

**SEVENTEENTH
ANNUAL REPORT
1969-70**

9
6

The Institution of Telecommunication Engineers
NEW DELHI

PROGRAMME

VENUE : Mavalankar Auditorium, Rafi Marg, New Delhi-1.

25th January, 1971

- 2-30 P. M. Special General Meeting
2-45 P. M. Annual General (Business) Meeting
3-30 P. M. Tea
4-00 P. M. (a) Arrival of the Chief Guest Dr. V.K.R.V. Rao
(b) Introduction of the new Council Members to the Chief Guest.
4-10 P. M. Inaugural Session :
(a) President's Address Lt. Gen. I.D. Verma
(b) Inaugural Address Dr. V.K.R.V. Rao
(c) Presentation of Awards Dr. V.K.R.V. Rao
(d) Bhabha Memorial Lecture Dr. B.D. Nagchoudhry
(e) Vote of Thanks Shri T.V. Ramamurti
6-15 P. M. Inauguration of Electronics Exhibition

Technical Convention

27th January, 1971

- 10-00 A. M. to 1-00 P. M. Session I Materials and Devices
2-00 P. M. to 5-00 P. M. Session II Comm. Systems

28th January, 1971

- 10-00 A. M. to 1-00 P. M. Session III Circuits
2-00 P. M. to 5-00 P. M. Session IV Industrial and Bio-Medical Electronics

Electronics Exhibition :

The Exhibition of Electronics Component, Instruments and Equipment will remain open from 10-00 A. M. to 7-00 P. M. on 25, 27, 28 January, 1971.

INTRODUCTION

On the occasion of the 17th Annual General Meeting of the Institution, the Council have pleasure in presenting the 17th Annual Report and the Audited statement of Accounts for the year ended on the 30th September, 1970.

Last year the Annual function of the Institution coincided with the XII Plenary Session of the International Radio Consultative Committee (CCIR) held in Vigyan Bhawan, New Delhi. Delegates attending the CCIR conference participated in the Institution annual day activities. Amongst the dignitaries present were Monsieur M. Mili, Secretary-General, International Telecommunication Union, Monsieur J.W. Herbstrett, Director, CCIR, and Senior Councillors—Dr. M. Joachim and Shri N.V. Gadadhar (Member of the Institution), of the CCIR.

Strenuous efforts have been made to get the physical possession of the plot of land on Lodi Road and it is expected that the plot would be handed over early in 1971 as soon as it is developed by the CPWD. M/S. Pradhan & Associates, Architects have been engaged to construct the building. A set of plans has already been drawn up and a perspective view of the proposed building is given in this Report.

This Institution has completed 17 years of its fruitful existence in achieving its aims and objectives, upholding professional standards, assisting the student members to qualify as Graduates in Telecommunication engineering, encouraging Research workers through the media of the Journals and conducting Symposia to discuss matters of immediate concern to the electronics and telecommunication field.

The Journal of the Institution has published 111 papers. The get up and the size of the Journal are being changed from this month with a coloured photograph on the front cover. The Editorial Committee is actively considering further changes in the text of the Journal to make it more popular amongst the members and general readers.

Additional Local Centres at Jaipur, Lucknow, Trivandrum and Visakhapatnam have been set up in addition to the existing ones at Bangalore, Bombay, Calcutta, Jabalpur and Madras which were quite active during the year. The Bangalore Centre was set up as a full time Local Centre last year and the Council is happy to report that the Calcutta Local Centre has now been upgraded to a full time Local Centre. The Council wish to express its sincere gratitude to the Honorary office bearers at Headquarters and at Local Centres for their selfless and untiring efforts contributing towards the success in manifold and varied activities of the Institution.

This Institution was no exception in sharing the impact caused by the downward trend in the Engineering field during the period under review, resulting in a decline in the income from the Examination fees. There has also been an increase in the expenditure in view of the rising cost of paper and printing of the Journal, as well as increased establishment charges at Headquarters and the Bangalore Centre. This has resulted in excess of expenditure of Rs. 22,000/- over the Income during the year. Necessary steps have been taken to restrict the expenses during the year 1970-71,

PART—I

THE COUNCIL—1970

President

Lt. Gen. I.D. Verma

Immediate Past Presidents

Shri S. K. Kanjilal

Air-Vice Marshal K. A. Joseph

Dr. P. K. Kapre

Vice-Presidents

Shri T. V. Ramamurti

Dr. Saroj Datta

Brig. S. L. Juneja

Honorary Treasurer

Shri B. S. Rau

Secretary

Lt. Col. H. K. Ranji (Retd.)

Staff & Finance Committee

Lt. Gen. I. D. Verma (*Chairman*)

Dr. Saroj Datta

Air-Vice-Marshal K. A. Joseph

Brig. S. L. Juneja

Shri S. K. Kanjilal

Dr. P. K. Kapre

Shri T. V. Ramamurti

Shri B. S. Rau

Shri S. Thiruvenkatachari

Building Committee

Dr. P. K. Kapre (*Chairman*)

Shri S. S. Aiyar

Lt. Gen. R. N. Batra

Brig. S. L. Juneja

Shri S. K. Kanjilal

Lt. Gen. I. D. Verma

Membership Committee

Dr. Saroj Datta (*Chairman*)

Lt. Gen. R. N. Batra

Shri Jagdeesh Prasad

Shri H. J. Mirchandani

Shri B. S. Rau

Brig. D. Swaroop

Library Committee

Brig. D. Swaroop (*Chairman*)

Shri S. M. Agarwal

Lt. Col. J. C. Anand

Brig. N. A. Patil

Shri T. V. Srirangan

Examination Committee

Shri T. V. Ramamurti (*Chairman*)
Lt. Col. J. C. Anand
Dr. Saroj Datta
Lt. Col. V. S. Ramanand
Shri B. S. Rau
Miss B. H. Shanta

Editorial Committee

Brig. S. L. Juneja (*Chairman*)
Lt. Col. J. C. Anand
Brig. N. A. Patil
Lt. Col. V. S. Ramanand
Miss B. H. Shanta
Shri T. V. Srirangan
Shri N. Balasundaram
Shri S. N. Mitra

Students Activity Committee

Lt. Col. J. C. Anand (*Chairman*)
Lt. Col. K. Balasubramaniam
Miss B. H. Shanta
Shri T. V. Srirangan

ITE Awards Committee

Dr. Saroj Datta (*Chairman*)
Shri C. A. Cornelius
Shri H. J. Mirchandani
Sari T. V. Ramamurti
Brig. D. Swaroop
Shri S. N. Mitra

The following members retired this year :—

1. Shri S. M. Agarwal
2. Dr. P. K. Kapre (*as Past President*)
3. Shri S. N. Ranganathan
4. Shri B. S. Rau
5. Shri Uma Shanker
6. Shri N. V. Sheno

The following members have duly been elected in accordance with Bye-laws 39 and 44 :—

1. Dr. P. V. Indiresan
2. Dr. P. K. Kapre
3. Brig. K. K. Mehta
4. Shri G. U. Menon
5. Dr. G. R. Toshniwal
6. Dr. Lal C. Verman

The Council wishes to place on record its deep appreciation for the services rendered by the retiring members while welcoming the new members to the Council for the year 1971.

The Council for 1971 is as under :

1. Lt. Gen. I. D. Verma (*President*)—Second Term
2. Shri S. S. Aiyar
3. Lt. Col. J. C. Anand
4. Lt. Gen. R. N. Batra, PVSM (*Retd.*)

5. Shri C. A. Cornelius
6. Dr. Saroj Datta
7. Dr. P. V. Indiresan
8. Air Vice-Marshal K. A. Joseph (*Retd.*),
9. Brig. S. L. Juneja
10. Dr. P. K. Kapre
11. Shri S. K. Kanjilal
12. Brig. K. K. Mehta
13. Shri G. U. Menon
14. Shri H. J. Mirchandani
15. Shri S. N. Mitra (*Vice Lt. Col. K. Balasubramaniam resigned*)
16. Air Vice-Marshal K. Narasimhan (*Vice Miss B. H. Shanta resigned*)
17. Brig. N. A. Patil
18. Shri Jagdeesh Prasad
19. Shri T. V. Ramamurti
20. Lt. Col. V. S. Ramanand
21. Shri T. V. Srirangan
22. Brig. D. Swaroop
23. Dr. G. R. Toshniwal
24. Dr. Lal C. Verman

MEMBERSHIP

The Membership of the Institution continues to have the following eight categories :—

- (a) Honorary Fellows (HF)
- (b) Fellows (F)
- (c) Members (M)
- (d) Associate Members (AM)
- (e) Associates (A)
- (f) Graduates (G)
- (g) Students (S)
- (h) Sustaining Members (SM)

Changes in membership during the year 1969-70 are reflected in the following table :

	<i>H.F.</i>	<i>F.</i>	<i>M.</i>	<i>A.M.</i>	<i>A.</i>	<i>S.M</i>	<i>G.</i>	<i>S.</i>	<i>Total</i>
Total as on 30.9.69.	6	20	88	446	18	18	978	4429	6003
ADD									
Elected/joined	...	1	2	66	1	5	195	1164	1434
Re-instated	...	...	...	...	...	...	180	418	598
Transferred to	...	...	14	60	...	...	476	...	550
Total	6	21	104	572	19	23	1829	6011	8585
LESS									
Transferred from	...	...	1	14	3	...	56	477	551
Written off	...	...	...	4	6	...	5	38	53
Resigned	...	...	...	1	1	...	2	2	6
Deceased	1	...	1	2	...	...	...	1	5
Net total as on 30.9.70	5	21	102	551	9	23	1766	5493	7970

The total membership as on 30th September, 1970 stood at 7970 showing an increase of 1967 members. The list of Corporate members of the Institution is given in Part II of this Report.

During the year under review, the Membership Committee recommended to the Council for acceptance of 1983 applications for membership including transfer to higher categories. Of this 153 were for Corporate membership, one for Associateship, 583 Graduates and 1246 for Students.

The Council is thankful to Public and Private Industries, Technical Laboratories, Engineering Institutions and Colleges for their kind and valued support, and it is hoped that majority of the electronics engineers from the above institutions/departments would become members of the Institution in increasing numbers.

Members are requested to pay their membership subscription regularly, latest by the 31st December as per Byelaw (28) every year, to avoid any break in the regular issue of the Journal. Members may also intimate any change in their qualifications/address/rank to the Secretary so that Secretariat records are kept to-date.

Life Membership :

Members who are nearing 55 years are eligible to become Life Members on payment of a lump sum amount. The Secretary may be contacted for further clarifications. Details are given on page 21.

Election of Fellow :

The Council takes great pleasure in announcing the election of Dr. Saroj Datta, Director of Communications, Civil Aviation Department, a distinguished member of the Institution as well as of the profession, as Fellow of the Institution.

Awards :

The Council is happy to note and offers its congratulations to the following members of the Institution who have been honoured with the Awards as under :

- | | | |
|---|-----|---|
| 1. Prof. B. Ramachandra Rao
(11081-M) | ... | Shanti Swaroop Bhatnagar
Memorial Award for 1965 |
| 2. Shri Yadav Ram Kulshrestha
(429-AM) | ... | Rs. 2,000/- Republic Day
Award |
| 3. Dr. V.P. Kulkarni
(11061-AM) | ... | Rs. 2,000/- Republic Day
Award |
| 4. Lt. Cdr. U.K. Pisharody
(11672-AM) | ... | Vishist Seva Medal —
Republic Day |
| 5. Shri S.S. Murthy
(4861-G) | ... | Rs. 500/- P & T Award. |

OBITUARY

The Council records with profound regret the sad demise of the following members of the Institution :

- | | |
|---------------------------|--------------------|
| (a) Shri S.R. Kantabet | (Honorary Fellow) |
| (b) Shri P.S.M. Sundaram | (Member) |
| (c) Shri A.P. Kulshrestha | (Associate Member) |
| (d) Shri M.V. Pai | (Associate Member) |

The Council extends its sincere and heartfelt sympathies to the bereaved families.

EXAMINATION

Student members would be happy to know that the Council has decided to reduce pass percentage of marks in one single paper to claim exemption from future examinations from 65% to 55%, other conditions remaining the same (Regulation 16). This would come into force from the November, 1970 examination.

The result sheet will now contain marks obtained in respective subject and it will be sent to all candidates on the declaration of the result. A consolidated marks list will also be issued alongwith the Graduate membership certificate to those who have completed the examinations and transferred to the Graduateship.

To introduce a sense of cost consciousness among the budding engineers, a paper on "Engineering Costing and Cost Accountancy" will be introduced from the May-1972 Grad. I.T.E. Examination, as a compulsory subject, in addition to two elective subjects of the Section 'B'.

With the addition of 3 more new examination centres at Bhopal, Patna and Roorkee, the number of examination centres is now 21 spread all over India. The examinations are now conducted at Agra, Ahmedabad, Bangalore, Bhopal, Bombay, Calcutta, Chandigarh, Delhi, Ernakulam, Gauhati, Hyderabad, Jabalpur, Jaipur, Jammu, Lucknow, Madras, Nagpur, Patna, Poona, Roorkee and Trivandrum. In the November, 1969 examination, 2039 candidates appeared out of which 249 Graduated. Similarly in May, 1970, number of candidates appeared were 1942 with 169 candidates completing the examination.

The Council is grateful to the Chairmen and Hon. Secretaries of all the Local Centres as well as heads of various Colleges, Universities, Technical Institutions and members of the faculty for their cooperation and facilities extended to the Institution in successfully conducting the examinations.

STUDENTSHIP AWARD

In the year 1963, the Council instituted a Studentship award of the value of Rs. 100/- to a candidate who secures the highest percentage of marks in both the papers of Section 'B' in one attempt and thus completing the Grad. I.T.E. Examination.

The Council congratulates Shri Jayaprakash Agarwal and Shri Sadhu Godwin Vijay Kumar the recipients of the Studentship awards for the November, 1969 and May, 1970 examinations respectively.

From the year 1969, another award entitled "SUBRAHMANIAN THYAGARAJA PRIZE" of the value of Rs. 50/- approximately has been instituted. This will be given in the form of books to a candidate who secures the highest percentage of marks and completes all papers of Section 'A' in one calendar year. No candidate was declared eligible for receiving the above award for the year 1969.

JOURNAL

The Institution publishes two Journals as under :—

- (a) Journal of the Institution of Telecommunication Engineers (JITE) ;
- (b) Students' Journal (SJ)

Journal (JITE)

The Journal of the Institution, a monthly magazine publishes papers on research observations and development carried out in the field of electronics and telecommunications. The first Journal was issued in March, 1955 as a quarterly edition. In December, 1959 it was made a bi-monthly publication. Since July, 1963, it is being issued monthly. From the January—71 issue of the Journal, the size has been increased to 21×29.5 cms (standard size) and will contain a colour photograph on the front cover. Titles of papers published in the Journal during the year under review are given at Appendix.

Students' Journal (SJ)

Since December, 1959 the Institution has been publishing Students Journal which is a quarterly publication. The main purpose of this Journal is to acquaint Student members with the latest developments in the field of electronics as well as to help them in supplementing their studies for appearing in the Grad. ITE Examination. The popularity of the magazine is evident from the fact that a large number of persons other than the students are regularly subscribing to it. Specialists in the Telecommunication and allied fields are constantly invited to contribute papers to enable student members to get the benefit of their knowledge.

I.T.E. AWARDS

The Institution has instituted the following awards in order to encourage the members and other personnel in contributing articles of original work undertaken by them.

Journal of the Institution of Telecommunication Engineers

- | | |
|---|-----------|
| 1. Named Prof. S. K. Mitra Memorial Award from 1964 | Rs. 500/- |
| 2. Named Prof. J.C. Bose Memorial Award from 1968 | Rs. 250/- |
| 3. Named Prof. Megnad Saha Memorial Award from 1968 | Rs. 250/- |

Students' Journal

- | | |
|---|-----------|
| 1. ITE (Students) Award I from 1965 | Rs. 200/- |
| 2. ITE (Students) Award II (to a student contributor who submits the best article which should be of award standard). | Rs. 100/- |

The following personnel have won the awards as under during the year 1968 :

S. K. Mitra Memorial Award

Shri G. S. Sidhu, Shri Davinder Singh & Dr. Amarjit Singh for their paper on 'Development of Coaxial 5 KW Triode' published in the October-68 issue.

J. C. Bose Memorial Award

Prof. G. S. Sanyal & Shri Mahendra Singh for their paper on 'Fresnel Zone Plate Antenna' published in the June-68 issue.

Megnad Saha Memorial Award

Col. S. Mishra & Shri K. B. Mahajan for their paper on 'Staggered Modulation in Beam Riding Guidance' published in the May-68 issue.

ITE (Students) Award I

Dr. B. Chatterjee for his paper on "A. C. Control Motors" in June-1968 issue.

ITE (Students) Award II

None qualified for this award.

THE LIBRARY

The Library of the Institution which has a good selection of books on varied subjects of electronics was well patronised during the year being located at a central place. The Council has sanctioned adequate funds to Local Centres for buying books specially for helping the Student members who are appearing for the Graduateship Examination.

The Library is kept open on week days except Tuesdays from 1.00 P.M.—8.00 P.M. and on Sundays from 10.00 A.M. —5.00 P.M.

LOCAL CENTRES

Local Centres provide the medium through which the Institution serves the members locally residing at different parts of the country in furtherance of its aims and objectives. The Institution has a full time Local Centre at Bangalore and Calcutta besides its branches at Bombay, Jabalpur, & Madras. Four more new centres have been opened during the year under review. They are Jaipur, Lucknow, Trivandrum and Visakhapatnam.

The Centres have organised lectures on current topics and arranged interesting programmes. The details of their activities are given in succeeding paragraphs.

Bangalore

Chairman	.....	Brig. S.K. Malhotra
Honorary Secretary	.....	Lt. Col. M.S. Nagarajan

The following lectures were arranged by the Centre during the year :

Prof. R.S. Krishnan of Indian Institute of Science, Bangalore gave a talk on 'Quantum electronics' on 15 January, 1970.

Prof. V.S. Venkatasubramanian of Indian Institute of Science, Bangalore gave a talk on 'Quantum mechanical principles' on 19 February, 1970.

Shri A.N. Karve of Chief Inspectorate of Electronics, Bangalore gave a talk on 'Time and frequency standard' on 28 February, 1970.

Shri A. Ramakrishna Sastry of Indian Institute of Science gave a talk on 'Satellite Radio relays' on 14 & 15 March, 1970.

Prof. S. Narayana of Indian Institute of Science, Bangalore gave a talk on 'Non-linear optical effects' on 19 March, 1970.

Prof. Thomas Kailath, visiting Professor to Indian Institute of Science, Bangalore gave a talk on 'A survey feedback communication system' on 16 March, 1970.

Dr. R. Srinivasan of Indian Institute of Science, Bangalore gave a talk on 'Materials for solid state masers and lasers' on 16 April, 1970.

Dr. J. Ramakrishna of Indian Institute of Science, Bangalore gave a talk on 'Elements of quantum electronics' on 18 June, 1970.

Prof. S.K. Chatterjee of Indian Institute of Science, Bangalore gave a talk on 'Optical Communication' on 16 July, 1970.

Prof. G. Suryan of Indian Institute of Science, Bangalore gave a talk on 'Semiconductor Laser' on 17 September, 1970.

Students Chapter (Bangalore)

Prof. S.K. Chatterjee of the Indian Institute of Science, Bangalore gave a talk on 'Propagation of laser beams' on 21 May, 1970.

Shri G. Narendra Nath of CIL, Bangalore gave a talk on 'Instrument Landing System' on 25 May, 1970.

A lecture course on 'High Power Semiconductor Electronics' was conducted during the period 11-13 May, 1970 at the Indian Institute of Science, Bangalore.

Shri L.G. Varadarajan of Indian Telephone Industries Ltd., Bangalore gave a talk on 'Automatic Telephone Exchanges' on 3 & 4 July, 1970.

Mr. Joseph Sathyaraju of L.R.D.E., Bangalore gave a talk on 'Voice frequency Telegraphy' on 27 July, 1970.

Shri H. Ramakrishna of Bharat Electronics Ltd., Bangalore gave a talk on 'Radio Telephony' on 28 July, 1970.

Shri M.A. Narasimhan of I.T.I., Bangalore gave a talk on 'Multiplexing Systems' on 18 September, 1970.

Shri M.D. Santhanam of I.T.I., Bangalore gave a talk on 'Microwave System' on 19 September, 1970.

A four day lecture course on Operating principles, current trends and applications of 'Digital Computers' was held during 21-24 Sep. 1970.

A technical talk competition for ITE members (Grds. & Students) was held on 19 July 1970. In the month of August 1970 the technical essay competition was held.

Lt. Col. J. C. Anand, Chairman, Student Activity Committee visited the Centre on 24 June 1970. At an informal get-together with the Student Chapter members, certain points of mutual interest for the benefit of student community as well as the Institution were discussed.

On 19 April, 1970 a symposium on 'What do we expect from young Electronic Engineering Graduates' was held at LRDE Teletorium. Mr. M. Govinda Reddy, Chairman of M/s Bharat Electronics Ltd., presided. The following points were covered during the course of speeches : (a) Theoretical background ; (b) Practical training ; (c) inplant training ; (d) management training ; (e) manpower dynamics ; (f) any revision and reorientation of existing academic structure.

Lt. Gen. I. D. Verma, President of the Institution visited the Centre on 31 March 1970. He had an informal get-together with the students. In his-brief speech, he commended the progress made by them.

The Annual Day Celebration for 1969 was held on 15 November 1969 when his Excellency Shri Dharma Vira, Governor of Mysore, the Chief Guest inaugurated the function.

Calcutta

Chairman

...

Brig. K. D. Bhasin

A. B. Bhattacharya (after transfer of Brig. Bhasin)

Honorary Secretary

...

Shri S. C. Mishra

A lecture talk on 'Analytical Design and Optimization of Control System' by Dr. J. K. Sen of Bengal Engineering College, Shibpur was held on 16 Apr. 1970.

The Annual General Meeting of this Centre was held on 10, 11 & 12 October 1969 with Lt. Gen. I. D. Verma, President of the Institution as Chief Guest. On this occasion an exhibition of Telecommunication and Electronic equipment was also held.

A seminar was held on 11 & 12 October 1969 at which 16 technical papers were presented by eminent scientists and technologists on 'Electronic Measurements' & 'Long distance Communication'.

Jaipur

Chairman ———Prof. V. L. Talekar
Honorary Secretary ———Dr. Mangal Sain

Prof. L. K. Swamy of Subodh College delivered 20 lectures in Mathematics for the benefit of Students of ITE appearing in the November Examination.

Madras

Chairman ———Prof. K. S. Hegde
Honorary Secretary ———Prof. N. M. Janardhan

Prof. Harry Spitzbardt of the German Democratic Republic gave a talk on 'Computational Linguistics' on 22 October 1969.

Visakhapatnam

Chairman ———Prof. B. Ramachandra Rao
Honorary Secretary ———Dr. P. Sitaramaswamy

Shri L. Bullayya, Vice-Chancellor, Andhra University, inaugurated the Local Centre at Waltair on 5th June 1970. On the same day, Prof. B. A. P. Tantry of Banaras University, gave a lecture on "Theory and Application of Tunnel diodes".

On 29th July 1970, Lt. Cdr. B. R. Patwari of Indian Navy, gave a lecture on "Naval Satellite Communication".

Delhi

The First Technical Symposium on Computer Technology and Electronic Instrumentation of the Institution of Telecommunication Engineers was held on the 11 and 12 October 1969 at the India International Centre, New Delhi. About 28 papers were selected for presentation at the above symposium. Prof. R. Narasimhan, Director, Tata Institute of Fundamental Research, Bombay and Dr. G. R. Toshniwal, Chairman, Toshniwal Industries Pvt., Ajmer, very kindly accepted our invitation to be the Chairman of the Computer Technology and Electronic Instrumentation sessions respectively on both the days. Dr. B. D. Nag

Choudhury, the then Member (Science), Planning Commission, New Delhi, inaugurated the Symposium.

The following lectures were held during the year under review :

Dr. P. S. Satsangi of Indian Institute of Tehnology, Delhi gave a talk on 'Engineering Systems Modelling Techniques' on 29 October 1969 under the Chairmanship of Shri J.D. Malhotra, Director, Railway Board, Ministry of Railways, New Delhi.

Dr. G. S. Kent of the University of West Indies, Jamiaica gave a talk on 'Laser studies of the upper atmosphere' on 27 Nov. 1969 under the Chairmanship of Dr. C. S. G. K. Setty. Dept. of Physics & Astrophysics, University of Delhi, Delhi.

Mr. W. J. Cheetham, Chief Engineer, Protection Engineering Department, G. E. C. Measurements Ltd., Stafford, U. K. gave a talk on 'Recent developments in protection of power plats and systems' on 5 December 1969 under the Chairmanship of Mr. A. K. Ghose, Vice-Chairman, C. W. P. C., New Delhi.

Prof. S. V. C. Aiya, Director, National Council of Educational Research & Training gave a talk on 'Electronics for language learning in India' on 10 December, 1969 under the Chairmanship of Dr. Saroj Datta, Director of Communications, Civil Aviation Department, New Delhi.

Dr. W. J. Philips, Head of RF System Divisions, BBC, London gave a talk on 'Uses of satellite for television distribution and broadcasting' on 4 February, 1970 under the Chairmanship of Shri S. S. Aiyar, Chief Engineer, All India Radio, New Delhi.

Mr. G. Millington, Senior Consultant, Marconi Research Laboratories London gave a talk on 'An engineering survey of ground wave propagation' on 6 February, 1970 under thhe Chairmanship of Shri S. N. Mitra, Director, Tehnical Laboratories, Ministry of Home Affairs, New Delhi.

Dr. J. K. Sinha, Asst. Director, Solidstate Physics Laboratory, Delhi gave a talk on 'Semiconductor memories' on 6 March 1970.

Dr. John Brown of Imperial College of Science & Technology, London gave a talk on 'Aerials, Old and New' on 8 April 1970 under the Chairmanship of Dr. Saroj Datta, Director of Communications, Civil Aviation Department, New Delhi.

Dr. Thomas Kailath of Standford University, USA gave a talk on 'Some aspects of Information theory' on 16 April 1970 under the Chairmanship of Prof. Ramachandran, Member UPSC.

Dr. Ing. Fritz Sippl of A. K. G., Vienna gave a talk on 'Recent advances in the technology of microphones and headphones' on 16 June 1970 under the Chairmanship of Shri S. Thiruvengkatachari, Addl. Chief Engineer, All India Radio, New Delhi.

BUILDING

The plot of land measuring 1200 sq. yds. is expected to be physically handed over to the Institution early 1971 as soon as the land earmarked for various Institutions on the Lodi Road is developed by the C. P. W. D. The Council, after considering blue prints submitted by reputed architects, selected M/s. Pradhan & Associates, to construct the Institution Building. Plans have been drawn up including an Auditorium with a seating capacity of 400 persons, a library, lecture/examination halls and an adequate number of rooms for administrative offices bearing in mind sufficient space for expansion. A perspective view of the proposed building is given alongside. The building alone is expected to cost around Rs. 6½ lacs and the fittings/fixtures, furniture and air-conditioning another Rs. 4 lacs. Efforts are being made to obtain substantial help from the Government of India and donations from reputed firms in the electronics field. The Council is confident that the members of the Institution would actively participate in realising the dream of having an ideal building of its own for the Institution and come forward not only with ideas to raise funds but also generously contribute to the Building Fund. Donations from Rs. 250 to Rs. 2 lacs will be exempted for the purposes of Income-Tax at the hand of the donor, under Section 80-b (5) of the Income-Tax Act, 1961.

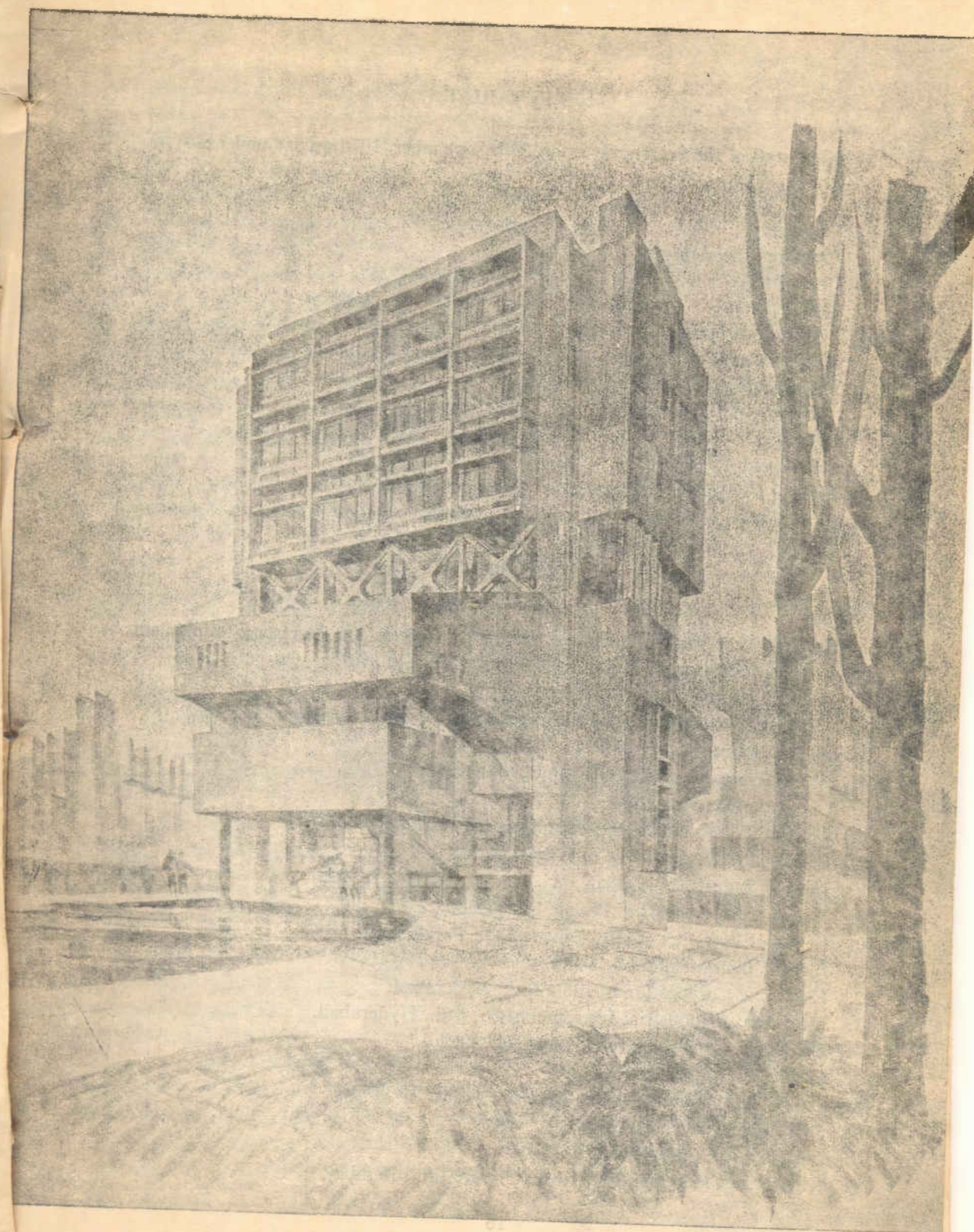
ACCOUNTS

The Institution Funds and Auditors' Report

The Auditors' Report and the Statement of Accounts are given in Part-III.

The finances of the Institution are sound with assets totalling over Rs. 8 lakhs. Constant efforts made by the Secretariat have resulted in the realization of about Rs. 7,000/- from the amount written off during the earlier years as bad debts, and over Rs. 1, 33,000/- as membership subscription during the year. There was a decline in the Income from the examination fees by nearly Rs. 42,000/- and coupled with the increase in the expenditure in respect of the Journal and establishments at Delhi and Bangalore, it has resulted in the excess of expenditure of nearly Rs. 22,000/- over income during the year. Adequate steps have been taken to reduce the expenditure on all items including the Secretariat staff.

The Institution funds have been invested in fixed Deposits with Scheduled banks. Interest on fixed deposits has been separately shown for the Building Fund (Balance sheet) and the Surplus fund (Income and Expenditure Account).



Proposed I.T.E. Building

SECRETARIAT

The staff of the Secretariat as on 30th September, 1970 was as under :—

	Estt.	Held.
Secretary	1	1
Assistant Secretary	2	2
P.A./Steno	1	1
Librarian	1	1
Office Assistants	4	3
Clerks Grade-I	4	4
Clerks-Grade-II	9	8
Daftry-cum-Operator	1	1
Peons	4	4
Sweeper	1	1

EXHIBITION

The following firms participated in the Exhibition of Electronic equipment held in Vigyan Bhawan, New Delhi-11 during 23-28 Jan. 70.

1. Asian Electronics Ltd., Bombay.
2. Associated Instrument Manufacturers India Private Ltd., New Delhi-1.
3. Audio Centre, Delhi.
4. Bharat Electronics Ltd., Bangalore.
5. Chena Corporatton, Delhi.
6. Central Electronics Engineering Research Institute, Pilani.
7. Continental Device India Ltd., Faridabad.
8. Darbari Industries, Allahabad.
9. Delton Cable Industries Private Ltd., Delhi.
10. Eastern Electronics (Delhi) Private Ltd., Faridabad.
11. Electric Instrumentation, Delhi.
12. Electronic Corporation of India Ltd., Hyderabad.
13. Electronic & Industrial Instruments Co. Ltd., Hyderabad.
14. Electronic Computers India Ltd., New Delhi.
15. Golden Industries, Delhi.
16. Indian Telephone Industries Ltd., Bangalore.
17. J. K. Television, New Delhi.
18. Jain Radio Works, Delhi.
19. Khandelwal Hermann Electronics Private Ltd., Bombay.

20. M. C. Engineering Co., New Delhi.
21. Mulchandani Electrical and Radio Industries Ltd., Bombay.
22. National Physical Laboratory, New Delhi.
23. National Radio & Electronics Co. Ltd., Bombay.
24. Philips India Ltd., Bombay
25. Polestar Electronics Private Ltd., Bombay.
26. Stead Electronics.
27. Solidstate Physics Laboratory, Delhi.
28. Telered Private Ltd., Bombay.
29. Telefunken India Ltd., New Delhi.
30. Toshniwal Brothers Private Ltd., New Delhi.
31. Varicon Private Ltd., Hyderabad.
31. Victory Television Private Ltd., New Delhi.
32. Waco Radio & Electronic Industries, Bombay.

The Council wishes to thank all the above Industries and Research Laboratories for readily responding to our call in setting up a successful exhibition.

**MINUTES OF THE 1ST(70) SPECIAL GENERAL MEETING OF THE
INSTITUTION HELD AT 16-30 HOURS ON 23 JANUARY, 1970
AT VIGYAN BHAWAN, NEW DELHI**

Shri S. K. Kanjilal, President of the Institution was in the Chair

ITEM-1. Consideration of the Amendment To BYE-LAW 24

After confirming that the quorum was formed, the President conducted the proceedings at 16-50 Aours.

Lt. Gen. Verma proposed that the existing Bye-law 24 as amended in the circular be adopted. This was seconded by Dr. Kapre.

Shri S. N. Mitra, formally opposed the adoption of the amendment of Bye-law 24 and was seconded by Shri K. R. K. Iyengar. Shri Mitra stated that the financial position of the Institution was quite sound and there was no urgency to raise the fees at this stage. Further, as far as his knowledge goes, other Institutions have not raised their membership fees. The President stated that, in fact, this suggestion was originally mooted by the Students' Chapter, Bangalore to raise the Students' fee from Rs. 12/- to Rs. 15/- so that the Institution could be in a position to afford more facilities to Students in all the Centres in providing libraries, purchase of text-books and holding of seminars specially for the Students. The

Council had considered this suggestion and felt that taking everything into account, it would be desirable to make an all round increase in the membership fee and not for the student members only. Secondly, he felt that financial resources should be conserved for the construction of the Building of the Institution as the Government had now allotted a plot of land. Shri Mitra, however, argued that if the membership fees were increased, there might be a fall in the membership growth which would adversely affect expected income from the members. He further suggested that instead of increasing membership fees, the Council might consider increase in examination fees as a possible fall in membership fees, as stated by him earlier, would consequently reduce income from the students appearing in the Examination, as only student members could appear in this examination. A representative of the Bangalore Students' Chapter was, however, of the opinion that if more facilities were made available to students and additional Students' Chapters organized, more students would be attracted to join the Institution.

Gen. Batra was fully convinced that adoption of the amendment to the Bye-law 24 was in the best interest of the Institution as it would make it possible for the Institution to provide better facilities to all the members and to open new local Centres which have been necessitated in view of the rapid growth of Electronic Industries in the country.

After considerable discussion the two proposals were put to vote by show of hands. There were 21 in favour of adoption of the amendment and 15 against, with 6 abstentions out of a total quorum of 42. The President, announced that the existing Bye-law 24 stood amended as under :—

“The following annual subscriptions shall be payable by the members of the Institution :

Honorary Fellows	Nil
Fellows	Rs. 75/-
Members	Rs. 75/-
Associate members	Rs. 50/-
Associates	Rs. 50/-
Graduates	Rs. 30/-
Students	Rs. 15/-
Sustaining members	Rs. 250/-

Sd/-

(H. K. Ranji)

Secretary

13 February, 1970

**MINUTES OF THE 16TH ANNUAL GENERAL (BUSINESS) MEETING
OF THE INSTITUTION OF TELECOMMUNICATION ENGINEERS
HELD AT 17. 05 HOURS ON 23 JANUARY 1970 AT VIGYAN
BHAWAN MAULANA AZAD ROAD, NEW, DELHI-11**

Shri S. K. Kanjilal, President of the Institution was in the Chair

ITEM—1. Confirmation of the Minutes of the 15th Annual General Meeting.

After confirming that the quorum was formed, the President conducted the proceedings at 17-10 Hours.

Minutes of the 15th Annual General (Business) meeting were taken to have been read as already circulated.

Shri B. S. Rau proposed that the minutes be confirmed. Lt. Col. J. C. Anand seconded the proposal and the minutes of the 15th Annual General (Business) Meeting were confirmed unanimously.

ITEM—2. Consideration and Confirmation of the 16th Annual Report and Audited Statement of Accounts for the Year 1968-69 (Year ended on 30th September, 1969.)

The 16th Annual Report and the Audited Statement of Accounts which were circulated to the members were taken as read.

Lt. Gen. Batra proposed duly seconded by Lt. Col. Ramanand that the 16th Annual Report and the Audited Statement of Accounts for the year ending on 30th September, 1969 be adopted and passed.

Shri Balasundaram, while appreciating the efforts of the council in ensuring issue of the Annual Report a week in advance to the members, brought to their notice the following points :

(a) In the income and expenditure statement of account, excess of Income over expenditure for this year was nearly Rs. 3,535/- as against Rs. 67, 066/- indicating that the profit had declined considerably.

(b) Interest received on fixed deposits and investments of nearly Rs. 5.8 lakhs was shown as Rs. 19, 802 which in his opinion, was very much less and suggested that steps should be taken to invest properly.

Dr. Kapre also felt that the interest shown in the income for Rs. 19, 802/- on fixed deposits and investments was very much less.

(c) The Annual Report should contain full speeches of the Inaugural session of the Annual General Meeting.

(d) He was critical of the Journal which had not changed for over a number of years in its presentation : he suggested that an editorial should be included in every issue to focus on topic of the day in its columns.

The above points were clarified by the Secretary as under :—

The income from the membership dues as shown in the statement accounts had declined from Rs. 1, 32, 663/- to Rs. 1, 08, 306/- as the names of those Graduate and Student members who had not paid by 30th September, 1969 had been struck off from the rolls and their membership fees receivable were not included as already explained on page 7 of the Annual Report.

Further, the salary paid to the Secretary during the year was Rs. 20, 047/- as against Rs. 8, 719 in the previous year.

Simultaneously, the expenditure on the local centres had increased in view of the Bangalore Centre being made a full fledged Local Centre.

It was clarified that the interest amounting to Rs. 14,000/- on fixed deposits pertaining to the Building Fund was not included in the income and expenditure account but it was duly reflected in the balance sheet on the liability side. This was done as per the advice of the Auditors.

Regarding printing the speeches delivered at the Annual General Meeting, in the Annual Report, the President stated that as the speeches were already printed and circulated in the Journal of the Institution, there, perhaps, was no further necessity of reproducing the same in the Annual Report again.

As regards the Journal, Dr. Bhat was outright in saying that the criticism of the Journal was not justified and desired to know specific points on which it was considered sub-standard. He, however, appreciated suggestion regarding the editorial column to be included in every issue of the Journal. In his opinion, papers published in the Journal were of high standard and the Journals were quite popular in the country as well as abroad. He further stressed the point that due to untiring efforts of the Chairman, Editorial Committee, Lt. Gen. I. D. Verma, the Journal was now being brought out in time in the month of its relevant issue. This was creditable and the above sentiments were shared by all the members. Dr. Kapre then, suggested that it would be advisable to co-opt Shri Balasundaram in the Editorial Committee.

The Secretary clarified another point raised regarding the accounts, that the salary paid to the Secretary in the previous year was far less than the salary paid to the Secretary during the year under review. This was due to the sad demise of Shri Rana, the previous Secretary and the post being left unfilled for nearly five

months. During that period Col. Hari Singh discharged the duties of the Secretary in an honorary capacity.

Some of the student members asked for clarifications regarding Grad. I.T.E. Examination. They felt that it would help the students considerably if individual reports giving details for the failure were issued, so that they would know their drawbacks and improve. The President informed the members that this was rather difficult as it would involve a heavier secretarial staff. Shri Mitra suggested that comments in general received from the examiners be printed in the Students' Journal along with some model answers to help the students in the matter. The President stated that this was already under consideration and it was expected to print model answers in the next issue of the Students' Journal. Student members, further suggested that more examination centres should be opened so that the students would not have to travel long distances to appear for the examination. The President said that this would be examined by the new Council. Another suggestion to increase the examination fee came up for consideration so that marks could be sent to the candidates along with the result sheet. The President confirmed that this would also be examined by the new Council. It was further submitted that instead of Rs. 60/- being charged for Part-I or Part-II of Section-A, Rs. 30/- should be levied for Part-I or Part-II and Rs. 60/- for Section-A. The President stated that this would be considered by the Council.

Shri Saxena desired to know the criteria in grading the membership for election. It was explained to him by the Chairman, Membership Committee, Air-Vice-Marshal K.A. Joseph, that due consideration and weightage were given to educational and technical qualifications as well as the degree of responsibility involved in the present assignment before grading the membership for every applicant.

Gen. Verma suggested that it would be advisable if questions arising out of the Annual Report or otherwise were submitted to the Secretariat at least a week in advance of the Annual General Meeting so that these could be examined and adequate replies given. This was agreed to. The President clarified that this procedure would not debar on-the-spot questions which would be considered as far as feasible.

Shri Mitra lauded the efforts made by the Chairman, Building Committee, Dr. Kapre and the members of the Committee resulting in allotment of a plot of land by the Government at concessional rate. He hoped that efforts would continue to be made for the building to be constructed as early as possible.

The 16th Annual Report for the year 1968-69 and the Audited statement of Accounts for the year ended 30th September, 1969 were then adopted and passed unanimously.

ITEM—3. Appointment of Auditors for the Year 1969-70.

Dr. G.R. Toshniwal proposed that Messrs. Khanna & Annadhanam, Chartered Accountants may be appointed as auditors for the year 1969-70 at an annual fee of Rs. 1,750/-. This was seconded by Brig. S.L. Juneja.

As there was no other nomination, M/S. Khanna & Annadhanam Chartered Accountants, were unanimously appointed as auditors of the Institution for the year 1969-70 at an annual fee of Rs. 1,750/-.

13 February, 1970.

Sd/- H. K. RANJI

Secretary

**Details of Life Membership Subscription of the Institution
are given in the following Table**

Age at the next birthday	Fellows and Members	Associate members and Associates
	<i>Rs.</i>	<i>Rs.</i>
40	882	588
41	851	568
42	819	546
43	785	524
44	756	501
45	695	476
46	678	452
47	640	426
48	600	400
49	559	373
50	517	344
51	473	315
52	427	289
53	380	253
54	331	221
55 and over	280	187

PART—II

THE INSTITUTION OF TELECOMMUNICATION ENGINEERS

HONORARY FELLOWS

RADHAKRISHNAN, S. (Dr.) D. Litt. (Agra), D. Litt. (Allahabad), D. Litt. (Andhra), D. Litt. (Annamalai), L.L.D. (Banaras Hindu University), D.L. (Calcutta), L.L.D. (Jabalpur), D. Litt. (Lucknow), L.L.D. (Madras), L.L.D. (Mysore), L.L.D. (Osmania), D. Litt. (Patna), D.Sc. (Roorkee), D. Litt. (Saugor), D. Litt. (Visvabharathi).

Foreign Universities : L.L.D. (Bagota), L.L.D. (Brussels), L.L.D. (Buenos Aires), D. Litt. (Cambridge), L.L.D. (Ceylon), L.L.D. (Columbia U.S.A.), L.L.D. (Hawaii Univ.), L.L.D. (Howard), L.L.D. (London), L.L.D. (Maing), L.L.D. (McGill, Canada), L.L.D. (Mexico), L.L.D. (Oberlin, U.S.A.), D.C.L. (Oxford), L.L.D. (Prague), L.L.D. (Rome), L.L.D. (Sofia Univ.), L.L.D. (Worslaw), L.L.D. (Moscow).

Other Distinctions : Bharat Ratna, Vidyachakravarti Kelaniya Parivina, Fellow of the British Academy, Pour Le merite-Germany, Hony. Fellow of the Academy of Sciences of the Republic of Rumania, Hony. Fellow of the Academy of Sciences of the Republic of Mongolia, Hony. Professor University of Moscow, Professor Emeritus—Calcutta University, Professor Emeritus—Oxford University Hony. Fellow of Souls College Oxford, Sarvagama Sarvabuma-Calcutta Sanskrit College, Goethe Plaque, Master of Wisdom (Mongolia), German Book-Sellers Peace Prize 1961, Wlodzimierz Pietzark Prize by Wareaw University for Philosophical Science, Bharatbhusamani Institute of Indology, Dwarka, former President of the Republic of India.

BHAGAVANTAM, S. (Dr.) Ph.D., 525, Rajmahal Extension, Upper Palace Orchard, Bangalore-6.

KOTHARI, D.S. (Dr.), M.Sc., Ph.D., F.N.I., Chairman, University Grants Commission, Bahadur Shah Zafar Marg, New Delhi-1.

SARABHAI VIKRAM., A. (Dr.), Chairman, Atomic Energy Commission & Secy. to the Government of India, Deptt. of Atomic Energy, Apollo Pier Road, Bombay-1.

THACKER, M.S. (Prof.), D.Sc. (Hc), D. Litt. (Hc), B.Sc. (Engg.), M.I.E.E. (London), M.I.M. (London), M. Inst. F. (London), M.I.E., M.I.R.E., M. Ind., I.M.M. Elec. Chem. S., F.Am., I.E.E., F.I.A.Sc., 2A, Mafatlal Park, Warden Road, Bombay-76.

FELLOWS

Mem. No.		Service on Council
1797	Agerwala, P.M., C.E. (Hons.), 11-A, Mehar Apartments, Altamont Road, Bombay-26	1955-57 V.P. 1957-58 P. 1958-59 1959-61

<i>Mem. No.</i>		<i>Service on Council</i>
66	Aiya, S.V. Chandrasekhar, (Prof.), M.A. (Cantab), M.I.E.E. (London), M.I.E. (India), S.M.I.R.E. (N.Y.), Director, N.C.E.R.T., NIE Campus, Aurobindo Marg, New Delhi-16.	1953-56 V.P. 1958-59 P. 1959-60 1960-63
12	Aiyar, S.S., B.Sc. (Engg), D.I.I.Sc., Chief Engineer, All India Radio, Broadcasting House, Parliament Street, New Delhi-1.	H.S. 1955-58 V.P. 1965-68 1969-70
537	Baliga, B.V., B.A., D.I.I.Sc., 250, Upper Palace Orchards, Sadashiv Nagar, Bangalore-6.	V.P. 1953-57 P. 1957-58 1958-62 1964-67
951	Batra, B.R., Retd. Chief Engineer, P & T, 9, National Court, 13 London Street, Calcutta-15.	P. 1953-55 1955-59
1376	Batra, R.N. (Lt. Gen.), P.V.S.M. (Retd.) General Manager, Somaiya Organics India Ltd Barabanki, Lucknow, (U.P.)	1953-56 V.P. 1962-63 P. 1963-64 1964-68 1968-70
543	Bhatt, N.B. (Dr.), M.Sc. Sc.D. (U.S.A.), F. Inst. P. S.M.I.E.E.E., A.M.I.E.E., M.Ac.S.A., 66, Kakanagar, New Delhi-11.	1953-55 1964-65 1966-69
1330	Datta, Saroj (Dr.), M.Sc., Ph.D. (Engg.) Lond., D.I.C., C. Engg., M.I.E.E., F.I.E.R.E., Director of Communications, Civil Aviation Department, Block II (East) R.K. Puram, New Delhi-22.	1961-63 H.T. 1963-64 1965-66 V.P. 1966-68 V.P. 1969-70
612	Iyappa, A.C. (Lt. Gen.) (Retd.), Managing Director, Bharat Electronics Ltd., Jalaballi, Bangalore-13.	V.P. 1953-55 P. 1955-56 1956-60
643	Jagdeesh Prasad, C.E. (Hons.), Delton House, 24 Bharat Ram Road, Darya Ganj, Delhi-6.	1953-56 1957-60 1961-62 P. 1962-63 1963-66 1968-70
1590	Joseph, K.A. (Air Vice Marshal) (Retd.), B.Sc. (Engg.) N. Aero.S.I., A.M.I.E.R.E., C-10, Maharani Bagh, New Delhi-14.	1953-57 V.P. 1958-61 1962-63 V.P. 1963-64 1965-67 P. 1967-68 1968-70

<i>Mem. No.</i>		<i>Service on Council</i>
542	Kanjilal, S K., B.E., A-46, Vasant Marg, Vasant Vihar, Opp. Sector VII/VIII, R K. Puram, New Delhi-22.	1953-57 H.T. 1958-59 1959-61 1962-63 V.P. 1963-65 1966-67 1967-68 P. 1968-69 1969-70
2441	Kapre, P.K. (Dr.), M.Sc, Ph.D., (London), F.I.E.E., D.I.C. (London), M.I.E., M.I.M., B.L., C-35, Green Park, New Delhi-16.	1956-59 V.P. 1960-63 V.P. 1964-65 P. 1965-67 1967-69 1969-70
3698	Rakshit H. (Prof.), D.Sc. F. Inst. P., F.N.I., Kavi Bharat Chandra Road, P.O. Chandan Nagar, Distt. Hooghly (West Bengal).	1964-67
2399	Ramamurti, T.V., B.E. (Elect.), D.I.I.Sc., Officer-in-Charge (D.P.E.C.U.), National Physical Laboratory, Hillside Road, New Delhi-11.	1953-55 1959-60 J.S. 1960-62 1964-67 V.P. 1968-70
877	Ramchandani, A.C., B.Sc. Tech. (Manchester), M.I.E.E., A.M.C.T. (London), Room No. 10, Gymkhana Club, New Delhi.	H.S. 1953-55 1953-56 1957-58 V.P. 1958-60 V.P. 1961-63 1963-64 S. 1964-66
775	Sreenivasan K. (Prof.), B.Sc., A.I.I.Sc., M.I.E.E. (London), M.A.I.E.E., S.M.I.R.E., F.A.Sc., Director, Madras Institute of Technology, Chrompet, Chengulpet Dt. Madras-44.	V.P. 1953-56 P. 1956-57 1957-61
3636	Toshniwal, G.R. (Dr.), D.Sc., S.M.I.E.E.E., F.N.I., Chair- man, Board of Directors, Toshniwal Bros. Pvt. Ltd., Mahatma Gandhi Road, Ajmer (Raj)	1966-68 V.P. 1968-69
2481	Verma, I.D. (Lt. Gen.). Signal Officer in Chief, Army Headquarters, Plot No. 108, Church Road, New Delhi-1.	V.P. 1967-69 P. 1969-70
1098	Vasudevan, C.P., B.E., Adviser, World Bank, 5457 Nab- raska Avenue, Washington DC-20015 (U.S.A.)	1955-58 1959-60 V.P. 1960-62 1963-64 P. 1964-65 1965-69

**Mem.
No.**

**Service on
Council**

676	Verman Lal, C., (Dr.), B.Sc., (B.E.), Michigan, M.S., Ph.D., (Cornell). F. Inst. P., M.I.E., F.N.I., 2-A, Friends Colony, New Delhi.	1953-55 V.P. 1956-58 V.P. 1959-60 P. 1960-62 1962-63 1966-69
-----	--	---

MEMBERS :

1774	Agarwal, S M, B.Sc., A.M.I.E., (India), Joint Secretary, Department of Electronics, Room. 134-A, South Block, New Delhi-11.	1957-58 J.S. 1958-59 1959-60 1963-66 1967-70
12834	Attre, R.S. (Lt. Col.), B.Sc. (Engg.) M.I.E., Defence Services Staff College, Wellington, Nilgiris (S. India).	
8039	Amarjit Singh, (Dr.), M.Sc., Ph.D., S.M.I.E.E.E., (New York), Director, Central Electronics Engineering Research Institute, PILANI (Rajasthan).	1966-69
2741	Anand, J.C. (Lt. Col.), B.Sc. (Hons.), M.I.E.E.E., DDPIL Ministry of Defence (DGI), 'G Block', New Delhi-1.	1968-70
13763	Bansal, S.L., B.Sc. (Engg.), A.M.I.E. (India), D.C.S.O., Defence Research and Development, Lab., Yakutpura P.O., Hyderabad-23.	
923	Basu, M.K., M.Sc., 95, Rabindra Nagar, New Delhi-11.	
1052	Basu, A., (Lt. Col.), Officer Commanding, Central Command Signal Regiment, Lucknow-2 (U.P.)	
3252	Bhasin, B. (Col.), M.I.E., Chief Inspector, Chief Inspectorate of Electronics, Hebbal P. O. Bangalore-6.	
41	Bhashyam, S.R., B.E. (Hons.), S.M.I.A.E., (New York), Post Master General, Gujarat Circle, Ahmedabad-20.	
398	Bhattacharjee, D.C., B.Sc. (Hons.), D.I.I.Sc., Deputy Chief Engineer, High Power Transmitters, All India Radio, Khampur, Delhi-36.	
3218	Bhattacharya, A.B., M.Sc., M.I.E.R.E., Ericsson Telephone Sales Corporation, AB, 5, Commissariat Road, Calcutta-22.	
2125	Chakravarti, S.P. (Prof.), M.Sc. (Physics), M.Sc. (Engg.), M.I.E.E., D.I.C., S.M.I.R.E., F.A.Sc. (Bangalore), M.I.E., 93, Mahatma Gandhi Marg, Lucknow-1 (U.P.)	1953-57 V.P. 1957-58 1958-60 1962-63 V.P. 1963-65

<i>Mem. No.</i>		<i>Service on Council</i>
1831	Chaman Lal, M.Sc. (Physics), Specialist Consultant, ISRO Department of Atomic Energy, West Block No. 7, R.K. Puram, New Delhi-22.	1965-66
11138	Chatterjee, J.S. (Dr.), M.Sc., D.Phil., M.I.E.E. (London), S.M.I.E.E.E. (U.S.A.), Head of the Department of Electronics & Telecommunication Engineering, Jadavpur University, Calcutta-32.	
3323	Chaudhari, M. (Dr.), B.Sc. (Hons.), M.Sc., Ph.D., D.I.C., S.M.I.E.E.E. (U.S.A.), Department of Electrical & Electronics Engineering, Birla Institute of Technology & Science, Pilani (Rajasthan).	
1948	Choudhury, N.K.D., (Dr.), M.Sc., M.S. (U.S.A.), Ph.D., (E & C. Engg.), Assistant Director, Central Building Research Institute, Roorkee (U.P.)	
10539	Choudhury, P.N., (Dr.), Ph.D., (Elec. Engg.), District Manager, Telephones, K. G. Road, Bangalore.	
2051	Cornelius, C.A., B.Sc. (Engg.), Chairman & Managing Director, Indian Telephone Industries Ltd., Doorvanisingar, Bangalore-16.	1964-67 1968-70
8470	Desikachar, P.R., B.Sc. (Hons), M.Sc. (Wireless), M.S.E.E., M.I.R.E. (U.S.A.), M.I.E.E.E. (U.S.A.), U.N. Technical Assistance Board, P.B. No. 913, Khartoum, Sudan.	
9844	Fadnavis, N.G., (Capt.) I.N., B.Sc. (Engg.), Planning Officer (Electronics), Directorate of Planning and Co-ordination, Ministry of Defence, Room No. 29, 11-A, Janpath, New Delhi-1.	
29	Gadadhar, N.V., B.E. (Elect), D.I.I.Sc., Senior Councillor, International Radio Consultative Committee, International Telecommunication Union, Geneva, Switzerland.	J.S. 1957-58 H.S. 1958-59 1960-61
696	Gairola, S.N., (Brig.), M.Sc., A.M.I.E.R.E., 10/1, Alipur Park, Flat 74, Alipore, Calcutta-27.	
5562	Garewal, K.S. (Brig.), B.Sc. (Physics), Chief Signal Officer, HQ 1 Corps, C/o 56 A.P.O.	1963-66
651	Gill, P.S. (Brig.), 8, Park Avenue, Maharani Bagh, New Delhi-14.	
379	Gokarn, G.D., B.Sc. (Hons.), S.M.I.E.E. (U.S.A.) I.T.U. Expert, Nigeria.	
1021	Gowrishanker, S.M., B.E., Director, Signal and Telecommunications, Government of India, Ministry of Railways, Railway Board, Rail Bhawan, Raisina Road, New Delhi-11.	
1969-70		

<i>Mem. No.</i>		<i>Service on Council</i>
13273	Ghosh, S.C., B.E. (Elect), Manager, Telecommunication Factory, Philips India Ltd., No. 4 & 5 Canal West Road, Calcutta-15.	
256	Gupta, I.K., B.Sc., C.E. (Hons), General Manager, Delhi Telephones, New Delhi-50.	
2440	Hari Singh (Col.) (Retd), M.Sc. (Hons.), M.I.E.R.E. (Lond), C.Engg., C-II/50, Moti Bagh, New Delhi-25.	1966-68
13107	Harsh Vardhan (Prof.), M.Sc. (Physics), Ph. D., (Engg. Physics), Instrument Design & Development Centre, Indian Institute of Technology, Hauz Khas, New Delhi-29.	
2690	Iyengar, K.R.K., B.Sc., (Hons.), D.I.I.Sc., M.Sc., (Elect. Engg.), Deputy Wireless Adviser, Patel Bhawan, Parliament Street, New Delhi-1.	1960-61 J.S. 1961-62 H.S. 1962-63
5096	John Brown (Dr.) M.A., Ph.D., D.Sc. (Engg.), A.M.I.E.E., S.M.I.R.E. (New York), City & Guilds College, Exhibition Road, London S.W. 7.	
2639	Joshi, C.P., M.Sc., F.I.E.R.E., State Radio Officer, Police Radio Headquarters, Mahanagar, Lucknow-6, (U.P.)	
2680	Joshi, M.V. (Dr.), B.E. (Elect. & Mech.), D.I.C., C-10, Maharani Bagh, New Delhi-14.	
4019	Juneja, S.V.S. (Brig.), Headquarters XV Corps C/o 56 A.P.O.	
7346	Juneja, S.L. (Brig.), Deputy Director, Weapons & Equipment, Room No. 214, South Block, New Delhi-11.	1968-69 V.P. 1969-70
1112	Kalra, S.N., Secretary General, Commonwealth Telecommunication Board, 28 Pall Mall, London S.W. 1 (UK)	
466	Khanna, Radha Krishna, M.Sc., Engineer-in-Charge, All India Radio, 18, Vidhan Sabha Marg, Lucknow-1 (U.P.).	
1857	Khurana, S.R. (Brig.), M.A., Wireless Advisor, D.G., Central Reserve Police, West Block No. 8, R.K. Puram, New Delhi-22.	
11334	Krishnamurthi, M. (Dr.), M.Sc., Ph. D., A.M.I.E.R.E., Deputy Director (Tech.), Cabinet Secretariat, East Block V, Level III, R.K. Puram, New Delhi-22.	
210	Lakhanpal, D.D., B.Sc., Tech. (Manchester), M.I.E., M.I.E.E., M.I.E.R.E., S.M.I.R.E., Murphy India Ltd., 29, New Queens Road, Bombay-4.	1953-56 VP 1956-57 1960-63

<i>Mem. No.</i>		<i>Service on Council</i>
902	Mahalingam, N., B.A., F.I.E.E., S.M.I.E.E.E., M.I.E. (India), Consulting Engineer, 18, Ansari Street, Ram Nagar, Coimbatore-9.	HT 1953-55 1955-56
608	Malhotra, S.K. (Brig.), B.A. (Phy. & Maths), P.T.S.C., T.E. (U.K.) M.I.M.B., Director, Electronics and Radar Development Estt., High Grounds, Post Box No. 108, Bangalore-1.	1966-68
3193	Mani, A. (Miss), B.Sc. (Hons), A.I.I.Cs., F.A.Sc., Deputy Director General of Observation (Instruments), The Observatory, Lodhi Road, New Delhi-3.	
879	Matange, N.D., B.Sc., (Engg.), M.S. (Elect. Engg.), (California) T.V. Dip. (R.C.A.), S.M.I.E.E.E. Sigma Xi Deputy Chief Engineer, All India Radio, Station Road, Chinsurah, Distt : Howrah (WB).	
839	Mehta, K.K. (Brig.), B.Sc., psc, MBIM (UK), A.M.I.E.R.E. M. Brit. I.R.E., Director of Electronics Research and Development Organisation, Ministry of Defence, 11-A, Janpath New Delhi-1.	1959-62 1963-64
988	Mehta, V., (Brig.), B.Sc., Director of Co-ordination (Police Wireless), Rail Bhawan, New Delhi-1.	
8430	Mishra, S. (Col.), B.Sc. (Hons.), M.Sc., M.E. (E.E.), M.I.R.E., M.I.E., M.I.E.E.E. (U.S.A.), Deputy Director (Electronics), Directorate of Electronics, R & D Organisation, 11-A, Janpath, New Delhi-1.	
42	Mitra, S.N., M.Sc. (Cal et Cantab), F.N.I., F.R.A.S. (London), Director of Technical Laboratories, Ministry of Home Affairs, R.K. Puram, New Delhi-22.	HS 1960-62 1962-63 1964-66 V.P. 1966-67
1835	Mobindra, L.C., M.I.R.S.E., A.M.I.E.E., F.I.P.E., Grad. I.E.E. (London), 14 B/6, East Patel Nagar, New Delhi-8.	
1798	Muthana, M.S., B.E., M.I.E., 12-A, Embassy Apartments, Napeon Sea Road, Bombay-6.	
4312	Nagarajan M.S. (Lt. Col.), B.Sc. (Hons.), M.A. (Physics), M.I.E. Dip. in Marconi College, U.K., CIL Wing, M/s Bharat Electronics Ltd., Jalahalli P.O., Bangalore-13.	
11129	Narasimhan, K. (Air Vice Marshal), B.A., A.M.I.E.R.E. (UK), Assistant Chief of the Air Staff (Systems), Air Headquarters, R.K. Puram, New Delhi-22.	
2181	Natarajan, R. (Prof.), Chairman, Management & Industrial Consultants Pvt. Ltd., 57, 17th Cross, Malleswaram, Bangalore-3.	

<i>Mem. No.</i>		<i>Service on Council</i>
15083	Palit, A.C., M.Sc., Flat No. 1, Block No. 9, 131 N.S.C. Bose Road, Calcutta-40.	
2621	Rai, B.K. (Lt. Col.), B.Sc. (Engg.), D.I.I.Sc., M.I.E.R.E., M.R.S.G.B., M.A.R.S.I., Inspector, Inspectorate of Electronics, Commissariat Road, Hastings P.O., Calcutta-22.	1965-66 H.T. 1966-67 1967-68
397	Rao, Venkat V., B.Sc., Frequency Management, Naxilous Unidas, Apartade, 4480 LIMA, PERU.	
876	Raghavachari, R., B.Sc. (Hons), D.I.I.Sc., Regional Engineer (N), A.I.R., Jam nagar House, New Delhi-1.	
9704	Raghunath, K. (Brig.), (B.E. (Mech.), A.M.I.E., Brig. E.M.E. H.Q. Eastern Fort William, Calcutta-21.	
15174	Ramanadham, R., (Prof.), M.Sc., M.I.R.E., D.I.C. (London), Ph. D. (Lond.), 'Professor and Head of the Department of Meteorology and Oceanography, Andhra University, Waltair (A.P.)	
5011	Ramanathan, A.R., B.E. (Mech.), M.Sc. (E.E.), A.M.I.E., M.I.E.R.E., 'Pasaram' 51, IHCS - LIC Colony, Jayanagar, III Block East, Bangalore-11.	
568	Ramanathan, G., B.Sc., D.I.I.Sc., D.I.O. (London), Installation Engineer, All India Radio, W/23. 273-B, North of District Court, Alleppey (Kerala).	
1485	Ramchandani, D.N., B.E. (Mech. & Elect.), Deputy Director General (T), P & T Board, Parliament Street, New Delhi-1.	
11081	Ramachandra Rao, B., (Prof.), M.Sc., D.Sc., S.M.I.E.E.E., M.I.E.R.E., Professor and Head of the Department of Physics, Andhra University, Visakhapatnam-3 (A. P.)	
6663	Ramnath, K.R. (Commodore), I.N., Director of Naval Science and Technology. Research and Development Organization, Ministry of Defence, (Room No 113, H Block), New Delhi-11.	
16	Rao, B.S.S., M.Sc., A.M.I.E.R.E., Principal, A. / Parekh Technical Institute, Rajkot (Gujarat).	
2412	Rao, C.R., M.Sc., D.I.I.Sc., Deputy Director General, D.G.C.A., Block II (East), R.K. Puram, New Delhi-22.	
2432	Rao, G.R.S., B.Sc. (Hons.), M.Sc., D.I.I.Sc., 5, Girishant, '351-A' V.P. Road, Khar, Bombay-52 (AS).	

<i>Mem. No.</i>		<i>Service on Council</i>
695	Rau, B.S., B.E. (Elec), Member (Development) P & T Board, Parliament Street, New Delhi-1.	H.T. 1955-57 1959-62 1967-69 H.T. 1969-70
1472	Sajnani, N.B., B.Sc., D.I.C. (Telecomn.), A.M.I.E.E. (London), A.M.I.E. (India), 243 West, 24th Street, New York, NY-10011 USA.	
2413	Sarwate, V.V. (Prof), M.Sc. (Wireless), D.I.I.Sc., M.S. (Elect. Commn.), Principal, Government College of Engineering and Tech., Raipur (M.P.)	
878	Sastry, M.L., B.Sc. (Engg.), A.M.I.E.E., C/o U.N. Laboratory Office, Post Box No. 53, Riyadh (Saudi Arabia).	1955-59 1965-66
925	Satish Chand (Wg Cdr.), B.Sc., A.M.I.E., A.M.I.E.R.E., Chief Technical Officer, No. 505 S.U., Air Force, C/o 56, A.P.O.	
6042	Saxena, A.P., M.I.E.E.E., Commandant, 3rd Batalian Signals, Central Reserve Police, Rampur (U.P.)	
2562	Sen, N.K., M.Sc., M.I.E., C/o Martin Burn Ltd., Martin Burn House, 12, Mission Road, Calcutta-1.	
1486	Sen Gupta, N.K., B.Sc. (Engg.), M.I.E. (India), Managing Director, Heavy Engineering Corporation Durgapur (W. B.)	1958-61
872	Seshasayee, R., B.E. (Hons.), Project Manager, ITU, United Nations Development Programme, P.O. Box 618, Bangkok (Thailand).	1962-63 J.S. 1963-64 1964-65
2694	Sevmour, J.W., S.M.I.R.E., M.A.I.E.E., 108, Heather Road, Oaklyn, N.J. 08107.	
2487	Shahaney, B.J. (Brig.), A.C.G.I. (London), Managing Director, Instrumentation Ltd., Kota-Jhalwar Road, Kota-5 (Rajasthan).	1960-63 1964-65 V.P. 1965-66 1966-67
919	Shantiswarup, B.E. (Hons.), M.I.E., C-II 63, Shahjahan Road, New Delhi-11.	
2124	Shenoi, N.V., B.E. (Elect.), Senior Member (T & O), P & T Board, P & T Directorate, Parliament Street, New Delhi-1.	1963-65 V.P. 1965-66 1967-0
1487	Singh, B.N. (Dr.), B.Sc. (Hons.), M.Sc. (Wireless), D.Sc., Director, Defence Laboratories, Jodhpur (Rajasthan),	
1969-70		

<i>Mem. No.</i>		<i>Service on Council</i>
655	Singh, Jagir (Wg. Cdr.), Kalewa Barracks, P.O. Box No. 498, Ndola-Zambia	
2619	Sinha, K.N. (Wg. Cdr.), B.Sc., C/o H.Q. Eastern Command, Air Force, Shillong (Assam).	
6057	Shanta, B.H. (Miss), B.Sc. (Hons.), M.A., D.I.I.Sc., Department of Electronics Engineering, University of California, Davis, California 95616 USA.	1968-69 1969-70
11670	Subrahmanyam, D.L., (Dr.), M.Sc., S.M., Ph.D., (Misch. U.S.A.), Director, Sarabhai Electronic Research Centre, Naroda Industrial Area, Naroda, Ahmedabad (Gujarat).	
147	Subrahmanyam, T.R., B.E., S.M.I.E.E., (New York), Assistant Chief Engineer, Electrical Division (Products), Voltas Ltd., 19, Graham Road, Bombay-1.	
1087	Sud, B.D., C.E. (Hons.), M.I.E., Industrial Adviser, Bank of Baroda, Central Office, 3, Walchand Hirachand Marg, Bombay-1 (BR).	
250	Sundaram, K.N., M.A. (Physics), M.A.S.E.E. (U.S.A.), Secretary and Officer on Special Duty, Reviewing Committee, Indian Institute of Technology, Powai, Bombay-16.	
16-M	Subbarao, B.S., M.Sc., Principal, A.V. Parekh Technical Institute, Rajkot.	
7349	Swaroop, D. (Brig.), B.Sc., D.I.I.Sc., A.M.I.E., A.M.I.E.R.E., Director of Production and Inspection of Electronics, Ministry of Defence (DGI), 'G' Block, New Delhi-11.	1969-70
611	Talwar, K.N. (Brig.), M/s. Josts Engg. Co. Ltd., Bangalore.	J.S. 1958-59 1959-61
15577	Talekar, V.L. (Dr.), Prof. and Head of Physics Department, Malaviya Regional Engineering College Jaipur (Rajasthan).	
43	Tandan, R.K., M.Sc., M.I.R.E., A.M.I.E.E., A. of C. & G. (London), National Physical Laboratory, Hillside Road, New Delhi-12.	
11669	Thapar, B.N. (Capt.), I.N., C/o Embassy of India, Moscow, USSR.	
535	Thiruvengkatachari, S., B.Sc. (Hons.), D.I.I.Sc., A.M.I.E., Additional Chief Engineer, All India Radio, Parliament Street, New Delhi-1.	1966-67 H.T. 1967-69

<i>Mem. No.</i>		<i>Service on Council</i>
2362	Umashanker, B.Sc., C.E., General Manager, M/s. Bennett, Coleman & Co. Ltd., Dababhai Nauroji Road, Bombay-1.	1957-60 1962-65 1967-70
961	Vaidya, K D., B.E., General Manager, Bombay Telephones, Telephone Bhawan, 19, Arthur Bundor Road, Colaba, Bombay-5 BR.	
4995	Venkataraman, K., M.A. (Physics), Department of Electronics and Communication Engg., College of Engineering, Guindy, Madras 25.	
24	Venkataramiah, Y., B.Sc. (Hons.), D.I.I.Sc., A.M.I.E., Regional Engineer (West), All India Radio, 3rd Floor, C.G.O. Building, 101, Maharishi Karve Road, Bombay-20.	
106	Venkiteswaran, S.P., B.A. (Hons.), M.A., F.A.Sc., M.Ae.S.I., F.N.I., C/o S.B. Padmanabhan, Deputy Director, R.D.S.O., Alambagh, Lucknow-5 (U.P.)	
10805	Wad, B.Y. (Commodore), I.N., C/o Mrs. K.M. Jayakar, 15-B, Zaverimahal, 66, Marine Drive, Bombay-20.	
388	Wagle, M.M., B.Sc., (Elect. and Mech.), Engineer-in-Charge, Rural Broadcasting, Eros Building, 42 Queens Road, Bombay-1.	

ASSOCIATE MEMBERS

3082	Agrawal, J P., B.E. (Hons.), M.E., Reader in Telecommunication Engineering, Government Engineering College, Jabalpur (M.P.)	
13483	Agarwal, H K., B.Sc. (Elect. Engg.), C&G (Telcom) Grad. I.E.E., 30, Malka Ganj Road, Delhi 7.	
13640	Acharya, K.V.P., B.Sc. (Hons.), Lecturer in Electrical Communication Engineering, Government Polytechnic for Women, Kakinada-2 (A.P.)	
2570	Ahluwalia, J.C. (Lt Col), A.M.I.E., 613, B.M.E. Battalion, 56 A.P.O.	
11542	Ahmed, Rais (Prof), M.Sc., M.Sc. (Engg.), D Phil, Department of Physics, Aligarh Muslim University, Aligarh (U.P.).	
2395	Ahuja, I S., A.M.Ae.S.I., General Manager and Technical Director, Ahuja Radios, 3, Okhla Industrial Estate, New Delhi-20.	
3602	Anand Kumar (Dr.), B.Sc. (Hons.), M.Sc., D.I.I.Sc., M.E., Ph.D., M.I.E.E.E. (New York), Lecturer, Department of Electrical Communication Engineering, Indian Institute of Science, Bangalore-12.	
13275	Anand, R.S. (Major), 10 Inf. Div., Sig. Regt., C/o 56 A.P.O.	
1969-70		11

*Mem.
No.*

- 13111 Anand, T.S. (Lt. Col.), A.M.I.E.R.E., 3. T.T.R., 2, STC Bambolim, Goa.
- 12919 Anandan. T.R., Assistant Engineer Telegraphs, Coaxial Repeater Station, Trichur-1.
- 7340 Andhare, V.K. (Lt. Col.), A.M.I.E., SO 1 (Sigs.) HQ Southern Command, Poona-1.
- 472 Antani, A.M., B.Sc. (Engg.), B.Sc. (Elect. Mech.), M.I.E., Pryag Compound, Belgaum Road, Dharwar (Mysore).
- 550 Apte, V.K. (Lt. Col.), C.M.O. Directorate, Ministry of Defence, 'M' Block, Room No. 115, DHQ P.O., New Delhi-11.
- 13011 Apte, G.M. (Flt. Lt.), B.Sc., D.R.E., C.Eng., M.I.E.R.F. (Lond.) 834, Sadashiv Peth, Poona-30.
- 8785 Arjunani, I.G., B.E. (Elect.), Director (Elect.), Department of Light Houses & Lightships, East Block, No. 10, Level IV, R.K. Puram, New Delhi-22.
- 5533 Arunachalam, V., B.A. (Hons.), D.E.T. Long Distance Division, 26, Race Course Road, Bangalore-1.
- 13080 Ayyar, K.S. (Prof.), M.I.I.T.A., Member, Computer Society of India, Principal, Sri Vijaya Institute of Telecommunication Engineering, 543, Garutam Park, Bangalore-4.
- 4667 Awasthi, Y.S. (Lt. Col.), B.A., ADSI, Western Zone, Delhi Cantt.
- 658 Babu, Harendra, R., (Sqn. Ldr.), B.E., A.M.I.E. (India), 313 Service Officers' Quarters, Dhaula Kuan, New Delhi.
- 4708 Bahl, S.K. (Lt. Col.), B.Sc, A.M.I.E., C. Sigs 1 Air Formation Sig. Regt., Palam, Delhi Cantt.
- 2593 Baij Nath (Wg. Cdr.), 73/C-II, Moti Bagh, New Delhi-23.
- 11541 Bains, B.S. (Major), M.Sc. (Hons.), Z, Commn Zone Sig Regt., 56 A.P.O.
- 14519 Bains, H.S. (Brig.), B.A. (Hons.), C.S.O. HQ. Central Comd, Lucknow (U.P.)
- 13862 Bajaj, P.L. (Sqn. Ldr.), HQ, Central Air Comd., Bamrauli, Allahabad (U.P.)
- 14499 Bajpai, R.C. (Sqn. Ldr.), M.Sc., Air Force Station, Arjungarh, New Delhi-47.
- 12662 Bakshi, K.L. (Major), B.A., T-Commn. Z. Sig. Regt., 56 A.P.O.
- 3194 Bakshy, M.K. (Flt. Lt.), B.Sc., No. 42. W.E.U, Air Force, C/o 99 A.P.O.
- 6078 Balakrishnan, P., B.E. (Telecomm.), Lecturer in Telecommunication Engineering, College of Engineering, Guindy, Madras-25.

*Mem.
No.*

- 233 Balchandani, K.M., B.E., D.G.O.C.S., Videsh Sanchar Bhavan, Mahatma Gandhi Road, Fort, Bombay-1.
- 13736 Ballal, M.P. (Cdr.) I.N., S.L.Dte., 144-E Block, New Delhi-11.
- 9297 Balasubramaniam, K. (Lt. Col.), O.C-2, Army H.Q. Sig. Reg., Signals Enclave, New Delhi-10. (Service on the Council-1969-70).
- 820 Balasubramanian, A.S., B.Sc., D.I.I.Sc., Regional Engineer, All India Radio, 20, Rutland Gate, 5th Street, Nungambakam, Madras 6.
- 1551 Balasubramanian, T.V., B.Sc. (Hons.), Assistant Chief Engineer, P&T Directorate, New Delhi-1.
- 1721 Balasundaram, N., B.Sc., A.M.I.E.E., S.M.I.R.E., Managing Director and Chief Engineer, Eastern Electronics (Delhi) Pvt. Ltd., 1-2, New Industrial Township, Faridabad (Haryana).
- 748 Banerjee, A., B.E., Director of Phones, Traffic, P&T Directorate, Parliament Street, New Delhi-1.
- 536 Banerjee, A.K. (Dr.), B.Sc. (Hons.), M.Sc., Ph.D., D.S.S., Dte. of Armament Org., (RD-157), Ministry of Defence, New Delhi-11.
- 14709 Banerjee, B.C. (Lt. Col) (Retd.), B.Sc., C/o The Gramophone Co. of India Ltd., 33, Jessore Road, Calcutta-2.
- 1157 Banerjee, K. K. (Dr.), 6, Shambhu Nath Das Lane, Calcutta-50.
- 14751 Banerjee, D.K. (Lt. Col.), A.M.I.E., M.C.T.E., Mhow (M.P.)
- 1165 Bapu Seetharam, H.R., B.Sc., (Hons.), D.I.I.Sc., Manager (Inspection), Bharat Electronics Ltd., Jalahalli P.O., Bangalore-13.
- 3209 Baral, S.S. (Prof.), M.Sc., D.Sc., P.R.S., Member, Societe des Radio Electriciens, Professor & Head of the Department of Physics & Telecommunication Engg., Bengal Engineering College, Howrah-3 (W.B.).
- 9205 Bartake, J.B. (Lt. Col.), D.C.S.O., HQ, Bengal Area, Fort William, Calcutta-21.
- 14710 Basak, A.K., B.Sc., B.E. (Telecom.), 29, Circus Avenue, Flat No. 7, Calcutta-17.
- 861 Basak, D.N., B.Sc. (Hons.), B.Sc. (Ergg.), M.I.R.S.E., M.A.A.R., Engineer in-Chief (Signals), Eastern Railway, 17, Netaji Subhas Road, Calcutta-1.
- 124 6 Basha V. Noorullah, B.E. (Telecomm), Engineer-in-Charge, (Madras Branch), O.C.S. 98-A, Armenian Street, Madras-1.
- 2524 Basu, L.M., M.Sc., A.M.I.E.R.E., C/o Chartered Bank, 31, Chowringhee Road, Calcutta-16.
- 4612 Basu, P.K., M.Sc. (Wireless), Station Engineer, A.I.R. Mall Road, Delhi-7.
- 1969-70

*Mem.
No.*

- 621 Batra, S.K. (Brig.), B.A., Inspectorate of Signals, Trades Training, Jabalpur (M.P.)
- 2936 Benedetti, S.J., M.Sc., M.A. (Phil.) (Southampton University), M.A. (Divinity), Observatoriode Fisica, Coameca, Casilla-7, San Miguel (F.N.P.G.S.M.) Argentina.
- 5652 Beotra, R.C. (Major), B.E., A.M.I.E., C.I.L., Hebbal, Bangalore-6.
- 12141 Bhargava, D.N. (Major), B.Sc., M.Sc. (Physics), O. C. 4 (Indep.) Air Support Sig. Coy., Lucknow 2 (U.P.)
- 2648 Bhagavat, G.K. (Dr.), B.E. (Hons.) (Telecommunication), Dr. Ing. (Munich), I. I. T., Powai, Bombay-76 (Service on the Concil-1967-69)
- 2483 Bhagwat, D.R. (Lt. Col.), O.C. M&G Area Sig. Coy., Bombay-5 (BR)
- 10524 Bhandari, R.C. (Major), A.M.I.W.S. (India), Indian Rayon Corporation Ltd., Veraval (Gujarat).
- 2423 Bharara, H.L., B.A. (Hons), D.O.T., Bangalore.
- 6931 Bhardwaj, B.D. (Lt. Col.), D.C.S.O., HQ M&G Area, Bombay-5 (BR)
- 6077 Bhakta, P.K., B.Sc. (Hons.), A.M.I.E., Engineer-in Charge, Telecommunication, Mining & Allied Machinery Corporation, Durgapur (W.B.).
- 2479 Bhalotra, T.R. (Major), M.Sc. (Physics), A.M.I.E.R.E., High Commission of India in U.K., C/o Ministry of External Affairs, New Delhi-11.
- 920 Bharna, N.C. (Sqn. Ldr.), B.Sc., B.E. (Hons.), HQ Central Air Command, Air Force Station, Bamrauli, Allahabad.
- 14749 Bhanot, M.M. (Major), B.Sc., 3/2, Bhim Road, Jullundur Cantt.
- 7336 Bhasin, K.D. (Brig.), President, A.S.E.C. G.S. Branch, Wing-41, West Block 3, R.K. Puram, New Delhi-22
- 12918 Bhatia, Romesh (Major), Western Comd. Sig. Regt., Simla-8.
- 2453 Bhatnagar, H.M., M.I.R.E., General Manager, J.K. Electronics, 84/55, G.T. Road, Kanpur (U.P.).
- 12994 Bhatnagar, I.S. (Wg. Cdr.), No. 1 Officers Bungalow, P.O. Laitkar Peak, Shillong-10.
- 2733 Bhatnagar, U.S., Engineer, Telegraphs Division, Ministry of P.T.T., Kuwait (Arabia).
- 2555 Bhatt, V.J., B.Sc. (Elect & Mech.), India Radio and Electronics Corporation, 13/14, Rani Building, Prarthana Samaj, Bombay 4 BR.
- 993 Bhide, V.M. (Col.), Bharat Electronics Ltd., Jalahalli, Bangalore-13.

*Mem.
No.*

- 15070 Bhanumoorthy, B.S., B.Sc., D.M.I.T., M. Tech., C/o Dr. A.R. Govindarao, 'Bilwakunja', 5th Cross, M.C. Block 'A', P.J. Extension, Davangere (Mysore State).
- 14403 Bhat, R.S. (Flt. Lt.), M.Sc. (Electronics), T/240 A.F. Officers Quarters, Jalahalli East, Bangalore 14.
- 164 Bhatt, N.R., B.Sc. (Hons.), M.Sc., Station Engineer, A.I.R., Backbay Reclamation, Bombay-20.
- 14405 Bhowmik, A.K. (Major), A.M.I.E., Course OLT-14, M.C.T.E., Mhow Cartt (M.P.)
- 5515 Biswas, Hironmoy (Fg. Offr.), B.Sc. (Hons.), No. 43, Squadron, C/o 99 A.P.O.
- 2647 Biswas, G. (Wg. Cdr.), Air Force Station, Baroda (Gujarat).
- 6902 Borges, W.J. (Rev. Fr.), St. Xavier's Technical Institute, Near Mahim Bus Depot, Mahim, Bombay-16 DD.
- 2376 Borwanker, A.K. (Lt. Col.), B.Sc., B.E., ADPIL, Ministry of Defence (DGI), G. Block, New Delhi-11.
- 673 Bose, K.K. (Dr.), B.E., Dpl. Engg. (Munich), Dr. Engg. (Dresden), A.M.I.E., Electron-Control Devices Corporation, 13 North Road, Jadavpur, Calcutta-32.
- 661 Chakrabarty, D.C. (Capt.), A.M.I.E.E.E. (U.S.A.) Superintendent of Police (Wireless), Chandigarh.
- 3579 Chakrabarty, D.P. (Prof.), M.E.E., Professor and Head of the Department of Electrical Engineering, Madhav Engineering College, Gwalior-5 (M.P.)
- 2539 Chakrabarty, S.K. (Wg. Cdr.); (Retd.), Kalitara Niwas, Barsat Road, Nanachandani Pukur, P.O. Barrackpore, Distt: 24 Parganas (W.B.)
- 11557 Chandra, K. (Sqn. Ldr.), M.Sc. (Physics), Air Force Technical College, P.O. Jalahalli West, Bangalore-13.
- 3927 Chatterjee, B. (Dr.), B.Sc. (Hons.), M.Sc., Ph.D., (Elect. Commn. Engg.), F.I.P.S., M.I.R.E. (USA), Grad. Brit. I.R.E., Department of Communication Engineering, I.I.T., Kharagpur (W.B.).
- 3284 Chawla, B.R. (Flt. Lt.), M.Sc., M.I.E.E.E., D.R.E., No. 2 (T), C.T.T.B. Air Force, Air Force Station, Begumet, Hyderabad-19 (A.P.)
- 12449 Chawla, Prem Prakash (Major), B.Sc. (Engg.), Officer Commanding, 216, F.D. Workshop Coy E.M.E., C/o 99 A.P.O.
- 4700 Chawla, R.K. (Fg. Officer), Officers Mess, 11 Wing, Air Force C/o 99 A.P.O.

*Mem.
No.*

- 12082 Cherian K. George, M.Sc., Manager, Ericsson Telephones Sales Corporation, A.B., L-25, N.D.S.E., Part II, New Delhi-16.
- 14592 Chhabra, K. C. (Major), 1 Crops Artly Bde. Sig. Coy, C/o 56 A.P.O.
- 781 Chiplunkar, V.N., M.Sc. (Physics), D.I.I.Sc., M.I.E.E.E. (New York) Department of Electrical Communication Engg., Indian Institute of Science Bangalore-12.
- 1114 Chippada, S. (Lt. Col.), 2 Andhra Sig. Coy N.C.C. Prakasamnagar, Rajahmundry.
- 9854 Chowdhury, S.C. (Lt. Col.), B.Sc. (Hons.), A.M.I.E.R.E., Special Signal Regt., Malta Lines, Delhi Cantt-10.
- 2428 Chowdhary, S.S. (Lt. Col.) (Retd.), B.Sc., 114, Lloyds Road, Madras-6.
- 13360 Choudary, W.S. (Lt. Col.), A.M.I.E. (India), A.D.E.M.E., HQ Western Comd, Simla-3.
- 1518 Clement, C.J., B.E. (Elect.), B.E. (Mech.), D.D.G. (L) P & T Directorate Parliament Street, New Delhi-1.
- 6167 Collaco, A.F. (Capt.), I.N., B.A. (Hons.), C/o Union Carbides, Calcutta.
- 14753 Cruz, L.J.D. (Major), B.Sc., OC 801 Corps, TPs Wkap, E.M.E., C/o 56 A.P.O.
- 657 Das, D.B. (Wg. Cdr.) (Retd.), N.I.E.T. (Lond.), A.M.B.I.R.E., 10, Church Street, Henley-on-Thames, Oxen-- England.
- 9143 Das, J. (Dr.), D.Sc., A.M.I.E.E., Professor, Department of Electronics and Communication Engineering, I.I.T., Kharagpur, (W.B.).
- 2211 Das, Paresh Nath (Dr.), B.Sc. (Hons.), M.Sc., D. Phil. C.U., M.I.E.E. (London), C. Engg., S.M.I.E.E.E. (USA), Assistant Professor, Jalpaiguri Engineering College, P.O. Dangujhar, Jalpaiguri (W.B.).
- 14748 Das, S.N., B.Sc. (Hons.), M.Sc (Tech.), 116-A, Rashbehari Avenue, Calcutta-29 (W.B.)
- 2625 Damodaran, M. (Wg. Cdr.), Officer Commanding, No. 3, Ground Training School, Air Force Station, Jalahalli, Bangalore-15.
- 13480 Daniel, D.N. (Sqn. Ldr.), Officer's Mess, T.T.W., Air Force, Yelahanka, Bangalore.
- 673 Dandas, A.S. (Lt. Col.), A.M.I.E. (India), M.I.R.E. (U.S.A.), BSF Signal Training School, East Block 9, R.K. Puram, New Delhi-22.
- 1111 Dasgupta, J., M.Sc. (Physics), M-8, Observatory Bunglow, Lodhi Road, New Delhi-2.

*Mem.
No.*

- 1202 Dasgupta, Ranjit, B.Sc., Chief Superintendent, Development, I.T.I., Doorvani Nagar, Bangalore-16.
- 14211 Datta, Anadi Kumar, M.Sc., M.I.S.C., A.M.I.R.E., A.M.I.E., Assistant Station Engineer, A.I.R. Central Stores, Akashvani Bhawan, New Delhi-1.
- 281 David, Macaulay, B.A., A.M.I.E.E. (London), D.E.T., Trichy, Road, Coimbatore-18.
- 2366 David, T.P., A.M.B.I.R.E. (London), Vad de Graaff Laboratories, B.A.R.C. Trombay, Bombay-74.
- 10801 Dayal, M. (Lt. Col.), B.Sc., A.M.I.E. (India), A.D.P.I.L., Ministry of Defence, (DGI), Room No. 47, 'G' Block, New Delhi-11.
- 14582 Debu, E.J. (Capt.), I.N., B-4, Raksha Bhavan, Man Singh Road, New Delhi 1.
- 7363 Deodhar, R.G., B.Sc. (Hons.), B.E., 14-A/62, W.E.A. Karol Bagh, New Delhi-5.
- 12745 Deogon, K.K. (Fit. Lt.), M.Sc., No. 255, Signals Unit, Air Force, C/o 56 A.P.O.
- 874 De Sarkar, S.S., B.Sc., (Hons.) MSc., Dy. Director, Standards Tele. Research, Designs and Standards Organisation, Ministry of Railway, Lucknow-5 (U.P.)
- 12751 Desai, S.L., B.E., (Elect. & Mech.), Deputy Director, T.R.C., Eastern Court, Janpath, New Delhi-50.
- 4224 Deshpande, P.B. (Major), B.Sc. (Hons.), Inspectorate of Electronics, Ministry of Defence (DGI), Tank Road P.O., Bombay-33.
- 2579 Deshpande, V.D. (Col.), C.S.O., Assam Rifles, 'KISMET', Upland Road, Shillong-3.
- 2695 Deva, Yashwant (Major), A.M.I.E. (India), 8 Mtn. Div. Sig. Regt. C/o 99 A.P.O.
- 15364 Devasthali, Y.A. (Major), 10 Inf. Div. Sig. Regt., C/o 56 A.P.O.
- 1201 Devidas, N. (Major), M.A., M.Sc. (Hons.), 4, Mtn. Div. Sig. Regt., C/o 56 A.P.O.
- 2755 Dhall, R.L., P.O. Box No. 8418, Kuwait (Arabia).
- 7746 Dhawan, K. (Lt. Col.), B.Sc., O.C., 9 Inf. Div. Sig. Regt., C/o 99 A.P.O.
- 13638 Dhawan, S.K. (Major), A.M.I.E. (India), M.C.T.E., Mhow (M.P.).
- 15363 Dhir, Yash Pal (Major), B.Sc., A.M.I.E. (India), O.C., 43 Inf. Bde. Sig. Coy. C/o 56 A.P.O.

<i>Mem. No.</i>	
9541	Dhodi, J.S. (Major), A.M.I.E., Equipment Depot Workshop, E.M.E., Agra Cantt.
10120	Dixit, G.B., B.Sc. (Hons.), 47, 13th Cross, 8th Main Road, Malleswaram, Bangalore-3.
2485	Dube, B.K., B.E. (Hons.), M.E., Director, State Police Wireless (Police Headquarters), Jaipur-2 (Rajasthan).
2843	Dutta, Shambhu Nath, B.Sc. (Hons.), B.E.E., Superintendent Engg. (Instrumentation), Damodar Valley Corporation, Anderson House, Alipore, Calcutta-27.
13481	Dutta, S.C. (Sqn. Ldr.), Grad. I.E.R.E., Air Force Technical College, P.O. H.T. West, Bangalore-15.
1053	Dwivedi, M.B. (Lt. Col.), M.Sc., C.I.L., Hebbal P.O., Bangalore-6.
3224	Fenderlinden, R.B. (Capt.), I.N., 72, Mc. Millan Street, Victoria Park, W. Australia (Service on Council 1965-67).
529	Ferris, M.V. (Major), B.Sc., Signal Regiment, Alipore Camp, Calcutta-27.
15084	Gandhi, D.T., E-2/14, East Patel Nagar, New Delhi- .
656	Ganesen, V. (Air Commodore), B.Sc. (Hons.), D.I.I.Sc., D.L.R.L. Chandrayan-gutta Lines, Hyderabad-5 (A.P.)
14216	Ganga Prasad (Major), B.Sc., A.M.I.E., Army HQ, M.S. Branch, New Delhi-11.
170	Garde, B.K., B.Sc., D.I.I.Sc., M.I.E., Deputy Regional Engineer, Maintenance A.I.R., Akashwani Bhawan, Calcutta-1.
3154	George, J.T., M.Sc., D.R.E., M.C.S.I., M.I.R.S., Head, Computational Centre, Thumba Equational Research Launching Station, Pallithura P.O., Trivandrum (Kerala).
14153	Garg, Shashi Kumar, B.E. (Elect. Engg.), D.E.T., Coaxial Equipment Installation, Room No. 653, Kidwai Bhawan, 36, Janpath, New Delhi-1.
155	Ghose, A.C., M.Sc., A.M.I.T.C.E., Assistant Project Officer (Retd.), Station Road, P.O. Sonarpur, Distt : 24 Parganas (W.B.).
2416	Ghose, A.K., M.Sc., S.M.I.E.E., M.R.E., A.M.I.E., Reader in Line Communication Engineering, Engineering College, Banaras Hindu University, Varanasi-5 (U.P.)
13110	Ghosh, Anirudha, B.Sc., 9, Lalit Parkash, 20, Perry Cross Road, Bandra, Bombay-50.
3256	Ghose, S.C. (Sqn. Ldr.), P.O. Meeluskieganj, Distt : Palamau (Bihar).

*Mem.
No.*

- 3596 Ghosh, A.K., M.Sc. (Tech.), M.I.E.E.E., Assistant Executive Engineer (Radio), Department of Lighthouses and Lightships, 'Deep Bhavan' Pandit Nehru Marg, Jamnagar (Gujarat).
- 2543 Ghosh, B.M., B.Sc., Deputy Manager, HE & HE Tests, Bharat Electronics Ltd., Jalahalli P.O., Bangalore-13.
- 3096 Ghosh, P.K., M.Sc., Engineer-in-Charge, Office of the Station Director, Broadcasting House, A.I.R., Parliament Street, New Delhi-1.
- 2476 Ghosh, S.P., (Sqn Ldr.), B.Sc., 246, Model Town, Jullundur City (Pb.)
- 2317 Gill, A.J.S., (Major), A.M.I.E. (India) SO 2 (Signals), HQ, Eastern Comd, Fortwilliam, Calcutta-21.
- 3337 Gill, Kulwant Singh (Col.), M.C.T.E., Mhow (M.P.)
- 8749 Godbole, M.V., (Lt. Col.), B.E. (Hons.), 4 EME Centre, Kamptee, Distt. Nagpur.
- 8424 Goel, Y.P., B.Sc., D.R.E., Production Manager, Toshniwal Instruments & Engineering Co., 10-A, Najafgarh Road, New Delhi-15.
- 5036 Gogte, V.M., B.Sc., Grad. I.E.R.E., K-41, Multistorey Buliding, R.K. Puram, New Delhi-22.
- 1 620 Gopal, G.P. (Sqn. Ldr.), M.Sc., Senior Signals Officer, Air Force Station, Jamnagar (Gujarat).
- 538 Goolry, K.S. (Lt. Col.) (Retd.). B.A., A.M.I.E.R.E., No. 1355 G.T. Road, Near Hyde Market, Amritsar.
- 2360 Gopalan, S., A.M.I.E.E., 19, Ganapat Nagar, Madras-18.
- 1846 Gopalakrishna, K.N., B.Sc. (Hons.), D.I.I.Sc., Controller, R.C.D.U., Safdarjung Airport, New Delhi-3.
- 14409 Goswami, N.B., M.Sc., Lecturer in Applied Physics, Government Engineering College, Jabalpur (M.P.)
- 14406 Gowarikar, S.R., M.Sc., Scientific Officer, (SD 2), V.E.C. Project, VEC Shed, North Site, Trombay, Bombay-65.
- 14705 Gowrishanker, K. (Lt. Col.), Eastern Comd., Sig. Regt., Alipore Camp, Calcutta-27.
- 15072 Goyal, R.N., B.Sc., B.E. (Hons.), M.E., Assistant Director, T.R.C., Eastern Court Compound, Janpath, New Delhi-50.
- 14657 Govindarajan, P., (Sqn. Ldr.), B.E. (Hons.), C.S.D.O., Air Force Station, Kanpur.

*Mem.
No.*

- 6903 Grewal, H.B.S. (Col.), H.Q., 26 Inf. Div., 56 A.P.O.
- 1552 Guin, M., (Major), M.Sc., A.M.A.R.S.I., 'S' Comm.Z. Sig Regt., 99 A.P.O.
- 109 Gulati, O.P., M.Sc., A/12/5, Vasant Vihar, Behind R.K. Puram, New Delhi-22.
- 9102 Gulati, R.R., A.M.I.E., Lecturer in Telecommunication Engineering, B.I.T.S., Pilani (Rajasthan).
- 12915 Gupta, G.C., (Sqn. Ldr.), M.Sc., 4875/77, Pathak Nanek, Hauz Qazi, Delhi-6.
- 15071 Gupta, Ram Gopal, M.Sc., Assistant Radio Officer, Police Radio HQ, Mahanagar, Lucknow-6.
- 15069 Gupta, K.C. (Dr.), M.E., Ph.D., Department of Electrical & Engineering, I.I.T., Kanpur-10.
- 5126 Gupta, B.C., (Capt.), No. PS-111/69, M.C.T.E., Mhow (M.P.)
- 934 Gupta, S.M., Controller, Central Radio Stores (Retd.), G-57, Nauroji Nagar, New Delhi-16.
- 2592 Gupta, J.S. (Prof.), M. Tech., B.E. (Elect.), M.I.E., Professor of Electrical Engineering, Regional Engineering College, Kurukshetra.
- 6438 Gupta, R.K., (Dr.), Ph.D., C. Engg., M.I.E.R.E., F.B.I.S. (London), M.Sc., Research Fellow, Department of Electronics & Electrical Engineering, University of Sheffield, Sheffield-1 (U.K.).
- 705 Gupte, R.K., (Lt. Col.), A.M.I.E., 5 Mtn. Div. Regt., 99 A.P.O.
- 15134 Gupta, V.K., M.E., E-82, Amar Colony, Lajpat Nagar IV, New Delhi 24.
- 14593 Harkrishan (Lt. Col.), 4, Technical Training Regt., 1 S.T.C., Jabalpur (M.P.)
- 12432 Hajela, S.K., (Dr.), B.Sc., Senior Engineer, Research Department, I.I.T., Dooravainagar P.O., Bangalore-16.
- 438 Harish Chandra (Gp. Capt.), M.Sc., D.I.I.Sc., Dy. Director (Radar), Air HQ, Vayu Bhawan, New Delhi-11.
- 3505 Harris, G.S. (Wg. Cdr.), Red Shield House, 30, Mereweather Road, Fort, Bombay-1 (BR)
- 586 Hart, M.B., (Lt. Col.), 30, Woodlands Street, Baulkhau Hills, N.S.W. 2153, Australia.
- 1978 Hattangada, V.R., B.Sc., A.M.I.E.R.E., Deputy Superintendent, Ancillary Overhaul Division, Air India, Santa Cruz (East), Bombay-29.
- 6536 Hazara, Ajit Kumar, B.Sc., (Hons.), Room No. 414, P & T Directorate, Parliament Street, New Delhi-1.

*Mem.
No.*

- 1922 Hegde, K.S. (Prof.), B.E., M.A. (Engg.), Principal, Government Engineering College, Guindy, Madras-25.
- 10127 Herbert, L. (Lt. Col.), B.Sc., A.M.I.E. (India), 54, Mtn. Div. Sig. Rgt., 56 A.P.O.
- 13274 Hiregange, N.R., B.E. (Telecom), D.O.T., Microwave Project, 6/1, New Road, Alipore, Calcutta-27.
- 4624 Israni, I.P., B.Sc., D.R.E., C-22, Geeta Bhawan, Bholabhai Desai Road, Bombay-26 (W.B.).
- 782 Indiresan, P.V. (Dr.), B.Sc. (Hons.), D.I.I.Sc., (E.C.E.) Ph.D., A.M.I.E.R.E., Professor and Head of the Department of Electrical Engineering, I.I.T., New Delhi-29.
- 3825 Iyer, C.R. (Flt. Lt.), B.Sc., Air Force Station, Thana (Maharashtra).
- 15337 Iyengar, B.N., B.Sc., D.I.I.Sc., 11-A/25, Western Extension Area, Karol Bagh, New Delhi-5.
- 8767 Jagdish Raj (Major), Machine Dev. Officer, T.C.B., Min of Def, South Block, New Delhi-11.
- 5145 Jagdishwar Lal, B.Sc. (Hons.), Deputy Chief Engineer Planning, P&T Dte. Parliament Street, New Delhi-1.
- 14407 Jain, S.K., M.Sc., M. Tech., Electrical Engineering Department, I.I.T., Powai, Bombay-76.
- 5281 James, C.C. (Fg. Offr.), B.Sc., Signals Officer, Air Force Station, Adampur (Pb.).
- 2457 Janardhan, N.M., (Prof.), B.E. (Telecomm), B.E. (Hons) (Adelaide), Professor, Department of Electronics and Communication Engineering, College of Engineering, Guindy, Madras 25.
- 13635 Janmeja, P.K., (Major), 74 Inf. Bde. Sig. Coy., 56 A.P.O.
- 2677 Jayachandra, M.Sc., 39/21, Old Idgah Colony, (Nagarkanti Colony) Agra (U.P.)
- 2521 Jayaraman, T.R., B.Sc. (Hons.), D.I.I.Sc., I.A.S., Joint Secretary, Room No. 107 'C' Wing, Shastri Bhawan, New Delhi-1.
- 13482 Jawalker, S.R., (Dr.), M.Sc., Ph.D., Lecturer, Department of Electrical Engineering, I.I.T., Powai, Bombay-76.
- 11558 Jha, S.S., (Lt. Col.), B.A. (Hons.), D.C.S.O., HQ B & O Indep Sub Area, Dinapore Cantt (Bihar.)
- 2627 Jirafe, W.J. (Dr.), B.E. (Hons.) (Telecommunication), M. Tech., Ph.D., Assistant Professor, Department of Electrical Engineering, I.I.T. Powai, Bombay-76.
- 1969-70

*Mem.
No.*

- 3'09 Joglekar, P.J., B.E., Ph.D., Electrical Engineering Department, I.I.T., New Delhi-29.
- 2792 John, A.G., M.Sc., Assistant Chief Engineer, A.I.R., Akashwani Bhawan, New Delhi-1.
- 12995 John Francis, B.Sc. (Physics), B.Sc. (Elect. Engg.), Deputy Director, T.R.C. Eastern Court Compound, New Delhi 50.
- 13581 John, J.D.A., I.T.U. Expert, C/o U.N. Dev. Programme, P.O. Box No. 2075, Lagos (Nigeria).
- 14706 John Peter, G.P. (Flt. Lt.), HQ Western Air Command, Subroto Park, New Delhi 10.
- 15578 Joseph, C.M., B.Sc., Chief Signal and Telecommunication Engineer, Eastern Railway, 17, Netaji Subhash Road, Calcutta-1.
- 831 Joseph, T.T. (Wg. Cdr.) (Retd.), M.Sc., Brit. I.R.E., J.B. Enterprises, 6, Hamidia Road, Bhopal (M.P.)
- 1417 Joshi, D.F.D., B.Sc., B.E. (Elect. & Mech.), A.M.I.E., General Manager Telephones, Telephone Building, Waudby Road, Bombay-1 (BR).
- 2865 Joshi, K.L. (Prof.), B.Sc. (Hons.), M.Sc., Professor of Telecommunication, College of Engineering, Poona-5.
- 12965 Joshi, R.D., B.E. (Hons.), Director of Telegraphs, Technical and Devp. Circle, P & T Department, Jabalpur-6 (M.P.)
- 989 Juneja, R.R., B.A., Elektogears Pvt. Ltd., 27, Rowland Road, Calcutta-20.
- 9162 Kabraji, R.Z. (Maj. Gen.) (Retd.), AVSM, Semiconductors Ltd., Ahmednagar Road, Poona-14.
- 3 Kagarwala, Abid, M.E.E. (U.S.A.), A.M.I.E.E., A.M.I.E. (London), Chartered Electrical Engineer, Glolite Electricals, Champs Bhimji Road, Mazagaon, Bombay-10.
- 1704 Kale, R.S., B.Sc. (Hons.), 888, Laxmibai Nagar, New Delhi-3.
- 12993 Kakkar, S.C. (Major), CAFSO Branch, Air Headquarters, New Delhi-11.
- 5982 Kapoor, B.N. (Lt. Col.), M.Sc. AD (Tels.), R & D Org. (L), Ministry of Defence, 11-A, Janpath, New Delhi-1.
- 6854 Kapoor, G.D. (Lt. Col.), B.Sc., Assistant Director Communication HQ IG BSF, Western Frontier, Jullundur Cantt.
- 10558 Kapur, H.S. (Major), M.Sc., 14/2, Bhim Road, Jullundur Cantt.
- 14151 Kapur Pramod (Major), 9 Inf. Div. Sig. Regt., 56. A.P.O.

Mem. No.	
224	Kapur, S.N., B.Sc., Station Engineer, A.I.R., Panaji (Goa).
9653	Karekatte, S.A., B.E., B-9, Instrumentation Township, Kota-5 (Rajasthan).
1114	Karnik, K.J. (Cdr.), I.N., (Retd.), B/3-2, Safdarjung Enclave, New Delhi-15
629	Karnik, V.R. (Gp. Capt.), M.Sc., P-19, Green Park, New Delhi-16
87.8	Kasturi, G. (Lt. Col.), B.Sc., C/o 515, Army Base Workshop, Bangalore.
2928	Katarya, C.P. (Lt. Col.), B.Sc., Liaison Officer, B.E.L., 11-A, Janpath, New Delhi-1.
981	Kaul, P.M., Asstt. Chief Engineer, (CP), P & T Dte., Parliament Street, New Delhi-1.
148	Keshava Chandra, M.Sc., Planning Officer. (Tape Recording Unit), A.I.R., Akashvani Bhavan, Parliament Street, New Delhi-1.
9131	Ketkar, L.G. (Maj.), B.Sc. (Hons.), Special Sig. Regt., Delhi Cantt.
6123	Khanna, Brij Mohan (Fg. Offr.), B.Sc., T-7-8-9, Officers' Married Quarters, Palam, New Delhi-10.
13759	Khanna, V.C. (Brig.), C.S.O., HQ Central Comd., Lucknow (U.P.)
2419	Kharkar, S.V., B.Sc. (Hons.), M.Sc., Electronics Department, Cusrow Wadia Institute of Technology, Poona-1.
724	Kheterpal, S.P. (Maj.), M.Sc., B.S.F. Sig. Trg. School, No. 9 East Block, R.K. Puram, New Delhi-22.
674	Kini, M.M., B.E. (Elect.), U.N. Adviser, Bangkok.
14152	Kodali, V.P. (Dr.), T.I.F.R., Homi Bhabha Road, Bombay-5.
11514	Kobli, P.L. (Lt. Col.), C/o Sig. Dte., Plot 10, Church Road, New Delhi-1.
157	Kohli, S.S., M.Sc., Engr.-in-Charge (AIR) (Retd.), B-2/8, Vasant Vihar, New Delhi-22.
2509	Kotadia, K.M. (Dr.), B.Sc. (Hons.), D.I.I.Sc., Ph.D., S.M.I.R.E., Department of Physics, Gujarat University, Ahmedabad-9.
12921	Kotwal, C.L. (Sqn. Ldr.), B.Sc., M. Tech. (Elect. Engg.), A.M.I.E. (India), A.M.A.S.I., C/o Signals Directorate, Air Headquarters, Vayu Bhavan, New Delhi-11.
4628	Kotwal, M.K. (Major), B.Sc., T. Comm. Zone Sig. Regt., 56 A.P.O.
2608	Krishnamoorthy, K.S., B.Sc. (Hons.), D.M.I.T., 'Sreyas', 94, Gayathari Devi Park Extension, Bangalore-3,
1969-70	

*Mem.
No.*

- 3219 Krishnamurthy, N., M.Sc., Asstt. Regional Engr. (AIR), Jamnagar House, New Delhi 1.
- 13016 Krishnamoorthy, M.S. (Col.), M.I.S.E., M.B.I.M. (London), B-3/5, Safdarjung Enclave, New Delhi-16.
- 9652 Krishnaswamy, M.V., B.Sc. (Hons.), D.I.I.Sc., M-2760, Netaji Nagar, New Delhi.
- 12083 Kudva, K.V. (Lt. Col.), B.Sc., A.M.I.E. (India), Det. Tech. Group E.M.E., 515, Army Base Workshop, Bangalore-8.
- 11578 Kulkarni, K.S. (Flt. Lt.), M.Sc., Air Force Technical College, Jalahalli (West), Bangalore-15.
- 11061 Kulkarni, V.P. (Dr.), M.Sc., M. Tech., Ph.D., Control and Guidance Division, S.S.T.C., P.B. 48, Trivandrum.
- 13050 Kulkarni, M.G., M.Sc. (Engg.), B.E. (Telecomm.), Assistant Director Research, T.R.C., Eastern Court, Janpath, New Delhi-50.
- 429 Kulshreshtha, Ram Yadav, B.Sc., A.M.I.E. Station Engineer, A.I.R., Malwa House, Indore (M.P.)
- 13034 Kumar, B. (Lt.), I.N., B.Sc. (Engg.) (Hons.), 28, Faculty House (Nalanda), I.I.T., Hauz Khas, New Delhi-29.
- 15802 Kulshreshtha, H.S. (Flt. Lt.), M.Sc., Comd. Sig. Sec., HQ. Western Air Command, Subroto Park, New Delhi-10.
- 2687 Lahiri, D.B., (Lt. Col.) GSO 1, WE/6, WE Dte., G.S. Br., New Delhi-11.
- 3159 Lakshminarayana, N., B.Sc., Assistant Professor in Telecommunication Engineering, College of Engineering, Kakinada-3 (A.P.)
- 6055 Lam, D.M., B.Sc. (Hons.), D.I.I.Sc., Dy. General Manager (XB), Waudby Road, Bombay-1.
- 3735 Lasrado, L., Experimental Satellite Communication Earth Station, Post Bag 11, Ahmedabad-9.
- 14594 Luthra, K.L. (Flt. Lt.), 3rd, Rock View, Air Force, Palam, New Delhi-10.
- 2623 Lazarus, N.P., A.M.I.R.E., A.R.Ac.S., A.M.Ae., S.I., 'Friendship' Plot 54-B, 23rd Road, TPS III, Bombay-50.
- 2403 Madan, P. (Brig.), B.Sc. (Hons.), Officer on Special Duty (Planning), B.E.L., Jalahalli P.O., Bangalore-13.
- 6879 Madhava Raja, V., B.Sc. (Hons.), M.Sc., C/o Shri K.B. Rao, 31, 3rd Cross Road, Sampige Road, Malleswaram, Bangalore-3.

**Mem.
No.**

- 92 Mahajan, D.R., B.E., Deputy General Manager (P), Bombay Telephones, Kawasji Patel Street, Sawla Chambers, Bombay 1.
- 12425 Maharishi, N.K. (Flt. Lt.), B.Sc., M.Sc. (Physics), S-11/1255, R.K. Puram, New Delhi-22.
- 4626 Mahajan, V. (Sqn. Ldr.), B.A., D.R.E., 138/2, A.F. Station, Rajokari, New Delhi-38.
- 14408 Mahajan, V.K. (Major), GSO-2 (OPS) HQ-25, Inf., Div., C/o 56 A.P.O.
- 74 Maiya, B.C.S. M.A., Principal, Telecommunication Training Centre, G.P.O. Building, Nagpur.
- 453 Major, D.S. (Lt. Col.), Petit Mansion, 85, Sleater Road, Bombay-7.
- 14614 Malhotra, Shadi Lal, M.Sc., M-79, Greater Kailash, New Delhi-48.
- 14217 Malhotra, H.C. (Major), A.M.I.E. (India), Sigs. Dte., G.S.Br., Army HQ. Plot 108, Church Road, New Delhi-1.
- 14750 Malik, M.M.K. (Major), C.I.L., Hebbal P.O., Bangalore-6.
- 2511 Marivannan, T., Senior Engineer, Research Development Unit, B.E.L., Bangalore-13.
- 2114 Marathe, B.R. (Dr.), M.Sc. (Wireless), Ph.D. (Physics), Senior Scientific Officer, C.E.E.R.I., Pilani (Rajasthan).
- 2480 Masand, C.W., B.Sc. (Engg.) (Elec. Mech.), D.I.I.Sc. (Bang.), M.Sc. (U.S.A.), A.M.I.E. (India), M.A.S.H.R., A.E. (USA), Masand Industries, G.T. Road, Jullundur City.
- 14615 Mathews, A. (Sqn. Ldr.), B.E., (4547) Tech/Sigs, Aircraft and Armament Testing Unit, Air Force Station, Kanpur.
- 3654 Mathew, Thomas, M.Sc., Rajanya, 31 Nehru Road, Santa Cruz (East), Bombay-55.
- 14747 Mattur, K.K., B.A. (Hons.), D.I.I.Sc., 34, Ishwar Colony, Pambari Road, Delhi.
- 11697 Mathur, Mukesh Narain, M.Sc., D.I.I.Sc., Principal's Residence, S.R. College of Commerce, Delhi University, Delhi-6.
- 699 Mathur, N.S. (Brig.), Police Wireless Co-ordination, Rail Bhavan, New Delhi-1.
- 15336 Mathur, U.C., M.Sc., Deputy Manager (Sales), B.E.L., Jalaballi, Bangalore-13.
- 14812 Mecci, Mahmood Khan, B.Sc., Senior M.I.E.E.E., 123-G/Block-2, P.E.C.H. Society, Karachi-29 (W. Pakistan).
- 6177 Mehra, S.C. (Major), 25 Inf. Div. Sig. Regt., 56 A.P.O.

*Mem.
No.*

- 8748 Mehrotra, S.L., (Major), M.C.T.E., Mhow (M.P.)
- 2535 Mehta, A.B. (Sqn. Ldr.), B.E. (Hons.), M.I.E.E.E. (New York), A.M.I.E. (India), 4-Nalanda House, I.I.T., New Delhi-29.
- 456 Mehta, K.M., B.Sc., D.I.I.Sc., Engineer-in-Charge, High Power Transmitters, A.I.R., Bombay.
- 2226 Mehta, O.N., M.Sc., C/o Shri D.N. Mehta, Hira Bhavan, Dr. Joshi Road, Karol Bagh, New Delhi-5.
- 14164 Mehta, K.S. (Flt. Lt.), M.Sc., Air Force Station, Bareilly (U.P.)
- 12991 Meemamsi, G.B., B.Sc. (Hons.), D.I.I.Sc., Dy. Director (Research), T.R.C., Eastern Court, Janpath, New Delhi-50.
- 2123 Menon, G.U., B.Sc. (Engg.), A.C.G.I., Grad. I.E.E., Managing Director, H.T.L. Guindy, Madras-32.
- 2641 Menon, K.G. (Gp. Capt.), D.D. Sigs. (Tech), Vayu Bhawan, New Delhi-11.
- 15766 Menon, M. Venugopal, M.Sc., D.R.E., 82, Chandranagar, Palghat-7 (Kerala).
- 1556 Mirchandani, H.J., B.E. (Mech. & Elect.), Director, T.R.C. Eastern Court Compound, Janpath, New Delhi-50 (Service on Council—1969-70)
- 2464 Mishra, S.C., B.Sc., Regional Manager, I.T.I., 9-B, Govindpur Road, Calcutta-31.
- 12992 Misra, J. N. (Sqn. Ldr.), B.Sc., B.E. (Electrical), A.M.I.E. (India), Assistant Air Attache, Embassy of India, Washington DC 20008, U.S.A.
- 2686 Mital, R.N., B.Sc., B.E. (Hons.), Managing Director, Ferro Electronics Pvt. Ltd., B-1/174, Fateh Maidan Road, Hyderabad (A.P.)
- 2418 Mithal, G.K., B.E. (Hons.), Reader in Advance Electronics, Government Engineering College, Jabalpur, (M.P.)
- 13782 Mukherjee, B.C., B.Sc. (Hons.), M.Sc. (Tech.), 2/109, Vidyasagar Upanibesh, Calcutta-47.
- 735 Mitra, S.K., M.Sc., Retd. Stn. Engr. AIR., 93, Keshab Sen Street, P.O. Amherst Street, Calcutta-9.
- 1853 Mitter, E.A. (Lt. Col.), 4, Boulevard Road, Delhi-6.
- 15252 Modak, B.V., B.E. (Hons.), 11, Ambika Housing Society, Chatushringi, Poona-16.
- 3095 Mohan, M. Ananda, A.M.A.S.I., A.M.I.S.E., A.M.I.R.E. (USA), Senior Technical Officer (Estt), 73, Victoria Layout, Bangalore-7.
- 584 Mohanty, A.P., B.Sc., Supdt. of Police (Signals), Cuttack-1 (Orissa).

*Mem.
No.*

- 8062 Mony, S.S. B.Sc., Assistant Director (TE), Post Master-General's Office, Kerala Circle, Trivandrum 1.
- 8504 Mukharjee, S.C. (Dr.), M.Sc., D.Phil., B.S.G. Division, Saha Institute of Nuclear Physics, 92, Acharya Prafulla Chandra Road, Calcutta-9.
- 2506 Mukherji, S.N., M.Sc., M.I.E.I., Governing Director, W.J. Alock & Co., 7, Hastings Street, Calcutta.
- 12710 Mukhi, Lajpat Mangharam, B.Sc. (Engg.), D.P.I.I.G., M.I.E.E. (London), 'Nanaknivas' 3rd Block, Warden Road, Bombay-26.
- 2586 Murgai, B.S., Divisional Engineer Telegraphs, Gorakhpur Division, Gorakhpur (U.P.)
- 9484 Murty, B.S., B.Sc. (Engg. Hons.), D.O.T., Coaxial Cable Project, 10-4-2, Masab Tank, Hyderabad-28.
- 11556 Murthy, B. Srinivasa, B.Sc., D.I.I.Sc. (ECE), M.E. (Adv. Elec.) Senior Scientific Officer I, Solidstate Physics Laboratory, Lucknow Road, Delhi-7.
- 12754 Murthy, S.N. (Major), B.Sc. (Hons.), Dy. Assistant Director, Vehicles Research and Development Establishment, Ahmednagar.
- 1163 Murthy, Y.N., Keshava, B.Sc., D.I.I.Sc., C/o Voltas Limited, (Project Engineering Division), 19, Graham Road, Ballard Estate, Bombay-1.
- 15806 Mundkur, Ramdas Santappa, M.Sc., Manager, Transformers & Coil Winding, B.E.L., Jalahalli, Bangalore-13.
- 75 Nabar, S.M., B.Sc. (Hons.), D.I.I.Sc., A.M.I.E., Deputy Inspector General of Police (Wireless), Poona.
- 14107 Nag, B.C. (Sqn. Ldr.), 288, Service Officers Enclave, Dhaura Kuan, New Delhi-10.
- 8747 Nagar, B.L., B.Sc., 5/3, West Patel Nagar, New Delhi-8.
- 2417 Nagaraj, N.S. (Dr.), B.Sc. (Hons.), Ph.D., D.I.I.Sc., Assistant Professor, Department of Electrical Communication Engineering, Indian Institute of Science, Bangalore-12.
- 5 Nageswaran, K., B.A. (Hons.), D.I.C. (London), Resa Musical Company, 11 Mount Road, Madras-2.
- 13479 Nagesh, J.R. (Sqn. Ldr.), Grad. Brit, I.E.R.E., Superintendent (Training), Instrumentation Ltd., Kota-5 (Rajasthan).
- 660 Naidu, R.K.R. (Major), O.C., Andhra (Indep.) Sub Area Sig Coy. Secunderabad-10.
- 540 Naidu, V.K.P., B.Sc., 9, Second Street, Bharathinagar, Tyagarayanagar, Madras-17.

*Mem.
No.*

- 10335 Nair, B.K.S. (Cdr.), B.Sc. (Engg.), M.I.E.E.E., A.M.I.E.R.E., A.M.I.E. (India), Institute of Armament Technology, Girinagar, Poona-25.
- 6171 Nair, B.R., B.Sc. (Engg.), Senior Engineer Crossbar, I.T.I., Dooravani Nagar, Bangalore-16.
- 652 Nair, C.U.K. (Lt. Col.), B.A., 27, Kerala Battalion NCC, Calicut-5
- 3135 Nair, K.K. (Prof.), M.Sc., D.I.I.Sc., M.I.E.E.E., Professor of Telecommunication Engineering, College of Engineering, Osmania University, Hyderabad-7. (A.P.).
- 15767 Nair, R.K., Signal Engineer, Nigeria Railway Corporation, EBUTE, METTA, Lagos (Nigeria).
- 14650 Nambiar, K.R. (Sqn. Ldr.), Air Force, Station, Manauri (Allahabad).
- 851 Nambiar, K.M.K. (Wg. Cdr.), C. Engg., M.I.E.R.E., Chief Communication Officer, Hindustan Aeronautics Ltd., ADMN Block, Niphad OZAR (Nasik).
- 6716 Nambiar, K.P.P., M.Sc. (London), D.I.C., A.M.I.E.E. (London), M.I.E.E. (U.S.A.), General Manager, the National Ekco Radio & Engineering Co. Ltd., Mahakali Caves Road, Chakala, Andheri (East), Bombay-69 AS
- 14 50 Nambudiri, K.V.V., Scientific Officer, Semiconductor & Microwave Technique Section, Electronics Research Centre, B.A.R.C., Bombay-85 A.S.
- 4209 Nambudiripad, M.N., B.Sc., A.M.I.E.R.E., St. Albert's College, Ernakulam (Kerala).
- 2766 Nanda, C.M. (Col.), M.A., A.M.I.E.R.E., G.S.O.I., A-55 Hauz Khas Enclave, New Delhi.
- 887 Narasimhan, P.R., B.E., Installation Engineer, All India Radio, HPT Colony, Near Bhomeshwar, Jamnagar Road Rajkot-1.
- 3706 Narasimhan, R. (Lt. Col.), Signal Coy NCC, Lawspet, Pondicherry-3.
- 938 Narasimiah, B.N., 18, I Main Road, Ramamohanpura, Sreerampuram P.O., Bangalore-21.
- 918 Narayanan, V.S. (Gr. Capt.), VSM, B.Sc. (Hons.), J.D. (Missiles), Air HQ, Vayu Bhavan, New Delhi-11.
- 532 Narayanaswamy, A.S. M.Sc., Deputy Planning Officer, Planning and Development Unit, A.I.R., Akashwani Bhavan, Parliament Street, New Delhi-1.
- 2827 Narula, H.S., Telephone Engineer, Post Box No. 5291, Kuwait (Arabian Gulf).
- 11048 Narula, V.P., B.Sc. (Engg.), D.I.I.Sc., C/o The Bharat Transformer Corporation, A. Tank, Patiala.

Mem.
No.

13639 Natarajan, G. (Major), A.M.I.E. (India), 2 Army H.Q. Sig. Rgt., Signals Enclave, New Delhi-10.

9767 Natu, K.V., B.E., Factory Manager, Philips India Ltd., Loni Kalbhor (C.R.), N.R. Poona.

6109 Nayar, K.R., D.O.T., Kerala Circle, Trivandrum-1.

1546 Nilkantan, P.S., M.Sc., Planning Officer, A.I.R., Akashwani Bhawan, Parliament Street, New Delhi-1.

2780 Ohri, D.D. (Wg. Cdr.), 4, Durand Road, Ambala Cantt.

457 Pai, K.V., B.E. (Electrical), Technical Expert, C/o E.C.A.F.E., Bangkok, Thailand.

2611 Pal, K.N., B.Sc., 18, Sunder Mansion, 91, Govandi Road, Chembur, Bombay-71.

13109 Pai, M.H., (Major), B.E. (Elect. Engg.), D.M.C. (U.K.), A.M.I.E. (India), Inspectorate of Electronics, Hebbal P.O., Bangalore-6.

2545 Pal, P.C. (Dr.), B.Sc. (Hons.), M.Sc., M.I.R.E. (New York), Reader, WVF Carrier Tele. Engg., Government Engineering College, Jabalpur, (M.P.)

12081 Pandit, R.N. (Major), M.A., A.M.I.E. (India), Senior Inspection Officer, Chief Inspectorate of Electronics Detachment, C/o D.L.R.L. Hyderabad-5 (A.P.).

9116 Panchal, J.C. (Prof.), D.E.E., B.E. (Elect.), (M.S. Illinois U.S.A.), A.M.I.E. (India), Near B.V. Mahavidyalaya, Vallabh-Vidyanagar, Via Anand, Gujarat.

2630 Pandhi, Ranbir (Wg. Cdr.), B.A., A.M.I.E. (India), AFHQ, Vayu Bhavan, New Delhi-11.

15228 Pant, Hem Chandra, M.Sc., Laser Group, Electronics Division, B.A.R.C. Bombay-85 (A.S.).

9198 Pant, N. (Major), M.Sc., Project Engineer, Experimental Satellite Communication Earth Station, Post Box No. 11, Navarangpura, Ahmedabad-9.

14882 Patrounav, V.G. (Dr.), AP 55, BLI-18, Zurupi Street, Moscow—M—469 USSR.

14389 Parmar, D.S. (Flt. Lt.), Tech. Sigs. Air HQ., No. 511. S.U., Air Force, C/o 99 A.P.O.

13075 Pandit, V.M. (Sqn. Ldr.), M.Sc., 39, Subroto Park, Delhi Cantt.

15083 Palit, A.C., M.Sc., Flat No. 1, Block No. 9. 131, N.S.C. Bose Road, Calcutta-40.

12085 Parashar, V.K. (Sqn. Ldr.), M.Sc., Officer's Mess, Air Force Technical College, Jalahalli (West), Bangalore-15.

*Mem.
No.*

- 10145 Paul, Dilip Kumar, B. Tele. E. (Hons.), M.E. (I.I.Sc.), A.M.I.E.E. (London), Graduate Research Assistant, Electrical Engineering Department, University of Rhode Island, Island 02881 U.S.A.
- 9 5 Panwar, B.S., (Col.), (Retd.) C/o Th. Vir Singh, Advocate, Hansi Road, P. O. Bhiwani, Distt. Hissar (Haryana)
- 2645 Parthasarthy, M.N., M.A., A.M.I.E.R.E., 76, North Tank Square, Triplicane, Madras-5.
- 567 Patil, N.A. (Brig.), Plot 108, Army H.Q., Church Road, New Delhi-1. (Service on Council-1969-70).
- 10406 Patil, S.T., B.E., A-61/580, Gandhi Nagar, Bandra (East), Bombay-51 (AS).
- 1610 Pattabhiraman, J., B.Sc., D.I.I.Sc., C/o Resident Representative of the U.N. Development Programme in Ghana. P.O. Box No. 423, Accra (Ghana).
- 895 Pendbarkar, S.B., B.E. (Telecomm.), Philips India Ltd., 68, Najafgarh Road, New Delhi-15.
- 159 Phatak, D.V., B.E., Deputy Chief Engineer, A.I.R. Akashwani Bhavan Parliament Street, New Delhi-1.
- 747 Pichumani, K.K., Divisional Engineer (Retired) P & T, 16, Benewells Road, Cantt., Tiruchirapalli.
- 14290 Pillai, S.G.K., B.Sc., A.M.I.E. (India), D.E.T. (Long Distance), C.T.O. Building, Bombay-1.
- 972 Pinto, K.A.J. (Wg. Cdr.), B.E. (Telecom.), A.M.I.E. (India), A.M.Ac.S.I., WIESE, Apartment State Street, Schenactadyny U.S.A.
- 11672 Pisharody, U.K. (Lt. Cdr.), V.S.M., I.N., C.Eng., M.I.E.R.E., Chief Inspectorate of Warship Equipment, Ministry of Defence (DGI), C/o B.E.L., Jalahalli P.O., Bangalore-13.
- 14228 Prabhu, R.A. (Flt. Lt.), B.Sc., D.R.E., Air Force Station, Makarpura, Baroda (Gujarat).
- 2836 Prabhu, M.A., B.A., No. 16, Monteray Drive, Leslie Park, Ottawa-6 Canada.
- 819 Prabhakar, Alladi (Prof.), M.E., M.I.E.E. (U.S.A.), Department of Electronics and Communication Engineering, College of Engineering, Osmania University, Hyderabad-7 (A.P.).
- 7364 Purakayastha, S.K.De., (Prof.), M.Sc. (Cal.), S.M. (Harvard), M.I.E.E.E. (U.S.A.), M.I.E.E. (U.K.), Head of the Electrical Engineering Department, Assam Engineering College, Julukbari Gauhati-13 (Assam).
- 2591 Puri, Y.R. (Lt. Col.), Assistant Director (Comm.), Border Security Force, Sardar Patel Bhawan, New Delhi-1.

*Mem.
No.*

- 8457 Radhakrishnan, T. (Prof.), B.E. (Hons.), M.Sc. (Engg.) of Dip. Stat, A.M.I.E., M.I.E.E.E. (Engg.), M.I.E.E. (London), Head of the Deptt. of Electrical Engineering, Manipal Engineering College, Manipal, South Kanara Distt. Mysore State.
- 13108 Raghavan, S.B. (Lt. Col.), 23 Mtn. Div. Sig. Regt., 99 A.P.O.
- 9703 Raghunath, Lecturer in Telecommunication Engineering, I.I.T., Banaras Hindu University, Varanasi-3 (U.P.).
- 122 Ragde, R.S., B.Sc., Project Officer, Telecommunications, United Nations Development Programme, Room No. 3566, 866, U.N. Plaza. New York, N.A. 10017 U.S.A.
- 2646 Rajagopal, D. (Gp. Capt.), B.Sc., J.D. (Plans) Air HQ. Room No. 129, Vayu Bhawan, New Delhi-11.
- 9276 Rajan, R.A., (Lt. Col.), B.Sc., O.C. XI Corps Sig. Regt., 56 A.P.O.
- 4327 Rajan, R.M. (Lt. Col.), B.Sc., D.C.S.O., HQ MK Area, Madras.
- 1683 Raju, D.V.S., B.Sc., D.M.I.T., M.I.E.E.E., Managing Director Electronics and Industrial Instruments Co. Pvt. Ltd., 17-B, Industrial Estate, Sanatnagar, Hyderabad-18 (A.P.).
- 15797 Rajagopalan S. B.E. (Hons.), M.E., Dy. Chief Signal and Telecommunication Engineer, Eastern Railway HQ, Fairlie Place, Calcutta-1.
- 3529 Ramachandra, R.K., B.Sc., M.I.S.E., C/o Mukand Iron and Steel Works Ltd., Rannegunge. Coal House, 3-A, Chowringhee Place, Calcutta-13.
- 11209 Ramachandran, V. (Dr.), B.Sc., D.I.I.Sc., (EGE), D.I.I.Sc. (Electronics), Ph.D., M.I.E.E.E. (U.S.A.), Assistant Professor, Department of Electrical Engineering, Nova Scotia Technical College, Halifax (N.S.) Canada.
- 740 Ramadoss, E.N. (Lt. Col.), B.Sc., 1 Armd. Div. Sig. Regt., 56 A.P.O.
- 6056 Ramadoss, K.C., B.E. (Telecomm.), I.I.T., Bangalore.
- 1489 Rama Kant, B.Sc., (Elect. & Mech.), D.D.G. (EB), P & T Dte., Parliament Street, New Delhi-1.
- 2184 Ramakrishna (Major), B.Sc., M.A., Det. Tech. G.P., E.M.E., No. 6, 515, Army Base Workshop, Bangalore-8.
- 4068 Ramakrishna, P. (Capt.), Grad. I.E.R.E. (C), Electrical Engg. Department, I.I.T. Hauz Khas, New Delhi-29.
- 3 22 Raman, S. (Lt. Col.), B.Sc., M.A. (Maths), M.I.R.E., A.M.I.E., R.E., Dte. of Planning and Co-ordination, Min. of Def., 11-A, Janpath, New Delhi-1.
- 701 Ramanand, V.S. (Lt. Col.), B.Sc., Deputy Planning Officer (L), Dte of Planning and Coordination, 11-A, Janpath, New Delhi-1. (Service on the Council—1968-70)

*Mem.
No.*

- 14923 Ramana, K.V.V. (Dr.), B.Sc. (Hons.), M.Sc. (Physics), D.Sc. (Physics) Lecturer in Physics, Andhra University, Waltair (A.P.) Vishakhapatnam-3.
- 2603 Ramanany, P.U. (Wg. Cdr.), Dte. of Sigs., Air HQ, New Delhi-11.
- 1953 Ramanathan, P.M., B.E. (Telecommunication), Asstt. Prof. in Telecomm. Engg., Regional Engineering College, Trichy-16.
- 14595 Ramaswamy, M.A., B.Sc., A.M.I.E. (India), D.E.T. (Planning), Delhi Telephones, Eastern Court, New Delhi-50.
- 8537 Ramaswami, N., D.E.E., Production Manager, Transmission, I.T.I., Bangalore-16.
- 7628 Ramesh Chander, (Lt. Col.), B.A. (Hons.), A.M.I.E., E.M.E., Dy Director and Chief Instructor, Defence Institute of Works Study, Landour Cantt, Mussoorie (U.P.)
- 14145 Randhawa, K.S. (Sqn. Ldr.), 193, Dhaura Kuan, New Delhi.
- 1411 Ranganathan, S N, B.E. (Electrical), P.M.G., Kerala Circle, Trivandrum. (Service on Council—1963-64, 1967-70 and H.T. 1964-66).
- 14814 Ranganathan, T.N., Electronics Engineer, Research and Development Section, Kirloskar Oil Engine Ltd., Kirkee, Poona-3.
- 607 Ranji, H.K. (Lt. Col.) (Retd.), B.E. (Electrical), A.M.I.E. (India), A.M.I.E.D.P., Secretary of the Institution of Telecommunication Engineers, 12-13/F, Connaught Place, New Delhi-1. Res : C-232, Greater Kailash-I, New Delhi 48. (Secretary-1968-70).
- 8427 Rao, B.S., (Dr.), M.Sc. (Tech), Ph.D., Director (Electronics Division), Indian Space Research Organisation, C/o Physical Research Laboratory, Navarangpura, Ahmedabad-9.
- 14154 Rao, D.V.R. (Major), B.Sc., A.M.I.E. (India), 977 A.D. Reg. Workshop, 56 A.P.O.
- 13634 Rao, Govinda, B.Sc., B.E. (Electrical), Deputy Engineer, O.T.I., Res : C-2 Ring Road, North Dooravaninagar, Bangalore-1.
- 231 Rao, G. Parbhakara (Major), M.Sc., A.M.I.E.R.E., XXXIII Corps Sig. Regt., 99 A.P.O.
- 2911 Rao, K.L., B.Sc., D.I.C., M.A. (Cantab), M.I.R.E., A.M.I.E.E., 185 C/1, Royapettah, High Road, Madras-14.
- 14233 Rao, Krishna Moorthi Pejaver, Senior Inspecting Officer, Communication Division, C.I.L., Bangalore-6.
- 13306 Rao, M. Srirama (Dr.), B.Sc., M.Sc. (Applied Physics), D.Sc., M.I.R.E. (U.S.A.), Reader in Physics, Andhra University, Waltair (A.P.)

**Mem.
No.**

- 15662 Rao. P.V., B.E., 18/H, 5th Main Road, 5th Block, Jayanagar, Bangalore-41.
- 2597 Rao, R. Nagaraja (Wg. Cdr.), B.E., D.I.I.Sc., D.C.Ae., A.M.I.E., A.F.R.Ae.S., Assistant Director. D.L.R.L., Hyderabad-5 (A.P.)
- 2607 Rao, S. (Wg. Cdr.), A. Brit. I.R.E., ALISDA, D.T.D. and P., (AIR), 275, Rajamahal Extension, Bangalore-6.
- 3928, Rao, V. Hanumantha, B.E. (Telecommunication), Deputy Superintendent, Police Communications, Office of the Inspector General of Police, Saifabad, Hyderabad-4 (A.P.)
- 1520 Rao, V. Kuppa, B.A., D.E.T. (Retd.), P & T 1st Floor, Kamal Kunj, Telong Cross Road, No. 2, Matunga, Bombay-19.
- 15347 Rao, T.K. (Major), B.E., Senior Inspection Officer, CIL Wing C/o B.E.L., Jalahalli, P.O., Bangalore-13.
- 5531 Rathana, J.L. (Major), B.Sc., 7, Haddows Road, Nungambakkam, Madras-6.
- 11506 Ravindran, K., B.Sc. (Gen.), B.Sc. (Hons.), M.S.E.E. (Elect. Engg.), M.I.S.E., A.M.I.C.E., A.M.I.E. (India), Chartered Engineer, 82, Chandranagar, Palghat-7, Kerala.
- 2245 Ravindra Nath, B. (Prof.), B.Sc., Head of Electrical Engineering Department, Malaviya Regional Engineering College, Jaipur-4 (Rajasthan).
- 10124 Ravindran, P.M. (Major), B.Sc., A.M.I.E. (India), HQ 23 Mtn. Div., 99 A.P.O.
- 15788 Rawat R.C. (Lt. Col.), Sigs. Dte., G.S.Br., Army HQ, Plot 108, Church Road, New Delhi-1.
- 2583 Ray, A.K., B.Sc., M.Sc. (Applied Physics), Grad. Brit. I.R.E. Bungalow No. C-4, Area-I, P.O. Maithan-Dam, Distt. Dhanbad.
- 10 Ray. N.C., M.Sc., D.I.I.Sc., E-1/140 Area Colony, Bhopal-6 (M.P.)
- 6054 Reddi, C.K., B.E. (Electrical), Regional Director, Telecommunications, Western Region, C.T.O. Building, Bombay-1.
- 3883 Reddy, K.L., B.E. (Electrical), District Manager, Telephones, Hyderabad (A.P.)
- 6933 Reddy, Y.C. Kesava (Flt. Lt.), B.Sc., A.M.I.E. (India), Officers' Mess, A.F. Station, Jamnagar.
- 15095 Reddy, S.L., M.Sc., S-277, Greater Kailash, New Delhi-48.
- 8447 Revankar, G.N., B.E. (Hons.), (Telecommunication), Assistant Professor, I.I.T., Powai, Bombay-76.

*Mem.
No.*

- 10449 Rishi, K. (Commander), B.Sc., N.D.A., Kharakvasla, Poona-23.
- 3797 Roy, R.N. (Dr.), B.Sc. (Hons.), M.Sc., D. Phil, Associate Professor, Saha Institute of Nuclear Physics, 92, Acharya Prafulla Chandra Road, Calcutta-9.
- 7284 Roy, S.C., (Lt. Col.), Embarkation HQ, Red Road, Camp No. 4, Fort William, Calcutta-21.
- 15096 Rustogi, Dipti (Mrs.) (Dr.), B.E. (Telecom.), M.E. (Elec. Comm.) Ph.D. (Engg.), 11/6, Salimpur Road, Calcutta-31.
- 564 Sabhaney, I.W. (Air Commodore), HQ Maint Comd., I.A.F., Nagpur.
- 14752 Sabharwal, T.P. (Lt. Col.), M.Sc., A.M.I.E. (India), M.I.E.R.E. (U.K.), ADPIL, Deptt. of Defence Production (DGI), D.P.I.L., New Delhi-11.
- 4627 Sachdev, D.K., B.Sc., D.I.I.Sc., (E.C.E.), Dy. Chief Engineer, Transmission, I.T.I., Doorvaninagar, Bangalore-16.
- 2 Sabadev, N.L., B.A. (Hons.), M.Sc. (Physics), Project Officer, All India Radio, Eden Garden, 4th Floor, Calcutta-1.
- 12442 Sahai, S.P. (Wg. Cdr.), M.Sc., A.M.I.R.E., 4, Mysore Air Sqn. (Tech.), N.C.C., No. 17-13 Chunningham Road, Bangalore-13.
- 1413 Sahgal, N.S.D. (Major), Senior Scientific Officer, CIL, Hebbal, Bangalore-6.
- 13008 Sahney, Saranjit Singh, (Major), 1/1, Robert Barracks, Mhow (M.P.)
- 14208 Sain, Mangal (Dr.) Ph.D., M.Sc., Station Engineer, AIR, Jaipur.
- 77 Samant, M.G. (Prof.), B.Sc. D.I.I.Sc., Deputy Director of Technical Education, Marathwada Regional Office, Aurangabad.
- 2638 Sampath, S. (Prof.), B.Sc. (Hons.), D.I.I.Sc. M.Sc. (Electronic Engg.), Deputy Director, I.I.T., Madras-36.
- 2590 Sampson, D.S. (Sqn. Ldr.), No. 15, Nandidurg Road Extension, Bangalore 6.
- 2670 Sandhu, G.S., B.Sc. (Hons.), D.E.T. (Construction), Jammu.
- 10834 Sangal, D.K., B.E., M.I.E.E.E. (New York), D.C.E., P & T Dte., Parliament Street, New Delhi-1.
- 205 Sankaranarayanan, P.H., B.Sc. (Hons.), M.A., A.D.G. (NM), P & T Dte., New Delhi-1.
- 5403 Sankaranarayanan, P.E., B.Sc., M.A., Grad. I.E. (India), D.P.I.I. (Holland), Scientist, Instrumentation Division, National Aeronautical Laboratory, Bangalore-17.

*Mem.
No.*

- 8062 Sankarasubramony, S., Assistant Director (TE), Postmaster-General's Office, Kerala Circle, Trivandrum-1.
- 2782 Sankaraman, S., B.E., Works Manager (Transmission), I.T.I., Doorvaninagar, Bangalore-16.
- 13052 Sankara Rao, B.S., M.Sc., Senior Scientific Officer, Solid State Physics Laboratory, Lucknow Road, Delhi-7.
- 1745 Sapre, S.D. (Air Commodore), B.A. (Hons.), B.Sc., D.I.I.Sc., Project Management Officer, Ministry of Defence, Room No. 29 C-1 Hutment, Dalhousie Road, New Delhi-11.
- 2557 Sardesai, S.N., B.Sc., B.E. (Hons.) (Telecom.), A.M.I.E. (India), M.I.E.E.E., Divisional Engineer, 15A/23, Sector 4, Bhilai-1 (M.P.)
- 5753 Sarkar, B.C., Systems Testing Engineer, International Computers Ltd., Nagar Road, Poona-14.
- 2961 Sarkar, N., Neel Mahal, 1st Floor, Flat No. 4, 25th Road, Bandra, Bombay-50.
- 45 Sarin, D.D., B.Sc. (Engg.), Planning Officer, Planning and Development Unit, A.I.R., Akashvani Bhavan, New Delhi-1.
- 2261 Sarin, J.C. (Major), B.Sc., Grad. I.E.R.E., DAD (E) HQ, DPIL, Ministry of Defence, G Block (DGI), New Delhi-11.
- 7261 Sarin, Tej (Brig.), B.A., C.S.O., HQ Southern Comd. Poona-1.
- 14291 Sarma, V.V.S., B.A., A.M.I.E. (India), Executive Engineer (Electrical), S-8 Post Qrs. Visakhapatnam-1 (A.P.).
- 11067 Satish Chandra (Lt. Col.), M.Sc., L.R.D.E., Post Box 108, High Grounds, Bangalore-1.
- 7744 Satyal, H.N., B.Sc., B.Sc. (Engg.), Grad. I.E. (India), 3/22, Tata Power Supply Colony, Matunga, Bombay-19 DD.
- 815 Sawhny, R.N.R., (Lt. Col.), O.C., 5 Delhi BNCC, 11, Lances Road, Delhi-7.
- 15366 Sawhney, H.S. (Lt. Col.), B. Sc. (Engg.), C. Engg., M.I.E.R.E., ADEME, HQ XI Corps 1, C/o 56 A.P.O.
- 2797 Saxena, M.S., Grad. Brit. I.R.E. (London), B-4/169, Safdarjung Enclave (Nauroji Nagar Extension) New Delhi-16.
- 2866 Sehgal, J.L., B.A., Scientific and Technical Officer, T.R.C., Janpath, New Delhi-50.
- 12917 Selot, M. (Dr.), M.E. (Advanced Electronics), Ph. D., Reader in Telecommunication Engineering, Government Engineering College, Jabalpur (M.P.)

*Mem.
No.*

- 2431 Sen, D.N., M.Sc. (Applied Physics), M.Sc., C/o Martin Burn Limited, 40-42, Janpath, New Delhi-1.
- 2728 Sen, Jayant Kumar (Dr.), Ph. D. (Engg) (Illinois, U.S.A), D. Phil (S)(Cal)., M.Sc. (Tech.), M.I.E.E.E. (USA), Department of Communication Engineering, Bengal Engineering College, Howrah-3.
- 12080 Sen, T.C., M.Sc., 764, West Newardganj, Agarwal Colony, Jabalpur-2 (M.P.)
- 2260 Seshadri, S., D.E.T. (Retd.), 3-5-695/5, New Narayanaguda, Hyderabad-29.
- 698 Seshamani, B. (Brig.), B.Sc., C.S.O. HQ Eastern Comd., Lucknow.
- 3589 Sethi, N.J.S. (Col.) (Retd.), C/o Shri Kartar Singh Ji, A-56, Nizamuddin East, New Delhi-13.
- 11671 Sethi, S.C. (Lt. Col.), B.Sc. (Engg.), A.M.I.E. (India), HQ C/o EME Dte. B-Block, DHQ PO New Delhi-11.
- 10766 Setty, C.S.G.K., (Dr.) Ph. D., B.Sc. (Hons.), M.Sc., A. Inst. P., Department of Physics and Astrophysics, University of Delhi, Delhi-7.
- 392 Shah, J.G. (Dr.), B.E. (Electrical), D.I.Sc., Ph.D., A.M.I.E., M.I.E.E.E. (U.S.A) CVM, (prof. & Head of Electrical Engineering Department, Sardar Patel College of Engineering, Varsava Road, Andheri, Bombay-58.
- 1968 Shamarao, P.L., M.I.R.E. (U.S.A.), No. 124 Shrikrishnarajindra Road, Basavanagudi, Bangalore-4.
- 8638 Shankar, M.S., M.Sc., Grad. I.E. (India), Type III, 98-C, R.D.S.O. Colony, Alambagh, Lucknow-5.
- 14105 Sharma, R.N. (Sqn. Ldr.), B.Sc. (Hons.), M.Sc. (Physics), H-58 A, Shivaji Park, Rohtak Road, Delhi-26.
- 4738 Sharma, M.L. (Fg. Offr.), No. 67 Squadron, Air Force, 56 A.P.O.
- 11673 Sharma, R.D. (Sqn. Ldr.), M.Sc., A.D. Eng-A3 (T), Air HQ, R.K. Puram, New Delhi-22.
- 15886 Sharma, V.T.V., B.E. (Elec.), D.I.I.Sc., District Singal and Telecommunication Engineer, Microwave, Southern Railway, Permbur, Madras-23.
- 13749 Sharma, R.P. (Fg. Offr.), M.Sc., No. 64, Squadron, Air Force, C/o 56 A.P.O.
- 15720 Shenoy, B.S.N., Plant Superintendent, (OHP), Harbour, Visakhapatnam-1.
- 12920 Shome, A.K., B.Sc. (Hons.) 83, Indra Biswas Road, Calcutta-37.
- 3535 Shrivastava, K.K., (Prof.), B.E. (Hons.), M.E., Professor of Telecommunication Engineering, Government Engineering College, Jabalpur (M.P.)
- 2580 Shukla, R. (Wg. Cdr.), Air Force Liaison Cell, B.E.L., Jalahalli P.O., Bangalore-13.

*Mem.
No.*

- 557 Singh, Ajit, (Brig.) (Retd.), Director, C.M.O. Dte, Ministry of Defence, M. Block, Room No. 116, New Delhi-1.
- 13725 Singh Gulzar (Sqn. Ldr.), No. 1 Wireless Experimental Centre, Delhi Cantt-10.
- 13488 Singh, Gurmail (Flt. Lt.), No. 69 Squadron, Air Force, 99 A.P.O.
- 2 51 Singh, Gurmukh, (Wg. Cdr.), D.E.E., A. Brit I.R.E. (London), No. 2 Delhi (Tech.), Air Sqn. N.C.C./I.I.T., Hauz Khas, New Delhi-29.
- 5535 Singh, Hardayal (Lt. Cdr.), B.E., I.N.S. 'Valsura', Jamnagar (Gujarat).
- 2322 Singh, Harphul (Capt.), J, Comm. Z, Signal Regt., C/o 56 A.P.O.
- 13725 Singh, Gurdas (Sqn. Ldr.), 1 Wireless experimental Centre, Delhi Cantt.
- 1532 Singh, Hazara (Lt. Col.), Officer Commanding, Eastern Command, Signal Regiment, Lucknow.
- 12999 Singh, I.J. (Flt. Lt.), M.Sc., I.T.G.W., Room No. 167, Vayu Bhawan, Rafi Marg, New Delhi-11.
- 829 Singh, Joginder (Major), B.A., HQ 1 Signal Training Centre, Jabalpur (M.P.)
- 6320 Singh Joginder (Major), 7, Infantry Division, Signal Regt., 56 A.P.O.
- 15338 Singh Bhupal, (Major), A.M.I.E. (India), HQ 11 Inf. Div., C/o 56 A.P.O.
- 11083 Singh, Harbhajan, B.A., M.I.E.E.E. (USA), 73 Oswald Road, Southall, Middlesex, U.K.
- 14106 Singh, Purshotam (Major), A.M.I.E. (India), 309/D-II, Pundara Road, New Delhi-11.
- 7303 Singh, R.C. (Major) (Retd.), 'Tilpat' View Farmouse, Khampur, New Delhi-30.
- 11645 Singh, S.P. (Flt. Lt.), M.Sc., No. 24 Rock View, A.F. Station, Palam, New Delhi-10.
- 6182 Singh, Swaran (Fg. Offr.), B.Sc., Air Force Station, Suryalanka, P.O. Bapatla (A.P.).
- 475 Singh, Shiv (Lt. Col.) (Retd.), 403-L, Model Town, Jullundur (Punjab).
- 13636 Singh, Umrao, (Lt. Col.), B.A., LL.B., 12 Inf. Div. Sig. Regt., 56 A.P.O.
- 4741 Singh, Vishnu Prakash (Major), M.Sc., 41 Clay Square, Lucknow.
- 11614 Singhal, R.K. (Wg. Cdr.), B.Sc., B.E., D.A.E. (Cranfield) M.I.E. (India), 36, C.V. Hostel, Dr. Rajendra Prasad Road, New Delhi-1.
- 12142 Singhal, S.S. (Major), M.Sc., 7Mtn. Bde. Sig. Coy, 99 A.P.O.
- 1969-70

*Mem.
No.*

- 2903 Singhal, Satya Prakash, M.Sc., Senior Scientific Officer, Gd. I, Solid State Physical Lab., Lucknow Road, Delhi-7.
- 4760 Sinha, A., C/o K.N. Shukla, (PA), D.E.T., Varanasi Division, Varanasi.
- 8067 Sinha, Ananda Mohun (Lt. Col.), B.Sc., A.M.I.E., 2 Trg. Bn., HQ CEME, 701 Comma. Z TPT, C/o 56 A.P.O.
- 13018 Sinha, D.P., B.Sc. (Engg.), Asstt. Director, Central Water & Power Commission, West Block 2, R.K. Puram, (Power Wing), New Delhi 22.
- 13679 Sitaramaswamy, P. (Dr.), Ph.D., M.Sc., Lecturer, Department of Applied Physics, Andhra University, Waltair (A.P.).
- 1331 Smith, D.C. (Lt. Col.), 10 Inf. Div. Sig. Regt., 56 A.P.O.
- 6892 Sodhi M.S. (Col.), DD (Tels.), Sigs. Dte., Army HQ, Plot 108 Church Road, New Delhi-1.
- 3530 Sobti, B.K. (Major), B.Sc., Officer Commanding, 16 Wireless Experimental Unit, Delhi Cantt-10.
- 2462 Somasundaram, R.S. B.Sc. (Hons.), D.E.T., Coaxial Equipment Division, 79, Gokhle Street, Ram Nagar, Coimbatore-9 (Tamilnadu).
- 3608 Sonde, B.S. (Dr.), M.E. (Telecomm.), M.Sc. (Engg.), Ph.D., M.I.E.E.E. (U.S.A.) Assistant Professor, Department of E.C.E., Indian Institute of Science, Bangalore-12.
- 5716 Srinivasan, R., B.Sc., A.M.I.E. (India), C/o Mr. V. Ramaswamy Iyengar, Advocate, Sriram Mandir, Swarnapuri, Salem-4.
- 384 Srinivasan, S., M.Sc., Director, Indian Standards Institution, Bombay Branch Office, Novelty Chambers, Grant Road, Bombay-7.
- 2617 Srinivasan, T. (Air Commodore), B.Sc. (Hons.), 4, 12th Cross Road, Malleswaram, Bangalore-3. (Service on Concil—1961-63).
- 10663 Srirangan, T.V., B.E., D.I.I.Sc., Deputy Director, T.R.C., Eastern Court, New Delhi-50. (Service on Concil 1969-70).
- 5309 Srivastava, H.C., A.M.I.E.R.E. (London) Police Radio HQ, Mahanagar, Lucknow.
- 15093 Srivastava, B.B., M.Sc., Radio & Electronics Research Laboratory, Institute of Technology, Banaras Hindu University, Varanasi-5.
- 13754 Srivastava, Krishna Mohan Lal (Dr.), Ph.D., M.Sc., Applied Physics Section, Institute of Technology, Banaras Hindu University, Varanasi-5.
- 1751 Srivastava, S.K. (Dr.), M.Sc., Ph.D., Lecturer in Applied Physics, Department of Electrical Engineering, Institute of Technology, Banaras Hindu University, Varanasi-5 (U.P.).

*Mem.
No.*

- 112 Srivatsan, B.S., B.E. (Electrical), D.I.I.Sc., Engineer (Electrical), Department of Lighthouses and Lightships, 4, Chapel Road, Hastings, Calcutta-22.
- 1460 Subrahmanyam, Ganti (Prof.), B.E. (Elec. Engg.), M.A., M.I.R.E., Principal, N.S. College of Engg., Saifabad, Hyderabad-28 (A.P.).
- 2422 Subramania, C.S., B.Sc., M.I.E.E.E., M.I.I.P.A., M.I.I.T.A., A.M.I.I.P.M., 31/1 Block No. 12, Kumara Park West, Bangalore-20.
- 1569 Subramanian, C.R., B.Sc., M.S. (EE), D.I.I.Sc., Rajam House, 6-Palace Cross Road, Bangalore-20.
- 6942 Subramanian, H., (Major), B.Sc., Signals, 409, Palace Upper Orchards, Bangalore-6.
- 2425 Subramanian, N., B.Sc. (Engg.), A.M.I.E. (India), 6 Delana, 261-A, Central Avenue Road, Chembur, Bombay 71.
- 1934 Subramanian, T.S., B.Sc. (Engg.), I.T.U. Expert, C/o U.N.D.P., Post Box No. 618, Bangkok.
- 8428 Sud, K.C. (Lt. Col.), B.Sc. (Hons), M.C.T.E., Mhow (M.P.)
- 582 Sujan, V.B., D.F.H., A.M.I.E.E. (London), 8, Jenkins House, Henry Road, Appolo Bunder, Bombay-1.
- 13079 Sukthankar, S.K., B.E. (Elec. & Mech.), Grade I.E. (India) Divisional Engineer, Telegraphs, Long Distance, C.T.O. Building, Bombay-1.
- 6110 Sundaram, V.M. (Lt. Col.) B.E. (Telecommunications), 14, Service Officers' Flats, Vinay Marg, Chanakya Puri, New Delhi-11.
- 14334 Suri, K.L. (Lt. Col.) (Retd.), B.A. (Hons.), Grad. Brit. I.R.E., C-485, Defence Colony, New Delhi-3.
- 11011 Suri, S.K., M.Sc. (Hons.), M.S. (U.S.A.), A.M.I.E.E.E., Scientist-In-Charge Instrumentation, Room No. 222, National Physical Laboratory, Hill Side Road, New Delhi-12.
- 1550 Sur, S.N., B.Sc. (Hons.), 27-A, Indira Biswas Road, Calcutta-37.
- 1690 Suryanarayanarow, C.V.S. (Wg. Cdr.), B.E., D.I.I.Sc., A.M.I.E., A.M.Ae.S.I., C.S.O., HQ Central Air Comd, Bamrauli, Allahabad (U.P.)
- 8817 Sushil Nath (Major), A.M.I.E., Intelligence Training School and Department, Poona-1.
- 808 Taskar, N.T., B.Sc., B.E. (Electrical), District Manager, Ahmedabad Telephones, Ram Niwas, 2 Khanpur, Ahmedabad-1.
- 677 Thomas, K.F. (Lt. Col.), 2, Air Formation Sig. Regt., Hospital Town East, Bangalore-14.

*Mem.
No.*

- 11641 Thomas, I.S. (Flt. Lt.), Air Headquarters Room No. 167, Vayu Bhawan, Rafi Marg, New Delhi-11.
- 14924 Thyagarajan, N., B.E., Institution of Engineers, Office of Superintendent, Engg., Tech. Elect., 157, Mount Road, Madras 2.
- 2493 Tod, D.S., B.Sc., M.S.R.E., Associate Partner, Henn-Collins Crocker Associates, Mc Millan House, Cheam, Common Road, Worcester Parle, Surrey (England).
- 435 Trivikrama Rao, B.V. (Prof.), B.Sc. (Hons.), M.Sc., A.M.I.E.R.E. (London), Air Force Technical College, Jalahalli (West), Bangalore-15.
- 3747 Tyagi, B.D. (Lt. Col.), M.E., D.E.E., A.M.I.E. (India), A.M.A.I.E.E., Military College of EME, P.O. Trimulgherry, Secunderabad-15 (A.P.)
- 15365 Uppal, P.N., B.E. (Electrical), C-7, Prithviraj Road, 'C' Scheme, Jaipur-1.
- 1168 Vardan, B.R.V., B.E. (Elect. Engg.), A.M.I.E.E. (London), A.M.A.S.I., Electronics Engineers (Adviser), I.C.A.O., T.A.M., P.O. Box No. 8531, Salmiyah P.O. Kuwait.
- 437 Vardarajan, S.M., B.Sc., B.E., D.I.I.Sc., M.I.E., Engineer-in-Charge, A.I.R., Eden Gardens, Calcutta-1.
- 6036 Varadarajan, G., M.A., B.Sc. (Hons.), Scientist, National Geophysical Research Institute., Hyderabad 7.
- 9853 Varma, K.R. Sukumara, (Major), B.Sc., 250, Field Workshop Coy., E.M.E., 99 A.P.O.
- 14155 Vazirani, G.T. (Major), A.M.I.E. (India), A.M.I.E.D.P., Officer-in-Charge, Data Processing Centre, Signals Records, Jabalpur (M.P.)
- 4114 Vedwa, R.K. (Sqn. Ldr.), B.Sc., 65, Bharati Nagar, New Delhi-3.
- 12948 Venkataraman, K.I. (Lt. Col.), B.E., A.M.I.E. (India), Military College of E.M.E., Secunderabad-15 (A.P.)
- 805 Venkataraman, K., M.A., M.E., Associate Professor, Department of Electronics Engineering, Birla Institute of Technology and Science, Pilani (Rajasthan).
- 571 Venkataraman, K.R., B.A., Senior Engineer, Hindustan Teleprinters Ltd., Guindy, Madras 32.
- 10781 Venkataraman, S., B.A. (Hons.), Divisional Engineer (Telegraphs), Telecommunication Training Centre, P&T, Trivandrum-1.
- 4575 Venkatraman, G. (Fg. Offr.), Air Force Station, Baroda (Gujarat).
- 3426 Venkatasubramony, A.R., B.Sc., Development Engineer, Eastern Electronics (Pvt.) Ltd., Faridabad New Town.

*Mem.
No.*

- 10144 Venkateswaran, P.S. (Lt. Col.), B.Sc., A.M.I.E. (India) Directorate of Electronics, 11-A, Janpath, New Delhi-1.
- 940 Venkateswarlu, N., B.Sc., D.E.C.E., Dy. Engineer-in-Charge, High Power Transmitters, A.I.R., Khampur, Delhi-36.
- 13837 Vepa, Ram K. (Dr.), B.Sc., D.E.C.E., Ph.D., I.A.S., DI-37, Chanakayapuri, New Delhi-11.
- 12916 Veries, J.J.H.De., Technical Director, Philips India Ltd., Shivasagar Estate, Block A. Dr. Annie Besant Road, Worli, Bombay-18.
- 4347 Verma, B.D. (Lt. Col.), B.Sc., B.E. (Hons.), A.M.I.E. (India), E.M.E., C.I.L., Hebbal, Bangalore-6.
- 2406 Verma, H.C., B.Sc. (Hons.), M.Sc. (Hons.), Associated Instrument Mfs. (India) Pvt. Ltd., Sunlight Insurance Building, 26-27, Asaf Ali Road, New Delhi.
- 14124 Verma, Sudershan Kumar, B.E., M.I.R.T., M.B.R.S.T.S., Divisional Signal & Telecommunication Engg., Central Phy. Divl. Office., V.T. Annexe Building, Bombay-1.
- 14712 Vij, B.B. (Fg. Offr.), (10313) Tech/Sig No. 256, Signals Unit, Air Force, C/o 56 A.P.O.
- 15255 Vijay Kumar, B.Sc., B.E. (Electrical), Assistant Director, T.R.C., Janpath, New Delhi-50.
- 2748 Virdee, K.S., B.Sc., Semiconductors, Behind Block No. 26, West Patel Nagar, New Delhi-8.
- 3268 Virdee, T.S., Commander, I.N., B.Sc., B.T., Deputy Director, NCC., 'Groves', Rajendra Path, Patna-1 (Bihar).
- 1656 Vithal, D.V.R., B.E. (Telecommunication), M.S. (U.S.A.), M.I.E.E.E., Reader, Department of Telecommunication Engineering, University College of Engineering, Osmania University, Hyderabad-7 (A.P.)
- 3364 Vohra, Ram Sarup, A.M.I.E. (India), Senior Scientific Officer, Dte. of N.S.T., Room No. 110, 'H' Block, New Delhi.
- 13051 Wagle, H.P., B.E. (Telecomm.), D.O.T., Microwave Project, 3-6-106 Himayath-Nagar, Hyderabad-29.
- 15094 Wig, S.N., (Wing Commander), Officers' Mess, Air Force Station, Adampur, Jullundur.

—:O:—

APPENDIX

List of Papers Published in the Journal of the Institution of Telecommunication Engineers and the Students' Journal from October 1969 to September 1970

Journal of the Institution of Telecommunication Engineers

Vol. 15, No. 10 October-69

- Design of a VHF Suppressed Antenna—Prem Swarup & R. Ramanathan
Side Lobe Optimization in circular Antenna Arrays—Madhavendra Nath & G. S. Shukla
Transistorised selective and control amplifier—A. Mallik
On Measurement of Dielectric constant at Microwave frequencies—R. Ganguly
Excitation of Electromagnetic waves on Plasma columns by using partially filled Plasma
Waveguides—K. C. Gupta & A. Singh.
Design and Performance of a three-stage thermoelectric cooler—M. M. Kaila
Bunch Pulser—M. M. Bemalkhedkar
3-Metre High Gain reflector antenna for satellite and terrestrial microwave links—N.
Mohanty & L. Lasrado
Non-linear analysis on the acceleration velocity Plane—Sarbeswar Prusty
A Lightning Flash density gauge—S. V. C. Aiya & M. Hari Shankar

Vol. 15, No. 11 November-69

- Space Charge capacitance of Aluminium-Cadmium sulphide-Aluminium Thin Film Switching
diode—S. K. Srivastava
An Iterative differential analyser with Transistorized Units—V. Venkateswarlu & R. L.
Sherma
Nomographs for Calculation of field strength—M. K. Rao
Control of Parameters of Varactor Diodes—W. S. Khokle & A. K. Ray
Sunspot dependence of the Noon Bite-out Phenomenon of the F_2 —Region at Equatorial
Latitudes—P. T. Sanyasi Raju & M. Mukunda Rao
Cascaded Exponential Line Resonator O. P. Rustogi & (Miss) Dipti Das
Surface Recombination in Alloy Junction Transistors—G. P. Srivastava & S. K. Bhatnagar
Design of a Heterodyne Eliminator—K. N. Seshadri
Development and Study of a Microwave Latching Device in X-Band—K. K. Gupta, R. P.
Wadhwa & M. Chaudhuri
An Atmospheric Noise Burst Generator—S. V. C. Aiya & K. Ramasway

Vol. 15, No. 12 December-69

- Graphic Analytic Method of Transistor Bistable Multivibrator Design—V. A. Kozlov &
K. V. Reddy

A Pulse Rate counter for randomly repetitive random processes—S. V. C. Aiya & A. P. Shivaprasad

Geomagnetic Influence on sky wave propagation of MF Signals—M. K. Rao

Generalized Root Contours of Third Order Systems—N. G. Nath & A. K. Choudhury

Study of Ohmic Contacts to Low Resistivity GaAs—(Mrs.) R. Gulati, R. K. Purohit & Ishwar Chandra

Effectiveness of Engineering Personnel—S. Balaram

Function Approximation and Legendre Polynomials—S. C. Kak

Measurement of the Peak field strength of a narrow band atmospheric—S. V. C. Aiya & G. Bhanumurthy

Some aspects of laser pumped parametric oscillator—N. K. D. Choudhury

Vol. 16, No. 1 January-70

Resistive Quenching of Domains of Tapered Gunn-Effect Oscillators—T. K. Bhattacharya

The Accuracy of Bearing Measurements in a Random Transmission Medium—M. S. Narayanan & D. D. Garg

Analysis of Higher Order Non-Linear Systems with Transportation Lag—Sarveshwar Prusty

Statistical Design of density tapered Planar Arrays—A. K. Kamal, K. L. Sastri and V. D. Agarwal

Linearly Tapered Zigzag Antenna—S. Balaram

A Study of Beam Mode Helix—S. M. Shakil & O. P. N. Calla

Marginal Stability equations based on system state Matrix and their applications—P. S. Krishnaswamy, G. T. Manohar & V. Seshadri

Ytterbium-Ytterbium Oxide Metal Thin Film Diodes—S. R. Jawalekar

Discrete Level Non-linear filters for Noise reduction in communication Channels—A. K. Pant, M. Lal & M. R. Mukerjee

The effect of receiver bandwidth on Lunar occultation Observations—Narrow Symmetric Bandpasses—T. Krishnan

Vol. 16, No. 2 February-70

A Linear Sawtooth Generator—K. G. K. Sarma & Victor Mathew

Fibonacci Codes—P. S. Moharir

Minority Carrier distribution in the base region of alloy junction Transistors—G. P. Srivastava, S. K. Bhatnagar & A. K. Jain

On the synthesis of RC All Pass Networks—D. Patranabis

Computers—A Panoramic View—G. K. Aggarwal

A New Technique for Voltage to Frequency Conversion—C. S. Dongrey

Vol. 16, No. 3 March-70

Regional Models of Radio Atmospheres over India—H. N. Srivastava & R. B. Pathak

A Radio Telemetry System for Transmissometers—C. P. Joseph & G. P. Srivastava

Broad Band Stripline Circulator for S-Band—S. Kesavulu & S. Sundaram

A Semi-Automatic Absorption Recorder—Suman Ganguly

Matrix Parameters of Coupled Exponential Lines—O. P. Rustogi & T. Bhattacharjee
 Whistler Propagation in Weakly Drifting Magnetoplasma—D. C. Agarwal
 Development of High Current Density Cathode—A. Authinarayanan, C. N. Kelkar & G. K. Bhide
 Modified Monoshot Converts Pulse Height to Pulse Width with Good Linearity—Mobiuddin Khan & N. W. Nerurkar
 A High-powered Equipment for studying Absorption and Partial Reflection in the Lower Ionosphere—Suman Ganguly

Vol. 16, No. 4 April-70

Evaluation of Junction Diode Capacitance—Raghu Raj Singh
 Satellite Power Determination for a given Ground Station—O. P. N. Calla & S. M. Shakil
 A Dual Mode Suboptimum Minimum Time control of higher order systems for Step displacement Inputs—G. K. Dubey & N. Murty Vepa
 Empirical Correlations between Time Domain and Closed Loop Frequency Domain Parameters for Type 1 Linear Feedback Control Systems—Mrs. S. J. Eappen & V. Seshadri
 A Note on the Limit Cycle Stability—D. Patranabis & K. B. Datta
 Number Representation, Addition and Subtraction Methods for Small Digital Computers—P. W. Besslich
 Photodielectric Effect in n-Type Silicon—T. K. Bandopahyaya & S. S. Masand
 Axial Mode Helical Antenna with Built-in Impedance Transformer—K. K. Srivastava & B. K. Sinha
 Microwave Characterization of Varactor Diodes—W. S. Khokle & A. K. Ray

Vol. 16, No. 5 May-70

A Remote Temperature and Dewpoint Indicating and Recording Device—S. V. Datar & P. M. Pakkir Mohammed
 Nomographic Determination of Safety Factor for Protection of Eye against Laser Radiation—V. V. Rampal & G. R. Prasad
 Reliability Improvement in Digital Systems through Redundancy—D. D. Majumdar & J. Das
 Posicast Controllers using Switching Techniques—V. K. Jain & B. Chatterjee
 A CRT display system for a digital voltmeter—(Miss) N. Kowsalya, G. S. Varadan & B. S. Sonde
 Seven Segment In-Line Digital Readout for a Binary-Quinary Decade Counter—S. P. Suri, M. C. Bansal and R. Parshad
 A Variable Equalization Low Distortion Transistorized Preamplifier—V. P. Sundersingh
 A Study of Single Coaxial Resonant Cavity—O. P. N. Calla
 The Role of Small Earth Stations in Civil Communication Satellite Systems—J. L. Blonstein
 Principles of D. C. Transistorized 'Nor' Gates Design—V. A. Kozlov

Vol. 16, No. 6 June-70

A Note on the Complex Signature in P's Records due to Travelling Ionospheric Disturbances—C. Raghava Reddi & B. Ramachandra Rao

An Electronic Tester for Logic Circuits—A. K. Jain & H. K. Rai
 A Multipurpose Transistorized Tachometer—A Das Sarma & T. Singh
 Archimedean Spiral Antenna—K. K. Srivastava & I. Sreenivasiah
 A Digital Mean Wind Speed Indicator with Numerical Display—S. V. Datar & A. K. Gangopahyay
 Secondary Breakdown Meter—P. N. Mehra & M. Satyam
 An Orientation System for Balloon-borne X-Ray Detector—K. S. V. Seshadri, A. S. Prakasa Rao & U. R. Rao
 On Admittance Matrix of Microwave Networks—J. N. Maiti & J. Basu
 Radio Refractive Index over India and their climatic classification for Microwave propagation—S. P. Venkiteshwaran, Gp. Capt. V. S. Narayanan & H. S. Sinha
 Studies of the Horizontal drifts in the F-Region of the Ionosphere at Ahmedabad—R. G. Rastogi
 Response of a Second Order Finite Pulsed feedback system—K. B. Datta
 (Letter to the Editor)

Vol. 16, No. 7 July-70

Some Empirical Relations between Cosmic Noise Absorption and the Critical Frequency of the F_2 Region—Md. Iqbal Ahmed & B. Ramachandra Rao
 A Transistorized Displacement Meter using a Variable Frequency Oscillator—P. E. Sankaranarayanan
 Study of Oscillations in Non-linear systems by linear differential equations with Periodic coefficients—S. Basuthakur
 Transistor Multistable switching circuits—V. A. Kozlov
 High Speed Magnetic Printing Apparatus for computers—V. G. Patrounov
 A Study of variation of terminal impedance for a normal mode helix antenna at VHF Range—O. P. N. Calla & S. M. Shakil
 On Parameter space method for control system analysis and design—Manohar Lal & D. P. Agrawal
 Analysis of a Chopper Amplifier—V. S. V. Mani
 A Crystal controlled Transistorized Master Clock—T. A. G. Krishnan & S. A. Soundara Rajan
 The Charged particle environment of the earth: The Magnetosphere—A Review—C. S. R. Rao
 Unbalanced Centre-Fed dipole with Transversely displaced feed-points—S. P. Kosta, M. D. Singh, et. al.

Vol. 16, No. 8 August-70

Measurement of Impedance at Microwave Frequencies Using Directional Couplers—R. K. Agarwal, K. Chandra & R. Parshad
 Analysis of a Non-Linear Variable Capacitance Parametric Amplifier—O. P. N. Calla
 A Programmable Proportional Temperature Controller—S. S. Ramamurthi, A. N. Garud, et. al.
 Metastable Atomic Oxygen Ions in Ionospheric Plasma—Dinesh Singh & S. K. Tolpadi

Effective Collision Frequency and Radio frequency conductivity in the Magnetosphere—
P. K. Shukla, K. D. Mishra & R. N. Singh
A Method of Measurement of Projectilve velocity ranging from 500 to 5000 ft/sec.—R. S.
Tripathy
Broad Band Mini-Ferrite Devices for X-Band—C. R. Venkataramanan, G. S. Mani, et. al.
A D.C. amplifier using a field effect transistor chopper—M. Thangarajan & P. E.
Sankaranarayanan

Vol. 16, No. 9 September-70

Oblique Wave Propagation in Inhomogeneous Compressible Plasma—D. C. Agarwal
Information Capacity of an Optical channel through a turbulent atmosphere—A. K. Kamal,
K. L. Sastri & K. S. Verma
Investigations on Automatic starting schemes for thyristor-controlled d.c. Motor with
Separate Excitation—T. Krishnan & V. Rajagopalan
Temperature Dependence of Transistors and Zener Diodes and their life testing procedures—
J. S. Bora and A. K. Babar
Electron density and the collision frequency of a periodically varying plasma medium—
Avinash Chandra, Satyendra Kumar & D. C. Sarkar
Heating of Electrons in Weakly Ionized Plasma by Magnetic Perturbation—P. K. Shukla,
R. P. Singh & R. N. Singh
On Silicon single crystal growth by Czochralski Method—W. N. Borle, S. Tata & S. K.
Verma
A New approach to transistorized power amplifier design—V. P. Sundersingh

Students' Journal

Vol. 10, No. 4 October-69

Semiconductor devices—G. Radhakrishna
Zener Diodes—G. Radhakrishna
Colour Television Systems—P. J. Joglekar
Electronic Noise—Lt. Col. V. S. Ramanand
A Method of Generating Saw Tooth Waveform—N. R. Joshi
Magnetism in Materials (3)—R. Ramaswamy
Maser and Laser (2)—R. Balachandran
Basic concept of Radar—K. S. Venkatakrishnan

Vol. 11, No. 1 January-70

Microwave—Miracle and Magic—R. C. Kumar
Magnetism in Materials (4)—R. Ramaswamy
Electromagnetic Forces—R. Balachandran
Tunnel Diode—G. Radhakrishna
Electronic Noise: Part II—Noise Measurements—Lt. Col. V. S. Ramanand
Audio frequency selective amplifier—N. R. Joshi & D. P. Joshi

Vol. 11, No. 2. April-70

Magnetism in Materials—R. Ramaswamy

Silicon controlled rectifiers—G. Radhakrishna

Open Wire controlled rectifiers—S. G. K. Pillai

Magnetic media of sound recording : Their manufacture and performance evaluation -
R. S. Tripathy

Vol. 11, No. 3 July-70

Open Wire carrier working—S. G. K. Pillai

Field effect transistors—G. Radhakrishna

Application of spherical trigonometry to problems in wireless direction finding—T. N.
Satyamoorthy

Working of teleprinter on 'Out of Band' signalling path of carrier system—V. Purna-
chandra Rao

Magnetism in Materials (6)—R. Ramaswamy

Decibel defined—I—B. C. Shama Maiya

PART--III

Report of the Auditors to the Members

We have examined the attached Balance Sheet of The Institution of Telecommunication Engineers, New Delhi as at 30th September, 1970 and also the accompanying Income and Expenditure Account for the year ended on that date, and have to report as follows :—

1. The accounts have been properly drawn up and we have obtained necessary information and explanations required.
2. That according to the best of our information and as per explanations given to us, the Accounts, read with the notes appearing thereon, give a true and correct view :

(a) in the case of the Balance Sheet, of the state of the affairs of the Institution as at 30th September, 1970 ;

(b) in the case of the Income and Expenditure Account, of the Deficit for the year ended on that date.

Akash Deep,
New Delhi.
17 December, 1970.

(Sd.) Khanna & Annadhanam
Chartered Accountants.

		Balance Sheet as at			
As on 30-9-1969 Rs.	LIABILITIES	Rs.	P.	Rs.	P.
	<i>Surplus Fund :</i>				
4,29,439	Balance as per last Balance Sheet	4,32,974	63		
3,536	Add : Excess of Income over Expenditure				
	Less : Excess of Expenditure over Income as per annexed Account	22,514	81	4,10,459	82
	<i>Reserve Fund :</i>				
9,393	As per last Balance Sheet			9,392	62
	<i>Building Fund :</i>				
2,11,178	As per last Balance Sheet	2,53,862	16		
—	Less : Adjustments for last year	25	00		
2,11,178		2,53,837	16		
	<i>Add :</i>				
21,848	Admission Fees				
6,836	Transfer Fees				
14,000	Interest received or accrued on Fixed Deposit	12,493	15	2,66,330	31
	<i>Reserve For Bad Debts :</i>				
955	Balance as per last Balance Sheet	5,159	72		
20,000	Add : Provision for the year	—			
5,932	Amount written off earlier years recovered during the year	—			
26,887		5,159	72		
21,727	Less : Amount written off during the year	1,096	22	4,063	50
5,160					
	<i>S. Thygarajan Memorial Award Fund Account :</i>				
759	Donations received during the year	—			
—	Balance as per last Balance Sheet	809	20		
50	Add : Dividend received from Unit Trust	50	40	859	60
	<i>Liabilities :</i>				
6,058	Members at Credit	8,329	71		
	Journal Subscription Received				
2,267	in Advance	2,229	64		
	Sundry Creditors :				
14,900	(a) For Expenses	21,209.58			
262	(b) Others	126.00			
		21,335	58		
1,08,440	Examination Fee Received in Advance	1,24,697	50		
810	Registration Fee Suspense	360	00	1,56,952	43
8,34,936	TOTAL CARRIED OVER			Rs. 8,48,058	28

30th September, 1970

As on 30-9-1969 Rs.	ASSETS	Rs.	P.
<i>Fixed Assets :</i>			
1,03,066	As per Schedule attached	1,21,688	12
<i>Investment at Cost :</i>			
(i) <i>Government Securities :</i>			
30,000	4½ Ten year Defence Deposit Certificate	30,000	00
(ii) <i>Others :</i>			
760	70 Units of Rs. 10 each fully paid of Unit Trust of India, Bombay (earmarked against S. Thyagarajan Memorial Award Fund Account)	759 50	30,759 50
<i>Current Assets :</i>			
12,882	1. Interest accrued on Fixed Deposit and Investments	8,391 62	
9,916	2. Stock of Paper at cost : (As certified by the Secretary)	9,225 49	
3,724	3. Sundry Dues : (a) Due from Members for Fees	4,690 50	
1,837	(b) Due for Journals— (includes Rs. 397 Considered Doubtful—Last year Rs. 283.34)	1,038 40	
6,459	(c) Due for Advertisements : (i) Institution Journal (includes Rs. 362.50 Considered Doubtful—Last year Rs. 719/50)	5,570.73	
30	(ii) Student Journal	89.25	5,659 98
829	(d) Sundry Debtors : (includes Rs. Nil Considered Doubtful—Last Year Rs. 24)	407 00	
4. <i>Advances and Prepayments :</i>			
1,460	Unsecured—Considered Good (a) Advance to Staff	375.00	
4,850	(b) Advance against printing of Publications	4,850.00	
31,944	(c) Prepaid Expenses	3,148.48	
3,144	(d) Income Tax deducted at source	11.18	8,384 66
496	5. Earnest Money paid for Land to be allotted		
2,11,417	CARRIED OVER	Rs. 1,90,445	27

Balance Sheet as at

As on 30-9 1969 Rs.	LIABILITIES	Rs.	P.	Rs.	P.
8,34,936	BROUGHT FORWARD	8,48,058	28		
8,34,936	TOTAL	8,48,058	28		

Notes :

Auditor's Report

As per our report to the Members attached separately,

Akash Deep, New Delhi
17th December, 1970

(Sd.) Khanna and Annadhanam
Chartered Accountants

1. No provision for Income Tax on Interest received has been made in the accounts as the Institution is exempt from it under the Income Tax Act.
2. The market value of Unit Trust as on 30th September, 1970 was Rs. 10.80 per Unit.

30th September, 1970

As on 30-9-1969 Rs.	ASSETS	Rs.	P.	Rs.	P.
2,11,417	BROUGHT FORWARD	1,90,445	27		
	<i>Cash and Bank Balances ;</i>				
7,098	(a) Cash in hand	3,845	65		
242	(b) Postage and Revenue Stamps on hand	800	75		
462	(c) Cash in hand with Local Centres (as certified by the Secretaries of the Centres)	589	43		
	(d) <i>With Scheduled Banks :</i>				
5,79,665	(i) On Fixed Deposits Rs. 2,26,500 earmarked against Building Fund	5,52,500	00		
36,052	(ii) Current Account	95,140	45		
—	(iii) Savings Account	4,736	73	6,57,613	01
8,34,936	TOTAL	Rs. 8,48,058	28		

(Sd.) Lt. Gen. I. D. Verma
President

(Sd.) Shri B. S. Rau
Honorary Treasurer

(Sd.) H. K. Raoji
Secretary

Income and Expenditure Account for the

As on 30-9-1909 Rs.	EXPENDITURE	Rs.	P.	Rs.	P.
	To Establishment (includes Rs. 1,556.66 for Leave Travel Concession and Rs. 24,000 paid to Secretary—Last year Rs. 20,047.50)			1,39,429	68
1,23,168	„ Employers' Contribution to Provident Fund			8,652	00
5,520	„ Medical Aid to Staff			4,477	57
2,820	„ Rent, Rates, Water and Electricity			65,156	10
35,865	„ Printing and Stationery			8,477	27
7,420	„ Postage and Telegram			6,016	68
5,732	„ Telephone Charges			2,886	74
2,621	„ Sundry Expenses			8,842	10
14,436	„ Bank Charges			1,098	42
532					
	„ Payment to Auditors :				
	„ As Audit Fee	1,750	00		
1,750	„ In Other Capacity	—		1,750	00
300					
	„ Institutions Journal Expenses :				
	Cost of Paper	18,534	60		
10,113	Printing Charges	25,326	47		
19,276	Block Making Charges	14,337	75		
12,422	Postage and Packing	10,331	41		
8,634	Reprints Cost	3,791	11	72,321	34
3,092					
	„ Student Journal Expenses :				
	Cost of Paper	5,946	75		
8,159	Printing Charges	7,528	42		
14,113	Block Making Charges	1,366	27		
1,749	Postage and Packaging	4,420	76		
8,334	Cost of Reprints	350	10		
535	Honorarium	575	00	20,187	30
500					
	„ Examination Expenses			64,479	47
60,162	„ Insurance			813	47
532					
	„ *Grants to :				
	(i) Bangalore Centre	19,500	00		
	(ii) Other Centres	3,610	60	23,110	60
3,67,698	CARRIED OVER			Rs. 4,27,698	74

Year ended 30th September, 1970.

As on 30-9-1969 Rs.	INCOME	Rs.	P.	Rs.	P.
1,08,306	By Membership Fees			1,33,030	50
—	„ Transfer Fee			8,374	00
—	„ Admission Fee			23,593	00
5,607	„ Sale of Institution's Publication			4,597	90
	„ <i>Income from Institution Journal:</i>				
9,992	Subscription	10,531	62		
11,522	Advertisement	12,805	76		
2,402	Sale of Reprints	2,022	46	25,359	84
	„ <i>Income from Student Journal:</i>				
623	Subscription	356	70		
221	Advertisement	360	26	716	96
2,53,808	„ Examination Fee			2,11,468	00
	„ Interest on Fixed Deposit and				
19,802	Investments			18,980	45
1,924	„ Application Fee			1,979	00
	„ Publication Grant from Indian				
1,000	National Science Academy			1,000	00
1,065	„ Difference in Exchange			—	
	„ Provision made in earlier years				
204	no longer required			164	89
2,556	„ Miscellaneous Income			297	40
2,825	„ Registration Fee Forfeited			560	00
—	„ Bad Debts Recovered			7,171	50
—	„ Excess of Expenditure over Income				
	for the year 1969/70			22,514	81
4,21,857	CARRIED OVER	Rs.		4,59,808	25

Income and Expenditure Account for the

As on 30-9-1969 Rs.	EXPENDITURE	Rs.	P.	Rs.	P.
3,67,698	BROUGHT FORWARD			4,27,698	74
1,300	To I. T. E. Award			1,300	00
200	„ Student Award			200	00
436	„ Binding Charges			—	
	„ Expenses pertaining to Previous				
374	year			589	81
15,778	„ Annual General Meeting Expenses			14,938	38
12,145	„ Depreciation			12,453	48
20,000	„ Provision for Bad Debts			—	
53	„ Loss on Sale of Assets			95	94
337	„ Library Books written off			—	
—	„ Symposium Expenses			2,531	90
	„ Excess of Income over Expenditure				
	for the year carried to Surplus				
3,536	Fund			—	
4,21,857				Rs. 4,59,808	25

*Last year shown as Local Centre Expenses.

Note : —Till last year Transfer and Admission Fees received was credited to Building Fund Account. Commencing from this year this procedure was changed and such fees have been credited to Income and Expenditure Account.

As per our report on the Balance Sheet

Akash Deep, New Delhi
17th December, 1970.

(Sd.) Khanna & Annadbanam
Chartered Accountants

Year ended 30th September, 1970.

As on 30-9-1969 Rs.	INCOME	Rs.	P.	Rs.	P.
4,21,857	BROUGHT FORWARD			4,59,808	25
4,21,857				4,59,808	25

(Sd.) Lt. Gen. I. D. Verma
President

(Sd.) Shri B. S. Rau
Honorary Treasurer

(Sd.) H. K. Ranji
Secretary

THE INSTITUTION OF TELECOMMUNICATION ENGINEERS NEW DELHI.

Schedule of Fixed Assets accompanying and forming part of the Balance Sheet as at 30th September, 1970

PARTICULARS	Cost as on 30-9-1969	Additions during the year	Sales or Adjustment during the year	Total Cost	Upto 30-9-1969	Depreciation		Total	Written down value of Assets as on 30-9-70	Written down value of Assets as on 30-9-69
						During the year	Less Sales or ad- justments during the year			
1. Land—Leasehold		24,890.63		24,890.63					24,890.63	
2. Adrema Machine	22,934.63	163.80		23,098.43	6,894.47	2,430.59		9,325.06	13,773.37	16,040.16
3. Cycle	279.50			279.50	271.63	1.57		273.20	6.30	7.87
4. Duplicating Machine	4,985.25	1,952.50	1,525.75	5,412.00	2,867.22	566.17	1,229.81	2,203.58	3,208.42	2,118.03
5. Fans	1,126.12			1,126.12	664.50	46.16		710.66	415.46	461.62
6. Franking Machine	1,468.50			1,468.50	695.04	116.02		811.06	657.44	773.46
7. Fire Extinguishers	325.50			325.50	111.95	21.35		133.30	192.20	213.55
8. Furniture & Fixtures	41,592.62	3,502.15		45,094.77	7,347.24	3,774.76		11,122.00	33,972.77	34,245.38
9. Library Books	66,112.03	732.16		66,844.19	33,822.74	3,302.14		37,124.88	29,719.31	32,289.29
10. Library Equipments	13,773.70			13,773.70	6,751.19	702.25		7,453.44	6,320.26	7,022.51
11. Numbering Machine	45.62			45.62	30.27	1.53		31.80	13.82	15.35
12. Typewriters	12,826.41			12,826.41	5,081.69	1,161.71		6,243.40	6,583.01	7,744.72
13. Wall Clocks	286.00			286.00	77.51	20.85		98.36	187.64	208.49
14. Water Cooler	2,835.00	110.00		2,945.00	889.13	308.38		1,197.51	1,747.49	1,945.87
TOTAL Rs.	1,68,590.88	31,351.24	1,525.75	1,98,416.37	65,504.58	12,453.48	1,229.81	76,728.25	1,21,688.12	1,03,086.30
Last year's Figures Rs.	1,46,767.16	24,393.04	2,569.32	1,68,590.88	54,713.81	12,144.99	1,354.22	65,504.58	1,03,086.30	—

As per our report on the Balance Sheet

Akash Deep, New, Delhi
17th December, 1970

(Sd.) Lt. Gen. I. D. Verma
President

(Sd.) Shri B. S. Rau
Honorary Treasurer

(Sd.) Khanna and Annadhanam
Chartered Accountants

(Sd.) H. K. Ranji
Secretary

ROLL OF PRESIDENTS OF THE INSTITUTION OF TELECOMMUNICATION ENGINEERS

Year	PRESIDENT
1953-55	Shri B. R. Btra
1955-56	Brig. A. C. Iyappa
1956-57	Prof. K. Sreenivasan
1957-58	Shri B. V. Baliga
1958-59	Shri P. M. Agerwala
1959-60	Prof. S. V. C. Aiyar
1960-62	Dr. Lal C. Verman
1962-63	Shri Jagdeesh Prasad
1963-64	Maj. Gen. R. N. Batra
1964-65	Shri C. P. Vasudevan
1965-67	Dr. P. K. Kapre
1967-68	Air Vice Marshal K. A. Joseph
1968-69	Shri S. K. Kanjilal
1969-70	Lt. Gen. I. D. Verma

Sustaining Members | OF THE INSTITUTION OF TELECOMMUNICATION ENGINEERS

Bharat Electronics Ltd., Bangalore
British Physical Laboratories India Pvt. Ltd., Bangalore
Catholic Press, Ranchi
Delton Cables Industries Pvt. Ltd., Delhi-6
Electronics Corporation of India Ltd., Hyderabad
Ericsson Telephone Sales Corporation AB, New Delhi
Forbes Forbes Campbell & Co. Ltd., Bombay
Hindustan Cables Ltd., Rupnarainpur, West Bengal
Hindustan Teleprinters Ltd., Madras
Indian Standards Institution, New Delhi
Indian Telephone Industries Ltd., Bangalore
ITT Far East & Pacific Inc., New Delhi
Jost's Engineering Co. Ltd., Bombay
Jyoti Ltd., Baroda
M. C. Engineering Co., New Delhi
Motwane Private Ltd., Bombay
Mulchandani Electrical & Radio Industries Ltd., Bombay
Murphy India Ltd., Bombay
National Ekco Radio & Engineering Co. Ltd., Bombay
Philips India Ltd., New Delhi
Siemens India Ltd., Bombay
Telefunken India Ltd., New Delhi
Thomson — CSF, Paris
Waco Radio Electronic Industries, Bombay

