

THE INSTITUTE  
OF  
MARINE ENGINEERS

FOUNDED 1889

INCORPORATED BY ROYAL CHARTER 1933

PATRON : HER MAJESTY THE QUEEN

TRANSACTIONS



Volume 72, 1960



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*Chairman:* A. C. HARDY, B.Sc. *Committee:* J. CALDERWOOD, M.Sc., F. D. CLARK, W. R. HARVEY, G. RIDLEY WATSON, B.Sc.

## SOCIAL EVENTS

*Chairman:* STEWART HOGG, O.B.E. *Committee:* F. P. BELL, E. R. CHAMBERLAIN, CDR. F. J. CORNEY, O.B.E., R.N., R. K. CRAIG, C.B.E., ENG. CAPT. W. A. GRAHAM, O.B.E., R.N.R., B. P. INGAMELLS, C.B.E., T. W. LONGMUIR, CDR. H. T. MEADOWS, D.S.C., R.D., R.N.R., J. E. M. PAYNE, P. S. ROSSETER, CDR. J. WHITE, D.S.C., R.N., W. YOUNG.

## Joint Panel on Nuclear Marine Propulsion

*Institute of Marine Engineers: VICE-ADMIRAL SIR FRANK MASON, K.C.B. (Chairman of Panel), R. COOK, M.Sc., W. R. HARVEY, H. N. PEMBERTON, H. N. E. WHITESIDE.*

*Royal Institution of Naval Architects: J. M. MURRAY, M.B.E., B.Sc., SIR VICTOR SHEPHEARD, K.C.B.*

*Institution of Engineers and Shipbuilders in Scotland: A. W. DAVIS, D.Sc., P. W. THOMAS, B.Sc.*

*North East Coast Institution of Engineers and Shipbuilders: T. W. F. BROWN, C.B.E., D.Sc., S.M., PROFESSOR L. C. BURRILL, M.Sc., Ph.D.*

*Secretary to the Panel: J. STUART ROBINSON, M.A.*

*Representatives of the Joint Panel on the British Nuclear Energy Conference:*

T. W. F. BROWN, C.B.E., D.Sc., S.M., J. M. MURRAY, M.B.E., B.Sc.,

J. STUART ROBINSON, M.A.

## REPRESENTATIVES ON EXTERNAL ORGANIZATIONS

|  |   |
|--|---|
| Association of Special Libraries and Information Bureaux   | J. STUART ROBINSON, M.A.                          |
| British Conference on Automation and Computation: Engineering Applications Group                               | H. E. UPTON, O.B.E., and J. STUART ROBINSON, M.A. |
| British National Committee for Non-destructive Testing   | R. H. PADDON ROW                                  |
| British Shipbuilding Research Association, Research Board  | T. W. BUNYAN, B.Sc.                               |
| City and Guilds of London Institute: Advisory Committee on Shipbuilding, Ship Joinery, Yacht and Boat Building | C. H. TAYLOR-COOK, B.Sc.(Eng.).                   |
| College of Technology, Portsmouth  | H. W. HOGBEN, M.B.E., B.Sc.                       |
| East Ham Technical College: Engineering Advisory Committee   | R. S. BRETT                                       |
| Engineering Institutions Examinations Standing Committee for Part I  | C. H. TAYLOR-COOK, B.Sc.(Eng.).                   |
| Institution of Electrical Engineers: Ship Electrical Equipment Regulations Committee                           | A. N. SAVAGE                                      |
| Institute of Welding   | JAMES TURNBULL, O.B.E.                            |
| International Institute of Refrigeration: Standing Committee   | K. C. HALES, B.A.                                 |
| Joint British Committee for Stress Analysis  | T. W. BUNYAN, B.Sc.                               |
| Joint Committee on Materials and Their Testing of Technical Institutions and Societies in Great Britain        | R. COOK, M.Sc.                                    |
| Lloyd's Register of Shipping: Technical Committee  | A. LOGAN, O.B.E., and H. J. WHEADON               |
| Northern Advisory Council for Further Education (Advisory Committee for Engineering)                           | A. W. JONES, B.Sc.                                |
| Poplar Technical College, Board of Governors   | D. G. ALCOCK                                      |
| Royal Naval Reserve (General Service) General Committee  | F. D. CLARK                                       |
| Southampton University: Advisory Committee, Department of Marine Engineering                                   | ENG. CAPT. W. A. GRAHAM, O.B.E., R.N.R.           |
| Welsh College of Advanced Technology, Cardiff  | D. SKAE   |
| World Power Conference, British National Committee   | A. C. HARDY, B.Sc.                                |

### BRITISH STANDARDS INSTITUTION

|                               |          |  |                                      |   |
|-------------------------------|----------|--|--------------------------------------|---|
| H. E. BEDFORD                 | CHE/18/2 | Metallic Finishes (Quality)                            | MEE/29                               | Pump Tests  |
| H. J. WHEADON                 | C/37     | Boiler Water Tests                                     | MEE/32                               | Engineering Symbols and Abbreviations                                     |
|                               | C/37/2   | Methods of Sampling Waters Used in Steam Generation    | MEE/34                               | Land Boilers  |
| W. McCLIMONT, B.Sc.           | C/37/3   | Methods of Boiler Water Treatment                      | MEE/34/1                             | Cylindrical Boilers   |
| A. N. SAVAGE                  | C/37/2/2 | Sampling of Steam                                      | MEE/34/2                             | Water Tube Boilers  |
|                               | ELE/1/10 | Marine Motors and Generators                           | MEE/34/6                             | Boiler Mountings and Fittings   |
|                               | ELE/3/2  | Ships' Cables  | MEE/34/8                             | Pipes and Piping  |
|                               | ELE/3/21 | Heat-resisting Cables                                  | MEE/34/9                             | Boiler and Superheater Tubes  |
| S. J. JONES, B.Sc.            | ELE/28   | Electrical Fans  | MEE/34/15                            | Corrugated Furnaces for Cylindrical Boilers                               |
|                               | ELE/28/2 | Methods of Measurement and Test of Fans                | MEE/36                               | Shaft Couplings   |
| T. G. BOYS                    | ELE/32/6 | Radio Interference Suppression in Marine Installations | MEE/39                               | Compressors, Exhausters and Fans  |
| A. N. SAVAGE                  | ELE/51/5 | Marine Transformers                                    | MEE/39/4                             | Fans for General Purposes   |
| E. F. BARTON                  | GLC/4    | Observation and Gauge Glasses for Pressure Vessels     | MEE/63                               | Ships' Side Scuttles and Frames   |
| E. F. J. BAUGH                | GLC/5    | Safety Glass for Marine Purposes                       | MEE/81                               | Valves for Gas, Water and Steam   |
| R. W. CROMARTY                | INE/4/5  | Ships' Refrigeration Thermometers                      | MEE/81/3                             | General Purpose Valves  |
| R. A. COLLACOTT, B.Sc., Ph.D. | INE/6    | Pressure Gauges  | MEE/81/3/1                           | General Purpose Valves (drafting)   |
|                               | INE/8    | Revolution Indicators and Records                      | MEE/84                               | Ignition Equipment for Compression Ignition Engines                       |
| A. J. MANN                    | INE/6/2  | Pressure Gauges (Drafting)                             | MEE/91                               | Jointing Materials and Compounds  |
| W. RENNIE                     | ISE/-    | Iron and Steel Industry Standards                      | MEE/93                               | Lubricating Nipples Used for Grease Lubrication in Machinery and Vehicles |
| E. BURNETT, M.B.E.            | ISE/6    | Steel Castings   | MEE/102                              | Numbering of Cylinders on I.C. Engines                                    |
| JAMES TURNBULL, O.B.E.        | ISE/15   | Iron and Steel for Shipbuilding                        | MEE/119                              | Plain Bearings  |
| W. RENNIE                     | ISE/31   | Wrought Steels   | MEE/123                              | Diesel and Gas Engines  |
|                               | ISE/31/1 | Gear Steels  | MEE/131                              | Dished Ends for Tanks and Pressure Vessels                                |
|                               | ISE/31/2 | Alloy Steels   | NFE/27/3                             | White Metal Bearing Alloys and Tin Base Die Casting Alloys                |
| T. A. RUSH                    | ISE/35/9 | Austenitic Cast Irons                                  | PTC/2                                | Fuel Oils   |
| S. ARCHER, M.Sc.              | MEE/-    | Mechanical Engineering Industry Standards              | UDC/269                              | Universal Decimal Classification Panel                                    |
| CDR. E. H. W. PLATT, R.N.     | MEE/6/19 | Gear Hobbing Machines                                  | USM/2/5                              | Thermodynamics  |
| J. LIDDELL, B.Sc.             | MEE/11/4 | Marine Flanges   |                                      |   |
| F. P. BELL                    | MEE/12   | Chains and Fittings                                    |                                      |   |
| J. CALDERWOOD, M.Sc.          | MEE/12/6 | Anchor Cables  |                                      |   |
| CRD. E. H. W. PLATT, R.N.     | MEE/13   | Engine Testing Fittings                                |                                      |   |
|                               | MEE/17/7 | Gears for Turbines and Similar Drives                  |                                      |   |
| T. D. SHILSTON                | MEE/21   | Air Receivers  |                                      |   |
|                               | MEE/21/1 | Solid Drawn Air Receivers                              |                                      |   |
|                               | MEE/21/2 | Riveted Air Receivers                                  |                                      |   |
|                               | MEE/21/3 | Welded Steel Air Receivers                             |                                      |   |
|                               |          |  | J. E. M. PAYNE                       |   |
|                               |          |  | J. CALDERWOOD, M.Sc.                 |   |
|                               |          |  | J. LIDDELL, B.Sc.                    |   |
|                               |          |  | S. MATHES                            |   |
|                               |          |  | S. J. JONES, B.Sc.                   |   |
|                               |          |  | E. F. J. BAUGH                       |   |
|                               |          |  | A. LOGAN, O.B.E.                     |   |
|                               |          |  | W. O. HAMILTON                       |   |
|                               |          |  | J. CALDERWOOD, M.Sc.                 |   |
|                               |          |  | LIEUT. CDR. A. P. MONK, D.S.C., R.N. |   |
|                               |          |  | G. F. GATWARD                        |   |
|                               |          |  | A. C. HARDY, B.Sc.                   |   |
|                               |          |  | R. W. CROMARTY                       |   |
|                               |          |  | A. LOGAN, O.B.E.                     |   |
|                               |          |  | T. D. SHILSTON                       |   |
|                               |          |  | N. MACLEOD                           |   |
|                               |          |  | R. MUNTON, B.Sc.                     |   |
|                               |          |  | J. STUART ROBINSON, M.A.             |   |
|                               |          |  | C. H. TAYLOR-COOK, B.Sc.(Eng.)       |   |



# Annual Report of the Council for 1960

## INTRODUCTION

To the Institute 1960 is a year of importance in that it underlines that a special effort can produce a special result. Considerable energy has been expended in trying to expand and improve the Institute's services to the members. The success of the endeavour is perhaps best measured in two ways; the first, a membership election total of 1,352, the highest figure ever recorded for one year in the history of the Institute; the second, the maintenance of a surplus of income over expenditure of the same order as last year notwithstanding the cost of financing the extra activities that have taken place. This indicates that these have been met out of the steadily increasing income which has accrued from their successful operation.

The significance of the membership figure is not just that it is such a large one, but mainly that it reverses the progressively dipping trend in the curve for 1958 and 1959. It would have been satisfactory simply to have reversed this trend, particularly as the shipping and marine engineering industries are not out of their difficult period. To have reversed it to the point that it exceeds the highest ever before achieved is particularly gratifying. This does seem to emphasize the importance of making an endeavour to provide a better service for the members.

## EXTENSION OF THE INSTITUTE'S AREAS OF OPERATION

### (a) Canadian Division

It was reported last year that an effort was to be made in Canada to extend the Institute's activities and usefulness in this part of the Commonwealth. This has now taken the form of a Canadian Division and as indicated last year provision was to be made for the representation of the Canadian members' views by the appointment of a Canadian member to the Council. The necessary amendments to the By-Laws were approved by the members at the Annual General Meeting and subsequently Rear-Admiral B. R. Spencer, C.D., R.C.N., Chief of Naval Technical Services, has been appointed as Vice-President for Canada. Mr. T. M. Pallas, P.Eng. (Member) has at the same time been appointed part-time Secretary for Canadian Affairs.

Other important events have taken place during the year. One is the publication of the first issue of the Canadian Supplement which will henceforth be produced quarterly. Another is that the Sections reported as having been formed in Toronto and Montreal have been re-named the Great Lakes and the St. Lawrence-Ottawa Sections respectively. These names reflect more accurately their areas of operation. In addition the Atlantic Section has been formed with headquarters at Halifax, and the British Columbia Section, based on Vancouver with a Sub-Section at Victoria, has been re-formed as two separate Sections. The British Columbia Section has therefore been re-named the Vancouver Section and the Victoria Sub-Section becomes the Vancouver Island Section.

Activity during the year has been very largely directed to the formation of these sections in the way of exploratory meetings, election of committees and the agreeing of procedure. In addition, a number of technical meetings have been held and the Council is particularly happy to record that Mr. H. N. Pemberton (Member of Council), when visiting Canada, was

able to read his paper "Marine Machinery Failures" in Toronto, Vancouver, Victoria, Montreal and Halifax.

The detailed reports of the Sections' activities will appear later in this report.

In conclusion the Council wish it to be known that they are particularly encouraged that the election of members in Canada during 1960 was 64, which compares with an average of ten per annum for the last few years.

### (b) Sections

(i) *Eastern United States of America*: As a consequence of the occasion in November 1959 provided by the then Chairman of Council, Mr. R. Cook, M.Sc., and the Secretary, being in New York for the Joint Meeting with the Society of Naval Architects and Marine Engineers, such interest was shown by the members of the Institute in the metropolitan area of New York in having some organization of the Institute in New York locally that it was agreed to explore the possibility of a section being formed covering such an area. Subsequently it was proposed and agreed that the boundaries should be extended to include all the Eastern States of the United States of America and a section, styled the Eastern United States of America Section, was formed in the early part of the year. The occasion of the British Trade Fair was taken as an opportunity for the President, The Right Honourable The Viscount Simon, C.M.G., to meet the then interim Committee of the section and other members. The first technical meeting was held in October when Mr. Pemberton read his paper "Marine Machinery Failures".

The Council is gratified to note that there has been an increase in membership elections in this area also.

(ii) *North Midlands*: Upon the request of local members the possibility was explored of the formation of a section based on Sheffield covering the North Midlands area of the United Kingdom. An exploratory meeting was held in Sheffield on 9th June as reported in the July issue of the TRANSACTIONS when a section was formed covering the West Riding of Yorkshire, Derbyshire and Nottinghamshire. It will be noted that the area covered by this new section includes a portion of Yorkshire previously included in the Kingston upon Hull and East Midlands Section. This section, which has now been confined to the North and East Ridings of Yorkshire and North Lincolnshire, has been re-named the Kingston upon Hull and Humber Area Section. Such an arrangement is to the benefit of those members who live in the West Riding of Yorkshire where transport facilities are very much better to the North Midlands centre compared with those available previously.

The first meeting of the North Midlands Section was held on 26th October when Mr. W. R. Harvey (Chairman of Council) presented his paper entitled "The Care and Maintenance of High Pressure Watertube Boilers".

(iii) *West Midlands*: The West Midlands Section has had added to its area the county of Leicestershire. The members living there, particularly those in the city of Leicester itself, are now able to take advantage of meetings held in Birmingham.

## Annual Report of the Council for 1960

(iv) *Devon and Cornwall Section:* An exploratory meeting was held in Plymouth on 16th June to see whether it would be beneficial both to the members and to the Institute for a section to be formed covering the counties of Devon and Cornwall. It was unanimously agreed by the members present that such a section should be formed and the first meeting was held on 8th December when Mr. C. C. Pounder (Vice-President, Belfast) presented his paper entitled "Human Problems in Marine Engineering".

### BY-LAWS

The amendments to the By-Laws which were approved by the members at the Annual General Meeting on 26th April have now been approved by the Privy Council.

### QUALIFICATIONS FOR MEMBERSHIP

During the year the Council has considered By-Laws 4 to 10 which stipulate requirements for the various grades of membership. It had been felt that some alterations in detail were required and these amendments will be presented to the members in the form of a Special Resolution for consideration at the Annual General Meeting.

### FINANCE

There is an excess of income over expenditure on the General Revenue Account of £6,468, a decrease of £1,249 over last year.

The increased membership is reflected in an increase of

£2,306 in membership income. The higher cost of producing the TRANSACTIONS and additional expenditure incurred on overseas Sections has increased membership expenditure by £3,772.

Administration expenditure has increased by £504 and establishment expenses by £551.

The surplus on the Memorial Building Revenue Account is £28,087, compared with £28,556 last year. The cost of the Memorial Building, £682,631, includes the final payment to the contractor.

The Council have appointed Lazard Brothers and Co. Ltd., as investment advisers to take advantage of the wider range of investments now allowed under the amendment to By-Law 61.

During the year £54,000 became available for permanent investment and £34,846 had been placed by the end of the financial year, the balance being invested shortly afterwards.

Monies awaiting investment have been held on deposit and on temporary loans to local authorities.

The general policy in compiling the investment portfolio has been the maintenance of capital value rather than high income yield. All the investments are subject to continual review by Lazard Brothers and Co. Ltd.

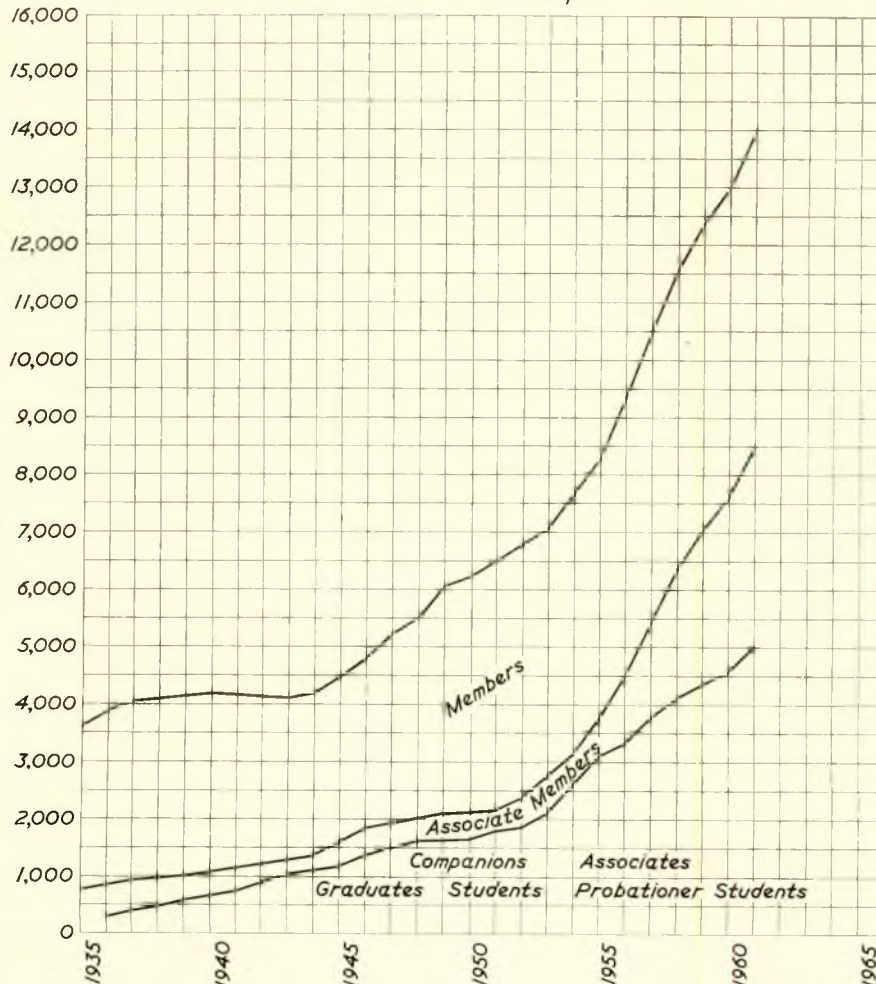
### ROYAL SOCIETY

The Council wishes to report that a congratulatory address was presented to the Royal Society on the occasion of the celebration of its tercentenary.

## SUMMARY OF THE YEAR'S ACTIVITIES

The changes in the membership are shown in the following chart and table:

*Chart of Membership*





Annual Report of the Council for 1960

| GRADE                | Total<br>31st Dec.<br>1959 | Transfer |     | Elected | Died | Resigned | Lapsed | Total<br>31st Dec.<br>1960 | Increase or<br>decrease<br>during 1960 |        |
|----------------------|----------------------------|----------|-----|---------|------|----------|--------|----------------------------|--|--------|
|                      |                            | From     | To  |         |      |          |        |                            |  |        |
| Past Presidents      | 13                         |          |     | 1       |      |          |        | 14                         | +                                      | 1      |
| Honorary Members     | 6                          |          |     |         |      |          |        | 6                          |  | —      |
| Members              | 5,344                      |          | 88  | 235     | 75   | 35       | 33     | 5,524                      | +                                      | 180    |
| Associate Members    | 3,032                      | 49       | 138 | 383     | 3    | 8        | 4      | 3,489                      | +                                      | 457    |
| Companions           | 45                         |          |     | 3       | 2    |          |        | 46                         | +                                      | 1      |
| Associates           | 1,628                      | 61       | 1   | 117     | 3    | 36       | 36     | 1,610                      | —                                      | 18     |
| Graduates            | 859                        | 110      | 34  | 146     | 2    | 11       | 3      | 913                        | +                                      | 54     |
| Students             | 778                        | 25       | 58  | 218     | 1    | 6        | 5      | 1,017                      | +                                      | 239    |
| Probationer Students | 1,292                      | 74       |     | 249     | 1    | 35       |        | 1,431                      | +                                      | 139    |
| Totals               | 12,997                     | 319      | 319 | 1,352   | 87   | 131      | 81     | 14,050                     |  | +1,053 |

COUNCIL

At their meeting on 11th May 1960 the Council elected Mr. W. R. Harvey as Chairman of Council and Mr. B. P. Ingamells, C.B.E., as Vice-Chairman for the 1960/61 session.

CONSTITUTION

Following the Privy Council's approval of the amendments to the By-Laws appointments as indicated below have been made:

*Honorary Vice-Presidents*

Rear-Admiral R. S. Hawkins (for the Royal Navy)  
*vice* Vice-Admiral Sir Norman Dalton, K.C.B., O.B.E., resigned.  
 E. C. Neville (for the Merchant Navy).

*Local Vice-President*

Newcastle: E. C. Cowper.

*Corresponding Members*

St. John's, Newfoundland: H. S. Salt.  
 Sunderland: J. G. Gunn.

In addition the following changes have taken place in existing offices:

*Local Vice-Presidents*

Karachi: Captain S. Z. Hasnain, P.N., *vice* Commodore I. K. Mumtaz, P. N., resigned.  
 Montreal: S. D. Clarke, B.Sc., *vice* A. R. Riddell, appointed Honorary Vice-President.

PAPERS READ

| Date          | Title   | Author  |
|---------------|---|---|
| 12th January  | "Recent Developments in Pump Auxiliaries for Ships"             | T. McAlpine, B.Sc. (Member) and I. S. Paterson, B.Sc.   |
| 26th January  | * "Control and Instrumentation of Marine Reactors"              | R. Anscorn, O.B.E., and F. W. Hutber, B.Sc.   |
| 9th February  | "Some Crankshaft Failures: Investigations, Causes and Remedies" | R. Atkinson, D.S.C., R.D., B.Sc.(Eng.) (Member) and P. Jackson, M.Sc.(Eng.) (Member of Council) |
| 23rd February | "Corrosion and Fires in Marine Boiler Air Pre-heaters"          | A. Bell, B.Sc. (Associate Member)   |
| 8th March     | "Distillation for Marine Purposes"                              | Cdr. R. G. J. Peaver, R.N.  |
| 29th March    | "Marine Machinery Failures"                                     | H. N. Pemberton (Member of Council)   |

\* Read before a meeting of the Joint Panel on Nuclear Marine Propulsion.

† Read before a Joint Meeting of the Institute and the Royal Institution of Naval Architects.

|               |  |  |
|---------------|--|--|
| 12th April    | "Pollution of the Sea by Oil"  | L. R. B. Shackleton, B.Sc., Ph.D., E. Douglas, B.Sc., and T. Walsh       |
| 10th May      | † "Gas Concentrations in the Cargo Tanks of Crude Oil Carriers"              | A. Logan, O.B.E. (Vice-President, I.Mar.E.), and J. W. Drinkwater, Ph.D. |
| 11th October  | "Service Results with the Mitsubishi Nagasaki Diesel Engine"                 | H. Fujita (Member)   |
| 25th October  | * "Observations on the Design and Construction of the n.s. <i>Savannah</i> " | J. A. Dodd, B.Eng., and S. Macdonald, B.Sc.                              |
| 8th November  | "General Developments in Ceramics for Marine Engineering"                    | F. H. Aldred, B.A., and N. W. Hinchliffe, B.Sc.                          |
| 22nd November | "The Automatic Control of Naval Boilers"                                     | Cdr. J. P. H. Brown, R.N. (Member) and Lt. Cdr. W. J. R. Thomas, R.N.    |
| 13th December | "Details and Operating Data of Recent A.C. Installations"                    | A. N. Savage (Member)  |

PAPERS PUBLISHED IN THE TRANSACTIONS

| Issue    | Title   | Author  |
|----------|---|---|
| January  | "Centrifugal Purification of Oils for Marine Service"   | M. E. O'Keefe Trowbridge, B.Sc., A.C.G.I.   |
| February | "The Design of a Resonance Changer to Overcome Excessive Axial Vibration of Propeller Shafting" | Cdr. A. J. H. Goodwin, O.B.E., R.N. (Member)  |
| March    | † "Human Problems in Marine Engineering"  | C. C. Pounder (Vice-President, I.Mar.E.)  |
| April    | † "Co-ordinated Alignment of Line Shaft, Propulsion Gear and Turbines"                          | H. C. Andersen, B.S., and J. J. Zrodowski, B.S.   |
| May      | "Development of the Göta-verken Diesel Engine"  | R. A. Lindén (Member)   |
| June     | "Recent Developments in Pump Auxiliaries for Ships"   | T. McAlpine, B.Sc. (Member) and I. S. Paterson, B.Sc.   |
| July     | "Some Crankshaft Failures: Investigations, Causes and Remedies"                                 | R. Atkinson, D.S.C., R.D., B.Sc.(Eng.) (Member) and P. Jackson, M.Sc.(Eng.) (Member of Council) |
| August   | "Corrosion and Fires in Marine Boiler Air Pre-heaters"  | A. Bell, B.Sc. (Associate Member)   |

† Read before a Joint Meeting of the Institute and the Society of Naval Architects and Marine Engineers.

## Annual Report of the Council for 1960

|           |   |   |
|-----------|---|---|
| September | "Distillation for Marine Purposes"                              | Cdr. R. G. Peaver, R.N.   |
| October   | "Marine Machinery Failures"                                     | H. N. Pemberton (Member of Council)                                     |
| November  | "Pollution of the Sea by Oil"                                   | L. R. B. Shackleton, B.Sc., Ph.D., E. Douglas, B.Sc., and T. Walsh      |
| December  | † "Gas Concentrations in the Cargo Tanks of Crude Oil Carriers" | A. Logan, O.B.E. (Vice-President, I.Mar.E.) and J. W. Drinkwater, Ph.D. |

26th November—Visit to m.v. *City of Port Elizabeth*.  
 5th December—Lecture on "Marine Steam Boilers" by Lt. Cdr. A. P. Monk, D.S.C., R.N. (Member).  
 10th December—Visit to m.v. *Ruahine*.

### PAPERS AND ARTICLES PUBLISHED IN THE STUDENT TRANSACTIONS

| Issue     | Title  |
|-----------|--|
| January   | "The Care and Maintenance of Watertube Boilers" Part II, by W. R. Harvey (Member of Council).  |
| February  | "The Layout and Operation of Marine Steam Turbine Machinery" by D. M. V. Parkinson, M.V.O. (Member).   |
| March     | "Watchkeeping and Maintenance on a Motorship" by S. Speed (Member).  |
| April     | "Closed Circuit Feed Systems for Marine Installations" by T. O. Leith (Graduate).  |
| May       | Research Establishments:   |
| June      | 1. The Admiralty Engineering Laboratory, West Drayton.   |
|           | 2. The Parsons and Marine Engineering Turbine Research and Development Association.  |
|           | 3. The British Shipbuilding Research Association.  |
| June      | Student Discussion on "The Day to Day Management of a Ship and Its Machinery".   |
| July      | "Grain by Tanker" by J. H. Clarke (Member). Recommended Methods for the Application of Mouldable and Castable Refractories: Report of the Marine Boiler Refractories Committee.  |
| August    | "Marine Centrifugal Pumps" by R. G. Sathaye (Associate Member).  |
| September | "Non-Destructive Testing for Marine Equipment" by W. E. Schall, B.Sc. (reprinted from Reed's Marine Equipment News, Vol. 4, No. 2).<br>"Brittleness in Metals" (reprinted from "Vulcan", Vol. XV, No. 1).<br>"The Nature of Vibration" (reprinted from 100A1, a Bulletin published by Lloyd's Register of Shipping). |
| October   | "Corrosion and Fires in Marine Boiler Air Preheaters" by A. Bell, B.Sc. (Associate Member).  |
| November  | **"Post-war Progress in Marine Engineering" by S. Kasthuri (Member).   |
| December  | "Marine Machinery Failures" by H. N. Pemberton (Member of Council).  |

### PAPERS PUBLISHED IN THE SUPPLEMENT TO THE TRANSACTIONS

| Issue     | Title   | Author  |
|-----------|---|---|
| May       | "Grain by Tanker"   | J. H. Clarke (Member)                         |
| September | § "Marine A.C. Distribution Equipment with Reference to H.R.C. Fuses"   | M. J. Bolton, A.C.T. (Liverpool) (Associate)  |
| October   | "Problems Associated with the Use of Bunker C Fuel"   | J. J. McMullen, B.S., M.S., Dr. Ing. (Member) |
| November  | ¶ "Generation of Power from Nuclear Energy and Its Application to Ship Propulsion" (Parts I and II, Part III being published in the January 1961 issue of the Supplement) | S. Kasthuri (Member)                          |

### JOURNAL OF THE JOINT PANEL ON NUCLEAR MARINE PROPULSION

Two issues of the Journal have been published and contained the following papers:

- "The Prospect for a Nuclear Powered Dry Cargo Liner with Particular Reference to the Organic Moderated Reactor" by E. C. B. Corlett, M.A., Ph.D., and E. P. Hawthorne, B.A.
- "Some Aspects of Marine Reactor Safety" by K. Maddocks, B.Sc.(Tech.), A.M.C.T.
- "The Control and Instrumentation of a Marine Reactor" by R. Anscombe, O.B.E., and F. Hutber, B.Sc.
- "Nuclear Power for Ship Propulsion" by J. E. Richards, Ph.D., Wh.Sc.

In addition the Journal contained Nuclear Engineering Abstracts from the technical press.

### STUDENT ACTIVITIES

The following events have taken place during the year:

- 18th January—Technical film programme.
- 30th January—Visit to t.s. *Kenya Castle*.
- 1st February—Lecture on "The Instrumentation of Marine Machinery" by F. P. Rout.
- 13th February—Visit to s.s. *City of Hull*.
- 7th March—Lecture on "Refrigerating Machinery and Its Applications in Ships" by Lt. Cdr. M. B. F. Ranken, R.N. (Member)
- 12th March—Visit to m.v. *Rangitiki*.
- 25th March—Social evening—film programme.
- 31st March—Lloyd's Register Lecture for Students: "The Evolution of the Design of Ships" by J. Turnbull, O.B.E. (Vice-President), followed by a visit to the National Physical Laboratory at Teddington and Feltham on the next day.
- 3rd October—Introductory talk by W. Girvan (Member) and technical film programme.
- 7th November—Lecture on "The Construction and General Layout of Modern Ships" by R. S. Hogg (Member).

§ Read before a meeting of the Merseyside and North Western Section.

|| Read before a meeting of the New York Metropolitan Section of the Society of Naval Architects and Marine Engineers.

¶ Read before a Joint Meeting of the Bombay Section of the Institute and the Institution of Marine Technologists.

### JUNIOR LECTURES

The following lectures were arranged in addition to those reported by the individual Sections of the Institute:

- 13th January at Borough Polytechnic. "Gas Turbines" by J. A. Barnes.
- 10th February at Kingston Technical College. "The Layout and Operation of Marine Steam Turbine Machinery" by D. M. V. Parkinson, M.V.O. (Member).
- 7th March at Paddington Technical College. "Gas Turbines" by N. M. Clark, B.Sc.
- 6th October at Poplar Technical College. "Safety at Sea" by S. Hogg, O.B.E. (Member).
- 8th November at East Ham Technical College. "Marine Electrical Engineering" by D. Gray, B.Sc. (Member).
- 9th November at South East Essex Technical College and School of Art. "The Peaceful Uses of Atomic Energy" by Dr. L. Bovey.
- 10th November at Hendon Technical College. "The Layout and Operation of Marine Steam Turbine Machinery" by D. M. V. Parkinson, M.V.O. (Member).
- 15th November at Falmouth Technical College. "Modern Marine Watertube Boilers" by Lt. Cdr. A. P. Monk, D.S.C., R.N. (Member).

### EDUCATION GROUP

The Annual General Meeting of the Group was held on

\*\* Read before the Institution of Engineers (India), Poona Centre.



## Annual Report of the Council for 1960

Tuesday, 15th March 1960, and was followed by a discussion, introduced by Cdr. A. F. Smith, R.N. (Member), on "What the Institute Should Do in Relation to Education". This discussion was published in the September issue of the TRANSACTIONS.

### INSTITUTE AWARDS

*The Denny Gold Medal* has been awarded to H. N. Pemberton (Member of Council) for his paper entitled "Marine Machinery Failures" read before the Institute on 29th March 1960.

*The Institute Silver Medal* has been awarded to Commander R. G. J. Peaver, R.N., for his paper entitled "Distillation for Marine Purposes" read before the Institute on 8th March 1960.

*Extra First Class Engineer's Certificate Examination—Institute Award.* The Institute Silver Medal for the candidate obtaining the highest marks in the Ministry of Transport's examinations in 1960 has been awarded, on the recommendation of the Chief Examiner of Engineers, to I. Thorp (Associate Member).

*The W. W. Marriner Memorial Prize*, value £5, for the best Engineering Knowledge script written by a candidate in the Ministry of Transport's examination for the Second Class Engineer's Certificate of Competency has been awarded, on the recommendation of the Chief Examiner of Engineers, to P. M. Low (Graduate).

*The Yorkshire Award for 1959/60*, value £40, has been awarded to W. McClimont, B.Sc. (Member), H. M. Richardson, B.Sc., and B. Taylor, B.Sc.(Eng.) (Member) for their paper entitled "Boiler Refractories: Operating Temperatures and Recent Developments in Construction" read before the Institute on 14th April 1959.

*The Frank Roberts Award*, consisting of books or instruments to the value of £7 10s., awarded annually to the Student or Probationer Student member of the Institute gaining the highest aggregate marks in the courses and examinations in Phase III of the alternative scheme for the training of seagoing engineers has been won by P. J. Hambling (Student).

### *Institute Awards for the Ordinary National Diploma Course*

The Institute's awards, value two and three guineas each respectively, for the best first year and the best second year students taking the Ordinary National Diploma Course under the alternative scheme for the training of seagoing engineers were awarded as follows:

- J. H. Parry (first year) and J. W. Taylor (second year), Birkenhead Technical College.
- M. J. Bullock (first year) and J. A. Swan (second year), Bolton Technical College.
- R. Ellison (second year), Gateshead Technical College.
- M. E. G. Hadlow (first year) and M. P. Barden (second year), Hendon Technical College.
- M. A. Ward (first year) and P. E. Lancaster (second year), Kingston upon Thames Technical College.
- H. Merryweather (first year) and D. A. Fox (second year), Kingston upon Hull College of Technology.
- C. D. G. Jenkins (first year) and R. A. Vaughan (second year), Newport and Monmouthshire Technical College.
- E. Bowes (first year) and A. J. A. A. Spears (second year), Plymouth and Devonport Technical College.
- J. King (first year) and R. G. Low (second year), Poplar Technical College.
- G. I. Gardner (first year) and R. B. Thorburn (second year), Riversdale Technical College, Liverpool.

- R. I. Shore (first year) and P. J. Dailly (second year), South East London Technical College.
- D. J. Steel (second year), South Shields Marine and Technical College.
- J. Martin (first year) and B. D. Edgar (second year), Stow College of Engineering, Glasgow.
- D. L. Davies (first year) and K. E. Alderwick (second year), Swansea Technical College.
- D. Sherratt (first year) and R. F. Nicholson (second year), Willesden Technical College.

### *Institute Prizes for the Study of Heat Engines*

The Institute's Annual Prizes, value two guineas each, for students at technical colleges and schools in marine centres who accomplish the best year's work in the subject of heat engines, were awarded as follows:

- W. S. Dougherty, Belfast College of Technology.
- D. G. Smith, Birkenhead Technical College.
- N. Hunt, Bootle Municipal Technical College.
- J. Sweeting, Central College of Further Education, Barrow-in-Furness.
- D. Anderson, College of Technology, Kingston upon Hull.
- J. A. Venis, Constantine Technical College, Middlesbrough.
- C. B. Hancock, Cornwall Technical College.
- C. F. McLeod, Dundee Technical College.
- D. R. Pedley, Falmouth Technical College.
- E. M. Errington, Gateshead Technical College.
- D. J. Watt, Greenock Technical Further Education Centre.
- J. T. Lewis, Plymouth and Devonport Technical College.
- N. P. Humphris, The Polytechnic, Regent Street, London, W.1.
- D. A. Preou, Poplar Technical College.
- K. Hayter, Riversdale Technical College, Liverpool.
- R. D. Burr, Robert Gordon's Technical College, Aberdeen.
- G. R. McPate, Rutherford College of Technology.
- R. Burnstone, Southampton Technical College.
- K. G. W. Thomas, South East London Technical College.
- E. Bellas, South Shields Marine and Technical College.
- J. M. Evans, South West Essex Technical College and School of Art.
- M. C. Jepps, Stow College of Engineering.
- L. M. Long, Swansea Technical College.
- A. J. Boyle, West Ham College of Technology.
- J. Clyde, West Hartlepool Technical College.
- J. F. Graham, West Park College of Further Education, Sunderland.
- O. J. H. Hulf, Woolwich Polytechnic.

### *Thames Nautical Training College—H.M.S. Worcester*

The Institute's annual prize, value two guineas, for excellence in marine engineering, was awarded to Cadet P. S. Austin.

### INSTITUTE EXAMINATIONS

*Associate Membership Examination.* Eighteen candidates entered for the Part I Examination and five passed. Five candidates entered for the Part II Examination and two passed. One candidate entered for and was successful in the Part III Examination.

*Common Preliminary Examination.* Fifteen candidates entered for this examination and eight passed. Of the remainder, four passed in two or more subjects and three failed completely.

*National Certificates and Diplomas in Mechanical Engineering.* The following have been issued and signed by the President during 1960: Ordinary National Certificates, 698; Endorsements, 136; Higher National Certificates, 225; Endorsements, 16; Higher National Diplomas, 31; Ordinary National Diplomas—alternative entry for seagoing engineers, 234.





GENERAL REVENUE ACCOUNT

YEAR ENDED 31st DECEMBER 1960

| 1959                          |                |  | £     | £      | £              |
|-------------------------------|----------------|--|-------|--------|----------------|
| £                             | £              |  |       |        |                |
| <b>MEMBERSHIP EXPENDITURE</b> |                |  |       |        |                |
| 4,189                         |                | Transactions (Note 10) ... ..                                  |       | 7,563  |                |
| 1,137                         |                | Year Book ... ..   |       | —      |                |
|                               |                | Journal of the Joint Panel on Nuclear Marine Propulsion ... .. |       | 426    |                |
| 272                           |                | Canadian Division Expenses ... ..                              | 1,472 |        |                |
| —                             |                | Overseas Sections Expenses ... ..                              | 349   |        |                |
| 127                           |                | Home Sections Expenses ... ..                                  | 1,158 |        |                |
| 871                           |                | Travelling to Sections ... ..                                  | 199   |        |                |
| 225                           |                |  |       |        |                |
|                               |                | Library Books and Periodicals ... ..                           |       | 3,178  |                |
| 404                           |                | Lecture Expenses ... ..  | 156   | 630    |                |
| 80                            |                | Junior Lecture Expenses ... ..                                 | 17    |        |                |
| 55                            |                |  |       |        | 173            |
|                               |                | Examination Expenses   |       |        |                |
|                               |                | Common Preliminary Examination ... ..                          | 55    |        |                |
| 60                            |                | Associate Membership ... ..                                    | 2     |        |                |
| 67                            |                |  |       | 57     |                |
|                               |                | Engrossing Certificates ... ..                                 |       | 64     |                |
| 106                           |                | Prizes ... ..  |       | 183    |                |
| 138                           |                | Secretary's Canadian Visit ... ..                              |       | 458    |                |
| 1,229                         |                |  |       |        | 12,732         |
|                               | 8,960          |  |       |        |                |
| <b>ESTABLISHMENT</b>          |                |  |       |        |                |
| 3,871                         |                | Housekeeping and Cleaning ... ..                               |       | 4,064  |                |
| 1,478                         |                | Fuel and Lighting ... ..                                       |       | 1,446  |                |
| 150                           |                | Insurance ... ..   |       | 144    |                |
| 584                           |                | Repairs Appropriation (Note 1) ... ..                          |       | 1,000  |                |
|                               |                | Depreciation of Furniture and Fittings ... ..                  |       | 1,418  |                |
| 1,438                         |                |  |       |        | 8,072          |
|                               | 7,521          |  |       |        |                |
| <b>ADMINISTRATION</b>         |                |  |       |        |                |
| 15,252                        |                | Salaries and Pensions ... ..                                   |       | 15,711 |                |
| 2,744                         |                | Stationery and General Printing ... ..                         |       | 2,822  |                |
| 1,452                         |                | Postage and Telephone ... ..                                   |       | 1,334  |                |
| 133                           |                | Maintenance of Equipment ... ..                                |       | 250    |                |
| 500                           |                | Audit Fee ... ..   |       | 500    |                |
| —                             |                | Bad Debts ... ..   |       | 41     |                |
| 625                           |                | Sundries ... ..  |       | 552    |                |
|                               | 20,706         |  |       |        | 21,210         |
| <b>SURPLUS FOR THE YEAR</b>   |                |  |       |        |                |
|                               | 7,717          | carried down ... ..  |       |        | 6,468          |
|                               | <u>£44,904</u> |  |       |        | <u>£48,482</u> |
| <br>                          |                |  |       |        |                |
| 1,000                         |                | Appropriation to Conference Expenses Reserve ... ..            |       | —      |                |
|                               |                | Provision for Depreciation of Investments ... ..               |       | 3,000  |                |
|                               |                | Balance at 31st December 1960 carried forward ... ..           |       |        | 83,921         |
| 80,173                        |                |  |       |        | 83,921         |
|                               | <u>£81,173</u> |  |       |        | <u>£86,921</u> |

| 1959                                   |                |   | £ | £              |
|--|----------------|---|---|----------------|
| £                                      | £              |   |   |                |
| <b>MEMBERSHIP INCOME</b>               |                |   |   |                |
| 1,438                                  |                | Entrance Fees ... ..  |   | 1,613          |
| 40,231                                 |                | Subscriptions (Note 11) ... ..                                    |   | 42,362         |
|  | 41,669         |   |   | 43,975         |
| <b>INTEREST ON INVESTMENTS</b>         |                |   |   |                |
| 1,958                                  |                |   |   | 3,283          |
| 50                                     |                | Less: Credited to Awards ... ..                                   |   | 153            |
|  | 1,908          |   |   | 3,130          |
| <b>NET RENT RECEIVABLE</b>             |                |   |   |                |
| 103                                    |                | Freehold Property, Shenfield ... ..                               |   | 98             |
| <b>INSURANCE COMMISSION</b>            |                |   |   |                |
| 142                                    |                |   |   | 154            |
| <b>PROFIT ON SALES OF PUBLICATIONS</b> |                |   |   |                |
|  |                | "Running and Maintenance of Marine Machinery" ... ..              |   | 262            |
| 326                                    |                | "Electricity applied to Marine Engineering" ... ..                |   | 250            |
| 297                                    |                | "Naval Architecture and Ship Construction" ... ..                 |   | 324            |
| 375                                    |                | Reprints of Papers etc. ... ..                                    |   | 289            |
| 84                                     |                |   |   |                |
|  | 1,082          |   |   | 1,125          |
| <br>                                   |                |   |   |                |
|  |                | Balance at 31st December 1959 brought forward ... ..              |   | 80,173         |
| 73,156                                 |                | Surplus for the year brought down ... ..                          |   | 6,468          |
| 7,717                                  |                | Provision for Depreciation of Investments not now required ... .. |   | —              |
| 300                                    |                | Life Subscriptions received during the year ... ..                |   | 280            |
|  | <u>£81,173</u> |   |   | <u>£86,921</u> |

# THE MEMORIAL BUILDING REVENUE ACCOUNT

YEAR ENDED 31st DECEMBER 1960

| 1959                               | £ | £ | £       | £ |
|------------------------------------|---|---|---------|---|
| <b>STANDING CHARGES</b>            |   |   |         |   |
| 10,000                             |   |   | 10,000  |   |
| 6,823                              |   |   | 7,024   |   |
| 520                                |   |   | 535     |   |
| 1,366                              |   |   | 1,547   |   |
| 18,709                             |   |   | 19,106  |   |
| <b>ADMINISTRATION AND SERVICES</b> |   |   |         |   |
| 4,632                              |   |   | 5,352   |   |
| 1,730                              |   |   | 1,897   |   |
| 1,692                              |   |   | 1,889   |   |
| 3,000                              |   |   | 3,000   |   |
| 2,886                              |   |   | 2,874   |   |
| 568                                |   |   | 613     |   |
| 14,508                             |   |   | 15,625  |   |
| 22,712                             |   |   | 21,875  |   |
| 28,556                             |   |   | 28,087  |   |
| £84,485                            |   |   | £84,693 |   |
| <b>Appropriations</b>              |   |   |         |   |
| 15,000                             |   |   | 15,000  |   |
| 1,000                              |   |   | 1,000   |   |
| 16,000                             |   |   | 19,000  |   |
| 12,556                             |   |   | 21,643  |   |
| £28,556                            |   |   | £40,643 |   |

| 1959   | £ | £ | £       | £      |
|--|---|---|---------|--------|
| 76,577   |   |   | 76,648  |        |
| 6,985  |   |   | 6,976   |        |
| 83,562   |   |   | 83,624  |        |
| <b>GARAGE</b>  |   |   |         |        |
| 1,550  |   |   | 1,635   |        |
|  |   |   | 276     |        |
|  |   |   | 140     |        |
|  |   |   | 26      |        |
|  |   |   | 124     |        |
| 627  |   |   | 566     |        |
| 923  |   |   | 1,069   |        |
| £84,485  |   |   | £84,693 |        |
| <b>Balance at 31st December 1959 brought forward</b> |   |   |         |        |
|  |   |   |         | 12,556 |
| <b>Surplus for the year brought down</b>             |   |   |         |        |
| 28,556   |   |   |         | 28,087 |
| £28,556  |   |   | £40,643 |        |

Annual Report of the Council for 1960

## NOTES ON ACCOUNTS

|   | £     | £             |
|---|-------|---------------|
| <b>1. Institute Premises Repairs Equalisation Account</b> |       |               |
| Appropriation from General Revenue Account                | 1,000 |               |
| Less: Expenditure during the year                         | 457   |               |
|   |       | <b>£543</b>   |
| <b>2. Building Repairs Equalisation Account</b>           |       |               |
| Balance at 31st December 1959                             | 3,606 |               |
| Appropriation from Memorial Building Revenue Account      | 3,000 |               |
|   |       | 6,606         |
| Less: Expenditure during the year                         | 3,917 |               |
|   |       | <b>£2,689</b> |

|  |     |     |               |
|--|-----|-----|---------------|
| <b>3. Conference Expenses</b>                            |     |     |               |
| Balance at 31st December, 1959                           | ... | ... | 396           |
| Appropriation from The Memorial Building Revenue Account | ... | ... | 3,000         |
|  |     |     | <b>£3,396</b> |
| <b>4. Social Events Account</b>                          |     |     |               |
| Balance in Hand at 31st December 1959                    |     |     | 3,201         |
| <i>Add: Profits</i>                                      |     |     |               |
| Dinner   | ... | ... | 657           |
| Conversaziones   | ... | ... | 14            |
|  |     |     | <b>671</b>    |
|  |     |     | <b>3,872</b>  |
| <i>Less: Losses</i>                                      |     |     |               |
| Summer Golf Meeting                                      | ... | ... | 12            |
| Autumn Golf Meeting                                      | ... | ... | 1             |
|  |     |     | <b>13</b>     |
|  |     |     | <b>£3,859</b> |

**5. Awards and Prize Funds**

|                                 | <i>Capital Accounts</i> | <i>Income Accounts for 1960</i> |               |               | <i>Balance 31.12.60</i> |
|---------------------------------|-------------------------|---------------------------------|---------------|---------------|-------------------------|
|                                 |                         | <i>Balance 31.12.59</i>         | <i>Income</i> | <i>Awards</i> |                         |
| <b>General</b>                  | £                       | £                               | £             | £             | £                       |
| Akroyd Stuart Award             | 700                     | 280                             | 32            | 50            | 262                     |
| W. W. Marriner Prize            | 230                     | 10                              | 8             | 5             | 13                      |
| Adam Girdwood Award             | 15                      | 6                               | 1             | —             | 7                       |
| Denny Gold Medal                | 250                     | 95                              | 10            | 6             | 99                      |
| Denny Award                     | 100                     | 57                              | 11            | 12            | 56                      |
| Stephen Legacy                  | 100                     |                                 |               |               |                         |
| Lord Inverforth Award           | 100                     |                                 |               |               |                         |
| John I. Jacobs Award            | 119                     | 108                             | 11            | 10            | 109                     |
| W. Murdoch Legacy               | 62                      |                                 |               |               |                         |
| D. F. Robertson Award           | 100                     | —                               | 15            | 15            | —                       |
| Frank Roberts Award             | 123                     |                                 |               |               |                         |
| <b>Administered as Trustees</b> |                         |                                 |               |               |                         |
| William Theodore Barker Award   | 3,000                   | 18                              | 120           | —             | 138                     |
|                                 | <b>£4,899</b>           | <b>£574</b>                     | <b>£208</b>   | <b>£98</b>    | <b>£684</b>             |

**6. The Memorial Building**

|  | <i>To 31.12.59</i> | <i>Year to Date</i> | <i>Total to 31.12.60</i> |
|--|--------------------|---------------------|--------------------------|
|  | £                  | £                   | £                        |
| <b>Cost of Construction to date</b>                  |                    |                     |                          |
| Foundations and Frame                                | 70,709             | —                   | 70,709                   |
| Building and Equipment                               | 607,676            | 1,674               | 609,350                  |
| Sundry Building Costs                                | 1,243              | —                   | 1,243                    |
| Architects Fees                                      | 41,521             | 1,000               | 42,521                   |
| Surveyors and Agents Fees                            | 10,717             | —                   | 10,717                   |
| Solicitors Fees and Stamp Duty                       | 6,966              | —                   | 6,966                    |
|  | 738,832            | 2,674               | 741,506                  |
| <i>Less: Compensations and Tenants Contributions</i> | 57,256             | 1,619               | 58,875                   |
|  | <b>681,576</b>     | <b>1,055</b>        | <b>682,631</b>           |

Note: A liability exists to improve the ventilation for a tenant.

## 7. Investments—General

## Quoted Securities at Cost

## Government Securities

|   | £      |
|---|--------|
| £2,834 3% Savings Bonds 1955/65 ... ..                      | 2,817  |
| £9,000 3% Savings Bonds 1960/70 ... ..                      | 9,000  |
| £5,500 3% Savings Bonds 1965/75 ... ..                      | 4,705  |
| £6,000 3% British Transport Guaranteed Stock 1978/88 ... .. | 5,918  |
| £500 Australia 3¼% Registered Stock 1956/61 ... ..          | 491    |
| £2,500 3½% Conversion Loan ... ..                           | 2,668  |
| £800 3% Treasury Stock ... ..                               | 704    |
| £13,200 3½% War Loan ... ..                                 | 12,636 |
|   | <hr/>  |
|   | 38,939 |

## Banks

|  |       |
|--|-------|
| 1,000 Lloyds Bank Ltd. £1 Ordinary Shares ... .. | 3,415 |
|--|-------|

## Breweries

|   |       |
|---|-------|
| 1,500 J. & R. Tennent Ltd. 5/- Ordinary Stock Shares ... .. | 2,870 |
|---|-------|

## Commercial and Industrial

|   |        |
|---|--------|
| 1,500 Beecham Group Ltd. 5/- Ordinary Shares ... ..                         | 3,267  |
| £1,427 Bowater Paper Corporation Ltd. Ordinary Stock ... ..                 | 3,910  |
| 1,500 Gallaher Ltd. 10/- Ordinary Stock Units ... ..                        | 2,766  |
| £600 Guest Keen & Nettlefolds Ltd. Ordinary Stock ... ..                    | 2,917  |
| 100 Guest Keen & Nettlefolds Ltd. £1 New Ordinary Shares (30/- paid) ... .. | 150    |
| £1,000 Imperial Chemical Industries Ltd. Ordinary Stock ... ..              | 2,838  |
| 4,000 News of the World Ltd. 5/- non-voting Ordinary Shares ... ..          | 2,892  |
| 750 Reckitt & Colman Holdings Ltd. £1 Ordinary Shares ... ..                | 3,210  |
|   | <hr/>  |
|   | 21,950 |

## Insurance

|   |       |
|---|-------|
| 700 Northern & Employers Insurance Co. Ltd. £1 Ordinary Shares ... .. | 3,571 |
|---|-------|

## Iron, Coal and Steel

|  |       |
|--|-------|
| 750 Colvilles Ltd. £1 Ordinary Shares ... .. | 3,040 |
|--|-------|

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**£73,785**

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(Market Value at 31st December 1960, £61,454)

N.B. Unpaid Calls on Guest Keen & Nettlefolds Ltd. New Ordinary Shares amount to £200.

## 8. Sinking Fund Insurance Policies

## Single Premiums to:—

|   | £       | £     |
|---|---------|-------|
| Royal Exchange Assurance Company to secure the payment on |         |       |
| 1st November 2011 of ... ..                               | 10,000  |       |
| 10th June 2012 of ... ..                                  | 10,000  |       |
| Canada Life Assurance Company to secure the payment on    |         |       |
| 10th June 2012 of ... ..                                  | 1,000   |       |
| Atlas Assurance Company to secure the payment on          |         |       |
| 10th June 2012 of ... ..                                  | 1,000   |       |
| Sun Life Assurance Society to secure the payment on       |         |       |
| 10th June 2012 of ... ..                                  | 1,000   |       |
|   | <hr/>   | <hr/> |
|   | £23,000 |       |

(The present surrender value of the above policies is £4,267)



9. Investments—Awards

|   |        |               |
|---|--------|---------------|
| Akroyd Stuart Award                             |        | £             |
| £915 3½% Conversion Loan at Cost                | ... .. | 698           |
| John I. Jacobs Award                            |        |               |
| £200 2½% Consols as valued at 31st January 1919 | ... .. | 119           |
| Lord Inverforth Award                           |        |               |
| £100 3½% War Loan at par                        | ... .. | 100           |
| W. W. Marriner Prize                            |        |               |
| £166 3% Savings Bonds 1955/65 at cost           | ... .. | 166           |
|   |        | <b>£1,083</b> |

10. Transactions

|        |        |                                     |        |        |        |        |        |        |        |  |
|--------|--------|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--|
| 1959   |        |                                     |        |        |        |        |        |        |        |  |
| £      | £      |                                     |        |        |        |        |        | £      | £      |  |
| 20,311 |        | Composition, Printing, Paper, etc.  | ... .. | ... .. | ... .. | ... .. | ... .. | 22,340 |        |  |
| 2,328  |        | Reporting, Abstracting and Salaries | ... .. | ... .. | ... .. | ... .. | ... .. | 2,928  |        |  |
| 6,069  |        | Wrapping and Postage                | ... .. | ... .. | ... .. | ... .. | ... .. | 6,626  |        |  |
|        | 28,708 |                                     |        |        |        |        |        |        | 31,894 |  |
| 23,306 |        | Less: Advertising Revenue           | ... .. | ... .. | ... .. | ... .. | ... .. | 23,864 |        |  |
| 2,509  |        | Sales                               | ... .. | ... .. | ... .. | ... .. | ... .. | 2,596  |        |  |
| 71     |        | Profit on Bound Volumes             | ... .. | ... .. | ... .. | ... .. | ... .. | 39     |        |  |
|        | 25,886 |                                     |        |        |        |        |        |        | 26,499 |  |
|        | 2,822  |                                     |        |        |        |        |        |        | 5,395  |  |
|        |        | Canadian Supplement                 | ... .. | ... .. | ... .. | ... .. | ... .. | 815    |        |  |
|        |        | Less: Advertising Revenue           | ... .. | ... .. | ... .. | ... .. | ... .. | 108    |        |  |
|        |        |                                     |        |        |        |        |        |        | 707    |  |
| 1,438  |        | Student Transactions                | ... .. | ... .. | ... .. | ... .. | ... .. | 1,574  |        |  |
| 71     |        | Less: Sales                         | ... .. | ... .. | ... .. | ... .. | ... .. | 113    |        |  |
|        | 1,367  |                                     |        |        |        |        |        |        | 1,461  |  |
|        | £4,189 |                                     |        |        |        |        |        |        | £7,563 |  |

11. Subscriptions

|        |                      |        |        |        |        |        |        |          |           |         |
|--------|----------------------|--------|--------|--------|--------|--------|--------|----------|-----------|---------|
| 1959   |                      |        |        |        |        |        |        |          |           |         |
| £      |                      |        |        |        |        |        |        | Received | Unexpired | Net     |
|        |                      |        |        |        |        |        |        | £        | £         | £       |
| 20,488 | Members              | ... .. | ... .. | ... .. | ... .. | ... .. | ... .. | 21,829   | 706       | 21,123  |
| 10,048 | Associate Members    | ... .. | ... .. | ... .. | ... .. | ... .. | ... .. | 12,032   | 612       | 11,420  |
| 5,711  | Associates           | ... .. | ... .. | ... .. | ... .. | ... .. | ... .. | 5,752    | 179       | 5,573   |
| 2,587  | Graduates            | ... .. | ... .. | ... .. | ... .. | ... .. | ... .. | 2,783    | 125       | 2,658   |
| 837    | Students             | ... .. | ... .. | ... .. | ... .. | ... .. | ... .. | 1,035    | 73        | 962     |
| 404    | Probationer Students | ... .. | ... .. | ... .. | ... .. | ... .. | ... .. | 582      | 76        | 506     |
| 156    | Companions           | ... .. | ... .. | ... .. | ... .. | ... .. | ... .. | 139      | 19        | 120     |
|        |                      |        |        |        |        |        |        |          |           |         |
|        | £40,231              |        |        |        |        |        |        | £44,152  | £1,790    | £42,362 |

## Annual Report of the Council for 1960

### INSTITUTE PUBLICATIONS

The Institute's publications, namely, "The Running and Maintenance of Marine Machinery", "Electricity Applied to Marine Engineering" and "Naval Architecture and Ship Construction", have continued in steady demand though to a somewhat lesser extent than in recent years.

### INSTITUTE TIE

The Council has now arranged for an Institute tie to be available to members. The tie incorporates the centre portion of the Institute's crest.

### INSTITUTE REPRESENTATION ON OUTSIDE ORGANIZATIONS

Upon invitation the Institute has nominated the following representatives to serve on the Committees indicated:

#### *British Standards Institution*

ISE/35/9—Austenitic Cast Irons—T. A. Rush.

P/139—Prevention of Corrosion—F. M. Paskins, O.B.E.

#### *Joint British Committee for Stress Analysis*

T. W. Bunyan, B.Sc.

#### *Portsmouth College of Technology, Engineering Advisory Committee*

H. W. Hogben, M.B.E., B.Sc.

The Institute's representation on the following Committees has been altered as indicated:

#### *British Standards Institution*

ISE/15—Iron and Steel for Shipbuilding—J. Turnbull, O.B.E., *vice* H. J. Wheadon.

MEE/29—Pump Tests—J. E. M. Payne *vice* R. M. Wallace.

MEE/39—Compressors, Exhausters and Fans, and MEE/39/4—Fans for General Purposes—S. J. Jones, B.Sc., *vice* J. K. W. MacVicar.

In addition the Institute has discontinued its representation on Committee SFE/—Solid Fuel Industry Standards. Committee SFE/1—Nomenclature and Definitions for Solid Fuel Burning Appliances has been disbanded.

### HONOURS

The Council congratulates the following members upon whom Her Majesty Queen Elizabeth II conferred honours during the year.

A. J. Sims, O.B.E., R.C.N.C. (Member)—Knight Commander of the Bath.

Rear-Admiral W. F. B. Lane, D.S.C. (Member)—Companion of the Bath.

E. J. Hunter, B.Sc. (Member)—Commander of the Order of the British Empire.

Capt. G. I. D. Hutcheson, R.A.N. (Member)—Commander of the Order of the British Empire.

H. A. J. Silley (Past President)—Commander of the Order of the British Empire.

Capt. E. A. G. Whittle, R.N. (Member)—Commander of the Order of the British Empire.

Cdr. J. A. R. Abbott, R.N. (Member)—Officer of the Order of the British Empire.

R. E. Knowles (Member)—Officer of the Order of the British Empire.

Cdr. B. P. McConnell, R.N. (Member)—Officer of the Order of the British Empire.

Ch. Eng. Officer J. D. B. Payne, R.F.A.S. (Member)—Officer of the Order of the British Empire.

J. G. Ruffell (Member)—Officer of the Order of the British Empire.

J. P. R. Williams (Member)—Officer of the Order of the British Empire.

C. Macdonald (Member)—Member of the Order of the British Empire.

L. H. Priestley (Member)—Member of the Order of the British Empire.

### DEATHS

Amongst the losses by death recorded throughout the year was W. A. Harrington, former Local Vice-President for Rangoon, who will be remembered particularly for his services to the Institute.

### REMEMBRANCE DAY

The Chairman of Council, Mr. W. R. Harvey, attended the Service in Westminster Abbey, and the Vice-Chairman of Council, Mr. B. P. Ingamells, C.B.E., laid a wreath on the Mercantile Marine War Memorial, Tower Hill, London, E.C.3, on Sunday, 13th November 1960.

### ANNUAL NATIONAL SERVICE FOR SEAFARERS

The Chairman of Council, Mr. W. R. Harvey, represented the Institute at the Annual National Service for Seafarers held in St. Paul's Cathedral on 19th October 1960.

### ROYAL INSTITUTION OF NAVAL ARCHITECTS

The Chairman of Council, Mr. W. R. Harvey, presented a congratulatory message from the Institute to the Royal Institution of Naval Architects at the opening of its Centenary Celebrations on 17th May 1960.

### SOCIAL EVENTS

The following social functions have been held:

Annual Dinner, at Grosvenor House, London, W.1, on 11th March.

Spring Golf Meeting, at Swinley Forest Golf Club, on 17th May.

Autumn Golf Meeting, Hadley Wood Golf Club, on 22nd September.

Annual Conversazioni, at Grosvenor House, London, W.1, on 2nd and 16th December.

The two Conversazioni were again most successful.

W. R. HARVEY (*Chairman of Council*)

J. STUART ROBINSON (*Secretary*)

## Annual Reports of the Sections

### HOME

#### DEVON AND CORNWALL

The Section was officially formed on the 16th June 1960 when the Chairman of Council, Mr. W. R. Harvey, and the Secretary, Mr. J. Stuart Robinson, visited Plymouth to address a meeting of local members. After discussion, it was unanimously agreed to inaugurate a section to be called: The Devon and Cornwall Section. A committee was forthwith appointed and a chairman duly elected.

In due course all members of the Institute having addresses in Devon and Cornwall were advised of the formation of the Section and were invited to apply for registration with, and to give their support to, the Section. Applications came in steadily and are still being received. To date the situation is as follows:

|                       | <i>Registered</i>                         | <i>Non-registered</i>                     |
|-----------------------|---|---|
| Members ... ..        | 35  | 57  |
| Associate Members ... | 22  | 24  |
| Companions ... ..     | —   | 1   |
| Associates ... ..     | 9   | 16  |
| Graduates ... ..      | 9   | 15  |
| Students ... ..       | 10  | 22  |
| Probationer Students  | 3   | 22  |
|                       | <hr style="width: 50%; margin: 0 auto;"/> | <hr style="width: 50%; margin: 0 auto;"/> |
|                       | 88  | 157                                       |

The inaugural meeting was held on 8th December 1960 in the splendidly equipped lecture theatre of the South Western Gas Board Showrooms at Derry's Cross. The Section was formally inaugurated by Mr. D. G. Alcock (Member of Council) who had made a special journey for this purpose. Afterwards, Mr. C. C. Pounder (Vice-President), presented his very interesting and thought provoking paper: "Human Problems in Marine Engineering".

The meeting was exceptionally well attended, there being in the region of one hundred and twenty persons present comprising Naval Officers of the Royal Naval Engineering College; Retired Naval Officers; Engineer Officers and ex-Engineer Officers of the Merchant Navy; Marine Engineers and Naval Architects of H.M. Dockyard; Marine Engineer Cadets from the Plymouth and Devonport Technical College and a number of students and other visitors not in the Institute whom the Section were very pleased to welcome.

W. E. B. Dainton (*Chairman*)  
A. H. Morton (*Honorary Secretary*)

#### *Annual General Meeting*

The Annual General Meeting was held on Tuesday, 24th January 1961 at the Plymouth and Devonport Technical College. The Honorary Secretary's annual report and the Honorary Treasurer's financial statement were read and approved.

As the Section had been functioning for only six months or so it was decided that no members of the Committee should retire on this occasion other than the Honorary Secretary and the Honorary Treasurer as required by the Rules. The Secretary and Treasurer were re-elected and an additional member, Lt. Cdr. C. H. E. Brewster, R.N., was elected to serve on the Committee which is as follows:

Local Vice-President: C. Moffatt  
Chairman: W. E. B. Dainton

Vice-Chairman: R. E. Pritchard  
Committee: Lieut. R. W. Blatchford, M.B.E., R.N.  
N. K. Croft  
M. J. Gilbert  
Cdr. D. G. Satow, R.N.  
Eng. Cdr. F. E. Yeates, R.N.  
Honorary Secretary: A. H. Morton  
Honorary Treasurer: Cdr. R. T. Jones, O.B.E.,  
D.S.C., R.N.

After the business of the Section was completed a lecture entitled: "Modern Marine Water Tube Boilers" was read by Lt. Cdr. A. P. Monk, D.S.C., R.N. About sixty persons attended the lecture which was well presented and was found most interesting and instructive by those present. Being of a practical nature, the lecture was particularly appreciated by the twenty or so students who were there.

#### KINGSTON UPON HULL AND HUMBER AREA

The year 1960 has been one during which steady progress has been maintained in all the activities of the Institute in this Section area.

Membership of the Section at the beginning of the year consisted of 202 registered and 228 non-registered members.

After the re-organization of the Section due to the formation of the North Midlands Section, the Section adopted its present title and on the 1st July the membership consisted of 153 registered and 151 non-registered members. Due to the large number of non-registered members a communication was sent to all such members inviting them to register with the Section and many favourable replies were received. Thus the membership of the Section on the 31st December 1960 stands at:

|                       | <i>Registered</i>                         | <i>Non-registered</i>                     |
|-----------------------|---|---|
| Members ... ..        | 75  | 21  |
| Associate Members ... | 68  | 34  |
| Associates ... ..     | 25  | 10  |
| Graduates ... ..      | 16  | 11  |
| Students ... ..       | 14  | 11  |
| Probationer Students  | 19  | 15  |
|                       | <hr style="width: 50%; margin: 0 auto;"/> | <hr style="width: 50%; margin: 0 auto;"/> |
|                       | 217                                       | 102                                       |

During 1960 seven lectures were given:

28th January "The Need for Research in Diesel Engine Development" by R. V. Hughes, B.Sc., Ph.D.

\* 18th February "Modern Marine Steam Turbines" by J. H. Gooch, B.A.

17th March "Centrifugal Purification of Oils for Marine Service" by M. E. O'Keeffe Trowbridge, B.Sc., A.C.G.I.

31st March "The Holmes-Werkspoor Diesel Engine; Building, Testing and in Service", by Bryan Taylor, B.Sc.(Eng.) (Member), at Leeds.

6th October "Heatless Repairs to Fractured or Broken Castings" by N. Tinwell.

10th November "Human Problems in Marine Engineering", by C. C. Pounder (Vice-President).

8th December "Some Observations on Ship Vibration" by W. McClimont, B.Sc. (Member), and P. W. Ayling, B.Sc.

\* Junior Lecture.



## Annual Report of the Council for 1960

The standard of lectures was very high and the attendance has progressively improved during the year. The average attendance at the senior lectures was 53, consisting of 29 members and 24 non-members. Attendance at the junior lecture was 45.

The lecture on the 10th November was a Joint Meeting with the Hull Association of Engineers and a large audience thoroughly enjoyed the oratory and wit of Mr. Pounder.

The Tenth Annual Dinner held at the Guildhall on 4th November was attended by 187 members and friends and once again proved to be a very successful occasion. The chief speaker was Mr. W. R. Harvey (Chairman of Council) and the occasion was also honoured by the Lord Mayor and the Sherriff of Kingston upon Hull.

B. Taylor (*Chairman*)

D. A. Taylor (*Honorary Secretary*)

### MERSEYSIDE AND NORTH WESTERN

It is again pleasing to report that interest in this Section is being well maintained and that our membership figures again show an increase when compared with previous years. A significant increase will be noted in Student membership, and this is no doubt due to the encouragement given to Students by friends in the local Technical Colleges.

The membership is as follows:

|                       | <i>Registered</i> | <i>Non-registered</i> |
|-----------------------|-------------------|-----------------------|
| Members ... ..        | 152               | 310                   |
| Associate Members ... | 171               | 152                   |
| Companions ... ..     | —                 | 1                     |
| Associates ... ..     | 53                | 72                    |
| Graduates ... ..      | 52                | 34                    |
| Students ... ..       | 94                | 68                    |
| Probationer Students  | 202               | 126                   |
|                       | 724               | 763                   |

### Meetings

Senior meetings were held in the rooms of The Liverpool Engineering Society, The Temple, Dale Street, Liverpool, 2, as follows:

|              |   |
|--------------|---|
| 4th January  | “Fundamentals of Steam Turbine Thermodynamics” by W. L. Coventry (Associate Member).  |
| 1st February | Annual General Meeting followed by “Centrifugal Purification of Oils”, by M. E. O’Keeffe Trowbridge, B.Sc., A.C.G.I.  |
| 7th March    | “An Approach to the use of Alternating Current on Ships” by F. W. Evans, M.I.E.E., and J. H. B. Raw, B.Sc.(Eng.), M.I.E.E., A.M.I.Mar.E.                    |
| * 4th April  | “Some Crankshaft Failures, their Cause, Investigation and Remedy”, by R. Atkinson, D.S.C., R.D., B.Sc. (Member), and P. Jackson, M.Sc. (Member of Council). |
| 3rd October  | “Marine Insulation”, by G. Laing, A.M.I. Mech.E., A.M.Inst.R. (Associate Member).   |
| 7th November | “The Manufacture and Maintenance of Propellers”, by J. M. Langham, B.A., A.M.I.Mech.E. (Associate).   |

On Friday, 25th March, in conjunction with the Barrow Engineering Society and the Barrow and District Productivity Committee, a paper entitled “Boiler Water Treatment” by J. T. Aynsley, was presented to senior and junior members at the Barrow Central College of Further Education.

The Section again co-operated with “Ladsirlac” in organizing suitable public lectures, with a marine engineering background, and this year two such lectures were presented:

|              |  |
|--------------|--|
| 13th January | “The History of Liverpool Shipping”, by Dr. G. Chandler, City Librarian.                     |
| 8th December | “The Docks and Sea Channels of the Port of Liverpool”, by R. H. Stephenson, M.Eng., M.I.C.E. |

The Section also co-operated with The Liverpool Engineer-

\* Published in the July 1960 issue of TRANSACTIONS.

ing Society in the presentation of the following paper:  
17th February “The Oil Fire at Houston, Texas”, by Chief Fire Officer A. H. Warren of the Cheshire County Fire Services.

Chief Fire Officer Warren who had flown to the fire, gave a graphic account of the incident, well supported with film.

Members were also invited to attend The Liverpool Engineering Society’s Presidential Address by R. F. Capey; this was on the 12th October. On the 9th November, again at the kind invitation of The Liverpool Engineering Society, we attended the paper “Aluminium in Shipbuilding” by L. W. Jefferson, B.Eng., A.M.R.I.N.A.

Two Senior Lectures were presented in Manchester, viz.  
11th January “Human Problems in Marine Engineering”, by C. C. Pounder (Vice-President).

15th February “Recent Developments in Pump Auxiliaries for Ships”, by T. McAlpine, B.Sc. (Member) and I. S. Paterson, B.Sc.,

and it is pleasing to record that both these lectures, presented in the “Newton” Room of The Engineers’ Club, Manchester, were very well supported.

Seven junior lectures were provided for Colleges within the area, as follows:

|                            |  |
|----------------------------|--|
| 17th February (Birkenhead) | “Construction of the Ship”, by G. Ridley Watson, B.Sc. (Member).                   |
| 9th March (Riversdale)     | “The Functions of an M.O.T. Surveyor”, by G. Keenan (Associate Member of Council). |
| 24th March (Bolton)        | “Marine Electrical Engineering”, by D. Gray, B.Sc. (Member).                       |
| 7th April (Birkenhead)     | “The Functions of an M.O.T. Surveyor”, by G. Keenan (Associate Member of Council). |
| 15th November (Bolton)     | “Marine Lubrication”, by G. H. Clark (Member).                                     |
| 16th November (Riversdale) | “Safety at Sea” by Stewart Hogg, O.B.E. (Member).                                  |
| 23rd November (Birkenhead) | “The Steam Reciprocating Engine”, by G. Yellowley (Member).                        |

Attendances at senior meetings have remained at an encouraging level, averaging about seventy members and visitors. The support for junior lectures has been more encouraging but could still be better supported by senior members.

On Wednesday, 1st June, a party of approximately 40 local members visited the works of Morgan Refractories Ltd. at Neston; this visit proved to be of the greatest interest to members, who were later entertained by Morgan Refractories Ltd. to luncheon at The Layton Court Hotel.

Mr. Peter Flegg of Birkenhead Technical College and Mr. D. T. N. Jones of Riversdale Technical College were nominated for the Lloyd’s Register of Shipping Award for Students. As a result both nominees visited Lloyd’s Register of Shipping, London, attended a lecture on the Evolution of the Design of Ships and visited The National Physical Laboratory.

The Dinner Dance was held in the Banqueting Hall of the Adelphi Hotel, on Friday, 4th November, when the Section was honoured by the presence of Lord and Lady Simon, Mr. and Mrs. Stuart Robinson, together with the Principals and their ladies from the local Colleges. Some 360 guests attended.

It was with regret that Mr. W. L. Coventry’s resignation from the Committee was accepted. Mr. Coventry, as many members will know, has left the district to take up an appointment on the North East Coast.

D. S. Tod (*Chairman*)

T. Kameen (*Honorary Secretary*)

### Annual General Meeting

The Annual General Meeting of the Section was held on Monday, 6th February 1961, in the rooms of the Liverpool Engineering Society, The Temple, 24 Dale Street, Liverpool, 2, at 6.0 p.m.

The annual report and financial statements were approved. The retiring Committee Members, Messrs. R. F. Capey,



## Annual Report of the Council for 1960

W. L. Coventry and D. S. Tod, were replaced by Messrs. J. Bowman, W. H. Falconer and J. Rogerson.

The newly constituted Committee is as follows:

Vice-President, Liverpool: T. McLaren, B.Sc.  
Local Vice-Presidents: Barrow: R. McVie, B.Sc.  
Manchester: J. A. Clay

Chairman: L. Deakin

Committee: J. Bowman

A. D. Bridgwater

W. H. Falconer

J. Farnie

Capt. W. S. C. Jenks, O.B.E., R.N.

G. Keenan (Associate Member of Council)

W. M. Maguire

J. Rogerson

J. L. Snowdon

Honorary Secretary: T. Kameen

Honorary Treasurer: J. E. Shields

### NORTH EAST COAST

The number of members registered with the North East Coast Section has increased from 776 to 819 during the year and it is hoped that this number will continue to increase.

|                       | <i>Registered</i> | <i>Non-registered</i> |
|-----------------------|-------------------|-----------------------|
| Members ... ..        | 303               | 74                    |
| Associate Members ... | 274               | 51                    |
| Companions ... ..     | 1                 | 2                     |
| Associates ... ..     | 51                | 20                    |
| Graduates ... ..      | 67                | 19                    |
| Students ... ..       | 61                | 11                    |
| Probationer Students  | 62                | 30                    |
|                       | 819               | 207                   |

The following meetings were held:

- 21st January (Newcastle) "Recent Developments in Pump Auxiliaries for Ships", by T. McAlpine, B.Sc. (Member) and I. S. Paterson, B.Sc.
- 16th February (South Shields) "Refrigeration Machinery and its Applications in Ships", by Lieut. Cdr. M. B. F. Ranken, R.N. (Member).
- 18th February (Newcastle) Annual General Meeting followed by "Some Crankshaft Failures: Investigations, Causes and Remedies", by R. Atkinson, D.S.C., R.D., B.Sc. (Member) and P. Jackson, M.Sc. (Member of Council). (N.E. Branch of Institution of Mechanical Engineers invited.)
- 17th March (Newcastle) "Distillation for Marine Purposes". by Cdr. R. G. J. Peaver, R.N.
- 13th October (Newcastle) "Design and Construction of Nuclear Marine Propulsion Plant of the Water Cooled Type", by W. R. Wootton.
- 10th November (Sunderland) "Automatic Boiler Control", by P. A. Gill.
- \* 24th November (Newcastle) "Marine Machinery Failures", by H. N. Pemberton (Member of Council).
- 8th December (Newcastle) "Recent Developments in Ship Steering Gears", by W. Spencer Paulin, B.Sc.

Invitations were also extended to Section members to attend:

4th November (Newcastle) "Sir Claude Gibb—Engineer", by Dr. A. T. Bowden. 1960 Parsons Memorial Lecture. N.E. Coast Institution of Engineers and Shipbuilders.

5th December (Newcastle) "The Diesel Engine in Association with the Gas Turbine", by E. Chatterton, B.Sc. N.E. Branch of Institution of Mechanical Engineers.

The average attendance at meetings during the year was better than for the previous year and it is hoped that this trend will be continued.

\* Published in the October 1960 issue of TRANSACTIONS.

The Annual Dinner Dance was held on the 5th February at the Royal Station Hotel, Newcastle upon Tyne and was graced with the presence of the President. The innovation of having only one toast after the Loyal Toast was very successful. This toast, "Our Guests", was proposed and replied to with light hearted speeches which pleased everyone.

S. H. Dunlop (*Chairman*)

A. W. Jones (*Secretary*)

### NORTH MIDLANDS

An inaugural meeting was held at the Royal Victoria Hotel, Sheffield, on Tuesday, 9th June 1960. The meeting was presided over by the Chairman of Council, Mr. W. R. Harvey, supported by Mr. J. S. Robinson, Secretary.

36 members of the Institute were present.

At 31st December the membership of the Section was as follows:

|                       | <i>Registered</i> | <i>Non-registered</i> |
|-----------------------|-------------------|-----------------------|
| Members ... ..        | 54                | 42                    |
| Associate Members ... | 37                | 37                    |
| Companions ... ..     | 1                 | —                     |
| Associates ... ..     | 12                | 14                    |
| Graduates ... ..      | 9                 | 7                     |
| Students ... ..       | 7                 | 13                    |
| Probationer Students  | 10                | 25                    |
|                       | 130               | 138                   |

Two Section meetings were held in 1960. On 22nd October, W. R. Harvey (Chairman of Council) re-presented his paper on "The Care and Maintenance of Water Tube Boilers". 58 members and visitors were present, and they received the paper with close attention. The discussion which followed outlined various factors of interest.

On 6th December, the Section was invited to the Yorkshire Copper Works, Leeds, a branch of Yorkshire Imperial Metals Ltd. B. J. Jenner, of Y.I.M. Ltd., presented a very interesting paper on "Some Aspects of the Use and Fabrication of Non-ferrous Tubes for Marine Pipelines". A lively and varied discussion ensued. The forty members and visitors present were also shown a new film which had been sponsored by the company.

J. C. Proudfoot (*Chairman*)

J. Haddock (*Honorary Secretary*)

### Annual General Meeting

The first Annual General Meeting was held at the British Iron and Steel Research Association Building, Hoyle Street, Sheffield, on 22nd February 1961, at 6.45 p.m. Mr. J. C. Proudfoot (Chairman of the Section) was in the Chair and twenty-four members attended.

The annual report and financial statement were presented and approved.

The Chairman expressed his thanks to the Committee and especially to the retiring Honorary Secretary, Mr. J. Haddock for his yeoman service, in the formation of this section.

The Committee having served since the inaugural meeting in June 1960 were re-elected and two members, Messrs. A. M. Jarvis and A. S. Lawrie, were added.

The constitution of the Committee for 1961 is therefore as follows:

Chairman: J. C. Proudfoot

Committee: H. V. Campbell

A. M. Jarvis, B.Sc.

F. P. Jewitt

A. S. Lawrie

C. W. Parris

H. C. Rivers

H. F. Sherborne, M.C., M.A.

W. S. Taylor

Honorary Secretary: F. H. Soppitt

Honorary Treasurer: Y. Arakie

After the meeting a paper on "Oil Fuel Burning" was presented by A. H. Skinner and Cdr. F. J. Ricks, R.N., which was well received and a lively and varied discussion followed.

## Annual Report of the Council for 1960

The meeting closed with a vote of thanks to Mr. Skinner and Commander Ricks proposed by Mr. C. W. Parris and seconded by Mr. Y. Arakie.

### NORTHERN IRELAND PANEL

During the year 1960 two lectures were presented at meetings of the Northern Ireland Panel.

These were "Metallurgy in Marine Engineering" given by Dr. J. E. Garside, M.Sc.Tech., on 23rd February and a junior lecture by Mr. T. O. Leith (Graduate) entitled "Closed Circuit Feed Systems for Marine Installations" which was read by Mr. J. R. Herd (Graduate) at a meeting on 15th November.

### SCOTTISH

The total membership of this Section continues to increase and is now 1,172, consisting of 722 registered members and 450 non-registered members.

Joint meetings were held with The Greenock Association of Engineers and Shipbuilders in Greenock and with the I.E.S. in Glasgow, and a paper was read in Edinburgh, followed by an informal dinner.

The sixth Annual Dinner was held on 19th February, and the fourth Dinner and Dance on 10th December. Good support was obtained for both these functions.

The following papers were presented during 1960:

- 13th January (Glasgow) "Electrically Driven Ships' Auxiliaries", by L. Thwaites.
- 19th January (Greenock) "The Care and Maintenance of Water Tube Boilers and Ancillary Equipment", by W. R. Harvey (Vice-Chairman of Council).
- 26th January (Glasgow) "Some Aspects of Marine Reactor Safety", by K. Maddocks, B.Sc.(Tech.).
- \*10th February (Glasgow) "Marine Valve Design Developments", by Lieut.-Cdr.(E) J. Tinneveld, R.N.N. (Associate Member) and J. R. Peacock (Associate).
- 16th March (Edinburgh) "Modern Papermaking", by J. A. Walker.
- 12th October (Glasgow) "Rationalization in the Marine Engineering Industry", by T. W. D. Abell (Chairman of Section).
- 26th October (Glasgow) "Apprenticeship and M.O.T. Examination Requirements for Junior Marine Engineers", by C. A. Creber (Associate Member).
- 16th November (Glasgow) "Medium Speed Diesel Engines for Marine Auxiliaries", by C. J. Hind.
- 7th December (Glasgow) "Recent Developments in the Welding of Pressure Vessels", by Dr. H. Harris.

The average attendance at Glasgow senior meetings was 76.

The average attendance at the Greenock, Edinburgh and Joint Meetings was 49.

The attendance at the Junior Meeting was 64.

T. W. Abell (*Chairman*)

A. W. Clark (*Honorary Secretary*)

### SOUTH WALES

The membership of the South Wales Section is now as follows:

|                       | <i>Registered Non-registered</i> |     |
|-----------------------|----------------------------------|-----|
| Members ... ..        | 114                              | 39  |
| Associate Members ... | 60                               | 28  |
| Companions ... ..     | 2                                | —   |
| Associates ... ..     | 18                               | 4   |
| Graduates ... ..      | 15                               | 11  |
| Students ... ..       | 29                               | 25  |
| Probationer Students  | 29                               | 40  |
|                       | 267                              | 147 |

The following programme was arranged for the 1960 Session:

\* Published in the January 1961 issue of TRANSACTIONS.

Senior Lecture "Recent Developments in Pump Auxiliaries for Ships", by T. McAlpine, B.Sc. (Member) and I. Paterson, B.Sc., at Cardiff on 14th October 1960.

Junior Lecture "Modern Marine Steam Turbines" by J. A. Gooch, B.A., at the Welsh College of Advanced Technology, on 14th November 1960.

Annual Dinner In the Royal Hotel, Cardiff, on the 11th November 1960.

The Annual Dinner was again an outstanding success, the President, The Rt. Hon. The Viscount Simon, C.M.G. attended. Our thanks are due to the Dinner Sub-committee and particularly to Mr. T. C. Bishop.

A successful Golf Meeting was held and there is no doubt this function is much appreciated by the golfing members.

F. F. Richardson (*Chairman*)

A. H. Stobbs (*Honorary Secretary*)

### Annual General Meeting

The Ninth Annual General Meeting of the Section was held on Friday, 6th January 1961, at the South Wales Institute of Engineers, Park Place, Cardiff.

Presenting his report, Mr. F. F. Richardson (Chairman), said it had been another successful year, and the only discordant comment he had to make was that the attendances at the more recent lectures had been less than could be desired. He expressed regret at losing the services of Mr. Stobbs as Honorary Secretary, which was due to his promotion to London, and on behalf of the Section thanked him for his untiring efforts and services.

Mr. G. K. Beard would continue to serve as Honorary Treasurer and thanks were due to him for his invaluable work.

Messrs. F. F. Richardson, T. C. Bishop and G. S. Taylor retired from the Committee and were replaced by Messrs. J. E. Church, H. S. W. Jones and R. F. Munro.

The newly constituted Committee is as follows:

Vice-President, Cardiff: David Skae

Chairman: F. H. Hartley

Vice-Chairman: David Skae (Vice-President)

Committee: R. F. J. Black

A. J. Cant

J. E. Church

J. L. Hindmarsh

H. S. W. Jones

R. F. Munro

J. Osborne

R. H. Rees, O.B.E.

R. G. Turnbull

H. G. Wickett, M.B.E.

J. Wormald, B.Sc.

Honorary Secretary: T. C. Bishop

Honorary Treasurer: G. K. Beard, B.Sc.

### SOUTHERN JOINT BRANCH R.I.N.A. AND I.M.A.R.E.

The following meetings were held during 1960:

- 19th January (Southampton) "Wetness Related to Freeboard and Flare", by R. N. Newton, R.C.N.C.
- 25th February (Portsmouth) "Manufacture and Maintenance of Propellers including Controllable Pitch Propellers", by J. M. Langham, B.A.
- 29th March (Southampton) "Marine Machinery Failures", by H. N. Pemberton.
- 29th September (Portsmouth) "Modern Marine Application of Refrigeration", by Lt. Cdr. M. B. F. Ranken, R.N.
- 18th October (Southampton) "Interaction between Ships Close Aboard in Deep Water", by R. N. Newton, R.C.N.C.
- 24th November (Portsmouth) "The latest Techniques for Corrosion Prevention", by J. S. Hudson, D.Sc.

The Council's aim has been to produce a balanced programme of papers as between naval architecture and marine engineering, and between practical and theoretical subjects.



## Annual Report of the Council for 1960

The high attendance at meetings and the interesting discussions which follow the papers appear to justify the choice of papers. It is gratifying to note that two of these papers were presented by their Chairman of Council, Mr. Newton. They were indebted to Mr. Newton and to the other authors for the considerable effort that has gone into the production of their papers.

In April a visit to H.M. Dockyard, Portsmouth, was organized.

The guest of honour at the Annual Dinner was Sir Alfred J. Sims, K.C.B., O.B.E., who was welcomed not only in his official capacity of Director General Ships, but as one who has taken an interest in the Branch for many years. In 1949, Sir Alfred presented a paper entitled "The Present Position in the Development of the Submarine" and on his visit in 1952 his subject was "The Rolling of Ships". Among the guests were Mr. I. E. King, Director of Dockyard Division and representatives of the parent societies and local technical colleges.

Members and their guests had a very enjoyable evening at the Annual Dinner and Dance held in Southampton in February.

At the Annual General Meeting in March 1960, Mr. G. M. Kennedy was elected President in succession to Mr. H. E. Steel. Mr. Steel was thanked for his enthusiastic interest in the work of the Branch and the Council expressed the hope that he would continue to play an active part. New members elected to the Council were Mr. W. G. Warren, R.C.N.C., Mr. A. E. Hall and Mr. C. R. Ford, M.Sc.

The elevation of Mr. Kennedy to the Presidency created a vacancy for a Vice-President and the Institute of Marine Engineers nominated Mr. Ian Cameron, Director and General Manager of John I. Thornycroft and Co. Limited, Southampton, for this office.

T. W. Paradise (*Honorary Secretary*)

### WEST MIDLANDS

The total number of registered members in the Section has fallen from 211 to 204, whilst the number of non-registered members has risen from 34 to 51.

The analysis of the present membership is as follows:

|                       | <i>Registered</i> | <i>Non-registered</i> |
|-----------------------|-------------------|-----------------------|
| Members ... ..        | 80                | 14                    |
| Associate Members ... | 54                | 17                    |
| Associates ... ..     | 26                | 4                     |
| Graduates ... ..      | 13                | 4                     |
| Students ... ..       | 14                | 6                     |
| Probationer Students  | 17                | 6                     |
|                       | 204               | 51                    |

During the year there has been some re-distribution of territorial areas covered by the Sections. Members living in Leicestershire have now been included in the West Midlands Section.

The effect of this transfer is to increase the total membership to 255.

Five meetings for the presentation of papers were held during the year, as below:

|              |   |
|--------------|---|
| 28th January | "Welding in Marine Engineering", by J. A. Dorratt, A.H.-W.C.  |
| 31st March   | "Developments of the Steam Engine", by N. W. Bertenshaw.  |
| 28th April   | "Epicyclic Gearing", by H. N. G. Allen (Member) and T. P. Jones (Associate Member).                     |
| 27th October | "Recent Developments in Pump Auxiliaries for Ships", by T. McAlpine, B.Sc. (Member) and I. S. Paterson. |
| 1st December | "Some Personal Impressions of U.S.A. and U.S.S.R.", by W. Carter (Member).                              |

There was an average attendance of 32 at these meetings.

Owing to circumstances outside the control of the Section the Seventh Annual Dinner, which should have been held in November 1959, had to be postponed to February 1960.

This function was again held at the Imperial Hotel under the Chairmanship of the Immediate Past Chairman, Mr. R. S. Robinson, B.Sc. (Member). There were 122 members and guests present. The Section was very pleased to welcome Sir William Wallace, C.B.E., L.L.D., President of the Institute; also Dr. R. S. Aitkin, Vice Chancellor and Principal of the University of Birmingham.

The Eight Annual Dinner was held in November 1960. On this occasion the venue was the Queen's Hotel. The function was attended by 137 members and guests, under the Chairmanship of Mr. J. R. Cotterill, J.P., Chairman of the Section. The Section was again honoured by the presence of the President, The Rt. Hon. The Viscount Simon, C.M.G. Among the guests were Dr. J. S. Clarke, O.B.E. (Member), Mr. Kenneth Atkinson, the American Consul in Birmingham, Mr. W. J. Ferguson, M.Eng. (Member of Council), Secretary to Lloyd's Register of Shipping, and Mr. J. Stuart Robinson, Secretary to the Institute.

The West Midlands Section welcomes the newly transferred members of Leicestershire and has fully in mind its duty to cater for and maintain their interest in the activities of the Section.

It is confidently hoped to have a member from Leicestershire on the Committee of the Section next year, thus establishing a vital link.

J. R. Cotterill, J.P. (*Chairman*)

### *Annual General Meeting*

The Eighth Annual General Meeting of the West Midlands Section was held at the Birmingham Exchange and Engineering Centre on Thursday, 26th January 1961. Mr. J. R. Cotterill was in the Chair and the meeting was attended by 18 members.

The Statement of Accounts was submitted and approved.

The Chairman thanked the Committee for their services and support given to him and the Section during the year. Particular mention was made of the retiring members Mr. K. H. Harrison and Mr. J. H. Gilbertson for their efforts during their term of office and he wished to convey his thanks to these two members who had taken over as Hon. Treasurer and Hon. Secretary at very short notice due to the fact that Mr. Wilson and Mr. Collins had left the district. The Chairman also wished to thank Mr. Collins and Mr. Wilson for the valuable assistance which they had given to him during his term of office and for the enthusiasm and enormous effort put into their work.

Reference was also made by the Chairman to the loss to the Section of Mr. L. D. Trenchard who had left the district and who had been a tower of strength to the Section in all offices which he had served, also even after his term of office. It was also mentioned that their appreciation should be recorded to Mr. Trenchard for the use of his office for their Committee Meetings.

Three nominations for the committee were received and duly proposed and seconded as follows—Messrs. R. S. Robinson, B.Sc., A. L. Cramb and J. B. Craig.

The Chairman announced that Mr. H. E. Upton, O.B.E., had been nominated as Chairman for the year 1961/62, which was unanimously approved by all in attendance.

Mr. H. K. Harrison and Mr. J. H. Gilbertson were proposed and seconded as Honorary Treasurer and Honorary Secretary respectively in the absence of any further nominations.

The Officers and Committee for the ensuing year are as follows:

|   |                                      |
|---|--------------------------------------|
| Local Vice-President, Birmingham, and Chairman: | H. E. Upton, O.B.E.                  |
| Vice-Chairman (to be appointed)                 |                                      |
| Committee:                                      | J. R. Cotterill, J.P.                |
|   | J. B. Craig                          |
|   | A. L. Cramb                          |
|   | J. A. Forrest, M.B.E., B.Sc., Wh.Ex. |
|   | R. R. Gilchrist, M.A.                |
|   | Lieut. D. S. Kennedy, R.N.R.         |
|   | D. F. O'Dwyer                        |
|   | H. E. Muckley                        |



## Annual Report of the Council for 1960

G. R. Murison  
R. S. Robinson, B.Sc.  
Honorary Secretary: J. H. Gilbertson  
Honorary Treasurer: H. K. Harrison

### WEST OF ENGLAND

Membership of the West of England Section at the 31st December was as follows:

|                       | <i>Registered</i> | <i>Non-registered</i> |
|-----------------------|-------------------|-----------------------|
| Members ... ..        | 99                | 10                    |
| Associate Members ... | 55                | 10                    |
| Associates ... ..     | 25                | 2                     |
| Graduates ... ..      | 16                | 3                     |
| Students ... ..       | 9                 | 3                     |
| Probationer Students  | 21                | 5                     |
|                       | 225               | 33                    |

The total membership of 258 is greater than last year's figure by fifteen, notwithstanding the fact that approximately the same number moved out of the area.

The full list of papers or lectures presented during 1960 is as follows:

- 18th January (Bath) "Research and Failures of Metals in Service", by C. E. Phillips, Wh.Sc., and A. C. Low, B.A.
- 8th February (Bristol) "The Care and Maintenance of High Pressure Water Tube Boilers and Ancillary Equipment", by W. R. Harvey (Vice-Chairman of Council).
- 22nd February (Bristol) Films entitled "No Rust Here" and "Zinc Controls Corrosion" followed by the Annual General Meeting.
- 14th March (Bath) "Some Notes on Recent Reduction Gears for Propulsion Purposes", by S. Archer, M.Sc. (Member).
- 25th April (Bristol) Films entitled "An Introduction to the Heat Engine", "British Adventure" and "Journey from the East".
- 10th October (Bristol) "Corrosion and Fires in Marine Boiler Air Preheaters", by A. Bell, B.Sc. (Associate Member).
- 14th November (Bath) "Distillation for Marine Purposes", by Cdr. R. G. J. Peaver, R.N., was presented in his absence abroad by Captain W. R. Stewart, R.N. (Member).
- 12th December (Bristol) "Heatless Repairs to Broken or Fractured Castings", by N. Tinwell.

The average attendance at these meetings was 30. Compared with last year, the average attendance has fallen by 18 per cent and it is hoped that this trend will be reversed during 1961.

The Committee wished to offer congratulations to a member of the West of England Section, Sir Alfred John Sims, K.C.B., O.B.E., who was created Knight Commander of the Order of the Bath during 1960.

Two Probationer Students fulfilled the requirements for the Lloyd's Register of Shipping Award; these being K. D. Hole and D. R. Owen who were duly nominated.

On Saturday, 28th May 1960, a party of 29 members made a second visit to the site of Hinkley Point Nuclear Power Station and were welcomed by the Group Resident Superintendent, Mr. R. Wall by whose courtesy the Section was permitted a return visit.

The Section Committee arranged with the Careers Master of the City of Bath Boys' (Grammar) School to give the boys a talk on the life and work of an Engineer Officer in the Merchant Navy and the prospects which such a career has to offer the right kind of boy. The meeting took place at 12 noon on Wednesday, 28th September 1960, when Mr. D. W. Gelling (Local Vice-President), Mr. A. L. Thomas (Committee Member) and Mr. J. E. Gander (Hon. Secretary) each gave a short talk dealing in the main with pre-sea training, watchkeeping duties and eventual examination, to boys of the

4th, 5th and 6th forms, numbering 120 in all. The meeting was well received and the panel answered several interesting questions. Arrangements are to be made in the near future for a party of 12 selected boys, together with the Careers Master, to visit a ship in Avonmouth Docks.

By courtesy of the Dean of the Faculty of Engineering, University of Bristol, members of the Section were granted permission to use the Engineering Library in Queen's Building. Although members may not borrow books from the library it is, nevertheless, hoped that this privilege of being able to use the Library will be welcome.

On Friday, 16th September 1960, a Dinner Dance was held at the Royal Hotel, Bristol, to mark the opening of the 1960/61 session. This function took the place of the Annual Cocktail Party which has been held in previous years. The principal guests were the Chairman of Council, Mr. W. R. Harvey, and Mrs. Harvey, the Chairman of the South Wales Section, Mr. Richardson, and Mrs. Richardson, and also the Group Resident Superintendent of Atomic Power Projects at Hinkley Point, Mr. R. Wall, and Mrs. Wall. The function was an outstanding success and thoroughly enjoyed by members, their ladies and guests, numbering 81 in all.

W. John (*Chairman*)

J. E. Gander (*Honorary Secretary*)

### *Annual General Meeting*

The sixth Annual General Meeting of the Section was held at Queen's Building, University of Bristol, on Monday, 20th February 1961, at 7.30 p.m. Mr. W. John, M.B.E. (Chairman of the Section) presided and there were twenty-one members present.

In reviewing the Section's activities during 1960 the Chairman said that it had been another successful year. He said that the papers presented at ordinary meetings had been both interesting and instructive, most of which had given rise to a considerable amount of discussion. The only disappointing aspect of these meetings was the poor attendance.

The visit to Hinkley Point Nuclear Power Station for the second time running had created much interest and those who took part in the event were all agreed that it had been very worthwhile.

The arrangements made at the City of Bath Boys' (Grammar) School were successfully carried out, and it is to be hoped that the boys will benefit from the talks given by members of the Committee.

With reference to the social activities, a departure from the usual Social Evening and Cocktail Party was made in favour of a Dinner Dance which proved to be an outstanding success in spite of the fact that it was held during the early autumn. In anticipation of the approval of the Committee elect, tentative arrangements have been made to hold the second Dinner Dance on Saturday, 28th October 1961, when it is hoped that the function will be an even greater success.

In conclusion, the Chairman thanked members of the Committee for giving him their whole-hearted support during his term of office.

The Honorary Treasurer presented the Section's Annual Financial Statement and reported that once again there was an excess of income over expenditure in the main account. He said that although expenditure had slightly exceeded income for social events, the Social Funds still had a credit balance. He explained that the continued improvement in the main account was due to the small nominal fee charged by the University in respect of accommodation for ordinary meetings, and also to the generosity of Charles Hill and Sons Ltd., who provided free of charge a room for Committee meetings, in addition to which there had been a reduction in expenses in accommodating lectures.

The Annual Report was then read by the Honorary Secretary. Commander P. R. Marrack, R.N. thanked the Honorary Treasurer and Honorary Secretary for their work during the year and proposed the adoption of the Financial Statement and Annual Report. This proposal was seconded by Mr. J. P. Vickery.

## Annual Report of the Council for 1960

Mr. J. A. L. Peck, proposed a vote of thanks to Mr. W. John, M.B.E., the retiring Chairman, and paid tribute to the contribution he had made in giving a good deal of his time, effort and enthusiasm to a Section whose members had diverse interests. He appreciated that it was no easy task for a Chairman to keep everyone happy. Mr. R. S. Brown expressed his pleasure at having the opportunity of seconding the proposal. The motion of thanks was carried with acclamation. Mr. John replied suitably.

Mr. F. C. Tottle, M.B.E. (retiring Vice-Chairman) proposed a vote of thanks to Mr. D. W. Gelling (Local Vice President) for the tremendous amount of work which he had done for the Section since its inauguration in 1954. Mr. Richardson seconded the motion.

At a meeting of the Committee held after the Annual General Meeting, Mr. W. John, M.B.E., was re-elected Chairman of the Section, and Captain W. R. Stewart, R.N., Vice-Chairman. The Committee for 1961 is therefore now constituted as follows:

Local Vice-President: D. W. Gelling  
 Chairman: W. John, M.B.E.  
 Vice-Chairman: Captain W. R. Stewart, R.N.  
 Committee: R. S. Brown  
           W. Brunton  
           T. A. Fawcett, B.Eng.  
           Rear-Admiral R. S. Hawkins (Co-opted)  
           D. V. Hyde  
           Cdr. P. R. Marrack, R.N.  
           J. A. L. Peck  
           T. A. Rees (Co-opted)  
           Cdr. C. W. T. Saunders, D.S.C., R.N.  
           G. S. Selman  
           C. W. J. Stow  
           F. C. Tottle, M.B.E.  
           J. P. Vickery

Honorary Secretary: J. E. Gander  
 Honorary Treasurer: A. J. A. Davies

### OVERSEAS

#### CANADIAN DIVISION

##### ATLANTIC

The Section was initiated on 8th June 1960, by eleven interested members. Since the commencement the membership has increased from thirty to sixty-five.

On 16th September the first general meeting was held, and formal approval of the Atlantic Section was granted by Council in London. At this meeting Mr. E. Burnett, M.B.E. (Member of Council) was present and a paper entitled "The Corrosion and Behaviour of Non-ferrous Metals in Sea Water" was read by Mr. T. Howard Rogers, D.I.C., F.I.M., M.C.A.I.

A dinner in honour of Mr. H. N. Pemberton (Member of Council), Chief Engineer Surveyor, Lloyd's Register of Shipping, was held in H.M.C.S. *Stadacona* on 31st October 1960. Following the dinner Mr. Pemberton read his paper "Marine Machinery Failures" to an audience of over seventy members and guests.

K. Nicol (*Honorary Secretary*)

##### *Annual General Meeting*

The Annual General Meeting of the Atlantic Section was held on 19th January 1961 in H.M.C.S. *Scotian* in Halifax, Nova Scotia. Mr. J. S. Porteous was in the Chair and thirty-three members were present.

The election of officers to serve on the Committee is as follows:

Local Vice-President, Halifax: G. Curphey  
 Chairman: J. S. Porteous  
 Committee: Lieut. Cdr. J. D. Clarke, R.C.N.(R.)  
           Cdr. R. J. Craig, R.C.N.  
           Lieut. J. S. Harper, R.C.N.  
           L. M. Mathers  
           H. R. MacPherson

Honorary Secretary: K. Nicol  
 Honorary Treasurer: G. S. Ronald

#### GREAT LAKES

The Annual General Meeting of the Great Lakes Section took place on Thursday, 19th January 1961 at the Engineers Club, Toronto. Mr. L. D. McBean was in the Chair and a short report was read by the Treasurer and approved. Mr. McBean then vacated the Chair.

Mr. A. Newland (Local Vice-President), acting as Chairman, referred to the Minute of the meeting of 19th May 1960 in which it was agreed that the officers elected would assume duties immediately to complete the existing year but for rotation purposes their term in office would date as from the Annual General Meeting in January 1961. He declared the following installed in office:

Local Vice-President, Toronto: A. Newland  
 Chairman: L. D. McBean  
 Committee: G. L. Brough  
           Cdr. G. P. Fowlie, R.C.N.R.  
           E. L. James  
           Cdr. V. F. O'Connor, C.D., B.Sc., R.C.N.  
           F. Robb

Honorary Secretary: J. Boyles  
 Honorary Treasurer: D. G. Champion

There being no further business the meeting adjourned and films of an engineering and shipbuilding nature were shown.

#### ST. LAWRENCE-OTTAWA

Membership of the St. Lawrence-Ottawa Section is as follows:

|                   |        | <i>Registered</i> | <i>Non-registered</i> |
|-------------------|--------|-------------------|-----------------------|
| Members           | ... .. | 52                | 24                    |
| Associate Members | ... .. | 12                | 15                    |
| Associates        | ... .. | 8                 | 5                     |
| Graduates         | ... .. | 3                 | 2                     |
|                   |        | 75                | 46                    |

The Annual General Meeting of the St. Lawrence-Ottawa Section was held on 20th January 1961, in the Engineering Institute of Canada, Montreal. Despite the severe weather a small number of members attended and made up in enthusiasm for their lack of numbers.

Mr. D. Halkett, Chairman of the Membership Committee reported favourable progress in the campaign for new members. To assist both the Canadian Division Secretary and the Honorary Secretary of the Section, a member of the Membership Committee has been appointed in Ottawa (Mr. H. J. Aspin), Montreal (Mr. W. Ward) and Quebec (Mr. D. Halkett).

Mr. D. K. Nicholson, Chairman of the Papers Committee in submitting his report said that it had been possible to arrange for three London papers to be presented during the current 1960-61 Session, following their initial presentation at the Institute.

The Honorary Secretary, Mr. W. P. Graham and Honorary Treasurer Mr. D. Stoneley retired, but were immediately re-elected.

The retiring Committee Members, Messrs. D. K. Nicholson, R. Conaty and W. Ward, were replaced by Messrs. A. Buchan, T. N. Ross and H. Sledge.

The new Committee is as follows:

Local Vice-President, Montreal: Lieut. Col. S. Clarke,  
 B.Sc., P.Eng.  
 Chairman: F. Minnikin  
 Committee: A. Buchan  
           T. N. Ross  
           H. Sledge

#### BOMBAY

The number of members registered with this Section on 31st December 1960 was 170 compared with 151 registered members in 1959, which shows an increase of 12 per cent. During the year, 5 members left India and consequently



## Annual Report of the Council for 1960

resigned the membership of the Section and 24 members newly joined the Section.

Three technical meetings were held during the year, which were well attended by members and visitors. The first one was a joint meeting with the Institution of Marine Technologists, the second a joint meeting with the Institution of Marine Technologists and the Company of Master Mariners of India and the last meeting was organized by our Section, solely for the benefit of our younger members.

\* 17th February "The Selection of Lubricants for Marine Machinery" by N. J. D'Sylva (Associate Member).

25th March "Striking Ships and Ship Service Analysis" by Professor E. W. Telfer, D.Sc., Ph.D. (Member), Technical University of Norway.

22nd November "Milestones of Progress in Marine Engineering" by S. Kasthuri (Member).

The Committee particularly thanks the authors of the above papers.

A moonlight harbour cruise was arranged on 24th March 1960 on the m.v. *Shobana*, which was made available to the Institute for the cruise by Scindia Workshops (Private) Ltd. through Mr. D. B. Daruvala, a member of the Committee. Members with their wives and guests totalling 126 attended the cruise. Buffet dinner was served on board. The orchestra by the Dockyard Apprentice School boys provided the entertainment. This was arranged by Commander W. P. Bapat, member of the Committee. Everyone enjoyed the pleasant evening, which gave an opportunity for members to meet together informally. Our thanks to Scindia Workshops (Private) Ltd., Mr. D. B. Daruvala, Commander W. P. Bapat and the Sub-committee who assisted us in several ways in making the cruise a success.

Part III of the Associate Membership examination was held at the office of the Local Vice-President, Rear-Admiral T. B. Bose, B.Sc., I.N., on Friday, 29th April 1960. Mr. R. N. Kripa (Member) was the only candidate who appeared and passed this examination.

Members who wished to take part by correspondence, in the discussion on papers read in London, were supplied with the advance copies. The Committee wishes to thank the Headquarters for the advance copies.

The Committee acknowledges with thanks the monthly TRANSACTIONS received from our Headquarters in London and also copies of the Iron, Steel and Hardware Journal of India. The following bound volumes of TRANSACTIONS have been purchased for the Bombay library: Royal Institution of Naval Architects, 1959; Institution of Engineers and Shipbuilders in Scotland, 1959-60; North East Coast Institution of Engineers and Shipbuilders, 1958-59; Royal Institution of Naval Architects—100 years 1860-1960 Centenary Volume by K. C. Barnaby; and Inaugural Address to the Institution of Electrical Engineers by Sir Willis Jackson.

The Government of India, Ministry of Transport and Communications, invited the views and suggestions of the Bombay Section in setting up a separate marine panel of the Indian Standards Institution and a suitable reply in favour of setting up a panel was given after due consideration by the Committee.

The Committee is pleased to announce that it has been decided to hold the next Shipbuilding and Shipping Conference in Bombay in 1961 under the joint auspices of the three Institutions *viz.*: The Institute of Marine Engineers Bombay Section; The Institution of Marine Technologists; and The Company of Master Mariners of India.

The Committee thanks all members for their enthusiasm and support, also the following organizations for the assistance given during the year: The Institution of Marine Technologists; The Directorate of Marine Engineering Training; Nautical and Engineering College; Scindia Workshops (Private) Ltd.; Scindia Steam Navigation Co. Ltd.; The B.E.S.T. Undertaking; Alcock, Ashdown and Co. Ltd.; The Company of

Master Mariners of India; The Times of India, The Indian Express and Free Press Journal of India.

B. S. Sood (*Chairman*)

C. S. Sundaram (*Honorary Secretary*)

### Annual General Meeting

The Annual General Meeting of the Section was held on 22nd February 1961 at 6.0 p.m. at the Nautical and Engineering College, Bombay. Rear-Admiral T. Bose, B.Sc., I.N. (Local Vice-President) presided and there were twenty-eight members present.

The annual report and statement of accounts for 1960 were adopted.

Messrs. B. S. Sood, P. N. Rabady and B. Ananda retired from the Committee and were replaced by Messrs. R. C. Mohan, K. S. Subramanian and K. Sharma.

The new Committee is constituted as follows:

Local Vice-President: Rear-Admiral T. B. Bose, B.Sc., I.N.

Chairman: *To be appointed*

Committee: Cdr. W. P. Bapat, I.N.

D. B. Daruvala

S. Kasthuri

A. C. Kidd

R. C. Mohan

J. E. Radcliffe

R. G. Sathaye

K. Sharma

K. S. Subramanian

Honorary Secretary: C. S. Sundaram

Honorary Treasurer: D. Dyer

### CALCUTTA

The Committee for 1961 is as follows:

Local Vice-President: B. Hill

Committee: H. Allen, M.A.

K. S. Chetty

A. Krishnan

S. K. Paul, B.Sc.

K. Ramakrishna

T. K. T. Srisailam

### CAPE TOWN

During the year 1960 the following meetings have been held:

21st September A joint meeting with the South African Institute of Mechanical Engineers, was held at which Cdr. W. J. Copenhagen, O.B.E., M.Sc., presented a paper entitled "Protective Films on Metal" followed by a film "Corrosion in Action".

12th October "The Use of Metallic Deposits by Metal Spraying" was presented by J. F. Attwell of Metallisation (S.A.) Ltd.

7th December A meeting was held at the Master Mariner's Club, at which E. Lewis of African Oxygen Ltd., lectured on "The Safe Handling of Welding and Cutting Equipment".

On the 4th August at the invitation of Captain D. W. Robertson, members visited the Simonstown Naval Dockyard and inspected some Napier Deltic Diesel engines under overhaul, and later saw one of the engines working aboard a frigate. The members were afterwards entertained by Captain Robertson at the Naval Officers' Club.

At the invitation of Mr. Abercromby, the Chief Engineer, on 8th November members inspected the engine rooms of the R.M.S. *Windsor Castle*.

The first Annual Dinner was held at the Master Mariners Club, Cape Town, on 18th November. Among the guests were Mr. B. J. Harris, Chairman of the S.A. Institution of Mechanical Engineers (Cape Western local centre) and Captain G. H. Pickering, the Master of Master Mariners. This proved a most enjoyable evening.

\* Accepted for publication in the Supplement to Transactions.



## Annual Report of the Council for 1960

### DURBAN

The programme for the year has again been of an interesting and varied nature, and has included the following meetings:

- 23rd February Annual General Meeting followed by a paper "Arc Welding Practice in U.K. Shipyards" by F. V. S. Wilson.
- 21st April Film evening: Two films by Burmeister and Wain, Copenhagen: "Forming of Metals"; "Land of Dew".
- 25th August Talk: "Use of Rubber in Marine Engineering" by Mr. Pitcher, followed by two films.
- 1st November Visit to R.M.S. *Windsor Castle* by courtesy of the Union Castle Line.
- 29th November Paper: "Production, Handling and Burning of Marine Fuel Oils" by D. McGregor Clark (Member) followed by a colour film, "Birth of an Oilfield".

An innovation during the year, was the holding of luncheon parties by members in the Merchant Navy Officers Memorial Club. These luncheons were greatly enjoyed, and it has been decided to make them a permanent and regular feature of the Section's activities.

Two prizes, each to the value of £10, for the purchase of books, were awarded to mechanical engineering students of the Natal Technical College desirous of furthering their studies in marine engineering.

The number of members at the end of the year is 42.

The Committee for 1961 is constituted as follows:

Local Vice-President: T. Ratcliffe

Chairman: C. T. Glover

Committee: W. W. Hutchinson

L. M. Olsen

G. C. Lovelace

P. F. Balfour

F. R. Eales

Honorary Secretary and Treasurer: J. R. Holdsworth

H. T. V. Horner (*Chairman*)

J. R. Holdsworth (*Honorary Secretary*)

### EASTERN U.S.A.

On 11th May 1960, the Council approved the formation of the New York Section which was later extended to cover the Eastern States as far west as the Mississippi.

The membership of the Section is as follows:

|                   |     |     |    |
|-------------------|-----|-----|----|
| Members           | ... | ... | 67 |
| Associate Members | ... | ... | 27 |
| Associates        | ... | ... | 7  |
| Graduates         | ... | ... | 8  |
| Students          | ... | ... | 2  |

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The President, The Rt. Hon. The Viscount Simon, C.M.G., was the guest at a luncheon party given by the interim committee on 9th June, in New York. Mr. J. H. Thomas (Chairman of the Section) was the host and Captain W. N. Landers, Secretary of the Society of Naval Architects and Marine Engineers was also present.

Later during his visit Lord Simon, in company with Mr. J. H. Thomas and Dr. J. J. McMullen (Member), was taken by helicopter on an inspection of the Pan Atlantic Steamship Corporation terminal at Port Newark.

On 17th October 1960, Mr. H. N. Pemberton (Member of Council) read his paper "Marine Machinery Failures" to the Eastern U.S.A. Section at the Carnegie Endowment International Center, 345 East Street, at the United Nations Plaza, New York City. This was followed by a Reception and Dinner.

The members of the Committee are as follows:

Local Vice-President, N.Y.: A. R. Gatewood

Chairman: J. T. Thomas

Committee: P. A. Birkeland

G. H. Hodges

H. Knap

W. H. Low

J. J. McMullen, B.S., M.S., Dr. Ing.

P. C. Speer

E. D. Story, B.S.

Honorary Secretary: G. A. Lianopoulos

Honorary Treasurer: P. F. Gresser

### SINGAPORE

Active corporate membership (i.e. Members and Associate Members) at the end of 1960 totalled 51 while Associate, Graduate and Student Members totalled 17 making a total of 68 being two less than last year.

On 6th August, a visit was arranged to the St. James Power Station when the new free piston engine gas turbine installation was inspected in operation. The Joint Group Members were invited to be the Section's guests on this occasion and some 45 members and guests attended.

Other functions arranged by the Overseas Joint Group and to which Section members were invited were:

16th March A lecture on "Satellite Tracking" by R. Fahenstock, M.S., B.S.

2nd April Visit to Singapore Gas Works.

19th May Film Evening.

28th May Visit to Singapore Harbour Board.

23rd June Symposium on Work Study by Brigadier Hinchley, O.B.E.

25th June Visit to R.A.F. Tengah.

7th July Lecture on Circuit Algebra by N. V. Knight, M.Sc., M.I.E.E.

16th July Visit to R.A.F. Seletar Engineering Wing.

27th August Visit to Singapore Glass Works.

8th September Lecture "Timber Possibilities in Engineering Structures" by P. W. E. Campbell and H. F. Burgess.

27th October Lecture "Some Problems of Modern School Designs in S.E. Asia including Air Conditioning" by M. W. Lee, A.R.I.B.A.

11th November Film "Construction of the Dokan Dam".

These functions were mostly well attended by members of the Section and the Joint Group have expressed their appreciation of our support.

J. R. Watson (*Chairman*)

J. F. Crane (*Honorary Secretary*)

The Annual General Meeting of the Section was held on Monday, 30th January 1961 at 5.15 p.m. in the Shell Theatre, Shell House, Collyer Quay, Singapore.

The retiring Chairman, Mr. J. R. Watson, welcomed the thirty-three members present. The annual report was read and adopted.

The Committee for 1961 is constituted as follows:

Local Vice-President: S. A. Anderson

Chairman: G. den Bakker

Vice-Chairman: J. McA. Brown

Committee: Lieut. Cdr. F. Helm, R.N.R.

J. O'B. Canavan

D. Litherland

K. C. Slater

W. Ward

J. R. Watson

Honorary Secretary: J. F. Crane

Honorary Treasurer: J. M. Mair

Following the business meeting Mr. Watson presented a paper entitled "The Selection of Machinery for a Coastal Vessel for Malayan Waters" which was well received and a discussion ensued.

Mr. G. den Bakker, the new Chairman, proposed a vote of thanks to the retiring Committee and to Mr. Watson for his paper.

### SYDNEY

The Committee has pleasure in presenting the Twelfth Annual Report of the proceedings of the Sydney Section of the Institute of Marine Engineers, during the year of 1960.

The Section has gained seven members during the year and now has a total of 176.

In addition, enquiries regarding membership have been received from 11 prospective members.

## Annual Report of the Council for 1960

Four general meetings were held during the year; also, the Twelfth Annual Meeting for students and apprentices, as follows:

- |                |   |
|----------------|---|
| 23rd March     | Annual General Meeting: "Problems Associated with Welding in Ship Construction and Repairs" by R. W. Joselin. |
| 16th May       | "Current and Future Development at Port Kembla, New South Wales" by A. G. Parish.                             |
| 22nd June      | Students' Meeting: "The Lubrication of Modern Marine Engines" by J. Renfrew (Member).                         |
| 18th July      | "The New Look in a Naval Dockyard" by Capt. A. M. Clift, R.A.N.   |
| 16th September | "A Recent Visit to the United Kingdom and North America" by Capt. R. G. Parker, O.B.E., R.A.N.                |

The Annual Dinner was held at The Wentworth Hotel on the 27th October 1960. This was a most successful function and was attended by 65 members and 65 guests. It has become one of the most important annual gatherings of those associated with shipping in Sydney.

The Annual General Meeting will be held on Wednesday, 22nd March 1961, and at the conclusion of the formal business, Rear-Admiral K. McK. Urquhart, C.B.E., will give a paper on "The R.A.N.'s first 50 years—Developments in Warships Design, Machinery and Equipment".

The constitution of the Committee during the past year has been as follows:

Chairman: Capt. G. I. D. Hutcheson, C.B.E., R.A.N.  
(Local Vice-President)

Committee: W. G. C. Butcher  
W. F. Ellis  
W. T. Mathieson  
J. Munro

Capt. R. G. Parker, O.B.E., R.A.N.

The Council continues to take a very keen interest in the activities of the Section, and has always been most encouraging towards it, and we are most grateful for this interest.

The Committee is also grateful to all the local Members for their continued support, as it is only through this that the Section can continue to function successfully.

G. I. D. Hutcheson (*Chairman*)  
N. A. Grieves (*Honorary Secretary*)

### VICTORIA

The following is a list of activities of the Victoria Section held during 1960:

- |               |   |
|---------------|---|
| 20th May      | A lecture on "The Advantages and Economics of Using Detergent Lubricants in Marine Auxiliary Diesel Engines" by W. Bragg, Assistant Superintendent Engineer (Diesel Vessels) Australian National Line.                    |
| 12th August   | A talk by H. Alcock (Member) on "Fuel Oil and Sea Water mixtures".  |
| 18th August   | An Apprentice Night was held in the Radio Theatre of Melbourne Technical College, where the Local Vice-President presented a slide rule to the best pupil of the Marine Engineering Section on behalf of the Institute.   |
| 4th October   | The Fourth Annual Dinner was held at Union Theatre of the Melbourne Technical School, when the guest speaker Mr. P. Howson, Member for Fawkner, represented the Minister for Shipping and Transport, Mr. Hubert Opperman. |
| 27th October  | A visit to the Australian Glass Manufacturers Company Pty. Ltd.   |
| 11th November | A lecture on the development of jet propulsion was delivered by Mr. P. Gasuines, Chief Hydraulic Designer for Kelly and Lewis.  |

### *Annual General Meeting*

The Annual General Meeting of the Victoria Section was held on 12th February 1961; the Committee, which was again re-elected unopposed is as follows:

Committee: C. Bie  
P. Bossen  
J. E. North  
G. Seales  
J. B. Thomson  
Lt. Cdr. D. W. K. Vagg, R.A.N.

Honorary Secretary: K. Paxton

Honorary Treasurer: Lt. Cdr. J. H. Coles, R.A.N.V.R.



## Representatives' Reports

*British Conference on Automation and Computation: Engineering Applications Group.* Representatives: H. E. Upton, O.B.E., and J. Stuart Robinson, M.A.

During the year a change has been made in the Organization which previously had been divided into three Groups dealing with separate subjects. They have been merged into a single body whose Council, consisting of two representatives of each member organization, will elect annually an Executive Committee of some 15 persons.

The meetings of the new Constitution began to take place in the Autumn of 1960.

There will be a conference at Harrogate on "Automation—Men and Money" on the 27th-30th June 1961. Literature giving full details will shortly be available for distribution and in view of the wide scope of the conference, members of the Institute will be interested.

To further the general work done, panels have been established for education and training, public relations and research and development. The tremendous and rapid growth of automation and computation means that there is an urgent need for education and training, while public relations are to be encouraged for the dissemination of news about automation and computation and while the expansion continues at its present pace, there is an ever growing need for a constant review of the requirements of industry in general.

*International Federation of Automatic Control.*

During the year a successful conference was held in Moscow and several delegates from Britain attended.

*British National Committee for Non-destructive Testing.*

Representative: R. H. Paddon Row.

*International Conferences*

The third International Conference on Non-destructive Testing was held in Tokyo during March and a delegation of four represented the United Kingdom, two of whom were members of the British National Committee. The leading United Kingdom delegate attended two meetings in Tokyo of the recently formed Standing Committee for International Co-operation within the Field of Non-destructive Testing, where he presented draft terms of reference for the Standing Committee which had been prepared by the British National Committee, and these received a substantial measure of agreement.

While in Tokyo the British National Committee delegates presented an offer to hold a fourth International Conference on Non-destructive Testing in Great Britain and this was accepted. As a result of subsequent negotiations it is now fairly certain that this Conference will be held in September 1963 and that it will be organized by the Institution of Mechanical Engineers in collaboration with the National Committee. Mr. H. N. Pemberton, Chief Engineer Surveyor of Lloyd's Register of Shipping has been appointed Chairman of the Organizing Committee and preliminary discussions have already been held. The National Committee has undertaken a substantial part of the work of initiating technical papers.

*The Needs of Industry in Non-destructive Testing*

The Working Party set up under the Chairmanship of Dr. E. G. Stanford to explore the outstanding requirements of different sections of Industry has had a series of meetings with the power generation industry, aircraft manufacturers and

operators, and the iron and steel industry, and the evidence collected is being studied.

A conference on Non-destructive Testing in Electrical Engineering was proposed by the National Committee and is being organized under the aegis of the Institution of Electrical Engineers. Considerable progress has been made with the planning of this meeting which is to take place in November 1961 and it is likely that about forty-five papers will be obtained.

As a result of an agreement between the Joint Committee on Materials and their Testing and the National Committee, a symposium on Recruitment of Inspectors and the Economics of Inspection has been organized and the meeting will take place in Oxford from 5th to 8th September 1961 and will be open to all.

*Standardization*

The British National Committee feels that the time is right for a survey of existing standards in the field of non-destructive testing and a discussion on the need for additional standards. It has accordingly invited the Institution of Production Engineers to consider a symposium under this heading.

*General*

The National Committee played a part in a British Council Course on Non-destructive Testing held during October for some eighteen overseas participants. In addition to individual contributions made by members to the planning and lectures the National Committee arranged a "Brains Trust" evening followed by a dinner.

*The British Shipbuilding Research Association, Research Board*

Representative: T. W. Bunyan, B.Sc.

1960 was a most significant year for The British Shipbuilding Research Association as it saw the move to new accommodation at Prince Consort House. This is a new building on the Albert Embankment overlooking the River Thames near Lambeth. The move was made necessary because the continued growth in the Association's activities, and in the staff needed to sustain them, had reached a point where the previous accommodation was seriously overcrowded. The move will facilitate further expansion.

Another development of great significance that took place during the year was the formation of a new section within B.S.R.A. to be concerned with production and operational research. It should prove of great benefit for the future of the shipbuilding industry. The decision was also taken during the year to establish within the Naval Architecture Department a small section concerned with applications of computers to shipbuilding. The Association has for some time been studying the possibilities of computers and has given financial and other support to investigations put in hand by the industry on a regional basis.

All sections of the Research Programme have been pursued with vigour but that of greatest interest to the members of the Institute is the Ships' Machinery Section. The experimental investigation of the laws of natural circulation in water tube boilers has been completed for vertical tubes and similar tests have been carried out on inclined tubes; many problems of experimental technique were solved in the course of the work on vertical tubes and the second phase as a result is proceeding at a rate which should lead to early completion of



## Annual Report of the Council for 1960

the project. In the course of the investigation, a new technique involving the use of radio-active isotopes has been developed for the measurement of the density of the steam/water mixture in the riser tube of the experimental boiler that is being used for these investigations. The investigation has continued into the forces and stresses in steam pipes and reports have been issued to member firms. The results obtained indicate that existing calculation methods are reliable in predicting the forces, stresses and flexibility in typical pipework systems under working conditions. The work is continuing with special reference to the stress distribution in pipe bends.

In the field of internal combustion engine research, continued progress has been made with the investigations into the scavenging and supercharging of two-stroke engines, particular attention having been paid to the problem of matching exhaust-gas driven turbochargers to large opposed piston engines. Staff at Liverpool University have been studying the problem for the Association and their work has highlighted the gaps in knowledge. It has also revealed scope for improvement in turbocharger efficiency, especially in view of the trend towards higher engine outputs. The Association proposes therefore, to initiate experimental work on the subject. Work on the failure of Diesel engine components exposed to combustion conditions has been brought to a close with the completion of further comprehensive creep and stress relaxation tests on a number of cast irons.

A number of new items has been added to the Research Programme in the machinery field and include an investigation into the temperatures and thermal stresses in large supercharged marine two-stroke engines; work on the influence of a limited number of stress reversals at high stress levels upon the fatigue strength of selected steels and cast iron; and a study of a new method of surface hardening known as the plasma-arc technique.

Continued progress has been made in other fields of work covering hydrodynamics, ships' structures, ships' performance and vibration. A most important item is the investigation into sea keeping which has been put in hand by B.S.R.A. in conjunction with the National Physical Laboratory, the National Institute of Oceanography and with the assistance of the Admiralty. Following trials on the *Weather Reporter*, three North Atlantic round voyages were completed during 1960 on board the *Cairndhu*. Three voyages were found to be necessary as the sea conditions experienced were not entirely suitable. A considerable amount of normal service data has however been recorded. Arrangements have also been made for further trials which are to be carried out on the research trawler, the *Ernest Holt* in the early part of 1961.

The Association has continued to receive considerable help from shipowners and recently paid tribute to them for assistance with advice and suggestions, and also stating that the facilities they have afforded for making measurements and observations on ships in service, often at considerable inconvenience to the owners and to ships' crews, have been invaluable to the successful prosecution of the Association's researches.

*City and Guilds of London Institute: Advisory Committee on Shipbuilding, Ship Joinery, Yacht and Boat-building.*

Representative: C. H. Taylor-Cook, B.Sc.(Eng.).

At its meeting in October, the Committee considered the examiners' reports and were pleased to note a small but general improvement in standard. They were, however, perturbed at the small number of candidates in Shipbuilding (a total of 200) and a sub-committee has been set up to consider whether the syllabus is properly directed, whether it is in line with current practice and whether the scheme is given adequate support by the industry.

*College of Technology, Portsmouth: Engineering Advisory Committee.*

Representative: H. W. Hogben, M.B.E., B.Sc.

Two meetings were held in 1960. The Committee has been reconstituted in the last year to include wider representation from industry and from the leading engineering institutions. The College, at present, has its course in Electrical

Engineering recognized for the award of a Diploma in Technology, and it is hoped to offer Dip.Tech. courses in other branches of engineering in the future.

The development of five-year Sandwich Courses is under consideration together with the possibility of establishing a course in Instrument Technology. No agreement was reached on the question of allowing certain students release on two days per week from industry. An independent survey has been made of the engineering workshops and it has been recommended that a sum of £50,000 should be spent on bringing the equipment up to date. The full time staff of the College has been increased to meet the growing demands in the engineering and science classes.

*East Ham Technical College: Engineering Advisory Committee.*

Representative: R. S. Brett.

The Committee consists of sixteen members including five representatives of professional bodies, namely the Institute of Marine Engineers, the British Institution of Radio Engineers, the Institutions of Mechanical Engineers, Electrical Engineers, and Production Engineers.

Three meetings of the Committee were held last year on the 28th March, 21st June, 15th November 1960. Main points arising from these meetings were:

i) *Work of the Engineering Department for 1959*

The work of the Department covers both mechanical and electrical engineering. Roughly two thirds of the work leads to City and Guilds examinations and the remainder to National Certificate examinations. In 1959, out of 243 entries for City and Guilds examination, there were 135 successes; in National Certificate subjects 63 passes out of 111 entries.

ii) *Examination Requirements of Professional Bodies*

The present examination standards of the professional engineering institutions make it necessary for part-time students to do an extra year of study between the S.3 and A.1 years. Therefore, the 1960-1961 session at the College will include an Intermediate or S.4 year for students wishing to gain admission to the institutions.

iii) *New Technical College Building*

It will be built in two phases. The first section comprising the workshop block and a tower containing a number of class rooms is now under construction and will be ready for occupation in September 1961. The construction of the final section comprising a Technical and Administration Block eight storeys high, will follow immediately and the whole project will be completed in September 1963.

iv) *Visits to the Engineering Department*

Members of the Advisory Committee visited the Department in groups during May and June 1960, and also inspected the progress of the new building. All were impressed with the Department's work especially in view of the cramped conditions and age of the equipment.

v) *Exemption Regulations for Marine Engineers*

After the 1st July 1960 the new Ministry of Transport regulations concerning the exempting power of Ordinary National Certificates for second class Marine Engineering Certificates come into force. This means that National Certificates awarded at the College will carry exemption from the Institute's examinations in Mathematics and Applied Mechanics.

vi) *Marine Engineering Apprentices: Alternative Training Scheme Courses*

The Ministry of Transport after inspecting the College facilities decided that the workshops and laboratories were insufficient for the training of apprentices in the Alternative Training Scheme. In the New Technical College building, however, it was hoped to have a Heat Engines Laboratory which would meet marine requirements and those of other examining bodies.

vii) *Enrolment for 1960/1961 Session*



## Annual Report of the Council for 1960

There was a small drop as compared with last year, which was due mainly to the commencement of Engineering Craft Practice courses at a near College.

viii) *New Block Release Course*

The new College workshops will be opened in September 1961. It was felt that in addition to the existing part-time day schemes for training apprentices, a Block Release Scheme for mechanical and engineering craftsmen should be organized. It would be a 4-year Course leading to the City and Guilds Full Technological Certificate. The Committee agreed that support should be sought from local engineering firms.

ix) *New Building Equipment*

The Committee agreed that local firms should be approached to see if they would present specialized equipment to the new Technical College.

*Engineering Institutions Examination. Standing Committee for Part I.* Representative: C. H. Taylor-Cook, B.Sc.(Eng.)

As a sub-committee has been formed for the purpose of dealing with the routine work connected with examinations, the Standing Committee now meets less frequently.

Consideration has been given to the problem of Indian students who find it difficult to obtain permission to sit for an examination in English and hence cannot satisfy the English requirement through one of the United Kingdom Examining Boards. No solution has yet been found.

It has been agreed that the South African Institute of Electrical Engineers may make use of the Part I examination syllabus for the purpose of their own examinations.

*Engineering Joint Examination Board.* Representatives: F. H. Reid, B.Sc., Wh.Ex., and F. S. Gander, B.Sc.

The Common Preliminary Examination was held from 5th to 8th April and from 4th to 7th October 1960.

The Annual Meeting of the Board was held on 22nd June 1960 to receive the report for 1959/60, including the statement of accounts and the report of the Moderating Committee on the examination results.

The *Final Meeting* of the Board was held on 6th December 1960 to receive the statement of accounts and the report of the Moderating Committee on the October 1960 examination results.

The examination results are shown in the following table:

| Examination         | Whole examination |             |             |             | Part examination |               |             |               | Total Sat |
|---------------------|-------------------|-------------|-------------|-------------|------------------|---------------|-------------|---------------|-----------|
|                     | Sat               | Pass        | Refer       | Fail        | Sat              | Pass          | Refer       | Fail          |           |
| Oct. 1959           | 139               | 25<br>(18%) | 33<br>(24%) | 81<br>(58%) | 123              | 55<br>(45%)   | 11<br>(9%)  | 57<br>(46%)   | 262       |
| Apr. 1960           | 137               | 25<br>(18%) | 32<br>(23%) | 80<br>(59%) | 212              | 89<br>(42%)   | 16<br>(8%)  | 107<br>(50%)  | 349       |
| Oct. 1960<br>(Home) | 29                | 4<br>(14%)  | 10<br>(34%) | 15<br>(52%) | 91               | 49<br>(54%)   | 11<br>(12%) | 31<br>(34%)   | 120       |
| (Overseas)          | 46                | 6<br>(13%)  | 22<br>(48%) | 18<br>(39%) | 53               | 22<br>(41.5%) | 9<br>(17%)  | 22<br>(41.5%) | 99        |

The Board was dissolved on 31st December 1960.

*Institution of Electrical Engineers: Ship Electrical Equipment Regulations Committee.* Representative: A. N. Savage.

The six sub-committees set up in 1956 to carry out the detailed work of preparation of the fourth edition of the regulations have completed their task, and their recommendations have been placed before the Council for their approval.

These sub-committees have now been disbanded and an Advisory and Co-ordination Sub-committee and a Cables Sub-committee have been formed having the following Terms of Reference:

- i) To review the current Regulations as and when necessary, and to consider any comments received and other relevant publications, and to prepare Committee

documents and drafts for submission to the parent Committee as necessary.

- ii) To provide interpretations of the current Regulations in response to specific inquiries from users.
- iii) To consider I.E.C. Publications in relation to the I.E.E. Regulations with a view to alignment with the former where suitable, and to advise the parent Committee.
- iv) To have the power to co-opt additional members subject to the confirmation of such action by the parent Committee and to invite submission of technical evidence.
- v) To formulate requests for the preparation of new, or the amendment of existing, British Standards.

*International Institute of Refrigeration: Standing Committee.* Representative: K. C. Hales, M.A.

The D.S.I.R. Standing Committee on the International Institute of Refrigeration met twice in 1960. Discussions have involved the problem of introducing younger members of industry to the Institute, organization and form of the four-yearly Congress, and the appointment from British applicants of a Technical Assistant to the Director in Paris.

*Joint British Committee for Stress Analysis.* Representative: T. W. Bunyan, B.Sc.

The Committee comprises representatives from the following bodies:

- The Royal Aeronautical Society.
- The Institution of Civil Engineers.
- The Institution of Electrical Engineers.
- The Institute of Marine Engineers.
- The Institution of Mechanical Engineers.
- The Institution of Naval Architects.
- The Institute of Physics.
- The Institution of Structural Engineers.
- The Institute of Welding.
- The Institution of Mining Engineers.

Three meetings took place during the year with the purpose of drafting rules for the permanent International Committee and with briefing the two delegates chosen to represent the

*Joint Committee on Materials and Their Testing of Technical Institutions and Societies in Great Britain.* Representative: R. Cook, M.Sc.

Plans for the Symposium on Recruitment of Inspectors and the Economics of Inspection, sponsored by the Joint Committee and conducted by the Institution of Engineering Inspection and the Society of Non-destructive Examination, have been developed. The meeting is to take place in Oxford on the 5th to 8th September 1961, and will be open to all.

Another subject being pursued by the Joint Committee is a Symposium on Machine Design and it is likely that this will take the form of an Informal Discussion in the Institution of Mechanical Engineers' programme, with the possibility of a more formal consideration at a later date. The possibility of a Symposium on the Testing of Plastics from the users viewpoint has been under discussion, and preliminary thought has been given to a further discussion on the Testing of Acoustic Properties of Materials.



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British Committee at the meeting in Stresa, Italy. The last meeting considered the proposed draft programme for the 2nd International Conference due to take place in Paris in April 1962.

A list of topics for papers intended to be read at the Conference has now been prepared and could be made available to any interested members of this Institution.

*Lloyd's Register of Shipping: Technical Committee.* Representatives: A. Logan, O.B.E., and H. J. Wheadon.

The Committee met twice during 1960, on 3rd May and 7th December, and several meetings of the various Panels were also held during the year.

The reports on the Panels are as follows:

### *Tanker Panel*

This Panel completed the major portion of its work on the revision of the Rules in 1959, but a further meeting will be held at a later date to consider proposals for the forward and after ends and the superstructures.

### *Electrical Panel*

The work of this Panel on the revision of the Rules was completed in 1960 and its proposals were adopted by the Technical Committee in December, with minor modifications.

### *Tanker Safety Panel*

A new Panel, to act in a consultative capacity on questions of tanker safety, has been set up and Mr. A. Logan has been appointed a member. The terms of reference are:

- i) To collate and examine information on explosions in tankers.
- ii) To consider whether alterations and additions should be made to the Rules.

### *Anchors and Chains Panel*

A new Panel has been established to examine the question of anchors and chain cables for merchant ships in the light of recent developments.

The following major items were also approved by the Committee:

### *Provisional Rules for Nuclear Ships*

The proposed Rules recommended by the Nuclear Panel were approved by both the Technical and General Committees and were issued in July.

### *Carriage of Liquefied Gases at Low Temperatures*

Tentative requirements prepared by the Chief Surveyors as design criteria have been approved.

### *Rules for Quality and Testing of Materials*

Unified requirements for Hull Structural Steel, as agreed by the Steel Panel were approved, subject to minor amendment.

### *Steel for Boilers, Pressure Vessels and Welded Machinery Structures*

The rules have been revised and extended to include the steels commonly used in the construction of the above items.

In addition, minor amendments were agreed on the following subjects:

- Rules for Steel Ships—Corrosion of External Surfaces of Shell Plating.
- Beams at Cargo and Accommodation Decks.
- Machinery Spaces.
- Welding.

Rules for Pumping and Piping.

Rules for Boilers and Pressure Vessels.

Repairs by Welding of Machinery Steel Castings.

Rules for Oil Tankers.

Rules for Steam Engines, Internal Combustion Engines, Reduction Gearing and Auxiliary Machinery.

Rules for Strengthening for Navigation in Ice.

*Northern Advisory Council for Further Education (Advisory Committee for Engineering).* Representative: A. W. Jones, B.Sc.

The Advisory Committee for Engineering met twice during the year and discussed some of the problems raised in the recent White Paper "Better Opportunities in Technical Education" and, in particular, the problem of introducing the scheme of Block Release.

A one-day conference has been organized to take place early in 1961. The conference will be attended by industrialists and educationists and will give an opportunity for explanation and discussion, between those concerned, of the White Paper and the problems it raises.

*Poplar Technical College, Board of Governors.* Representative: D. G. Alcock.

The Institute was represented at all the Meetings of the Board of Governors held over the last year and at the majority of the Staff Sub-committee Meetings.

The College is continuing with its usual good work in the way of courses for Certificates of Competency and, in addition, they are playing an increasing part in the training of apprentices engaged in the Alternative Training Scheme.

After some negotiations with the L.C.C., the College is now also providing some Vacation Workshop Training facilities to augment the Ordinary National Diploma Courses followed by the Alternative Scheme Apprentices, the majority of whom are associated with the Institute.

During the year under review the Board of Governors approved the engagement of additional staff for the training vessel *Glen Strathallan*, a 400-ton trawler type steam yacht which provides additional beneficial training for all types of Marine Courses.

The guidance of the Institute would seem to be thoroughly appreciated by those concerned.

*Welsh College of Advanced Technology, Cardiff.* Representative: D. Skae.

Meetings of the Governors and of the Engineering Advisory Sub-committee have been attended during the year, but no matters of special interest to the Institute have arisen.

## BRITISH STANDARDS INSTITUTION COMMITTEES

*C/37/2/2 Sampling of Steam.* Representative: W. McClimont, B.Sc.

A new British Standard 3285:1960—Methods of Sampling Superheated Steam from Steam Generating Units—has now been published. The standard gives basic requirements for apparatus and for procedure for obtaining a representative sample of steam, which is superheated or has a moisture content of not more than about 0.5 per cent, for the measurement of purity. It also covers the extraction and processing of the sample for delivery either to measuring and analytical devices suitable for continuous testing or for delivery to a container in which the sample may be preserved for subsequent laboratory investigation. Application of the procedure laid down in this standard is limited to steam flowing through pipes; the steam being sampled must also be under sufficient pressure to establish the required rate of flow through the sampling probe or probes.

Three meetings have been held to discuss the preparation of two further standards, one for the sampling of saturated steam flowing in pipes and the other for the sampling of saturated steam before superheat, as in the case of sampling from boiler drums.

*ELE/1/10 Marine Motors and Generators.* Representative: A. N. Savage.

A revised Edition of B.S. 2949:1958 was issued in April 1960. This revision was undertaken to include requirements for propulsion machines and electromagnetic slip couplings.

*ELE/3/2 Ships' Cables.* Representative: A. N. Savage.

No meetings of this Committee have been held during 1960.

*ELE/3/21 Heat-resisting Cables.* Representative: A. N. Savage.

The work of this Committee has proceeded during the year and a new British Standard, B.S. 3249:1960 was issued on the 15th June 1960. This new British Standard replaces the part of B.S. 1327:1946 which dealt with flexible cords insulated with varnished cambric and asbestos.

A second British Standard, B.S. 3258:1960 Silicone-



## Annual Report of the Council for 1960

Rubber-Insulated Cables and Flexible Cords was issued on the 4th August 1960. This standard together with B.S. — Butyl-Rubber-Insulated Cables and Flexible Cords with heat-resisting fibre layer, replaces the part of B.S. 1327:1946 which dealt with flexible cords insulated with vulcanized rubber and asbestos.

*ELE/32/6 Radio Interference Suppression in Marine Installations.* Representative: T. G. Boys.

During the year British Standard 1597 is being revised. The Committee was represented at the meeting of I.E.C./TC18, Electrical Installations in Ships, held at Tours, France, from 9th to 13th May 1960.

*ELE/51/5 Marine Transformers.* Representative: A. N. Savage.

The draft specification has been completed and circulated to the Industry for comment.

*GLC/4 Observation and Gauge Glasses for Pressure Vessels.* Representative: E. F. Barton.

Three meetings have been held to consider comments made by industrial concerns, governmental departments and Commonwealth Standards Associations upon the Draft Standard presented for comment in March 1960. Amendments have been finalized and it is expected that the standard will be published in 1961.

Tubular level glasses are required to be guaranteed to withstand specified thermal shock tests, and protector glasses for these are to be of toughened glass guaranteed also to withstand thermal shock tests. Toughened tubular glasses are not yet commercially available. Dimensional requirements have been made on the basis of preferred sizes so that the quality clauses may be applied to glasses which do not conform to specified sizes.

Dimensional standards and quality requirements have also been specified for through vision and reflex gauge glasses, and for circular sight and light glasses intended for pressure vessels.

Appendices have been included to give guidance on the safe maximum temperatures and temperature differentials for the two varieties of glass in common use, and safe maximum pressures for circular glasses of specified diameter and thickness.

*GLC/5 Safety Glass for Marine Purposes.* Representative: E. F. J. Baugh.

Some four meetings were held during 1960 and a third Draft will be examined by the Committee on 9th March 1961. It is anticipated that the final Draft will be submitted to the Committee during the Autumn of this year.

*INE/4/5 Ships' Refrigeration Thermometers.* Representative: R. W. Cromarty.

In September 1960 the work of this sub-committee was completed with the publication of B.S. 3273 "Specification for Distance Indicating Thermometers for Ships' Refrigerated Cargo Spaces".

*ISE/15 Iron and Steel Industry Standards.* Representative: James Turnbull, O.B.E.

A revision of B.S. 14:1942 "Steel for Marine Boilers" is now well advanced.

*ISE/35/9 Austenitic Cast Irons.* Representative: T. A. Rush.

Three meetings on the above committee were held during 1960 and the drafting of a standard for austenitic cast irons commenced. The draft of Part I of the standard "Corrosion and Erosion Resistant Irons" has been compiled and circulated to main committee for approval prior to being circulated for industrial comment. Further consideration will be given at the next meeting to Part 2 "Heat-resisting Castings" and Part 3 "Non-magnetic Castings for the Electrical Industry".

*MEE/—Mechanical Engineering Industry Standards.* Representative: S. Archer, M.Sc.

The Committee met three times during the period under review. The following standards were approved and are now published:

B.S. 3329—Gear Planing and Gear Shaping Machines.  
B.S. 3317—Triangular Eye Hooks, Rings, Shackles and Slings.

B.S. 1790—Length Bars and Their Accessories.

B.S. 3243—Hand Operated Pulley Blocks.

B.S. 2643—Specimens for Surface Grinding.

B.S. 498—Part I—Engineers Files and Rasps.

B.S. 3245—Jointing Compounds for Liquid Petroleum Gas Installations.

B.S. 3274—Tubular Heat Exchangers for Light and Medium Duties.

B.S. 430—(Revised) Solid Drawn Air Receivers.

B.S. 1099—(Revised) Small Fusion Welded Air Receivers.

B.S. 487—(Revised) Part 1—Fusion Welded Air Receivers.

B.S. 1710—(Revised) Identification of Pipe Lines.

B.S. 2062—(Revised) Part 2—Gear Hobs.

B.S. 853—Parts 1 and 2 Calorifiers for Central Heating and Hot Water Supply.

B.S. 3016—Part 3—Pressure Regulators for Use with Butane/Propane Gases.

B.S. 2573—Permissible stresses in Cranes (Part 1—Structures).

B.S. 466—Electric Overhead Travelling Cranes.

B.S. 3295—Unit Heads (Slide Type).

B.S. 2634—Roughness Comparison Specimens. Part 1—Ground Flat and Cylindrical Types.

B.S. 919—Screw Gauge Limits and Tolerances. Part 1—Gauges for Screw Threads of Unified Form.

*MEE/6/19 Gear Hobbing Machines.* Representative: Cdr. E. H. W. Platt, R.N.

Five meetings of the Committee were held during 1960 and the following were the principal subjects discussed:

*Standard for Gear Planing and Shaping Machines*

The new standard, B.S. 3329:61 has been published.

*New standard for "Commercial" Hobbing Machines*

It has been agreed that, whilst Grade "B" in British Standard 1498 shall be retained, a new standard shall be drafted with the title "Hobbing Machines for Gears for General Purposes". A draft format for this new standard was discussed at the December 1960 meeting.

*Revision of British Standards 1807 and 1498*

A number of alterations in detail to these standards, arising largely from the work of the *ad hoc* committee referred to in the last Annual Report, have been discussed and agreed. Marine gear cutters have played the major part in these discussions.

*MEE/13 Engine Testing Fittings.* Representative: J. Calderwood, M.Sc.

The revised standard for fittings for cylinder pressure indicators for reciprocating engines was completed and issued for comment during the year. Only one modification to the draft was suggested and subject to all members of the Committee agreeing this the specification will be issued shortly. Basically, it differs from the old specification only in minor details; the important alteration is that the cylinder head connexion thread has been altered from  $\frac{3}{8}$ in. British Standard Whitworth to  $\frac{3}{8}$ in. Unified Thread.

*MEE/21/1 Solid Drawn Air Receivers.* Representative: T. D. Shilston.

Revised B.S. 430—Issued.

*MEE/21/3 Welded Steel Air Receivers.* Representative: T. D. Shilston.

Revised B.S. 487—Welded Air Receivers.

*Part I—For pressures not exceeding 500lb./sq. in.—Issued*

*Part II—For pressures exceeding 500lb./sq. in.—now in galley proof form ready for editorial checking.*

*New B.S. 1099*



## Annual Report of the Council for 1960

Small Fusion Welded Air Receivers—Issued.

New B.S. 3256

Small Fusion Welded Air Receivers for Road and Railway Vehicles—Issued.

*MEE/34/8 Pipes and Piping.* Representative: J. Liddell, B.Sc.

Several meetings of the drafting panel of this Committee were held to continue with the revision of B.S. 806:1954 "Ferrous Pipes and Piping Installations for and in connexion with Land Boilers". Since the complete revision of this standard will take some considerable time, the efforts of the panel during the year were concentrated on the preparation of Amendment No. 3 to the standard which was published in November. The Amendment includes a new formula for determining the thickness of pipes together with revised maximum permissible design stresses and in consequence thinner pipes can be used. The definition of design pressures for steam piping and feed piping have been revised and the clause relating to the hydraulic test on completed pipes and fittings has been amended.

*MEE/34/9 Boiler and Superheater Tubes.* Representative: J. Liddell, B.Sc.

The Committee met on several occasions to consider the use of steel made by the oxygen steel making processes for the manufacture of seamless carbon steel tubes and electrically welded carbon steel tubes covered by Parts 1 to 6 and Part 13 of B.S. 3059. The Committee agreed that steel made by the oxygen processes be included and Draft Amendment No. 2 to B.S. 3059 to this effect has been circulated for comment.

*MEE/63 Ships' Side Scuttles and Frames.* Representative: E. F. J. Baugh. (Revision of B.S. 3024:1947.)

Two meetings were held during 1960 and a Draft has now been prepared and will be submitted to the Committee for approval on the 21st March. This, however, may be delayed since proposals have been submitted for Welded Side Scuttles by the manufacturing members of the Technical Committee but, nevertheless, it is hoped that these proposals will be approved and included for in the aforementioned Draft.

*MEE/81 Valves for Gas, Water and Steel.* Representative: A. Logan, O.B.E.

Two parts of the standard B.S. 3016 (in three parts) for Pressure Regulators for use with Butane/Propane Gases were published during the year. Part II in first half of the year and Part III in the second half.

*MEE/81/3 General Purpose Valves.* Representative: A. Logan, O.B.E.

The Committee met five times during the year to consider draft standards for Cast Iron Gate Valves for general purposes.

Some interesting points discussed at length were "face to face dimensions"; standardization of screw threads to Unified threads or British Standard Threads. The second draft standard was circulated to the industry which was commented on comprehensively. Work still proceeds on the standard.

*MEE/93 Lubricating Nipples Used for Grease Lubrication in Machinery and Vehicles.* Representative: G. F. Gatward.

There were three meetings in 1960, held on the 5th April, 25th May and 19th July, during which the discussion centred around the formulation of a draft British Standards Specification No. BS 1486/Part Two for Heavy Duty Lubricating Nipples, used for Grease Lubrication in Machinery and Vehicles. This draft has now been circulated to industry for comment and replies are awaited.

The Committee have in mind future work of MEE/93, and are giving consideration to the possibility of producing a British Standards for the Connector Part of the Lubricating Gun.

*MEE/119 Plain Bearings.* Representative: R. W. Cromarty.

The Committee has been requested to send in their views on the British Standard No. 1131—"Plain Bearings (Metal)". In particular, comments are wanted as to whether any revision or minor amendments are required. Members interested are requested to send their comments to the Secretary of the Institute as soon as possible.

*NFE/27/3 White Metal Bearing Alloys and Tin Base Die Casting Alloys.* Representative: N. Macleod.

One meeting was held during the year at which modifications to draft standard were agreed.

The final draft has been approved by the Technical Committee NFE/27, and published as B.S. 3332:1961, under the title "Specification for White Metal Bearing Alloy Ingots".

*USM/2/5 Heat Engines.* Representative: C. H. Taylor-Cook, B.Sc.(Eng.).

This Committee (a sub-committee of the main committee USM2) has not met during the past year. It is understood that the main committee is still engaged in combining the reports of its sub-committees into one report. The title of this section has been changed from "Heat Engines" to "Thermodynamics".

# Minutes of Proceedings of the Seventy-second Annual General Meeting

25th April 1961

The 72nd Annual General Meeting of the Institute was held in the Memorial Building, 76 Mark Lane, London, E.C.3, on Tuesday, 25th April 1961, at 6 p.m.

The President, The Right Honourable The Viscount Simon, C.M.G., occupied the Chair.

The Minutes of the preceding Annual General Meeting were taken as read, having been published in the June 1960 issue of the *TRANSACTIONS*, and were confirmed and signed.

## *Introductory Remarks by the Chairman*

The CHAIRMAN (Lord Simon) expressed his pleasure at seeing so many members assembled for the Annual General Meeting. He hoped to conduct the business with reasonable dispatch so that members could get to their next appointments, if any, but at the same time not deal with it in too cavalier a fashion. He had been asked to remind them that only those who had paid their subscriptions could vote on any resolution.

## *Examination of Voting Papers*

On the invitation of the CHAIRMAN, the Scrutineers retired in order to examine the voting papers.

## *Presentation of Annual Report*

The SECRETARY (Mr. J. Stuart Robinson, M.A.) presented the Annual Report of the Council for 1960.

## *Presentation of Annual Financial Statement*

The HONORARY TREASURER (Mr. J. Calderwood, M.Sc.) in presenting his report, said it had been drawn up in the same form as for some years past, and he hoped it was clear. There were two or three items on which he would like to comment.

In the Balance Sheet it would be seen that £3,000 had been transferred to Conference Expenses. The Council had decided some time ago to build up a Conference Fund, and a Conference was to be held next year. It would appear that the transfer of £3,000 each year would fully meet any expenses incurred next year or at future Conferences.

The net value of investments during the year increased to £32,000 after allowing £3,000 for depreciation, almost wholly on undated Government stocks.

The new arrangement of part Government stocks and part industrial was working very well, and he thought their financial advisers had given them excellent advice on the investments which should be made.

One point that might raise comment was Current Liabilities and Assets. There appeared to be £60,000 in the "kitty" which was not invested. That gave rather a false picture because it represented the position at the end of the year. Since then £20,000 had been invested, and there were several

very large commitments, including income tax commitments, that must be paid soon, so that the remaining £40,000 remained in hand.

On the General Revenue account he would like to mention only the cost of *TRANSACTIONS*, which worked out at 4s. 4d. per copy this year, compared with 4s. 1d. in 1959: advertising paid for most of it. It was to the credit of their permanent staff that they had been able to keep that small increase while the text had increased by over 10 per cent and the Canadian Supplement had been published.

One other item he would mention was the transfer of £1,000 for Repairs and Redecoration of the Institute. They had been transferring an amount each year, but sooner or later there would be fairly heavy costs for decorations and, at any rate for the time being, it had been decided to make a provision of £1,000.

If there were any questions he would try to answer them; if he could not, Mr. Stone, their chartered accountant was in the hall.

## *Adoption of Annual Report and Accounts*

Mr. W. McCLIMONT, B.Sc. (Member) said that the continued growth in the membership, prestige and financial status of the Institute during 1960, was particularly gratifying when considered against the continuing difficulties of the shipping and marine engineering industries. These difficulties appeared likely to be with us for some time yet and it was reassuring to find that the Institute was weathering so well these adverse conditions. It might reasonably be expected, therefore, that the continued advancement of the Institute would not be impeded by the industrial conditions of the next few years.

In seconding the adoption of the Annual Report and Accounts for 1959, he had drawn attention to certain desirable trends in the make-up of the membership of the Institute and he was glad to find that these trends were being continued and even accelerated. Particularly gratifying was the large increase of 457 in the number of Associate Members who thus increased from 23 to 25 per cent of the total membership; in these figures lay the guarantee of the future technical strength and growing prestige of the Institute.

Changing conditions of recruitment, training and employment of engineers in the Royal Navy and in the Commonwealth Navies had made necessary some changes in the By-Laws; at the same time there had been developments in the training and the pattern of employment of Merchant Navy officers also and these too called for amendments to the By-Laws. The Council were to be congratulated on having given these matters appropriate consideration and it was to be hoped that the resulting Resolution would meet with the approval of members. He hoped that these revisions would ease the



## Minutes of Proceedings of the Annual General Meeting

task of the Membership Committee by bringing the letter of the law more into keeping with the spirit of it. There would remain, of course, the problems of defining "equivalent qualifications", "equivalent rank" and "position of responsibility", but the resolution of these matters was inevitably the duty of the Membership Committee. They would have to bring all their wisdom to bear on these matters because he felt that the extension of the Institute's areas of operation, concerning which there was much reference in the Report, was producing new problems in the field of membership election. In the past, no matter the area of the world in which applicants resided, the qualifications for membership which they submitted were generally of United Kingdom origin—training in Royal Naval Colleges; Board of Trade, or Ministry of Transport Certificates of Competency; British University degrees or Higher National Certificates—but a large, and rapidly increasing number of applicants were now submitting their own national qualifications—for example, Naval Colleges in countries which had recently become independent, and Certificates of Competency not acceptable for deep-sea ships—and much care and sagacity would be necessary to maintain a balance between the maintenance of the standards of the Institute and the desirability of nurturing the newer centres of training throughout the world, also recognizing at the earliest appropriate time the standards of their examinations. The international prestige of the Institute was remarkably high, and it seemed to him that the Institute had an important international role ahead of it. He was glad that the Council recognised this and was meeting admirably the problems which it posed.

The Balance Sheet for 1960 and the annexed Accounts showed the same characteristics as members' own personal affairs—everything had become more expensive and while ends could still be made to meet, the process had become noticeably more difficult. In spite of this, the financial position continued to be healthy. It was nice to note that the final payment for the construction of the Memorial Building had been made to the contractor.

The sharp increase in the cost of the TRANSACTIONS was perhaps worthy of comment since it appeared to be a reversal of the trend of the previous year. Leaving aside the CANADIAN SUPPLEMENT and the STUDENT TRANSACTIONS, the net cost had nearly doubled at £5,395. Even at this higher figure, however, this was still less than the cost of wrapping and postage of the TRANSACTIONS. Revenue from advertising and sales paid all the costs of production.

The Institute's representatives on outside organizations had again had a busy year for which thanks should be recorded. He noted that Committees continued to proliferate; two representations discontinued but four new ones created.

The Annual Reports of the Sections made encouraging reading; the attendances were particularly impressive. He had had the privilege recently of giving lectures to two of the Sections and it was an exhilarating experience particularly, dare he say it, after the sometimes rather soporific atmosphere of the lecture hall of the Memorial Building. The Institute owed a great deal to the work of the office bearers and Committees of the Sections, and he wished continued success to their endeavours.

Mr. McClimont then formally proposed the adoption of the Annual Report and Accounts for the year ended December 1960, as published in the March 1961 issue of the TRANSACTIONS.

Mr. C. W. TONKIN, B.Sc., in seconding the motion, said that both the Report and the Accounts were most satisfactory. The motion for their adoption had been most ably proposed.

There being no questions or comments, the motion was put to the meeting and *carried unanimously*.

### *Presentation of Awards for 1960 by the Chairman*

The CHAIRMAN said that the happiest part of the meeting was the presentation of the 1960 awards. He then presented the following awards:

*Denny Gold Medal*: to Mr. H. N. Pemberton (Member of Council) for his paper entitled "Marine Machinery Failures".

*Yorkshire Award 1959/60*: to Messrs. W. McClimont, B.Sc. (Member), H. M. Richardson, B.Sc. and B. Taylor, B.Sc.(Eng.) (Member) jointly for their paper entitled "Boiler Refractories: Operating Temperatures and Recent Developments in Construction".

He added that the other recipients of awards who were unable to be present would have their prizes forwarded to them.

### *Report of the Scrutineers—Election of President and Vice-Presidents*

The CHAIRMAN announced the result of the Scrutineers' Report as follows:

President: C. C. Pounder

Vice-Presidents:

*United Kingdom*: J. P. Campbell  
W. J. Ferguson, M.Eng.  
S. Hogg, O.B.E.  
T. W. Longmuir

*Australia*: Capt. G. I. D. Hutcheson, C.B.E., R.A.N.

*United States of America*: A. R. Gatewood

Members of Council: R. F. Capey  
J. E. Church  
Rear-Admiral F. E. Clemison, C.B.  
J. H. Milton  
A. H. Stobbs

Associate Member of Council: C. W. Tonkin, B.Sc.

### *Vote of Thanks to Scrutineers and re-appointment for 1961/62*

MR. J. CALDERWOOD, M.Sc. proposed a vote of thanks to the Scrutineers. They had, he said, a most thankless task to do, and should be thanked for doing it. It must be a horrible job adding up all the forms and checking them whilst the meeting was going on. He could never quite understand why they were not allowed to do it just before the meeting, so that they could attend the meeting. (*Hear, hear.*)

In addition to proposing the vote of thanks, he moved the re-election of the following as Scrutineers:

Messrs. B. C. Curling, O.B.E., G. H. Garner and E. R. Hall, B.Sc. and the election of Mr. M. W. Dunham.

*The vote of thanks was carried with acclamation.*

The election of the above-named members as Scrutineers was *carried unanimously*.

### *Resolution Set Out in the Notice Convening the Meeting*

The CHAIRMAN said they had now come to an item of special business, the Resolution set out on three pages in the notice convening the meeting. It would have been read and studied, and reference had been made to it by Mr. McClimont. These were amendments to the membership rules, which had been proposed, after very careful consideration, by the appropriate sub-committee of the Council. They did not involve a great deal in the way of alterations. A good many of the amendments were tidying-up but there was a certain amount of adjustment here and there, particularly in relation to qualifications of Naval Officers by virtue of their rank.

"That subject to the provisions of Article 20 of the Royal Charter, the By-Laws of the Institute be and they are hereby amended as follows:

By-Law 4 (i) at present reading as follows:—

'(i) engineers who hold a First Class Certificate of Competency issued by the Ministry of Transport and Civil Aviation or an equivalent qualification, and have held for three years subsequent to obtaining such qualification a position of responsibility in the science or practice of engineering or shipbuilding;'

shall be amended to read as follows:—

'(i) engineers who hold a First Class Certificate of Com-



## Minutes of Proceedings of the Annual General Meeting

petency issued by the Ministry of Transport or an equivalent qualification, and have held for three years subsequent to obtaining such qualification a position of responsibility in the science or practice of engineering or shipbuilding;

By-Law 4 (ii) at present reading as follows:—

- ‘or (ii) engineers who have held for not less than five years a rank not lower than that of Lieutenant Royal Navy, Royal Australian Navy, Royal Canadian Navy, Royal New Zealand Navy, the Pakistan Navy, the Indian Navy, or the South African Navy;’

shall be amended to read as follows:—

- ‘or (ii) Naval Officers qualified in Marine Engineering of or above the rank of Lieutenant-Commander in the Royal Navy or of equivalent rank in a Commonwealth Navy or in a foreign Navy;’

By-Law 6 at present reading as follows:—

‘6. *Associate Members.* Candidates for election or transfer into the class of Associate Members shall be those who at the time of such election or transfer:

- (i) have had an engineering training of not less than four years and three years sea service, and hold a First Class Certificate of Competency issued by the Ministry of Transport and Civil Aviation or an equivalent qualification;
- or (ii) are engineers who hold a rank not lower than that of Lieutenant Royal Navy, Royal Australian Navy, Royal Canadian Navy, Royal New Zealand Navy, the Pakistan Navy, the Indian Navy or the South African Navy;
- or (iii) are at least twenty-five years of age and (a) have served an engineering or shipbuilding apprenticeship of not less than four years, or (b) have an approved University degree or recognized diploma in the science of engineering or naval architecture and not less than two years’ practical engineering or shipbuilding experience. Candidates under (a) and (b) above must have held a position of responsibility for at least three years in the science or practice of engineering or shipbuilding and candidates must, in addition to possessing the above qualifications, have passed the Institute examination for this grade as may be prescribed by the Council’s Examination Rules for the time being or such exempting examinations as may from time to time be approved by the Council under such Rules.’

shall be amended to read as follows:—

‘6. *Associate Members.* Candidates for election or transfer into the class of Associate Members shall be at the time of such election or transfer at least twenty-five years of age. They shall hold a position of responsibility in the science or practice of engineering or shipbuilding and shall be:

- (i) those who have had an engineering training of not less than four years and hold a First Class Certificate of Competency issued by the Ministry of Transport or an equivalent qualification;
- or (ii) Naval Officers qualified in Marine Engineering of the rank of Lieutenant in the Royal Navy or of equivalent rank and qualification in a Commonwealth Navy or in a foreign Navy, and who have had not less than three years practical experience as an officer since qualifying;
- or (iii) those who (a) have served an engineering or shipbuilding apprenticeship of not less than four years, or (b) have an approved University degree or recognized diploma in

the science of engineering or naval architecture and not less than two years’ practical engineering or shipbuilding experience. Candidates under (a) and (b) above must have held a position of responsibility for at least three years in the science or practice of engineering or shipbuilding and candidates must, in addition to possessing the above qualifications, have passed the Institute examination for this grade as may be prescribed by the Council’s Examination Rules for the time being or such exempting examinations as may from time to time be approved by the Council under such Rules.’

By-Law 7 at present reading as follows:—

‘7. *Associates.* Candidates for election or transfer into the class of Associates shall be those who, at the time of such election or transfer, have technical or scientific responsibilities, and who:

- (i) hold an approved University degree or recognized diploma in engineering, naval architecture or allied subject;
- or (ii) are at least twenty-five years of age and have held for at least two years a professional position of responsibility in shipping, engineering, shipbuilding or an allied industry which would enable them to further the interests of the Institute;
- or (iii) have been previously elected as Graduates of the Institute and are at least thirty-five years of age but have not attained the qualifications required for admission to corporate membership.’

shall be amended to read as follows:—

‘7. *Associates.* Candidates for election or transfer into the class of Associates shall be those who, at the time of such election or transfer, have technical or scientific responsibilities, and who:

- (i) hold an approved University degree or recognized diploma in engineering, naval architecture or allied subject;
- or (ii) are at least twenty-five years of age and have held for at least three years a professional position of responsibility in shipping, engineering, shipbuilding or an allied industry which would enable them to further the interests of the Institute;
- or (iii) have the qualifications for election as Graduates, but are over thirty years of age;
- or (iv) have been previously elected as Graduates of the Institute and are at least thirty-five years of age but have not attained the qualifications required for admission to corporate membership.’

By-Law 8 (i) at present reading as follows:—

‘(i) hold a Second Class Certificate of Competency issued by the Ministry of Transport and Civil Aviation or an equivalent qualification;’

shall be amended to read as follows:—

‘(i) hold a Second Class Certificate of Competency issued by the Ministry of Transport or an equivalent qualification;’

By-Law 8 (ii) at present reading as follows:—

- ‘or (ii) are engineers who hold the rank of Sub-Lieutenant Royal Navy, Royal Australian Navy, Royal Canadian Navy,



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Royal New Zealand Navy, the Pakistan Navy, the Indian Navy or the South African Navy;

shall be amended to read as follows:—

- ‘or (ii) are Naval Officers qualified in Marine Engineering of the rank of Sub-Lieutenant in the Royal Navy or of equivalent rank and qualification in a Commonwealth Navy or in a foreign Navy, and who have had not less than two years practical experience as an officer since qualifying.’

By-Law 9 at present reading as follows:—

‘9. *Students.* Candidates for election or transfer into the class of Students shall be those who at the time of such election or transfer:

- (i) are not over twenty-five years of age;
  - (ii) have passed the Studentship Examination prescribed by the Council’s Examination Rules for the time being or such other exempting examinations as may from time to time be approved by the Council under such Rules;
- and (iii) have satisfied the Council that they are or intend to become (a) engineering apprentices or (b) engineering students at an approved educational institution.

Students shall be required, before reaching the age of twenty-eight years, to qualify for transfer to a higher grade of membership, or in default thereof to retire from the Membership Roll of the Institute.’

shall be amended to read as follows:—

‘*Students.* Candidates for election or transfer into the class of Students shall be at the time of such election or transfer not over twenty-five years of age, and shall

- (i) have satisfied the Council that they are or intend to become (a) engineering apprentices or (b) engineering students at an approved educational institution and have qualified in one of the examinations which may from time to time be approved by the Council;
- or (ii) be Naval Officers who are undergoing a course of training in order to qualify in marine engineering and who are of the rank of Sub-Lieutenant in the Royal Navy or of equivalent rank undergoing similar training in a Commonwealth Navy or in a foreign Navy.

Students shall be required, before reaching the age of twenty-eight years, to qualify for transfer to a higher grade of membership, or in default thereof to retire from the Membership Roll of the Institute.’

Provided that the Council be and are hereby authorised to agree to any changes to the foregoing amendments which may be required by the Lords of Her Majesty’s Privy Council.”

The CHAIRMAN formally proposed the resolution, and asked the Chairman of Council to second it.

MR. W. R. HARVEY, O.B.E. (Chairman of Council) formally seconded.

The CHAIRMAN, there being no questions or comments, put the resolution to the meeting.

*The motion was carried unanimously.*

### *Vote of Thanks to the President*

MR. W. R. HARVEY, O.B.E. (Chairman of Council) said it was with very great pleasure that he proposed a vote of thanks to the President. From personal knowledge he could say that Lord Simon had rendered the Institute very consider-

able service during his term of office, both because of his wide experience, and by the time he had devoted to the Institute. He had during the year visited and addressed almost every Branch in the United Kingdom, and a glance at the TRANSACTIONS would show that was no mean feat. They had to thank the President, in particular, for his good offices in securing the acceptance by His Royal Highness the Duke of Edinburgh of nomination for the Presidency for the year 1962/3. It gave him very great pleasure to propose the vote of thanks, and he asked Mr. Cook to second it.

MR. R. COOK, M.Sc. (Member of Council) in seconding, said the Institute had been well served over the years by its Presidents, but he would venture to affirm that it had never been better served than during the past twelve months. (*Hear, hear.*) The Chairman of Council had spoken of the zeal and efficiency with which Viscount Simon had performed his duties, and to that Mr. Cook would like to add a tribute to the charm and distinction with which he had performed them. He was sure they would all agree with that. The duties of a President, taken by themselves, might not appear very onerous, but when they were added to the duties of the Chairman of the Port of London Authority, they were no doubt a not inconsiderable burden.

They owed the President a great debt for performing them so cheerfully and so willingly, and he would like to add that they also owed a debt of gratitude to Lady Simon for the really charming manner in which she had presided as hostess at their social functions.

*The vote of thanks was carried with acclamation.*

### *Reply by the President*

The PRESIDENT, in reply, remarked that this was item 13 of the agenda, so he would not make a long speech: he had talked enough already. When he had said at the beginning of his Address that he had regarded it as a great honour to be elected President of the Institute, he meant every word of it. He would like to thank Mr. Cook very much for his kindly reference to Lady Simon having accompanied him to some of the functions, which he knew that she had greatly enjoyed.

### *Vote of Thanks to the Council and Officers*

MR. W. D. EWART (Member) said this was one gathering at which he could not follow the advice of the successful hostess and leave before the party was over, for he had a short but pleasant duty to perform in connexion with the work of the Council of the Institute during the past year.

His knowledge of Latin being what it was, he could only refer to Greek mythology in describing the Council’s activities: he thought that the story of Sisyphus pushing a large boulder everlastingly up a hill was singularly appropriate. It had been a question of continuous effort.

So often the decisions taken in Committee had to be implemented by Council members in undertakings which were both time and energy consuming. There was no doubt that the end justified the means, as anyone who had attended meetings of the new Sections would testify.

The formation of the new Canadian Division and of the new Section of the Eastern United States of America were now accomplished facts, and the development was a wide one which indicated that the Institute was abreast of the times. Even the Russians, in 1957, found it essential to establish local government offices. In both cases, the aims were somewhat similar, to encourage local participation in developments and to improve the service to members.

They had heard in the Report presented by the Secretary that the formation of the Canadian Division and the Eastern United States Section had been followed by the visit of a Council Member and the presentation of a paper. Quite recently a well known Swiss member of the Institute had presented a paper to the Eastern U.S.A. Section. The same active encouragement from the Council had been evident in the first year of the new Sections known as North Midlands,

## *Minutes of Proceedings of the Annual General Meeting*

Devon and Cornwall. Inaugural meetings of these Sections had been attended by the Chairman of Council and in the case of Devon and Cornwall the first technical meeting had been addressed by the President-elect. In each case, the Secretary of the Institute had been present.

As would be seen from the Report, the names of several Council Members, as well as those of what might be termed the rank and file, appeared as representatives on various Committees, Conferences, Panels, and British Standards bodies connected with the ship and engine building industries, and with associated scholastic endeavour. These were also time-consuming activities, and shed more light on the lesser-known duties of Council Members. Behind the past year's accomplishments were the members of the Institute staff, whose labours made such an important contribution to the smooth operation of what was becoming a complex organization.

In making those remarks he spoke with great sincerity, for he had entered marine engineering 22 years ago as a result of advice received from the immediate past Secretary of the Institute, and had at intervals since then received much welcome assistance and advice from Council Members.

It was with great pleasure that he proposed a vote of thanks to the Council of the Institute.

MR. M. W. DUNHAM (Member) felt honoured by being asked to second the vote of thanks to the Council and Officers for their work during the past year. They were not thanked often enough for their work. His pleasure was not diminished by the fact that most of what he might have said had already been said by Mr. Ewart, whom he would like to congratulate on having proposed the vote of thanks in such an able manner.

The Institute had always been well served by its Members of Council, and the surest proof of their efforts was the present high standing of the Institute in marine engineering circles today. The eminent gentlemen on the Council had a total combined service of nearly 400 years. This included the service of Vice-Presidents, and included in that figure was one score of over 30 years and others of over 20 years. That represented a magnificent effort for the advancement of the Institute, and the members were very grateful to them. If they were served in the future by the Council as they had been in the past, as he was sure they would be, they were in good hands, and were indeed fortunate.

The CHAIRMAN wished to add his support of the motion, knowing as he did what tremendous work the Council and Officers did.

*The motion of thanks was carried with acclamation.*

*Reply by Chairman of Council*

MR. W. R. HARVEY, O.B.E. (Chairman of Council) said it was with real pleasure that he acknowledged the vote of thanks to the Council and to the Officers of the Institute which had been so ably proposed and seconded. In doing so, he would like to add his personal thanks for the help the Council and the staff had given him during his year of office.

The rapid expansion of the Institute in recent years had considerably increased the work involved in running it, and it was only by the loyal support of the relatively small staff, and in particular, of the Secretary, that it had been possible for the Council to fulfil its duties. That this had been done was proved by the continual success of the meetings and the enthusiastic increase in the branches throughout the Commonwealth and in the U.S.A.

He hoped to have the pleasure in the very near future of visiting the branches in the U.S.A. and Canada. If the letters he had received in connexion with these visits were anything to go by, the enthusiasm of the branches in the United Kingdom was well matched by the enthusiasm and support received from branches overseas. That was a very good omen for the future.

*Closing Remarks by the Chairman*

The CHAIRMAN, in closing the meeting, thanked the members present for their attendance, and especially those who had taken a vocal part in the proceedings. He was happy to see among the audience, hiding away like the modest gentle flower that he was, at the back of the hall, the President-elect. They would like to express their gratitude to Mr. Pounder for accepting the task, which was an onerous task, but a very honourable task and a very pleasant one.

MR. POUNDER expressed his thanks.

*The proceedings then terminated.*

## Minutes of the Proceedings of the Ordinary Meeting held at The Memorial Building on Tuesday, 25th April 1961

An Ordinary Meeting preceding the Annual General Meeting was held at the Memorial Building, on Tuesday, 25th April 1961 at 5.30 p.m. when the Presidential Address was delivered by the President, The Right Honourable The Viscount Simon, C.M.G.

Mr. W. R. Harvey, O.B.E. (Chairman of Council) was in the Chair, supported by Mr. R. Cook, M.Sc. (Member of Council). Ninety-two members and guests were present.

The CHAIRMAN in proposing a vote of thanks to the President said he was sure that it would be the wish of the meeting that he should express thanks to the President for

his Address. Whilst at the outset the President had disclaimed any technical qualifications to address a technical audience, it would be agreed that his look into the future had given them all food for thought, and a wise reminder that the industry as a whole and the Institute in particular could not rest on their laurels, but would have to take a very active part in the problem of tomorrow.

*The motion of thanks was carried by acclamation.*

The CHAIRMAN then invited the President to occupy the Chair for the Seventy-second Annual General Meeting, and asked all those who were not members of the Institute to leave the Hall.





THE RIGHT HONOURABLE THE VISCOUNT SIMON, C.M.G.

### **THE RIGHT HONOURABLE THE VISCOUNT SIMON, C.M.G.**

Born on 2nd September 1902, John Gilbert Simon, 2nd Viscount Simon of Stackpole Elidor, is the only son of the late Viscount Simon whom he succeeded in 1954. Lord Simon was educated at Winchester and Balliol College, Oxford. From 1924 to 1936, he served with Mackinnon Mackenzie and Co., in India and in Ceylon. In 1936 he was appointed as assistant manager of the Peninsular and Oriental Steam Navigation Company.

Soon after the outbreak of the last war, in January, 1940 he joined the staff of the Ministry of Shipping (later Ministry of War Transport) where he became a director of the Liner Division in 1945. He returned to the P. and O. Steam Navigation Co. in 1947 as managing director, being appointed deputy chairman in 1952. He was President of the Chamber of Shipping from 1957/58 and has been a member of the Port of London Authority since 1950. He was elected as Chairman in succession to the late Viscount Waverley, on 30th January 1958.

Lord Simon was appointed a Companion of The Most Distinguished Order of St. Michael and St. George in 1947 for his services to the Ministry of War Transport and is an Officer of the Order of Orange Nassau.



# PRESIDENTIAL ADDRESS

*of*

THE RIGHT HONOURABLE THE VISCOUNT SIMON, C.M.G.

When, a year ago, you did me the honour of choosing me as your President, you laid upon me a number of enjoyable duties, but also one not quite so enjoyable which I have today to perform. It is, I think, especially difficult for someone like myself, who has no technical qualifications, to deliver a Presidential Address to a technical audience, because he cannot hope to interest you with fresh thoughts on a familiar problem or to direct your attention, as others might do, to some new development in the field in which you work. And yet, clearly, he is under an obligation to relate what he has to say, in some way, to marine engineering.

What I have decided to do—and I hope it will be acceptable to you—is to cast my mind forward, and try to describe the sort of world in which I imagine our successors will be living in, say, fifty years time, and in particular to look at that world from the point of view of the marine engineer, and to consider, not in detail, of course, but in general terms, the changes that may be demanded of this profession if it is to continue to play its proper part in the community. Some of you may be here to see those days, but I am happy to think that one of the advantages of this kind of crystal gazing is that one cannot be proved wrong until long after everyone has forgotten what one has said.

It will not be doubted by anyone that we are living today in a period of more rapid expansion of scientific knowledge and of its application to new techniques than has ever taken place before in the history of the world. The scientific advances made at the end of the eighteenth century and the beginning of the nineteenth were startling enough to the people of those days, and their application over a period of a hundred years revolutionized industry and had profound effects on ordinary ways of life. But the scientific discoveries of the mid-twentieth century, although in a sense not so startling, because they are to a large extent following lines of development which have been foreseen, far surpass anything that has gone before both in their wider range and in the speed of their advance. At the same time, as a result of greatly improved technology, and perhaps also as a result of more intense competition, the application of these new discoveries to industry and to other fields of activity is proceeding at an astounding pace. Hardly a week passes in which some new development is not reported. Where is all this leading us? When I ask myself that question, I wonder at my temerity in addressing you on these lines.

And yet I think it is possible to pick out certain broad paths along which development is likely to take place, and I suggest it would not be wasting our time to look ahead along these paths, even though we have to keep constantly in our minds the possibility that something unexpected might, at any moment, introduce a fundamental change in conditions that would alter the whole direction of our progress. Apart from the impact of some new discovery, there is always, staring us grimly in the face, the possibility that the nations of the world might be insane enough to launch nuclear war on each

other. No one can foresee where that would lead, although we can be fairly sure that its effects, unless it could be immediately checked and contained, would be so disastrous as to invalidate any of our pre-conceived ideas about the future. If I ignore that possibility, it is not because any of us can be unaware of it, but merely because we cannot even guess how the world would set about righting itself after such a catastrophe.

Other dramatic changes that might be brought about as a result of new discoveries would, one hopes, be of a very different kind. But these too, for the obvious reason that by definition we do not know what they will be, or even what they are likely to be, must for my purposes this evening be left out of account.

Now, in trying to look into the future, we may well find ourselves bemused by the width of the picture, and I think I may be forgiven if, remembering that I am speaking to the Institute of Marine Engineers, I concentrate on those aspects of the scene which have some relevance to marine engineering. And this thought clearly brings me to consider the position of sea transport in the world of the future into which I am trying to peer. For without sea transport there would clearly be no marine engineering.

For a long time now international trade has been steadily expanding, and although slumps or recessions—call them what you will—may temporarily check this expansion, I see no reason to doubt that, over the next fifty years, a further growth in the volume of international trade will occur. The increasing demands of what are now under-developed countries cannot fail to lead to greater shipments, and we must hope that in the more fully developed countries as well, steadily improving standards of living will lead to more interchange of goods.

Of course, the pattern of trade may change. A closer relationship between Britain and Europe, which many of us feel is essential if this country is to flourish, might result in more goods travelling shorter distances, and if we regard, as well we may, the eventual construction of a Channel Tunnel as a likely development in international transport, the effect of this on the overall volume of sea transport might be considerable. But even taking this and similar possible developments into account, I believe that we can look to increased interchange of goods between countries separated by the oceans of the world.

Is it possible that a substantial proportion of this traffic will in years to come be carried by air? I would not deny that it is possible. But all the indications at present are that under any conceivable system it must be less economical to carry goods through the air, where energy must be expended on maintaining the vehicle in its chosen medium, than through the sea where the ship enjoys natural flotation. The main advantage of air transport, which is speed, may sufficiently appeal to passengers to justify the payment of higher fares—fares that are substantially higher if the “hotel” element of



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the fare by sea is removed for purposes of comparison. But I see little chance that the extra cost of conveying goods by air as compared with conveying them by sea would ever be justified except in special cases.

I reach the conclusion, therefore, that there will still be, in this imaginary world into which I look forward, a demand for the transport of goods by sea at least as great as at present, and in all probability greater. I make no prognostication about passenger traffic across the sea, although I would expect that there will always be people who can spare the time to enjoy the relaxation of a sea voyage, and who will be glad to do so. This, however, is not fundamental to the problem, as I think you will agree that passenger ships by themselves would never support either a marine engineering industry or the maintenance of a professional body of marine engineers.

But one thing which stands out is this—that if the sea transport of goods is to continue and expand it will have to justify itself in a keenly competitive world, and both ships and engines must be made as efficient and as economical as possible. More serious perhaps, for our purposes, than the competition between shipping and other methods of transport, is the competition which will have to be fought out between ourselves and other nations in the provision of efficient and economical shipping services. We have always to remind ourselves that, although during most of the last hundred years we have enjoyed the benefits of a flying start in the building and operation of mechanically propelled ships, that benefit has gradually been lost as other nations have developed their shipbuilding and shipping industries—sometimes, as we know, with very considerable artificial assistance. In the years to come the health of the British shipping industry will depend more and more, as indeed it depends now, on the competitive efficiency of our shipbuilding and marine engineering industries and of our shipping operations.

The most vital consideration of all, it seems to me, is that shipping should remain a truly international business, and until success rewards the efforts which are now being made to control and ultimately eliminate the worst features of nationalistic policies in shipping, we in this country, and marine engineers in particular, cannot feel that our future is secure.

If, as I have suggested, the development of international trade hangs largely upon the progress of countries now less than fully developed, it must follow that our own country's proportion of world trade will continue to decline. I myself believe that this is inevitable, even if, as we all hope, the actual volume of our trade increases. But there is no need to get unduly alarmed about this provided our shipping has free access to the world's trade. Do not let us delude ourselves, however, that, even if we get a fair field, the contest will be an easy one. I have said before, and I would like to repeat, that there is to my mind nothing whatever disgraceful in the fact that we, who led the world in marine engineering in the nineteenth century, now find ourselves only one of a number of nations competing on level terms. This was an inevitable development. It may well happen that from time to time, in some particular field or another, we shall be outstripped. And why not? We cannot claim a monopoly or even a pre-eminent position in the development of technical skills. What we must be careful about is that we do not allow any false feeling of superiority, based on our very real achievements in the past, to prevent us from learning today from others who, it may be fifty years ago, were learning from us.

There can be little doubt that this keen competition for efficiency, of which I have spoken, will lead to important developments in the propulsion of ships. This is a subject upon which quite clearly an unqualified President would be rash to speak at any great length. We know that important researches are taking place into the application of nuclear power to ships. At the moment I think it would be generally agreed that for merchant shipping no adequate advantage has yet appeared to justify the high cost and weight of a nuclear powered installation, but that is not to say that, in the course of the development of what is still a new conception, some fundamental discovery may not completely alter the balance

of advantage. Some thought, I know, has already been given to putting merchant ships, particularly tankers, under water, where nuclear propulsion offers special advantages and where the power required to maintain a given performance is substantially reduced. In these and all other fields of research it is of the greatest importance that we in this country should keep in the forefront.

There has been, as we all know, some criticism recently of the research effort of the British shipbuilding and marine engineering industries. I think myself it is rather a pity, if there are grounds for complaint, to air them too publicly. Almost every one of us nourishes within himself a tendency to criticize the other fellow—psychologists may tell us that it is a form of self-defence. We all of us have, if only sub-consciously, a knowledge of our failings and it may well seem to our sub-conscious minds that the best way to keep these failings dark is to attack what we think are the failings of others. At any rate it is a plain fact that any public criticism rapidly gathers momentum, and in doing so can well do as much if not more harm than good, whereas frank discussion among those qualified to appreciate the issues involved can achieve all the good without the harm.

It has struck me, in reading these criticisms and some comments upon them, that not enough weight has been given in the public mind to two most important aspects. The first of these is that in the shipbuilding and marine engineering industries a great deal of what is really research is carried out, in conjunction with shipowners, by the adoption of new experimental ideas in current production. This is referred to in a footnote to the D.S.I.R. report, but I do not feel has received sufficient attention. The second point, which is probably more important, is that the shipowner, who is the industry's customer, demands above everything else reliability, for good reasons which are obvious to all of us. Now all development involves some compromise between the achievement of maximum theoretical advantages on the one hand, and the maintenance of reliable working conditions on the other. It is, I think, natural that the shipowner, who may carry in one ship responsibility for hundreds of lives and for millions of pounds' worth of goods, whose plant is required to operate, day in day out, under a wide range of differing conditions and far removed from an established base supported by repair facilities, leans rather to the side of reliability. So he tends to be, in this respect, a conservative, and that is not only natural, if I may say so; it is also right.

I have allowed myself to digress, because I have felt strongly not so much that the report of which I have been speaking was itself unfair, but rather the comments which have been made upon it and the deductions drawn from it. The publication of the report has no doubt stimulated thought within the industry and that is all to the good. For, quite apart from entirely new developments such as the application of nuclear power, the importance to us all of achieving the highest efficiency in what we call conventional types of machinery for ships cannot, you will agree, be over-estimated.

Looking ahead, as I have been trying to do, there is one field in which I feel pretty sure we shall see significant developments in the years to come, and that is in the application of automatic controls both to boilers, where they are used, and to ships' machinery generally. When we consider the astonishing achievements of recent times in the control of "space ships", we may wonder whether in the years to come there will be any need for marine engineers on ships at all. It is not entirely for sentimental reasons that I am going to be bold enough to reject that thought. It seems to me that, marvellous though the control systems are which regulate the movement of vehicles projected into space, their effectiveness is based on the fact (which from the success of the experiments appears well established) that the external forces affecting the vehicle can be calculated in advance and relied upon. My guess is that it will be a long time before the constantly changing influence of wind and wave on ships can be assessed in advance and allowed for. Nor, I would suggest, can we expect the delicate instruments, which so brilliantly carry



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out the intentions of their inventors in the space ship, to be as reliable when subjected to accelerations and decelerations that cannot be even approximately predetermined. At any rate, in this future to which I am this evening looking forward, I think it is safe to assume that there will still be seagoing engineers.

There will, it is quite likely, be fewer of them. At the same time they will almost certainly require to have higher technical qualifications than are now demanded, and they will need to be even more versatile, if that is possible, than their fathers and grandfathers of the present day. How they should be trained, what their qualifications should be and how these should be tested are matters which will call for the most careful study, in which I am sure this Institute will have an important part to play. The suggestion that has already been made, that the Institute should itself sponsor facilities for advanced studies in marine engineering, fits well into that picture, and I personally hope that it will be vigorously followed up.

Nor will higher qualifications, as I see the future, be demanded only of the seagoing engineer. I have mentioned already what is obvious to all of us—and if no other part of my forecast was true this at least would be certain—that our success as a maritime country, which is vital to our prosperity, depends on our placing at the disposal of our ship-

owners the best ships, and the most efficiently and economically engined ships, in the world. To ensure that this happens, it will be necessary for all engaged in marine engineering ashore, whether in research and development or in design and production, to keep themselves fully informed and up-to-date in every engineering technique that is, or that may be, put to use in a ship. And in this field, so far from wanting fewer we shall certainly want more, and still more, engineers with the highest qualifications and the broadest knowledge, to maintain our position. As hitherto, I would expect that most of those who enter this branch of the profession will, at the outset of their careers, have had some experience at sea, and I think this is very desirable for a number of reasons, not the least of which is the need to foster close contact between those who design and those who operate machinery.

In this Britain of the future, some aspects of which I have tried thus briefly to describe, I am confident there will be a place for a vigorous Institute of Marine Engineers, whose main tasks will be the same as they are today—to promote the development of marine engineering, to facilitate the interchange of new ideas and to maintain and improve the status of our profession—a profession whose importance to the community will, I feel sure, be no less in fifty years' time than it is today.

# Twenty-first Annual General Meeting of the Education Group

Tuesday, 21st March 1961

The Twenty-first Annual General Meeting of the Education Group of the Institute was held on Tuesday, 21st March 1961. The Chair was occupied by Mr. D. G. Alcock, Chairman of the Group.

The Minutes of the preceding Annual General Meeting, which had been circulated, were confirmed and were signed by the Chairman.

## *Annual Report*

The CHAIRMAN reported that the Executive Committee had not been very active during the past year. The Committee was asked to recommend to Council that honours graduates in engineering from universities should be eligible for exemption from the Institute's Part I examination, and that was approved.

The second item of some importance was that there had been a continued and steady demand from the Sections and technical colleges for the junior lectures arranged by the Committee. Efforts had been made progressively to bring in fresh material, although of necessity quite a number of the lectures were suitable for repetition, and it was advisable to repeat them especially for the benefit of apprentices and student members. New material was, however, introduced. Difficulty had sometimes been encountered in persuading people that it was a well worthwhile activity, and in the current year it was gratifying to be able to report that Mr. Victory had been invited to prepare a lecture on fire fighting equipment in ships. Mr. Victory had agreed to do so, and it was hoped that it would be available from the early part of 1962.

The third item concerned the Engineering Joint Examinations Board. It had now been dissolved and the last Common Preliminary Examination was held in October 1960. From that date onwards the academic qualifications for student membership would be by virtue of passes in specified subjects of the General Certificate of Education or similar examination.

As to the Common Preliminary Examination, an analysis of the previous year's examination results showed that there were 15 candidates. 8 passed. 4 passed in two or more subjects and 3 failed completely. In the Part I examination there were 18 candidates. 5 passed 13 failed. In the Part II examination there were 5 candidates. 2 passed and 3 failed.

In the Part III there was 1 candidate who was successful.

## *Election of Chairman*

The CHAIRMAN announced that the Executive Committee had nominated Mr. J. McAfee as Chairman for the ensuing session.

There being no further nominations, the Chairman declared Mr. McAfee duly elected.

The CHAIRMAN pointed out that for the sake of convenience it was customary for the retiring Chairman to stay in the Chair for the remainder of the meeting.

## *Election of Vice-Chairman*

The CHAIRMAN announced that the Executive Committee had nominated Mr. P. J. Howard, B.Sc.(Eng.) as Vice-Chairman for the ensuing session.

There being no further nominations, the Chairman declared Mr. Howard duly elected.

## *Election of a Committee Member*

The CHAIRMAN said that the Committee had nominated Professor G. H. Chambers, D.S.C., to fill a vacancy caused by the retirement of Mr. D. M. V. Parkinson, M.V.O.

There being no further nominations, the Chairman declared Professor Chambers duly elected.

The CHAIRMAN also pointed out that the Committee recommended that the retiring Chairman should continue to serve in a co-opted capacity for a further year. It was, he said, in accordance with tradition.

The recommendation was adopted.

## *Date of next Annual General Meeting*

It was agreed that the next Annual General Meeting should be held on Tuesday, 20th March 1962.

That concluded the formal business of the meeting.

The CHAIRMAN then introduced Mr. L. Jackson, an Associate Member, and invited him to present a paper and open a discussion on "The Marine Engineer".



