Sectt. II-27—30,004—24-10-44.

Edn. Hon (194 5) Department.

MS. SERIES.

G.O. No. 1864 Edn.

Dated 12. 11. 45.

30

order on p 15 ct

[Despatch Abstract.]

College - Engineering - Enquiry - Board of visitors and Special committee on Technical Education - Representation of the South India Centre of the Institution of Engineers. Orders passed

Memo 1618/46-3 P.W 15-1-46.
G.O. 1583 Edn. 24-5-50.

C-3-2

The Institution of Engineers (India)

ESTABLISHED 1920 INCORPORATED BY ROYAL CHARTER 1935

South India Centre, Madras

HON. SECRETARY:
K. K. NAMBIAR, B. E., M. I. E.
(ENGINEER. CORPORATION OF MADRAS)

RIPON BUILDINGS.
P. T., MADRAS.

Dated 29th. March 1945.

ASST. SECRETARY TO GOVERNMENT
8-APR 1945
EDUCATION — PUBLIC HEALTH DEPT.

To

The Secretary to Government,
Education & Public Health Department,
Fort St. George, Madras.

13055

Sir,

I have the honour to communicate herewith a resolution passed at the 22nd. Annual General meeting of the South India Centre of the Institution of Engineers (India) held at Ripon Buildings on 16th; December 1944:-

"RESOLVED that the Chairman and the Hony. Secretary be authorised to approach the Government to consider the desirability of including the representative of the Institution of Engineers (India) S.I. Centre on each of the following committees:-

(a) The Committee recently appointed for considering postwar Technical education.
(b) Advisory Board of the College of Engineering, Guindy, and
(c) Technological Diploma Board of the Government school of Technology, Madras.

A copy of the proceedings of the annual general meeting referred to above is herewith enclosed.

In this connection I have to point out for your information that this is the only institution of Engineers in India having a Royal charter. A copy of the Royal charter is enclosed herewith. A perusal of the Royal Charter will clearly indicate the main objects and functions of the institution. The formation of the institution which was inspired by Sir

Excellency Lord Chelmsford

E+Hu Deptt(c)

T.M.(by post)

From The Assistant Secretary to Govt.

To The Dy Director of Public Instruction.

College of Engineering, Guindy - Board of Visitors - Representation - Indian Institution of Engineers.

Please arrange to return the letter from the Hony Secretary of the Institution of Engineers (India) S.I. Centre Madras dt 29-3-45 sent as enclosure to Govt. Endt No. 13055-C/45-1 Edn dated 21-6-45.

(By)

R.C.NO.328-A/45

Office of the Director of Public Instruction, Madras, Dated 8-8-1945.

From

Dr. B. B. Dey, (...), F.R.I.C.
Offtg. Director of Public Instruction, Madras.

To

The Secretary to Government,
Education and Public Health Department.

Sir,

Sub: College of Engineering, Guindy - Board of Visitors - Representation - Institution of Engineers (India)

In resubmitting herewith the papers received with the Government Endt No. 13055-C-1 Edn and Public Health Dated 21-4-45 I have the honour to submit a copy of Endt dated 18-7-45 of the Principal, College of Engineering, Guindy and to state that in view of the Principal's remarks I do not recommend that the request of the Institution of Engineers contained in the items (a) and (b) of the resolution dated 16-12-44 should be complied with.

Recommend 10.8.45

for Director of Public Instruction.

RVR 10/8/-

Copy of Endt of the Principal.

Resubmitted.

I do not consider it necessary and desirable to accede to the request of the Institution of Engineers. At present we have only one Institution of Engineers. It should be expected that in the near

Excellency [illegible]

6

: 2 :

future there will be Institutions of Electrical Engineers, Mechnical Engineers, Civil Engineers, Automobile Engineers, Structural Engineers, etc. etc., and if the request of the Institution of Engineers is granted it would set up a precedent to other institutions to seek representation of this kind.

As far as I know, the Institution of Engineers in India has in no way influenced the standard of technical education in Colleges or schools Speaking for the colleges I would say that the standard in the colleges is set up by the Universities which are guided by Boards of studies or Faculties. I am not able to say in what way the Institution of Engineers have affected the standard of education in Technical schools. At any rate, it certainly has not done anything in the Madras Presidency. This is no reflection on the institution of Engineers in India. Institutions of various types of Engineers in England and America have not influenced the standard education in engineering. This has been left to Universities and managements of the Technical Schools. I have no reason to think that it should be otherwise in this country.

I, therefore, see no reason why the request of the Institution of Engineers should be granted.

14/9 HCF KSCF

Memo 13055C/45-3 Edn., Dated 13-9-45 College of Engg., Guindy (5) Board of Visitors

Ref: From the Hony. Secy, The Institution of Engrs (India) ltr dated 29-3-45
" D.P.I. Rc. No. 328 A/45 of 8.8.45

The Govt. consider that ~~there should be room~~ besides the 'official' engineering talent now represented on the Board of Visitors of the Engg. College, Guindy, there should be room for the ~~representation~~ representation of views from a different angle also. From that standpoint, it is proposed to increase the number of nominated members from one to two, the second nomination going to the ~~Madras branch~~ South India Centre of the Institution of Engrs. (India), by means of a convention, ~~rather than by giving~~ a right to the Association to send one of its nominees.

Exactly three times a nomination of this kind has to be made, the D.P.I. will ~~consult~~ ask the Association to suggest two names of one of whom ~~he~~ Govt. may nominate.

To the D.P.I.

The Govt. is requested to offer its Remarks by 7/10/45.

Dep'd 14-9-45

Encl. 22/R. a memo of the Visitors

~~...on his suggestion.~~

8

To The D. P. I.

C.F. 32.

EDUCATION Department

From (Name) DR. B. B. DEY, D. Sc. (Lond), F.R.I.C.,
Designation OFFG: DIRECTOR OF PUBLIC INSTRUCTION,
Station MADRAS.

Received 24 OCT 1945 Registered

To
The SECRETARY TO GOVERNMENT,
EDUCATION AND P.H. DEPARTMENT,
MADRAS.

Enclosures:

No. R.C. 328-A/45 dated 22nd October 1945.

Sir,

SUB:- College of Engineering, Guindy - Board of visitors - Representation - Institution of Engineers (India).

47895 b/aute

b/o 10-11 infra

In reply to the Government Memorandum No.13055-C/45-3, Education, dated 13th September 1945, regarding the subject quoted above, I have the honour to submit herewith a copy of letter dated 16th October 1945 from the Principal, Arthur Hope College of Technology, Coimbatore which contains detailed remarks on the question of the representation of the Institution of Engineers (India) on the Board of Visitors of the college of -- Engineering, Guindy.

2. In view of the reasons adduced by the Principal, I agree with his suggestion for the formation of a simple board of visitors for all the Technical Colleges under the Government of Madras consisting of the members proposed by him including the representatives from the Army, the Navy and Air Force services. This suggestion may however, be taken up for consideration a little later when the college at Vizagapatam is established and for which I am suggesting separately a panel of experts.

3. In the meantime, the question of nominating a representative of the Institution of Engineers (India) on the present Board of Visitors may be deferred.

I have the honour to be,
Sir,
Your most obedient servant,

23.10.45

for DIRECTOR OF PUBLIC INSTRUCTION.

KAN. 23/10

Sol 23/X

P.T.O

10

Copy of letter dated 16th October 1945 from the Principal, Arthur Hope College of Technology to the Director of Public Instruction, Madras:

I am entirely in agreement with the view of the Government that besides the official Engineering talent now represented on the Board of visitors of the College of Engineering, Guindy, there should be room for the representation of views from a different angle also. However, granting a representation to the South Indian Centre of the Institution of Engineers, (India) whether by convention or by right, is not likely to fulfil the object which the Government have in view and is most likely to result in an increase in the representation of official engineering talent. The Engineering talent in the Presidency consists mostly of official and a majority of the leading members of the South Indian Centre of Institution of Engineers are officials. The idea of the position of officials in the South Indian Centre of the Institution of Engineers would be obtained by statistics of its Presidents and Secretaries. As far as I know during the last 10 years, the vast majority of Presidents, if not almost all, were either officials of the Government of Madras, the railways or the Corporation of Madras. A Professor of the College of Engineering was the Secretary of the Association for many years until last year or so when he was succeeded by an official from the Corporation of Madras. If the Government grant a representation to the South Indian Centre of the Institution of Engineers, then it is most likely that an official would be nominated by the Centre unless the Government specify that the person nominated should be a non-official. In that case, the choice of the South Indian Centre of Institution of Engineers would be severely restricted and the Institution may not be able to send a representative whom they consider best.

At present there is room for 2 non official representatives on the Board of Visitors of the College, viz., one from the University and one by nomination by the Government. The former has mostly been filled up by an official and the second more often than now, by an official or a retired official. This shows how difficult it is to avoid preponderance of official engineering talent on the Board of Visitors. I am of opinion that, to fulfil the very desirable object that the Government have in view, the number of seats in the Board of visitors should be increased by two or three to provide representation to representatives of firms like Burmah Shell & Co., Gannon Dunkerley, Chari & Chari, The Chamber of Commerce etc. etc.

In my previous remarks, on this subject, I have opposed the representation of the South Indian Centre of Institution of Engineers because of the complication which would be created when other institutions of Engineers are started in this country. At that time, I had in view the leading position which officials occupy in the Institution of Engineers although I did not state that. The Government

should also consider that there are going to be a number of Engineering Colleges and the question whether there will be different Boards of Visitors for different colleges and whether the South India Centre of the Institution of Engineers will be represented on each Board.

I suggest that there should be a single board of visitors for all the colleges under the Government of Madras composed as follows with a view to co-ordinate the work of the various colleges and to have as many different points of view as possible. The Army, The Navy, and the Airforce are going to recruit officers for Technical Branches from these colleges and we should have their representatives also on the Board of Visitors.

Proposed Board of Visitors for all Technical Colleges under the Govt. of Madras.

@@@

1. Chief Engineer for Building
2. Chief Engineer for Irrigation
3. Chief Engineer for Communication
4. Chief Engineer for Electricity
5. Director of Industries & Commerce
6. A Technical Officer nominated by the G.H.Q.
7. A Technical Officer nominated by the N.H.Q.
8. A Technical Officer nominated by the A.H.Q.
9. Chief Engineer of M.S.M. or S.I.Ry
10. The Port Engineer, Madras Port Trust or Vizagapatam Port.
11. A Nominee of the University of Madras
12. An Engineer from a firm of Engineers & Contractors
13. A representative of the South Indian Chamber of Commerce.
14. A representative of the Andhra Chamber of Commerce.
15. The Principal, College of Engineering, Guindy
16. The Principal, Andhra Engineering College
17. The Principal, Arthur Hope College of Technology, Coimbatore.
18. The Principal, Anantapur Engineering College.

/True Copy/

23.10.45

for DIRECTOR OF PUBLIC INSTRUCTION.

KAN. 23/10

SR 23/X

(80) HINDU COLLEGE
...GH SCHOOL,
...SULIPATAM
—cont.
...RST-YEAR-PUPILS)—cont.

				YRS.												
50	94729P	Musti Venkata Sastri ..	B	17	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	Tel.	..
51	94730P	Marangunti Venkata Sitarama Charyulu.	B	14	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
52	94733P	Origanti Venkatarama Sarma.	B	15	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	Tel.	..
53	94735P	Kodavali Venkateswara Rao.	H	17	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
54	94736P	Talupula Venkateswara Rao	H	17	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	Tel.	..
55	94737P	Tadinada Venkata Patchayya.	B	17	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..	Tel.
56	94738P	Pokkunuri Adinarayana Sastri.	B	15	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
57	94745P	Parinam Jagannadha Rao ..	B	15	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
58	94749P	Pallapotu Krishnamurti ..	H	18	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..	Tel.
59	94752P	Adapala Nakuludu ..	H	15	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
60	94754P	Madireddi Panduranga Rao	H	13	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	Tel.	..	..
61	94756P	Dokku Reddemma ..	H	17	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
62	94758P	Guduri Sitaramamurti ..	B	14	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
63	94759P	Pratapa Sitarama Sastri ..	B	15	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
64	94760P	Cherukuri Subrahmanyeswara Rao.	H	18	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
65	94762P	Challapalli Srinivasa Sastri ..	B	15	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..	Tel.
66	94765P	Nidumolu Venkataratnam ..	H	17	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..	Tel.
67	94767P	Mogilisetti Venkata Ranga Rao.	H	14	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
68	94773P	Iragavarapu Anantha Tiru Venkataswami.	B	13	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	Tel.	..
69	94782P	Chilamkurti Nageswara Rao.	H	16	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	Tel.	..
70	94783P	Chiruvolulanka Nagabhushanam.	H	16	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
71	94784P	Chilamkurti Narayana Rao ..	H	15	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..	Tel.
572	94786P	Thota Panduranga Rao ..	H	18	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..	Tel.
573	94787P	Pothukuchi Parthasaradhi Sarma.	B	15	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..	Tel.
74	94788P	Viramallu Radhakrishnamurti.	H	14	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
575	94789P	Chilamkurti Ranganadha Rao.	H	16	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	Tel.
576	94790P	Thota Ramalingeswara Rao.	H	16	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..	..
577	94792P	Komaravolu Srinivasa Sarma.	B	14	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
578	94795P	Jagabathula Subrahmanyam.	H	16	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
579	94796P	Kasinadhuni Subrahmanyam.	B	14	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
580	94798P	Ogirala Venkateswara Rao ..	B	15	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
581	94799P	Kota Venkatappayya Sastri.	B	16	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
582	94801P	Kattamuri Venkata Ratna Narasimha Rao.	B	16	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
583	94802P	Pingali Venkata Purna Ramalingeswara Sarma.	B	14	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	..
584	94803P	Sugnanam Venkatappa Rao.	H	15	1	Tel.	Tel.	Tel.	Tel.	Tel.	Tel.	..	..	Tel.	..

B = Brahman. H = Non-Brahman Hindu. Tel. = Telugu.
Note.—The entry 1 under a subject against a pupil's name indicates that the pupil is coming up for that subject.

(2) · E&P.H. Deptt.

C 13055 from the Hon. Secretary, Institution Engineers (India), S.I. Centre, Madras d 29.3.45.

Institution of Engineers (India), South India Centre - Representation on certain bodies.

Request ~~Item~~ (a) in the resolution on p1 cf.

The committee referred to here is apparently the Special Committee on Tech Edn appointed by Govt. This Committee has already done its work. This request need not therefore be considered.

May also be put to D.P.I.

Request (b) ~~in the resoln~~

The D.P.I. may be asked to offer his remarks on this request. Draft endt submitted.

21.4.45

Request (c)

This relates to the Dev. dept. Relevant extracts may be sent to that dept for necessary action.

yes.
21.4.45

16.4.45 17/4/45

Issue endts & ~~the~~ send extract to Dev.
21.4.45

C. 13055 C.2
21.4.45

(Issued as Endt No. 13055 C/45-1 Edn. d 21-4-45)

C No 36160 C/45 from the D.P.I., Re. No 328 A/45 d 8.8.1945

The D.P.I is not in favour of granting the requests in items (a) and (b) in the Resolution of the Institution of Engineers, his recommendation being based on the endt. of the Principal of the Engineering College, on pp 8-6 c. The Institution may be told that the Spl. Committee on Education had already finished its work (on postwar plans) and that the

13/

no sufficient grounds to minute the ~~Bd~~ personnel
the Bd of Visitors of the Engineering College, Guindy
er orders

14/8/45
25/8/45

There is now no question of the Institution of Engineers being represented on the Committee for Post-War technical Education, for the ~~simple~~ reason that there is no such Committee functioning now. But it is not clear that the reason assigned by the Principal for refusing representation to this Association on the Board of Advisers to the Engineering College is very cogent. Para 2 of the Royal Charter constituting the Association explains its objects and purposes. The affairs of the Engineering College cannot be said to be ~~outside the purview of~~ alien to these objects and purposes and the grant of representation to this Association on the Board of Visitors need not necessarily be a precedent for similar treatment to other associations, if and when such should come to be established. Denial of representation would, it seems to me, require some better reasons. For orders whether the D.P.I. should be asked u.o. to consider the point further.

28.8.45 S/

c. 7-5-6

29/8

placed below

While investing on this may be done in favour of this Institution, I do not think it is appropriate that the Official Engineering Talent represented on the Board there must be drawn from a different angle to be represented there. We may, I think, consider it desirable that two members to be nominated by this Institution of Engineers (India) should be drawn (one ?) each from the Public Works Department and the Local Fund Audit Department. In this way we need not give to any one Circle the right to have a representative, as such; we will merely have in each occasion that we propose to ask two members of the Institution to be nominated

Draft Memo
Dated:

SECRETARY, EDN. AND P. H. DEPT.
SEP 1945
GOVERNMENT OF MADRAS

2.

Memo No 13055 C/45. 3 Econ. dt 13.9.45.
From the D.P.I. Rc No 328- A/45 dt 22.10.45.

The D.P.I. reports that pending the introduction of simple board of visitors for the all India Technical Colleges, the question of nominating a representative of the Institution of Engineers (India) on the Board of Visitors may be deferred. The Board of Visitors proposed by the Principal, Andhra Utkal College of Technology, does not include any representative of the Institution of Engineers (India) as the majority of the leading members of the S. India Centre are officials, and as the representative to be selected by the Centre will in all probability be an official adding to the no: of officials on the Board of Visitors. For orders whether the appointment of a representative of the Centre may be deferred.

5/11/45

Memo 30.10.45 Rm
31/10/45

We may accept the views of the D.P.I. which endorse the views of the Principal. The Principal's reference to future does not contemplate representation to the Institution of Engineers (India) as such. Nor do we need to give any definite decision on the question whether representation of the Institution of Engineers (India) on the Board of Visitors is necessary or not. This matter may be considered in the light of the experience gained during the period representation is given to the Institution. For the present the Institution may be informed that the matter will be considered in due course.

7/11/45

SECRETARY, EDN. AND P. H. DEPT.
8 - NOV 1945
GOVERNMENT OF MADRAS

The draft order below is for approval:-

College. Engineering. Guindy - Board of Visitors and Special Committee on Technical Education. Representation of the South India Centre of the Institution of Engineers - Orders passed.

From the Hony. Secy., South India Centre of the Institution of Engineers (India) dy 29.3.45.

From the D.P.I. Rc. No. 328-A/45 dy 22.10.45.

Order/No. 1864 Edn. dy. 12.11.45.

The Honorary Secretary, South India Centre of the Institution of Engineers (India), is informed that the Special Committee on Technical Education referred to in resolution (a) passed at the 22nd Annual General meeting of the Centre held on 16.12.44, has already completed its work on post war plans and that the question of according representation to the Institution does not arise as regards resolution (b). The Government are not satisfied that there is need for the Special representation asked for and hence they regret that the request cannot be acceded to. (with reference to resolution (c)

Orders have been issued in G.O. No. 4153 Edn. dy 22.10.45 regarding the nomination of a representative of the S. India centre on the Technological Diploma Examination Board

DPI 10/11/45

Hon 9/11/45

Dy No. 1-11-45

Despd 12-11-45

To
The Hon'y Secy.,
The Institution of Engineers (India)
S. India Centre,
Ripon Buildings
The D.P.I.
S.C.

(2) 10

(10)

The

Institution of Engineers

(India)

South India Centre

★

Proceedings of the Twenty Second Annual General Meeting held at Ripon Buildings, Madras on 16th December 1944

★

RIPON BUILDINGS, MADRAS

The Institution of Engineers (India)

South India Centre

ANNUAL MEETING

16th December 1944—Ripon Buildings

PROGRAMME

9	A.M.	Vists: 1. Inspection of the Emulsion Plant of the Corporation at Periamet.
		2. Visit to Newtone Studio, Kilpauk.
		3. „ Gemini Studio, Mount Road.
11-30	„	Committee Meeting, Ripon Buildings.
12	Noon	Annual General Meeting :—
		1. Inaugural Address by H. R. Dogra, on "Roads of Post-war Conception."
		2. Address of the Chairman.
		3. Business Meeting,
1-30	P.M.	Lunch—(by Mr. J. H. Tarapore).
2-30	„	Papers Meeting :—
		1. Paper on "Technical Education—Post-war" by Prof. A, V. Nath.
		2. Continuation of the discussion on Mr. Preston's paper. "The Post-war Education and training of Engineering Personnel" adjourned on 18-11-'44.
		3. Discussion of paper "Denudation, Erosion and Floods," by Mr. C. C. Inglis.
4-30	„	Tea.
5	„	Photograph.
5-30	„	Meeting of the New Committee.

Ripon Buildings,
Madras, 29-11-'44.

K. K. NAMBIAR,
Hon. Secretary, S.I. Centre

11

(11)

PROCEEDINGS

OF THE

22nd ANNUAL GENERAL MEETING

HELD AT RIPON BUILDINGS, MADRAS

On 16th December 1944.

There were 36 members present from all parts of the Presidency as also 7 visitors. The Mayor of Madras also graced the occasion with his presence. The outgoing Chairman Sri Rao Bahadur C. V. Krishnaswamy Chetty, M.B.E., B.A., B.Sc., (Tech) A.M.I.E.E., M.I.E., commenced the proceedings by giving a short history of the South India Centre of the Institution and thanked all the members for their co-operation and bringing the South India Centre to the forefront. He introduced Mr. H. R. Dogra B.Sc., Chief Engineer (Communications) to the members and thanked him for having kindly agreed to deliver the inaugural address on "Roads of post-war conception". Mr. J. H. Tarapore, B.E., M.I.E., Chairman-elect for the ensuing year was also introduced to the members. Mr. Chetty expressed his appreciation of the very active interest taken by Mr. K. K. Nambiar the Honorary Secretary of the South India Centre in managing the affairs of the Institution and wished that he would continue as Honorary Secretary for some more years.

A cheque for Rs. 250 being the Railway Board prize was then handed over to Sri Rao Bahadur R. Madhavachari, B.A., B.E., M.I.E., for his paper on "Prestressing the new girders of the Palar Bridge".

Mr. J. H. Tarapore the Chairman-elect was then requested to assume his office. In doing so Mr. Chetti added that he had every confidence that Mr. Tarapore who hails from an eminent family of Engineers will do

his best as Chairman of the South India Centre of the Institution and wished him all success.

Mr. J. H. Tarapore took the chair.

Mr. H. R. Dogra then delivered his inaugural address.

The address which dealt in detail regarding the plans for the development of roads in the Province during the post-war period was very much appreciated by the audience.

Mr. J. H. Tarapore then delivered his Presidential address.

He also thanked Mr. H. R. Dogra for his valuable and instructive lecture and concluded his speech by thanking the members present at the session.

The business meeting was then gone through as detailed below :—

(1) Read and confirmed the minutes of the 21st Annual General Meeting with the addition that "Sri Rao Bahadur P. Venkataramana Raju the outgoing Chairman presided over the meeting."

(2) Read and confirmed the Annual Report for the year 1943-44.

(3) Proposed by Capt. P. S. L. Choudhuri and seconded by Capt. S. P. Choudhuri it was Resolved that the following members be elected to constitute the committee for the ensuing year :—

1. Mr. J. H. Tarapore, B.E., M.I.E., *Chairman.*
2. Sri Rao Bahadur C. V. Krishnaswamy Chetty. M.B.E., B.A., B.Sc., (Tech) A.M.I.E.E., M.I.E.
3. Lt.-Col. Dr. K. C. Chacko, B.A., D.Sc., M.I.E.
4. Sri B. S. Chetty, M.A., B.Sc.. (Edn.) M. Inst., C.E. M.I.E.
5. Prof. V. H. Sadarangani, B.E., B.Sc., M.I.E.

(12) 12

6. Capt. D. I. Deshpande, B.Sc., (Hons.) M.Sc., M.I.E.
7. Sri Rao Sahib A. Venkataramanan, B.A., B.E., A.M.I.E,
8. Sri D. Rajagopalan, B.E., A.M.I.E.
9. Major V. K. Ramachandar, B.E., I.E., M.I.E.
10. Sri V. N. Rangaswamy, M.A., B.Sc., (Tech.) A.M.C.T., A.M.I.E.
11. K. V. Thadney Esq., A.M.I.E.
12. Sri K. K. Nambiar, B.E., M.I.E., *Honorary Secretary.*

Mr. J. H. Tarapore then entertained the members at a sumptuous luncheon.

Resuming after lunch at 2-30 P.M. discussion of papers was taken up.

Professor A. V. Nath read a paper on "The Need for Experts and Specialists in all branches of Industry and a 15 year plan for training them." He explained in detail the various features outlined in the scheme and several members took part in the discussion and added valuable suggestions in furtherance of the scheme. Prof. Nath replied to the various points raised by members.

The General Body then resumed its discussion on Mr. Preston's paper on 'Postwar education and training of Engineering Personnel' after which the paper on "Denudation, Erosion and Floods" by Mr. C. C. Inglis was discussed. Several members took part in this discussion and referred also to some problems on denudation, erosion and floods pertaining to the Madras Province.

At the conclusion of this discussion the following resolutions were passed :—

(1) Proposed by Sri V. H. Sadarangani and seconded by Lt.-Col. Dr. K.C. Chacko it was RESOLVED that the Hony. Secretary be authorised to make enquiries from the various members the desirability of form-

ing local groups in places such as Trichinopoly, Trivandrum, West Coast, Vizag., etc., to discuss professional papers, etc.

(2) Proposed by Sri V. H. Sadarangani and seconded by Prof. A. V. Nath : RESOLVED that the Chairman and the Hony. Secretary be authorised to approach the Government to consider the desirability of including one representative of the Institution of Engineers (India) S. I. Centre on each of the following committees :—

(*a*) The committee recently appointed for considering postwar Technical education.

(*b*) Advisory Board of the College of Engineering, Guindy, and

(*c*) Technological Diploma Board of the Government School of Technology, Madras.

The meeting then RESOLVED that the Commissioner and the Worshipful Mayor of the Corporationbe thanked for having kindly consented to allow the use of the Council Chamber for holding the meeting and also thanked Mr. H. R. Dogra for delivering the inaugural address.

With this, the meeting came to a close and the members adjourned to Tea and Photograph.

———



H. R. DOGRA, Esq., B.Sc.
Chief Engineer (Communications)

INAUGURAL ADDRESS

BY

H. R. DOGRA ESQ., B. Sc.

Roads of Post-War Conception.

Importance of roads in the Post-war development is a subject on which many eminent personages have expressed their views.

Apart from the importance of a well balanced road system as a vital weapon of defence of a country, it needs very little argument to show how important the roads are for the advancement of peace-time activities of a country like India in the field of agriculture, commerce and industries.

For any organised undertaking in these fields contact of nerve centres controlling the collection and distribution of produce and goods with the producing areas through the well balanced road system is vital.

In our Post-War scheme of road development, we are attempting to serve nearly 95% of the population by connecting all villages with a population of 500 people and above with a road grid.

The probable development and the growth of the countryside and the village, expansion of marketing and commercial centres, opening out of closed and unexplored areas which are rich in forest produce and minerals and the increase of village and city traffic as a result of this development during the next 20 years have been taken into account and catered for in our scheme of road expansion.

The present mileage of 36,000 and odd miles or the Presidency is to be regraded, reconditioned and renovated to take heavier loads of the increased traffic after

allowing sufficient elbow room in all the congested areas. Twenty-thousand miles of new roads have been proposed of standards suitable for the new conditions of life to complete the proposed grid. The total cost is roughly worked out and comes to about 66 crores of rupees. The work is proposed to be completed in 10 years and intensive activity in which both men and machinery will be employed to carry out the work is envisaged.

4½ lakh tons of cement and 54,600 tons of bitumen will be required for the improvement of roads. 2,500 miles will be cement concreted. 3,000 miles will be provided with black top and the balance of 50,000 miles will be water B. M. The work is both immense and of a specialised nature. The effort of all the road engineers of the Province will be required to make a success of the scheme. Extensive use of quarrying machinery, transport vehicles, power rollers, tar boilers, sprayers, compressors and earth excavators will be necessary. Several workshops both central and mobile will have to be set up and organised to keep this plant in working order. Numerous technicians, skilled and unskilled labour, junior and senior engineers will be required. In places where amenities of life are scarce, organised labour units will have to be set up, housed and fed. Arrangements to keep them healthy and fit for hard work will have to be made in all such localities.

The harnessing of difficulties met with in crossing big rivers and streams of the Presidency by providing adequate cross drainage works is an important item of development, Many roads, although they constitute important links of communications are little used because of the absence of suitable bridges across the streams which intercept through passage. A specialised section will have to be organised to carry out this part of the scheme. A centralised office for designing and mobile executive units for the execution of bridge works will have to be set up. Thus there is a huge task ahead for the engineers of this Presidency to tackle but I am not despondent because my contact of 35 years with the

Madras Road Engineers both in the P.W.D. and the L.A.D. gives me full confidence to assert that they will rise to the occasion and handle the situation in a fitting manner worthy of them.

Now, I put to you, gentlemen, some of our difficulties in securing suitable designs for our road works :

It is a well known fact that segregation of fast moving traffic from the cart traffic is not only essential from safety point of view and as a means to avoid congestion of traffic but also from the point of view of extending the life of the wearing surface of the road. We wish to avoid the grinding of the metal by iron tyred traffic and sweeping away of this powdered surface by fast moving traffic.

We have evolved what is called a conphalt surface which consists of 8′ wide c.c. shoulders on either side of a middle 10′ to 16′ wide bituminous surface strip. It is a well known fact that on the level bulls pulling the carts prefer to walk on concrete. Thus the concrete strips on either side of the black top road automatically attract the bulls to keep to these strips. This leaves the middle of the road which is provided with black top and varies in width according to the intensity of traffic for the fast moving traffic which are generally rubber-tyred vehicles.

For heavy cart traffic, cement concrete is found to be the only suitable material which can stand the knife edge cutting action under heavy loads. But for vehicles provided with pneumatic tyres and loaded with even heavier loads black top is found to be quite suitable and durable.

Incidentally, I may mention that once a proposal came to me to provide 16 ft. c.c. in the middle and 8 ft. wide black top strips on either side. Needless to say that this proposal if carried out would give rise to bad traffic jams and consequent accidents owing to the introduction of an incentive to slow moving traffic to stick to the centre of the road.

This method therefore has solved our problem but it is expensive because of the use of cement concrete.

If we use water bound macadam for cart strips, the bulls will not use them when the middle strip offers less resistance because of its black top. Thus this method of segregation fails in cases where traffic does not warrant the use of cement concrete.

In other Provinces, I believe the difficulty is being solved by having separate road lanes for cart traffic which may be of earth or water bound macadam and placed parrallel to and on either side of the road for fast moving traffic. In other words, there will be three parrallel roads with avenue trees between them.

This system has the following disadvantages:

(*a*) It needs more land width which is not possible to secure everywhere and particularly in thickly populated areas;

(*b*) Even if the land can be secured, is it correct to waste thousands of acres of land for this purpose which can otherwise be put to more useful agricultural purpose; and

(*c*) The crossing from one side of the road to the other side will even then have to be done across the fast moving traffic lane and it is doubtful if the cartmen will keep to the cart lanes everywhere particularly in places where the cart lanes fall into disrepairs and thus offer less attractive line of travel.

In Municipal areas, concreting or roads is greatly affected by the existence of underground water supply and drainage systems. The question arises whether the road works in such areas should be controlled by a different agency than the one in charge of the underground water supply and drainage systems and if so, what precautions should be taken by the road engineer to offer the least obstruction for an access to these underground public utility services. It should not be forgotten that many old underground systems of this

nature have been laid without any consideration for concrete surfacing of roads over them.

Our next difficulty is Rail Road crossings.

It is not uncommon to see a string of carts held up at almost every Railway crossing whether the train is in sight or not. Something has therefore to be done to avoid this hold up.

One solution is to provide overbridges but they are, besides being costly, not easy to erect everywhere particularly in built up areas.

Then we come to the question of suitable camber for different types of surfaces and particularly for the earthen or gravelled berms. It is not uncommon to find a good road rendered unsafe for traffic by miry berms after a heavy shower of rain obviously because the berms are not provided with adequate drainage facilities and in some places the berms have been so recklessly sloped that they develop deep gullies which make them unsafe for use by the traffic.

Soil stabilisation and the study of its behaviour under different climatic and physical conditions is a subject which needs extensive research. In our post-war scheme, we have made a provision for this research work.

In bridge designs we have yet to establish the necessity of raising our structures to such heights as to keep the decking clear of floods which may happen only once in 10 to 20 years.

When we talk of submersible bridges, we think of such structures which get submerged in almost every year's flood, but why is it that we always design dry deck structures to heights above even the highest flood level known in our living memory knowing fully well that such a flood is of a very rare occurrence and probably of a very short duration.

Coming to black top surfacing, our attempts at maintaining them in the Madras Presidency are still in an experimental stage particularly where the treated thickness of the crust is very shallow. Punjab P.W.D. has shown a striking saving in maintenance by the use of this binder inspite of the enormous cost of blue stones required for the chips for such a treatment which has to be brought to site for many miles by rail. In this Province however we find that the blue stone is readily available in every district, and probably this is the reason why the cost of maintenance of black top mount up to even greater than that of water bound macadam. The one secret of Punjab roads treated with this binder is that there the engineer for the first few years of maintenance does not wait for the surface to deteriorate before taking up the laying of a strengthening coat over the precoat but follows a preconsidered policy of adding on coat after coat of very small thicknesses after regular intervals until a sufficient thickness of wearing coat pregnated with this binder is obtained when it is left for years without any extensive repairs.

Before I leave this subject, I would invite attention to the need for standardisation of specification for bituminous surfacing. A few years ago, Madras Government ordered laying of experimental strips of a heavily used trunk road in the neighbourhood of Madras with this material in accordance with the varying specifications issued by the different distributors of this binder and some of the firms learnt to their cost the unsuitability of their specifications. The P. W. D. made independent experiments in the Nilgiris with this binder and the engineer in charge evolved a specification which has been found to be most economical and suitable. Incidentally one of the distributing firms has isued the very same specification to their customers as their own without the permission of the Department or the engineer who conducted those experiments. We have found that the best method is the one in which the binder is made to cover the metal before it is laid on road. In European countries the suppliers deliver the precoated metal at site for consolidation and this process is carried on by machinery at convenient centres

but in this country we have to do these operations at site.

Water Bound Macadam.

Of late there has been a good deal of controversy about the relative advantages of mechanical interlock of metal at the risk of crushing of metal which is likely to take place during the operational process of interlocking.

One school of thought advocates mechanical interlock at any price because of the poor binding quality of gravel as a binder which in dry weather disintegrates into powder and is blown away by the suction zone created in the wake of fast moving vehicles and in wet weather becomes so sloppy that it loses all binding power.

The other school insists to prevent damage to metal and is of the opinion that the advantage of mechanical interlock is not so important as the prevention of damage to the metal which is bound to take place if dry rolling of the naked metal is resorted to to obtain mechanical interlock. Here again, a good deal of research work is necessary and detailed investigations of these theories will be necessary as major portion of our roads will necessarily have to be of water bound macadam.

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PRESIDENTIAL ADDRESS

BY

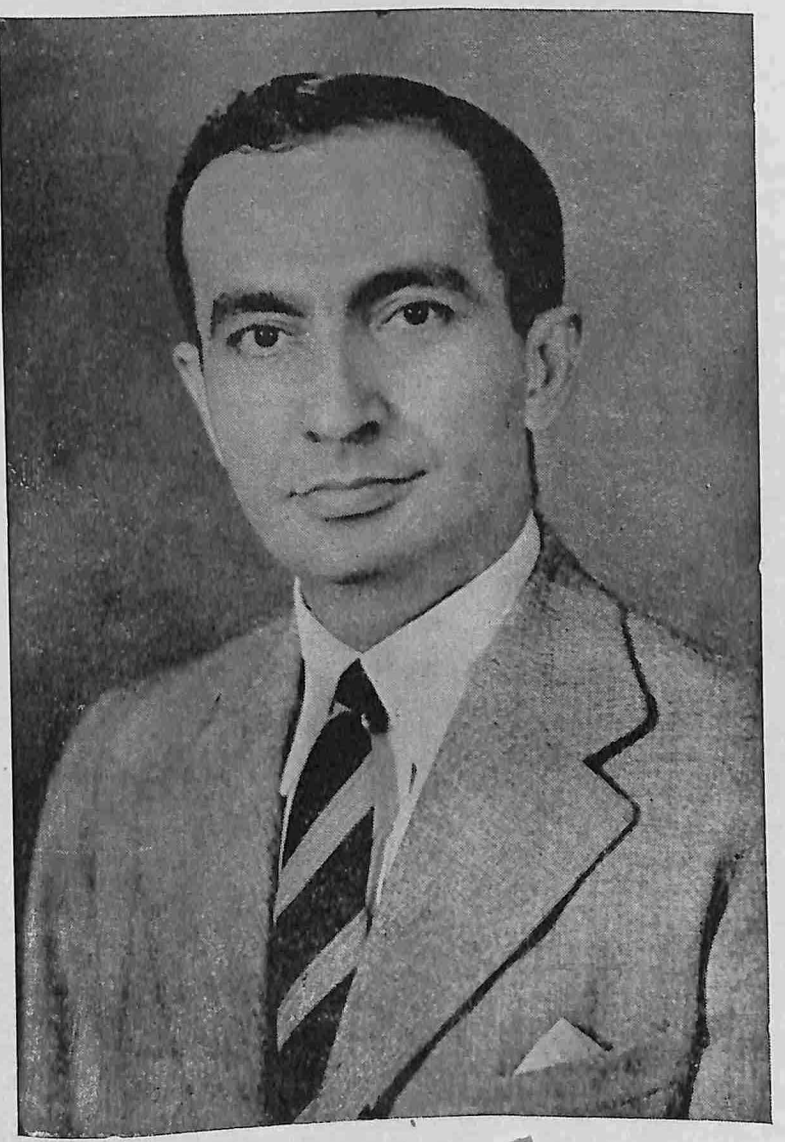
MR. J. H. TARAPORE, B.E., M.I.E.

Chairman, South India Centre.

Gentlemen,

I am sincerely thankful to you for the great honour your committee has conferred on me by electing me Chairman of this centre for the ensuing year. When I considered the responsibilities attached to this office I felt rather diffident at first; but the confidence your committee has placed in me has encouraged me to accept it. It shall be my endeavour to further the interests of our Institution to the best of my ability and I am confident that by your support and the support of your able committee and your energetic Hon. Secretary we shall be able to make substantial progress in the affairs of our centre in the coming year.

Engineers have played a very important part in the progress and advancement of every country, and at the present time they are playing a still greater part. No one will deny that the progress made by the Allies in today's great world war is largely due to the efforts of the Engineers. The allied landing in Normandy in what is called the 'Second Front' had been made possible by the technical skill and ability of the Engineers. A very large scale landing of troops and materials had to be planned and at the same time all existing ports had to be avoided on account of their strong defences. This was achieved by the construction of a prefabricated harbour. A complete port was fabricated in England, towed across the English Channel and assembled in position on the sandy beaches of Normandy. By this magnificent engineering performance a first class port capable of handling about 15,000 tons of supply per day, which would normally require years to construct was erected and put in operation in a few days time.



Mr. J. H. TARAPORE, B.E., M.I.E.
Chairman, South India Centre

In the post-war period, the engineers will again be in great demand. Their services will be required in the reconstruction of the cities destroyed by the barbarity of modern warfare. They will also be required for the reorganisation of industries in order to convert them from war production to peace time requirements.

The industrialisation of our country is essential in order to raise the present very low standard of living of the people. The present war has given a good impetus to it. Indian capitalists are now coming forward to finance industries. Taking advantage of the present opportunities a number of small industries have already started during the last 3 or 4 years and they are all prospering. But we must not form the impression that they are all well established, and running on sound lines. At the present time there are practically no imports and the demand for finished articles far exceeds the supply. But these conditions will not continue long. Soon after the war imports from several countries will start pouring into this country and the point for consideration is how far our production then would be able to stand against the imported products in the Indian market with regard to quality and price.

The Ceramic Factories in Mysore and Travancore are now marketing a large quantity of cups, saucers, plates and other Chinaware; and recently a restricted quantity of British China-ware was permitted into India. Let us compare the two. The Indian product is rather thick and crude whereas the imported variety is vastly superior both in quality and finish. But the most astounding fact is, that the superior imported ware is selling at less than half the price of our indigenous product. This should serve as an eye opener to us as to the future of our industries. We must strive to improve the quality and we must so organise our process as to reduce the cost of production. Unless we are able to offer to the public, articles of fairly good standard at competitive prices, we cannot hope to hold the market. Our aim must be not merely to manufacture an article but to make it marketable. The Engineer has therefore to keep his eyes open and give his careful attention to

every detail and devise ways and means to save labour and materials in the process of manufacture.

India is on the eve of her industrialisation and this is the time to see that it is developed in a planned manner. There are several ways in which government help will be necessary in this planning. Proper control will have to be exercised over the floatation of industrial concerns. If this is not done it is possible that a large number of small mushroom industries will crop up all over the country and will do more harm than good to the industrial development of the country. There is also the danger of foreign firms with no local interest trying to establish themselves and the government has to guard against such exploitation.

However, when large industries are started, it is in our country's interest that we should associate ourselves with leading foreign concerns who are in the line. The association may be either in the form of partnership or we may just pay them Royalty for their technical process and expert supervision. Thereby we can have at our disposal and to our benefit the entire technical knowledge, skill and experience of those established and reputed firms. In any event as long as the controlling interest is in our hands, we need not fear exploitation.

In India there is an acute dearth of technicians and it is essential that side by side with the growth of our industries we must take up the training of our technicians. At present the Government is training a large number of them all over India for war production. These skilled workmen will form the back bone of our industries after the war. This is one of the best ways in which the Government is helping in the industrialisation of the country.

One common source of trouble with some of our industries is that adequate finance is not found before starting them. The result is that owing to inadequate resources, production is hampered and the industry consequently cannot face competition. The concern soon comes to grief and is eventually wound up.

In industrialisation a long sighted policy must be adopted. It is a folly to expect quick returns. A sound business well organised will take some time before it brings in profits, but the result will be certain. The steel industry started by the late Mr. J. N. Tata is an excellent example of industrial foresight and organisation. It took more than a decade before the industry could declare any dividend, but we are happy to see that it stands as India's foremost National Industry.

Having started an industry the responsibilities of the Engineer increases many fold. He has to be ever vigilent and keep himself up-to-date so that the latest developments in process machinery and equipment are regularly introduced in his factory; otherwise it will not take long for us to become obsolete and lag behind. As soon as high speed machines become available we should not hesitate to scrap the older models.

An Engineer to be successful has not only to look to the technical aspect of an industry but he should also possess good administrative ability and some knowledge of business as well. These qualities are lacking in most of our Engineers and this is due to the system of training now existing in our various technical institutions. It is necessary that these subjects are included in the curriculam of studies of our future Engineers.

Although India is an agricultural country it is strange that she is not able to produce even her own requirements of food grains. With the growth of industries in the country some of the man power which is now engaged on agriculture will be drawn by the industries. How then are we going to cope up with our food problem? The only way of doing it is by improving the slow and antequated methods now adopted by the agriculturists. Modern mechanised methods and improved manure and fertilisers are essential in solving the agricultural problems. Thus we will be able to provide food for the ever increasing population of the country.

We have a very ambitious scheme for the development of roads in the country. About 450 crores of rupees are proposed to be spent for the construction and improvement of about 4 lakhs miles of roads in the country. In the past owing to the vastness of the country and subsequently very large expenditure involved, the importance of roads was neglected and the country could not make any progress. But this world war has proved how vital roads are for the development and security of a country and we are glad that this scheme is going to materialise in the near future.

In the post war period we can be certain that mechanical transport will take a very much increasing percentage of traffic over animal transport. For this reason roads must be designed and surfaced for taking faster moving traffic. The problem is therefore not merely of increasing the road mileage but an equally important problem of improving and surfacing of existing roads. In many case surface improvement either by cement concrete or bitumen pays for itself in the long run; but the main problem confronting the Government and public bodies had been the question of meeting the high initial cost. In South India the longest stretch of concrete road is the Trivandrum-Nagercoil road where a continuous stretch of about 45 miles had been concreted in the year 1939-40. This is one of the most heavily trafficked roads in S. India. The cost of concrete surfacing came to Rs. 12 lakhs. Against this capital expenditure there has been a saving to the Government of a little over a lakh of rupees annually by way of reduced road maintenance and saving in tyres and wear and tear of State Transport buses. When the scheme was taken up doubts were expressed whether the Government were justified in spending such a large amount in the mere surface improvement of an existing road. But the actual results of the experiment has by now, more than justified the initial expenditure and schemes are being prepared for the improvements of other important trunk roads.

All the schemes for surface improvement of roads are not likely to prove so remunerative as the one quoted

above; but it has to be noted that there is also an enormous amount of indirect saving in the maintenance of the large number of vehicles owned by the public. This saving is certainly a national wealth and has to be taken into consideration.

The construction of roads, the development of Hydro-electric power and the starting of industries occupying the foremost place in the post war programme of the Government of India indeed augurs a bright future for our country. But the successful accomplishments of these projects lie in the hands of our Engineers. We, as Engineers, have therefore a heavy responsibility.

Gentlemen, our centre is now moving forward. The membership of our centre during the past year has increased from 170 to 231 and more members are now taking part in the activities of the institution. But still it has not the recognition it ought to have from the Government and other bodies. We must strive to raise our institution to the status of our sister institutions in England and the U. S. A. In these countries any question on engineering is invariably referred to their Institution for their opinion and recommendation. We could achieve this, provided we can claim membership from every Engineer who is holding responsible position in this country.

While our activities are increasing we are handicapped for want of suitable premises of our own. Our centre is in urgent need of a building where we could meet not once a month as hitherto but more frequently for holding our discussions and also where we may house our Library. Although there may be delay in the construction of the building owing to war conditions, it is necessary that a suitable site be selected and the necessary preliminaries got ready without delay. I suggest that this be one of the matters the committee should take up this year.

In conclusion, I pray that the Almighty God may shower His blessing on our Institution and may it flourish and may our Engineers play an important part in shaping the destiny of our beloved country.

MEMBERS OF THE COUNCIL
from the SOUTH INDIA CENTRE

1. J. H. Tarapore Esq.,
2. Rao Bahdur P. Venkataramana Raju
3. Prof. V. H. Sadarangani
4. Lt. Col. Dr. K. C. Chacko

MEMBERS OF THE STANDING COMMITTEES OF THE COUNCIL from the SOUTH INDIA CENTRE.

Administrative Committee.

Mr. J. H. Tarapore

Applications Committee.

1. Rao Bahadur C. V. Krishnaswamy Chetty
2. Rao Saheb A. Venkataramanan

Examinations Committee.

1. Lt. Col. Dr. K. C. Chacko
2. Prof. V. H. Sadarangani

Finance Committee.

Mr. B. S. Chetty

Papers Committee.

Civil : Sri K. K. Nambiar
Mechanical : Capt. D. L. Deshpande
Electrical : Sri K. P. P. Menon

Members are requested to inform the Hon. Secretary, immediately of any change in their address or omission of or additions to their qualifications.

K. K. Nambiar,
Hony. Secretary.

Gordon & Co., Ltd., Triplicane, Madras.

COLLEGE OF EN

The Institution of Engineers (India).

ESTABLISHED 1920.

INCORPORATED BY ROYAL CHARTER 1935.

Royal Charter

PUBLISHED BY

THE INSTITUTION OF ENGINEERS (INDIA).

8, Gokhale Road, - Post Box 669, - CALCUTTA.

1936.

Telegrams :
ENJOIND

Telephone :
Pk. 1034.

(24)

AT THE COURT AT BUCKINGHAM PALACE,

The 13th day of August, 1935.

PRESENT,

THE KING'S MOST EXCELLENT MAJESTY IN COUNCIL.

WHEREAS there was this day read at the Board a Report of a Committee of the Lords of His Majesty's Most Honourable Privy Council, dated the 1st day of August, 1935, in the words following, viz. :—

"YOUR MAJESTY having been pleased, by your Order of the 21st day of February, 1935, to refer unto this Committee the humble Petition of Sir Thomas Guthrie Russell, President of the Institution of Engineers (India) and others praying for the grant of a Charter of Incorporation to the said Institution :

"THE LORDS OF THE COMMITTEE, in obedience to Your Majesty's said Order of Reference, have taken the said Petition into consideration, and do this day agree humbly to report, as their opinion, to Your Majesty, that a Charter may be granted by Your Majesty in terms of the Draft hereunto annexed."

HIS MAJESTY, having taken into consideration the said Report, and the Draft Charter accompanying it, was pleased, by and with the advice of His Privy Council, to approve thereof, and to order, as it is hereby ordered, that the Most Honourable the Marquess of Zetland, one of His Majesty's Principal Secretaries of State, do cause a Warrant to be prepared for His Majesty's Royal Signature, for passing under the Great Seal a Charter in conformity with the said Draft, which is hereunto annexed.

E. C. E. Leadbitter.

George the Fifth, by the Grace of God of Great Britain, Ireland and the British Dominions beyond the Seas King, Defender of the Faith, Emperor of India.

To all to whom these Presents shall come, Greeting!

Whereas the Association or Institution incorporated under the Indian Companies Act, 1913, and known as the Institution of Engineers (India) hath petitioned Us for a Charter of Incorporation such as is in and by these Presents granted:

AND WHEREAS We are minded to comply with the prayer of such Petition:

NOW THEREFORE We by virtue of Our Royal Prerogative in that behalf, and of all other powers enabling Us so to do, of Our special grace certain knowledge and mere motion do hereby, for Us, Our Heirs and Successors, will, grant, direct, appoint and declare as follows:—

1. The Persons now Members of the said Association or Institution known as the Institution of Engineers (India) and all such persons as may hereafter become Members of the Body Corporate hereby constituted pursuant to or by virtue of the powers granted by these Presents, and their Successors, shall for ever hereafter (so long as they shall continue to be such Members) be by virtue of these Presents one Body Corporate and Politic by the name of "The Institution of Engineers (India)" and by the same name shall have perpetual succession and a Common Seal, with power to break, alter and make anew the said Seal from time to time at their will and pleasure, and by the same name shall and may sue and be sued in all Courts, and in all manner of actions and suits and shall have power to do all other matters and things incidental or appertaining to a Body Corporate, including power to take and hold personal property and power to purchase, take on lease and hold lands, tenements or hereditaments or any interest in any lands,

tenements or hereditaments whatsoever in our Indian Empire for the purposes of the Institution and power to sell, let on lease, alienate, or otherwise dispose of the same or any part thereof.

2. The objects and purposes for which the Institution of Engineers (India) (hereinafter called "the Institution") is hereby constituted are to promote the general advancement of engineering and engineering science and their application in India and to facilitate the exchange of information and ideas on those subjects amongst the Members of and persons attached to the Institution and otherwise, and for that purpose—

(*a*) To promote and advance the science, practice and business of Engineering in all its branches (hereinafter referred to as "Engineering") in India.

(*b*) To establish, subsidise, promote, form and maintain local Associations of members belonging to the Institution and others engaged or interested in Engineering so as to assure to each individual member as far as may be possible equal opportunity to enjoy the rights and privileges of the Institution.

(*c*) To diffuse among its members information on all matters affecting Engineering and to encourage, assist and extend knowledge and information connected therewith by establishment and promotion of lectures, discussions or correspondence; by the holding of conferences; by the publication of papers, periodicals or journals, books, circulars and maps or other literary undertaking; by encouraging research work; or by the formation of a library or libraries and collection of models, designs, drawings, and other articles of interest in connection with Engineering or otherwise howsoever.

(*d*) To promote the study of Engineering with a view to disseminate the information obtained for facilitating the scientific and economic development of Engineering in India.

(*e*) To establish, acquire, carry on, control or advise with regard to colleges, schools or other educational establishments where students and apprentices may obtain a sound education and training in Engineering on such terms as may be settled by the Institution.

(*f*) To encourage, regulate and elevate the technical and general knowledge of persons engaged in or about to engage in Engineering or in any employment manual or otherwise in connection therewith and with a view thereto to provide for the holding of classes and to test by examination or otherwise the competence of such persons and to institute and establish professorships, studentships, scholarships, rewards and other benefactions and to grant certificates of competency whether under any Act of the Government of India or Local Governments regulating the conduct and qualifications of Engineers or otherwise howsoever.

(*g*) To give the Government of India, the Local Governments and Municipalities and other public bodies and others, facilities for conferring with and ascertaining the views of Engineers as regards matters directly or indirectly affecting Engineering and to confer with the said Governments, Municipalities and other public bodies and others in regard to all matters affecting Engineering.

(*h*) To encourage inventions and investigate and make known their nature and merits.

(*j*) To arrange and promote the adoption of equitable forms of contracts and other documents used in Engineering and to encourage the settlement of disputes by arbitration and to act as or nominate arbitrators and umpires on such terms and in such cases as may seem expedient.

(*k*) To promote efficiency and just and honourable dealing and to suppress malpractice in Engineering.

(*l*) To do all such other acts and things as are incidental or conducive to the attainment of the above objects or any of them.

3. With a view to the better attainment of the objects of the Institution, the Institution shall use its best endeavours to arrange (in so far as not already arranged) the sub-division of India into areas and the establishment of local centres for the members and others of and attached to the Institution who reside or are occupied in those areas and shall from to time prescribe and when desirable alter the boundaries of such areas which shall be regulated in such manner as the Bye-laws for the time being of the Institution shall prescribe.

4. The Institution shall not carry on any trade or business or engage in any transaction with a view to the pecuniary gain or profit of the Members thereof. No Member shall have any personal claim on any property of the Institution and no part of the income or property of the Institution shall be paid or transferred directly or indirectly by way of dividend or bonus or otherwise howsoever by way of profit to the Members of the Institution except in the case of and as a salaried officer of the Institution.

5. There shall be a Council of the Institution consisting of such number of members, with such qualifications, and to be elected or constituted as such Members of Council in such manner, and to hold office for such period, and on such terms as to re-election and otherwise, as the Bye-laws for the time being of the Institution shall direct.

6. Unless and until the Bye-laws for the time being of the Institution shall otherwise direct—

(*a*) The Council at their last meeting prior to the Annual General Meeting of the Institution in each year shall elect from among their number a President for the ensuing year, and the President so elected shall enter into his office at that ensuing Annual

General Meeting and shall be *ex officio* a member of the Council for the ensuing year.

(*b*) Of the members of the Council of the Institution, other than the President, such number as shall coincide with the total number of local centres for the time being of the Institution shall be Vice-Presidents and the said Vice-Presidents shall be the respective Chairmen for the time being of the several local centres of the Institution.

7. The first President of the Institution shall be Colonel Sir Thomas Guthrie Russell, and the first Vice-Presidents shall be Lieutenant-Colonel Alexander Irving Sleigh, V.D., Norman Bruce Macbeth, Rao Bahadur Carnapati Vencata Krishnaswamy Chetty, Alexander Fordyce Harvey and Khan Bahadur Mohammad Abdul Aziz.

The first Members of the Council shall be :—

(*a*) the said President ;

(*b*) the said Vice-Presidents ;

(*c*) the following Past-Presidents of the said Association or Institution, namely :—

Christopher Addams Williams, C.I.E.,
Diwan Bahadur Nuggihalli Narasim Ayyangar,
Raja Jwala Prasad, and
Alexander Jardine, D.Sc.

(*d*) the following members of the said Association or Institution, namely :—

Pritamdas Bhojraj Advani,
Malcolm Ramsay Atkins,
Probhat Nath Banerjee,
Fakirjee Eduljee Bharucha,
Rai Bahadur Mul Chand Bijawat, M.A.,
Sir Maurice William Brayshay,
Henry Burkinshaw,
George William Burley,

Kaiyalat Chakko Chakko,
Dewan Bahadur Kashinath Ramchandra Godbole, C.B.E.,
Edward Joseph Bernal Greenwood,
Frederick Charles Griffin,
Sri Krishna Gurtu, M.A.,
Bertram Lionel Harvey, O.B.E.,
George McCausland Hoey,
Abdul Ghafoor Khan,
Raj Krishna,
Rai Bahadur Makkhan Lal,
Richard Harington Martin,
Narayan Vinayak Modak,
Mohsin Ali,
Rao Bahadur Gopalaswami Nagaratnam Ayyar,
Colonel Sir James Scott Pitkeathly, C.M.G., C.I.E., C.V.O., C.B.E., D.S.O.,
Raj Narain, M.B.E.,
Dewan Bahadur Autoor Vengu Ayyar Ramalinga Ayyar,
Douglas Henry Remfry,
Sir Percy Rothera, O.B.E.,
Colonel Frederick Charles Temple, C.I.E.,
Rai Bahadur Bhagwati Prasada Varma,
Arthur Tom Weston, M.Sc.,
Major George Bransby Williams, J.P., and
Colonel Sir George Henry Willis, C.I.E., M.V.O., R.E.

(e) the following Associate Members of the said Association or Institution, namely :—

Alexander Macdonald,
Birendra Nath Mookerjee,
Radha Lal, and
Raja Ram.

The said President, Vice-Presidents and Members of the Council shall respectively hold office as such until the due

election and coming into office of their successors in accordance with the Bye-laws of the Institution, but shall be respectively eligible, subject to such Bye-laws, for re-election if otherwise qualified.

8. The Institution shall have such Officers, with such functions, tenure and terms of office as the Bye-laws of the Institution may prescribe, and such other Officers and Servants as the Council of the Institution may from time to time appoint. The first Secretary of the Institution shall be Chaitanya Chand Seal.

9. The government and control of the Institution and its affairs shall be vested in the Council subject to the provisions of these Presents and to the Bye-laws for the time being of the Institution. The business of the Council shall be conducted in such manner as the Council may from time to time prescribe.

10. All the powers of the Institution shall be vested in and exercisable by the Council except so far as the same are by these Presents or by the Bye-laws for the time being of the Institution expressly required to be exercised by the Institution in general meeting.

11. Unless and until the Bye-laws of the Institution shall otherwise provide there shall be five classes of Members of the Institution termed respectively Honorary Life Members, Honorary Members, Members, Associate Members and Companions of whom the Members and Associate Members shall be known as Corporate Members and the Honorary Life Members, Honorary Members and Companions shall be known as Non-corporate Members.

The Members of the said existing Association or Institution known as the Institution of Engineers (India) who by virtue of these Presents become Members of the Institution shall be deemed to have entered the Institution as Members of the same class as that to which they belonged in the said existing Association or Institution.

(India) (including the property and moneys (if any) held by them as trustees) shall from the date of these Presents become and be deemed to be the property and moneys of the Institution, and shall, as soon as may be, be formally transferred to the Institution or such person or persons on its behalf as the Bye-laws may prescribe.

22. And We do hereby, for Us, Our Heirs and Successors Grant and Declare that these Our Letters Patent, or the enrolment or exemplification thereof, shall be in all things good, firm, valid and effectual, according to the true intent and meaning of the same, and shall be taken, construed and adjudged in all Our Courts or elsewhere in the most favourable and beneficial sense and for the best advantage of the said Institution, any mis-recital, non-recital, omission, defect, imperfection, matter or thing whatsoever notwithstanding.

In Witness whereof We have caused these Our Letters to be made Patent.

Witness Ourself at Westminster the ninth day of September in the twenty-sixth year of Our Reign.

By Warrant under the King's Sign Manual.

SCHUSTER

SEAL

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THE STATESMAN PRESS,
CALCUTTA.

30