

THE ENGINEERING ASSOCIATION

OF

NEW SOUTH WALES.

Established 1870.

Incorporated 1884.

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SESSION 1910-11.

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PART I.

MINUTES OF PROCEEDINGS

ANNUAL GENERAL MEETING, 13th OCTOBER, 1910.

Present: The President, Mr. EDWARD J. ERSKINE, in the chair, and about 50 members.

Minutes.—The Minutes of the previous meeting were read and confirmed.

CONFIRMATION OF RULES AND BY-LAWS.

Sec. II., Rule 6, to be amended to read:—"Student Associates shall be (a) Students of not less than two years standing who shall have attained the age of twenty-four years. (b) Persons between the age of twenty-four and thirty who, through insufficient practical experience are not eligible as full members. The Council may, through the President, at any time call upon such Student Associate to show cause why he does not present himself for full membership, should it consider him eligible for such. Student Associates shall have the same right and privileges as Students above mentioned."

ANNUAL REPORT OF COUNCIL AND BALANCE-SHEET.

On the motion of the President, Mr. Edward J. Erskine, seconded by Mr. James Shirra, the Annual Report of Council and Balance-sheet were adopted.

ANNUAL DINNER.

The President, Mr. Erskine, announced that the Council had decided not to hold the Annual Dinner this year.

Mr. R. J. Vincent proposed that the Annual Dinner be held this year as before, which was seconded by Mr. R. Grant.

The President, Mr. Erskine, put the motion to the meeting, which was negatived.

ANNOUNCEMENT OF RESULT OF BALLOT FOR
ELECTION OF OFFICERS AND COUNCIL FOR
THE ENSUING SESSION.

The President, Mr. Erskine, announced the result of the ballot as follows:—

PRESIDENT:

MR. G. A. JULIUS.

VICE-PRESIDENTS:

MR. JAMES MACARTNEY, MR. WALTER REEKS.

HONORARY TREASURER:

MR. JOHN SANDS.

HONORARY SECRETARY AND EDITOR:

MR. HENRY V. AHRBECKER.

MEMBERS OF COUNCIL:

MR. J. W. BRAGG, MR. THOS. FERGUSON, MR. R. R. FERRIER, MR. R. GRANT, MR. C. J. HOLROYDE, MR. HECTOR KIDD, MR. JAMES KIDD, MR. R. R. KING, MR. JAMES SHIRRA.

PRESENTATION OF PRIZE FOR STUDENTS'
PAPER.

The President, Mr. Erskine, announced that the Council decided on the report of the Committee appointed to deal with the Students' Prize Papers, to give only one prize of £2 2s., and that be presented to Mr. G. N. Tregarthen for his paper on "Troubles due to the Aeration of Water in Pumps."

The President, Mr. Erskine, then handed Mr. G. N. Tregarthen cheque for £2 2s.

The retiring President, Mr. Edward J. Erskine, said:—Before I leave the chair I may say this, that during the year I have received from the Council the very great-

est help, having no difficulty one way or the other, and I thank the members for their very kind attendance during the year.

Mr. Erskine then vacated the chair in favour of Mr. Julius.

The new President, Mr. G. A. Julius, on taking the chair, said:—I have to thank you for the extreme honour you have bestowed upon me in electing me to the office of President of this Association. I can only say that I shall do my very best in the interests of the Association. Before concluding, I would like to be allowed to move a hearty vote of thanks to Mr. Erskine, the retiring President. He has done great service, and has put in such good work that, in vacating the chair, we have a considerable loss.

The motion was seconded by Mr. Hector Kidd, who said:—Everyone who knows Mr. Erskine will know how thoroughly he does his work. I am sure you all join with me in saying we would have liked him to stay in the chair for another year.

The motion was carried by acclamation.

Mr. Erskine replied.

PAPER ON "TROUBLES DUE TO THE AERATION OF WATER IN PUMPS," BY MR. G. N. TREGARTHEN (STUDENT MEMBER).

Paper read by Mr. Tregarthen.

The discussion was opened by Mr. R. J. Vincent, followed by Messrs. Hector Kidd, James Shirra, A. G. McDonald, and G. A. Julius.

On the motion of Mr. R. J. Vincent, seconded by Mr. Edward J. Erskine, a very hearty vote of thanks was accorded Mr. Tregarthen for his paper, the motion being carried by acclamation.

Mr. Tregarthen replied to the various points raised.

The meeting then terminated.

9th MARCH, 1911.

Present:—The President, Mr. G. A. JULIUS, in the chair, and about 60 members.

Minutes.—The minutes of the previous meeting were read and confirmed.

BALLOT FOR NEW MEMBERS.

- Member: Mr. WALTER E. ADAMS, Principal Assistant Engineer, Sydney Harbour Trust, Circular Quay, Sydney.
- Member: Professor S. H. BARRACLOUGH, Engineer, The University, Sydney.
- Member: Mr. BERTRAM SANDS GILES, Engineer, Messrs. Gibson, Battle & Co., Limited, 535 Kent Street, Sydney.
- Member: Mr. JOSEPH HENDERSON, Engineer, Messrs. G. & C. Hoskins, Limited, Lithgow.
- Member: Mr. THOMAS HARRY HOUGHTON, Engineer, 63 Pitt Street, Sydney.
- Member: Mr. CHARLES ELPTRICK MARCHANT, Engineer, 437 Kent Street, Sydney.
- Member: Mr. ERIC WAVERLEY McKEOWN, Assistant Lecturer, The University, Sydney.
- Member: Mr. THOMAS EDWARD MOORHOUSE, Engineer, Existing Lines Department, N.S.W. Government Railways, Bridge Street, Sydney.
- Member: Mr. HAROLD A. ROBERTS, Assistant Lecturer, The University, Sydney.
- Member: Mr. HAROLD EDWIN SPENCER, Engineer, The Commonwealth Oil Corporation, Limited, Equitable Building, George Street, Sydney.
- Member: Mr. WILFRID JOSEPH SPRUSON, Engineer, 91 Elizabeth Street, Sydney.
- Member: Mr. GEORGE WILLIAM TWIGDEN, Engineer, 12 Castlereagh Street, Sydney.
- Student Associate: Mr. CLIVE NEILSON HUNTLEY, Engineering Draftsman, Existing Lines Department, N.S.W. Government Railways, Bridge Street, Sydney.
- Student Associate: Mr. WILLIAM J. MARR, Assistant Manager, Messrs. Gordon Marr and Sons, Pyrmont.
- Student Associate: Mr. EMERALD LOUIS TIGHE, Engineer, Messrs. Crossley Bros., Limited, 49 York Street, Sydney.
- Student: Mr. DUDLEY RUSSELL DOWLING, Engineering Apprentice, Colonial Sugar Refining Co., Ltd., Pyrmont.
- Student: Mr. CHARLES FERGUSON, Engineering Apprentice, Colonial Sugar Refining Co., Ltd., Pyrmont.

Student: Mr. FRANCIS JAMES FERGUSON, Engineering Apprentice, Colonial Sugar Refining Co., Ltd., Pymont.

Student: Mr. LESLIE W. KIDD, Engineering Apprentice, Colonial Sugar Refining Co., Ltd., Pymont.

Student: Mr. SUTTON THOMAS ROBBINS, Engineering Apprentice, Colonial Sugar Refining Co., Ltd., Pymont.

Having been duly nominated and approved by Council, were balloted for and unanimously elected.

PRESIDENTIAL ADDRESS BY MR. G. A. JULIUS,
B.Sc., M.E.

Mr. Julius then delivered his inaugural address, which proved to be of a highly interesting character. He thanked the members for the honour conferred in electing him to the chair, and feelingly referred to the loss the Association had sustained by the death of the late Mr. Henry V. Ahrbecker and Messrs. P. Hunter and J. Lang. He detailed the work of the past Session, and referred at length to the qualifications and status of the engineer, engineering developments during the past twelve months, the Humphrey internal combustion pump, steam versus internal combustion engines as prime movers, turbine machinery to marine practice, and referred to the launching of the white Star liner "Olympic," the displacement of the horse by motor vehicles, the phenomenal advance in aeronautics, wireless telegraphy, the great Barren Jack Reservoir, the launching of the torpedo-destroyer "Warrego" at the State Dockyard, the development of large private engineering undertakings, and the question of wages as being of the greatest import in the industrial life of to-day.

Mr. Walter Reeks referred to the brilliant and scholarly address delivered by the President, and said he fully endorsed all that had been said regarding the status of the Association.

Mr. James Shirra proposed that a hearty vote of thanks be accorded Mr. Julius for his lucid and thoughtful address, which was seconded by Mr. Hector Kidd, supported by Mr. A. J. Arnot, and carried by acclamation.

The meeting then terminated.

20th APRIL, 1911.

Present:—The President, Mr. G. A. JULIUS, in the chair, and about 60 members.

Minutes.—The minutes of the previous meeting were read and confirmed.

BALLOT FOR NEW MEMBERS.

Member: Mr. HARRY BROWN, Engineer, 126 Sussex Street, Sydney.

Member: Mr. HERBERT HENRY BRANSON DEANE, Engineer, 257 Clarence Street, Sydney.

Member: Mr. JOHN FREDERICK HOWARTH, Engineer, 76 Pitt Street, Sydney.

Member: Mr. ARTHUR MAYOH, Civil Engineer, "Strathkyle," Bligh Street, Sydney.

Member: Mr. HAROLD LINDSAY THOMPSON, Engineer, 331 Kent Street, Sydney.

Student: Mr. CLAUDE LIONEL FENNER, Engineering Apprentice, Colonial Sugar Refining Co., Ltd., Pyrmont.

Student: Mr. HAROLD VINCENT HOSKINS, Engineering Apprentice, Colonial Sugar Refining Co., Ltd., Pyrmont.

Having been duly nominated and approved by Council, were balloted for and unanimously elected.

PAPER ON "FITTING AND RUNNING REFRIGERATING MACHINERY ON SHIPBOARD," BY MR. WILLIAM SINCLAIR.

Paper read by Mr. Sinclair.

The discussion was opened by Mr. Norman Selfe, who proposed that a very hearty vote of thanks be accorded Mr. Sinclair for his interesting and valuable paper, followed by Mr. James Shirra, who seconded the vote of thanks, and Messrs. W. H. German, A. J. Lee, Russell Sinclair, and J. J. C. Braud.

The vote of thanks was put to the meeting by the President, and carried by acclamation.

Mr. Sinclair replied to the various questions raised. The meeting then terminated.

26th MAY, 1911.

Present:—The President, Mr. G. A. JULIUS, in the chair, and about 130 members.

Minutes.—The minutes of the previous meeting were read and confirmed.

BALLOT FOR NEW MEMBERS.

Member: Mr. FREDERICK CHARLES FOX, Engineering Draftsman, Clyde Engineering Co., Ltd., Granville.

Student: Mr. WILFRED LESLIE LAMOND, Engineering Draftsman, Messrs. Henry Vale and Sons, Auburn.

Having been duly nominated and approved by Council, were balloted for and unanimously elected.

PAPER ON "THE DEISEL ENGINE AND ITS APPLICATION," ILLUSTRATED BY LANTERN SLIDES, BY MR. H. H. B. DEANE.

Paper read and lantern slides explained by Mr. Deane.

The President, Mr. Julius, said:—Mr. Deane has given us so much matter that it is impossible to assimilate it in the time we have had. We shall have to postpone the discussion of this paper until a future meeting.

Mr. H. J. Vale proposed that a very hearty vote of thanks be accorded Mr. Deane for his able paper; also for the lantern slides, which were of the most interesting nature; which was seconded by Mr. J. J. C. Brand, and carried by acclamation.

The meeting then terminated.

8th JUNE, 1911.

Present:—The President, Mr. G. A. JULIUS, in the chair, and about 70 members.

Minutes.—The minutes of the previous meeting were read and confirmed.

BALLOT FOR NEW MEMBERS.

Member: Mr. DANIEL CAMERON, Superintending Engineer, The National Gas Engine Co., Sydney.

Member: Mr. ROBERT SYKES, Engineer, Messrs. Chas. Anderson and Co., Ltd., Nichols Street, Sydney.

Student: Mr. ROBERT MELVILLE ROBINSON, Engineering Apprentice, Clyde Engineering Co., Ltd., Granville.

Having been duly nominated and approved by Council, were balloted for and unanimously elected.

PAPER ON "THE STRENGTH, ELASTICITY, AND OTHER PROPERTIES OF NEW SOUTH WALES HARDWOOD TIMBERS," ILLUSTRATED WITH LANTERN SLIDES, BY PROFESSOR W. H. WARREN, Wh.Sc., M. Inst. C.E., M. Am. Soc. C.E.

Paper read and lantern slides explained by Professor Warren.

The President, Mr. Julius, said:—We have listened with the greatest interest to that which has been put before us by Professor Warren. Probably amongst those who have listened to him I have realised best the amount of work involved in getting this data prepared. I think this Society may consider itself honoured in having this paper put before it, and having it published in its proceedings.

Mr. James Shirra proposed that a very hearty vote of thanks be accorded Professor Warren for his valuable paper, which was seconded by Mr. William Sinclair, and carried by acclamation.

Professor Warren replied.

The meeting then terminated.

29th JUNE, 1911.

Present:—The President, Mr. G. A. JULIUS, in the chair, and about 70 members.

DISCUSSION ON PAPER, "THE STRENGTH, ELASTICITY, AND OTHER PROPERTIES OF NEW SOUTH WALES HARDWOOD TIMBERS," BY PROFESSOR WARREN, Wh.Sc., M. Inst. C.E., M. Am. Soc. C.E.

The discussion was opened by Mr. Walter Reeks, followed by Mr. G. A. Julius, Professor Scott, and Mr. James Shirra.

Professor Warren replied to the various questions raised.

The President, Mr. Julius, said:—We have all listened with the greatest interest to the explanation and definitions given by Professor Warren. I think you will all agree that this Association is under a deep debt of gratitude to Professor Warren for allowing us to issue the results of those tests to Australia and the world generally. There is no doubt that the value of these tests is of the greatest importance, and I think we are distinctly honoured by Professor Warren coming to us first and allowing us to issue the report to the engineering world. I think that we ought to move a hearty vote of thanks to Professor Warren for so kindly coming to the meeting and so fully answering our questions.

The motion was carried by acclamation.

DISCUSSION ON PAPER "THE DEISEL ENGINE AND ITS APPLICATION," BY MR. H. H. B. DEANE.

The discussion was opened by Mr. James Shirra, followed by Mr. G. N. Tregarthen, Mr. G. W. Findlay, Mr. Walter Reeks, and Mr. G. A. Julius (President).

Mr. Deane replied to the various points raised.

The President, Mr. Julius, said:—We must thank Mr. Deane for the clear way he has answered our questions to-night. I will ask you to carry the vote of thanks by acclamation.

The meeting then terminated.

13th JULY, 1911.

Present:—The President, Mr. G. A. JULIUS, in the chair, and about 50 members.

Minutes.—The minutes of the previous meeting were read and confirmed.

BALLOT FOR NEW MEMBERS.

Member: Mr. HENRY BALE, Engineer, c/o Messrs. Cameron and Sutherland, Post Office Chambers, Pitt Street, Sydney.

Member: Mr. ERNEST JOHN CROCKER, Engineer, c/o Messrs. Wildridge and Sinclair, 82 Pitt Street, Sydney.

Member: Mr. GEORGE WENTWORTH GRAYSON, Engineer, Public Works Department, Sydney.

Student: Mr. TREVOR M. BAYLIS, Engineering Student, Technical College, Ultimo.

Student: Mr. A. G. CAMPBELL, "Karraba," Greville Street, Randwick.

Student: Mr. LEWIS G. COLE, c/o Messrs. Wildridge and Sinclair, 82 Pitt Street, Sydney.

Student: Mr. RICHARD STANLEY MOORE, Engineering Student, Technical College, Ultimo.

Student: Mr. CLIFFORD N. NAGLE, Engineering Student, Technical College, Ultimo.

Having been duly nominated and approved by Council, were balloted for and unanimously elected.

PAPER ON "CONDENSING PLANT," ILLUSTRATED BY LANTERN SLIDES, BY MR. F. SAUNDERS, A.M.I. Mech. E.

Paper read, and slides explained by Mr. Saunders.

The discussion was opened by Mr. Hector Kidd, who proposed that a hearty vote of thanks be accorded Mr. Saunders for his paper, followed by Mr. R. R. Ferrier, who seconded the vote of thanks, which was carried by acclamation.

Mr. Saunders replied to the various points raised.

The meeting then terminated.

10th AUGUST, 1911.

Present:—The President, Mr. G. A. JULIUS, in the chair, and about 50 members.

Minutes.—The minutes of the previous meeting were read and confirmed.

PAPER ON "SUPPLY OF AIR FOR BLAST FURNACE AND KINDRED OPERATIONS," ILLUSTRATED WITH LANTERN SLIDES, BY MR. W. H. GRIEVE.

Paper read and slides explained by Mr. Grieve.

Mr. J. J. C. Brand, in proposing a vote of thanks, said:—It is too late to enter into a discussion of this paper, but I think Mr. Grieve has gone to a tremendous amount of trouble, and put in a lot of time to collect and give us all the figures that he has shown on the screen to-night. I have much pleasure, therefore, in proposing

a hearty vote of thanks to Mr. Grieve for his exceedingly well-prepared paper; which was seconded by Mr. William Sinclair, and carried by acclamation.

The President, Mr. Julius, said:—I hope that as Professor Barraclough is to read a paper at the next meeting, which will call forth much discussion, there will be a full attendance. We shall afterward have a special meeting to discuss the two papers.

Mr. Grieve having replied, the meeting terminated.

14th SEPTEMBER, 1911.

Present:—The President, Mr. G. A. JULIUS, in the chair, and about 80 members.

Minutes.—The minutes of the previous meeting were read and confirmed.

BALLOT FOR NEW MEMBERS.

Member: Mr. THOMAS WILLIAM THORNLEY, Engineer, Messrs. W. Thornley and Sons, Marrickville.
Student: Mr. LESLIE J. FATHERS, Demonstrator in Electrical Engineering, Technical College, Ultimo.
Having been duly nominated and approved by Council, were balloted for and unanimously elected.

APPOINTMENT OF AUDITORS TO AUDIT THE ACCOUNTS FOR THE SESSION ENDING 30th SEPTEMBER, 1911.

On the motion of Mr. J. J. C. Brand, seconded by Mr. W. H. Grieve, Messrs. George Bohler and Henry Shaw were duly appointed auditors to audit the accounts for the Session ending 30th September, 1911.

APPOINTMENT OF SCRUTINEERS FOR BALLOT OF OFFICERS AND COUNCIL FOR THE ENSUING SESSION.

On the motion of Mr. William Sinclair, seconded by Mr. W. H. Bale, Messrs. Henry Adamson and Thomas Brown were duly appointed Scrutineers of the ballot for Election of Officers and Council for the ensuing Session.

PAPER ON "BOILER EXPLOSIONS AS AFFECTED BY UNSYMMETRICAL RIVETED JOINTS," READ BY PROFESSOR S. H. BARRACLOUGH, M.M.E., Assoc. M. Inst. C.E.

Part I.—"Typical Lap-joint Boiler Explosions," by S. H. Barraclough and A. J. Gibson.

Part II.—"An Experimental Investigation of the Strains in Unsymmetrical Riveted Joints, by S. H. Barraclough, A. J. Gibson, H. W. May, and E. P. Norman.

Illustrated by Diagrams, Models and Lantern Slides.

Part I. of paper read, diagrams, models and lantern slides explained by Professor Barraclough.

On the motion of the President, Mr. G. A. Julius, with the concurrence of Professor Barraclough, it was resolved that the reading of Part II. of the paper be deferred for a Special Meeting to be held about a fortnight hence.

On the motion of Mr. A. J. Arnòt, seconded by Mr. H. B. Howe, and supported by Mr. R. Hollis, M.L.A., a very hearty vote of thanks was accorded Professor Barraclough for his valuable paper.

The motion being carried by acclamation, Professor Barraclough having acknowledged the vote of thanks, the meeting terminated.

29th SEPTEMBER, 1911.

Present:—The President, Mr. G. A. JULIUS, in the chair, and about 70 members.

P. N. RUSSELL BEQUEST.

The President, Mr. G. A. Julius, announced that the sum of £3000, the amount of the legacy under the will of the late Sir Peter Nicol Russell, had been paid into the credit of the Association by the Trustees of the Estate.

PART II. OF PAPER ON "BOILER EXPLOSIONS AS AFFECTED BY UNSYMMETRICAL RIVETED JOINTS," BY PROFESSOR S. H. BARRACLOUGH, M.M.E., Assoc. M. Inst. C.E.

Part I.—"Typical Lap-joint Boiler Explosions," by S. H. Barraclough and A. J. Gibson.

Part II.—“An Experimental Investigation of the Strains in Unsymmetrical Riveted Joints,” by S. H. Barraclough, A. J. Gibson, H. W. May, and E. P. Norman.

Illustrated by Diagrams, Models and Lantern Slides. Professor Barraclough gave a resume of Part I., read at the last meeting.

Part II.—Paper read, diagrams, models and lantern slides explained by Professor Barraclough.

On the motion of Mr. James Macartney, seconded by Mr. William Sinclair, a very hearty vote of thanks was accorded Professor Barraclough for his valuable paper.

Professor Barraclough acknowledged the vote of thanks.

The meeting then terminated.