process of Steel Making. | T. Swinden, D.Met., and F. B. Cawley, M.Met. |
| Apr. 18th. | Thermodynamics of a New Type of Marine Machinery. Combustion Engines with Pneumatic Power Transmission. | Dr. H. G. Hammar and E. Johansson. |
| May 9th. | Modern Methods of Boiler Feed Water Treatment and some Suggestions for their Application to Marine Boilers. | P. Hamer and C. A. Stead. |

On the recommendation of a Special Committee of adjudicators, the Council have unanimously awarded:—

The Denny Gold Medal to Mr. C. C. Pounder for his paper entitled "Some Recent Diesel Installations and their Characteristics", and

Institute Silver Medals to Dr. T. Swinden and Mr. F. B. Cawley for their paper entitled "The Acid Bessemer Process of Steel Making".

Since the reading and discussion of papers was discontinued in September, every endeavour has been made to obtain and publish the papers which would otherwise have been presented during the second half of the Session.

The following papers, which have not been read or discussed at the Institute, were published in the TRANSACTIONS during the year:—

| Issue. | Subject. | Author. |
|------------|--|---------------------------------|
| July. | The Development, Uses and Characteristics of Ferrous Alloys in Marine, Constructional and Power Engineering. (Junior Section Lecture). | Dr. W. H. Hatfield, F.R.S. |
| August. | Forced and Induced Draught Fans. (Junior Section Lecture). | A. J. R. Paul. |
| September. | Diesel-Electric Drives. (Junior Section Lecture). | Robert Marsh, B.A. |
| October. | Copper and Copper Alloys—Their Properties and Applications. | H. W. Brownsdon, M.Sc., Ph.D. |
| November. | The Origin and Development of the Heavy Oil Engine. (Herbert Akroyd Stuart Award Essay). | S. N. Mukerji, M.Sc. |
| December. | Marine Refrigeration. (Junior Section Lecture). | E. G. Russell-Roberts (Member). |

Junior Section.

Lectures were again held very successfully under the auspices of the Junior Section at technical colleges in the London area during the first half of the session, but were discontinued from the beginning of the war in September. A paper on "Marine Refrigeration" by Mr. E. G. Russell-Roberts which had been prepared for presentation in October has been published in the *TRANSACTIONS*. The Council desire to record their thanks and appreciation to the authors who have so kindly prepared these lectures.

The programme was as follows:—

| Date. | Subject. | Author. |
|------------|--|---|
| Jan. 19th. | The Boulder Dam (Film Lecture). | C. M. Roberts. |
| Feb. 16th. | Induced and Forced Draught Fans. (At the Borough Polytechnic). | A. J. R. Paul. |
| Mar. 16th. | The Development, Uses and Characteristics of Ferrous Alloys in Marine Constructional and Power Engineering. (At Chelsea Polytechnic). | Dr. W. H. Hatfield, F.R.S. |
| Mar. 30th. | Film Display: The Production of Large Steel Ingots; Modern Steelcraft; and Films of the Construction and Launching of The Cunard White Star Liners "Mauretania" and "Queen Elizabeth". (At the Institute). | |
| Apr. 20th. | Recent Developments in Airless Injection Engines. (At Acton Technical College). | J. Calderwood, M.Sc. (Member of Council). |

Junior Meetings in Provincial Centres.

The 1938/39 programme of Junior Section meetings in the provinces was completed by successful lectures at Sunderland Technical College on February 3rd, 1939, and Glasgow University on February 9th, 1939.

The lecture at Sunderland was given by Mr. J. Calderwood, M.Sc. (Member of Council), on "High Speed Diesel Engines", and the Glasgow lecture by Mr. G. R. Hutchinson (Member) on "Marine Steam and Diesel Main Machinery".

A second series of provincial meetings arranged at Liverpool, Swansea and Southampton for the 1939/40 Session was cancelled with the remainder of the Junior Section programme on the outbreak of hostilities.

The following students have been awarded the Council's prizes, each of two guineas, for the best essays submitted in connection with the junior lectures:—

R. Humphrey (Sunderland Technical College); J. Holmes (Glasgow University); G. Brown (L.C.C. School of Engineering and Navigation, Poplar); E. J. Smith (Chelsea Polytechnic); J. Kemper (Acton Technical College).

Transactions.

Wartime conditions, involving increased cost of

production, lack of suitable material for publication and an impending scarcity of paper, greatly increased the work and difficulties of the Papers and Transactions Committee during the latter part of the past year. As previously mentioned, the Council are fully alive to the importance of maintaining this most valuable link with the Members, and the intensive efforts of the Committee are being directed to this end.

The receipt of many appreciative comments confirmed the advantages of the centralisation of the abstracting. The appointment of Eng. Com'r. D. Hastie Smith as part-time abstractor has been confirmed, and Members may anticipate that publication of the "Abstracts of the Technical Press" Section will continue without interruption despite present conditions. Every effort is also being made to ensure the supply of papers for publication as the leading contents of the *TRANSACTIONS*, and it is hoped that many of these papers will evoke discussion by correspondence.

Conditions of Appointment of Engineer Officers of the Merchant Navy Reserve.

Urgent representations have been made to the Ministry of Shipping on the efforts being made to induce certificated seagoing engineers, registered under the above scheme, to accept sea service in vessels owned or operated by companies who, by reason of the poorly found condition of these ships and the low rates of pay offered, had always had difficulty in engaging or retaining qualified engineers. A deputation from the Council was interviewed at the Ministry, when the whole question was ventilated, and assurances have since been received that the suggestions put forward by the deputation are being implemented.

The deputation also called attention to the serious situation which was arising due to the conscription into Army service, at the age of 20 years, of marine engineer apprentices when they had almost completed four years training, the supply of junior engineers being thereby diverted from the vital service of the Mercantile Marine. The adoption of the proposals which the Council have submitted at the Ministry's invitation will, it is anticipated, remedy this situation.

Library.

A new edition of the Library Catalogue, embodying several hundred additions made since the previous issue in 1935, was published in June last. Copies of this new edition are available at 1s. each. Copies of all new books published during 1939 on marine engineering, shipbuilding and allied subjects were added to the Library during the year, and the Council's special thanks are again tendered to the panel of reviewers for their invaluable voluntary services in reviewing these books. The selection and purchase of books to meet special requirements, particularly on behalf of overseas members, and the issue of books on loan through the post and to

members having direct access to the Library, continues to be an important part of the Institute's work. The Council intend that information within the resources of the Library shall, particularly at this time of national emergency, be readily available, and in this respect every assistance will be given to members on application to the Secretary.

Essay Competitions.

Only two essays were received during the year, one for the Murdoch and Robertson Award and one for the Stephen Award.

The first-named essay, entitled "Automatic Control Apparatus in Refrigerating Plants" by R. A. Collacott (Student) has been awarded the full Murdoch and Robertson prize of £13, and publication in the *TRANSACTIONS*.

The other essay, entitled "Electricity in Oil Carrying Vessels" by G. A. Day (Member), has gained a partial Stephen Award of £3.

Akroyd Stuart Award Competition.

Five essays of a high standard were received for the Akroyd Stuart Award in respect of the 1937-39 Competition, and on adjudication the full award of £50 was made to Mr. S. N. Mukerji, M.Sc. of Calcutta.

Associate Membership Examination.

Only one candidate entered for the Associate Membership Examination. He passed in Marine Engineering Knowledge and in Marine Engineering Drawing and Design, but failed in all other subjects.

Studentship and Probationer Studentship Examinations.

Thirty-nine candidates entered for the Studentship Examination, and the following twenty-two qualified for election as Students:—

R. S. Colvin, R. J. R. Cully, T. H. Douglas, W. D. Emmerson, R. Screen, E. W. Watson (Rutherford Technical College), H. Chilton, C. F. Croisdale, G. C. Dring, T. Gray, F. A. Hay, E. M. Pentney, D. I. Walsh (Sunderland Technical College); J. L. Whittle (University College, Southampton); J. H. Birtwhistle (City of Liverpool Technical College); B. E. L. Deckker (Colombo Port Commission); C. S. Sundaram (I.M.M.T.S. "Dufferin"); R. V. Castle (Dover Technical College); W. D. Kellow, H. T. Morrison, D. Vincent (Falmouth Technical School); P. Martin (Royal Technical College, Glasgow).

The following candidates were awarded the Council's prizes for attaining highest marks in the various subjects:—

F. A. Hay (Sunderland) : English and General Knowledge.

H. Chilton (Sunderland) : Electrotechnology.

D. I. Walsh (Sunderland) : Mathematics.

H. Chilton (Sunderland), W. D. Emmerson (Newcastle) and P. Martin (Glasgow) : Applied Mechanics.

R. V. Castle (Dover) and D. I. Walsh (Sunderland) : Machine Drawing.

C. F. Croisdale (Sunderland) : Heat Engines.

The following gained distinction (85 per cent. or more marks) in the various subjects:—

Electrotechnology : H. Chilton (Sunderland), Mathematics : E. W. Watson (Newcastle); T. Gray, E. M. Pentney, and D. I. Walsh (Sunderland).

Applied Mechanics : W. D. Emmerson, R. Screen (Newcastle); H. Chilton, C. F. Croisdale, T. Gray and F. A. Hay (Sunderland); P. Martin (Glasgow).

Heat Engines : T. H. Douglas (Newcastle), H. Chilton, C. F. Croisdale (Sunderland); D. Vincent (Falmouth).

The following qualified for election as Probationer Students:—

W. E. Rendle (City of Liverpool Technical College); N. A. C. Bromidge (H.M.S. "Caledonia"); C. V. Bryant, S. W. Kennedy, H. W. Relf, A. H. Webb (Dover Technical Institute).

Lloyd's Register Scholarship.

Twelve candidates were examined for the 1939 Scholarship, which has been awarded to J. Sloan of Belfast, an apprentice to Messrs. Harland & Wolff, Ltd., and a student of Belfast College of Technology. The award is to take effect in September, 1940, subject to the winner then having passed the Matriculation Examination of Belfast University.

R. Magill, who won the previous year's Scholarship, is studying at Queen's University, Belfast.

J. A. Smith, who won the Scholarship in 1938, is completing his final year's course at the City and Guilds College, South Kensington.

Institute Prizes for Students of Technical Colleges in Marine Centres.

The Institute's annual prizes for Students of Heat Engines at technical colleges and schools in marine centres have been awarded as follows:—

Dundee Technical College : William Kay.

Falmouth Technical School : William Douglas Kellow.

Royal Technical College, Glasgow : George Cameron Reid Mathieson.

Watt Memorial School, Greenock : Archibald Dick Little.

Hull Municipal Technical College: Leslie Vincent.
 Leith Technical College: James Turnbull.
 City of Liverpool Technical College: Reginald Kenneth Peberdy.
 L.C.C. School of Engineering, Poplar: William Samuel Hales.
 Woolwich Polytechnic: Terence Tyler.
 Constantine Technical College, Middlesbrough: Ralph William Wade.
 Rutherford Technical College, Newcastle: John Collin.
 Municipal College, Portsmouth: Reginald Main.
 University College, Southampton: Alexander Daniel Mackenzie.
 Marine School of South Shields: Stephen Witham Williamson.
 Swansea Technical College: Kenneth Gwynne Brown.
 Birkenhead Technical College: Wilfred James Macbeth.
 The Polytechnic, Regent Street: Ronald Frank Garton.
 Cardiff Technical College: C. L. Bailey.

Extra-First Class Engineer's Certificate Examination—Institute Award.

After consultation with the Ministry of Shipping, the award of the Institute medal to the candidate attaining the highest position in the Extra-First Class Engineer's Certificate Examination has been made, in respect of the 1939 examinations, to Mr. John E. Rundle, an Associate Member of The Institute.

National Certificates with Special Reference to Marine Engineering.

Since the institution of the scheme of endorsement 27 Ordinary Certificates and 7 Higher Certificates with special reference to Marine Engineering have been endorsed and issued, as follows:—

| ORDINARY CERTIFICATES. | |
|---|----|
| Birkenhead Technical School ... | 13 |
| London, Poplar, L.C.C. School of Engineering and Navigation ... | 11 |
| Plymouth and Devonport Municipal Technical College ... | 1 |
| Southampton University College ... | 2 |
| HIGHER CERTIFICATES. | |
| London, Lewisham, South-East | |
| London Technical Institute ... | 4 |
| Southampton University College ... | 3 |

The extension of this scheme should have the much-desired effect of stimulating the recruitment of junior engineer officers for the Merchant Navy.

Examinations Board and Education Group.

A joint Sub-Committee of the Examinations Board and the Education Group Executive Committee was set up to consider the re-arrangement of The Institute's examinations involved by the adop-

tion of the Common Preliminary Examination Scheme. The Council have approved the Sub-Committee's recommendations that:—

- (1) The Common Preliminary Examination should supersede The Institute's Probationer Studentship Examination, and that candidates passing the former examination be eligible for admission as Students of The Institute;
- (2) That a new class of Graduates be established, admission to which would be by examination on a basis yet to be determined.

The first Common Preliminary Examination is to be held in April, 1941, meanwhile The Institute's Probationer Studentship and Studentship Examinations will be held as usual in May, 1940.

Education Group.

As mentioned above, the Executive Committee of the Education Group has co-operated with the Examinations Board in the preparation of a report and recommendations to the Council in connection with the adoption of the Common Preliminary Examination.

The Council adopted a recommendation by the Group that the Institution of Mechanical Engineers be approached with a view to the arrangement of a joint meeting of the Education Groups of the two institutions, for discussion of subjects of mutual interest. This matter is in abeyance since the outbreak of war.

Representatives Appointed.

The following appointments of Institute representatives have been made during the year in response to invitations from the respective bodies:—

Joint Committee on Engineering Co-operation Overseas.

Egypt: H. Bishop.
 Hong Kong: W. O. Lambert.
 Ceylon: R. S. Shaw.

Engineering Joint Council.

R. Rainie, M.C., vice J. McLaren, resigned.

Joint Committee on Materials and their Testing.

W. D. Heck, B.Sc., vice Dr. S. F. Dorey, resigned.

National Service—Central Register.

Marine Engineering and Naval Architecture Committee.

R. Rainie, M.C. (Chairman of Committee) and the Secretary.

Regional Panels of the above Committee and of the Mechanical Engineering Committee.

Region 2. E. Markham, Wh.Ex.
 „ 3. Eng. Lt.-Com'r. A. C. Yeates, R.N.(ret.).
 „ 4, 5 and 12. The Secretary.

- „ 6. E. Gyles and Eng. Com'r.
W. A. Graham, O.B.E.
(ret.), Southampton.
- „ 7. E. A. S. Machon.
- „ 8. Major E. W. B. Kidby,
O.B.E., R.E.
- „ 9. H. E. Lamplough.
- „ 10. A. P. Traill, Wh.Ex.
- „ 11. A. R. Graham.

British Standards Institution :—

Component Parts of Engine Indicators: J. Calderwood, M.Sc.

Engineering Symbols and Abbreviations: J. Calderwood, M.Sc.

Technical Committee on Keys and Keyways: G. T. Marriner.

Marking of Valves, Flanges and Fittings: G. T. Marriner.

Iron and Steel Industry Committee: J. Turnbull.

(All vice J. Hamilton Gibson, resigned).

Cables for Use on Ships: P. H. Dallison (additional to N. H. Swancoat).

Standardisation of Letter Symbols: J. Calderwood, M.Sc.

British National Committee, World Power Conference.

E. W. Green, O.B.E., vice J. Hamilton Gibson, O.B.E., resigned.

L.C.C. School of Engineering and Navigation, Poplar, Advisory Committee.

S. N. Kent, vice H. J. Vose, resigned.

Institution of Civil Engineers. Conference on Engineering Education and Training.

T. A. Bennett, B.Sc.

Engineering Joint Examination Board.

R. F. Thompson, B.Sc., vice A. F. C. Timpson (resigned).

Guild of Benevolence.

The report of the past year's work of the Guild will be presented at the Sixth Annual General Meeting on Wednesday, April 3rd, 1940. There has been an increase in the enrolments during the past year, numbering 49 subscribing members and 13 life members, but as it is anticipated that the present unhappy international situation will be reflected in increased claims upon the Guild's funds, the Council hope that the difficulties will be surmounted by a corresponding increase in the enrolments during the ensuing year.

It has been represented to the General Committee that members of the Institute have but little inducement to become members of the Guild, seeing that they and even non-members of either the Institute or the Guild are already eligible for relief from the Guild in times of adversity. The Committee deprecate this point of view, and remind members that at present a considerable part of the Guild's income distributed in relief is interest on capital subscribed by shipping and other companies when the Guild was founded. Nevertheless, they

recognise that more Institute members are likely to become members of the Guild if an equitable distinction be made between them and non-members.

The Committee have accordingly adopted the following scale of grants, which they hope will remove the previous objection and induce every member of The Institute to support the Guild by becoming a subscribing member :—

Members of The Institute who are also members of the Guild to receive 20s. per week, plus 5s. per week for one and 2s. 6d. per week for each further dependant, but total not to exceed 30s. per week.

Members of The Institute only or members of the Guild only to receive 15s. per week, plus 2s. 6d. per week for each dependant, but total not to exceed 22s. 6d. per week.

Non-members of either The Institute or the Guild to receive 10s. per week, plus 2s. 6d. per week for each dependant, but total not to exceed 15s. per week.

The above payments to be subject to the total income of the recipients being not more than—

45s. per week for Institute *and* Guild members,
40s. per week for Institute *or* Guild members,
30s. per week for non-members of either Institute or Guild,

inclusive of the grant from the Guild.

Special cases to be considered on their merits, irrespective of the above basic scale of relief.

Premises.

The Corporation of London, in exercise of the powers delegated by the Lord Privy Seal, in September took over part of the basement of The Institute as a public air-raid shelter. A shelter has also been provided for the Housekeeper and his wife.

The Institute premises have been kept open for the benefit of members requiring to use the Library and Reading Room, and black-out arrangements have been provided for all windows on the first floor. As a precaution, the James Watt window has been removed and stored in the basement.

During the past year the use of the Lecture Hall and/or the Library has been granted to the British Association of Refrigeration, the London Shipping Orchestral Society, the Omnibus Society, and the Engineer Surveyors' Association for their meetings, and to the General Steam Navigation Co.'s Sports Club (Debating Section) for a meeting in March.

The Council gratefully accepted the offer by Major J. H. W. Gill (Member) of a model axial flow pump as used in marine practice, for permanent exhibition at The Institute.

Emergency Office Accommodation.

For some time before the declaration of war on September 3rd the Council had been making

arrangements for the duplication and safe storage of important Institute documents and for the removal of the Offices and Staff in the event of an emergency. Since the outbreak of hostilities The Institute Offices have been located at 73, Amersham Road, High Wycombe.

Publicity.

Among the functions cancelled owing to the war was a reception and dinner to the Press, which had been arranged by the Publicity Committee to take place on the evening of the Presidential Address in September.

Annual Golf Competition.

The Ninth Annual Golf Competition was held at Sundridge Park, Bromley, on Tuesday, June 13th, 1939, twenty-four members entering for the day's events. The Institute Cup was won by Mr. S. Hogg, Mr. A. Walker and Mr. J. G. Edmiston securing second and third places respectively. The prize for the best net score of those with handicaps of 18, 19 and 20 was won by Mr. W. Tennant. The winners of the two-ball foursome bogey competition held in the afternoon were Messrs. E. F. J. Baugh and A. Walker, Messrs. R. K. Craig and J. G. Edmiston securing second place. A full report of the Competition was published in the July TRANSACTIONS.

The Autumn Golf Meeting arranged to take place at Sundridge Park in September was cancelled owing to the war.

Social Events.

The Annual Conversazione and the Annual Dinner are included in the list of cancelled fixtures of the Session.

Armistice Day, 1939.

Mr. A. F. C. Timpson, M.B.E. (Chairman of Council), represented The Institute and laid a wreath at the service at the Mercantile Marine Memorial on Tower Hill on November 11th, 1939.

Staff.

Mr. R. Cane, junior clerk, was called up for army service and joined his unit, the Royal Army Pay Corps, in December. The Council have decided that his post shall remain open for his return.

As reported elsewhere, the appointment of Eng. Com'r. D. Hastie Smith, R.N.(ret.), as abstractor and sub-editor in a part-time capacity has been confirmed.

National Service. Central Register.

In common with kindred institutions, The Institute is co-operating with the Ministry of Labour and National Service in the selection of personnel for engineering appointments in the various Government Departments and in private firms engaged in the national service. Nominees for these posts can only be selected from those members who have enrolled on the Central Register; unemployed members and others seeking work of national import-

ance who have not so enrolled should complete and return the cards and dossiers issued early last year, or apply for fresh copies at once.

So far there has been practically no demand on the Ministry for marine engineers or naval architects, though there has been a brisk demand for mechanical engineers with various special qualifications, of ages ranging from 20 to 50 or occasionally higher. For some of these vacancies members of The Institute have been recommended and some have secured appointments.

It is necessary to mention that members resident overseas who have enrolled on the Central Register cannot be considered for these appointments unless they have relinquished their employment and returned to this country since registering.

The Society of Naval Architects and Marine Engineers, New York. Jubilee Meeting in New York, 1943.

The Council have been informed of the tentative plans of the above Society to hold a Jubilee Meeting in New York in 1943, it being hoped that a large delegation from The Institute will be able to participate in the occasion. It is not known what effect the subsequent outbreak of hostilities may have had on the Society's plans.

Engineering Association of Malaya.

The Agreement which has existed between The Institute and the above Association, by which the Association acts as Honorary Local Representatives of The Institute in Malaya has, by mutual consent, been renewed for a further period of three years. The two societies exchange publications and privileges of admission to the meetings and use of Libraries, Reading Rooms and other rooms available to members, on application for visitors' tickets to the respective secretaries.

International Meeting of Shipbuilders, Marine Engineers and Nautical Experts, Hamburg, Kiel and Berlin, 1939.

A full report was published in the July TRANSACTIONS of the proceedings of the above Meeting, in which delegates from this and other British institutions took part on the invitation of the Institution of Friends of the Hamburg Experimental Tank.

International Congress of Naval Architects and Marine Engineers, Liege, 1939.

Members will be aware from the full report published in the October TRANSACTIONS of the success which attended the International Congress of Naval Architects and Marine Engineers convened and organised by the Union Belge des Ingénieurs Navals. The Congress activities, which were centred mainly in Liège, occupied the three days 18th, 19th and 20th August, 1939. The Institute was officially represented at the Congress by Mr. A. R. T. Woods (Vice-President). Mr. F. W. Youldon (Vice-Chairman) and Mr. A. C. Hardy (Associate Member of Council) also attended.

Reports of Representatives on the Various Outside Bodies.

The Engineering Joint Council. (Representatives: Mr. R. Rainie, M.C.; co-opted, The President).

Two meetings of the Council were held during the past year. The main item under discussion was the Engineering Joint Examination Board, which is the subject of a separate report.

The Engineering Joint Council, Committee on Co-operation between Members resident overseas. (Representative: Mr. John McLaren).

There have been no meetings of the Committee during the past year. Meanwhile, correspondence has taken place between the constituent institutions and a number of their members in Canada, Egypt, Ceylon and Hong Kong preparatory to the formation of local organisations in those areas under the auspices of the Joint Committee.

The Engineering Joint Examination Board. (Representatives: Mr. F. H. Reid, B.Sc., Wh.Ex. and Mr. R. F. Thompson, B.Sc.).

The recommendations of the Sub-Committee set up by the Board to prepare a scheme to implement the proposals already agreed to by the constituent institutions were considered by the Board at two meetings held in June last and, after sundry amendments, approved. The Council of The Institute thereupon set up a Committee to consider the re-arrangement of The Institute's examinations involved by the adoption of the Common Preliminary Examination scheme. With the outbreak of hostilities in September the work of the Board and of The Institute's Committee was suspended pro tem. Since the preparation of this report, however, it has been decided to resume the work of the Board.

Lloyd's Register of Shipping, Technical Committee. (Representative: Mr. S. B. Freeman, C.B.E., M.Eng.).

The Committee held a meeting on Tuesday, 28th March, and a long programme of matters affecting the Society's Rules relative to the construction of steel vessels was considered, viz. :—

- (1) Oil carried as cargo in deep tanks and peak tanks.
- (2) Deep tanks and peak tanks.
- (3) Arrangements for carrying and burning of oil used as fuel—Oil fuel bunkers.
- (4) Detached superstructures.
- (5) Rules for vessels intended to carry petroleum in bulk—Riveting.
- (6) Rules for vessels intended to carry petroleum in bulk—Periodical surveys.
- (7) Pumping arrangements.
- (8) Rules for the construction and survey of engines and boilers of steam vessels.
- (9) Rules for the construction and survey of heavy-oil engines and their auxiliaries.

(10) Rules for steel trawlers.

(11) Rules for electric propulsion.

(12) Rules for electric equipment.

Particular interest, perhaps, attaches to the new rules for electric propulsion and for electric equipment, which constitute, in effect, a new and authoritative set of recommendations for the industry. The old rules were, in general, adopted in 1925, and the present proposals are in agreement with the new edition which the Institution of Electrical Engineers are about to issue of their regulations for the electrical equipment of ships. Lloyd's Register's new rules, however, make provision for the acceptance, in countries other than the United Kingdom, of their standard practice, provided it is officially accepted and is equivalent to the Society's rules.

Rules relating to the electric propelling machinery are an important matter, no revisions having been made since March, 1934. The Ships' Electrical Equipment Regulations Committee of the Institution of Electrical Engineers has adopted the rules of Lloyd's Register as the basis for their new regulations. The regulations run to seven pages and are worthy of study.

Such matters as governing of prime movers, the permissible temperature rises, the protection, when overloads occur, of essential services, the permissible alloys for lead sheathing, the precautions necessary on account of high voltages, and the regulations for the testing of installations, are the most important details dealt with.

The Merchant Shipping Advisory Committee. (Representative: Mr. J. B. Harvey).

This Committee has not been active during the past year.

Corrosion Research Committee of the British Non-Ferrous Metals Research Association. (Representative: Mr. James M. Dewar).

Considerably improved facilities for the work of the Association are now available in the new Laboratories in Euston Street, which were opened on 29th June, 1939, by the Rt. Hon. Oliver Stanley, M.C., M.P., then the President of the Board of Trade. The character of the work in progress has, however, been affected to some extent by the outbreak of war and special attention has been given to Service problems and to providing technical information designed to increase or improve the supply, manufacture and quality of non-ferrous metal products for war purposes. So far, however, it has not been necessary to discontinue work on any of the main subjects of research mentioned below.

In work on the production of ingots and castings of non-ferrous metals free from cavities and defects and having mechanical properties best suited for their service requirements or subsequent manufacturing operations, particular investigations are concerned with the cause and prevention of gas unsoundness in castings of aluminium and its alloys,

bronzes and nickel silver. Considerable progress has been made in determining the creep (gradual extension under prolonged steady load) and other mechanical properties of non-ferrous metals and alloys at normal and elevated temperatures. The objects of this work are to develop alloys with improved properties and to provide data hitherto unavailable on the high temperature properties of non-ferrous metals which can be used for design purposes. Research on spectrographic analysis is standardising quick and accurate methods of determining composition, which accelerate inspection. Methods of obtaining bright electro deposits of nickel, new methods of testing adhesion and thickness, and recommended specifications for certain types of electro deposits are among the practical results emerging from research on electro-deposition. Rolled non-ferrous metals are receiving attention in work on the surface quality of rolled brass and, in collaboration with the Institution of Automobile Engineers, on deep drawing of metals. Extensive work on the welding of non-ferrous metals and alloys, undertaken in collaboration with the Institute of Welding, has been commenced in the Association's laboratories and in the works of members. A study of the resistance to corrosion of copper, lead, zinc and galvanized iron is also the subject of a number of investigations.

Probably of most direct interest to The Institute and marine engineers generally, is the work concerned with corrosion of condenser tubes. The improvement of the corrosion resistance of 70:30 cupro-nickel condenser tubes by controlled additions of iron and manganese has been the subject of a brochure "Cupro-Nickel Condenser Tubes. Minor Constituents (Iron and Manganese)", British Non-Ferrous Metals Research Association Report, No. D.31, January, 1939, giving recommendations based on the results of a number of tests on the amounts of iron and manganese which should be present. Further experimental work has been in progress during 1939 to determine the upper limit of iron which can be permitted in the copper-nickel alloys exposed to various types of attack by sea water.

Considerable progress has been made in studying the influence of biological factors on the corrosion of non-ferrous metals and in particular on the corrosion of condenser tubes. Hydrogen sulphide which is often developed in closed water systems as a result of the activity of sulphate reducing bacteria is sometimes the cause of corrosion and other types of trouble, and may occasionally cause accelerated corrosion of condenser tubes. It has now been found that the development of sulphate reducing bacteria can be inhibited by the use of certain dyestuffs. A process, based on this discovery, has been patented and may have applications outside condenser practice, some of which will be of particular interest to marine engineers. Corrosion of the armouring wires and brass tape used in the construction of submarine cables is sometimes

due to hydrogen sulphide released by the action of these bacteria from water in storage or freight tanks or in the holds of cable ships. Practical trials are now in progress involving the treatment of such waters to prevent the corrosion of cables which are stored in them. A further application may be to prevent the development of unpleasant odours in ship's bilge water. The results of this investigation will shortly be published in a paper to be presented to the Society of Chemical Industry.

Recently experiments on the effect of organic sulphur compounds in accelerating corrosion of non-ferrous metals used for the manufacture of condenser tubes have shown that such substance can, in certain circumstances, markedly increase the depth of attack due to impingement. The organic substances in question arise from the decomposition of sea-weed and other organic matter in sea and estuarine water and bacteria may play a part in such decomposition. The comparative resistance of various non-ferrous metals and alloys to the action of these compounds in sea water is now being determined.

Heat Engine Trials Standing Committee. (Representatives: Mr. J. Carnaghan and Mr. G. J. Wells).

Nothing further to report.

Marine Oil Engine Trials Committee. (Representatives: Mr. S. B. Freeman, C.B.E., M.Eng. and Mr. H. S. Humphreys).

Nothing to report.

L.C.C. School of Engineering and Navigation, Poplar, Advisory Committee. (Representative: Mr. S. N. Kent).

The session which ended on August 31st, 1939, established yet another record in the history of the School, for the total enrolment was the highest yet attained. This fact emphasizes and justifies the need for the extension of the premises now in progress. It is fortunate that the extension has progressed as far as it has—the actual building being now practically complete. The present session, 1939/40, was due to begin on September 1st, but actually on that day the Junior School was evacuated and the remaining courses were closed. The Day School for Boys is now in the reception area of Bridgwater, Somerset. The School there was speedily organized with a full day programme of work and the Advisory Committee has had a full report of the satisfactory circumstances of schooling and housing of the boys and is glad to know that the work is being carried on with so close an approximation to the normal curriculum. The evacuated School has afforded an excellent example of stability under war conditions. Happily, there has been practically no leakage of pupils back to London and the number now in attendance is much greater than that of the original evacuation party and a high percentage of the possible maximum. The Senior Departments of the School

resumed work at Poplar as soon as A.R.P. arrangements had been approved. The day courses in preparation for the Board of Trade Examinations for engineer officers are in full swing, and that applies equally to the Navigation Department. Evening classes are also open and the attendances at all classes has been extremely good in all the circumstances. The standard of work throughout is being maintained at the high level which the School has established.

Association of Special Libraries and Information Bureaux. (Representative: Mr. B. C. Curling).

In view of the state of international tension prevailing, in July, 1939 a memorandum was drafted by the Association on the *Organisation of Information Services in War Time*. This memorandum was informally submitted to Sir Edward Bridges, Secretary to the Cabinet, and to Sir Arthur Robinson of the Ministry of Supply. The outbreak of war intervened before a formal presentation of the memorandum could be arranged, but it is hoped that the Association's purpose will be achieved in due course.

The Annual Conference, arranged for September, was cancelled, copies of the papers being subsequently circulated to intending delegates. Some of these may be discussed at meetings now being arranged for the purpose in London.

The Association is again carrying on its essential functions after the period of general dislocation immediately following the outbreak of war.

British Society for International Bibliography. (Representative: Mr. B. C. Curling).

Under the auspices of the British Standards Institution the Society has taken an important part in the formation of a Technical Committee on Documentation. This Committee has already commenced work under its wide terms of reference, which include the standardising of British methods of documentation, and their co-ordination with those of other nations through the International Standards Association.

The war has somewhat impeded the latter activity, but work is proceeding on the lines indicated by the British aspect of the problem.

The Council recently decided to publish the papers read before the Society, with other matters of importance to members, in a Journal at approximately quarterly intervals.

Royal Naval Reserve. (Representative: Mr. J. B. Harvey).

No meetings have been held during the past year.

Marine Fuel Committee of the Coal Utilisation Council. (Representatives: Mr. E. W. Green, O.B.E., Eng. Rear-Admiral W. Scott Hill, and Eng. Rear-Admiral W. M. Whayman, C.B., C.B.E.).

No meetings of this Committee have been held during the past year.

Word Power Conference, British National Committee. (Representative: Mr. E. W. Green, O.B.E.).

At a meeting of the Committee during the year the British Standard Specification No. 845, 1939, Commercial Acceptance Tests for Steam Boilers, was under discussion.

On the outbreak of hostilities the chairmanship of the International Executive Council of the World Power Conference was taken over by the chairman of the Netherlands National Committee and the Central Office in London closed. The office of the British National Committee was also closed on the 30th October, but arrangements have been made to deal with correspondence.

British Corporation Register of Shipping and Aircraft, Committee of Management and Technical Committee. (Representative: Mr. R. T. Wilson).

A comprehensive revision of the Ship and Machinery Rules was completed during the earlier months of 1939 and the new edition came into force on 1st August.

One of the most interesting and important features of the new ship rules is the introduction, for the first time in the history of classification, of specific requirements for hatch wedges and cleats, which play an important part in the safety of life at sea. Rules are now given for the construction of steel hatch covers for use under tarpaulins, in addition to those already provided for large steel covers which are secured in position by mechanical means.

The machinery rules were rearranged and considerably expanded; in particular, the section relative to electric installations is now in accord with the latest standards for cables and equipment, and has been enlarged in respect of the application of electric power to the main propelling plant. The sections relative to the testing of material for classed ships and their machinery have also been rearranged and amplified.

The work of the Society has inevitably been influenced by war conditions, but there has been no diminution in the number or variety of technical problems, most of which must of necessity be regarded as confidential.

The Institution of Electrical Engineers, Ship Electrical Equipment Regulations Committee. (Representatives: Mr. S. A. Smith, M.Sc. and Mr. N. H. Swancoat).

Several meetings of this Committee have been held during the past year and new Regulations, which appear to be quite satisfactory, have now been issued.

The Parliamentary Science Committee. (Representatives: Mr. H. S. Humphreys and Mr. T. R. Thomas, B.Sc.).

Since the outbreak of war the Committee has been reorganised, under the title of The Parliamentary and Scientific Committee, on lines which should facilitate the exercise of its functions in the interests of the constituent member societies.

The British Electrical and Allied Industries Research Association: Joint Committee: Steels for High Temperatures. (Representative: Dr. S. F. Dorey).

Since the use of high steam pressures and temperatures permits of higher thermodynamic efficiencies being obtained, with consequent reduction in the fuel bill, their use continues to receive the closest attention from both turbine user and turbine builder. With the advantages which are accruing from steels for use at high temperatures, the adoption of higher steam pressures and temperatures will undoubtedly become more general, and machines and equipment are being produced which are equally as reliable as low-pressure plant, and at prices which justify the adoption of higher pressures and temperatures on commercial grounds.

During the year examination has been made of 24 acid open hearth carbon steels (0.23 per cent. C.) and 11 basic open hearth carbon steels (0.18 per cent. C.) for abnormal creep behaviour, and further tests are in progress on acid open hearth steels subsequently treated with aluminium.

Investigations have been made on the creep resistance of steels utilized in high pressure and high temperature superheater and steam pipe practice in order to determine the creep properties of tube and pipe materials (carbon and molybdenum steels) and to afford a basis for the estimation of design stresses; tests are being made on the materials before and after drawing into tubes.

Research has been continued on the creep and impact properties, composition, heat treatment and microstructure of complex molybdenum steels (molybdenum-vanadium) at various temperatures and stresses and in different media. Steels with various molybdenum and vanadium contents have been prepared in the cast and rolled state for further investigation. Prolonged creep tests to fracture and microscopical examination have been made on air-cooled molybdenum steel in order to estimate the stresses to produce 1 per cent. creep in 10^5 hours at various temperatures, and to determine whether fracture was likely to occur with less than 1 per cent. elongation.

Investigations have also been carried out on a molybdenum cast steel of a type suitable for turbine casting and data have been obtained for purposes of design for high temperature service. Complete creep curves have been obtained from tests lasting in some cases over 10,000 hours, and the estimated stress-temperature relationships for 0.1 per cent. and 0.3 per cent. creep in 100,000 hours, and for 0.1 per cent. creep in 10,000 hours have been recorded.

Stress-corrosion tests have been carried out in

superheated steam for 1,000 hours at 550° - 600° C. on molybdenum, molybdenum-vanadium and chromium-molybdenum steels whose creep properties had been determined, and tests are being carried out for longer periods of time.

Joint Committee on Materials and their Testing of Technical Institutions and Societies in Great Britain. (Representative: Mr. W. Dennis Heck, B.Sc.).

This Committee has not been active during the past year.

The Engineering Public Relations Committee. (Representatives: General Committee, Messrs. R. Rainie, M.C., and A. C. Hardy, B.Sc.; Executive Committee, the Secretary; Subcommittee for Scotland, Messrs. G. O. Common and L. C. Davis).

During the early part of the year exchanges of views took place between the constituent institutions regarding the future functions and financing of the Committee. As a result the Main Committee, at their meeting on 9th June, 1939 decided to recommend to the co-operating institutions that the Committee should, in future, act as an advisory body, and that the annual subscription for 1939-40 should be £2 2s. for all bodies represented on the Committee and £1 1s. for all affiliated bodies.

The Council concurred in these proposals and re-appointed Messrs. Rainie and Hardy as the Institute's representatives on the Committee.

At their May meeting the Council considered the Committee's report on a recent investigation of the question of state registration of engineers, and resolved by a majority vote to inform the Committee that in the Council's opinion the subject merited further investigation.

The Institution of Civil Engineers. Advisory Panel on Engineering Abstracts. (Representative: Mr. A. C. Hardy, B.Sc.).

One meeting of the Panel was held during the year, at which routine business only was considered. The work of the Panel ceased on the decision, immediately after the declaration of war, to suspend the publication of Engineering Abstracts (with the exception of Section 3, Marine Engineering and Shipbuilding, which the Institution of Marine Engineers decided to continue).

The Institution of Civil Engineers: Conference on Education and Training: General Committee. (Representative: Mr. T. A. Bennett, B.Sc.).

The General Committee met on 12th May, 1939 and it was decided to hold a Conference in London on the 6th, 7th, and 8th February, 1940. The Conference was to include university education, education in technical schools and colleges, and practical training. An Executive Committee was appointed under the chairmanship of Professor C. E. Inglis. Owing to the outbreak of war this Conference has been postponed until the end of hostilities.

University College, Southampton: Advisory Committee. Department of Marine Engineering. (Representative: Eng. Com'r. W. A. Graham, O.B.E., R.N.R.).

No meetings of this Committee have been held during the year, but it can be reported that the students of the Department have been very successful in securing Board of Trade certificates.

British Standards Institution.

Petroleum Industry Section: Technical Committee PT/2, Fuel Oils; Sub-Committee PT/2/1, Diesel Fuel Oils; Technical Sub-Committee PT/3, Lubricants. (Representative: Mr. J. L. Chaloner).

(1) Lubricants.

The revision of the classification of lubricating oils (B.S.S. No. 210) is now completed and it has been made quite clear that this specification is solely one of classification. The original classification took the form of tables in which were typical figures for certain properties of oils known—or believed—to be suitable, as determined by practical experience for the particular use of the oil as defined by the classification. At that time, with the methods of refining that were commonly practised, the oils as measured by the scheduled figures were probably quite suitable for the uses noted. The introduction of new processes of manufacture, however, demanded a revision of the classification and a reconsideration of the significance of the tests employed. All tests except viscosity have been omitted, the reason for this omission in each case being indicated. Whilst the specification may appear to be unnecessarily restricted, it is felt among interested sections of the industry that the classification as now published will prove a real help to both suppliers and users.

(2) Benzoles.

The Committee in conjunction with the National Benzole Association has completed the revision of further specifications as follows:—

- No. 479. Coal Tar Naphthas, covering coal tar solvent naphthas 96/160 and 90/160, coal tar heavy naphtha 90/190, and coal tar heavy naphthas (unrectified) 90/190 and 90/200.
- No. 458. Xyloles covering 2°, 3° and 5° xyloles.
- No. 865. Toluoles covering pure toluole, pure toluole for nitration, 90's and 95's toluole.

Gears and Gear Materials for Cranes and Derricks. (Representative: Mr. A. E. Crighton).

There have been no meetings of this Committee during the past year.

Screw Threads. (Representative: Eng. Rear-Admiral W. M. Whayman, C.B., C.B.E.).

Further progress has been made in the revision of the Specifications for British Bolts and Nuts (Nos. 190, 191 and 193) and consideration is at pre-

sent being given to the establishment of specifications for the quality of the material for both cold and hot forged bolts. Discussions are also proceeding in regard to the revision of Specification No. 57 for Heads for B.A. Screws. A Specification for Wing Nuts has been completed and has been published (No. 856-1939). A further Specification for Spring Washers is also practically completed.

A draft Specification for Screw Threads of Whitworth Form was issued for comment in July and work is very near completion. The revision of Specification No. 93 for B.A. Screw Threads is well in hand and attention is also being given to metric threads. Discussions with the manufacturers of screwing taps have proceeded, and substantial agreement has been reached in regard to tolerances for four grades of taps. In regard to overall dimensions the manufacturers have favoured the adoption of American practice. A draft specification incorporating these requirements will shortly be circulated.

Component Parts of Engine Indicators. (Representative: Mr. J. Calderwood, M.Sc.).

There have been no meetings of this Committee during the past year.

Engineering Symbols and Abbreviations. (Representative: Mr. J. Calderwood, M.Sc.).

There have been no meetings of this Committee during the past year.

Standardisation of Letter Symbols. (Representative: Mr. J. Calderwood, M.Sc.).

A preliminary meeting was held some months ago when it was decided to form a Committee. The Committee has not yet met.

Technical Committee on Keys and Keyways. (Representative: Mr. G. T. Marriner).

This Committee will not be active again until a revision of B.S. No. 46, Part I, is required.

Marking of Valves, Flanges and Fittings. (Representative: Mr. G. T. Marriner).

This Committee has not met during the past year. It had completed a draft specification which was circulated for the technical comment of industry at the beginning of the year. Normally, the Committee would have met in the autumn to consider the comments received, but owing to the outbreak of war the Committee were not called together at that time. It is, however, anticipated that a meeting will be arranged in the near future, in order that the work on this specification may be completed.

Air Receivers. (Representatives: Mr. J. Carnaghan and Mr. R. S. Kennedy).

In order that the provision in regard to access shall be in accord with the requirements of the Factories Act, 1937, the following specifications have been revised:—

- No. 428-1931. Forged Welded Steel Air Receivers.

No. 429-1931. Riveted Steel Air Receivers.
No. 487-1931. Fusion Welded Steel Air Receivers.

Specification No. 487 has been amended to a considerable extent and a new edition has been published. A corrigendum slip has been issued for Specification No. 428 and one is in course of issue for No. 429.

It may be mentioned that a draft specification has been prepared for valves, gauges and similar fittings for air receivers for and in connection with compressed air installations.

Mechanical Industry Committee. (Representatives: Mr. J. Carnaghan and Mr. R. S. Kennedy).

Meetings were held during 1939 in April and October. The following specifications and revisions of specifications were approved for publication.

Welded Steel Boilers for Central Heating.

Welded Steel Boilers for Hot Water Central Heating and Hot Water Supply.

Calorifiers.

Steel Tubes for Water Wells.

Toolmakers' Straightedges.

Steel Straightedges of Rectangular Section.

Toolmakers' Flats and High Precision Surface Plates.

Micrometers (external).

Wing Nuts.

Fusion Welded Steel Air Receivers (revision).

Approximate Comparison of Hardness Scales.

Capillary Joints for Copper Tubes.

Hand Hammers.

Abrasive Papers and Cloths.

Pump Tests (revision).

Forged Welded Air Receivers (amendments).

Land Boiler and Ancillary Specifications (amendments).

Loco-type Multitubular Boilers.

Vernier Callipers.

Slip (or Block) Gauges.

Method of Testing Dust Extraction Plant.

Valves, Gauges and Similar Fittings for Land Boiler Installations (revision).

Ferrous Pipes and Piping Installations for Land Boilers (revision).

Round Strand Steel Wire Ropes for Lifts and Hoists (revision).

Dimensions of and Proof Tests for Open Spanners (revision).

The Testing of the Zinc Coating of Galvanised Wires (revision).

Spot Welding Machines. (Representative: Mr. R. S. Kennedy).

The work of this Committee was terminated for the time being by the issue of Specification No. 807.

Protective Lenses for Welding Operators. (Representative: Mr. R. S. Kennedy).

One meeting was held to consider difficulties in obtaining suitable glass. Satisfactory proposals

have been received from the manufacturers, which will entail a slight modification to the specification.

Sub-Committee on Gas Welding of Steel Structures. (Representative: Mr. R. S. Kennedy).

A revision of Specification No. 693 is at present in hand and a draft has been submitted to the industry for comment and criticism.

Sub-Committee on Electrodes for Shipbuilding Purposes. (Representative: Mr. E. F. Spanner, R.C.N.C.(ret.).

No meeting of this Committee have been held during the past year.

Coal Burning Appliances, Nomenclature and Definitions. (Representative: Mr. E. W. Green, O.B.E.).

No meetings of this Committee have been held during the past year.

Sub-Committee on Steam Generators and Boilers. (Representative: Mr. E. W. Green, O.B.E.).

The work of this Committee resulted in the issue of Specification No. 845-1939, Commercial Acceptance Tests for Steam Boilers, during the past year.

Iron and Steel Industry Committee. (Representatives: Mr. T. R. Thomas, B.Sc. and Mr. J. Turnbull).

A meeting of this Committee was held during the past year when the following specifications, which had previously been subjected to revision by the sub-committee concerned, were considered with a view to publication as new standards:—

No. 13-1938. Structural Steel for Shipbuilding.

No. 14-1938. Structural Steel for Marine Boilers.

No. 592-1938. Carbon Steel Castings for Ships and Marine Engine and General Engineering Purposes. (Superseding B.S.S. Nos. 30-1907, 592-1935 and 5028-1924).

No. 29-1938. Carbon Steel Forgings for Marine Purposes.

The revisions are composed principally of modifications necessary for bringing the specifications into line with present practice. It is intended to publish the specifications as soon as agreement has been reached on the few items which are still being investigated.

Technical Committee on Land Boilers. (Representative: Mr. J. Carnaghan).

As previously reported, specifications have been published for Lancashire and Cornish boilers, multitubular horizontal boilers, vertical cross-tube boilers, vertical multitubular boilers, cast iron central heating and hot-water supply boilers, riveted steel hot-water central heating and hot-water supply boilers, valves, gauges and similar fittings for land boiler installations, and ferrous pipes and piping installations for land boilers.

Since the date of the previous report, specifications have been published for welded steel boilers for central heating, welded steel boilers for hot-water central heating and hot water supply, loco-type boilers, and calorifiers.

The draft specification for water-tube boilers (including forged and fusion welded boiler drums and forgings) and that for non-ferrous pipes and piping installations are in the final stage of preparation.

A draft specification for valves, gauges and similar fittings for air receivers for and in connection with compressed air installations has been circulated for comment.

Specifications are in course of preparation for iron and steel pressure vessels and for fusion welded copper, aluminium and nickel pressure vessels.

Technical Committee on Ships' Materials. (Representative: Mr. J. Carnaghan).

Specifications for structural steel for ship-building and for structural steel for pressure parts of marine boilers have been approved for publication.

Specifications for carbon steel castings for ship, marine engine and general engineering purposes, also carbon steel forgings for marine purposes (ship and engine forgings), are in final stages of preparation.

Sub-Committee on Marine Flanges. (Representative: Mr. J. Carnaghan).

The revision of Specification No. 3022 is under consideration.

Standardisation of Pump Tests. (Representative: Mr. R. M. Gillies).

This Committee has not been active during the past year.

Technical Committee on Fans. (Representatives: Mr. T. A. Bennett, B.Sc. and Mr. J. Dunlop).

This specification has now been published as No. 848-1939, *The Testing of Fans for General Purposes* (excluding Mine Fans). Members are requested to assist in the general adoption of this British Standard, which deserves their close study, by making it known throughout the Industry.

Technical Committee on Calibration of Carburettor Jets. (Representative: Mr. A. F. Evans).

This Committee has not been active during the past year.

Technical Committee on Documentation. (Representative: The Secretary).

The Committee held its first meeting in July, and a further meeting in December. The terms of reference are as follows:—

- (a) To prepare proposals for submission to the International Standards Association Committee on Documentation and to consider relevant matters referred by the I.S.A. to the National Standardising Bodies.

- (b) To consider whether any British Standards dealing with Documentation should be issued, and if so, to draft such standards.

Machine Tool Tests and Alignments. (Representative: Mr. G. Thompson, M.Eng.).

No meetings of this Committee have been held during the past year.

Technical Committee on Hand Hammers. (Representatives: Mr. J. Carnaghan and Mr. R. S. Kennedy).

A specification for hand hammers has been published and another is being prepared for mattocks, picks and beater picks.

Ships' Side Scuttles and Frames (Type A). (Representative: Mr. F. M. Burgis).

Three meetings have been held during the year. At the first the Committee commenced the review of the draft British Standards Specification for Ships' Side Scuttles (CF(SH)974) drawn up on the lines discussed at the previous meetings. The specification was considered in conjunction with a series of drawings prepared in accordance with the details of this specification. The composition of materials—naval brass, bronze (gunmetal), brass, steel, malleable cast iron—was discussed and amended where necessary, and certain members of the Committee were asked to ascertain or confirm details of modern practice. Similar steps were taken in connection with mechanical tests, thus enabling stress and elongation figures, size and method of obtaining test bars, etc., to be fixed. The information obtained as a result of these enquiries was discussed at the second and third meetings and the specification amended as necessary. Finally, the form of the draft specification was approved and subsequently distributed to various organisations for technical comment, the closing date for receipt of such comment being fixed as 3rd February, 1940.

Electric Cables for Use on Board Ship. (Representatives: Mr. N. H. Swancoat and Mr. P. H. Dallison).

The work of this Committee during the past year has resulted in the preparation of a draft specification for cables and flexible cords for electrical equipment of ships (including electric propulsion).

Coupling Guards for Machinery. (Representative: Mr. T. A. Crompton).

A first meeting was held on 3rd February, 1939. At this meeting it was reported that the Technical Committee was appointed by the Mechanical Industry Committee on 12th October, 1938 (2M (ME) 2494) in response to a request received from the British Engineers' Association, for the setting up of suitable standards for efficient guards for machinery and in particular the commoner forms of guards for couplings between

standard types of machines (*e.g.* compressors, pumps, dynamos, etc.) and their prime movers. The Committee decided for the time being to confine its attention to coupling guards.

It was decided to obtain particulars of the various types of coupling guard now being used with a view to the preparation of a summary for circulation to the Committee and for this purpose members undertook to forward particulars to the secretary including drawings and where necessary photographs of the type of coupling guards they used.

Two further meetings were held on 28th June, 1939 and the 18th December, 1939, and at the latter meeting a draft specification was considered. As a result it is hoped shortly that the Committee will present a final specification of coupling guards for machinery. The Committee will, of course, remain as a standing Committee to consider any further questions that may arise coming under the original terms of reference.

Technical Committee ME/12, Chains and Fittings, and Sub-Committee ME/12/6, Anchor Chains.
(Representative: Capt. B. Warwick).

Since March four meetings of these Committees have taken place at which discussions have covered the quality of material, shapes and dimensions of links and shackles. It has been agreed that the word "bolt" should be used instead of "pin", this latter word to be used only to refer

to the metal or wood retaining pin at the point of the shackle bolt. Discussions have also taken place on forged steel cables. The question of testing was also discussed, and now the position is that the draft specification has been prepared showing suggested alterations and amendments arising out of the discussions at the various meetings. The draft specification will come forward for discussion at some convenient date which it is not possible to determine at the present time.

Technical Committee on Steel Castings for Use at High Temperatures. (Representative: Mr. T. H. Burnham, B.Sc.).

At a conference on steel castings for use at high temperatures and for general engineering purposes held on 3rd November, 1933, it was decided that as considerable research was being conducted in connection with castings with alloying elements, any attempt to standardise steel castings for use at high temperature might tend to hinder the developments that were taking place. It was accordingly decided that no action should be taken for the present. Since 1933 no further discussions on this matter have taken place.

A. F. C. TIMPSON,
Chairman of Council.

B. C. CURLING,
Secretary.

Obituary.

NICHOLAS ALEXANDER ANFILOGOFF (Member 3981) died suddenly on 27th January, 1940, at his home, Red Croft, Paglesham, Essex. Mr. Anfilogoff was born in Russia in 1877, but was of Greek descent, and served his apprenticeship at the Briansk Government Armament Works. He came to England in 1896 to assist the late Dr. Paul Dvorkovitz in designing the first petroleum stills in this country, these being erected at Silvertown, E., for the refining of Russian crude oil. A chemist of outstanding ability, he was a graduate of the Russian Imperial Technological Institute (University of Moscow). In England he held the distinction of being the only man in the United Kingdom who was at the same time a Fellow of the Institute of Chemistry of Great Britain and Ireland and a Member of the Institution of Mechanical Engineers, while he was also a Member of the Institute of Chemical Engineers and one of the original Members of the Institution of Petroleum Technologists. Mr. Anfilogoff became naturalized as a British subject in 1903, and by that time he had risen to be chief chemist to the old European Petroleum Company. He went to the London and Thames Haven Oil Wharves, Ltd., as manager of their

town wharves in the following year, and in 1908, when the Company built a refinery at Thames Haven, he was placed in charge of that department also. On 1st January, 1913, he was appointed general manager of all the Company's works, including Thames Haven, and later became a director of the London Oil Storage, an associated company.

In March, 1930, he resigned his position with the London and Thames Haven Oil Wharves, Ltd., and started a consultant practice in London. It was then that he began to visualize the possibilities of additional and more accessible accommodation for oil tankers in the Thames Estuary, and a site on Canvey Island, which offered almost direct access to deep water, commended itself to him and prompted him to draw up a promising scheme. It was over five years before he was able to put his plan into operation, however, for many unexpected difficulties arose.

It was only after a very lengthy litigation that he was able to go ahead with his scheme, which included the promotion of a Company known as the London & Coastal Oil Wharves, Ltd., of which for some time he remained general manager and

director. Mr. Anfilogoff took a great interest in local public affairs, and for some years held a seat on the Essex County Council. In 1929 he was appointed a justice of the peace for Essex, and for some time he was a district commissioner for the Grays and District and the Stanford-le-Hope and District Boy Scouts' Associations. Tilbury Hospital also received his active support, as did local sports organizations. Mr. Anfilogoff was twice married and leaves a widow and five children.

GEORGE ARTHUR (Member 1883) died at his home at Fortrose on 15th December, 1939, aged 82 years. A native of Ross-shire, Mr. Arthur served his apprenticeship with Messrs. Barclay, Curle & Co., Ltd., of Glasgow, and later served at sea for some time on MacBrayne's vessels. He then joined Messrs. Shaw, Savill & Albion Co., Ltd., serving on vessels in the New Zealand trade. His ability soon won him promotion and during the last war he superintended the installation of the engines of the new ships built in Ireland to the Company's order, going out usually as chief engineer when the ship sailed on its maiden voyage to New Zealand. In New Zealand he met and married Miss Minogue, a lady of Irish extraction, who survives him. On the outbreak of the Spanish-American war in earlier days, he was offered and accepted a position with a large Spanish shipping company, and had many exciting experiences when running the American blockade. On his retirement some years ago, the Shaw, Savill & Albion Co.'s management presented him with a valuable testimonial, and the directors of the Company voted him a generous annuity in appreciation of his faithful and skilful service to the Company. Since retiring, Mr. Arthur made a hobby of horticulture, and he was no mean exponent of the game of chess.

ANDREW ATKINS (Member 2942) died 7th March, 1939, at Raynes Park, London. The third son of the late Captain Robert Atkins, Mr. Atkins was born at Sunderland in 1863 and served his apprenticeship with Messrs. George Clark & Sons of that town. He then joined the s.s. "Galveston" as 3rd engineer, serving two years in Chinese waters in this vessel. Having obtained his Second-Class Board of Trade Certificate he was promoted to 2nd engineer of the "Galveston". After obtaining his First-Class Certificate he joined, in 1889, the firm of R. M. Hudson & Sons of Sunderland as 2nd engineer of this Company's s.s. "Conemara". After two voyages he was promoted to the position of chief engineer of this vessel at the early age of 25 years. At the Company's request he served for some time with Messrs. Shaw, Savill & Albion Co. to obtain a knowledge of refrigeration, and he subsequently became chief engineer of R. M. Hudson & Sons' s.s. "Leitrim", which was specially built to carry refrigerated cargoes. Retiring in 1912, after having served 20 years in the above

capacity, he took up residence in London, but on the outbreak of the last war Messrs. Shaw, Savill & Albion Co. requested his services for the s.s. "Apolda", a German vessel then lying at Capetown and taken over by the British Government. For five years this ship traded between South Africa and Australia. During this time Mr. Atkins carried out a very difficult repair of a broken l.p. crankshaft web of the s.s. "Apolda". His skill having enabled the ship to return to port under her own steam, he was the recipient of a presentation by Lloyd's of £150. Subsequently for some time he served as chief engineer of the Shaw, Savill & Albion Co.'s s.s. "Tyro", after which he retired finally from the sea.

WILLIAM HENRY BAKER (Member 31) died at his home at Teignmouth, Devon, on 30th May, 1939. Having been born within the sound of Bow Bells in 1858 Mr. Baker claimed to be a real Londoner. He was educated at the Commercial Travellers' School at Pinner, and served his apprenticeship with Messrs. Tangyes, Ltd., of Birmingham. His first ship was the s.s. "Scotland" owned by Messrs. Temperley, Carter & Darke, of which vessel he eventually became chief engineer. He then became chief engineer of the s.s. "Malek" and served in a similar capacity in the s.s. "Bussah". Mr. Baker then left the sea to become chief assistant to Sir J. Fortescue Flannery, a position he held for many years. Just before the last war he established his own business, but as hostilities made it difficult to carry on he retired to Devon, where he devoted much of his time to his hobby of gardening. Mr. Baker is survived by his wife.

D. R. BROADBENT (Associate Member 1327) died about July, 1939. After serving about two and a half years with the Great Western Railway Co. at Swindon and Messrs. Handyside & Co. of Derby, Mr. Broadbent spent two and a half years at King's College, London. For several years he was employed as an electrical engineer, and by 1901 had become electrical engineer and chairman of directors of The British Electrical Manufacturing Co., Ltd.

JOSEPH BRUNDRIT (Member 2696) died at Liverpool on 15th December, 1939. Born at Ramsey, Isle of Man, in 1865, Mr. Brundrit was educated at King William's College, Isle of Man, and served his apprenticeship with Messrs. J. W. Pickering & Co. of Liverpool from 1881-1883 and subsequently with Messrs. Fawcett, Preston & Co. of Liverpool. He remained with the latter firm for two years afterwards as a draughtsman. He then joined Messrs. Lampport & Holt as a junior engineer and served in the s.s. "Maskelyne". In 1888 he was transferred to this Company's s.s. "Thales" and later served in the s.s. "Newton" (1889), the s.s. "Hogarth" (1890) and the s.s. "Vandyck" in the same year. From 1891-93 he

served in the P.S.N. Co.'s s.s. "Patagonia" in which vessel he was shipwrecked. Later he served as 3rd and 2nd engineer in the s.s. "Orellana". In 1895 he was appointed engine and boiler inspector in the Leeds district to the Vulcan Boiler Insurance Co., a post which he relinquished in 1899 to become chief assistant to Mr. Harry Roscoe of Liverpool. In 1903 he accepted an appointment with Messrs. Clover, Clayton & Co., Ltd. of Birkenhead to take charge of hull repairs, engine repairs and estimating. In 1906 he established himself as a consulting engineer and invented and marketed Brundrit's Tembala (patent automatic circulator for boilers), an occupation in which he was still engaged at the time of his death.

WILLIAM WOODYER BUCKTON (Member 6138) died on the 13th February, 1940, aged 65 years. Mr. Buckton was educated at Marlborough College and at Pembroke College, Cambridge, and served his apprenticeship with Messrs. W. H. Allen Sons & Co., Ltd., of Bedford. He then joined Messrs. Harland & Wolff, Ltd., as an electrical engineer, with whom he remained until 1905 when he established himself as a consulting engineer in London. He was still engaged in this capacity on the outbreak of hostilities in 1914 when he joined the Royal Engineers as a captain and served in France and Belgium throughout the war. After the war he entered the employ of Mr. Richard T. Durran as a consulting engineer, and remained in this position until the time of his death. During this period he was responsible for the design and building of several tankers, and acted as consulting marine, mechanical and electrical engineer and inspector for a group of South American utility companies. Mr. Buckton, who is survived by a widow, was a man of exceptional character, popular with his colleagues, and a particularly able engineer. Golf and motor-ing claimed his interest in later life.

ALFRED E. CARTER (Member 4195) died after a long illness on 10th June, 1939 at his home at West Ham. After serving his apprenticeship at The Thames Ironworks, Ltd., Mr. Carter spent some 30 years at sea, latterly as Chief Engineer with Messrs. J. & C. Harrison, Ltd. In 1920 he was a marine surveyor with Messrs. Dudgeon & Gray, Ltd.

JOHN MACDONALD CONNELL (Member 7576) died as the result of an accident on the 20th January, 1940. Born in 1889 and educated at Dunoon Grammar School, Mr. Connell served his apprenticeship in the shipyard and ship drawing office of the Fairfield Shipbuilding & Engineering Co., Ltd. from 1906-12. From then until the outbreak of war in 1914 he was employed in the ship design department of that Company. During the war he held a commission in the 5th territorial battalion of the Argyll and Sutherland High-

landers, attaining the rank of captain. On demobilisation in 1920 he was appointed a ship surveyor to the British Corporation Register of Shipping and Aircraft. After a short period of service at the head office, Mr. Connell was transferred to the Hull office and later to the London office, where he remained until he resigned in 1937 with the object of establishing a business on his own account as a consultant. At the outbreak of the present war, in view of his experience of Admiralty work, he was appointed a manager for The London Graving Dock Co., Ltd. He was very popular among the shipping and shipbuilding fraternity, especially in Hull and London where he spent the longest periods of his career. Mr. Connell was an enthusiastic member of the Bushey Hall Golf Club and a keen fisherman. He is survived by his wife.

ROBERT CRAWFORD (Member 5284) died in London on 2nd June, 1939, after a lengthy illness. Mr. Crawford was born at Hebburn-on-Tyne in 1887 and was educated at the Higher Grade School, Jarrow-on-Tyne. After completing his apprenticeship at Palmers Shipbuilding & Iron Co., Ltd., Mr. Crawford was employed for several years by Swan, Hunter & Wigham Richardson, Ltd., Yarrow & Co., Ltd., and the Fore River Co. of Massachusetts and Savannah, Georgia. He then entered the service of Lloyd's Register of Shipping and served as ship surveyor at Kobe, Yokohama and Nagasaki. While at Yokohama he had a narrow escape from death in the great earthquake. Later he was stationed at Bilbao, Spain, where he remained until the outbreak of the civil war, when he was transferred to Falmouth. While at Falmouth he contracted rheumatic fever, which resulted in his having to retire. A relapse followed his partial recovery, and a second attack of the fever resulted in his death.

JOHN GEORGE DAVISON (Member 5440) died unexpectedly after a short illness in the Settlers Hospital, Grahamstown, South Africa, on 3rd December, 1939, aged 59 years. Mr. Davison was a native of Sunderland and educated at St. Bede's High School in that town. His apprenticeship was served with Messrs. George Clark, Ltd., Southwick Engine Works, Sunderland. The next 20 years of his life were spent at sea as an engineer, during the last five of which he held the position of chief engineer. He then decided to secure a shore post and having obtained the South African Government certificates of competency as a mechanical and an electrical engineer he was appointed town and electrical engineer to the Municipality of Port Alfred, South Africa, a position which he still held at the time of his death. Mr. Davison was congratulated by the Lords Commissioners of the Admiralty and the Shipping Controller on the exceptionally meritorious service which he rendered in the last war as chief engineer of the s.s. "Umtata". His wife survives him.

WILLIAM ALFRED LOFTUS DAWKINS (Member 8226) died 15th November, 1939. Born at Southampton in 1883, Mr. Dawkins was educated at Freemantle Church of England School from where he proceeded by a scholarship to the Taunton Trade School. His apprenticeship was served with Messrs. Napier & Son of Southampton and on its completion he joined the Royal Mail Lines as a junior engineer. Eventually he became chief engineer of this Company's vessel "Devon". At the beginning of the last war he was second engineer of the "Asturias" in which capacity he remained till the time this vessel was torpedoed. After the war he left the Company to take up the position of superintendent of the Wilton Dry Dock & Ship-repairing Co., which position he resigned owing to ill health. He then rejoined Royal Mail Lines, his last ship being the "Nalon" of which he was chief engineer. In February, 1939 he relinquished this post owing to a return of ill health.

WILLIAM HENRY DICK (Companion 4430) died on 9th January, 1940 at his residence, Roseworth West, Gosforth, after a long illness. He was born in Newcastle in 1880 and was educated at Marchbank School and George Watson's College, Edinburgh. As a young man he joined the firm of Messrs. Holzapfel (now International Paint & Compositions Co.). For this firm he travelled extensively and established valuable connections in various parts of the world. In 1911 he joined Wailes Dove Bitumastic Ltd. as a director, ultimately taking over the entire management, a position which he held until the time of his death. During the last war he served in the Royal Engineers, was made a staff officer, and retired with the rank of major. Throughout his life he was a keen athlete, and during his younger days played rugby for his school and county, continuing his pursuits in this sport as far afield as New South Wales. He was also a very keen oarsman, and at one time was member of a British crew which won the championship of Buenos Aires. He made several tours of the world, and had a comprehensive knowledge of many countries. During his travels he made a wide circle of friends with whom he kept in constant touch. He engaged very considerably in big game hunting, and possessed a remarkable collection of trophies at Low Gosforth House, where he lived for so many years. During his latter years his sporting activities were mainly local, and he will be remembered as one of the best shots and fishermen in the North of England. Despite his world travel and his cosmopolitan outlook, he was first and foremost a Novocastrian, and always took a great pride and interest in the fortunes of his native town. At the outbreak of the present war he was appointed deputy divisional commander of the Northumberland County Special Constabulary, but unfortunately was prevented from taking a very active part owing to the illness which overtook him some weeks later. In the firm which he

controlled for so many years he was exceedingly popular, possessing the gift of being able to judge character and instil confidence in his staff. In 1908 he married Isabella, daughter of the late Mr. E. J. Dove, and is survived by her and a family of four daughters.

ENGINEER VICE-ADMIRAL SIR ROBERT B. DIXON, K.C.B., D.Sc. (Past-President) died 28th July, 1939. See portrait and obituary in August, 1939 TRANSACTIONS.

ARCHIE LIVESTON DONALD (Member 5414) died at London on the 21st May, 1939. Born in India, Mr. Donald came to this country at an early age and served his apprenticeship with Messrs. Vickers, Sons & Maxim, Ltd., of Barrow-in-Furness. He then joined the Royal Mail Steam Packet Co. as a junior engineer and remained in this Company's service for 12 years. In 1919 he accepted an appointment with the P. & O. S.N. Co. and was for many years a chief engineer in this Company's vessels. He left the sea shortly before his death. Mr. Donald is survived by his wife.

STANLEY HARRY FLOOD (Associate Member 4775) died suddenly on 31st January, 1940 at Loughton, Essex, in his 50th year. A native of Rochester, where he was educated, Mr. Flood served a marine engineering apprenticeship at H.M. Dockyard, Chatham, and acquired some of his technical knowledge at Gillingham Technical Institute. On the termination of his apprenticeship in 1912 he was appointed as a draughtsman in the Trials Section at Chatham, where a large amount of time was spent on acceptance trials of H.M. ships at sea. On the outbreak of hostilities in 1914 he was called to the colours with the East Kent Yeomanry, having been a territorial member for two years. In 1915 he was gazetted as lieutenant to the 3rd Battalion, Middlesex Regiment, and served overseas in France and at Gallipoli. When peace was declared he went with the Army of Occupation to Germany where he served in the Educational Corps at Cologne and Bonn University. He retired with the rank of captain on the Special Reserve and became a director of S. H. Flood & Co., consulting engineers of London. During this period he interested himself in printing and acquired an expert knowledge of the process of monotype work. He then served on the staff of the London School of Printing of which he remained a member up to the time of his death, and for several years was instructor at Leyton Technical College. He took a keen interest in local government affairs and was at one time a member of the Herne Bay Urban District Council. He was a member of the Committee of the Fleet Street Branch of the British Legion and represented them at the meeting held at the Albert Hall last year. He took a keen interest in the welfare of young engineers and had their problems at heart.

ARTHUR HODGSON GALLOWAY (Member 6370) died at Wallasey, Cheshire, on the 20th May, 1939. Born at Leeds in 1877 Mr. Galloway was educated at the Higher Grade School in that city and later at Wellington, Salop. His apprenticeship was served with Messrs. Corbett & Sons of Wellington and on its completion he went to sea as a junior engineer. In 1901 he joined the Union Castle Line with whom he remained for five years, when he joined the Canadian Pacific Steamships Ltd. and was appointed to the "Empress of Ireland". He was on leave when this ill-fated vessel went down in 1914. During the last war he served in the Inland Water Transport, R.E. with the rank of captain. On the cessation of hostilities he resumed his service with Canadian Pacific Steamships, Ltd., but about six years ago failing health compelled him to relinquish his position of chief engineer.

CHARLES GARDINER (Member 5337) died at his home at Blackheath on the 16th November, 1939. Born at Poplar in 1894, Mr. Gardiner supplemented his general education at the L.C.C. School of Engineering and Navigation, Poplar, and served his apprenticeship at the Thames Ironworks & Engineering Co. and the General Steam Navigation Co. He then went to sea in one of the latter Company's vessels and by the age of 30 had secured an Extra-First Class Board of Trade Certificate. In 1925 he left the sea to become principal of the School of Marine Engineering in Barking Road, London, a position which he retained until the time of his death. During these fourteen and a half years over a thousand of his students obtained Board of Trade Certificates and endorsements. Mr. Gardiner is survived by his wife.

W. T. GARNHAM (Member 2395) died at Valparaiso during August, 1939. Mr. Garnham was born in 1882 and served his apprenticeship at the Stratford Locomotive Works of the Great Eastern Railway Co. For a number of years he was at sea and obtained an Extra-First Class Board of Trade Certificate, and later he served as an engineer in the Chilean Navy. For a number of years prior to his death Mr. Garnham, who is survived by his wife, held the position of chief engineer and sub-manager of the Sociedad Explotadora de Tierra del Fuego at Puerto Bories.

GEORGE ALFRED HAYHURST (Member 8681) died as the result of enemy action on 8th December, 1939. Mr. Hayhurst was born in South East London in 1894 and was educated at a London County School. He served his apprenticeship in the shops of the General Steam Navigation Co. at Deptford from 1911-1915, afterwards sailing as 3rd engineer in this Company's vessels. Having obtained his Second-Class Board of Trade Certificate he joined, in 1918, the Commonwealth & Dominion Line and later served with the Anchor Brocklebank Line of Liverpool. In 1920 he

obtained his First-Class Board of Trade Certificate. From 1920 until his death he was employed continuously by the General Steam Navigation Co. Just over two years ago he decided to try for a Diesel endorsement of his Board of Trade Certificate and was successful at the age of 43 years. During the summer of 1939 he served in the m.v. "Royal Daffodil", and on the outbreak of war he was employed alternately in steam and Diesel ships. His regrettable death occurred when his ship, the s.s. "Merel" was sunk by a magnetic mine off the South East Coast of England when within a few hours of home.

CONRAD W. HENNIG (Companion 4254) died 18th April, 1939. Born at Wimbledon in 1883, Mr. Hennig spent his early life at Fleet, Hampshire. He decided upon teaching as a profession and with this object was trained at St. John's College, Battersea, where he achieved considerable success. His teaching career was interrupted by the last war, during which he served in the Inland Water Transport, Royal Engineers, and was stationed in India and Mesopotamia. On the cessation of hostilities he resumed his employment as a science instructor in the service of the London County Council Education Department. During the past few years Mr. Hennig suffered ill health, but prior to this he took a particularly keen interest in the work of The Institute. He is survived by his wife.

WILLIAM AULT HORTON (Member 8472) died at Durban, South Africa, on 9th November, 1939. Born in 1885, Commander Horton served his apprenticeship from 1897-1904 with Messrs. Haslam & Co. of Derby. In 1904 he joined the Royal Navy from which he retired with the rank of engineer lieutenant commander in 1923 to take up an appointment with the Chinese Government. In 1925 he was appointed to the research ship "Discovery II" as chief engineer, a post which he continued to hold until 1938 when he became a partner in the firm of Hean & Horton, consulting engineers of Durban. He was still engaged in this capacity at the time of his death.

SUMMERS HUNTER, C.B.E. (Past-President and Member 2240) died 7th January, 1940. (See portrait and obituary in January, 1940 TRANSACTIONS).

HUGH KEITH (Member 6430) accidentally drowned while bathing at Barbados on the 12th August, 1938. Mr. Keith was born at Lochwinnoch, Renfrewshire, in 1887, and after leaving Greenock Higher Grade School served his apprenticeship at the works of John MacDougall & Sons of Johnstone. He commenced his sea career in 1909 as junior engineer in Andrew Weir & Co.'s s.s. "Comeric", and by 1918 had become chief engineer of that Company's "Inveric". In 1924, having meanwhile continued to serve as chief engineer of several of the Company's steamers, he

was withdrawn from sea service to act as assistant superintendent engineer in connection with the construction of a number of new vessels which Andrew Weir & Co. were then building in Belfast and on the Tyne. On the completion of these vessels Mr. Keith was appointed local manager of the British Union Oil Co., Ltd., in Barbados, a position he still held at the time of his death. Mr. Keith was regarded by his employers as a highly intelligent, skilful and capable employee, while all his associates felt his death as a keen personal loss.

CHARLES THOMAS C. KINGHORN (Member 6393) died at his home at South Shields after an illness extending over several years. Mr. Kinghorn served his apprenticeship from 1912-17 at the Blyth Shipbuilding Co., Ltd., and for most of his career was at sea, latterly with Messrs. F. C. Strick & Co.

ALISTAIR MACKAY (Member 6633) died suddenly at Alexandria on the 2nd November, 1938. Born in 1893 in Ross-shire, Scotland, Mr. MacKay was educated at Fort Rose Academy and at Hamilton Technical School, Glasgow. He commenced his apprenticeship in 1911 at the works of D. Rowan & Co., Ltd., but on the outbreak of hostilities in 1914 he joined the Argyle and Sutherland Highlanders. In 1916 he was seriously wounded and invalided out of the army. Returning to civilian life later in the year he completed his apprenticeship. In 1919 he joined the Sun Shipping Co. of London as 5th engineer and altogether remained at sea for over nine years, during the last three of which he held the position of chief engineer. From 1928 until 1933 he was employed first as an assistant to a consulting engineer in London and then in the Nigerian Government Marine Service. In the latter year he left the Nigerian Government Service owing to an economy drive and later was appointed to the Iraq Government Dredging Service at Basra. Mr. MacKay was then appointed as chief engineer of tugs in Palestine and later was promoted to port mechanical superintendent, holding this position until the time of his death, which occurred through heart failure while surveying a Palestinian ship in Alexandria. Among his duties as port mechanical superintendent was that of surveyor of ships on the Palestine Registry. Mr. MacKay enjoyed considerable popularity in Haifa, being very well known and liked in British, Arab and Jewish circles. He was a very keen fisherman and his technical ability earned him the respect and esteem of his superior officers. He is survived by his wife.

J. McNAUGHTON (Member 1593) died at Liverpool on the 4th May, 1938. Born at Birkenhead in 1866, Mr. McNaughton served his apprenticeship at the works of the Barrow Shipbuilding & Engineering Co., and subsequently he took up a sea career. At the age of 25 he was serving as

chief engineer in Johnson Line vessels sailing from Liverpool. In 1900 he was appointed by the Mersey Docks and Harbour Board as engineer inspector for the Glasgow district. In 1913 he established himself on his own account as a consulting engineer, later becoming a partner in the firm of A. McConwell & Co. His retirement took place in 1932.

JAMES MACVEY (Member 4929) died about June, 1939. Mr. Macvey served his apprenticeship with Messrs. Barclay, Curle & Co. and from 1899 to 1905 served as a seagoing engineer. From then until 1923 he was engaged as resident engineer, Messrs. Hull, Blyth & Co., Port Said, and for many years acted as Lloyd's surveyor at that port.

ROBERT MILLER (Member 8293) died as the result of enemy action on 6th January, 1940. Mr. Miller was born at North Shields in 1895 and educated at Tynemouth Municipal High School and the Marine School at South Shields. From 1911 to 1916 he served an apprenticeship with the Shields Engineering & Dry Dock Co., Ltd., North Shields, and subsequently remained in this Company's employ until April, 1918. From then until May, 1919, he served as a junior engineer in H.M.S. "Sunhill" and H.M.S. "Orcoma". He then entered the service of the British Tanker Co., Ltd., as a junior engineer and by 1925 had attained the rank of chief engineer. He served in this capacity in various of the Company's steamers until 1937, when he was requested to go into their motor ships. Accordingly, he was appointed in December, 1937, to the m.v. "British Zeal" as 4th engineer in order to qualify for a motor endorsement. Obtaining this in 1938 the Company appointed him 2nd engineer in their new m.v. "British Liberty". This vessel was mined in the North Sea on the 6th January, 1940, the crew taking to the ship's lifeboats. The ship, however, did not founder at once, and the captain, with Mr. Miller and 19 other members of the crew, put back to the ship. A few hours later the vessel was mined again and lost. In 1927 Mr. Miller married Miss Elizabeth Huitson of North Shields, by whom he is survived. There is one son, aged nine years.

ALEXANDER MOFFAT (Member 6106) died 22nd February, 1939, at Toorak, Victoria, Australia. Born at Bendigo, Victoria, in 1876, Mr. Moffat served his apprenticeship with Messrs. Horwood & Sons of Bendigo, and was subsequently employed in the railway workshops at Newport, Victoria, and by Messrs. Walkers, Ltd., of Maryborough, Queensland. He then took up a sea career, his first ship being the "City of Lincoln" in which he was 4th engineer. He remained in this ship until it was wrecked in Table Bay in 1902. He then joined the "Lake Michigan" and later the "Collingwood" as 3rd engineer. In 1903 he entered the service of Messrs. Huddart Parker, Ltd., as 2nd

engineer, and after obtaining his First-Class Board of Trade Certificate he became chief engineer of the "Excelsior" and "Despatch". In 1909 he took a shore post as chief engineer of the State Rivers and Water Supply, a post which he relinquished in 1915 to establish a garage business in Toorak. Here he earned a very high reputation and considerable popularity amongst all who had contact with him. Mr. Moffat, who retired about four years ago and took a trip round the world, was for some years a member of the Federal Council of the Australian Institute of Marine Engineers and was elected President in 1930. He is survived by his wife and family.

JOHN ALEXANDER MUIR (Member 6612) died as the result of enemy action on January 16th, 1940. Mr. Muir was born at Dinvin, Portpatrick, Wigtownshire, in 1894 and educated at Sheuchan School, Stranraer. His apprenticeship was served with Messrs. Muir & Houston, Ltd., of Glasgow, on the completion of which he joined the s.s. "Mongolian" as 4th engineer, a few months later being promoted to 3rd engineer. He was serving in this capacity in 1918 when the vessel was blown up in the Atlantic with the loss of 60 lives. In 1918 he joined the "Maashaven", one of F. C. Strick & Co., Ltd.'s ships, and was later transferred to s.s. "Schuaben" in which he remained for two years, when he was promoted to chief engineer of the s.s. "Algorta". For 15 years he remained with this Company as chief engineer, but left in order to gain experience in tankers. He was appointed 2nd engineer of the m.t. "Inverdargle" belonging to Messrs. Andrew Weir & Co., in which he was serving when the vessel was sunk with the loss of all hands in the Bristol Channel as a result of enemy action. In 1927 Mr. Muir, then chief engineer of the s.s. "Djerissa" was shipwrecked at Cresswell Northumberland, when the vessel was driven on the rocks. All the members of the crew were rescued by breeches buoy, but the ship became a total wreck. A letter of sympathy has been sent by Mr. Muir's employers to his wife and son. The letter refers to his high qualities and capabilities.

ENGINEER VICE-ADMIRAL SIR HENRY JOHN ORAM, K.C.B., F.R.S. (Honorary Member). See portrait and obituary in May, 1939 TRANSACTIONS.

GEORGE OSWALD (Member 4488) died suddenly at Sydney, Australia, on the 5th August, 1939, aged 57 years. A native of Dundee, Mr. Oswald served his apprenticeship with Messrs. Thomas Bell & Son of Dundee, and completed his technical studies at Dundee Technical College. In 1907, having then had five years' sea service, he went to Australia as 2nd engineer of the steamer "Rupara". He returned to England in 1911 to take out to Australia the steamer "Morialta". Later he served as chief engineer of the passenger vessel "Warialda". Just prior to the war in 1914 he was supervising the building of a passenger vessel by

the Fairfield Shipbuilding & Engineering Co., Ltd., Glasgow. He took this ship out to Australia, but returned almost immediately to serve in the Royal Navy as an engineer-lieutenant. He returned to Australia in 1918, and was appointed assistant superintendent engineer of the Adelaide Steamship Co. at Adelaide. He was promoted to superintendent engineer, resident at Sydney, in 1923, a position he still held at the time of his death. His last visit to this country was to supervise the construction of the Company's liner "Manoora" in the Fairfield yard five years ago. He was responsible for the engine-room specifications of four cargo vessels built at Dundee since 1936, and was expected home in connection with the construction of a passenger vessel which was recently laid down in the same yard. At the funeral, the large attendance at which was an indication of his popularity both professionally and socially, the general manager of the Adelaide S.S. Co. paid high tribute to his ability. Mr. Oswald, who was also a member of the Institution of Naval Architects, is survived by his wife and three daughters.

ANDREW PENDLEBURY (Member 4168) died in London on the 25th February, 1940. Mr. Pendlebury was born in 1869 and educated at Manchester Grammar School. After serving his apprenticeship with Messrs. James Broughton & Co. of Manchester he was employed for some time by Messrs. Ferranti and then became chief draughtsman for Messrs. Sir James Farmer & Son of Salford. Later he went to Messrs. Bradford Dyers as engineer inspector of their many plants, as he had an exceptional knowledge of textile finishing and dyeing plant. He then established himself in Bradford as a consulting engineer under the title of Whittaker & Pendlebury, a business in which he was successful until the end of the last war, when he joined the New London Electron Works, Ltd., as engineer manager and secretary. He removed the whole of their extensive works to a new site, and the Company's new detinning works are a monument to his ability as an engineer. Mr. Pendlebury took a great interest in the local affairs of East Ham and was a candidate for the Council on one occasion. He served as President for the Civic Association for many years prior to his death and took an active part in the work of the local Rotary Club. Of exceptional character, Mr. Pendlebury's death is regretted by a large circle of friends and business acquaintances.

HAROLD PUFFETT (Member 2774) died March 21st, 1940, at Charing Cross Hospital after an accident. Born at Leeds in 1882, Mr. Puffett was educated at the Leeds Higher Grade School. His apprenticeship was served with Messrs. Tannett, Walker & Co., Ltd., of Leeds, and at the early age of 20 years he was appointed a foreman. Subsequently, for five years he held the position of head foreman with this firm. He then accepted a position

as head foreman with Messrs. Carrick & Wardale of Gateshead-on-Tyne. He then became London manager of Messrs. Liverpool Patents Co., Ltd., and in 1913 he established his own business in London. Mr. Puffett was responsible for a number of patents, including an invention known as a "no-clink firebar", and the Abato patent fuel economiser and smoke consumer. Just before the accident which resulted in his death he had applied for a patent in connection with coke economising in boilers. Mr. Puffett, who is survived by a widow, was a worshipful master of the Coborn Lodge and a founder of the Trinity Lodge of masons.

LLEWELYN ROBERTS (Vice-President and Member 8174) died 4th April, 1939. See portrait and obituary in April, 1939 TRANSACTIONS.

WILLIAM HENRY ROBSON (Member 1458) died at Bournemouth on the 2nd August, 1939, as the result of being knocked down by a motor car. Born at Monmouth in 1869 he was educated at Queen Elizabeth's School, Bristol, and served his apprenticeship with the Great Western Railway Co. Mr. Robson, who gained a Whitworth Exhibition in 1890 and later obtained an Extra-First Class Board of Trade Certificate, was at sea from 1891-97. Returning to shore life as an inspector for the Vulcan Motor Insurance Co., he two years later became superintendent engineer for J. Carlile & Co., of London. He was then appointed superintendent for the Egypt & Lavant Steamship Co., a post which he held for several years. Mr. Robson then established himself as a consultant and lived at Cardiff from 1900-1922, where he became well-known in marine engineering and shipping circles, and subsequently in London for five years, later retiring to Bournemouth. Mr. Robson is survived by his wife, two sons and a daughter.

JOHN RUSSELL (Member 4115) died 2nd December, 1939, at Rottingdean. Mr. Russell, the second son of the late Captain Edward Russell of Brookville, Belfast, was born in 1878 and served his apprenticeship with Messrs. Workman, Clark & Co. of Belfast. In 1898 he commenced his sea career as 6th engineer of the s.s. "Sado Maru", being promoted to 4th engineer during the voyage. He left this ship in 1899 to join the Houlder Line steamer "Southern Cross", and remained in the service of this Company until his retirement from the sea at the end of the last war. By 1907 he had become chief engineer of the s.s. "Urmston Grange" a position which he still held when the vessel was requisitioned by the Government for blockading purposes at Scapa Flow. After the war he was for some time on the staff of Messrs. R. H. Green & Silley, Weir, Ltd., but relinquished this post to establish himself on his own account in 1921. The business flourished and it had grown into quite a substantial concern when he disposed of it in 1937. He then visited Australia and when

on the return journey he was taken ill and had to have an operation performed at Cape Town, from which he never fully recovered. Mr. Russell's singular success in business was in no small measure due to his fine character, cheery disposition and helpfulness. He was an ideal employer and was held in high regard by his workmen and staff, as well as by his many business friends and associates. Mr. Russell is survived by his wife and two daughters.

CHARLES CECIL SANGSTER (Member 3191) died as a result of enemy action on the 23rd November, 1939. Mr. Sangster was born in 1883 and was educated at St. Bonaventure Grammar School. His apprenticeship was served with the North London Railway Co. at Bow and on its completion he joined the P. & O. Steam Navigation Co. as a junior engineer. He remained with this Company throughout his career and for a number of years prior to his death held the position of chief engineer. One of his ships was the s.s. "Stratheden", in which he served during this vessel's maiden voyage. At the outbreak of the present hostilities his ship, the s.s. "Rawalpindi", was taken over by the Royal Navy as an armoured cruiser. The epic encounter of this ship with the German battleship "Deutschland", in which Eng. Com'r. Sangster and most of the officers and crew lost their lives, will long be remembered as one of the most heroic naval actions.

ANDREW SPEIRS (Member 1863) died at Millport, Buteshire, on 30th December, 1939. Mr. Speirs was a native of Millport and served his apprenticeship with the famous old Govan firm of John Elder (now known as the Fairfield Shipbuilding & Engineering Co., Ltd.). Most of his seafaring career was spent on the China coast and rivers, where he was for many years a well-known figure. On his retirement he and his wife took up residence at Bridge of Allan, but after his wife's death he returned to his birthplace. A keen bowler, Mr. Speirs was President of the Millport Bowling Club about three years ago. From his boyhood he was a clever steersman of racing yachts and maintained his interest in this sport until his death. His loss is felt keenly by many residents of Millport, where he was very popular.

ALEXANDER MAVER SUTTIE (Member 6696) died by enemy action on the 16th January, 1940. Mr. Suttie served his apprenticeship from 1913 to 1918 with Messrs. R. W. Stewart & Co. of Dunfermline and Messrs. Rankine & Blackmore of Greenock. He then decided to follow a sea career and by 1931 had become a chief engineer with Messrs. Andrew Weir & Co. His death occurred when his ship, the m.v. "Inverdargle", was either torpedoed or mined in the Bristol Channel on the 16th January, 1940.

ALEXANDER TOUGH (Member 547) died 5th November, 1939, at Hull, after an illness of a few weeks' duration. Aged 76 years, Mr. Tough was a native of Montrose and was educated at the High School in that town. His apprenticeship was served at the works of the Montrose Foundry Co. and on its completion he joined the B.I.S.N. Co. as a junior engineer. By 1892, when he became associated with The Institute, he had risen to the position of chief engineer with this Company, with whom he remained until his retirement. Mr. Tough, who was of generous and attractive disposition, maintained his interest in the work of The Institute until his death. His burial took place at Manor Park Cemetery, London, E.

RICHARD WILLIAMSON (Member 2966) died at Matlock, Derbyshire, on 9th April, 1939. Mr. Williamson served his apprenticeship at the works of Fletcher, Jennings & Co. of Whitehaven and for about a year was at sea in the service of the White Star Line. He became a well-known figure in the coasting trade and was a director of the Lancashire Shipping Co., Ltd (James Chambers & Co.) of Liverpool, and was also manager of the Northwest Shipping Co., Ltd., of Workington, and R. Williamson & Sons, shipbuilders, of the same town. Mr. Williamson was a member of the Liverpool Committee and of the General Committee in London of Lloyd's Register of Shipping. The funeral took place at Cockermouth, Cumberland.

8, NEW COURT,
LINCOLN'S INN,
LONDON, W.C.2.

To the Members,
THE INSTITUTE OF MARINE ENGINEERS,
85/88, THE MINORIES, E.C.3.

GENTLEMEN,

We have to report that we have examined and checked the Accounts of your Institute for the year ended 31st December, 1939, and we set out below our observations.

(1) The Revenue Account shows a Surplus of £515 13s. 2d. as compared with £635 7s. 2d. last year, a decrease of £119 14s.

(2) The Gross Revenue for the year was £8,070 14s. 7d., an increase of £65 5s. 8d. made up as follows:—

| | Decrease. | Increase. |
|---|-----------|-----------|
| | £ s. d. | £ s. d. |
| Subscriptions | — | 61 15 11 |
| Entrance Fees | 5 0 0 | — |
| Advertisements | 1 8 0 | — |
| Interest | — | 14 18 9 |
| Contributions towards Expenses for use of Hall and Library | — | 0 15 6 |
| Sundry Sales | 5 16 6 | — |
| | £12 4 6 | 77 10 2 |
| Deduct Decreases | | 12 4 6 |
| Increase as above | | £65 5 8 |

(3) Expenditure charged to Revenue Account amounted to £7,555 1s. 5d., an increase of £184 19s. 8d. made up as follows:—

| | Decrease. | Increase. |
|--|-----------|-----------|
| | £ s. d. | £ s. d. |
| General Expenses | 78 8 10 | — |
| Rent, Rates, etc | — | 22 18 11 |
| House Account | — | 20 6 6 |
| Repairs | 46 18 7 | — |
| Insurance | — | 31 18 9 |
| Transactions | — | 247 19 3 |
| Transactions (Bound Volumes) | 20 13 3 | — |
| Junior Section | 9 8 1 | — |
| Library and Reading Room Account | — | 21 19 4 |
| Depreciation | 1 13 11 | — |
| Heat Engine Prizes | 3 0 5 | — |
| | £160 3 1 | 345 2 9 |
| Deduct Decreases | | 160 3 1 |
| Increase as above | | £184 19 8 |

The increase in Rent, Rates, etc., is due to the removal of the Office to High Wycombe where a private house has been rented, while Insurance includes part of the premium on a further City Premises Redemption Policy for £1,000.

(4) The difference between the increase of £184 19s. 8d. in Expenditure and the increase of £65 5s. 8d. in Revenue accounts for the decrease of £119 14s. in Surplus Revenue.

(5) *The Running and Maintenance of Marine Machinery Handbook Account.*

In accordance with the Council Minute of 3rd July, 1933, £39 12s. 2d. has been paid to the Guild of Benevolence. Further Sales, less Expenses, during the year amounted to £38 17s. 11d.

(6) *Investments.*

The Investments stand at cost with the exception of the £200 2½% Consols which were written down to £119, their value at 31st January, 1919, and remain in the books at that figure.

The Market Value at 31st December, 1939, of the Institute's free Investments standing in the books at £14,919 18s. 8d. was £14,373. No new Investments were made during the year, but £500 was placed on deposit with the Post Office Savings Bank.

(7) We have verified the Investments and Bank Balances and have inspected the Insurance Policies and Title Deeds, and we have obtained all the information and explanations we have required. In our opinion the Balance Sheet of your Institute has been properly drawn up so as to exhibit a true and correct view of the Institute's affairs according to the best of the information and explanations given to us and as shown by the books of The Institute.

Yours faithfully,

WEST & DRAKE,
Chartered Accountants.

19th February, 1940.

The Honorary Treasurer then read the foregoing Auditors' Report and his own report on the financial affairs of The Institute as follows:—

"I am going to ask you to excuse my making some personal observations. This happens to be my 21st Report to you as Treasurer and I deem it a very great honour to have been privileged to occupy the position as your Treasurer for such a long period.

During this time The Institute has been making steady progress with its finances and what is perhaps more important still its increase in Membership.

In my first Report, 21 years ago, the Membership figure was 2,052, as compared with its present total of 4,186. The income from subscriptions was £1,716 as compared with the past year's total of £5,380.

The Capital Account has risen in that period from £16,300 to the present total of £30,150 16s. 10d.

During this time Redemption Policies have been taken out totalling £23,000, subscribed for from Revenue Account and Life Membership subscriptions.

I am not going to suggest for one moment that this wonderful improvement in the financial status of The Institute during this period is attributable to any influence on my part, but I do wish to take this opportunity of saying how much I have appreciated the chance afforded of serving this Institute and doing my very best at all times to promote its interests.

I have also had the privilege over this same period of being Chairman of your Social Events Committee and although I am perfectly aware that individual Members have at times criticized the policy of that Committee, the policy which has been adopted has resulted in substantial profits being made. These profits have not been absorbed in the accounts of The Institute but have been used for charitable purposes. The present Guild of Benevolence, as well as its predecessor the Titanic Engineers Memorial Fund have received together, over that period, a sum amounting to approximately £700.

From the Treasurer's point of view, the out-

TABLE A.

| | 31st Dec., 1930. | 31st Dec., 1931. | 31st Dec., 1932. | 31st Dec., 1933. | 31st Dec., 1934. | 31st Dec., 1935. | 31st Dec., 1936. | 31st Dec., 1937. | 31st Dec., 1938. | 31st Dec., 1939. |
|-----------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Receipts from Subscriptions | £ 4,010 s. 16 d. 11 | £ 4,051 s. 10 d. 1 | £ 4,225 s. 12 d. 3 | £ 4,330 s. 7 d. 7 | £ 4,597 s. 8 d. 4 | £ 4,761 s. 1 d. 4 | £ 5,258 s. 15 d. 6 | £ 5,312 s. 8 d. 8 | £ 5,318 s. 8 d. 11 | £ 5,380 s. 4 d. 10 |
| Entrance Fees... | 411 2 8 | 468 12 0 | 393 0 0 | 373 17 6 | 418 12 9 | 491 3 3 | 371 15 0 | 328 13 0 | 333 15 0 | 328 15 0 |
| Advertisements ... | 1,129 12 0 | 1,236 18 6 | 1,085 5 6 | 1,024 18 6 | 1,067 6 0 | 1,015 1 0 | 1,118 8 6 | 1,329 3 6 | 1,570 14 6 | 1,569 6 6 |
| Total Income ... | 6,215 1 5 | 6,487 5 1 | 6,409 9 10 | 6,428 11 9 | 6,738 6 1 | 6,921 18 4 | 7,489 13 6 | 7,722 18 8 | 8,005 8 11 | 8,070 14 7 |
| General Ex. A/c. | 1,955 16 6 | 1,878 1 11 | 1,957 3 7 | 2,181 10 7 | 2,126 5 7 | 2,387 2 0 | 2,962 2 7 | 2,683 17 6 | 3,025 7 4 | 2,948 8 0 |
| Rent, Rates and Taxes | 660 17 9 | 659 18 3 | 647 19 9 | 477 15 8 | 470 4 6 | 484 10 3 | 519 2 1 | 536 2 1 | 542 18 2 | 565 17 1 |
| House A/c. ... | 411 7 4 | 440 11 3 | 468 7 8 | 489 15 2 | 473 11 6 | 553 2 2 | 549 19 5 | 572 14 9 | 587 3 9 | 607 10 3 |
| Repairs and Redecorations | 72 9 5 | 434 4 3 | 260 7 0 | 10 12 7 | 530 13 7 | 107 19 0 | 16 15 1 | 452 9 9 | 53 0 9 | 4 12 8 |
| Printing Transactions ... | 2,075 0 0 | 2,459 6 6 | 2,292 15 7 | 2,320 0 9 | 2,223 11 3 | 2,334 14 6 | 2,480 6 9 | 2,470 15 0 | 2,911 1 0 | 3,159 0 3 |
| Sundry Creditors | 928 9 2 | 944 19 3 | 385 7 8 | 387 11 7 | 467 7 8 | 1,363 7 8 | 526 5 0 | 448 6 3 | 536 17 11 | 567 17 2 |
| Capital A/c. ... | 23,792 7 5 | 24,088 9 11 | 24,581 11 0 | 25,962 3 4 | 26,652 15 0 | 27,304 3 7 | 28,010 9 11 | 28,999 16 6 | 29,635 3 8 | 30,178 10 4 |
| Balance on Revenue A/c. | 719 19 3 | 296 2 6 | 493 1 1 | 745 0 7 | 690 11 8 | 651 8 7 | 706 6 4 | 741 4 11 | 635 7 2 | 515 13 2 |

TABLE B.

BENEVOLENT FUND.

GUILD OF BENEVOLENCE.

| | 31st Dec., 1930. | 31st Dec., 1931. | 31st Dec., 1932. | 31st Dec., 1933. | *31st Dec., 1934. | 31st Dec., 1935. | 31st Dec., 1936. | 31st Dec., 1937. | 31st Dec., 1938. | 31st Dec., 1939. |
|---------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Revenue :— | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| Interest on Investments | 93 8 0 | 94 8 8 | 83 0 0 | 85 9 4 | 108 14 8 | 339 17 2 | 360 2 0 | 378 12 4 | 391 9 10 | 396 14 10 |
| Ground Rents | | | | | | 180 18 5 | 352 3 1 | 352 3 0 | 352 2 10 | 352 2 10 |
| Members Subscriptions | | | | | | 163 12 3 | 160 4 8 | 196 7 1 | 248 4 1 | 245 7 3 |
| Donations... .. | 12 13 2 | 28 16 6 | 46 6 0 | 71 8 9 | 102 9 2 | 140 16 4 | 106 2 9 | 191 2 2 | 93 11 8 | 225 18 9 |
| Income Tax recovered | 20 14 4 | 21 18 8 | 20 14 11 | 19 10 7 | 16 17 2 | 27 7 3 | 40 16 4 | 52 8 6 | 49 7 1 | 60 4 2 |
| Total Receipts ... | 126 15 6 | 145 3 10 | 150 0 11 | 123 9 8 | 239 1 6 | 825 4 2 | 978 12 6 | 1,118 4 7 | 1,115 0 0 | 1,220 3 8 |
| " " (without donations) | 114 2 4 | 116 7 4 | 103 14 11 | 104 19 11 | 136 12 4 | 684 7 10 | 872 9 9 | 927 2 5 | 1,021 8 4 | 994 4 11 |
| Expenditure ... | 126 15 6 | 125 1 0 | 165 6 4 | 120 7 0 | 104 15 1 | 539 19 7 | 864 19 1 | 944 4 5 | 1,115 0 0 | 1,187 18 5 |
| Investments ... | 2,340 17 2 | 2,544 17 11 | 2,543 7 11 | 2,645 17 8 | 8,052 19 5 | 17,318 14 4 | 19,701 5 4 | 20,019 15 9 | 20,171 11 9 | 20,315 17 9 |
| Cash and Deposit A/c. ... | 1 11 1 | 21 13 11 | 7 18 6 | 9 11 2 | 6,459 6 7 | 1,923 9 3 | 44 8 3 | 10 10 0 | 178 5 0 | 283 8 2 |

* Includes Benevolent Fund to Aug 2nd and Guild of Benevolence from Aug. 2nd to Dec. 31st.

Dr.

SOCIAL EVENTS ACCOUNT.

Cr.

| | £ | s. | d. | | £ | s. | d. |
|----------------------------------|-------------------|----|----|-----------------------------------|-------------------|----|----|
| To Payments | 790 | 16 | 7 | By Balance at 31st December, 1938 | 356 | 6 | 3 |
| Expenses of Golf Meetings | 39 | 8 | 4 | Receipts | 793 | 17 | 6 |
| Donation to Guild of Benevolence | 100 | 0 | 0 | | | | |
| Balance at 31st December, 1939 | 219 | 18 | 10 | | | | |
| | <u>£1,150 3 9</u> | | | | <u>£1,150 3 9</u> | | |

LIBRARY AND READING ROOM ACCOUNT.

| | £ | s. | d. | | £ | s. | d. |
|----------------------------|-----------------|----|----|-----------------|-----------------|----|----|
| To Reading Room Expenses | 48 | 7 | 4 | By Sales | 1 | 8 | 4 |
| Book Purchases and Binding | 28 | 15 | 4 | Revenue Account | 101 | 14 | 4 |
| Library Catalogues | 26 | 0 | 0 | | | | |
| | <u>£103 2 8</u> | | | | <u>£103 2 8</u> | | |

XXXXV

standing feature of the past year has been the decision to increase the subscription rates. The necessary formalities to effect this were extensive, including the taking of a ballot of all our Members, the result of which, as you have already heard from the Secretary, was conclusive. This decision came to by the Members as a whole, had then to be ratified by the Privy Council and was incorporated in our By-laws, to become operative as from 1st January of this year. Some Members may have questioned the advisability of increasing our subscription rates this year. The Council however had no alternative but to put into effect the resolution passed at our last Annual General Meeting and confirmed so strongly by the Membership vote.

Our Members may congratulate themselves that even at the enhanced rate the subscription is still one of the lowest of the subscriptions of prominent technical institutions in this country.

The War position has so far not adversely affected our finances although increases in certain directions directly attributable to the War have already taken place and will continue, while on the other hand, some economies have been effected.

We have had to incur additional expense due to having taken a short lease of the house at High Wycombe where The Institute is now operating. Fortunately we did not have to go to the great expense of purchasing a property at an enhanced figure due to the outbreak of War so that any expense incurred thereby is purely temporary. On the other hand, we have cut out the spending of money on repairs and renovations of our main premises. These in the past have been kept in an excellent state of repair so that the curtailment of expenditure in this direction will not affect the condition of the property for the time being.

During the year an Indemnity Policy for £1,000 has been taken out with the Sun Life Assurance Society, due to mature at the same date as those already in existence, viz.: in 2012. The premium for this was £157 4s. 2d. This was defrayed by £124 6s. 2d. taken from the Life Subscriptions Account and the balance has been charged to revenue.

The interest on the various legacies was increasing materially in value on our Balance Sheet until two or three years ago, when the Council very wisely decided to increase the number and value of the Awards, the cost of same being debited to the accumulated interest under these various legacies. The result now, however, is that the Capital amounts of these legacies are practically down to their basis value and cannot be reduced further.

The values of these legacies are as follows:—

| | | |
|-----------------------|-----|------------|
| Denny Award | ... | £100 @ 5% |
| Denny Gold Medal | ... | £250 @ 4% |
| Stephen Legacy Fund | ... | £100 @ 2½% |
| D. F. Robertson Award | ... | £100 @ 4% |
| Murdoch Legacy | ... | £100 @ 2½% |
| Lord Inverforth Award | ... | £100 @ 3½% |

The capital of the whole of the above legacies is merged in The Institute Capital Funds and the interest in each case is a charge on the Revenue Account.

The varying rates of interest are due to the fact that they were donated at different times and the interest stated was that operating at the time the Legacies were made.

As far as the John I. Jacobs Award is concerned, this is a separate investment of £200 in 2½ per cent. Consols. This stands in our books at a value of £119 although its present day value is approximately £148.

The Akroyd Stuart Award of £700 was invested in 3½ per cent. Conversion Loan 1961 and stands at a figure of £698 4s. 11d., bringing in interest at the rate of £32 0s. 6d. per annum.

If the Council continues, as I have no doubt they will, to make the same number of Awards as they have been doing during the last 2-3 years, part of the cost of these will have to be defrayed in future from The Institute Revenue Account.

We have continued to make contributions to various research and similar funds. The amount expended in this direction during the past year is £127 and appears in the Revenue Account under General Expenses. The main items in this figure are as follows:—

| | | | |
|--|-----|----|---|
| Parliamentary Science Committee | £10 | 10 | 0 |
| Institution of Naval Architects (Wm. Froude Tank Research) | £21 | 0 | 0 |
| British Electrical & Allied Industries Research Association ... | £25 | 0 | 0 |
| Joint Committee on Materials and their Testing | £10 | 0 | 0 |
| Engineering Joint Examination Board | £25 | 0 | 0 |
| British Non-ferrous Metals Re- search Association | £25 | 0 | 0 |

There is a heavy item for sundries, amounting to £207 4s. 4d. in the Revenue Account. This covers such items as: Group Portrait, £10 10s. 0d.; contribution to St. Bartholomew's Hospital Fund, £5 5s. 0d.; cost of photographing records, £14 2s. 11d.; evacuation expenses, £47 6s. 1d.; and a number of other small items.

If you will turn to the Balance Sheet and look at the item under Investments, you will note the Market value on the 31st December, 1939, is stated by our Auditors as being £14,375. The actual value to-day is £14,955, approximately £35 more than we paid for these various investments which have been purchased over a period of years. This I think you will agree is rather an interesting fact. £915 3½ per cent. Conversion Loan which was purchased in connection with the Akroyd Stuart Award at a cost of £698 4s. 11d. has a market value to-day of £906. I give these comparisons mainly to convince you that the Council have proved to be wise in their selection of investments, although possibly a critic might make the observation that it is not

their wisdom and foresight, but circumstances over which they have had no control.

There is again a profit on the "Running and Maintenance of Marine Machinery" Handbook of £38 17s. 11d. This will be handed over to the Guild of Benevolence. This Handbook has been a satisfactory source of income for the Guild of Benevolence and I am glad to be able to say that it is likely to be re-edited and reprinted and I hope will continue to be a source of revenue for the Guild.

The Social Events Account has again contributed £100 to the Guild of Benevolence and although there is still a balance on this account which will enable a contribution to be made during the present year, owing to the cancellation of our Annual Dinner and Conversazione there will be no income this year; unless these events are able to be resumed contributions from this source to the Guild of Benevolence will entirely cease. In this connection I should like to answer a criticism that I have heard from one or two quarters to the effect that the price charged for tickets for the Luncheon which is to take place to-day is excessive. May I, however, be allowed to point out to any Member making this criticism that any profits that are made are going to a good object and a Member partaking of a good lunch should feel all the better pleased that he is, at the same time, contributing to a worthy cause.

One cannot foretell what is likely to happen during the present year but as far as one can foresee the accounts of The Institute should continue in a very satisfactory condition.

The final figure in our accounts is always the most interesting and that is the amount of the Capital Account which now stands at £30,150 16s. 10d., an increase of £515 13s. 2d. over that of last year and the highest that The Institute has ever attained.

The Council, as Trustees for the funds of the Guild of Benevolence, have had their accounts under consideration and these I am glad to say show a slight improvement both as regards Capital and Income over the previous year.

The Capital has been increased by a total of £241 4s. 6d. made up of a legacy of £100 received from the Executors of our late Vice-President, Mr. George Adams, the balance being made up of Life Membership subscriptions to the Guild. This brings the total Capital Account to £20,423 6s. 3d.

£150 of this additional Capital has been placed in 3½ per cent. Conversion Loan, 1961. The balance for the time being has been placed with the Post Office Savings Bank.

The total income from all sources during the past year amounted to £1,220 3s. 8d. as compared with £1,085 8s. 5d. in the previous year. The main increase was due to the contribution of £100 from the Social Events Account, this being placed to Revenue Account and not to Capital Account as was done in the previous year.

The demands for relief are continually increasing. The total amount distributed in relief during last year was £1,129 8s. 0d., as compared with £1,060 13s. 6d. in the year preceding.

There is a small balance of Income over Expenditure of £32 5s. 3d.

You will have noted from the Secretary's Report the variation that has been made in the scales of relief in favour of those who are both Members of The Institute and Members of the Guild of Benevolence. We do hope that this differentiation in favour of the Members of The Institute will lead to considerable accession of Members to the Guild. Nothing would please the Chairman, Mr. Carnaghan, more than to be able to record a large influx of new Members.

During the past year the amounts received from Members' subscriptions are actually below the previous year, being £245 7s. 3d. against £248 4s. 1d.

The subscription asked is only very small and although a Member, in joining, may have the good fortune never to have to make a claim for assistance from the Guild, he would have the satisfaction of knowing that he is contributing to the help of those less fortunately placed.

The Guild assets invested in Trustee Securities have been purchased at a total cost of £11,150 2s. 10d., their present-day market value being £10,352 0s. 0d.

Monies invested in Freehold Ground Rents total £9,265 14s. 11d. and here we have what may be safely considered a slowly appreciating investment, with an income, after meeting cost of collection, of $3\frac{1}{2}$ per cent.

I trust the Members will be satisfied with the accounts as presented and that they will have no hesitation in signifying their approval of the same".

Eng. Lt.-Com'r. A. W. Richardson (Member), proposing the adoption of the Report and Accounts, said: "I would express a word of appreciation to the Members of Council, and to the Secretary and his staff, for having carried on so successfully the business of The Institute under very trying conditions.

It will be noted that the membership of The Institute has increased by 76 during the year, which is very satisfactory and shows that in spite of war conditions The Institute is still an attraction to those connected with marine engineering.

Although the membership of the Guild of Benevolence has increased also during the past year, we hope—now that an additional drain on the resources of the fund will be bound to occur—that a larger number of Members will enrol this year, so as to help those who are in need.

The Balance Sheet having been duly scrutinised and passed by our Auditors, calls for no comment other than that it is clear and beyond criticism and gives a very good indication of The Institute's affairs.

I have much pleasure in formally moving the adoption of the Report and Accounts".

Mr. G. Speck (Member) supported Commander Richardson's commendation and formally seconded the motion for the adoption of the Report and Accounts.

The President invited further comment or questions on the Report and Accounts; none being forthcoming, he formally put to the meeting the proposal that the Report and Accounts be adopted, and this was carried unanimously.

The next business on the programme was the presentation, by the President, of the following Awards:—

Denny Gold Medal—C. C. Pounder (Member).

Institute Silver Medals—T. Swinden, D. Met. and F. B. Cawley, M. Met.

Extra-First Class Engineer's Medal—J. E. Rundle (Associate Member).

Stephen Award—G. A. Day (Member).

Murdoch and Robertson Award—R. A. Collacott (Student).

Messrs. Pounder, Cawley, Rundle and Day were present in person and were warmly applauded as they came forward to receive their respective awards and the President's congratulations.

It was announced that as Dr. Swinden and Mr. Collacott were unable to attend the meeting, their awards were being forwarded to them.

Mr. A. F. C. Timpson, M.B.E. (Chairman of Council) then rose and moved a vote of thanks to the President in the following terms:—

"The next and most important item on our Agenda devolves upon me. It is a pleasant duty which I willingly undertake.

We have always been fortunate in our selection of President and have been no less fortunate on this occasion. We and our President, however, might have been more fortunate in the selection of the particular year in which we decided to ask him to occupy the Presidential Chair.

In normal times we have had ample opportunity of getting to know our President before the Annual General Meeting. We have heard his Presidential Address, and he has presided at the Annual Dinner and at the *Conversazione*. Unfortunately the outbreak of hostilities has interfered with all these occasions and with the exception of his official visit to The Institute we have had little opportunity of actual personal contact. This has been a disappointment both to him and to us. However, you will be pleased to learn that he has accepted re-appointment for a further year of office. We trust that he may be our 'Peace President' and that during his second term we may have the pleasure of hearing his Presidential Address and of seeing him preside at our social functions under peace-time conditions.

Although he has not publicly participated in the activities of The Institute he has, nevertheless,

done a considerable amount of work for The Institute of Marine Engineers and for marine engineers in general behind the scenes.

We all know the many calls upon his time and we therefore thank him for his services so willingly rendered and for so ably presiding over our meeting to-day.

We also thank him for agreeing to act as our President for a further year and wish him every success in the continuation of his office.

I therefore move that a vote of thanks be accorded to the President and I call upon Mr. Youldon to second the motion".

Mr. F. W. Youldon (Vice-Chairman of Council) said: "During my early sea-going days I learned that unwritten law of the sea 'obey orders if you break owners', and I willingly hasten to obey the orders of my superior officer, the Chairman of Council.

I endorse every word he has said regarding our President and share his and I am sure your regret that present conditions have prevented a closer and more intimate contact with him. The loss in this connection is entirely ours, and I trust that during his further year of office this loss will be made good, and that the feelings of esteem and respect in which we already hold him will be further enhanced.

The desire that he may be our 'Peace President' might be looked upon as 'wishful thinking', but I am sure that it will be echoed by all of us.

I have great pleasure in seconding the motion that a hearty vote of thanks be accorded to our President".

The vote of thanks was unanimously accorded, with an accompaniment of loud and prolonged applause.

The President responding, thanked the meeting for the way they had accepted the motion. He confessed it had been a disappointment to him that the war had prevented the fulfilment of many of the public duties attaching to the office of President.

He, too, looked forward and hoped that he would be their "Peace President", but he doubted whether they would have finished the job with Germany before the next *Conversazione*.

The Members of The Institute might rely on him to do his best for them both as a corporate body and as individuals.

He had had the honour of holding an honorary commission in the Royal Naval Reserve, and he had been struck by the fact that relatively few Merchant Navy engineer officers joined that body in times of peace—that is, relatively few compared with deck officers. As a result there had been some little difficulty in arranging temporary commissions for Mercantile Marine engineers serving in what were now His Majesty's ships. That difficulty would hardly have arisen if engineers as a body had interested themselves in the Royal Naval Reserve in peace time. On that particular point

he had done a good deal of work behind the scenes and had not overlooked the interests of their profession.

The President next announced the report of the Scrutineers, the result of the voting being as follows:—

President:—Sir Percy E. Bates, Bt., G.B.E.

Vice-Presidents:—

London: J. M. Dewar, Dr. S. F. Dorey,
R. S. Kennedy, A. H. Mather, J. McLaren,
A. R. T. Woods.

Cardiff: A. W. Loveridge, B.Sc.

Swansea: Major E. W. B. Kidby, O.B.E.,
R.E.

Newcastle: W. Hamilton.

Sunderland: F. H. Reid, B.Sc., Wh.Ex.

Aberdeen: W. P. Hunter.

Belfast: W. E. McConnell.

Royal Navy: Eng. Rear-Admiral F. R. G.
Turner, O.B.E.

Merchant Navy: W. C. Sutcliffe.

Calcutta: C. S. McCaskie.

Sydney: A. C. Heron.

Melbourne: R. Stark.

Singapore: F. G. Ritchie.

Rangoon: W. A. Harrington.

Los Angeles Harbour: F. G. Archbold.

Honorary Treasurer:—Mr. Alfred Robertson,
C.C.

Members of Council:—Messrs. H. J.
Wheadon, A. W. Richardson, H. A.
Garnett, D. Goodsir, and H. Scott.

Associate Member of Council:—Mr. H. R.
Tyrrell, B.Sc.

Mr. H. A. Garnett (Member) proposed a vote of thanks to the Scrutineers (Messrs. A. E. White-side and G. B. Plows) and to the Honorary Auditors (Messrs. W. D. Heck and H. J. Vose) and their re-appointment for 1940. This proposal was carried with applause.

Mr. W. S. Burn, M.Sc. (Member) said that, having heard the reading of the Annual Report, they would all agree that the Council during the year just ended had, as in previous years, done their job well, and he had great pleasure in proposing a most hearty vote of thanks to the Council and Officers for the efficient way in which they had carried out their many duties.

The proposal was carried with acclamation.

Mr. A. F. C. Timpson, M.B.E. (Chairman of Council), responding, said that the Council and Officers greatly appreciated the approval of their work implied by their response to Mr. Burn's motion.

He personally found great pleasure in working on behalf of The Institute. He had received much assistance during the past year from his colleagues on the Council, of which he wished to make appreciative record. Not only did these Officers devote

much time to the work of the Committees, but arduous duties were undertaken on the many outside bodies on which The Institute was represented. Finally, he would like to record his appreciation of the work of the permanent staff. A great deal of work was inevitably associated with the activities

of a healthy organisation such as The Institute, and the Council and Officers who were responsible for carrying it out would be glad to know that their efforts were appreciated by the membership as a whole.

The proceedings then terminated.

THE INSTITUTE OF MARINE ENGINEERS GUILD OF BENEVOLENCE.

Trustees: THE INSTITUTE OF MARINE ENGINEERS (INCORPORATED BY ROYAL CHARTER).

General Committee, 1939:

Chairman: J. CARNAGHAN.

Committee:

Vice-Presidents—†A. E. CRIGHTON, ‡R. S. KENNEDY, †S. N. KENT.

Members of Council—†T. A. CROMPTON, †H. S. HUMPHREYS, ‡A. F. C. TIMPSON, M.B.E.,
*F. W. YOULDON.

Members of the Guild—†F. A. HUNTER, †G. SPECK, *CAPTAIN B. WARWICK.

‡ Retire in 1940. * Retire in 1941. † Retire in 1942.

Executive Committee, 1939:

Chairman: J. CARNAGHAN.

Committee:

Vice-President—S. N. KENT.

Members of Council—T. A. CROMPTON, H. S. HUMPHREYS.

Members of the Guild—F. A. HUNTER, G. SPECK, CAPTAIN B. WARWICK.

Members of Committees—ex officio:

Honorary Treasurer: ALFRED ROBERTSON, C.C.

Secretary: B. C. CURLING.

Honorary Medical Officer: W. J. GALT, M.A., M.B., B.Ch., Ibex House, The Minories, E.C.3.

Honorary Solicitor: W. E. ARCHER, 51 and 52, Fenchurch Street, E.C.3.

Honorary Auditors: W. D. HECK, B.Sc. and H. J. VOSE.

Auditors: WEST & DRAKE, 8, New Court, Lincoln's Inn, W.C.2.

Bankers: BARCLAY'S BANK, LIMITED.

THE INSTITUTE OF MARINE ENGINEERS GUILD OF BENEVOLENCE.

MINUTES OF PROCEEDINGS AT THE SIXTH ANNUAL GENERAL MEETING, Wednesday, April 3rd, 1940.

Chairman: Mr. JAMES CARNAGHAN.

The Sixth Annual General Meeting of The Institute of Marine Engineers Guild of Benevolence was held in the Library of The Institute at 2.30 p.m. on Wednesday, 3rd April, 1940, fourteen members and officers being present.

The Chairman, in his opening remarks, expressed relief in finding that a quorum of members was present, in view of the prevailing circumstances in which members found it extremely difficult to attend such meetings. He thanked the members present for their attendance, which made it possible to carry on the business of the Guild in accordance with the prescribed Rules.

They had again to render their sincere thanks to The Institute of Marine Engineers for their continued assistance to the Guild throughout the past year, also to express their gratitude for the accommodation provided and for the assistance of The Institute staff, in order to carry on the work of the Guild, all given without any monetary cost to the Guild.

They had also to express their thanks to the Council of The Institute for the substantial contribution to the Guild's Revenue Account from the Social Events Account and from the "Running and Maintenance of Marine Machinery" Account. He was glad to be able to announce that further contributions already voted by the Council, amounting to £138 17s. 11d. from these two sources, would figure in the next Annual Report, *i.e.* for 1940.

Their thanks were also due to their Honorary Treasurer, Mr. Alfred Robertson, C.C., for his excellent supplication to the Members of The Institute, made at the Annual General Meeting of The Institute on the 15th March last, when he appealed for more support for the Guild. It was to be hoped that the appeal, together with the Committee's decision (referred to in the Annual Report of The Institute) to revise the Scale of Grants in order to make a more equitable distinction between members and non-members of The Institute, would induce a larger number of members of The Institute to become supporters of the Guild.

The Secretary then read the Annual Report as

follows:—

SIXTH ANNUAL REPORT OF THE GENERAL COMMITTEE.

In recording another year's work of dealing with the continuing cases of distress which were already under the care of the Guild and those submitted by applicants since the beginning of the year, the Committee look forward somewhat anxiously to the coming year by reason of the added hardships which war must impose on everyone, especially the recipients of relief.

A further appeal by the Chairman to Members of The Institute for increased support was circulated by the kind co-operation of the Council in June. Of the total increase of enrolments during the year numbering 49 Subscribing Members and 13 Life Members, 39 of the former and 10 of the latter Members enrolled as a result of the Chairman's appeal.

The Guild, like other benevolent organisations, must anticipate increasing claims for assistance as the losses by war take effect. Lest it may be thought that, because war brings full employment to marine engineers as a class, a lessening of financial hardship among them must result, it should be remembered that almost all the cases dealt with by the Guild are those of marine engineers or their dependants, past the age of employability if not otherwise incapacitated, whose incomes have been reduced to the State pension or Public Assistance relief. The majority of these cases are outside the scope of other charities, but in some instances the Liverpool Marine Engineers and Naval Architects Guild, the Marine Engineers Association Benevolent Fund, the Royal Alfred Aged Merchant Seamen's Institution, and the Royal Scottish Corporation have shared in grants of relief to the applicants. For this assistance the Committee wish to record their gratitude to these Societies.

The Committee again appeal for new members and donors, while tendering their sincere thanks to the Life and Subscribing Members and Donors named in the following pages, who have so generously supported the Guild during the past year.

Revision of Scale of Grants.

It has been represented to the General Committee that Members of The Institute have but little inducement to become Members of the Guild, seeing that they and even non-members of either The Institute or the Guild are already eligible for relief from the Guild in times of adversity. The Committee deprecate this point of view and remind members that at present a considerable part of the Guild's income is interest on capital subscribed by Companies associated with the shipping industry when the Guild was founded. Nevertheless, the Committee recognise that more Institute Members are likely to become Members of the Guild if an equitable distinction be made between them and non-members.

The Committee have accordingly adopted the following scale of grants, which they hope will remove the previous objection and induce every Member of The Institute to support the Guild by becoming a Subscribing Member:—

Members of The Institute who are also members of the Guild to receive 20s. per week, plus 5s. per week for one and 2s. 6d. per week for each further dependant, but total not to exceed 30s. per week.

Members of The Institute only or members of the Guild only to receive 15s. per week, plus 2s. 6d. per week for each dependant, but total not to exceed 22s. 6d. per week.

Non-Members of either The Institute or the Guild to receive 10s. per week, plus 2s. 6d. per week for each dependant, but total not to exceed 15s. per week.

The above payments to be subject to the total income of the recipients being not more than:—

45s. per week for Institute *and* Guild Members,

40s. per week for Institute *or* Guild Members,

30s. per week for Non-Members of either Institute or Guild,

inclusive of the grant from the Guild.

Special cases to be considered on their merits, irrespective of the above scale of relief.

Qualifications for Relief

The Rule stating the principles upon which relief is granted is as follows:—

“The persons who shall be subjects for relief shall (but without prejudice to the power of the Executive Committee to decide what persons are proper subjects for relief, whether actually covered or not by the descriptions hereinafter mentioned) include the following:—

Members of The Institute of Marine Engineers, their wives, widows, and/or children.

Members of the Guild, their wives,

widows, and/or children

Engineers who possess Board of Trade Certificates of Competency, their wives, widows, and/or children.

Officers and employees of the Guild, their wives, widows, and/or children.

Where the claims are equal, preference shall be given to those applicants who are or have been Members of the Guild”.

Meetings of the Committees.

Since the date of the preceding report the General and Executive Committees have held six joint meetings and three meetings of the Executive Committee. At eight of these meetings applications for relief were considered.

Applications for Relief.

A summary of the cases dealt with between 1st January and 31st December, 1939, is given on pages 6 and 7. Relief granted to these applicants involved an expenditure of £1,151 13s. In 31 of these cases the relief has been continued from the preceding year.

Membership.

At the date of this report the Membership Roll included 101 Life Members and 364 Subscribing Members.

110 of the Subscribing Members have covenanted to continue their subscriptions for seven years; this enables the Guild to claim repayment of Income Tax on these subscriptions. It is hoped that all Subscribing Members in this country will follow this course, as it will produce a very appreciable addition to the income available for distribution as relief. Particulars of the scheme are being issued with this Report to Members who have not yet covenanted.

J. CARNAGHAN,
Chairman of General Committee.
B. C. CURLING,
Secretary.

The Honorary Treasurer then read the official Auditors' Report as follows:—

*We have audited the Balance Sheet of The Institute of Marine Engineers Guild of Benevolence, dated 31st December, 1939, *above set forth, and have received all the information and explanations we have required. In our opinion such Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Guild's affairs according to the best of our information and the explanations given to us and as shown by the books of the Guild.*

(Sd.) West & Drake,
Chartered Accountants.

8, New Court,
Lincoln's Inn, W.C.2.
12th February, 1940.

*See page xlv.

BENEVOLENT FUND.

GUILD OF BENEVOLENCE.

| | 31st Dec., 1930. | 31st Dec., 1931. | 31st Dec., 1932. | 31st Dec., 1933. | *31st Dec., 1934. | 31st Dec., 1935. | 31st Dec., 1936. | 31st Dec., 1937. | 31st Dec., 1938. | 31st Dec., 1939. |
|---------------------------|------------------|------------------|------------------|------------------|-------------------|------------------|------------------|------------------|------------------|------------------|
| Revenue:— | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| Interest on Investments | 93 8 0 | 94 8 8 | 83 0 0 | 85 9 4 | 108 14 8 | 339 17 2 | 360 2 0 | 378 12 4 | 391 9 10 | 396 14 10 |
| Ground Rents | | | | | | 180 18 5 | 352 3 1 | 352 3 0 | 352 2 10 | 352 2 10 |
| Members Subscriptions | | | | | | 163 12 3 | 160 4 8 | 196 7 1 | 248 4 1 | 245 7 3 |
| Donations... | 12 13 2 | 28 16 6 | 46 6 0 | 71 8 9 | 102 9 2 | 140 16 4 | 106 2 9 | 191 2 2 | 93 11 8 | 225 18 9 |
| Income Tax recovered | 20 14 4 | 21 18 8 | 20 14 11 | 19 10 7 | 16 17 2 | 27 7 3 | 40 16 4 | 52 8 6 | 49 7 1 | 60 4 2 |
| Total Receipts ... | 126 15 6 | 145 3 10 | 150 0 11 | 123 9 8 | 239 1 6 | 825 4 2 | 978 12 6 | 1,118 4 7 | 1,115 0 0 | 1,220 3 8 |
| " (without donations) | 114 2 4 | 116 7 4 | 103 14 11 | 104 19 11 | 136 12 4 | 684 7 10 | 872 9 9 | 927 2 5 | 1,021 8 4 | 994 4 11 |
| Expenditure ... | 126 15 6 | 125 1 0 | 165 6 4 | 120 7 0 | 104 15 1 | 539 19 7 | 864 19 1 | 944 4 5 | 1,115 0 0 | 1,187 18 5 |
| Investments ... | 2,340 17 2 | 2,544 17 11 | 2,543 7 11 | 2,645 17 8 | 8,052 19 5 | 17,318 14 4 | 19,701 5 4 | 20,019 15 9 | 20,171 11 9 | 20,315 17 9 |
| Cash and Deposit A/c. ... | 1 11 1 | 21 13 11 | 7 18 6 | 9 11 2 | 6,459 6 7 | 1,923 9 3 | 44 8 3 | 10 10 0 | 178 5 0 | 283 8 2 |

* Includes Benevolent Fund to Aug. 2nd and Guild of Benevolence from Aug. 2nd to Dec. 31st.

The Honorary Treasurer, continuing, made the following statement on the Accounts for the past year:—

"An examination of the Balance Sheet shows that the Capital on last year's account stood at £20,182 1s. 9d. whereas in this year's account it stands at £20,423 6s. 3d., an increase of £241 4s. 6d., this increase being accounted for by a donation of £100 received from the Executors of our late Chairman, Mr. George Adams, and £141 4s. 6d. from Life Membership Subscriptions. This is a very substantial amount to receive in Life Membership Subscriptions in a single year.

On the opposite side under Investments you will note an increase of 3½ per cent. Conversion Loan from £7,450 to £7,600. The market value of our trustee securities at the 31st December, 1939 is stated as £9,616 15s. 0d. There has, of course, been an appreciation in the value of gilt-edge stock since that date and the approximate value to-day is £10,250. In spite of this rise our assets on investment of gilt-edge securities have decreased on the basis of present-day values against the original cost by approximately £800. The interest income will, of course, continue to be the same with the exception of the income derived from the 4½ per cent. Conversion Loan. This has, as you are aware, been converted and we shall receive payment for same on the 1st July, £603 in cash as against its purchase cost of £662 4s. 3d.

The Council of The Institute of Marine Engineers, as your Trustees, have very kindly agreed to advance the money for the purchase of £600 in 3½ per cent. Conversion Loan and they are bearing the slight extra cost over the actual money we receive. Further, we shall be receiving the interest on both securities for the intervening period between the date of purchase of the 3½ per cent. Conversion Loan and the date of repayment of the 4½ per cent. Conversion Loan.

The capital value of the Ground Rents remains the same and will continue to appreciate by a small amount annually. In my own personal opinion, it would have been better if a larger amount of our Capital had been invested in Ground Rents, as they form a cast-iron security, and if well purchased always become an appreciating asset. If we have any substantial amounts to invest in future, I should strongly advocate the monies being applied in this direction.

We have opened an account in the Post Office Savings Bank for the first time. You will note there is an item of £96 18s. 6d. under this heading which brings in 2½ per cent. This is very useful as a temporary investment for small amounts.

The Revenue Account shows an increased income from £1,085 8s. 5d. for the previous year to £1,220 3s. 8d. in the present accounts. The increase is caused mainly by £100 placed to Revenue Account received from Social Events Account.

The sheet anchor of our Revenue Account ought to be membership subscriptions. This item,

THE INSTITUTE OF MARINE ENGINEERS GUILD OF BENEVOLENCE.

Balance Sheet, 31st December, 1939.

| LIABILITIES. | £ | s. | d. | £ | s. | d. |
|---|--------|----|----|---------|----|----|
| Capital Account | | | | | | |
| Balance at 31st December, 1938 | 20,182 | 1 | 9 | | | |
| Donations | 100 | 0 | 0 | | | |
| Life Membership Subscriptions | 141 | 4 | 6 | | | |
| | 20,423 | 6 | 3 | | | |
| Revenue Account | | | | | | |
| Balance at 31st December, 1938 | 304 | 0 | 0 | | | |
| Add Excess of Income over Expenditure for the year | 32 | 5 | 3 | | | |
| | 336 | 5 | 3 | | | |
| Subscriptions received in advance | 12 | 15 | 6 | | | |
| Creditor | 5 | 5 | 0 | | | |
| | 354 | 5 | 9 | | | |
| | | | | £20,777 | 12 | 0 |

| ASSETS. | £ | s. | d. | £ | s. | d. |
|--|---------|----|----|-------|----|----|
| Investments | | | | | | |
| As valued 2nd August, 1934:— | | | | | | |
| £1,937 London Midland & Scottish Railway 4% Preference Stock... | 1,515 | 14 | 0 | | | |
| £500 New South Wales 4% Stock 1942/62 | 505 | 12 | 6 | | | |
| £250 3½% War Loan | 259 | 16 | 3 | | | |
| £403 4½% Conversion Loan | 446 | 19 | 2 | | | |
| At Cost:— | | | | | | |
| £7,600 3½% Conversion Loan 1961 | 8,106 | 15 | 10 | | | |
| £200 4½% Conversion Loan 1940/44 | 215 | 5 | 1 | | | |
| | 11,050 | 2 | 10 | | | |
| (Market value 31st December, 1939, £9,616 15s.). | | | | | | |
| Freehold Ground Rents, at cost | | | | | | |
| Ryde (£70 0 0 per annum) | 1,725 | 12 | 0 | | | |
| Croydon ... (£103 0 0 " ") | 2,767 | 10 | 8 | | | |
| West Ham ... (£117 0 0 " ") | 2,960 | 1 | 3 | | | |
| Wimbledon ... (£6 2 6 " ") | 161 | 0 | 0 | | | |
| Bowes Park... (£6 0 0 " ") | 155 | 16 | 2 | | | |
| Thornton Heath (£25 10 0 " ") | 664 | 15 | 6 | | | |
| Ilford... (£31 15 0 " ") | 830 | 19 | 4 | | | |
| | £359 | 7 | 6 | | | |
| | | | | 9,265 | 14 | 11 |
| Cash at Bank | | | | | | |
| Current Account (Capital) | 10 | 10 | 0 | | | |
| Post Office Savings Bank | 96 | 18 | 6 | | | |
| | | | | 107 | 8 | 6 |
| Ground Rents due and accrued, less Commission for Collection | 95 | 16 | 11 | | | |
| Income Tax Recoverable | 60 | 4 | 2 | | | |
| Relief Paid in Advance | 22 | 5 | 0 | | | |
| Cash at Bank | | | | | | |
| Current Account (Revenue) | 173 | 6 | 11 | | | |
| Cash in Hand | 2 | 12 | 9 | | | |
| | 354 | 5 | 9 | | | |
| | £20,777 | 12 | 0 | | | |

Dr.

REVENUE ACCOUNT for the year ended 31st December, 1939.

Cr.

| | £ | s. | d. |
|---|--------|----|----|
| To Relief | 1,129 | 8 | 0 |
| „ Printing and Stationery | 23 | 13 | 11 |
| „ Postage... .. | 28 | 16 | 8 |
| „ Audit Fee | 5 | 5 | 0 |
| „ Miscellaneous Expenses | 0 | 14 | 10 |
| „ Balance, excess of Income over Expenditure, carried to Balance Sheet | 32 | 5 | 3 |
| | £1,220 | 3 | 8 |

| | £ | s. | d. |
|---|--------|----|----|
| By Investment Income | 396 | 14 | 10 |
| „ Ground Rents, less Commission for Collection | 352 | 2 | 10 |
| „ Members' Subscriptions | 245 | 7 | 3 |
| „ Donations | | | |
| Proceeds of Sales of "Running and Maintenance of Marine Machinery" Handbook for the year ended 31st December, 1938 | 39 | 12 | 2 |
| Social Events Account | 100 | 0 | 0 |
| Sundries | 86 | 6 | 7 |
| | 225 | 18 | 9 |
| | £1,220 | 3 | 8 |

in spite of an actual increase of membership, shows a reduction of £2 16s. 10d.—small I admit, but the receipts from this source should in the opinion of the Council and of your General Committee be very much larger.

I am not an advertising agent but I do respectfully submit that we shall have to resort to stronger advertising amongst all members of The Institute to induce them to become members of the Guild. I make these remarks more particularly because owing to present war conditions I fear we shall not be able to continue to rely upon an income from the Social Events Account and further the income from the proceeds of the sale of the "Running and Maintenance of Marine Machinery" Handbook may also drop for a year or possibly two years. With the deletion of these two items our Revenue Account is likely in the future to show a deficit if we keep up the present amounts paid in relief which, in the past year, amounted to £1,129 8s. 0d. against £1,060 13s. 6d. paid out in the previous year.

I am afraid some may say that I have been somewhat pessimistic in my remarks. The General Committee, as well as the Council of The Institute, are most anxious to see this Guild of Benevolence in such a financial position that it can face increasing demands which are bound to be made upon it in the near future with confidence. The only way that this can be realised is to have a considerable increase in membership from amongst our own Members".

Mr. F. P. Bell, proposing the adoption of the Report and Accounts as submitted, said that in doing so he would like to congratulate the Committees concerned. He was sure that he was voicing the wishes of the Members in that expression of approval of the Committees' work.

Mr. A. H. Ledger seconded the proposal, and expressed his satisfaction at the alteration to the scale of grants as affecting Members of The Institute as compared with non-members. He reminded the Committee of certain Members of The Institute who were suffering hardships at the time the Guild was founded. These Members would undoubtedly have become subscribing members of the Guild had they not already fallen victims to adversity, and he suggested that they should be given special consideration on these grounds. Now that the scale of grants had been revised he hoped that these members would benefit by the alteration.

The Chairman assured Mr. Ledger that the cases he referred to would receive special consideration. He reminded Mr. Ledger of the provision by which such cases had been and would continue to be dealt with on their merits, irrespective of the normal scale of grants. On being put to the meeting, the proposal that the Report and Accounts be adopted was carried unanimously.

Mr. T. A. Crompton proposed that Mr. J. Carnaghan be re-elected as Chairman of the General

Committee for the ensuing year. He (Mr. Crompton) had been a Member of the Committee since the Guild was founded, and he was sure that in Mr. Carnaghan the Committee during the past year had had a most worthy successor to the late Mr. George Adams.

Mr. A. F. C. Timpson, seconding this proposal, warmly supported Mr. Crompton's remarks regarding Mr. Carnaghan's past chairmanship.

The Honorary Treasurer, on behalf of the Chairman, put the proposal to the meeting, and it was carried unanimously, with acclamation.

Mr. Carnaghan thanked Mr. Crompton and Mr. Timpson for their kind remarks, and the members for their renewal of confidence. He would be pleased to continue devoting his best efforts to the service of the Guild.

The Chairman, on behalf of the General Committee, next submitted the following nominations of Members for election to the Committee to fill vacancies occurring by retirement in accordance with the Rules:—

Vice-President: Mr. R. S. Kennedy (for re-election).

Member of Council: No election.

Member of the Guild: Mr. A. F. C. Timpson, M.B.E.

In the absence of other nominations, the Chairman formally proposed the election of the above two nominees and the Members unanimously signified their assent.

On the proposal of the Chairman the following Honorary Officers were unanimously re-elected:—

Honorary Auditors: Messrs. W. D. Heck, B.Sc. and H. J. Vose.

Honorary Solicitor: Mr. W. E. Archer.

Honorary Medical Officer: Dr. W. J. Galt, M.A., M.B., B.Ch.

There being no further business on the agenda, **Mr. F. O. Beckett** next proposed a vote of thanks to the General and Executive Committees and the Officers for their valuable services during the past year. (Carried with acclamation).

The Chairman, replying on behalf of the Committee and Officers of the Guild, thanked Mr. Beckett for his very kind remarks and the members for the hearty manner in which they had accorded their vote of thanks.

The Committee were pleased that they had been able to grant relief to all necessitous cases which came within the province of the Rules of the Guild and yet had kept the expenses within their revenue. Their burden would be lessened considerably if the revenue were large enough not only to relieve all cases of distress but also to provide a sufficient credit balance at the end of each financial year to enable them to transfer a reasonable sum to the Capital Account.

He desired to say how much the Committee

appreciated the valuable assistance they received in the work of the Guild from the Honorary Treasurer (Mr. Alfred Robertson), the Secretary (Mr. B. C. Curling), and one of the Secretary's assistants (Miss Ormiston).

He assured them that the General and Executive Committees endeavoured to make a success of the Guild's affairs and he was certain that all these parties were grateful for the expressed appreciation of their work.

LIST OF DONORS TO
THE INSTITUTE OF MARINE ENGINEERS GUILD OF BENEVOLENCE.
(since the publication of the preceding Report).

| | £ | s. | d. | | £ | s. | d. |
|-----------------------------------|-----|----|----|-------------------------------|----|----|------|
| The Institute of Marine Engineers | 139 | 12 | 2 | H. McLean | | | 18 6 |
| T. Dodds | | 8 | 6 | M. Hutchison | | | 5 0 |
| E. T. Ryland | 1 | 1 | 0 | Trustees for Mr. George Adams | 12 | | 10 0 |
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| W. H. Roberts | 1 | 1 | 0 | E. G. Soanes | | | 9 6 |
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PARTICULARS OF
CASES ASSISTED BY THE INSTITUTE OF MARINE ENGINEERS
GUILD OF BENEVOLENCE.

from the 1st January to the 31st December, 1939.

| Case No. | Age. | Particulars. | Amount of Relief Granted. | Case No. | Age. | Particulars. | Amount of Relief Granted. |
|----------|---------|---|---------------------------|----------|------|---|---------------------------|
| 1 | 86 | Member of The Institute; married; has Old Age Pension | £67 0s. 0d. | 47 | 59 | Widow; has income of 6s. per week; has son and daughter training for male nurse and domestic science respectively | £20 7s. 6d. |
| 2 | 50 | Asked for temporary help to pay fares, etc., for one week while awaiting a ship; had relief previously in 1934 ... | 15s. 0d. | 48 | 43 | Widow; has one son, aged 5, has widow's pension for self and child | £40 5s. 0d. |
| 3 | 72 | Member of The Institute; married; has invalid wife and daughter dependent; has Old Age Pension | £60 15s. 0d. | 51 | 60 | Widow of former member of The Institute; has small capital; has one grandchild dependent; ineligible for widow's pension | £33 12s. 6d. |
| 4 | 72 | Had invalid wife (now deceased); total income 25s. 10d. per week; had help previously in 1934 | £18 15s. 0d. | 53 | 69 | Widow; average income 17s. 6d. per week | £27 0s. 0d. |
| 5 | 79 | Member of The Institute; widower; has small pension of £31 per annum; is in ill-health | £40 5s. 0d. | 58 | 62 | Widow; has intermittent employment as a stewardess; has no dependants | £5 2s. 6d. |
| 6 & 7 | 56 & 58 | Daughters of marine engineer; have joint income of 17s. 6d. per week; both unmarried ... | £80 10s. 0d. | 59 | 72 | Now deceased | £10 5s. 0d. |
| 8 | 59 | Widow; has one daughter in sanatorium and son and daughter employed away from home; has income of 5s. per week | £51 15s. 0d. | 60 | 64 | Former member of The Institute; has income of 15s. per week; no dependants ... | £27 0s. 0d. |
| 19 | 83 | Widow; no dependants; has Old Age Pension | £40 5s. 0d. | 65 | 70 | Married; has invalid wife dependent; has income of 10s. per week; now employed ... | £32 7s. 6d. |
| 20 | 74 | Married; has income of 30s. per month and Old Age Pension; now employed ... | £26 17s. 6d. | 67 | 71 | Married; has semi-invalid wife dependent; income of 20s. per week | £27 0s. 0d. |
| 26 | 67 | Widow; has income of 50s. per week from a son and daughters who are kept out of this amount | £27 0s. 0d. | 69 | 50 | Widow; has father dependent; assists son who is in a junior grade of the Civil Service in London | £40 5s. 0d. |
| 27 | 72 | Has wife dependent; has income of 23s. per week ... | £19 1s. 0d. | 72 | 60 | Widow; has widow's pension and income of £6 5s. per quarter | £28 6s. 6d. |
| 28 | 81 | Has Old Age Pension; no dependants | £40 5s. 0d. | 73 | 36 | Widow; has one child, aged 6, dependent; now employed ... | £5 0s. 0d. |
| 29 | 72 | Now deceased | £18 12s. 6d. | 74 | 59 | Widow; has no dependants; does occasional housework when health permits | £40 5s. 0d. |
| 34 | 70 | Unmarried; has no dependants; has income of £20 per annum | £34 12s. 6d. | 77 | 48 | Widow; has one daughter dependent; has widow's pension | £40 5s. 0d. |
| 41 | 67 | Has sister wholly dependent; both unmarried; unemployable owing to age | £30 14s. 0d. | 79 | 74 | Widow; has no dependants; has widow's pension... .. | £27 0s. 0d. |
| 44 | 69 | Married; has income of 25s. per week; attending hospital for treatment | £13 5s. 0d. | 80 | 60 | Sister of deceased member of The Institute; has a blind brother who has a pension of 30s. per week | £27 0s. 0d. |
| | | | | 85 | 66 | Widow; has no dependants; has income of 27s. 6d. per week | £27 0s. 0d. |

| <i>Case No.</i> | <i>Age.</i> | <i>Particulars.</i> | <i>Amount of Relief Granted.</i> | <i>Case No.</i> | <i>Age.</i> | <i>Particulars.</i> | <i>Amount of Relief Granted.</i> |
|-----------------|-------------|---|----------------------------------|-----------------|-------------|---|----------------------------------|
| 91 | 54 | Widow; has no dependants; has widow's pension... | £40 5s. 0d. | 97 | 69 | Married; has income of 19s. per week | £35 10s. 0d. |
| 94 | 39 | Widow of former member of The Institute; has one child dependent and one child in the Blue Coat School; now employed | £8 0s. 0d. | 98 | 72 | Widower; has no dependants; has income of 25s. per week | £13 15s. 0d. |
| 96 | 64 | Widow of former member of The Institute; has no dependants | £18 19s. 0d. | 101 | 73 | Married; has income of 10s. per week; is paralyzed ... | £6 15s. 0d. |
| Total | | | | | | | £1,151 13s. 0d. |

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