

THE ENGINEERING ASSOCIATION

OF

NEW SOUTH WALES

Established 1870.

Incorporated 1884

SESSION 1914-1915.

PART I.

MINUTES OF PROCEEDINGS

OF THE ANNUAL GENERAL MEETING, HELD AT THE
SOCIETY ROOMS, 5 ELIZABETH STREET, SYDNEY,
ON THURSDAY, 8TH OCTOBER, 1914.

Present.—The retiring President, Mr. Walter Reeks, in the chair, the Vice-President, Mr. J. W. Bragg, and about 70 members.

The Secretary read the notice convening the meeting.

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

Business.—(1) Election of new members. (2) Announcement of result of ballot for election of Officers and Council for the ensuing session. (3) Annual Report and Balance Sheet. (4) Presentation of Prizes for Students' Papers. (5) Paper on "Some Notes on the Progress of the Sydney, Newcastle and Hunter River Steam Navigation Company," by Mr. D. Chalmers; illustrated with lantern slides.

Election of New Member.—William Poole, Consulting Engineer, 906, Culwulla Chambers, Castlereagh-street, Sydney, was duly elected a member of the Association, whereupon the President extended his personal welcome in the customary manner.

Mr. Poole, in reply, said that the pleasure he experienced in becoming a member of the Association was enhanced by the fact that he was many years ago associated with the Society as a student.

Election of Council—Session 1914-15:—

President: Professor S. H. E. Barraclough.

Vice-Presidents: J. W. Bragg and W. H. Grieve.

Hon. Treasurer: J. Macnamara.

Hon. Secretary and Editor: D. F. J. Harricks.

Members of Council: G. A. Julius, Jas. Macartney, A. F. Saunders, Alex. Stobo, Commander G. H. Bromwich, R. Sykes, J. G. McEwin, A. J. Hart, H. L. Thompson.

Ex-officio Member of Council: W. Reeks.

Resolved: That the Report and Balance Sheet be taken as read.—Carried.

PRESENTATION OF PRIZES FOR STUDENTS' PAPERS.

The President announced that the Committee appointed by the Council to judge the papers awarded the prizes as follows:—

First Prize of £5 5s. to Mr. J. G. Dilling, for his paper on "Steel Workshop Construction to suit Colonial Conditions."

Second Prize of £2 2s. to Messrs. T. N. Baylis and R. S. Moore, for their paper on "Rear Axle Drives for Motor Vehicles,"

and remarked that the adjudicators had expressed their opinion that all the papers were of exceptional merit, and displayed a careful consideration of the various subjects dealt with by their authors. (Applause.)

The retiring President then vacated the chair in favour of Professor S. H. E. Barraclough, who was received with acclamation.

Moved by Mr. J. W. Bragg—

Seconded by Mr. H. Kidd: "That a very hearty vote of thanks be accorded to Walter Reeks, Esq., the retiring President, for the able manner in which he had conducted the affairs of the Association during his occupation of the chair."

Carried by acclamation.

The President: Gentlemen, I should like to add my personal opinion that we are very greatly indebted to Mr. Reeks, not only for the work performed by him during the year, but for many years past. (Hear, hear.) Everyone knows that the subject of these remarks has always been ready and willing to sacrifice his own interests whenever necessary in favour of the interests of this Association. (Applause.)

Mr. Reeks: Mr. President and Gentlemen, I hope it will be very many years before I cease to be interested in the affairs of the Engineers' Association of New South Wales. (Applause.)

The President: Gentlemen, before proceeding to the most important of the various items mentioned on the business paper, I should like to express to you the very real feeling of gratitude with which I have accepted the honor conferred upon me in electing me as President of the oldest (I think I may justly say the most flourishing) of the Engineering Associations in the Commonwealth of Australia. I should be content with saying no more than this did I not feel that I owe you one word of explanation and apology. Under ordinary circumstances I should not have judged it right for me to accept this honor, owing to the fact that I am at present engaged in military duties. I feel that I have been seriously neglectful of my responsibility as a member of your Council during the past two or three months, and I am afraid I shall be compelled to neglect them for some time to come, and if it were not that my time has been taken up by a cause that everyone has at heart, I should have felt I was not justified in accepting this honor at your hands. However, I will throw myself upon your kind consideration, and especially the consideration of my fellow-officers in the Association, and trust they will forgive my shortcomings during the next few months. One may hope that by next March things may be a good deal straighter than they are at present, and I am sure I am expressing your own opinion as well as mine when I say it is to be hoped things will not come to an end until everyone is perfectly satisfied. (Hear, hear.) I am reminded of a little story which the President of the Agricultural Section of the British Association told in Adelaide when he was there some little time ago, and which seems to me to bear very much upon the situation of such an Association as our own under the circumstances. You may remember that the British Association landed in Adelaide two days after the war began. The President, being an ardent fighter and greatly interested in military matters, felt rather grievously that he had to deliver his presidential address to the Agricultural Section, and also felt greatly in sympathy with his audience, and I could not help admiring the skill with which he accomplished his task. He introduced his subject by referring to the old story

of the Battle of Naseby, when the opposing forces were drawn up on opposite sides of the valley and about to commence operations which went on during the day. Well, in the eyes of the forces mentioned, there was a farmer down on the level in a little green patch which he had to plough, and while the battle proceeded, the farmer continued ploughing his furrows up and down until the whole field was turned over into rich chocolate soil. The President of the Section drew a very skilful parallel between the two situations. He expressed the hope that everybody at the moment was more deeply interested in the war than in Agriculture, but that the latter was one of the essential things in modern warfare if it were desired to come out on top.

Well, gentlemen, the same thing appears to me to apply in much the same way to such an Association as this one. After all, when there is a big conflict in progress between nations, although the numbers actually engaged in the fighting-line are vast indeed, the numbers of people concerned in the conflict are vaster still, and none are doing such good service as those who are maintaining the various industries which are essential to the life of the nation while this titanic struggle goes on. I think that, as an Association, we can really serve our country well by doing everything in our power to preserve normal conditions. It has to be essential that the highest degree of efficiency be maintained in all national services, and the work of maintaining this efficiency very largely devolves upon the engineering section of the community. (Applause.)

Mr. D. Chalmers then proceeded to read a paper entitled "Some Notes on the Progress of the Sydney, Newcastle and Hunter River Steam Navigation Company," and illustrated the same by means of lantern slides.

The meeting then terminated.

Signed J. W. BRAGG, Vice-President.

Minutes of Special General Meeting held at the Society's Rooms, 5 Elizabeth-street, Sydney, on Tuesday, 24th November, 1914, at 1.45 p.m.

Present.—Mr. J. W. Bragg, Vice-President, in the chair, and 23 members.

The Chairman notified that the necessary quorum was present.

The Acting Secretary read the notice convening the meeting.

The Vice-President, Mr. Bragg, explained that the proposed alterations to Rules and By-laws of the Association were necessary in order to enable the Council to deal with the trust funds. Legal advice had been obtained from Messrs. Sly and Russell, and the proposed alterations had been drawn up by them. Mr. Bragg concluded by moving the resolution as follows:—

That the Rules and By-laws of the Engineering Association of New South Wales shall be altered in the following manner, viz.:—

(a) In Rule or By-law No. 5 of Section 7 the words “The Funds of the Association shall be lodged at a bank approved of by the Association” shall be omitted, and in lieu thereof there shall be inserted the words following:—“The Funds of the Association shall be used for the furtherance of the objects of the Association, but any funds not immediately required for this purpose may be invested by the Council in any manner specially authorised by the Act of Incorporation, or in any of the investments in which by law Trustees are permitted to invest trust funds, and pending any such use or investment the Funds of the Association shall be lodged at a bank approved of by the Association.”

(b) In the By-law contained in Section 10 of such Rules and By-laws there shall be added at the end thereof the words following, that is to say:—“The interval between such two successive general meetings shall be not less than seven days or more than sixty days.”

(c) The following Rule or By-law shall be inserted after the Rule or By-law comprised in Section 10, namely:—

2. Such two successive general meetings may be convened by one and the same notice, and it is to be no objection to such notice that it only convenes the second meeting contingently on such new Rule or By-law or alteration or repeal of existing Rules or By-laws being carried at the first meeting.

The resolution was seconded by Mr. G. A. Julius, and carried unanimously.

The Vice-President announced that a meeting would be held the following Tuesday (1st December, 1914), to confirm the resolution.

The meeting then terminated.

Signed J. W. BRAGG, Vice-President.

Minutes of Special General Meeting held at the Society's Rooms, 5 Elizabeth-street, Sydney, December 1st, 1914, at 1.45 p.m.

Present.—Mr. J. W. Bragg, Vice-President, in the chair, and 22 members.

The Chairman notified that the necessary quorum was present.

The Acting Secretary read the notice convening the meeting.

The Chairman, Mr. J. W. Bragg, moved that the resolution passed at the Special General Meeting held on 24th November, 1914, be confirmed as a special resolution, viz.:—

That the Rules and By-laws of the Engineering Association of New South Wales, be altered in the manner following:—

- (a) In Rule or By-law No. 5 of Section 7 the words "The Funds of the Association shall be lodged "at a bank approved of by the Association" shall be omitted, and in lieu thereof there shall be inserted the words following:—"The Funds "of the Association shall be used for the further- "ance of the objects of the Association, but any "funds not immediately required for this pur- "pose may be invested by the Council in any "manner specially authorised by the Act of In- "corporation, or in any of the investments in "which by law Trustees are permitted to invest "trust funds, and pending any such use or in- "vestment the Funds of the Association shall be "lodged at a bank approved of by the Associa- "tion."
- (b) In the By-law contained in Section 10 of such Rules and By-laws there shall be added at the end thereof the words following, that is to say:—

“The interval between such two successive
“general meetings shall be not less than seven
“days or more than sixty days.”

(c) The following Rule or By-law shall be inserted after the Rule or By-law comprised in Section 10, namely:—

2. Such two successive general meetings may be convened by one and the same notice, and it is to be no objection to such notice that it only convenes the second meeting contingently on such new Rule or By-law or alteration or repeal of existing Rules or By-laws being carried at the first meeting.

The resolution was seconded by Mr. Walter Reeks, and carried unanimously.

The meeting then terminated.

Signed S. H. E. BARRACLOUGH, President.

Minutes of the Opening Meeting of the 45th Session held at the Society's Rooms, 5 Elizabeth-street, Sydney, on Thursday, the 11th March, 1915:—

Present.—The President, Professor S. H. E. Barracough, M.M.E., M.I. Mech. E., Assc. M. Inst. C.E., in the chair, and about 80 members.

The notice convening the meeting was taken as read.

Minutes.—The minutes of the last Annual General Meeting of the Association, held on 8th October, 1914, were read and confirmed.

The minutes of a Special Meeting of the Association, held on the 1st December, 1914, were read and confirmed.

The President then read a paper entitled “Military Field Engineering.”

The meeting then terminated.

Signed S. H. E. BARRACLOUGH, President.

Minutes of the meeting held at the Society's Rooms, 5 Elizabeth-street, on Thursday, 15th April, 1915:—

Present.—The President, Professor S. H. E. Barracough, in the chair, and about 60 members.

Minutes.—The minutes of the General Meeting of the Association, held on 11th March, 1915, were read and confirmed.

Ballot for New Members.—Mr. J. C. Smythe, as a member of the Association; Messrs. A. J. Coyle and C. A. Witney as student members of the Association.

The Chairman, in opening the proceedings, said it might interest members of the Association to know that the Council had under consideration the general question of the qualifications for membership in the Association, and the various grades of membership, and that probably, at a date to be fixed during the year, the members would be asked to consider the proposals of the Council in that direction, the Council being anxious that in this matter, as in others, they should endeavour to maintain and increase, as far as they could, the general standing and prestige of the Association.

Mr. D. F. J. Harrieks then read a paper entitled "A Note on Marine Propulsion in 1914." The paper was illustrated with lantern slides.

(With the consent of the meeting the paper by Mr. J. A. Taylor on the "Michell Thrust Bearing" was postponed.)

The meeting then terminated.

Signed S. H. E. BARRACLOUGH, President.

Minutes of the General Meeting held at the Society's Rooms, 5 Elizabeth-street, Sydney, on Thursday, the 13th May, 1915.

The President, Professor S. H. E. Barraclough, in the chair, and about 40 members.

Minutes.—The minutes of the General Meeting held on Thursday, April 15th, 1915, were read and confirmed.

Ballot for New Members.—Members—Cecil Roy Burton and Robert John Burns; Student Members—Clarence A. W. Devvit and Jack Evans Herbert, having been nominated and approved by Council, were balloted for and unanimously elected.

The President, in opening the proceedings, said: "Gentlemen, I am sure it will be in accordance with your wishes that I should announce officially that a student member of our Association, Lieut. C. N. R. Huntley, 1st Field Co. Engineers, has died of wounds received in the operations in the Dardanelles. Also that Serg. Drinkwater and Lance-corporal Cole, both student members of the Association, have been wounded. We, unfortunately, have to accustom ourselves to this kind of announcement, but

I am sure it will be the feeling of everybody that the very least we should do, as an Association, is to put on record on our minutes the fact of the loss which the Association has sustained. The next business is the reading of a paper which Mr. Taylor very kindly agreed to postpone from the last meeting."

Mr. J. A. Taylor then read a paper on "The Michell Thrust Bearing," which was illustrated by lantern slides.

The proceedings then terminated.

Signed S. H. E. BARRACLOUGH, President.

Minutes of the General Meeting held at the Society's Rooms, 5 Elizabeth-street, Sydney, on Thursday, the 10th June, 1915:—

Present.—The President, Professor S. H. E. Barraclough, in the chair, and about 50 members.

Minutes.—The minutes of the previous General Meeting of the Association held on Thursday, 13th May, 1915, were read and confirmed.

The President, in opening the proceedings, said that at the last two meetings of the Council of the Association the question of alteration and modification of the Rules with regard to the grades of membership, and admission to the Association, had been considered, but he thought it would not be necessary or advisable to refer to them in detail that evening, as the matter would be brought before the Association in due form in an extended way, probably at the next meeting, or the following one.

Mr. R. Sykes then read a paper entitled "Consideration in the design of Industrial Machines," which was illustrated with the aid of lantern slides.

The proceedings then terminated.

Signed S. H. E. BARRACLOUGH, President.

Minutes of the General Meeting held at the Society's Rooms, 5 Elizabeth-street, Sydney, on Thursday, the 7th July, 1915:—

Present.—The President, Professor S. H. E. Barraclough, in the chair, and about 60 members.

Minutes.—The minutes of the General Meeting, held on 10th June, 1915, were read and confirmed.

The President, in opening the proceedings, said: Gentlemen, there are two announcements I should like to make. In the first place I should like to announce in a formal way, so that it may be recorded on our minutes, the death of one of our honorary members, Mr. Lawrence Hargrave, who has been on our membership since the year 1875. The Secretary of the Association has already sent a letter of condolence, and a wreath on the occasion of the funeral.

The death of Mr. Hargrave is certainly a matter that ought not to go without some mention on our part. He was a man who, perhaps, had much less honor in this country—although not exactly his own country, a country in which he spent a great part of his life—than he did in most other countries of the world. I was very astonished to find how carefully his papers had been read by people interested in aeronautics and aerodynamics generally, both in America and on the Continent of Europe. I mentioned a couple of meetings back the names of some of the flying people that I had occasion to meet four or five years ago, and when talking to them I found that absolutely the only introduction required was that you knew Mr. Lawrence Hargrave. Count Zeppelin himself was immensely interested in Mr. Hargrave, and had always followed his work; and even Bleriot, Latham, and all the people interested in aerodynamics. In a sense Mr. Hargrave was a man who perhaps was a little in advance of his times, and he suffered possibly from the disadvantage of being what I would call an inventor, as distinguished from a designing engineer. There is no doubt that some of his ideas were extremely fruitful as regards the progress of aerial navigation. His invention of the box kite was, of course, a very striking step forward; his box kite is now practically universally used in all the meteorological stations all over the world, and it was undoubtedly the forerunner of the bi-plane type of aeroplane—in fact, he was a man who was extremely fertile in brilliant ideas. I say he suffered a little bit, I think, from being an inventor rather than an engineer; he was never content to let somebody else do detail work which could be done much better by an ordinary engineer than by a man of his special gifts. I used to try to persuade him to give up the engine side of it, in which he was tremendously interested, and stick to the aeroplane side. A great many people could design engines with possibly more experience than he had with them, whereas not many people had his fertility of imagination and resource as regards actual

aeroplane work. His death is undoubtedly a very great loss (and will be regarded as such in this and other centres of the world), to the intellectual activity of Australia. There is no doubt that his papers (which he principally contributed to the Royal Society of New South Wales, and which were mostly read in this building) will be always regarded as monuments of extraordinary skill and ingenuity.

I am sure you will be with me in thinking that we should record on our minutes the loss we have suffered by his death.

The other matter I wanted to mention was that during the month there has been a good deal of consideration of the question of the manufacture of munitions in Australia—ammunition of various types—and certain action was taken by members of the Council in anticipation of the Association endorsing it. We felt it was wise, possibly, to take some action at the moment, so a letter was written from the Association expressing to the authorities the desire of all the members of this Association to advance, in any way in their power, the proposed manufacture of munitions, especially shells, in this country.

A letter has been received in reply from the Munitions Committee, Department of Defence, Melbourne, in these terms:—

“6th July, 1915.

“Dear Sir,—Your letter of 23rd June, addressed to the Hon. the Premier of N.S.W., intimating the desire of your Association to co-operate with the Armaments Committee, has been referred by him (through the Hon. the Prime Minister) to the Munitions Committee, and I am desired by this Committee to thank your Association for its offer, and to inform you that the offer will be borne in mind in the event of there being any way in which they can utilise the services of your Association.—Yours faithfully,

“(Sgd.) JOHN BARKER,

“Secretary Munitions Committee.”

“Prof. S. H. E. Barraclough,

“President, Engineering Assn. of N.S.W.,

5 Elizabeth-st., Sydney.”

There is also a letter from Mr. A. E. Cutler, who is acting as Executive Officer of the N.S.W. Munitions Committee, and he says, amongst other things:—

“I have to express to you their thanks for the offer contained therein”—that is in the letter of the 23rd June—“and to state that there is no doubt when the question of the manufacture of shrapnel has been further advanced, at least some of the members of your Association will be asked to aid the Committee in this matter.”

The Council endorsed the action taken in that respect, and I am sure the Association will also do the same.

The next item is the ballot for new members. One name has been forwarded, that of Mr. Frederick John Ludowici, of 177 York-street, Sydney, proposed by Mr. Harriks, and seconded by Mr. J. Macnamara.

(The ballot was then proceeded with, and Mr. Ludowici declared elected as Associate Member.)

I have next to apologise for the non-attendance of Mr. Rupert V. Minnett, who regrets that he is unable to be present.

Mr. J. P. Power, of Messrs. Ellis & Power, regrets that the short notice prevented him from attending.

Mr. George Chambers also sends his apologies, and regrets that owing to a previous engagement he is not able to attend; he is particularly interested in the paper to be read by Mr. Hart, and hopes to have an opportunity of taking part in other discussions.

There is also a letter from Mr. Herbert E. Ross, but as it is rather in the nature of a short discussion on one or two points mentioned in the paper, I think the letter may perhaps be read in the course of the discussion.

The next matter on the programme for to-night's business is the question of the amended Rules and By-laws which the Council desire to bring before you in accordance with the Rules of the Association. A copy of the existing Rules, and of the proposed amendments, has been sent to each member, and it has to come before two meetings of the Association.

I will ask Mr. Julius if he will bring this matter formally before us to-night.

Mr. C. A. JULIUS: Mr. President, and Gentlemen,—For some time past members of the Council have considered that some amendment was necessary in the constitution of this Association in the provision of an intermediate grade between that of “Student-Associate” and full member. Considerable difficulties have arisen in the past in the in-

roduction of new members to the Association, due to the fact that they are obviously qualified to be elected to a position higher than that of "Student," or "Student-Associate," but at the same time members of the Council did not think they were sufficiently advanced in the profession to be elected to full membership. Almost all the scientific and engineering bodies in various parts of the world have the two grades—that is, member and associate-member—and the alteration that is proposed by your Council, after two meetings at which the matter has been fully considered, is, practically, to allow for the introduction of one new grade of associate member.

There are one or two other minor alterations suggested. With regard to the old Rule as to associates who, in the definition given in our By-laws, are not engineers, it was felt that they should not have a vote in the affairs of the Association, the election of the Council, and the balloting for new members, as they were only persons interested in engineering matters, whom we welcomed to our meetings, but who really had no professional opinion on engineering matters.

The new proposals, therefore, make a correction with regard to that particular grade in eliminating from that clause the powers under which Associates were entitled to vote.

It was also felt that the term "Student-Associate" was a bad one. The term "Associate," coupled with some other grade-name, applied to define a lower grade. As a general rule in most associations we have the terms "associate members" and "members." On the other hand, we have "students" and "Student-associates"—a reversal in the application of the word "associate," and we felt that there were a number of applicants who objected to election to a grade in which the name "student" was used, where they were men who had passed out of the student stage, and were taking an active part in the engineering profession. The term was therefore altered from "student-associate" to "graduate." In introducing these new provisions and modifications, considerable attention was paid to the regulations now in force in the Institute of Mechanical Engineers at home before the proposed alterations were adopted by the Council.

I think the members have all had an opportunity of studying the amendments which, as I said before, have been most carefully considered by the Council.