

INSTITUTE OF MARINE ENGINEERS
INCORPORATED.

SESSION



1902-1903.

President: DAVID J. DUNLOP, Esq.

REPORT OF THE PROCEEDINGS

AT THE

ANNUAL MEETING

HELD AT

58, ROMFORD ROAD, STRATFORD,

ON FRIDAY, APRIL 17TH, 1903.

CHAIRMAN :

D. J. DUNLOP, Esq., (*President*).

PROGRAMME OF THE
Fourteenth Annual Meeting

On FRIDAY, APRIL 17th, 1903,

HELD AT

58, ROMFORD ROAD, STRATFORD.

Chairman: D. J. DUNLOP, Esq. (President).

- | | |
|---|---|
| 7.15 The CHAIRMAN. | 8.40 Vote of Thanks to Retiring Office Bearers and Council.
Proposer, Mr. GEO. ADAMS.
Seconder, Mr. P. SMITH.
Response, Mr. W. C. ROBERTS. |
| 7.20 Appointment of Scrutineers.
Proposer, Mr. G. E. BRAY.
Seconder, Mr. P. S. KING. | 8.55 Vote of Thanks to Auditors.
Proposer, Mr. J. CAMERON.
Seconder, Mr. A. McINDEWAR.
Response, Mr. D. HULME. |
| 7.25 The Annual Reports.
The HON. SECRETARY.
The HON. LOCAL SECRETARY
(Bristol Channel Centre.) | 9.5 Vote of Thanks to the Hon. Solicitor.
Proposer, Mr. A. H. MATHER.
Seconder, Mr. C. NOBLE. |
| 7.40 The Financial Statement.
The HON. TREASURER.
The HON. LOCAL TREASURER
(Bristol Channel Centre.) | 9.10 Report of Scrutineers.
Messrs. G. SHEARER and W. E. FARENDEEN. |
| 7.50 General Remarks.
Mr. J. R. RUTHVEN. | 9.15 Vote of Thanks to Scrutineers.
Proposer, Mr. S. C. SAGE.
Seconder, Mr. J. E. ELMSLIE.
Response, Mr. G. SHEARER. |
| 8.0 Adoption of Reports.
Proposer, Mr. R. LESLIE.
Seconder, Mr. K. C. BALES. | 9.20 Appointment of Auditors.
Proposer, Mr. JNO. McLAREN.
Seconder, Mr. A. O. WALKER. |
| 8.15 Adjournment for Coffee. | 9.30. Vote of Thanks to Chairman.
Proposer, Mr. W. LAWRIE.
Seconder, Mr. J. H. SILLEY. |
| 8.30 Vote of Thanks to the Retiring President.
Proposer, Mr. G. W. KIDD.
Seconder, Mr. T. F. AUKLAND.
Response, The PRESIDENT. | |

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President: D. J. DUNLOP, ESQ.

REPORT OF THE PROCEEDINGS
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58, ROMFORD ROAD, STRATFORD,
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CHAIRMAN :

D. J. DUNLOP, ESQ. (*President*).

The Fourteenth Annual Meeting of the Institute of Marine Engineers was held on Friday, April 17th, 1903, at the Premises of the Institute, 58, Romford Road, Stratford, Essex. The President opened the proceedings by reviewing the work of the Session and commenting on the various details in respect to the papers, lectures, and social events.

He congratulated the Institute on the progress which was being made, and expressed the hope that it would still go forward and prosper, holding a position in the scientific world to which its representative character and

the importance of Marine Engineering entitled it; such progress could only be made by the efforts of every member backing up and supporting those who were elected by the members to carry on the operations on their behalf.

The present was the closing meeting of the Session under his presidency, but although that was the case, his interest would be maintained, and he hoped to continue the pleasant associations he had formed during his year of office, and be present at some at least of the meetings in future Sessions.

Continuing, the CHAIRMAN said, certainly there have been some very valuable papers read. The one by Mr. Silley on "The Treatment of Boilers, under forced and induced draught," and for which he was awarded the "Denny" Gold Medal, was, I think, a particularly interesting paper, and one that everybody here should take a lesson from, and not only get instruction from it, but still further, to go on the lines that the author of the paper went on when he took it into his mind to write on the subject. So far as marine engineering is concerned, I do not think there are any more interesting questions at the present time than that of boiler management. Even under natural draught, boilers on board ship do not always receive the attention and care they are entitled to, and many boilers are damaged or destroyed by only a temporary neglect while at sea, or through insufficient time being allowed for their overhaul when in port. Under assisted or forced draught the risks to which boilers are exposed are greatly increased, and in the treatment of his subject Mr. Silley deserves the highest credit for the attention and intelligence he has brought to bear upon it, and we are all indebted to him for the full benefit he has given us of his experience.

Water tube boilers have been brought prominently before us for a considerable time principally on account of their defects, but how far the failures are due to

faults of design or construction, or ignorance as to treatment and management has never been made clear, and light on these points would be most valuable.

I believe very few water tube boilers have hitherto been fitted in the Mercantile Marine, but any of our Members who have had the management of them would render a service to the Institute by laying before our Members the benefit of their experience. I hope some of the Members will take up the matter and put before the Institute, not only their theoretical opinions, but the experience they may have gained in the working of water-tube boilers. I wont detain you any longer with my remarks on this subject. The work of the Institute last year was most satisfactory and most creditable, and I trust, in years to come, we shall go forward and advance in greater measure.

My next duty is to ask you to appoint scrutineers.

Mr. BRAY (Member) moved that Mr. Shearer and Mr. Farenden be appointed scrutineers.

Mr. P. S. KING (Member) seconded the motion, which was at once agreed to.

The HONORARY SECRETARY then read the Annual Report:—

FOURTEENTH ANNUAL REPORT.

During the financial year which closed on January 31st, 1903, the progress of the Institute has been maintained, and the work which has been accomplished in the direction of that progressive advancement which is indicated in the constitution as one of the aims of the founders, it is now our duty to detail for the information of the Members scattered all over the world.

The following figures show the condition of the Membership Roll and the numbers elected in each class, under the Presidency of D. J. DUNLOP, Esq., during

whose year of office peace in South Africa has been celebrated, thus terminating a war in the course of which the transportation of troops, munitions of war and necessaries has been so organised and carried out as to call forth the encomiums of the Empire, a share of which has fallen deservedly upon those entrusted with the practical charge and efficient upkeep of the machinery of the steamers employed on transport service.

MEMBERSHIP ROLL.—The roll of Members at the close of the financial year is as follows :—

	Roll on Jan. 31st, 1902.	Lapsed.	Died.	Resigned.	Elected.	Roll on Jan. 31st, 1903.
Past Presidents (Hon. Mem.)	4	—	—	—	—	4
Hon. Vice-Presidents	1	—	—	—	—	1
Hon. Members	1	—	—	—	—	1
Members	762	42	10	8	46	765
Companions.. ..	93	1	2	3	10	93
Associate Members.. ..	48	4	—	2	4	46
Associates	58	5	—	—	3	51
Graduates	29	2	—	—	2	28
*Probationary Members	7	—	—	—	—	7
TOTALS	1003	54	12	13	65	996

The deaths which have taken place since the last roll call was made are, unhappily, more in number than the previous year, and the names of those who have departed are recorded with great regret as follows :—

J. G. BIRTLEY (Member), who died at Swansea, in November, 1902, was connected with the Bristol Channel Centre.

COLIN BUCHANAN (Member), who died at Foochow, in July, 1902, was well-known both in this country and in the East as the Superintendent of the Indo-China Steam Navigation Company at Shanghai. He was on

* Elected subject to payment of first year's subscription, and yet unpaid.
The totals for 1902 include those on the Probationary List.

his way home when, seized with sudden illness, he had to land from the steamer at Foochow, where amid widespread regret he succumbed to the disease.

G. E. DAVIES (Member), who died at Wolverhampton in January, 1902, was Junior and Chief Engineer in the British India Company for about 20 years. When Chief Engineer of the *Madura*, he was appointed to be Superintendent of the Colombo Wharfage Company, and from which appointment he was invalided home in the hope of recovery—a hope unhappily not realised.

EDWARD S. FRASER MCINTOSH (Member), who died at Glasgow, July, 1902, and was buried at Inverness, was for about 18 years in the service of the China Mutual Steam Navigation Company, and, at the time of his death, held an appointment in connection with a new steamer building for the Ocean Steamship Company in Glasgow.

DAVID GIBSON (Member), who died at Sunderland in December, 1902, was a well known and highly respected Member at the Bristol Channel Centre, in connection with which he was a faithful and energetic worker for many years, until failing health compelled him to retire from active labour. Owing to the appreciation in which he was held Mr. Gibson was elected a Life Member.

J. GOLD (Member), who died at Singapore, in December, 1902.

JOHN HUNTER (Member), who was drowned in the *Camorta*, when she was lost in a cyclone off the coast of Burmah, April, 1902; was in the service of the British India Steam Navigation Company for many years as junior and chief engineer.

E. J. KELLY (Member), who died at Cardiff, in February, 1902, was associated with the Bristol Channel Centre.

G. S. LAPSLEY (Member), who died at Bombay, April, 1902, was Chief Engineer in the service of the Peninsular and Oriental Steam Navigation Company.

GEO. RUTHERFORD (Member), who was killed at Singapore, March, 1902, by marauders who broke into the house for plunder. Mr. Rutherford was a much respected Member associated with the Bristol Channel Centre, and was Representative to the Council 1901—2.

JAS. WIMSHURST (Companion), who died in January, 1903, was well known throughout the kingdom, not only as a Shipwright Surveyor and Naval Architect in connection with Lloyds, and, latterly, as principal Shipwright Surveyor to the Board of Trade, but as a man of science and research, who worked for the love of the study, and was ever ready to explain the results of his labour to those who were interested to learn and know. One of his machines was exhibited at one of our conversaciones some years ago, and excited considerable interest.

CHAS. WOOD (Companion), who died in London, January, 1903, was well known as the Superintendent of Wreck Raising for the Thames Conservancy Board, a post he held for over 25 years with great and deserved acceptance. The work accomplished under his supervision was considerable, and formed the subject of a lecture which was to have been delivered in January, when his death occurred, only a few weeks subsequent to his retirement from his appointment in the Thames Conservancy.

GENERAL MEETINGS.—The meetings for the reading and discussion of papers are held on the second and fourth Mondays of each month, from September to April. The meetings in connection with the experimental and educational work are held on the first and third Mondays.

COUNCIL MEETINGS.—The Council meetings are held on the first and third Fridays of each month, and

on the alternating Fridays as circumstances require. Committee meetings are held to suit the business of each department of the work as found necessary.

PAPERS AND DISCUSSIONS (Mr. J. R. Ruthven, Convener).—The eight Papers (Nos. ci. to cviii.) which have been read and discussed during the year, will be found noted in the summary of events and meetings which have been held. A few of the papers announced as in preparation, were not forward in time, but it is hoped they will be placed before the Members during the forthcoming Session. The Denny Gold Medal for the previous Session was awarded to Mr. J. H. Silley (Member), for his paper (No. xciv.) on "The Treatment of Boilers under Forced and Induced Draught," read the previous Session on February 11th, 1901. It is desirable that members should intimate to the Convener as early as possible, when they have papers in preparation. Several subjects were suggested for consideration at the re-opening of the Session on October 6th, 1902.

EXPERIMENTAL AND EDUCATIONAL (Mr. W. McLaren, Convener).—Several lectures have been delivered in connection with this Department with great acceptance, and their publication adds greatly to the value of the year's transactions. This opportunity is taken of recognising and recording our indebtedness to Messrs. Arthur Gulston, Sidney A. Houghton, J. T. Milton, and H. M. Rounthwaite for their contributions, which were much appreciated. The testing of fuels of various kinds and qualities has been carried on by the Committee as opportunity was afforded, and the results recorded. Instruments and Specialties have been exhibited, and described for the benefit of Members in attendance. The time and attention devoted by the Convener to this work throughout the year, have been such as to call for the special thanks of the Council, while his regular attendance and devotion at the business meetings deepens the regret that his projected retirement from the Council has occasioned. The work-

shop has been further added to and rendered more useful by the kindness of Mr. G. Shearer (Member), who has given both time and labour to the improvements he has made. The want of a lantern and screen for the purpose of illustrating lectures and papers having been very much felt, arrangements were accordingly made for the purchase of the necessary apparatus.

ISSUE OF TRANSACTIONS (Mr. J. E. Elmslie, Convener).—The bound volumes of the Transactions which have been disposed of, including several copies presented to libraries and kindred societies, number 59 volumes. Members are recommended to return their papers for each year in order to their preservation in permanent form, by having them bound in the chosen binding of the Institute at 3s. 6d. per volume. Extra copies, complete, can be obtained by Members at 10s. 6d. per volume, except those out of print. The papers read during the Session, with the discussions, are being issued in parts, as proposed at last Annual Meeting.

READING ROOM (Mr. A. H. Mather, Convener).—Papers and Magazines in great variety have been supplied for the use of Members in the reading room, as per list.

LIBRARY (Mr. W. Lawrie, Convener).—The advantages to be derived from the use of the Library and Reading Room have only been appreciated by a small proportion of the Members. The books in the Library, which are being added to from time to time, are issued on loan to Members on application.

PROPERTY (Mr. S. C. Sage, Convener).—The building and grounds of the Institute have been kept in necessary repair. The adjoining houses have been altered, and the fronts extended out for shops. The interests of the Institute were safe-guarded in connection with these alterations. The value of the property has appreciated during recent years. A flag staff was erected on the building, and a few decorations

made in celebration of the Coronation rejoicings. An additional room, suitable for a laboratory, would be very useful. The Museum, containing a collection of articles of interest, of peculiar cases of flaw or fracture, and curiosities from different parts of the world, is being added to from time to time, but the need of suitable accommodation for the proper classification of the collection, hinders its development.

PRESS CUTTINGS (Mr. C. Noble, Convener).— Notices and cuttings from papers and magazines, illustrations or drawings of matters of interest, worthy of preservation for record and educational purposes, are invited from Members. Several communications have been received in the course of the Session from members and friends at home and abroad.

RECREATION (Mr. W. I. Taylor, Convener).— The Annual Dinner was held in the King's Hall, Holborn Restaurant, on Friday, July 25th. A detailed report of the proceedings has already been published. The Conversazione was held in the Liverpool Street Station Hotel, on Friday, November 28th, 1902. A Concert was held in one of the halls, exhibits were arranged in two of the ante-rooms, and, during the latter portion of the evening, a reception was held by the President, followed by dancing in the large hall, which was kept up till 3 a.m. This event was well attended and, as usual, proved to be a very pleasant social gathering for members and friends. The change of place from former years rendered it more convenient for the attendance of those resident in the south and west districts of the City. Several of the Office Bearers and Members of Committee from the Bristol Channel Centre were present.

TENNIS CLUB (Mr. A. H. Mather, Hon. Sec., and Mr. W. E. Farenden, Captain).—The Tennis Club had a successful season, May to September. The membership consisted of 15 ladies and 14 gentlemen. A Tournament was held towards the close of the season, which

resulted in the palms being awarded to the Misses E. and I. Sinclair, and Messrs. W. E. Farenden and R. S. Osborne. The Social Gathering of the Club was held in the Premises of the Institute on Saturday, September 27th, when a very agreeable evening was spent amid music and dancing. The Club spent a July Saturday afternoon at Theydon Bois, where, after a few games, tea was served, and was followed by a Concert.

The balance sheet is as follows:—

EXPENDITURE.		INCOME.	
	£ s. d.		£ s. d.
General Expenses ..	3 8 10	Subscriptions ..	6 17 6
Excursion	2 18 9	Excursion	3 0 7
Social Evening ..	2 8 6	Social Evening ..	3 3 0
Repairs to Lawn ..	1 0 0	Tournament Entries..	0 17 6
Printing, Postage, &c.	0 16 6		
Tournament Awards..	1 5 0		
Balance in Hand ..	2 1 0		
	<u>£13 18 7</u>		<u>£13 18 7</u>

A Conference was held in London, on Saturday, November 29th, with the Office Bearers and Members of Committee of the Bristol Channel Centre, when several matters were discussed for the benefit of the Centre and the Institute as a whole. It was considered advisable to limit the grade of Companions to those who were well within the specification of qualification defined in the by-law, and to aim at keeping the number of Companions within about 30 per cent. of the number of Members. It was agreed to renew the grant to the Bristol Channel Centre of a sum not exceeding 75 per cent. of the total subscriptions received from members associated with the Centre. In addition to this grant, a loan of £80 was sanctioned by the Council to be granted from the general funds for one year at Bank rate of interest, to enable the Centre to complete the cost of furnishing the local premises suitably and fitly for the operations of the Institute at Cardiff. The con-

ditions attached to these concessions were to the effect that the Office Bearers and Members of Committee of the Centre do supply a complete inventory of the property purchased by them on behalf of the Centre, and also a balance sheet showing the receipts and disbursements.

By invitation of the Sanitary Institute, two Members have been appointed to represent the Institute of Marine Engineers at the Conference to be held at Bradford.

By invitation of the Fire Prevention Congress Committee, two Members have been appointed to represent the Institute at the Meetings to be held in London, July, 1903.

The new scheme, proposed and being adopted by the Admiralty for the education and training of officers for the Royal Navy, is hailed as an endeavour to improve the conditions under which the Service has been carried on during recent years, and break away from the traditions which have, at least, tended to hinder progress and advancement by an apparent division of interests. There is hope that the new regulations, modified probably in respect to a few of the details, as experience may dictate, will weld into the homogeneity of one common and undivided interest, the various departments, with the same spirit animating the whole of the directing Officers. As we have advocated for many years, it is still considered that the Engineer Department should be represented adequately on the Admiralty Board, in order that matters affecting the Department might be considered within the veil. A tribute of thanks is due to Mr. D. B. Morison for the papers he wrote on the subject from the Engineering point of view, initiating discussion and conference, which have helped to show the necessity for a departure from the old conditions.

JAS. ADAMSON,

Hon. Secretary.

REVENUE

Dr. 1st February, 1902, to

	£	s.	d.	£	s.	d.
To General Expenses :						
Bank Charges	0	12	7			
Postages, Telegrams, &c.	24	19	1			
Telegraphic Address	1	1	0			
Inscription on Medal	0	2	6			
Engrossing Certificates	2	2	0			
Stationery and General Printing	8	12	2			
Assistant Secretary's Salary	100	0	0			
Chartered Accountants' Fees	10	10	0			
Expenses, Deputations, &c.	13	14	0			
				161	13	4
„ Rates, Taxes, &c. :						
Rates and Taxes	32	17	2			
Gas	14	3	1			
Water.. .. .	11	17	0			
				58	17	3
„ House Account :						
Caretaker's Wages	59	5	0			
Coals	4	8	0			
Sundries	6	10	0			
Garden	10	0	0			
Repairs, &c.	73	15	10			
				153	18	10
„ Insurance						
				1	14	6
„ Advertisements						
				8	5	0
„ Depreciation :						
On Furniture	12	15	9			
On Additions, &c., to Buildings	26	3	10			
				33	19	7
„ Reading Room Expenses						
				14	1	9
„ Paper and Discussions :						
Printing and Lithography.. .. .	295	11	11			
Reporting	16	3	6			
Postages	45	10	4			
				357	5	9
„ Interest, Denny Gold Medal						
				10	0	0
„ Recreation Section :						
Expenses, Dinner	123	5	11			
„ Conversazione	114	14	8			
				238	0	7
„ Transactions Section :						
Expenses Binding Volumes				16	16	0
„ Experimental Department Expenses						
				5	8	0
„ Bristol Channel Centre :						
Expenses	0	16	9½			
Expenditure as per their account.. .. .	178	6	0			
				179	2	9½

 £1244 3 4½

ACCOUNT.

31st January, 1903.

Cr.

				£	s.	d.	£	s.	d.
By Entrance Fees:									
Members	..	..	..	42	0	0			
Associate Members	..	..	..	6	10	0			
Associates	..	..	..	0	10	0			
Graduates	..	..	..	1	0	0			
Companions	..	..	..	10	0	0			
							60	0	0
„ Subscriptions:									
Members	..	..	..	699	15	11			
Associate Members	..	..	..	21	5	6			
Associates	..	..	..	12	12	7			
Graduates	..	..	..	3	13	4			
Companions	..	..	..	60	0	2			
							797	7	6
Less Subscriptions in Advance:									
Members	..	..	£136	5	2				
Associate Members	..	..	2	4	8				
Associates	..	..	1	5	11				
Graduates	..	..	0	13	9				
Companions	..	..	19	1	5				
							159	10	11
							637	16	7
„ General Revenue:									
Sale of Bye-Laws	..	..	..	0	1	0			
Billiard Table Receipts	..	..	..	1	15	4			
							1	16	4
„ Interest on Deposit Account..							5	9	8
„ Donation to Library ..							3	1	0
„ Recreation Section:									
Sale of Dinner Tickets	..	..	..	74	7	6			
Donation to Dinner..	..	..	..	50	0	0			
Sale of Conversazione Tickets	..	..	..	143	4	0			
							267	11	6
„ Transactions Section:									
Sale of Bound Volumes	..	..	..				12	18	11
„ Experimental Department:									
Donation	..	..	..				3	0	0
„ Bristol Channel Centre:									
Subscriptions—									
Members	..	..	..	129	4	11			
Associate Members	..	..	..	2	16	3			
Associates	..	..	..	2	17	9			
Companions	..	..	..	45	1	10			
							180	0	9
Less Subscriptions in Advance:									
Members	..	..	£21	15	7				
Associate Members	..	..	0	10	4				
Associates	..	..	1	2	8				
Companions	..	..	7	11	7				
							31	0	2
							149	0	7
„ Balance ..							103	8	9½
							£1244	3	4½

MEETINGS HELD DUR

DATE.	NO. OF PAPER.	SUBJECT.
1902.		
February 3...		Testing Peat Fuel
" 10...	101	Some Boiler Defects
" 17...		Testing Peat Fuel
" 24...		Adjourned Discussion, "Boiler Defects"
March 3...	Lecture	Microscopic Structure of Metals, Part I.
" 10...	Do.	Do. do. do. Part II.
" 14...		Annual Meeting
" 24...	Lecture	Balancing of Engines
April 14...	Do.	Adjourned Discussion on above
" 21...	Lecture	Internal Structure of Iron and Steel
" 28...	102	A Steam Turbine
May 5...		Testing Peat Fuel and other Samples of Coal... ..
" 12...		Do. do. do.
" 19...		Do. do. do.
July 25...		Twelfth Annual Dinner
September 27...		Fourth Annual Tennis Club Social
October 6...	103	Our Fuel Supply
" 13...	104	Standardization of Pipe Flanges
" 20...	103	Our Fuel Supply and Testing Fuel
" 27...	104	Adjourned Discussion, Pipe Flanges
" 27...	105	Electric Lighting on Board Ship
November 3...	103	Our Fuel Supply and Testing Fuel
" 10...	105	Adjourned Discussion, Electric Lighting
" 17...	103	Testing Fuel
" 24...	105	Adjourned Discussion, Electric Lighting
" 28...		Conversazione
December 1...		Coal Testing Experiments
" 8...	105	Adjourned Discussion, Electric Lighting
" 15...		Coal Testing Experiments
" 22...		Do. do.
1903.		
January 5...		Do. do.
" 12...	106	Raising Engines to Repair Tank Tops
" 26...	Lecture	Baltic and Artic Voyage of the Ice Breaker, <i>Ermack</i>

Papers Nos. 107 and 108 having been read at Cardiff, in January, 1903, are on "Raising Wrecks sunk in the Thames,"

ING SESSION 1902-3.

AUTHOR.	CHAIRMAN.	WHERE HELD.
G. W. Newall (Convener) ...	Jas. Adamson	58, Romford Road
C. W. Hansen (Member) ...	T. F. Aukland	Do. do.
G. W. Newall (Convener) ...	Jas. Adamson	Do. do.
C. W. Hansen (Member) ...	J. E. Elmslie	Do. do.
J. T. Milton (Lloyd's Registry)	J. Macfarlane Gray... ..	Do. do.
Do. do.	W. C. Roberts	Do. do.
	W. C. Roberts	Do. do.
H. M. Rounthwaite	J. Macfarlane Gray... ..	Do. do.
Do. do.	Do. do.	Do. do.
S. A. Houghton	W. C. Roberts	Do. do.
(Board of Trade)		
W. H. Northcott (Member) ...	J. Macfarlane Gray... ..	Do. do.
W. McLaren (Convener) ...	Jas. Adamson	Do. do.
Do. do.	Do. do.	Do. do.
Do. do.	Do. do.	Do. do.
W. I. Taylor (Convener) ...	D. J. Dunlop, Esq.	Holborn Restaurant
	(President)	
A. H. Mather (Hon. Secretary Tennis Club)		58, Romford Road
Jas. Adamson (Hon. Sec.) ...	W. McLaren	Do. do.
J. R. Ruthven	W. Lawrie	Do. do.
(Member of Council)		
Jas. Adamson	W. McLaren (Convener) ...	Do. do.
J. R. Ruthven		Do. do.
C. W. Barnes (Assoc. Member)	W. C. Roberts	Do. do.
Jas. Adamson	W. McLaren (Convener) ...	Do. do.
C. W. Barnes (Assoc. Member)	W. McLaren	Do. do.
Jas. Adamson	W. McLaren (Convener) ...	Do. do.
C. W. Barnes (Assoc. Member)	J. E. Elmslie... ..	Do. do.
W. I. Taylor (Convener) ...	D. J. Dunlop, Esq.	Great Eastern Railway Hotel
W. McLaren (Convener) ...	Jas. Adamson	58, Romford Road
C. W. Barnes (Assoc. Member)	W. Lawrie	Do. do.
W. McLaren (Convener) ...	Jas. Adamson	Do. do.
Do. do.	Do. do.	Do. do.
Do. do.	Do. do.	Do. do.
T. W. Wailes	W. Lawrie	Do. do.
(Vice-President B. C. Centre)		
A. Gulston (Newcastle)...	W. C. Roberts	London Institution, Finsbury Circus

included in Vol. XIV. January 19th, was the date arranged for the lecture postponed on account of the death of Mr. C. Wood.—J.A.

The HONORARY SECRETARY said that unfortunately Mr. Sloggett, the retiring Honorary Secretary of the Bristol Channel Centre, was not able to be present that evening, owing to business engagements. He would read the report of the Bristol Channel Centre on his behalf. The report was in the following terms:—

INSTITUTE OF MARINE ENGINEERS. INCORPORATED.

Bristol Channel Centre.

ANNUAL REPORT

SESSION 1902-1903.

For actual work done, the Session 1902-3 compares favourably with any former one. The Bristol Channel Centre has been full of activity throughout, and more meetings have been held than in any previous similar period.

The number of papers contributed by members of this Centre has also exceeded that of any former year. The following five papers by local members have been read and discussed:—"Lifting Engines from their Seatings on board Ship," by Mr. T. W. Wailes (Vice-President); "The Speed Regulation of Steam Engines, land and marine," by Mr. W. Welbury (Member); "Independent Pumping Arrangements," by Mr. D. K. Roberts (Member); "Scotch or Cylindrical Multi-tubular Boilers," by Mr. E. Nicholl (Member); "Water Tube Boilers," by Mr. A. E. Mills (Member).

An address on the subject of "Ships and Engines" was also given to the members by Mr. H. Brandon (Member).

Two Summer Visits of very special interest were carried out. The first one was a visit of inspection to Barry Docks, on which occasion the members were the

guests of the Barry Railway Company, and also of the Barry Graving Dock and Engineering Company, Ltd. Both of these Companies were most courteous and hospitable in their reception of the members. Mr. Archibald Hood (Vice-Chairman of the Barry Railway Company) on behalf of Lord Windsor and his Co-Directors, gave them a most cordial welcome, and Mr. Lewellen Wood (Director of the Barry Graving Dock Company) also did the same on behalf of that Company. The President of the Centre, Sir Thomas Morel accompanied the party on this occasion, and the Mayors of Cardiff and Newport were also present. A meeting of the Institute was held during the visit, over which Sir Thomas Morel presided, and Mr. Archibald Hood read a most interesting paper, entitled: "The Development of Barry and its Docks." Mr. Archibald Hood was ever willing to lend encouragement and assistance in the work of scientific and educational societies and institutions, and by his death which has since taken place, the Bristol Channel Centre has lost a warm supporter. Thanks principally to the late Mr. Hood, the Barry Dock visit was a great success.

A visit of inspection was made later in the summer to the Cardiff Corporation Waterworks and Reservoirs, on which occasion the Cardiff Borough Waterwork's Engineer (Mr. C. H. Priestly) gave an interesting address and description of the scheme.

A most enjoyable summer function was the occasion when the President and Lady Morel were "At Home" to the members with their lady friends, and received the party in the charming grounds of their residence at St. Andrews, near Cardiff. On this occasion a telegram was sent to His Majesty, King Edward VII., conveying the humble congratulations of the members to their Majesties the King and Queen Alexandra on the news of His Majesty's convalescence after his recent illness. The following reply was subsequently received:—To Sloggett, care of Sir Thomas Morel, St. Andrews, "Am commanded by their Majesties to thank you and

members of the Bristol Channel Centre of Institute of Marine Engineers for kind telegram of congratulation."

KNOLLYS.

Two Social Gatherings at the Institute Premises, Cardiff, have also been held; on the first occasion the members were the guests of the Committee, and on the second, of Mr. Wm. Jones (Companion).

At the Bristol Channel Centre Twelfth Annual Dinner, a very large company assembled, and the President of the Centre (Sir Thomas Morel) presided. It gave much pleasure to the members of the Centre to have the President of the Institute (D. J. Dunlop, Esq., J.P.) present as their guest on that occasion.

At a conference held in London between the Council of the Institute and the Committee of the Bristol Channel Centre, which was presided over by the President, it was decided to support a proposed limitation of the number of Companions to one-third of the membership of the Institute. This has since been brought into effect by the Council.

Mr. A. E. Smithson, Honorary Treasurer of the Bristol Channel Centre was presented by the Committee with a handsome oak liqueur cabinet, as a slight recognition of the long services he has rendered for so many years to the Centre. The cabinet bears a silver plate having the crest of the Institute and the following engraved upon it:—"Presented to A. E. Smithson, Esq., M.I.M.E., by the President and Committee of the Bristol Channel Centre of the Institute of Marine Engineers, as a mark of regard and in appreciation of his services as a Member of Committee, and of his useful work in the capacity of Honorary Treasurer, Christmas, 1902."

The Committee of the Centre in making a recommendation to the Council for the next President of the Institute to succeed Mr. D. J. Dunlop, forwarded the name of Sir John Gunn; it has afforded much gratifi-

cation to the Centre to know that the Council has nominated Sir John Gunn as President Elect of the Institute.

In view of the retirement of Sir Thomas Morel from the Presidentship of the Bristol Channel Centre, Sir Edward Hill was approached, and at the solicitation of Sir Thomas and others, he accepted nomination for the position. A few weeks later this arrangement was upset by the sad and unexpected death of Sir Edward Hill.

The Right Honourable Lord Tredegar was next nominated, and he was interviewed by Sir John Gunn upon the matter; His Lordship expressed himself as being pleased to allow himself to be nominated for the position in succession to Sir Thomas Morel, who retires.

Many losses have been sustained in the Centre by death, notably those of Mr. David Gibson, who was many years a Vice-President and staunch supporter of the Centre; and also of Mr. A. S. Jackson, who has for many years been a member of the Bristol Channel Centre Committee.

There has been a substantial increase in the membership during the Session.

The Committee for the Session 1902-3 has been composed as follows:—

President:—Sir THOMAS MOREL, KT.

Vice-Presidents:—

Mr. T. W. WAILES, Mr. W. M. AISBITT, Mr. J. BODDY.

Honorary Treasurer:—Mr. A. E. SMITHSON.

Representative to Council:—Mr. R. WILLIAMSON.

Honorary Secretary:—Mr. GEORGE SLOGGETT.

Members of Committee:—

Mr. T. A. JOHNSON.

„ J. FLEMING.

„ A. S. JACKSON.

„ T. A. REED.

Mr. J. CHELLEW.

„ W. SIMPSON.

„ W. D. ROSSER.

„ WM. M. SCOTT.

Mr. J. SHEARMAN.

Some three months previous to the close of the Session, the Honorary Secretary (Mr. George Sloggett) notified the President and Committee that it was his intention to decline re-election as Hon. Secretary after the present Session terminated, as the demands on his time in connection with the secretarial work were now greater than he could fulfil. He suggested that Mr. J. George Walliker, of Barry, might be able to undertake the work.

The President (Sir Thomas Morel) has always evinced great interest in the Centre's welfare and development, as also has Sir John Gunn (Past President). Sir Thomas Morel having been President for two years (the full consecutive term allowed by the rules), he is not eligible for the Presidentship next Session.

The Office Bearers and Members of Committee have all responded most readily and willingly to whatever calls have been made upon them for assistance, and the success of the Centre this Session, as hitherto, has been due to their unanimity and harmonious method of carrying on the Institute work.

GEORGE SLOGGETT,

Honorary Secretary,

BRISTOL CHANNEL CENTRE.



MEETINGS HELD DUR

DATE.	SUBJECT.
1902.	
March 25	Uses of India Rubber on Board Ship
April 9	Discussion on Uses of India Rubber on Board Ship ..
„ 23	Steam Turbines
„ 26	Visit of Inspection to Barry Docks. Paper on “The Development of Barry and its Docks”
July 12	“At Home” at Sir Thomas and Lady Morel’s
August 2	Visit of Inspection to Cardiff Water Works. Paper Descriptive of Cardiff Water Works
October 25	Twelfth Annual Dinner.. .. .
November 19	Lifting Engines from their Seatings on Board Ship ..
„ 26	Discussion on Lifting Engines from their Seatings on Board Ship
December 8	Ships and Engines. An Address
„ 17	Our Fuel Supply.. .. .
„ 20	Smoking Concert and Social Gathering
1903.	
January 14	The Speed Regulation of Steam Engines, Land and Marine
„ 28	Independent Pumping Arrangements.. .. .
*February 11	Scotch or Cylindrical Multitubular Boilers
* „ 18	Discussion on Scotch or Cylindrical Multitubular Boilers ..
* „ 14	Smoking Concert and Social Gathering
* „ 25	Water Tube Boilers

* Session 1903-4.

ING SESSION 1902-3.

AUTHOR.	CHAIRMAN.	WHERE HELD.
Mr. G. W. Newall, Member Do. do.	Mr. T. W. Wailes, Vice- President The President, Sir Thomas Morel	Institute Premises, 3, Park Place, Cardiff Do. do.
Mr. W. H. Northcott ..	Mr. John Fleming ..	Do. do.
Mr. Archibald Hood ..	{ Mr. Lewellan Wood .. } { Sir Thomas Morel .. } { Mr. Archibald Hood .. }	Barry Dock St. Andrew's, near Cardiff
Mr. C. H. Priestley, Cardiff Borough Water Works Engineer	Mr. T. W. Wailes The President, Sir Thomas Morel	Beacons Reservoir, n'r Merthyr Tydvil Large Park Hall, Cardiff
Mr. T. W. Wailes Do. do.	Mr. M. W. Aisbitt, Vice- President, B.C.C. Mr. J. Boddy, Vice-Presi- dent, B.C.C.	Institute Premises, 3, Park Place, Cardiff Do. do.
Mr. H. Brandon, Member..	Mr. M. W. Aisbitt, Vice- President, B.C.C.	Do. do.
Mr. Jas. Adamson, Hon. Sec., London	Mr. T. A. Reed, Member of Committee Mr. J. Chellew, Member of Committee	Do. do. Do. do.
Mr. W. Welbury, Member..	Mr. W. Simpson, Member of Committee	Do. do.
Mr. D. K. Roberts, Member	Mr. T. W. Wailes, Vice- President, B.C.C.	Do. do.
Mr. E. Nicholl, Member .. Do. do.	Mr. T. W. Wailes, Vice- President, B.C.C. Mr. W. Scott, Member of Committee Mr. Wm. Jones, Companion	Do. do. Do. do. Do. do.
Mr. A. E. Mills, Member ..	Mr. W. Simpson, Member of Committee	Do. do.

3, PARK PLACE,

CARDIFF,

Feb. 11th, 1903.

A General Meeting of the Bristol Channel Centre of the Institute of Marine Engineers was held here this evening, Mr. T. W. Wailes (Vice-President) in the chair.

It was reported that, owing to the regretted demise of Sir Edward Hill, K.C.B., M.P., who had intimated acceptance of the position of President of the Bristol Channel Centre in succession to Sir Thomas Morel, the Committee had had the melancholy task imposed upon them of looking for a new president. Sir John Gunn, President-elect of the Institute of Marine Engineers, Sir Thomas Morel, and the Hon. Local Secretary, were asked by the Committee to approach Lord Tredegar in the matter. It had afforded the Committee at their last meeting the keenest pleasure to receive an intimation from Sir John Gunn that Lord Tredegar had given a cordial assent to his nomination by the Committee, and accompanied it with an expression of willingness to do his utmost to further the interests of the Institute.

On the proposition of the Chairman, seconded by Mr. T. A. Reed, it was unanimously resolved to confirm the Committee's nomination of Lord Tredegar as the new President of the Centre.

Proceeding to the nomination of other Office Bearers, the following names were submitted. The present Hon. Secretary having previously declared his final resolve not to again assume the duties of the office, owing to the professional calls upon his time, expressed his readiness to do all in his power to serve the Centre in the capacity of a Committeeman, if the members so desired.

Nominations: Messrs. T. W. Wailes, R. Williamson, W. A. Johnson, J. Fleming, A. E. Smithson, G. Sloggett (these six gentlemen retiring and offering themselves for re-election), W. Darling, J. G. Walliker, E. Nicholl, Chas. Jones, C. Kendall, A. Boyd, W. Siburn, J. Henderson, E. Morgan, and A. Kendrick—16 nominations for eight vacancies. Regret was expressed that Messrs. A. S. Jackson and J. Shearman were not seeking re-election as Committeemen, owing to ill-health, and the Chairman voiced the feeling of the meeting when he said they earnestly hoped these gentlemen would soon be restored to their wonted robustness, enabling them to resume that practical interest in the Bristol Channel Centre which they had displayed for so many years.

After an animated discussion on the procedure of voting and the counting of votes, the meeting heard Mr. E. Nicholl, R.N.R., read a paper on "Scotch or Cylindrical Multitubular Boilers."

3, PARK PLACE,

CARDIFF,

March 12th, 1903.

A General Meeting of the Bristol Channel Centre of the Institute of Marine Engineers took place at the Rooms of the Centre, Park Place, Cardiff, on Wednesday, March 11th, Mr. J. Chellew (Member of Committee) being called upon to preside.

The retiring HON. SECRETARY (Mr. George Sloggett) read the Annual Report, which said that the past year had been full of activity for the Centre. More meetings had been held than in any similar period, and the number of papers contributed had exceeded that of any former year. The report referred to the fact that Sir John Gunn, an ex-president and generous supporter of the Centre, was the President-elect of the parent

Institute, and that Lord Tredegar had accepted the position of President of the Bristol Channel Centre, in succession to Sir Thomas Morel, whose maximum term of office had expired. A gratifying indication of the progress of the Bristol Channel Centre was found in the substantial increase in membership during the past year. Sympathetic reference was made to the deaths of Mr. David Gibson and Mr. A. S. Jackson, prominent members of the Committee. The report went on to announce that three months ago, Mr. George Sloggett, who, from within two years of the establishment of the Centre to the present time, had undertaken the duties of Hon. Secretary, intimated to the Committee his inability to afford the time necessary to the proper discharge of the work attaching that office, and asking to be relieved of the position by the close of the Centre's year, he also suggested Mr. J. George Walliker as his successor.

On the proposition of the CHAIRMAN, seconded by Mr. W. SCOTT, the report was unanimously adopted.

NEW COMMITTEE AND OFFICE BEARERS.

The HON. SECRETARY announced that he had just received from London the results of the annual elections. The Committee and Officers for the ensuing year would be:—President, the Right Hon. Lord Tredegar; Vice-Presidents, Messrs. M. W. Aisbitt, J. Boddy and T. W. Wailes; Hon. Treasurer, M. A. E. Smithson; Hon. Secretary, Mr. J. George Walliker; Representative to Council, Mr. J. Fleming; Members of Committee, Messrs. T. A. Reed, J. Chellew, W. Simpson, W. D. Rosser, W. Scott, T. Allan Johnson, George Sloggett, E. Nicholl and W. Darling.

Messrs. JOHNSON, DARLING and SLOGGETT returned thanks for election, the last-named saying he should always be glad to assist the new Hon. Secretary with that advice which only came from experience of the performance of the duties of the office. Mr. WALLIKER,

also responding, said, while he fully appreciated the difficulty of following so energetic and resourceful a man as Mr. Sloggett, he should endeavour to follow in his footsteps and keep the Centre up to the high standard of activity and usefulness for which it was noted. He should need the willing support of the members, and felt confident he should receive it.

WATER-TUBE BOILERS.

It had been arranged to resume discussion on Mr. A. E. Mills' paper on "Water-tube Boilers," but in view of the recent death of Mr. A. S. Jackson, member of committee, who was a colleague of the author of the paper, it was resolved to postpone the renewed debate for a fortnight.

A vote of condolence with the widow and relatives of the late Mr. Jackson was passed, on the proposition of the CHAIRMAN, seconded by Mr. C. L. RYDER, the members upstanding in silence.

A vote of thanks to the Chairman brought the meeting to a close.

GEO. SLOGGETT,

Hon. Local Secretary.



The HON. SECRETARY: In addition to the names mentioned in the Obituary, I regret to announce the death of one of our Vice-Presidents, which occurred last week, Henry Hammett, Chief Engineer in the P. & O. S. N. Co., who was well known and personally esteemed by many of us.

Mr. G. W. KIDD (Hon. Treasurer), submitted the Balance Sheet and Revenue Account, after the Bristol Channel Centre Report was read. Continuation of the proceedings will be found on page 45.

BRISTOL CHANNEL CENTRE.

Visit to Barry Docks, Saturday, April 26th, 1902.

Through the kindness of the Barry Railway Co. and the Barry Graving Dock and Engineering Co., a most enjoyable visit to this enterprising port in the Bristol Channel was arranged by the Bristol Channel Centre of the Institute of Marine Engineers, on Saturday afternoon, April 26th, 1902, and close upon 200 gentlemen largely interested in the commercial welfare of Glamorgan accepted the invitations which had been sent out by the Honorary Secretary, Mr. George Sloggett, whose return to active work in connection with the Local Centre, after a long illness, was very heartily welcomed. The progress of Barry, since the first dock was opened in 1889, has been remarkable. This dock is 3,100 feet long, with a maximum width of 1,100 feet, whilst the second dock, which was opened in 1898, is 3,338 feet in length, with a width of from 400 feet to 600 feet, and both are fitted up with the most modern appliances in the shape of tips, &c., for the quick shipping of coal. There is a deep water lock, opened in 1897, which leads direct from the sea to Dock No. 1, and this can be divided by means of gates into two locks, each sufficiently large to take an average size steamer. The depth of water on the cills is as under :—

High water, ordinary Spring tide. .	49·8-ft.
Low " " " "	13·7 "
High " " Neap "	41·4 "
Low " " " "	21·8 "

The available depth is 3 feet more in the centre of the cills than the above figures indicate. Recognising the necessity of developing an import trade, the Directors have constructed a most commodious transit shed, which consists of a dry and cool cellar with two floors above. The most up-to-date facilities in the shape of hydraulic cranes, elevators, &c., for the hauling and storage of imported goods, have likewise been provided. There are three graving docks, two of which belong to the

Barry Graving Dock and Engineering Company, the Directors of which were most lavish in the hospitality which they extended to the visitors on Saturday last. Here the most up-to-date and extensive accommodation is provided for the repairing of large vessels, and, indeed, one of the docks is capable of taking in the largest merchant steamer afloat. The Graving Dock Company's extensive workshops are fitted up with the most modern type of machinery, and the entire management is in the capable hands of Mr. R. Munroe.

The visitors were conveyed from Cardiff—and it must be remembered that Barry is situate within that port—by special train, provided by the Barry Railway Company, shortly after one o'clock. Amongst those present were Mr. Lewellen Wood, J.P. (the Chairman of the Barry Graving Dock and Engineering Co.), Sir Thomas Morel (the President of the Bristol Channel Centre of the Institute of Marine Engineers), Mr. Archibald Hood, J.P. (Deputy-Chairman of the Barry Dock Railway Co.), Mr. H. Wood Davey (Chairman of the Cardiff Chamber of Commerce), the Mayors of Cardiff and Newport, Messrs. E. Handcock (Director of the Graving Dock Co.), John Duncan, J.P., T. W. Wailes, Bregeon, M. W. Aisbitt (Lloyd's Underwriters), H. W. Blackler, John Chellew, J. T. Duncan, John Andrews, J.P., J. A. Jones, Alex. Duncan, J.P., J. Boddy, R. Williamson, J.P., J. A. Johnson, J. Moon, C. A. Heywood, Aldermen P. W. Carey, W. J. Trounce, and T. W. Jacobs; D. W. Roberts, Professor Elliott, W. Simpson, T. A. Reed, J. J. Leaning, J. Fleming, A. S. Jackson, R. T. Duncan, Henry Vincent, Captain T. H. Sloggett, Captain John Trail, Captain Davies (Dock-Master, Barry), R. Munroe (Manager of the Graving Dock Co.), J. Elliott, G. W. Penn, O. Horton, W. Darling, H. Tillsen, A. E. Smithson (Honorary Treasurer, Bristol Channel Centre Institute of Marine Engineers), J. Macaulay, Miles, Captain Leitch, Aldrich, Wm. Evans (Norwegian Veritas), J. Gilmour, George Sloggett (Honorary Secretary, Bristol Channel Centre), and others.

On arrival at the Graving Dock Company's premises, the visitors were met by Mr. Munroe, and a brief inspection was made of the excellently arranged and extensive fitting shop. By invitation of the Directors, the company then sat down to a most recherché luncheon, over which Mr. Lewellyn Wood presided, and at the close he submitted the usual loyal toasts, which met with a hearty response.

In giving "The Institute of Marine Engineers," the CHAIRMAN said that, inasmuch as the toast was that of the Institute, and not of any member or any members of it, there would be no impropriety in everyone of those present drinking to it. (Laughter and hear, hear.) Words from him in support of the toast were unnecessary. Many of those present represented some of the foremost activities of Cardiff—activities which were competitors with what they had seen that day, but in spite of that, when they had finished their tour of inspection, he was sure there was not one of them who would not agree that Barry Dock had nothing to lose, but everything to gain, by giving the widest publicity to the extent of its capabilities and resources. The Company he represented was glad to welcome the Engineers there that day, and to have the opportunity of congratulating them upon the past achievements of their Institute, and to wish them a progressively successful career in the future. (Applause.)

Mr. E. HANDCOCK supported the toast, and

Sir THOMAS MOREL, in reply, expressed the appreciation of the visitors of the kindness of the Graving Dock Company. Most of those present were busy men, and had not the time to see the different works that were going on around them, and these occasions afforded the opportunity of witnessing the improvements that had been made, and the elements of success which existed in their midst. (Hear, hear.) Sir Thomas concluded by proposing "Success to the Barry Dock Graving Company." It was a Company that stood in a unique

position, for it not only occupied a foremost place in being able to do exceedingly good work from a repairing point of view, but it stood in the premier position in the United Kingdom for being able to do quick and economical work. (Applause.)

Mr. AIsBITT, in supporting the toast, said that Lloyd's repairs in the Bristol Channel amounted to £500,000 a year, and, in addition to that, £250,000 was paid by owners of steamers, and another £250,000 by outsiders—in all, about £1,000,000 a year. The port of Cardiff, which included Barry and Penarth, received about eight-tenths of that, and the balance was divided between Swansea, Bristol, and Newport. The cost of repairs in the Bristol Channel for hull work might be about 10 per cent. above that of the Tyneside ports, but when everything was taken into consideration, especially machinery, the cost was, on the whole, lower. Besides, the work was done more expeditiously in the port of Cardiff than in any other port he knew of, on account of the modern appliances that had been introduced. (Applause.)

The toast was drunk with musical honours, and

The CHAIRMAN, in response, said that, to use the words of an old friend, he would only say, "If you are satisfied they are gratified, and if you are gratified they are satisfied." If any of them, upon some tiresome business subject, would come down and see the respected Manager of the Company, they would be received with quite as much pleasure as they had been that day. (Applause.)

Mr. MUNROE, in response to the calls of the company, also returned thanks.

At this point Mr. Lewellen Wood then vacated the chair in favour of Sir Thomas Morel, the President of the Bristol Channel Centre of the Institute of Marine Engineers, and the business meeting was proceeded with.

Sir THOMAS said he would first call upon Mr. Archibald Hood to read the paper which he had been good enough to prepare, tracing the history of the great undertaking which they had inspected and would still further inspect.

Mr. ARCHIBALD HOOD, who was received with cheers, then read the following paper :—

“THE DEVELOPMENT OF BARRY AND ITS DOCKS.”

In the absence of the Right Honorable Lord Windsor, Chairman of the Barry Railway, I have the pleasure, on behalf of the Directors of that Railway, to give a cordial welcome to the Marine Engineers of the Bristol Channel.

Your indefatigable Secretary has asked me, indeed, pressed me, to read to you a short paper on the Barry Docks and Railways.

In the pamphlet, a copy of which you will all receive, everything is said that I could be expected to say upon such a subject, but your Secretary has insisted that I should say something about the origin of the undertaking.

To deal with this subject leads me into ancient history. The making of the West Dock at Cardiff may be considered as the origin of all dock extension which has followed on this side of the Bristol Channel. Much as many of us take credit for what we have done in the way of dock accommodation and extension in the Bristol Channel, nothing of such an important and meritorious character has been done by the followers of the grandfather of the young man who now bears the honorable title of the Marquis of Bute, nor has anyone had the same difficulties to contend with, or the same risks to run, as that nobleman had to undertake single-handed. He and his representatives courageously followed up the initial step by constructing the East Dock and the Roath Basin.

In 1874 his representatives obtained authority to construct what was called the Roath Dock, with entrance basin, and it could not have been constructed before it was required. The basin was made, but the dock was never made, for reasons to which I need not refer. For years after 1874, repeated applications were made by the traders of Cardiff, urging Lord Bute and his representatives to make this dock, and the applicants even offered to be at the expense of making a dock themselves; but nothing was done in the way of further dock accommodation until the end of 1881, when Lord Bute gave notice of a Bill for the ensuing Session of Parliament, to construct a dock to be called the Roath Dock; and in this Bill powers were asked to increase the dock charges. The Bill came before Parliament in the beginning of 1882, and was met by a strenuous opposition to the increased charges by the Colliery Owners, Merchants, and others, who, however, did not altogether succeed in their opposition, and the dock was subsequently made, but no increased charges have been demanded.

Seeing that powers had been in existence since 1874 to make a dock, which would have satisfied the opposing traders, they were not satisfied that further delay might not be incurred, and that great delays and expense, as well as serious hindrances to trade, were experienced for want of such accommodation, they resolved to apply for powers to make a dock themselves.

They had also been long dissatisfied with the treatment they had been receiving from the Taff Vale Railway, in consequence of that Company's aversion to doing anything in the way of extending dock accommodation at Penarth, or reducing their rates of carriage. The Taff Vale Company were paying unprecedentedly high dividends, and the traders thought that their railway rates should have been reduced.

The result was that the opposers to the Bute Dock Bill lodged a Bill in Parliament for the Session com-

mencing in 1883. This Bill was called the "Barry Dock and Railways Bill," and was passed by a Committee of the House of Commons, but thrown out by a Committee of the House of Lords. The promoters, though cast down, were not destroyed, and they resumed their application in the following year, when their Bill passed through both Houses.

This is the origin of what is now called the Barry Railway Company. In coming to Barry, the Directors selected what they considered the most desirable and convenient site within the Port of Cardiff.

The ground was broken for the new undertaking in November, 1884, and the Dock was opened for traffic in July, 1889. The extension of the works is all narrated in the pamphlet to which I have referred.

The Docks are under a disadvantage in being a little further from the Collieries than the Cardiff or Penarth Docks, and they have this advantage, in being nearer the sea and nearer deep water, thus affording facility for making the deep water entrance which is referred to in the pamphlet.

However, taking all things into consideration, the promoters of the Barry undertaking are satisfied with what they have done. By their efforts, a reduction in railway rates has been effected to the extent, on an average, of 2d. or 3d. per ton. Dock accommodation has been provided in advance of shipping requirements, and consequently the whole district has thereby received great benefits, all tending to the extension of trade and the development of the great mineral fields of Glamorgan.

It is very gratifying to the Barry Directors that their efforts do not seem to have prejudicially effected any of the docks in the Channel, but only to have made provision for the increased traffic which has taken place.

Sir THOMAS MOREL said he was sure they were much obliged to Mr. Hood for his valuable paper. Thirty-

three years ago Mr. Treharne was the owner of Barry Island. He then invited the whole of the commercial men of the day to visit the island, and pointed out the possibilities of building there magnificent docks, already partly built by nature. At that time they were busy men and did not look at the matter in the same light as Mr. Treharne did. Unfortunately for him he had to sell the whole of Barry Island for £12,000 to the present owner, Lord Windsor. Then some years afterwards by reason of the immense growth of the trade of the district it was found necessary to increase the dock accomodation of Cardiff, and reduce the high tolls on the carriage of coals from the colliery to the port of shipment. From a business point of view he (Sir Thomas) did not know what they would have done in this district without the Barry Railways and Docks, and a great deal of thanks were due to the Barry Company for having promoted their undertaking. Before Barry was developed, shipowners had to wait seven or eight days for their turn for vessels to enter the Cardiff Docks, but in those days they had not in Cardiff the able advisers of the Bute interests that they now had, otherwise the docks would have been built at Cardiff. Even after powers had been obtained for constructing the Barry Dock it would not have been proceeded with if the Taff Vale Company had lowered their rates of carriage.

The MAYOR OF CARDIFF said that in the sixties he had in the course of his ordinary duties to go to the dock office perhaps on an average twice a day to see whether a ship might be admitted to the docks. He remembered ships being kept outside three weeks seeking admission to the docks. Mr. Hood had not in the least exaggerated when he suggested that in the first place it was absolute necessity that put this idea of additional dock accommodation into the minds of traders. He (the Mayor) was also struck with the kind spirit which prevailed in Mr. Hood's paper, and thought it must be a source of gladness to all that the provision of this extra accommodation had not prejudiced the trade of Cardiff and other places.

The MAYOR OF NEWPORT, who said he remembered the opening of the first Newport and Cardiff Docks, remarked that this was his first visit to Barry, and he was astonished at the enormousness of the work carried on.

Mr. H. WOOD DAVEY (President Cardiff Chamber of Commerce) said that the coal trade would have been utterly stifled without the Barry Docks. The trade of Barry had gone on increasing steadily year by year beyond the dreams of avarice, and yet it had not been to the detriment of Cardiff. He did not suppose that the coal trade would go on increasing at the enormous rate it had done in the past, and they must look forward to the development of trade in other directions. There was plenty of scope for an import trade, and it seemed to him that they ought to be in a position to compete for the establishment within the port of Cardiff of the quick service of steamers between Canada and Great Britain. (Hear, hear.)

Sir THOMAS MOREL here produced plans, showing how the Americans loaded fabulous quantities in the sea port districts in a quick time, the ship and trucks being specially arranged for the purpose.

Mr. T. W. WAILES said that it was the men who had promoted the Barry undertaking who had spurred on Cardiff.

Mr. LEWELLEN WOOD said that if he were again President of the Cardiff Chamber of Commerce he would point out that one of its principal and most important functions was to mark the conduct of public bodies in respect of the rates. The rates now being levied by our District and County Councils were beginning to form one of the most serious obstacles to the development of business.

Mr. WILLIAMSON, Mr. J. A. Jones, and Mr. A. S. Jackson also spoke.

Mr. JOHN ANDREWS emphasised the fact that there was not only a tendency towards growth of municipal rates, but also our public expenditure of all kinds. There was a large amount of public apathy as to the expenditure of public money. If they wished capitalists to embark upon new enterprises in their midst, they must be able to show that they would not be called upon to pay higher local rates than they would be in other places.

Sir THOMAS MOREL at this point expressed regret at the absence of Sir John Gunn, who, owing to the unfortunate occurrence of which they all knew, had been obliged to take Lady Gunn away from Cardiff, in consequence of the anxiety she felt as to her daughter.

Mr. T. A. REED (Member of Committee) said he thought they ought to get some practical result from that day's meeting, that being the primary object of their Institute gatherings.

He had a large experience of Barry Docks, having vessels there nearly every week throughout the year. There was any amount of provision in Barry Docks so far as the tipping of coal and carrying on an import trade was concerned, but, as an engineer, he complained of the want of facilities for putting propellers, winches, and heavy goods of that kind on board vessels in the dock. It was sometimes very inconvenient to have to swing a vessel across the Dock from the tip by a crane, in order to get things on board, then get the vessel back again to its tip. In many docks, and some local ones, it was not necessary to leave the tip-side for such a purpose.

If there were faults and failings at the Docks, Mr. Hood said, he was glad to hear them expressed, and he would do all he could to remedy them.

A vote of thanks having been accorded Mr. Hood, the company rejoined the special train, and visited the various points of interest in the undertaking, and were

loud in their praise of the enterprise displayed by the Directors.

A visit was subsequently paid to the fine and well-appointed offices of the Barry Railway Company, where light refreshments were partaken of.

Here Mr. ARCHIBALD HOOD, on behalf of Lord Windsor and the other Directors of the Barry Railway Company, again gave a cordial welcome to the Members of the Institute of Marine Engineers, and said his co-Directors would join him in expressing their pleasure at being favoured with the visit of such an important Institute.

In responding to a very hearty vote of thanks, accorded with musical honors, Mr. Hood said that, although Marine Engineering had done a great deal to improve steam navigation, he hoped they would go on and make still greater improvements. Nothing they had yet done would surpass the importance of what had been done in this direction by the great father of steam navigation, viz., James Watt. Seemingly, a step in the proper direction had been made by the introduction of the Turbine propeller. They ought to direct their attention to some less bulky method of producing power than by taking such loads of coal on board. A step in this direction had been made by the introduction of oil as fuel, but oil was too expensive to be economically available in this country.

If they could only find out by their engineering skill some better method of trimming coal than the present, it would be an advantage. Many things had been tried, but as yet there had been no success. There was little difficulty in loading quickly by tips, but the difficulty was the trimming, and he asked them if they could not find out some method of trimming coal more speedily and less expensively than at present. That would be an important step in forwarding the progress of steam navigation.

Mr. JOHNSON, Manager of Hill's Dry Dock, humorously advised Mr. Hood and other colliery owners to sell all the coal they could, as it would not be wanted in the future.

The company then rejoined the special train, and were conveyed to Cardiff, after spending a most pleasant half-day.

GEORGE SLOGGETT,
Honorary Secretary,
BRISTOL CHANNEL CENTRE.



The HON. TREASURER (Mr. G. W. Kidd), read the following letter from the Chartered Accountants:—

ST. GEORGE'S HOUSE, 6 AND 8, EASTCHEAP,
LONDON, E.C.
19th March, 1903.

To the Members of the

INSTITUTE OF MARINE ENGINEERS,
58, ROMFORD ROAD, STRATFORD, E.
GENTLEMEN,

We have to report that we have examined and checked the London accounts of your Institute for the year ended 31st January, 1903.

With reference to the Bristol Channel Centre, we beg to again call your attention to the importance of having a duly audited account of Income and Expenditure during the year, with a Balance Sheet at the end; as, without this, it is not possible to get a true and complete Statement of the Institute's Income and Expenditure, nor to show the Institute's correct financial position at the close of the year.

We have had produced to us an account of moneys received and paid by the Bristol Channel Centre, but there is no Balance Sheet showing the Assets and Liabilities of this Centre.

Subject to the foregoing remarks, we are of opinion the Balance Sheet of your Institute is properly drawn up so as to exhibit a true and correct view of the state of the Company's affairs, as shewn by the books of the Company.

We have ascertained that the Title Deeds of the Freehold Property are held by the London and County Banking Co., Stratford, for safe custody, and we have verified the Bank Balances and the Investment in Consols.

We are, Gentlemen,

Yours truly,

(Signed) FEAST, DRAKE & Co.,

Chartered Accountants.

The HON. TREASURER said: With reference to the figures on the Financial Statement submitted to you, I think they speak for themselves. We might, however, draw your attention to one or two of the items. The house account is considerably more this year, because it was necessary to do certain repairs. If those repairs had been left to some future time they would have cost a great deal more. The depreciation on furniture has been taken as usual, and in time to come the furniture will stand at nil in the books. The item of £357 5s. 9d. for printing, lithography, reporting and postages, seems a big item indeed, but when you remember that our members extend all over the globe, and that postage has to be paid to them, also that the papers have to be printed and illustrated, you can understand that it takes a large amount of money to do all that. Our Institute was built not to save money, but to spread the knowledge contained in the papers that are read for the benefit of Members abroad as well as at home. If it were possible to save money in this respect I dare say the Council would save it. The item, Recreation Section, includes the expenses of the Annual Dinner and Conversazione. We never expect to get any money out of such, but we like them to balance, if possible. This year, through the handsome gift of our President, we have a balance in hand of over **£32** for this Section. I need not draw your attention to any other figures, except in regard to the alterations which we have done in the building this year, amounting to **£73 15s. 10d.** Our debit balance would be reduced if that item had been kept off the year's expenditure sheet and dealt with in another way. You will notice that the Accountant makes a note of the loan of £80 to the Bristol Channel Centre. I may just as well say here that by the good offices of our President, through the time he sacrificed in going to Cardiff, and in coming to London to meet the Committee of the Bristol Channel Centre and the Council of the Institute, he has brought about a better feeling, and I hope we have heard the last of the trouble with the Bristol Channel Centre Balance Sheet. I think they

are now in a way to go smoothly, and that with a little care we shall have a clear statement and a satisfactory expenditure account, and bring this Centre right into line without the friction and trouble we have had before. That is the earnest wish of everyone.

The CHAIRMAN: While you consider the statement just made by Mr. Kidd, I will ask Mr. Ruthven to give us a few remarks.

Mr. J. R. RUTHVEN said the Institute is to be congratulated on the completion of 14 years of successful work. The number of Members has increased; Companions, stationary; Associate Members, decreased; Associates, decreased; Graduates, decreased. Although success is not always to be measured by increase of Members it would be well for the future of the Institute to be able to secure a larger number of Graduates. The advantages are all on the side of the Graduates who join. The Council welcome new speakers at the meetings and encourage the reading of papers by junior Members. I have heard that some Members think our papers and discussions are "over the heads" of the junior Members. That can be easily remedied; I would ask the junior and other Members to send in their views and I am sure the Council would be glad to do anything they could to meet their objects. The Denny Gold Medal is one of the least of the benefits which may be gained by writing a paper. As will be seen from our records the medal has not always been awarded to the most profound paper, neither has it been awarded to the paper requiring deep research, but it will be found that it has gone to the paper which has been earnestly written from personal experience and careful observation. The question of subjects for papers is a natural one to arise on this point. I am glad to be able to give a few mentioned by our Hon. Secretary last October in his preface to the valuable paper on Our Fuel Supply.

The subjects named were "Cold, Refrigeration,

and Insulation," "Heat, its value, preservation and conservation," "Fuel, its various forms and modes of treatment," "Steam, how to use it to the best advantage," "Economy in everything," and I would also add on my own account that attention to the saving of life at sea and the care and comfort of the passenger is another item which might be added to any consideration of subjects for papers. It is encouraging to know that papers and discussions here have had good effects in improving the work of various great public bodies. So it will be seen that the designs of the founders of this Institute are bearing fruit.

The Experimental Department is doing good work; new and improved instruments are being added and various tests and experiments are carried out on the premises. Junior Members should attend in larger numbers. The Reading Room and Library are not used to their full advantage. The Technical Library is one of the best, some of the books are of rare value. Copies of drawings for reference would be welcome, and the Council would be glad to make special provisions to store such drawings for the convenience of Members. There must be a large number of old and new drawings, tracings, prints, etc., in the possession of Members which would be of greater value if given to, or lent to the Institute. The subject of the Institute being located in London has often been spoken of; no doubt in time this will come about. It rests with the Members to think out the advantages or dis-advantages of such a step. In the meantime meetings can be held in the City, when it will be convenient for Members who cannot easily get to Stratford. I believe that at present Stratford is the centre of the majority of the Membership, and of the majority of the present officers. Negotiations are in progress to have the meeting held in the London Institution, on the 2nd Monday of each month, and on the 4th Monday at 58, Romford Road, next session. Such an arrangement means increase of expenditure of £25 to £30, and it is therefore hoped that the attendance of Members will be

greatly increased to justify such increase. To remove the whole establishment of the Institute to the City is a question which may be faced some day, but the wherewithal to accomplish the change would require to be very carefully considered, and at least £8,000 or £9,000 be in hand before the matter could be seriously contemplated. The founders of the Institute were sufficiently clear sighted and prophetic in their instincts to make provision in the by-laws for a great advance, both in the influence and service of the Institute, so that in looking forward to a House in the City, we are simply working along the lines laid down.

Mr. R. LESLIE (Vice-President), in moving the adoption of the reports, said: "In proposing the adoption of these reports I fear I am taking up a duty that is just a little outside of my strength, as one may say, as unfortunately I have not been a regular attender of late, not nearly so regular as I should like to have been, but my feelings are fully with the Institute, and I have much pleasure in proposing the adoption of the reports. I am very pleased to see that things are in a satisfactory condition, although during the past three years war, Engineers have had such an amount of work on hand that we have had but little time to attend the meetings of the Institute. Now that we have peace again I think the Institute should receive more attention from its members, both ashore and afloat. They ought to give a little more time to its affairs and so improve its position in every conceivable way. As Mr. Ruthven has said, there are a good many ways in which the position of the Institute might be improved, and with a good strong Council that could be done. But the great thing is to get the young and rising generation to take an interest in it; we must get something that will attract and give the young men something to come for. I think the main attraction in an Institute such as this is, lies in placing something before the young men that will give them an interest in coming here. I have no doubt the Council will be well able to formulate a scheme that not only will

attract the younger but also older members. In past times, when the Institute first started, the interest was very keen and I should like very much to see that interest maintained. The report throughout is well drawn up; it is a very good report and reflects great credit on our Honorary Secretary. Now that we are again entering times of peace I can only say that if we all put our shoulders to the wheel and help the Honorary Secretary and Members of Council to keep the Institute up to its present level, or increase it to a higher level, we shall be helping to keep the Marine Engineering part of our profession well forward. Day after day we see other countries going ahead of us in what was taught only 30 years ago by our people on the Clyde. Now they can turn out steamers that can do their 23 to 24 knots an hour, and yet our own people hesitate. It would be well to know the cause. It seems strange to me when looking back on my boyish days to remember a good many Germans being taught engineering on the Clyde, and now we see ships turned out by them that we appear to find a difficulty in producing here, for what reason I do not know. Certain members of the press have been trying to get at the cause of the delay in producing fast ships for our Atlantic Service, but up to the present we find that our fast mails are not being carried by British Steamers. I consider that a disgrace not only to the Kingdom, but to the Empire. Great Britain is the mother of engineering in every way, yet, owing to the want of some particular kind of stimulus, we now seem to be dropping behind. At the present time there seems to be some want of enterprise. Whether it is caused by over cautiousness or financial difficulties I do not know. I should like to see the Cunard or some other line turn out ships that would beat the records, and I hope that we shall very soon hear of something being done in that direction, so that we can at least say that, so far as speed is concerned, Britain still 'rules the waves.' I would like to have said a little more, but as I have been somewhat rushed to-night, I can only say I have much pleasure in moving the adoption of

the report, and also in thanking Mr. Adamson for having compiled it so nicely and clearly. I would also like to thank our worthy Treasurer for putting the statement before the meeting so clearly that everyone here can study the figures and see that they are correct and right.

Mr. K. C. BALES (Member): It is my pleasant duty to second the adoption of the reports. Mr. Leslie opened by saying that owing to the exigencies of his work he has not been able to attend the meetings of the Institute during the past Session as he would like to have done. I can assure you that, although he has not been able to be present, he has had the good of the Institute at heart. Referring to the severe competition which we are now feeling with Continental Powers. I might also mention America. Take, for instance,—departing a little from Marine Engineering,—the subject of machine tools in general, and especially one class, viz., automatic machinery for screw and repetition production. We have felt in the last few years a most severe competition in that branch of engineering. Whether, as Mr. Leslie says, it is through any want of stimulus, or whatever it is, we must all be very anxious to know, because, although the Americans are our cousins, we don't like them to go in front of us. I am very pleased to see that the tool makers of this country are waking up to the fact that America has run in front of us considerably in regard to the tools that I have spoken of, and now tools are being made in this country which, I think, are equal to those which, in the past, were purchased from America. Mr. Leslie has so ably put the adoption of the report before you, and the Honorary Secretary, Mr. Adamson, has made it so clear, that these facts taken into consideration with the concise figures given by Mr. Kidd, the Treasurer, leave me nothing to say but, that I have much pleasure in seconding the adoption of the reports.

The motion for the adoption of the reports was put to the meeting and carried.

At this stage the meeting adjourned for a short interval, during which tea and coffee were served in the Council Room. On the resumption of the meeting—

The HONORARY TREASURER proposed that a hearty vote of thanks be accorded to the retiring President, Mr. D. J. Dunlop. He said they had had a number of Presidents in the past, some of them highly scientific, others highly technical, and a number practical. He thought they would agree that in their retiring President they had one who combined all those three qualities. He could safely say that the Institute had never had a President who had sacrificed so much of his time on behalf of the Institute as Mr. Dunlop had done. In any little troubles that they had had he had tried to bring about a good feeling all round. It must be a great tie to any man to go from Scotland to London repeatedly as he had done, and also from Scotland to Cardiff. He brought about that meeting in London with the Bristol Channel Centre, which, he thought, was calculated to do an immense amount of good to the Institute in general, and it was due to his good offices that they were able to come to such a satisfactory conclusion as they did on that particular day, as referred to in the report. He considered Mr. Dunlop had been a wonderfully good President to the Institute, and it would be many a long day before they got one in whom were combined the qualities possessed by him. He was a scientific engineer and shipbuilder, and also a technical and practical man. He had given heart, soul, and time, and also money, to help forward the Institute of Marine Engineers that year. He concluded by proposing that the heartiest vote of thanks be given to Mr. Dunlop.

Mr. T. F. AUKLAND (Companion) seconded the proposition, and said he could thoroughly endorse everything that Mr. Kidd had said in regard to Mr. Dunlop. He had heard a good deal of that gentleman long before he became the President of the Institute. Having been connected with shipping all his life, he

had known the name of Dunlop exceedingly well in connection with the Clyde. It gave him great pleasure to second the vote of thanks to their President for the immense amount of time which he had given to the Institute, for the long journeys he had taken, and for the interest he had shewn throughout his presidency.

The PRESIDENT said he must take exception to the remark made that he had sacrificed his time on behalf of the Institute. He did not look upon it as a sacrifice, because he thought he was employing his time in as good a manner as it was possible for him to employ it. There had certainly been no interest with which he had ever been associated to which he had taken a greater liking than the interests of their Institute. The profession of Marine Engineering should be second to none. If he had at any time been a little too pushing in expressing the hope that they might before very long have their headquarters in London it was because when they got there they would occupy that standing that they ought to occupy as one of the foremost Institutes in the country, one that should lead, and not be behind any scientific or practical institution in Great Britain. His term of office was closed, but he hoped that would not sever him from the pleasant intercourse he had had during the past year. When opportunity offered it would certainly be his pleasure to attend their meetings whenever he came to London. Mr. Leslie had referred to their being behind other countries in the speed of their steamers. They in Great Britain occupied a very unfortunate position. With the *Lucania* they got $22\frac{1}{2}$ knots, and then the Germans went one better and put on $\frac{3}{4}$ of a knot. The next step was the hard one. The German boats were built within the limit of proportions that were recognized without any extreme proportions for the draught of water at both ends. The new boats to be built for 25 knots speed (that was for 26 knots under trial, if they were to maintain an average speed of 25 knots across the Atlantic) would have to be built outside of the present recognised proportions as laid down in Lloyd's rules. For those 25 knot boats to

have their normal depths as compared with their other proportions, would necessitate them drawing about 36 ft. of water. That was a big consideration in the minds of those who were working out what proportions those steamers should assume. He believed that the beam of those boats would be about 85 to 90 ft., instead of something like 10 ft. less, so that an equal displacement may be secured on a smaller draft of water. Taking that one little point into consideration, and working from it, they would find many problems that had not yet been solved, and which must be solved before $1\frac{1}{4}$ million of money was going to be put into one steamer. That was a sort of answer to the question why this country was behind Germany. With regard to the question of tools to carry out their work, which was referred to by Mr. Bales, the engineers in this country had not yet realised that it was an economy to throw out almost every tool they had and instal new ones. Last year he was frequently in Germany, and there were many engineering works in that country with lathes fitted that, for power to turn out work, were not excelled, if equalled, in Great Britain. He knew personally of three or four works where such tools were employed. In both Germany and Denmark there were workshops that at one time used nothing but Scotch tools, with perhaps a few of German manufacture. To-day those shops had not a British tool in use; they were either all German, or special tools made for a special purpose and purchased from America. That was where they in this country were behind as manufacturing engineers. He had seen straight shafting about 15 in. diameter, and about 30 to 40 ft. long turned in those lathes, and it had been finished off bright from end to end in one operation. They had lathes that would turn shafts up to 66 ft. in length. Those were points that were neglected in this country, and they would require to wake up before they could compete with those countries that knew nominally nothing of engineering or shipbuilding 20 years ago. Germany had had its colleges for 300 or 400 years, but the Germans never built a steamer until they

came over here and saw how it was done. Neither had they built a marine engine until they came to Scotland or England. Some of the principal Superintendents of Hamburg had gained their experience on the Clyde and in England, and the head of the French Trans-Atlantic Company was on the Clyde 35 years ago. They had learned their trade in England or Scotland, and had gone back to their own country to practice it. Those were lessons that should not be neglected, and now that they saw those people going ahead of them it was time to try and keep abreast of them at all events. With regard to the social gatherings of the Institute, they had always been a great success, simply because their Members were all friendly and had endeavoured to make their gatherings successful. In conclusion he wished to thank them for the very kind way in which they had referred to his services during the past year, and he hoped they might have future intercourse at such times as it was possible for them to do so.

Mr. GEORGE ADAMS (Member), in proposing a vote of thanks to the retiring Office-Bearers and Council, said the status of the Institute was in the hands of those gentlemen, and he gathered from the reports and his own observation that everything was satisfactory regarding the affairs of the Institute. He wished the vote of thanks to be thoroughly comprehensive, and that it should include all those who were present from time to time as well as others who could not always attend. He felt sure that all those present would join with him in passing a very hearty vote of thanks to the retiring Office-Bearers and Members of Council of the Institute.

Mr. P. SMITH (Member) seconded, and said he thought the thanks of the whole of the Members of the Institute were due to the Office-Bearers and Council for the manner in which the affairs of the Institute had been conducted during the past twelve months. He had heard it said by critics two years ago that the Institute of Marine Engineers was tottering and falling.

That was quite incorrect, and he thought they had every right to congratulate their representative Members on the position that they were leaving the affairs of the Institute in. He thought the Institute was probably stronger to-day than it was two years ago, and he could only wish that the new Office-Bearers, whoever they might be, would succeed in carrying on the work so ably carried on up to the present time. The little friction they had had in connection with the Bristol Channel Centre seemed now to be smoothed over, thanks to their President, their hard-working Hon. Secretary, and the Members generally. He had great pleasure in seconding the vote of thanks.

The proposition was most cordially agreed to.

Mr. W. C. ROBERTS (Chairman of Council), in acknowledging the vote, said he could assure them it had always been their constant endeavour to do everything they could to advance the interests of the Institute in every possible way. If some of the Members were present at their Council meetings they would see how much interest they took in the affairs of the Institute. It was a labour of love to them all, and he was very pleased that their efforts were appreciated. He had no doubt that those who would succeed them would likewise carry on the work in the same way, and make it their endeavour to improve the interests of the Institute in every way possible. If the Members had any ideas to put forward in the way of improvement they would only be too pleased to receive them, and give them their consideration.

Mr. J. CAMERON (Member), who moved that a vote of thanks be accorded to the Honorary Auditors, said those gentlemen had given both time and trouble to audit the accounts of the Institute. They all knew that figures required a lot of management, especially when they dealt with pounds, shillings, and pence. It was a very satisfactory thing that the Council could make *both ends meet*. He thought the Auditors were entitled to a

very hearty vote of thanks for the care, attention, and labour they had spent on the work.

Mr. A. McINDEWAR (Member) seconded the motion, which was unanimously carried.

Mr. D. HULME (Joint Auditor) said it was Mr. A. Brown who had done most of the overhauling of the books. The accounts of the Institute were passed through the hands of paid Auditors, so there was very little for Auditors like himself to do in regard to seeing to the interests of the Institute. On behalf of Mr. Brown and himself he begged to thank them for the vote of thanks.

Mr. A. H. MATHER (Member of Council), proposed a vote of thanks to the Honorary Solicitor. That year, he said, they had not been so severe on their Honorary Solicitor as in previous years, but one or two matters had claimed his attention, and one in particular was in connection with the property next door. The houses on the adjoining plot had been converted into shops, and the duty of looking after the interests of the Institute had been left in the hands of their Solicitor, so that there should be no hitch in regard to additions to the adjoining premises. The business had been attended to in a proper manner, and a satisfactory agreement drawn up. Speaking of the removal of the Institute, that was a question deserving of very deep consideration before any move could be made, as indicated by Mr. Ruthven. In view of what appeared in the Annual Report, there was one little thing he might point out in connection with the Museum. They had a collection of valuable objects stowed away in a room that was not easily accessible. That room was in the top of the building, and hardly anyone ever went there, unless it was a new Member, and he thought it would be an improvement if their premises could be added to in the front, up to the limit allowed by the Borough Council's building line. They could make the addition in such a way that the Museum could be so placed as

to be seen by everyone entering the building. The alteration he suggested would, he thought, add to the appearance of the Institute and be of value generally.

Mr. C. NOBLE (Member of Council), in seconding the proposition, said their Honorary Solicitor had been a very old friend to the Institute, and had assisted them in some very knotty questions that had arisen. He had always been willing to help them, and he had no doubt he would be equally willing to assist them in the future. He had much pleasure in seconding the vote of thanks.

The proposition was carried unanimously.

The SCRUTINEERS then reported that the voting by the Members, as indicated in the ballot papers returned, had resulted in the election of the following: President, Sir John Gunn; Honorary Treasurer, Mr. G. W. Kidd; Honorary Secretary, Mr. James Adamson; Honorary Minute Secretary, Mr. C. G. Newby; New Members of Council, Mr. W. C. Roberts, Mr. R. Balfour, Mr. D. Hulme, Mr. W. I. Taylor, Mr. J. E. Elmslie, Mr. G. W. Manuel, Mr. S. C. Sage, and Mr. J. Clark.

Mr. S. C. SAGE proposed a vote of thanks to the Scrutineers for their services, and the motion having been seconded by Mr. ELMSLIE, was at once agreed to.

Mr. SHEARER said he had to thank the meeting on behalf of Mr. Farenden and himself for that recognition of their services. Their duty had not been very arduous and they were both pleased to have performed a little duty that was necessary.

Mr. JOHN McLAREN (Member), then proposed the appointment of the Honorary Auditors.

Mr. A. O. WALKER (Member), seconded the proposition, with the result that Mr. A. Brown and Mr. D. Hulme were re-elected.

Mr. W. LAWRIE (Member of Council), then proposed a vote of thanks to the Chairman, who, he said, had shown as great an interest in the Institute, and as great a desire to help it, as any previous President. He was very pleased to have heard their Chairman remark that evening that although his term of office was expired, the Institute would still have his sympathy and support. That would be appreciated by all their Members to the fullest extent, and he hoped Mr. Dunlop would long be spared to assist the Institute in its work.

Mr. J. H. SILLEY (Member), seconded the proposition, which was carried with loud applause.

The CHAIRMAN gracefully acknowledged the vote of thanks. Continuing, he said, if there was anything he had a warm side for, it was Engineering, but more especially Marine Engineering. He knew of no profession that required more varied information than Marine Engineering. The power that moved their vessels—he might almost say that moved this world—was under deck, and was never seen, or, if seen, was avoided because of its grimy aspect. He trusted it would be the endeavour of them all to push forward as far as possible the interests of their Institute. In conclusion he thanked them for their good wishes and expressed the hope that they might often meet in the future.

Mr. D. HULME here observed that in the latest Admiralty List published, Sir John Durston had been made a Rear-Admiral, so now there was one Engineer who ranked as an Admiral.

This concluded the business of the meeting.



58, ROMFORD ROAD,
STRATFORD.

May 15th, 1903.

At a meeting of Council held here this evening the following appointments were made for the next ensuing Session :—

Members of Council.

MR. J. BLELLOCH (in room of Mr. G. W. Manuel, unable to undertake the duty on account of retirement to Scotland).

MR. C. W. MURRAY (in room of Mr. R. Balfour, unable to continue in duty on account of intervening business arrangements).

Conveners of Committee.

<i>Experimental</i>	- - - - -	MR. W. McLAREN (Vice-President).		
<i>Library</i>	- - - - -	MR. W. LAWRIE (Member of Council).		
<i>Papers and Discussions</i>	- -	MR. J. R. RUTHVEN	do.	do.
<i>Press Cuttings</i>	- - - - -	MR. C. NOBLE	do.	do.
<i>Property</i>	- - - - -	MR. S. C. SAGE	do.	do.
<i>Reading Room</i>	- - - - -	MR. A. H. MATHER	do.	do.
<i>Recreation</i>	- - - - -	MR. W. I. TAYLOR	do.	do.
<i>Transactions, Issue of</i>	- - -	MR. J. E. ELMSLIE	do.	do.
<i>Ways and Means</i>	- - - - -	MR. JOHN CLARK	do.	do.

Chairman of Council.

MR. W. C. ROBERTS (Member of Council).

Vice-Chairman.

MR. W. I. TAYLOR (Member of Council).

Hon. Solicitor.

MR. JOHN NEELY.

Vice-Presidents.

Afloat—

MR. PETER BOYD, R.N.R.
MR. W. HOPKIRK.
MR. W. M. ROSS, C.B., R.N.R.

Africa—

MR. J. K. AITKEN.

Australia (N.S.W.)

MR. JAS. MACARTNEY.

Belfast—

MR. W. J. PRATTEN.

Calcutta—

MR. W. ELKIN.
MR. A. R. MACKINTOSH.

Cardiff—

MR. M. W. AISBITT.
PROF. A. C. ELLIOTT, D.Sc.
MR. T. W. WAILES.

Derby—

SIR A. S. HASLAM.

Dumbarton—

MR. W. BROCK.
MR. P. DENNY.

Edinburgh—

MR. J. LOCKIE.

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