

**FIFTEENTH
ANNUAL
REPORT
1967-68**

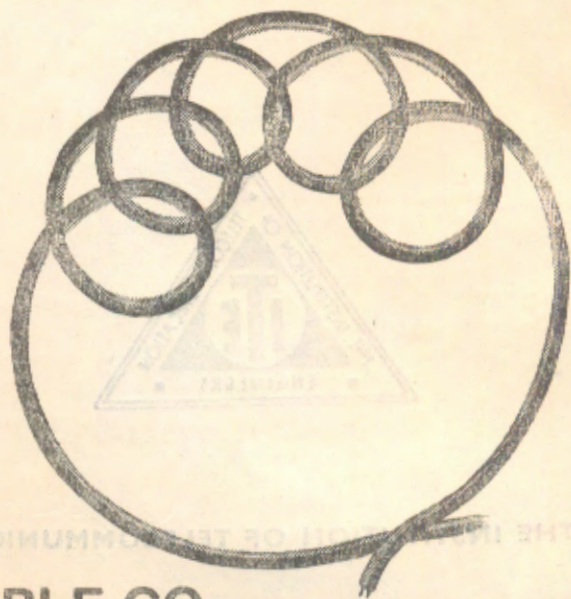
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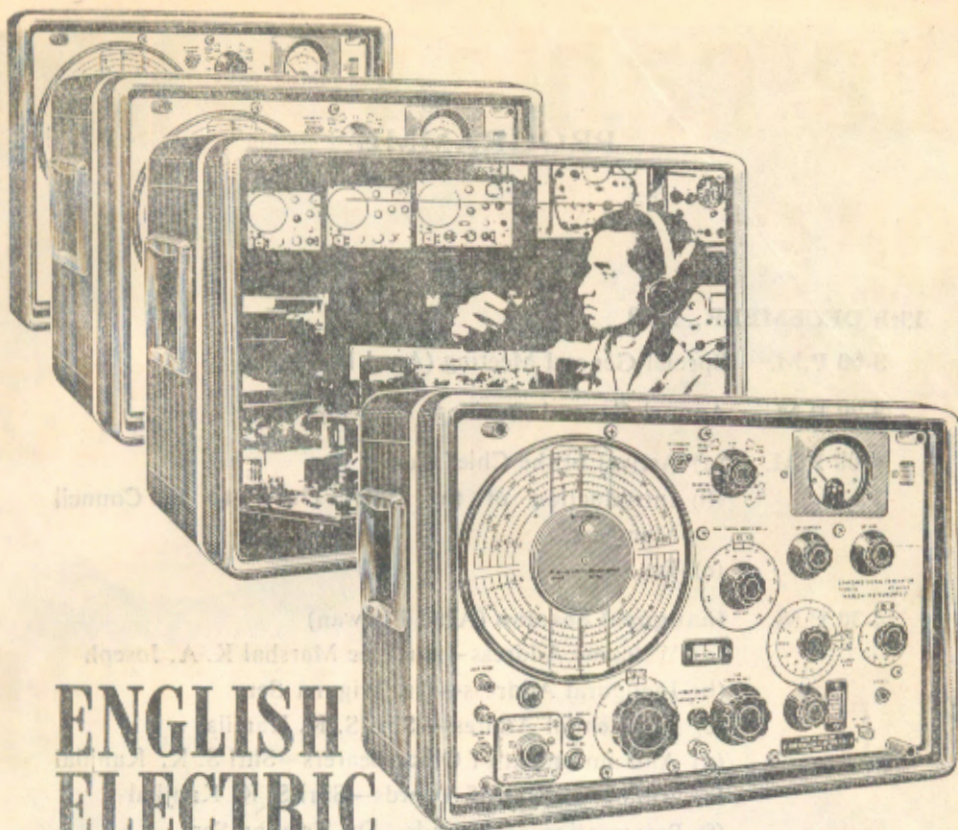


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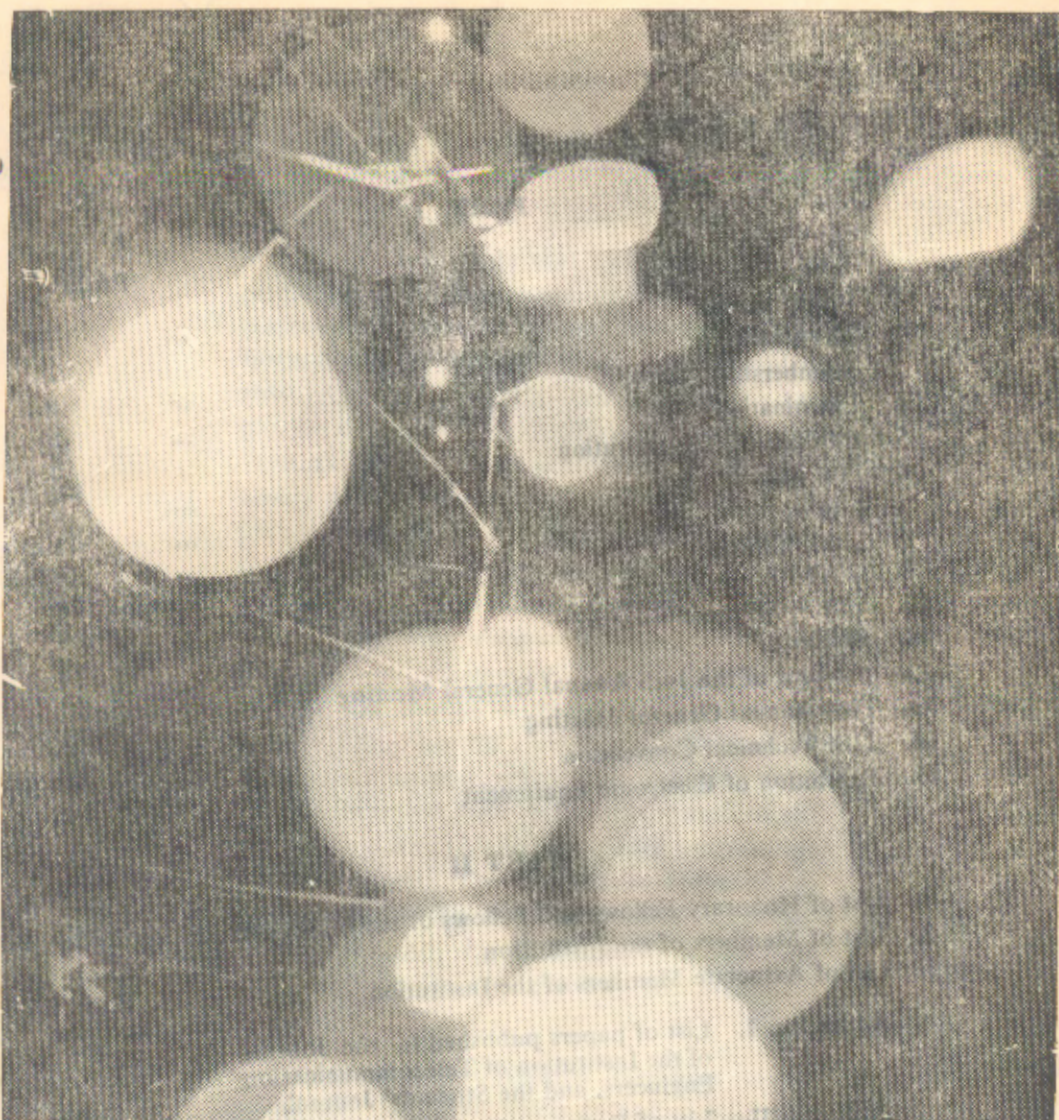
13th DECEMBER, 1968.

- 3-00 P.M. Special General Meeting (Azad Bhawan)
- 3-20 P.M. Annual General (Business) Meeting.
- 4-00 P.M. (a) Arrival of the Chief Guest.
(b) Introduction of the Chief Guest to the Council Members.
(c) Tea.
- 4-30 P.M. **Inaugural Session (Azad Bhawan)**
(a) Welcome Address—Air Vice Marshal K. A. Joseph
(b) Inaugural Address—Dr. Triguna Sen
(c) Presidential Address—Shri S. K. Kanjilal
(d) Announcement of Office-Bearers—Shri S. K. Kanjilal
(e) Announcement of Awards—Shri S. K. Kanjilal
(f) Presentation of Awards—Dr. Triguna Sen
(g) Vote of Thanks—Lieutenant General I. D. Verma
- Exhibition of Electronic Equipment (Azad Bhawan)**
- 5-40 P.M. **Inauguration by Dr. Triguna Sen**

14th DECEMBER, 1968—2nd Bhabha Memorial Lecture
by Dr. S. Bhagavantham, Scientific Adviser to
the Minister of Defence (Azad Bhawan)

14th & 15th DECEMBER, 1968—Technical Convention (Azad Bhawan)
First Session 9-30 A.M. to 1-00 P.M.
Second Session 2-00 P.M. to 3-30 P.M.
Third Session 9-30 A.M. to 1-00 P.M.
Fourth Session 2-00 P.M. to 6-00 P.M.

9-00 A.M. **Exhibition of Electronic Equipment**
to 7-00 P.M.



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INTRODUCTION

It is with great pleasure that the Council of the Institution of Telecommunication Engineers presents the 15th Annual Report of the Institution. The Institution has made considerable progress during the year 1967-68. The membership of the Institution has gone upto 7170 as on the 30th September, 1968. The Grad. I. T. E. Examination continues to be popular with 4981 candidates appearing during the year. 270 have been declared successful and the Graduateship diplomas issued to them. 64 papers have been published in the Journal of the Institution. A notable feature is the publication of this journal early in the month of its issue. Local centres of the Institution at Bangalore, Bombay, Calcutta, Jabalpur and Madras increased their activities throughout the year. Bangalore and Delhi had special programmes for the students. The Council is aware of the problems facing the students desirous of appearing in the Grad. I.T.E. Examination and steps have been taken to provide the necessary facilities.

The financial position continues to be sound with the total assets exceeding Rs. eight lakhs.

The details of the activities of the Institution in various fields are given in this Annual Report.

PART—I

THE COUNCIL (1967-68)

The Council of the Institution of Telecommunication Engineers for the year 1967-68 and the constitution of various Committees are given below :

PRESIDENT

Air Vice-Marshal K. A. Joseph

IMMEDIATE PAST PRESIDENTS

Dr. P. K. Kapre Shri C. P. Vasudevan Lt. Gen. R. N. Batra

VICE-PRESIDENTS

Shri S. S. Aiyar Dr. Saroj Datta Lt. Gen. I. D. Verma

HONORARY TREASURER

Lt. Col B. K. Rai, (upto May 68)
Shri S. Thiruvengkatachari (From April. 68)

OTHER MEMBERS

Shri S. M. Agarwal	Shri B. S. Rau
Dr. N. B. Bhatt	Air Commodore I. W. Sabhaney
Prof. G. K. Bhagavat	Shri Uma Shanker
Brig. H. Chukerbuti	Dr. Amarjit Singh
Shri S. K. Kanjilal	Col. Hari Singh
Brig. S. K. Malhotra	Shri N. V. Shenoi
Lt. Col. B. K. Rai	Dr. G. R. Toshniwal
Shri S. N. Ranganathan	Dr. Lal C. Verma

SECRETARY

Shri S. K. Rana (upto 16 May 68)
Col. Hari Singh (Hony. upto 19 Sep. 68)
Lt. Col. H. K. Ranji (w. e. f. 20 Sep. 68)

Staff and Finance Committee

Air Vice Marshal K. A. Joseph
(Chairman)

Dr. P. K. Kapre
Shri C. P. Vasudevan
Lt. Gen. R. N. Batra
Shri S. S. Aiyar
Dr. Saroj Datta
Lt. Gen. I. D. Verma
Shri S. K. Kanjilal
Shri S. Thiruvengkatachari

Editorial Committee

Lt. Gen. I. D. Verma (Chairman)
Dr. N. B. Bhatt
Shri S. Thiruvengkatachari
Dr. G. R. Toshniwal
Shri S. N. Mitra
Shri T. S. Subramanian

Membership Committee

Shri S. S. Aiyar (Chairman)
Lt. Gen. I. D. Verma
Dr. N. B. Bhatt
Shri B. S. Rau
Air Cdr. I. W. Sabhaney
Shri R. Raghavachari

Examination Committee

Dr. Saroj Datta (Chairman)
Lt. Col. B. K. Rai
Shri S. M. Agarwal
Prof. G. K. Bhagwat
Col. Hari Singh
Shri T. V. Ramamurti
Shri T. S. Subramanian

I. T. E. Award Committee

Shri S. K. Kanjilal (Chairman)
Dr. Saroj Datta
Shri B. S. Rau
Dr. Amarjit Singh
Shri S. Thiruvengkatachari
Dr. G. R. Toshniwal
Shri S. N. Mitra
Brig. B. J. Shahaney

Building Committee

Dr. P. K. Kapre (Chairman)
Lt. Gen. R. N. Batra
Shri S. K. Kanjilal
Shri S. M. Agarwal

Library Committee

Dr. N. B. Bhatt (Chairman)
Brig. S. K. Malhotra
Lt. Col. B. K. Rai
Shri B. S. Rau
Shri S. N. Mitra

The following members retired this year from the Council of the Institution.

Shri S. S. Aiyar
Dr. Saroj Datta
Brig. H. Chukerbuti
Brig. S. K. Malhotra
Col. Hari Singh
Lt. Col. B. K. Rai
Air Commodore I. W. Sabhaney

The election to fill up the vacancies caused by the retirement of the above members was held in accordance with Bye-laws 39 and 44. The following members have been duly elected to the Council of the Institution.

Lt. Gen. R. N. Batra
Miss B. H. Shanta
Shri Jagdeesh Prasad
Shri T. V. Ramamurti
Shri C. A. Cornelious
Brig. S. L. Juneja
Lt. Col. J. C. Anand
Lt. Col. V. S. Ramanand

The Council wishes to place on record its deep appreciation of the service rendered by the retiring members and welcomes the new members.

The Council for 1968-69

Shri S. K. Kanjilal (President)
Air Vice Marshal K. A. Joseph
Dr. P. K. Kapre
Shri C. P. Vasudevan
Shri S. M. Agarwal
Lt. Col. J. C. Anand
Lt. Gen. R. N. Batra
Prof. G. K. Bhagavat
Dr. N. B. Bhatt
Shri C. A. Cornelious
Shri Jagdeesh Prasad
Brig. S. L. Juneja
Shri T. V. Ramamurti
Lt. Col. V. S. Ramanand
Shri S. N. Ranganathan

Shri B. S. Rau
Miss B. H. Shanta
Shri Uma Shanker
Dr. Amarjit Singh
Shri N. V. Sheno
Dr. G. R. Toshniwal
Shri S. Thiruvengkatachari
Lt. Gen. I. D. Verma
Dr. Lal C. Verman

MEMBERSHIP

The membership of the Institution is at present of seven categories, viz;

1. Honorary Fellows (HF)
2. Fellows (F)
3. Members (M)
4. Associate Members (AM)
5. Graduates (G)
6. Students (S)

In addition, there is another class of membership known as Sustaining Members.

The tables below show the progressive and steady growth of membership despite written off cases.

Membership of the Institution :

The changes in membership, since 1st October, 1967 are shown below :

Total at 1st Oct. '67	H.F.	F	M	AM	S.M.	A	G	S	Total
	5	16	68	345	17	14	940	5301	6706
Additions during the year									
Elected :	1	2	3	29	...	1	53	1314	
Re-instated :	...	...	1	7	...	...	10	52	
Transferred to :	...	...	9	10	...	...	228	...	
Totals :	6	18	81	391	17	15	1231	6667	
Deductions during the year									
Deceased :	...	...	1	2	...	...	...	...	
Resigned :	...	...	1	4	...	...	3	2	
Lapsed (W/Off)	...	...	1	18	...	...	249	726	
Transferred from :	...	...	2	9	...	...	10	228	
Totals :	...	...	5	33	...	...	262	956	
Net change totals as on 1st Oct. '68 :	6	18	76	358	17	15	969	5711	Total 7170

Growth of Membership in various categories, year by year, ever since the Institution came into existence given in Table 2.

TABLE 2

Years	H.F.	F	M	A.M.	S.M.	A	G	S	Total Membership
1953-54	...	...	...	120	...	85	360	385	950
1954-55	2	...	19	132	...	72	282	244	751
1955-56	3	1	26	186	...	102	520	446	1284
1956-57	4	1	27	195	...	79	489	302	1097
1957-58	5	1	31	243	12	63	466	267	1088
1958-59	5	1	36	256	13	45	456	238	1050
1959-60	5	3	35	273	13	36	484	607	1456
1960-61	4	3	39	288	14	36	471	1121	1976
1961-62	6	10	39	300	15	35	492	2089	2986
1962-63	5	10	43	288	16	25	454	2811	3722
1963-64	5	13	50	318	17	22	460	3590	4475
1964-65	5	13	57	317	16	17	835	4116	5376
1965-66	4	15	56	330	16	13	958	4791	6182
1966-67	5	16	68	345	17	14	940	5301	6706
1967-68	6	18	76	358	17	15	969	5711	7170

It will be seen from the above table that ever since 1959 when the graduateship examination of the Institution was recognized by the Government and the Union Public Service Commission, there has been a steep increase in the category of Student membership. It is hoped that in the years to come more and more members will join the Institution in the other categories of membership too.

A close survey of the composition of the membership indicates that a large percentage of members belong to public sector and Government departments. It is our sincere desire that Telecommunication and Electronic engineers working in private sector undertakings as also in laboratories and teaching establishments would join the Institution and take active part in its growth. It is only when the electronic and telecommunication engineers from both the private and public sector and in the laboratories and engineering colleges join our Institution that the Institution can be truly representative in all its aspects.

During the year, the Membership Committee considered and recommended to the Council the acceptance of 1763 applications for members and 188 applications for transfer to higher grades. Of the total, 56 were for the entry into Corporate grades, 2 into the Associateship, 241 into Graduates and 1464 into students. The list of Corporate members as on the 30th September, 1968 is included in Part-II of this Report.

Members are requested to **pay their dues** in the month of October every year and to intimate any change in their addresses or qualifications to the Secretariat for correction in the official records of the Institution.

Every year, the Institution has to write off a large amount of money due to failure on the part of certain members to pay their membership dues even after repeated reminders. We are aware that nobody wishes to be a defaulter intentionally but paying membership subscription in due time has somehow escaped the attention of some members. We once again appeal to all the members to ensure prompt payment and spare us of this unpleasant duty of with-holding the supply of the journal or striking their names off the rolls in accordance with Bye-laws 28 and 29.

Fellows :

The Council takes great pleasure in announcing the election of Shri S. S. Aiyar, Chief Engineer, All India Radio; and Dr. N. B. Bhatt, Director, Solidstate Physics Laboratory, distinguished members of the Institution and of the profession, as Fellows of the Institution during the year 1967-68.



EXAMINATION

The Graduateship Examination of the Institution retained its popularity as candidates who pass the Grade. I.T.E. Examination can be considered for recruitment to posts in superior engineering services as recognised by the Union Public Service Commission. The Examination, after a modest beginning in 1959 with only 22 candidates, had the privilege of having 2479 candidates in November 1967 and 2501 in May, 1968 Grade. I.T.E. Examinations. (Total number of successful candidates was 270). Nearly 3000 candidates are expected to take up the examination in November, 1968.

These examinations are now, being held at eighteen centres throughout India, namely at Agra, Ahmedabad, Bangalore, Bombay, Calcutta, Chandigarh, Delhi, Ernakulam, Gauhati, Hyderabad, Jabalpur, Jaipur, Lucknow, Madras, Nagpur, Poona, Srinagar and Trivandrum; Chandigarh and Srinagar having been recently started. Rajkot centre was shifted to Ahmedabad from May-1968.

According to Regulation 5 of the Examination Regulations, candidates wishing to appear for Section 'B' of Grad. I.T.E. Examination should have had five years of experience in technical capacity or should produce an Eligibility Certificate from one of the Referees (appointed by the Council), that he has prosecuted and engaged himself in the engineering profession for an aggregate period of not less than 24 months. Accordingly a system of Refereeship has been introduced for the benefit of those candidates who do not possess an experience of five years in the field of telecommunication engineering. The list of Referees is given in Appendix-IV of the Report. Candidates are advised, in their own interest, to register themselves with the referees early after becoming student members of the Institution. It is incorrect to communicate with referees through letters and answer their queries on the subject matter of their study through correspondence.

It has been observed that the percentage of student members successful in passing the Grad. I.T.E. examination is still low. The Council is seized of this problem and has taken various steps including facilities for training. The Ministry of Defence is continuing to conduct courses for the students who are preparing for the Grad. I.T.E. Examination. Tutorial Colleges for such training are a regular feature with great success at Bangalore, Bombay Delhi and Poona. The Council is grateful to the Ministry of Defence and their staff at the above Tutorial Colleges for their valuable assistance. Constructive suggestions to improve the present facilities offered will be appreciated. This should be forwarded to the Secretary of the Institution at 72-Ring Road, Lajpat Nagar-III, New Delhi-24.

There has been a phenomenal progress in recent years in the field of electronics, specially in Control Engineering and Computer Engineering. The Examination Committee recommended inclusion of two more papers; e.g. Control Engineering and Computer Engineering in Section 'B' of Grad. I.T.E. Examination. The Council has accepted this recommendation along with a paper on "Electronic Measurements." With this addition, the number of papers in Section 'B' is now 13.

The Examination Committee also revised the syllabus for the paper on Applied Electronics & Circuits—Part-II, Section-A of Grad. I.T.E. Examination in step with recent developments.

The Council takes this opportunity of thanking the Chairman and Honorary Secretaries of the various Local Centres, as well as heads of many Colleges, Universities, Technical Institutions, and members of the profession for their co-operation and facilities extended to the Institution in conducting the examination at their respective centres.

STUDENTSHIP AWARD

In the year 1963, the Council decided to give studentship award of the value of Rs. 100/- to a candidate who secures the highest first class marks in both the papers of Section 'B' in the first attempt thus completing the Grad. I.T.E. Examination. Since then the following candidates have been given the Studentship Award.

November, 1963	Shri Thakur Kapil Dev Lal Srivastava
May, 1964	Shri K. Seshadri
November, 1964	Shri Vijay Kumar Goyal
May, 1965	Shri U. S. Bhatnagar
November, 1965	Shri Sreeram Waman Damle
May, 1966	Shri Purushotam Gajanan Adhi
November, 1966	Shri Amar Nath Sahai.

The Council has great pleasure in announcing the Studentship Award to Shri A Sukumaran Nair for November, '67 examination. The Council offers its congratulations to Shri Sukumaran Nair recipient of the Studentship Award for 1967-68.

EXEMPTIONS

The Examination Committee in their 36th meeting held on the 4th April, 1966 appointed a sub-committee to consider fresh exemptions already granted by the Institution to various qualified persons.

In order to facilitate the work, the Secretariat obtained recent Syallabii and question papers for the last three years (subject and year wise) from various Engineering Colleges, I.I.T.'s Universities, and Boards of Technical Education, throughout India for the detailed consideration by the sub-committee appointed for the purpose.

Revised exemption will come into force with effect from May-69 Grad. I.T.E. Examination. Candidates who complete Section-A by November-68 as per current exemptions will be deemed to have passed Section A and will be required to pass Section B only to complete the Grad. I.T.E. Examination. Candidates who have completed Section B papers but have failed to qualify in Section A by November, 1968 will be governed by the revised exemptions coming into force from May-69.

JOURNAL

The Institution is publishing two journals entitled 'Journal of the Institution of Telecommunication Engineers' and 'Students Journal'.

The Journal of the Institution of Telecommunication Engineers, a monthly, publishes observations and researches in the telecommunication as well as allied fields. The Journal of the Institution of Telecommunication Engineers started in March 1955 as a quarterly publication up to September 1959. From December 1959 it was made a bimonthly till June 1963. From July 1963 it was made a monthly publication. 64 papers were published in the year under review. The list of papers published in Journal of the Institution is given in Appendix I of this Report. Due to the untiring efforts of the Editorial Committee, it has now been made possible to make available this Journal early in the month of its issue.

Students' Journal, a quarterly, started in December 1959. It caters to the needs of student members of the Institution in supplementing their studies for the Grad. I. T. E. Examination. The articles published in the journal cover the scope of syllabus of the Graduateship Examination of the Institution. The Students' Journal has gained its popularity within a very short period after its publication. This is evident from the fact that a large number of persons other than student members are subscribing to this quarterly. The Council also invites specialists to contribute papers to the Students' Journal of the Institution so that the benefit of specialised knowledge is made available to the student members of the Institution and helps them to prepare for the Graduateship Examination. Late publication of the March, June-September 1968 issues is regretted.

The Council wishes to express its thanks to various Universities, Research Laboratories and Libraries in this country and abroad who have been continuously subscribing to the Journals of the Institution and to many Electronic and Radio Industries in India and abroad, who have been advertising their products in these journals.

I. T. E AWARDS

In order to give incentive to contributors of articles in the journals the following awards are given by the Institution.

Journal of the Institution of Telecommunication Engineers.

- | | |
|--|----------------|
| 1. I. T. E. Award
(Named S. K. Mitra Memorial
Award from 1964) | Rs. 500/- |
| 2. I. T. E. Awards (two from 1965) | Rs. 250/- each |

Students' Journal

- | | |
|--|-----------|
| I. T. E. (Students) Awards (from 1965) | Rs. 200/- |
|--|-----------|

The following awards had been given so far to the best contributors of original papers to the Journal of the Institution :

I. T. E., Awards Rs. 500/.

<i>Year of Award</i>	<i>Recipient</i>	<i>Paper</i>
1955-59	— Shri S. N. Mitra	Magneto-Ionic Triple Splitting over Delhi (Sept. 1959 issue)
1960	— Shri Chaman Lal	Flutter Fading of Short-wave Radio Signals in Equatorial Regions and its connections with Spread Echoes, Magnetic storms and the Radiation Belt (August 1960 issue).
1961	— Dr. C. S. G. K. Setty	Observations of Ionosphere F-layer at Night (March 1961 issue).
1962	— Prof S. Sampath and Shri K. V. Ramanan	Evaluation of Amplification Factors in Multi-grid tube by the Electrolytic Tank Method (Jan. 1962 issue).
1963	— Shri K.P.P Nambiar and Mr. R. H. Murphy	A. C. Series Motor Speed Control with Silicon Controlled Rectifiers (January 1963 issue).

Re-named S. K. Mitra Memorial Award

1964	— Shri R. Seshasayee	Transistorized Channeling Equipment (January/February 1964)
1965	— Shri H. J. Mirchandani and Shri V. M. Sundaram	A 7Kmc/s microwave terminal for short haul applications (November 1965 issue).
1966	— Prof. J. Das and Shri P.K. Chatterjee	A simple PCM coder with improved quantizing noise (March 1966 issue)

I. T. E. Awards from 1965

1965	— Shri B. S. Murthy	Liquid epitaxial growth of germanium (May 1965 issue).
1965	— Shri R. Singh and Dr. K. S. Balain	Growth and photo etching of oxide layers on silicon (March 1965 issue).
1966	— Shri S. C. Majumdar	Investigation of extended range VHF propagation through troposphere and

- | | | |
|------|---|--|
| | | VHF propagation at short distance beyond radio horizon (July 1966 issue) |
| 1966 | — Sarva Shri K. N. Jha and N. D. Taneja | Vacuum deposition plant for thin film circuits (September 1966 issue) |

Students' Journal : I. T. E. Award from 1965

- | | | |
|------|-----------------------|---|
| 1965 | — Dr. V. Ramachandran | Articles on Wave filters in 1965 issues of the Students' Journal. |
| 1966 | — Shri R. Ramaswamy | Articles on Transistors in 1965 issues of the Students' Journal. |

LIBRARY

A well equipped Library is an asset to any professional organisation like ours. With the help of the Ministry of Education, the Institution, has been able to build up a good library of technical books to meet the needs of our members. The Institution has also supplied a set of text books to Bombay, Madras and Jabalpur local centres and to Telecommunication Tutorial College, New Delhi. The arrangement will be to some extent, meet the requirements of Student members in their studies for Grad. I. T. E. Examination. The total number of books available in the Library is 2236.

The Institution is particularly grateful to Dr. P. K. Kapre for donating 33 valuable technical books.

List of journals exchanged is given in Appendix II of the Report.

LOCAL CENTRES

Local Centres are the feeders of the Institution in propagating its objectives and serve the members locally residing at different parts of the country. There are six Local centres at Bangalore, Bombay, Calcutta, Delhi, Jabalpur and Madras.

The Centres continue to maintain their activities and organized lectures on current topics and interesting programmes for the members. The details of their activities are given in succeeding parts.

Bangalore

- | | |
|--------------------|----------------------------|
| Chairman | — Col. D. Swaroop |
| Honorary Secretary | — Lt. Col. M. S. Nagarajan |

Seven lectures were arranged by the Centre during the year as under:

- (a) Prof. R. S. Krishnan of the Indian Institute of Science, Bangalore gave talk on "Physics of Solids" on the 17th January, 1968.

- (b) Prof. S. V. C. Aiya (Fellow), Head of the Department of Electrical Communication Engineering, Indian Institute of Science, Bangalore spoke on "Recent Developments in Electronics" on the 12th February, 1968.
- (c) Dr. E. S. Rajagopal of the Indian Institute of Science, Bangalore addressed the members of the Local Centre on "Low Temperature Electronics" on the 15th February, 1968.
- (d) Dr. G. Suryanarayana of the Indian Institute of Science, Bangalore was the fourth speaker of the series who gave a talk on "Physics of Semiconductors" on the 21st March, 1968.
- (e) Shri Virendra Mohan of Bharat Electronics Ltd., Bangalore spoke on "Technology of Transistors" on the 28th April, 1968.
- (f) Shri G. H. Vaze, Head, Electronics Division of Bhabha Atomic Research Centre, Bombay gave a talk on "Electronic Instrumentation in Atomic Reactors" on the 15th May, 1968.
- (g) "Principles of Transistor Switching Circuits" was the subject of discussion when Shri K. Kapali of the Indian Telephone Industries Ltd., addressed the members of the local centre on the 16th May, 1968.

In addition, the Students' Chapter organized a "Students' Fortnight" third in the series from the 15th to 29th April, 1968. Eighty students registered for the course which was inaugurated by Col. D. Swaroop, Chairman of the Bangalore Centre. 13 lectures were delivered on Electronics and Telecommunication subjects by eminent speakers in the field.

The Annual day celebrations of the Bangalore centre were held on the 22nd November, 1967 at Madras Woodlands Hotel, Bangalore when His Excellency, Shri G. S. Pathak, Governor of Mysore was the Chief Guest.

The Bangalore Local Centre, under the Joint auspices of the Institution of Engineers (India), Mysore centre, the Institution of Electronic and Radio Engineers, arranged a Seminar on "Electronics in Industry" on the 15th, 16th and 17th December, 1967.

Bombay

Chairman	—	Shri P. M. Agerwala
Honorary Secretary	—	Shri K. P. P. Nambiar

Bombay local centre of the Institution arranged a lecture by Shri K. N. Sundaram, Deputy Educational Adviser to the Government of India, Bombay on "Engineering Employment—some aspects of Current Trends" on the 25th July, 1968. Shri P. M. Agerwala, Chairman of the Local Centre was in the Chair.

Calcutta

Chairman	—	Brig. S. N. Gairola
Honorary Secretary	—	Shri S. C. Mishra

The Calcutta Centre arranged two Technical lectures on "Computers" and "Coilless Tuned Circuits for Solidstate Amplifiers" by Shri D. Dutt of ACT and Shri A. C. Palit of Sen and Pandit on the 12th July, 1968 and the 26th July, 1968 respectively.

Madras

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

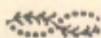
The Madras Local centre arranged a lecture on "Time assignment speek interpolations" by Dr. K. R. Swaminathan of the Bell Telephone Laboratories, USA on the 26th October, 1967. Prof. K. S. Hegde, Chairman of the Centre was in the chair.

Prof. Herbert Doring of the Institute of High Frequency Techniques from Aachen, Germany spoke on "Microwave Modulation of laser beams" at the College of Engineering, Guindy, Madras on 23rd January, 1968.

Delhi

Activities of the Institution at Headquarters (Delhi) are given below :

- (a) A students get-to-gether was organized on the 13th November, 1967 immediately after the Nov. 67 examination was over. Three technical films on "Look at life—The tower of Babbie", "Electrons in Harness" and "The Radio Sky" were screened through the courtesy of the British Information Service.
- (b) On 23rd November, 1967, Dr. James R. Wait of the Institute of Telecommunication Sciences and Aeronomy USA spoke on "Long Distance propagation of very low frequency radio waves" under the Chairmanship of Prof. M. S. Sodha of the IIT, Delhi. Dr. S. K. Chatterjee of the Indian Institute of Science, Bangalore proposed a vote of thanks to the speaker.
- (c) On the 5th January, 1968, three films on "Networks", "Introducing Telex" and "Considering Science" were screened at the National Institute of Sciences of India.
- (d) Mr. R. G. J. Costello, Marketing Manager, Air/Water Traffic Systems of Philips, Holland spoke on "Airlines Load Optimization Recording and Display system (AIRLORD) with the help of colour films and slides under the Chairmanship of Dr. Saroj Datta, Director of Communications, Civil Aviation Department, New Delhi on the 21st March, 1968.
- (e) On 2nd April, 1968 there was a technical lecture under the joint auspices of the Instituion of Telecommunication Engineers and the National Institute of Sciences of India. Dr A. Dros spoke on "Electronic component Industry—an example of applied physical sciences" under the Chairmanship of Dr. A. R. Verma, Director, National Physical Laboratory, New Delhi.



OBITUARIES

The Council deeply regrets to note the deaths of Lt. Col. J. N. Shahani, Shri S. K. Rana and Shri H. R. Thadani, members of the Institution.

Lt. Col. J. N. Shahani, born on 22nd February, 1911 passed his M. Sc. from the Bombay University and joined the Corps of Signals in July 1940. He was one of the founder members as well as a member of the first Council of the Institution in 1953. Till his death, he was actively associated with the Council and participated in all its activities.

Shri S. K. Rana born on 4th January, 1907 graduated in Science with Hons. from the Calcutta University and joined the P & T Department in 1931. He retired from Government Service as Deputy General Manager, Delhi Telephones and took over as the Secretary of the Institution in March, 1967. His loss has been deeply felt by the Council and more so, by the Secretariat.

Shri H. R. Thadani, born on August 13, 1901, passed M. Sc. (Tech.), Manchester in 1925. He was Chief Engineer, P. & T. Department. He was a Founder Council Member in 1953. His keen interest in the affairs of the Institution will be missed by all.

Our condolences and sympathies go out to the bereaved families.

SECRETARIAT

The office of the Institution is located at 72-Ring Road, Lajpat Nagar-III, New Delhi-24. The staff of the Secretariat is as under :—

(a) Secretary	1
(b) Assistant Secretaries	2
(c) Stenographer (P.A.)	1
(d) Office Assistants	3
(e) Librarian	1
(f) Clerk-cum-Cashier	1
(g) Clerks	11
(h) Daftry	1
(i) Peons	4
(j) Chowkidar	1
(k) Sweeper	1

The Secretariat was handicapped without a Secretary since the sudden death of Shri S. K. Rana on the 16th May, 1968 till 20 September, 1968. The Council is grateful to Col. Hari Singh who acted as Honorary Secretary in the meantime.

The efficient working of the Secretariat is entirely due to the cooperative work put in by office bearers and officials of the Secretariat.

The Council wishes to place on record its deep appreciation of the manner in which the staff has worked throughout the year.

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BUILDING

The Council continues to be concerned with the pending task of finding a building of its own for housing the Headquarters of the Institution.

Efforts are being continued with the Ministry of Works and Housing for an allotment of a piece of land in a central locality in New Delhi. The Government is still considering construction of a building on a co-operative basis in the Indraprastha Estate to accommodate some Institutions like ours. This is being pursued by the Institution of Town Planners, India. Simultaneously the outright purchase of a suitable building is also being explored.

MINUTES OF THE FOURTEENTH ANNUAL GENERAL MEETING

The Business meeting of the Fourteenth Annual General Meeting of the Institution of Telecommunication Engineers commenced at 3-30 p.m. on the 8 December 1967 at Mavalankar Auditorium, Vithalbhai Patel House, New Delhi, with Dr. P. K. Kapre in the Chair.

Agenda Item No. 1: (Confirmation of the minutes of the Thirteenth Annual General Meeting of the Institution)

The minutes of the Thirteenth Annual General (Business) meeting of the Institution were read by the Secretary. Shri S. Thiruvengkatachari proposed that the minutes might be confirmed. Shri S. N. Ranganathan seconded the proposal.

The minutes of the Thirteenth Annual General (Business) Meeting were confirmed.

Agenda Item No. 2: (Consideration and confirmation of the Fourteenth Annual Report and the audited statement of accounts for the year 1966-67 (ended 30 September 1967)).

The Fourteenth Annual Report and the audited statement of accounts which were circulated to members were taken as read.

Shri B. S. Rau proposed that the Fourteenth Annual Report and the audited statement of accounts for the year 1966-67 be confirmed. The proposal was seconded by Shri R. Raghavachari.

The Fourteenth Annual Report and the audited statement of Accounts of the Institution for the year 1966-67 were confirmed.

Agenda Item No. 3: (Election of Auditors for the year 1967-68).

Col. Hari Singh proposed that M/s. Khanna & Annadhanam Chartered Accountants might be appointed as Auditors of the Institution for the year 1967-68 at an annual fee of Rs. 1750. This was seconded by G. Capt. I. W. Sabhaney.

As there was no other nomination M/s. Khanna & Annadhanam, Chartered Accountants, were unanimously appointed as Auditors of the Institution for the year 1967-68 at a fee of Rs. 1750 per annum.

FOURTEENTH ANNUAL GENERAL MEETING

The Fourteenth Annual General Meeting of the Institution of Telecommunication Engineers (India) was held on the afternoon of 8 December 1967 at the Mavalankar Auditorium, Vithalbhai Patel House, New Delhi. Dr. S. Bhagavantam, Scientific Adviser to Minister of Defence, Delhi, inaugurated the session.

Dr. P. K. Kapre, Industrial Director, Philips India Ltd., New Delhi, welcoming the Chief Guest said: "We are particularly privileged this year to have in our midst this afternoon, Dr. Bhagavantam who has so kindly consented to inaugurate our Annual Session, despite very heavy calls on his time." He mentioned that our Institution had been honoured by him last year, by accepting the Honorary fellowship.

Before ending the address, he extended the heartiest congratulations to Air Vice Marshal K. A. Joseph, the Director of Signals, Air Headquarters, on his unanimous election as the President for the year 1967-68.

Dr. Bhagavantam in his inaugural address said: "It is a great honour to be called upon to be the chief guest and inaugurate this particular Annual Session of an organization like the Institution of Telecommunication Engineers (India). I sincerely feel it that you have gone out of your way to invite me firstly to become an Honorary Fellow of the Institution and then to come and be the chief guest and inaugurate the Fourteenth Annual Meeting—not that I am not used to being invited to do such things in respect of organization with which I have no contact, both happens—but that the Institution of Telecommunication Engineers should have opened its door to accept a man of my training which is not in any case specially telecommunications, but is only distantly connected with it.

In view of the growing importance of electronics and thus increasing responsibilities with the telecommunication engineers he said: "The plea I am making is that since some of you, many of you come from Universities, technological institutions and so on, some of you have the responsibility for building up the base necessary for meeting such requirements. The Institution should give an urgent thought to building up the institutions where such specialized technology can possibly be built up. It cannot be built up in a routine production concern, which is constantly worried about showing production figures. It will have to be built up. I am talking of this sophisticated technology. The base does not exist. We will have to give some thought to a thing like this."

Air Vice Marshal K. A. Joseph in his Presidential address discussed briefly the development in the field of Military Aviation Electronics, starting from humble beginnings to the present day highly sophisticated electronic systems together with some of the future trends.

Shri S. S. Aiyar, Chief Engineer, All India Radio, New Delhi, then proposed a vote of thanks.

Details of the above meeting are given in the January Issue of the Journal of the Institution Vol. 14, No. 1.

ELEVENTH TECHNICAL CONVENTION

The Eleventh Technical Convention of the Institution of Telecommunication Engineers was held on the 9th (forenoon) and 10th December 1967 at the Constitution Club, New Delhi. Invitations were extended to research organizations in government departments, Council of Scientific & Industrial Research, industries, universities and public institutions in India to send papers for being presented at the Technical Convention. Invitations were also extended to similar organizations outside India. It is encouraging to record that 67 technical papers were received and 56 were read and discussed. Three sessions were arranged and papers grouped subjectwise to provide an opportunity for group discussion on specialized subjects.

First Session

The first session containing 15 papers dealt with Acoustics and Audio Engineering; Antenna and Propagation; Noise; Radio; Atmospheric; Cosmic, Galactic and Solar; Radio Astronomy; Radio Meteorology; Space Electronics; Navigational Electronics; Industrial Electronics; Electronic Computers and Control Engineering.

The session started with Shri S. Thiruvengkatachari, Additional Chief Engineer, All India Radio, New Delhi in the Chair who welcomed the participants and expressed his appreciation of the large number of papers being presented on many different subjects in the Technical Convention. In all fifteen papers were read and discussed. Details of the papers are given in Appendix IV—serials 1-15.

Second Session

The Second session of the Technical Convention was held on the 10 December 1967 when papers on Semiconductor Electronics; Materials and Components were read and discussed. Dr. N. B. Bhatt, Director, Solid State Physics Laboratory, Delhi, was the Chairman of the session. Papers read and discussed are given in Appendix IV—serials 16-30.

Third Session

The third and the last session of the technical convention was held on the 10th December, 1967 in the afternoon in which paper on Electrical Communication systems; Electronics instrumentation and control; LF, medium, HF, UHF, VHF and microwave techniques were presented and read. Dr. Saroj Datta, Director, Communication, Department of Civil Aviation, New Delhi, was in the chair. Papers read and discussed are listed in Appendix IV—serials 31-56.

The Chairman of the above sessions thanked the speakers for their valuable contributions and for making the symposium a great success.

Details of the above papers read are readily available in the Journal of the Institution—January 68 issue Vol. 14, No. 1.

The Council takes the opportunity of expressing its grateful thanks to the contributors of papers in making the convention a success.

EXHIBITION OF ELECTRONIC EQUIPMENT

An Exhibition of Electronic Components, Measuring Instruments and equipment was organised simultaneously with the Annual General Meeting and the Technical Convention. The exhibition was held at Mavalankar Auditorium, New Delhi, on the 8th, 9th and 10th December 1967 and was opened by Dr. S. Bhagavantam, Scientific Adviser to the Minister of Defence, New Delhi, after inauguration ceremony. The Council wishes to thank all the participants in the exhibition for their cooperation in making it a success. A list of the firms that participated in the exhibition is given below :

1. M/s Ahuja Radios, Delhi
2. The Amateur Radio Society, New Delhi
3. M/s Associated Battery Makers Eastern Ltd., New Delhi
4. M/s Associated Instrument Manufacturers India Pvt. Ltd., New Delhi
5. M/s Bharat Electronics Ltd., Bangalore
6. Central Electronic Engineering Research Institute, Pilani.
7. M/s Eastern Electronics Delhi Private Ltd., Faridabad.
8. M/s Electric Instrumentation, Delhi
9. M/s Electronic Appliances Pvt. Ltd., New Delhi.
10. M/s Electronic Corporation of India Ltd., Hyderabad
11. Electronics & Radar Development Establishment, Bangalore
12. M/s Formica India Ltd., New Delhi
13. M/s Gannon Dunkerley & Co. Ltd., New Delhi
14. M/s Garg Associates Pvt. Ltd., Ghaziabad
15. M/s Hindustan Teleprinters Ltd., Madras
16. Indian Telephone Industries Ltd., Bangalore
17. M/s M. C. Engineering Co., New Delhi.
18. M/s Motwane Pvt. Ltd., New Delhi.
19. National Physical Laboratory, New Delhi
20. Solid State Physics Laboratory, Delhi
21. M/s Toshniwal Brothers Pvt. Ltd., New Delhi
22. M/s Continental Device India Ltd., Faridabad.

The Council is most grateful to all the above industries for their readily responding to our call in making the exhibition a great Success.

Hindustan Cables Limited

A PUBLIC SECTOR UNDERTAKING

(Ministry of Industrial Development & Company Affairs)

**Pioneers in the Manufacture of
Telecommunication Cables in India**



Range of Products :

Dry Core, Paper Insulated, Local Exchange and Junction Cables—ranging from 10 pair size to 1200 pair size.

Large and small Tube Coaxial Cables for Multichannel long distance Telephones and Telegraph Communication.

Varieties of Plastic Cables and Wires for Telecommunication purpose for indoor and outdoor use.

PART-II

THE INSTITUTION OF TELECOMMUNICATION ENGINEERS

1. HONORARY FELLOWS

Honorary Fellows of the Institution are distinguished persons in their own fields and their names are given below :

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 all Souls College Oxford, Sarvagama Sarvabuma-Calcutta Sanskrit College, Goethe Plaque, Master of Wisdom (Mongolia), German Book Sellers Peace Prize 1961, Wlodzimierz Pietrzak Prize by Warsaw University for Philosophical Science, Bharatbhusamani—Institute of Indology, Dwarka, former President of the Republic of India, Madras.

BHAGAVANTAM, S. (Dr.) Ph. D., Scientific Adviser to the Minister of Defence, South Block, New Delhi-11

KANTEBET, S. R., Retired Director General, Overseas Communication Service, Bombay, Apte Road, Poona-4.

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, Estt., 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.Elc. Chem. S., FAm I.E.E. F.I.A.Sc., Chairman, Industrial Licensing Committee, Ministry of Industrial Development & Company Affairs, New Delhi.

2. FELLOWS

The Fellows of the Institution elected by the Council are as follows.

Year of Election	Mem. No.		Service on Council
1962	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
1962	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.) Head of the Department of Electrical Communication Engineering, Indian Institute of Science, Bangalore-12.	1953-56 V.P. 1958-59 P. 1959-60 1960-63

Year of Election	Mem. No.		Service on Council
1967	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
1962	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
1956	951	Batra, B. R. Retired Chief Engineer, Posts & Telegraphs. 9 National Court, 13 London Street, Calcutta-15.	P. 1953-55 1955-59
1963	1376	Batra, R. N. (Lt. Gen.), Director General Civil Defence, Ministry of Home Affairs, South Block, New Delhi-11.	1953-56 V.P. 1962-63 P. 1963-64 1964-68
1955	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., Director, Solid State Physics Laboratory, Lucknow Road, Delhi-7.	1953-55 1964-65 1966-68
1956	612	Ayappa, A. C. (Lt. Genl.) Managing Director, Bharat Electronics Ltd., Jalahalli, Bangalore-13.	V.P. 1953-55 P. 1955-56 1956-60
1963	643	Jagdeesh Prasad, C.E. (Hons.), General Manager, Bharat Heavy Electrical Ltd., Hardwar (U.P.)	1953-56 1957-60 P. 1961-62 1962-63 1963-66
1965	1590	Joseph, K. A. (Air Vice Marshal), B.Sc. (Engg.), M. Aero. S. I., A.M.I.E.R.E., Director of Signals, Air Headquarters, New Delhi-11.	1953-57 V.P. 1958-61 1962-63 V.P. 1963-64 1963-67 P. 1967-68
1965	542	Kanjilal, S.K., B.E., Senior Member (T.O.), P & T Board, Parliament Street, New Delhi-1.	1953-57 H.T. 1958-59 1959-61 1962-63 V.P. 1963-65 1966-67 1967-68
1966	2411	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., 32, Golf Links, New Delhi-3.	1956-59 V.P. 1960-63 V.P. 1964-65 P. 1965-67 1967-68
1962	3698	Rakshit, H. (Prof.), D.Sc. F. Inst. P., F.N.I., 47-W.C. Bannerjee Street, Calcutta-6.	1964-67
1966	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-12.	1953-55 1959-60 1960-62 (J.S.) 1964-67

Year of Election	Mem. No.		Service on Council
1963	877	Ramchandani, A. C., B.Sc., B.Sc. Tech. (Manchester), M.I.E.E., A.M.C.T., (London), Retd. Chief Engineer, A.I.R., B-1/66, Safdarjung Development Area, New Delhi-16.	H.S. 1953-55 1955-56 1957-58 1958-60 (V.P.) 1961-63 (V.P.) 1963-64 (S) 1965-66
1959	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, Chromepet, Madras.	V.P. 1953-56 P. 1956-57 1957-61
1962	1098	Vasudevan, C.P., B.E., Adviser, World Bank, 5457, Nabaska Avenue, Washington DC-20015 (U.S.A.)	1955-58 1959-60 V.P. 1960-62 1963-64 P. 1964-65 1965-68
1962	676	Verman, Lal. C. (Dr.), B.S. (E.E.), Michigan, M.S., Ph. D. (Cornell), F. Inst. P., M.I.E., F.N.I., C/o Indian Standards Institution, Manak Bhavan, 9, Bahadur Shah Zafar Marg, New Delhi-1.	1953-55 V.P. 1956-58 V.P. 1959-60 P. 1960-62 1962-65 1965-67

2. MEMBERS

1968	12834	Attre, R. S. (Lt. Col.) B.Sc. (Engg.) M.I.E. Defence Services Staff College, Wellington, Nilgiris, (S. India).	
1962	1774	Agarwal, S. M., B.Sc., A.M.I.E. (India), Joint Secretary, Department of Defence Supplies, Ministry of Defence, New Delhi-11.	1957-58 J.S. 1958-59 1959-60 1963-66 1967-68
1965	8039	Amarjit Singh (Dr.) M.Sc., M.E.S., Ph.D., S.M.I.E.E.E. (New York), Director, Central Electronics Engineering Research Institute, Pilani. (Raj.)	1966-67 1967-68
1968	3252	Bhasin, B. (Lt. Col.), M.I.E., Assistant Director, Defence Electronic Research Lab., Chandrayanagutta Lines, Hyderabad-5. (A.P.)	
1955	41	Bhashyam, S. R., B.E. (Hons.), S.M.I.R.E. (New York), Post Master General, Gujarat Circle, Ahmedabad.	
1964	398	Bhattacharjee, D. C., B. Sc. (Hons.) D.I.I.Sc., Director of Frequency, Assignments, All India Radio, Parliament Street, New Delhi-1.	
1967	3218	Bhattacharya, A.B., M.Sc. M.I.E.R.E., Ericsson Telephone Sales Corporation, AB. 5, Commissariat Road, Calcutta-22.	

Year of Election	Mem. No.		Service on Council
1955	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, Mall Road, Lucknow (UP).	1953-57 V.P. 1957-58 1958-60 1962-63 V.P. 1963-65
1962	1831	Chaman Lal, M.Sc. (Physics), Wireless Adviser to the Government of India, Department of Communications, Patel Bhawan, New Delhi-1.	1965-66
1967	11138	Chatterjee, J. S. (DR), M. Sc., D. Ph'l, M. I. E. E. (London), S. M. I. E. E. E. (U. S. A.), Head of the Electronics & Telecommunication Engineering Department, Jadavpur University, Calcutta-32.	
1967	3323	Chaudhari, M. (DR), B. Sc. (Hons), M. Sc., Ph. D., D. I. C., S. M. I. E. E. E. (U. S. A.), Faculty of Engg. and Technology, Birla Institute of Technology and Science, Pilani (Raj).	
1968	1948	Choudhury, N. K. D., M. Sc., Assistant Director, Central Building Research Institute, Roorkee (U. P.).	
1957	2051	Cornelius, C. A., B. Sc. (Engg.), Managing Director, Hindustan Teleprinters Ltd., Industrial Estate, Guindy, Madras-32.	1964-67
1966	1330	Datta, Saroj (DR), M. Sc., Ph. D., D. I. C., (London), M. I. E. E., M. 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
1965	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.	
1958	39	Gadadhar, N. V., B. E. (Elect.), D. I. I. Sc., Senior Councillor, International Radio Consultative Committee, International Telecommunication Union, Geneva.	J.S. 1957-58 H.S. 1958-59 1960-61
1967	696	Gairola, S. N., (Brig.), M. Sc., A. M. I. E. R. E., Chief Signal Officer, Headquarters Eastern Command, Fort William, Calcutta-21.	
1963	5562	Garewal, K. S. (Brig.) B. Sc. (Physics), Chief Signal Officer, Hq. 1 Corps, C/o 56 A. P. O.	1963-66
1966	651	Gill, P. S. (Brig), B. A., Chief Signal Officer, HQ. Southern Command, Poona-1.	
1967	379	Gokarn, G. D., B. Sc. (Hons), S. M. I. E. E. (U. S. A.), Communication Adviser, High Commission of India, India House, Aldwych, London, WC2., C/o External Affairs Ministry, New Delhi-1	
1962	257	Gupta, I. K., B. Sc., C. E. (Hons), Managing Director, Hindustan Cables Ltd., P. O. Hindustan Cables, Rupnarainpur, Distt :- Burdwan (W. B.).	
1964	2440	Hari Singh, (Col), B. Sc. (Hons), A. M. I. E. R. E., Director, C. M. O. Directorate, Ministry of Defence, Room No. 149, Gate No. 12, 'F' Block, DHQ P. O., New Delhi-11	1966-68

Year of Election	Mem. No.		Service on Council
1963	2690	Iyengar, K. R. K., B. Sc. (Hons), D. I. I. Sc., M. Sc. (Elect Engg), Deputy Director, Intelligence Bureau, Ministry of Home Affairs, New Delhi.	1960-61 J.S. 1961-62 H.S. 1962-63
1962	5096	John Brown (DR), M. A., Ph. D., D. Sc. (Engg), A. M. I. E. E., S. M. I. R. E. (New York), Department of Electrical Engineering, University College, Gower Street, London W. C.-2,	
1963	2639	Joshi, C. P., M. Sc., State Radio Officer, Police Radio Headquarters, Mahanagar, Lucknow (U. P.)	
1968	466	Khanna, Radha Krishna., M. Sc., Engineer-in-Charge, High Power Transmitter, All India Radio, Khampur, Delhi-36.	
1963	1857	Khurana, S. R. (Brig), M. A., Director of N.C.C., Gujrat Ahmedabad-3	
1967	11334	Krishnamurthi, M. (DR), M.Sc.Ph. D., A. M. I. E.-R. E., Deputy Director, (Tech), Cabinet Secretariat, Block V, (East) Level III, R. K. Puram, New Delhi-22	
1957	210	Lakhanpal, D. D., B. A., B. Sc. Tech (Manchester), M.I.E., M. I. E. E., M. I. E. R. E. S. M. I. R. E., Managing Director, Murphy India Ltd., 29 New Queens Road, Bombay-4.	1953-56 V.P. 1956-57 1960-63
1955	902	Mahalingam., B. A., A. M. I. E. E. (London), 18, Ansari Street, Ram Nagar, Coimbatore-9.	H.T. 1953-55 1955-56
1966	608	Malhotra, S. K. (Brig), B.A. Director, Electronics & Radar Development Establishment, High Grounds, Post Box No. 108, Bangalore-1.	1966-68
1967	3193	Mani, A. (Miss), B. Sc., (Hons.), A.I.I.Sc., Director, Instruments, Meteorological Office, Poona-5.	
1966	879	Matange, N. D., B. Sc. (Engg), M.S. (Elect. Engg.), (California), Project Officer, Western Project Circle, All India Radio, Bombay.	
1961	839	Mehta, K. K. (Brig), B. Sc. P. S. C., M. B. I. M. (U.K.), A. M. I. E. R. E., Director of Electronics, Research and Development Organization, Old Armed Forces Mess, 14, II-A, Janpath, New Delhi-1	1959-62 1963-64
1962	988	Mehta, V. (Brig), B. Sc., Director of Coordination (Police Wireless) Rail Bhavan, Rafi Marg, New Delhi-1.	
1965	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.), Electronics & Radar Development Establishment, High Grounds, Post Box No 108, Bangalore-1	
1964	52	Mitra, S.N., M.Sc. (Cal et Cantab), F.N.I., F.R.A.S. (London), Director of Technical Laboratories, Ministry of Home Affairs, 63-Kaka Nagar, New Delhi-11.	H.S. 1960-62 1962-63 1964-66 V.P. 1966-67

1967-68

Year of Election	Mem. No.		Service on Council
1966	1835	Mohindra, L.C., M.I.R.S.E., A.M.I.E.E., F.I.P.E., Grad. I.E.E. (London), Senior Deputy General Manager, Central Railways, H-21, Badhwar Park, Colaba, Bombay-5.	
1960	1798	Muthanna, M.S., B.E., M.I.E., Telephone Bhavan, Colaba, Bombay-5.	
1967	11129	Narasimhan, K. (Air Commodore), B.A., A.M.I.E.R.E., (U.K.), Joint Director of Signals, Air Headquarters, New Delhi-11.	
1955	2181	Natarajan, R., B.A., 417, 17th Cross, Malleswaram, Bangalore-3.	
1967	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.	H.T. 1965-66 1966-67 1967-68
1965	876	Raghavachari, R., B.Sc. (Hons.), D.I.I.Sc., Deputy Chief Engineer, All India Radio, Parliament Street New Delhi-1.	
1966	9704	Raghunath, K. (Brig.) B.E. (Mech), A.M.I.E., Deputy Director, E.M.E., H.Q., IV Corps, C/o 99 A.P.O.	
1962	5011	Ramanathan, A. R. (B.E. (Mech), M.Sc. (E.E.), A.M.I., M.I.E.R.E., I.T.U. Telecommunication Expert, U.N. Technical Assistance Board, P.O. Box No. 274, Monrovia, Liberia.	
1965	1485	Ramchandani, D.N., B.E. (Mech and Elect.), Post Master General, Andhra Circle, Hyderabad-1 (A.P.)	
1967	11081	Ramchandra 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, Vishakhapatnam-3 (A.P.).	
1965	6663	Ramnath, K.R. (Capt., I.N.) B.E. (Elect.), Commanding Officer, I.N.L. Valsura, Jamnagar.	
1955	2412	Rao, C.R., M.Sc. D.I.I.Sc., Deputy Director General, D.G.C.A., D-Block II East R.K. Puram, New Delhi-22.	
1967	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)	
1955	695	Rau, B.S., B.E. (Elect), Deputy Director General (L), P & T Directorate, Parliament Street, New Delhi-1	H.T. 1955-57 1959-62 1967-68
1962	2415	Sarwate, V.V. (Prof.), M.Sc. (Wireless), D.I.I.Sc., M.S. (Elect. Commn.), Govt. College of Engineering & Technology, Raipur (M.P.)	
1955	878	Sastry, M.L., B.Sc. (Engg.), A.M.I.E.E., C/o U.N. Laboratory Office, Post Box No. 553, Riyadh (Saudi Arabia).	1956-59 & 1965-66
1957	2562	Sen, N. K. M.Sc., M.I.E., C/o Martin Burn Ltd., Martin Burn House, Calcutta-1.	

Year of Election	Mem. No.		Service on Council
1955	1486	Sen Gupta, N.K., B.Sc. (Engg.) M.I.E. (India), Managing Director, Heavy Engineering Corporation, Durgapur. (W. B.).	1958-61
1962	872	Seshasayee, R., B.E. (Hons.), I.T.U. Expert, with Telecommunication Training Centre, C/o Regional Representative, U.N. Technical Assistance Board, P.O. Box 618, Bangkok (Thailand).	J.S. 1962-63 1963-64 1964-65
1958	2694	Scymour, J.W., S.M.I.R.E., M.A.I.E.E., 108, Heather Road, Oaklyn, N.J.08107.	
1968	1487	Singh, B.N. (Dr.), B.Sc. (Hons.), M.Sc. (Wireless), D.Sc., Director, Defence Laboratories., Jodhpur.	
1963	2417	Shahane, B.J., (BRIG.)A.C.G.I. London, Managing Director, Instrumentation Ltd., Kota-Jhalwar Road, Kota (Raj.)	1960-63 1964-65 V.P. 1965-66 1966-67
1955	919	Shantiswarup, B.E., Hons., M.I.E., General Manager, P & T Electrification Circle, 4, New Road, Alipur, Calcutta-27.	
1967	11670	Subrahmanyam, D.L. (Dr.), M.Sc., S.M., Ph.D., (Misch. U.S.A.), Deputy Director, Central Electronics Engineering Research Institute, Pilani (Raj.).	
1967	147	Subrahmanyam, T.R., B.E., S.M.I.E.E.E. (New York), Assistant Chief Engineer, Electrical Division (Products), Voltas Ltd., 19 Grahm Road, Bombay-1.	
1962	250	Sundaram, K.N., M.A. (Physics), M.A.S.E.E. (U.S.A.), Deputy Educational Adviser, (Tech.) Ministry of Education, Industrial Assurance Building, 2nd Floor, North Wing, Opp. Churchgate, Bombay-1.	
1960	1984	Sundaram, P.S.M., B.Sc. (Engg.), Project Manager, C/o United Nations Technical Assistance Board, Khartoum, Sudan.	
1966	7349	Swarcop, D. (Col.), B.Sc.D.I.I. Sc., A.M.I.E., A.M.I.E.R.E., Electronics and Radar Development Establishment, High Grounds, P.B.No 108, Bangalore-1.	
1964	611	Talwar, K.N. (BRIG.), Commandant, Military College of Telecommunication Engg., Mhow (M.P.)	J.S. 1958-59 1959-61
1967	11669	Thapar, B.N. (Capt., I.N.), B.A., Director of Naval Signals, Naval Headquarters, New Delhi-11.	
1965	535	Thiruvankatachari, I.S., B.Sc. (Hons.), D.I.I.Sc., A.M.I.E., Additional Chief Engineer, All India Radio, Broadcasting House, Parliament street, New Delhi-1.	1966-67 H.T. 1967-68
1961	3636	Toshniwal, G.R., (Dr.), D.Sc., S.M.I.E.E.E., F.N.I., Chairman, Board of Directors, Toshniwal Bros. Pvt. Ltd., & Managing Director, Toshniwal Industries Pvt. Ltd., 'Rival' Katcheri Road, Ajmer (Raj.).	1966-68

1967-68

Year of Election	Mem. No.		Service on Council
1956	2362	Umashanker, B.Sc., C.E., Managing Director, Indian Telephone Industries Ltd., Bangalore 16.	1957-60 1962-65 1966-67 1967-68
1962	4995	Venkataraman, Krishna, M.A. (Physics), Department of Electronics & Communication Engineering, College of Engineering, Guindy, Madras-25.	
1964	24	Venkataramaiah, Y., B.Sc., (Hons.), D.I.I.Sc., A.M.I.E., Deputy Chief Engineer, All India Radio, New Broadcasting House, Bombay.	
1961	106	Venkiteshwaran, S.P., B.A. (Hons.), F.A.Sc., F.N.I., M.Ac. S.I., 8, Ramakrishna Marg, Faizabad, Lucknow-7 (U.P.).	
1964	2481	Verma, I.D. (Lt. Gen.), Signal Officer-in-Chief, Plot 108, Signals Directorate, Church Road, New Delhi-1.	V.P. 1967-68
1959	388	Wagle, M.M., B.Sc. (Elect and Mech), Engineer-in-Charge, Rural Broadcasting, Eros Building, 42 Queen's Road, Bombay-1.	

4. ASSOCIATE MEMBERS

1957	2570	Ahluwalia, J.C. (Lt. Col.), A.M.I.E., Production Manager, 509, Army Base Workshop, Agra (U.P.)
1967	11542	Ahmed, Rais (Prof.), M.Sc., M.Sc. (Engg.), D. Phil., Department of Physics, Aligarh University, Aligarh (U.P.)
1955	2395	Ahuja, I.S., General Manager and Technical Director, Ahuja Radios, 3-Okhla Industrial Estate, New Delhi-20.
1959	2741	Anand, J.C. (Lt. Col.) B.Sc. (Hons) M.I.E.E.E., ADPIL, Ministry of Defence (DGI), Department of Production, Room No. 51, 'G' Block, New Delhi-11.
1967	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.
1968	12919	Anandan, T.R., Assistant Engineer Telegraphs, C/o Shri K. Krishna Iyer, Thekke Madhom, Cochin-2 (Kerala State).
1964	7340	Andhare, V.K. (Lt. Col.), A.M.I.E., 11, Military College of Telecommunication Engineering, Mhow (M.P.)
1966	472	Antani, A.M., B.Sc. (Engg.), Station Engineer, All India Radio, Dharwar (Mysore State).

Year of Election	Mem. No.	Service of Council
1964	550	Apte, V.K. (Lt. Col.), CMO, Directorate 'F' Block, Gate-12, Room No. 147, DHQ., P.O., New Delhi-11.
1965	8785	Arjunani, I.G., B.E. (Elect.), Executive Engineer (Elect.), Department of Light-houses and Lightships 15/8, East Patel Nagar, New Delhi-12.
1962	5533	Arunachalam, V., B.A. (Hons.), Divisional Engineer Telegraphs, Long Distance Division, No. 175, Vasanthanagar, Bangalore-1.
1960	4667	Awasthi, Y.S. (Lt. Col.), B.A., ADSI, Western Zone, Delhi Cantt.
1967	658	Babu, Harendra R., B.E., A.M.I.E. (India), Signals Unit, No. 120, Air Force, C/o 99 A.P.O.
1956	4708	Bahl, S.K., (Lt. Col.), B.Sc., A.M.I.E., Commander Signals, 27, Mountain Divisional Sig. Regt. C/o 99 A.P.O.
1957	2593	Bajj Nath (Wg. Cdr.), 73/C-II, Moti Bagh, New Delhi-23.
1967	11541	Bains, B.S. (Maj.), B.Sc. (Hons.), M.Sc., Staff Officer-2 (Signals) HQ, Western Command, Simla-3.
1968	12662	Bakshi, K. L. (Maj.), B. A., Inspectorate of Electronics, 19/33, National Stadium, New Delhi-1
1957	233	Balachandani, K. M., B. E., Director General, Overseas Communication Service, Industrial Assurance Building, 2nd Floor, Veer Nariman Road, Church Gate, Bombay-1.
1965	9297	Balasubramaniam, K. (Lt. Col), OG-2, Army Headquarters, Signals Regiment, Signals Enclave New Delhi-10.
1954	820	Balasubramanian, A.S., B. Sc., D.I. I. Sc., Deputy Planning Officer, All India Radio, Akashvani Bhavan, New Delhi-1.
1957	1551	Balasubramanian, T. V., B. Sc. (Hons.), Assistant Chief Engineer, P & T Directorate, New Delhi-1.
1955	1721	Balasundaram, N., B.Sc., A.M.I.E.E., S.M.I.R.E., Director and Chief Engineer, Eastern Electronics, (Delhi) Private Ltd., 1-2 New Industrial Township Faridabad. (Haryana).
1964	748	Banerjee, A., B.E., Director of Phones Traffic, Office of the Director General, P&T Directorate, Parliament Street, New Delhi-1.
1963	536	Banerjee, A.K., B.Sc. (Hons.), M.Sc., D.S.S., Principal Scientific Officer, Instruments Research & Development Estt., Dehradun (U. P.)
1965	1165	Bapu Seetharam, H.R., B.Sc. (Hons.), D.I.I.Sc., Manager (Inspection), Bharat Electronics Ltd., Jalahalli P.O., Bangalore-13.

Year of Election	Mem. No.		Service on Council
1960	3209	Baral, S.S. (Prof.), B.Sc. (Hons.), M.Sc., D.Sc., P.R.S. Member, Societe des Radio Electriciens, Professor, Department of Communication Engineering, Bengal Engg. College, Howrah-3 (W.B.).	
1966	9205	Bartake, J.B. (Lt. Col.), D.C.S.O., HQ, Bengal Area, Fort William, Calcutta-21.	
1963	851	Basak D.N., B.Sc. (Hons.), B.Sc. (Engg.), M.I.R. S.E., M.A.A.R., 38 Pelhan Road, Wimbledon, London SW-19.	
1968	12496	Basha, V. Noorullah, B.E. (Telecom.), Deputy Engineer-in-Charge, (Madras Branch), Overseas Communication Service, 98-A, Armenian Street, Madras-1.	
1957	2524	Basu, L.M., M.Sc., A.M.I.E.R.E. C/o Chartered Bank, 31, Chowringhee Road, Calcutta-16.	
1954	923	Basu, M.K., M.Sc., Deputy Director (Telecom.), Dte. Gen. of Security, Cabinet Secretariate, Block V (East), Level 3, R K., Puram, New Delhi-22.	
1954	4612	Basu, P.K., M.Sc. (Wireless), Station Engineer. All India Radio, Mall Road, Transmitters, Delhi-7.	
1955	621	Batra, S.K. (Col.), B.A. DCSO, JHQ PH and HP Area, Ambala Cantt.	
1960	2936	Benedesti, S. J., M. Sc. (Southampton Univ.), M. A. (Phil.), M. A. (Divinity), Observatorio de Fisica, Cosmea, Casilla-7, San Miguel (F. N. P. G. S. M.), Argentina.	
1962	5652	Beotra, R. C. (Maj.), B.E., A.M.I.E., Director of Electronics, HQ, R and D, 11-A, Janpath, New Delhi-1.	
1968	12141	Bhargava, D. N. (Maj.), B. Sc., M. Sc., (Physics), C/o 23, Mtn. Div. Sig. Regt., C/o 99 A P. O.	
1958	2648	Bhagavat, G. K. (Prof.), B. E. Hons. (Telecommunication), Dr. Ing. (Munich), Indian Institute of Technology, Powai, Bombay-76.	1967-68
1956	2483	Bhagwat, D. R. (Maj.) Officer Commanding Maharashtra and Gujarat Area, Signal Coy, Colaba, Bombay-5.	
1967	10524	Bhandari, R. C. (Maj.), A. M. I. W. S. (India), Indian Rayon Corporation Ltd., Veraval (Gujarat).	
1961	2423	Bharara, H. L., B. A. (Hons.), Asstt. Chief Engineer, P & T Directorate, New Delhi-1.	
1964	6931	Bhardwaj, B. D. (Lt. Col.), Deputy Chief Signal Officer, Headquarters, Maharashtra & Gujarat Area, Colaba, Bombay-5.	
1968	2479	Bhalotra, T.R. (Maj.), M.Sc. (Physics), A.M.I.E.R.E., Room No. 48, 'G' Block, Directorate of Production and Inspection of Electronics, 'G' Block, New Delhi-11.	

Year of Election	Mem. No.	Service on Council
1960	920	Bharma, N.C. (Sqn. Ldr.), B.Sc., B.E., (Hons.) HQ Central Air Command, I.A.F., Air Force Station, Bamrauli, Allahabad (U.P.).
1964	7336	Bhasin, K.D. (Brig.), HQ XXXIII, Corps (CSO) C/o 99 A.P.O.
1968	12918	Bhatia, Romesh (Major), Western Command, Signal Regiment, Simla-8.
1956	2453	Bhatnagar, H.M., Technical Manager, The National Ekco Radio and Engineering Co. Ltd., Unity House, 8-Maha Permanand Marg, Bombay-4.
1956	2733	Bhatnagar, U.S., Engineer, Telegraphs Division, Ministry of P.T.T. Kuwait (Arabia).
1957	2555	Bhatt, V.J., B.Sc. (Elect. & Mech.), India Radio and Electronics Corporation, 13/14, Rani Building, Prarthana Samaj, Bombay-4 BR.
1954	993	Bhide, V.M. (Col.) Chief Commercial Manager, Bharat Electronics Ltd., Jalahalli, Bangalore-13.
1958	2647	Biswas, G. (Wg. Cdr.), Air Force Station, Baroda (Gujarat).
1964	6902	Borges, W.J., St. Xavier's Technical Institute, Near Mahim Bus Depot, Mahim, Bombay-16.
1965	2376	Borwanker, A.K. (Lt.Col.), B.Sc., B.E., 509, Army Base Workshop, Agra.
1954	673	Bose, K.K., (Dr.), B.E., Dipl. Engg. (Munich.), Dr. Engg. (Dresden), A.M.I.E., Electron-Control Devices Corporation, 13-North Road, Jadavpur, Calcutta-32.
1959	661	Chakrabarty, D.C. (Capt.), Superintendent of Police (Wireless), Chandigarh.
1961	3579	Chakrabarty, D.P. (Prof.), M.E.E. Professor and Head of the Department of Electrical Engineering, Madhav Engineering College, Gwalior-5 (M.P.).
1958	2599	Chakrabarty, S.K. (Wg.Cdr.) (Retired), A-II/62, Naya Mahadeo Tola Kashi R.S., Varanasi.
1967	11557	Chandra, K. (Sqn.Ldr.), M.Sc. (Physics), Defence Service Staff College, Wellington (Madras).
1954	3927	Chatterjee, B. (Dr.), B.Sc. (Hons.), M.Sc., Ph.D. (Elect. Commn. Engg.), F.I.P.S., M.I.R.E.(U.S.A.) Department of Communication Engineering, Indian Institute of Technology, Kharagpur (W.B.)
1968	12449	Chawla, Prem Prakash (Maj.), B.Sc. (Engg.), 10-3-112, Teachers Colony, East Marredpally, Secunderabad-26.
1968	12082	Cherian K. George, M.Sc., C/o Ericsson Telephones Sales Corp. A.B., L-25, N.D.S.E. Part II, New Delhi-16.

Year of Election	Mem. No.	Service on Council
1954	781	Chiplunkar, V.N., M.Sc. (Physics), D.I.I.Sc., M.I.E.E.E. (New York), Lecturer, Department of Electrical Communication Engineering, Indian Institute of Science, Bangalore-12.
1954	1114	Chippada, S. (Maj.), 2 Andhra Signals Regiment, N.C.C., Government Arts College, Rajahmundry (A.P.).
1966	10539	Choudhry, P.N. (Dr.), Ph.D. (Elect. Eng.), Deputy General Manager (Engg.), Telephone Bhavan, 34, Dalhousie Square, South, Calcutta.
1956	2428	Chowdhary, S.S. (Lt.Col.), B.Sc., Deputy Director, National Cadet Corps Directorate, Madras and Pondicherry, Fort St. George, Madras-9
1954	1518	Clement, C.J., B.E. (Elect.) B.E. (Mech.), General Manager, Telephones, Madras.
1963	6167	Collaco, A.F (Capt.), I.N., B.A. (Hons.), C/o Union Carbide, Calcutta.
1961	1201	Das, N.D. (Maj.), B.Sc. (Hons.), M.A., 2 Sig. Trg. Centre, Panjim, Goa.
1957	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. (U.S.A.), Assistant Professor Jalpaiguri Engineering College, P.O. Dangujhar, Jalpaiguri.
1957	1111	Dasgupta, J., M.Sc. Physics, M-8, Observatory Banglow, Lodhi Road, New Delhi-3.
1960	1202	Dasgupta, Ranjit, Chief Superintendent, Development, Indian Telephone Industries Ltd, Bangalore 16.
1968	281	David, Macaulay., B.A., A.M.I.E.E. (London), Divisional Engineer, Telephones, Trichy Road, Coimbatore-18.
1967	2366	David, T.P., A.M.B.I.R.E. (London), Van de Graaff Laboratories, B.A.R.C., Trombay, Bombay-74.
1967	10801	Dayal, M. (Lt.Col.), B.Sc., A.M.I.E. (India), Assistant Director, Production and Inspection Electronics, Ministry of Defence, DGI, Room No.47, 'G' Block, New Delhi-11.
1964	7363	Deodhar, R.G., B.Sc. (Hons.), B.E., 14A/62, Western Extension Area, Karol Bagh, New Delhi-5.
1954	874	De Sarkar, S.S., B.Sc. (Hons.) M.Sc., Dy. Director Standards Tele. Research, Designs and Standards Organisation, Ministry of Railway, Lucknow-5 U.P.
1968	12751	Desai, S.L., B.E. (Elect. & Mech.), Dy. Director Telecommunication Research Centre, Posts & Telegraph Directorate, Eastern Court, Janpath, New Delhi-1.
1957	2579	Deshpande, V.D. (Col.), N.C.C. Group Headquarters, Station Banglow, Kolhapur-1

Year of Election	Mem. No.	Service on Council
1963	2695	Deva, Yashwant (Maj.), A.M.I.E. India, II-C, Model Town, Phagwara.
1965	7746	Dhawan, K. (Lt.Col.), B.Sc., OC I, Mil. Trg. Regt., I STC, Jabalpur. M.P.
1966	9451	Dhodi, J.S. (Maj.), A.M.I.E., Det. Tech. Group No. 16, Scaling, Central Ordinance Depot, Agra Cant. (U.P.)
1966	10120	Dixit, G.B., B.Sc. (Hons.), 47, 13th Cross, 8th Main Road, Malleswaram, Bangalore-3.
1960	2843	Dutta, Shambhu Nath, B. Sc. (Hons.), B. E. E., Deputy Commercial Engineer, Damodar Valley Corporation, 27, Anderson House, Calcutta-27.
1959	1053	Dwivedi, M. B. (Maj.), M. Sc., Directorate of Electronics, Research and Development Organisation, Ministry of Defence, 'G' Block, DHQ PO, New Delhi-11.
1964	9844	Fadnavis, N. G. (Cdr.), I. N., B. Sc. (Engg.), No. 79, Moti Bagh, C-II; Shanti Path, New Delhi-23.
1960	3224	Fanderlinden, R. B. (Capt.), I. N. (Retired), 72, McMillan Street, Victoria Park, W. Australia.
1960	529	Ferris, W. V. (Maj.), B. Sc., Eastern Command Signal Regiment, Alipore Camp, Calcutta-27.
1954	170	Cadre, B.K., B.Sc., D.I.I.Sc., M.I.E., Narayan Nivas, D.L. Vidya Road, Dadar, Bombay-28.
1954	656	Ganesan, V. (Air Commandore), B. Sc. (Hons.), D. I. I. Sc., Defence Research and Development Laboratory, Chandrayan Gutta Lines, Hyderabad-5 (A. P.)
1955	2416	Ghose, A. K., M. Sc., S.M.I.E.E.E., M.I.R.E., A.M.I.E.E., Reader in Line Communication Engineering, Engineering College, Banaras Hindu University, Varanasi-5 (U.P.)
1960	3266	Ghose, S. C. (Sqn. Ldr.), Officer Commanding No. 1 Central School Trade Test Board, Air Force Hostel, Banaglore-6.
1954	155	Ghose, A.C., M.Sc., Assistant Project Officer, Eastern Project Circle, All India Radio, Eden Garden, Calcutta-1.
1964	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).
1957	2543	Ghosh, B.M., B. Sc., Deputy Manager, HE & HE Tests, C/o Bharat Electronics Ltd., Jalahalli P. O., Bangalore-13.
1960	3096	Ghosh, P.K., M. Sc., Engineer-in-Charge, H.P.T. All India Radio, Kingsway, Delhi-9.

Year of Election	Mem. No.		Service on Council
1959	3337	Gill, Kulwant Singh (Lt. Col.), Officer Commanding, Special Regiment, Malta Lines, Delhi Cantt.	
1965	8749	Godbole, M. V., B. E. (Hons.), A. M. I. E., 83, Field Workshop Coy., C/o 99 A. P. O.	
1962	5036	Gogate, V. M., B. Sc., Grad. I.E.R.E., K-4/1, Multistorey Building, R. K. Puram, New Delhi-22.	
1954	538	Goolry, K. S. (Lt. Col.) (Retired), B. A., A. M. I. E. R. E., No. 1355, G. T. Road, Near Hyde Market, Amritsar.	
1954	2360	Gopalan, S., A. M. I. E. E., 19, Ganapati Nagar, Madras.	
1954	1846	Gopalakrishna, K. N., B.Sc. (Hons.) D. I. I. Sc., Controller, Radio Construction and Development Unit, Safdarjung Airport, New Delhi-3.	
1955	1021	Gowrishankar, S. M., B.E., Director, Signal and Telecommunication, Government of India, Ministry of Railways, Rail Bhawan, New Delhi-11	
1964	6903	Grewal, H. B. S. (Lt. Col.), HQ Indian Military, Academy, P. O. Prem Nagar, Dehradun (U. P.).	
1968	1552	Guin, M. (Major), M. Sc., A. M. A. R. S. I., 'S' Communication Zone, Signal Regiment, C/o 99 A. P. O.	
1959	109	Gulati, O.P., M Sc., Engineer-in-Charge, A.I.R., 18, Abbot Road, Lucknow (U.P.).	
1965	9102	Gulati, R. R., A. M. I. E., Lecturer in Telecommunication Engineering, Birla Institute of Technology and Science, Pilani (Rajasthan).	
1968	12915	Gupta, G.C. (Sqn. Ldr.), B.Sc., 137/3, Officers Married Qrs, Air Force, Rajokri, Gurgaon Road, New Delhi-38.	
1957	2592	Gupta, J.S. (Prof.), B.E. (Elect.), Professor of Electrical Engineering, Regional Engineering College, Kurukshetra.	
1960	705	Gupte, R.K. (Lt. Col.), A.M.I.E., 5 Mtn., Div. Sig. Regt., C/o. 99 A.P.O.	
1968	12432	Hajela, S.K. (Dr.), B.Sc., Assistant Director, Telecommunication Research Centre, (P. & T. Board), Eastern Court, Janpath, New Delhi-1.	
1954	438	Harish Chandra (Gp. Capt.), M.Sc., D.I.I.Sc., Director, J.C.E.S., Plot No. 108, Church Road, New Delhi-1.	1958-59 J.S. 1959-60 1960-61
1960	3505	Harris, G.S.(Wg.Cdr.), Red Shield House, 30 Mercweather Road, Fort, Bombay-1 (B.R.).	

Year of Election	Mem. No.	Service on Council
1954	586	Hart, M.B. (Lt.Col.), C/o C. Haidar Ali, American Express Co., Connaught Circus, New Delhi-1.
1962	1978	Hattangady, V.R., B. Sc., A.M.I.E.R.E., Deputy Superintendent, Ancillary Overhaul Division, Air India, Santa Cruz (East) Bombay-29.
1955	1922	Hegde, K.S. (Prof.), B.E., M.A. (Engg.), Principal, Government Engineering College, Guindy Madras-25.
1966	10127	Herbert, L. (Maj.), B. Sc., A.M.I.E. (India), Military College of Telecommunication Engineering, Mhow (M.P.).
1965	782	Indiresan, P.V. (Dr.), B.Sc. (Hons.), D.I.I.Sc., (E.C.E.), Ph. D., A.M.I.E.R.E., Indian Institute of Technology, New Delhi-29.
1965	8757	Jagdish Raj (Maj.), B.A., Machine Dev. Officer, T.C.B., Ministry of Defence, South Block, D.H.Q. P.O., New Delhi-11.
1962	5145	Jagdishwar Lal, B.Sc. (Hons.), Deputy Chief Engineer Planning, P. & T. Directorate, Parliament Street, New Delhi-1.
1965	9143	Jajaneswar Das (Dr.), M.Sc., A.M.I.E.E. (London), M.I.E., Professor, Department of Electronics and Communication Engineering, Indian Institute of Technology, Kharagpur (W.B.).
1956	2497	Janardhan, N.M. (Prof.), B.E. (Telecommunication), B.E. (Hons.) (Adelaide), Professor, Department of Electronics and Communication Engineering, College of Engineering, Guindy, Madras-25.
1958	2677	Jayachandra, M.Sc., 39/21, Old Idgah Colony, (Nagarkanti Colony), Agra (U.P.)
1957	2521	Jayaraman, T.R., B. Sc. (Hons.), D. I. I. Sc., I. A. S., Secretary, Government of India, Education Department, Government of Mysore, Bangalore-1
1967	11558	Jha, S. S. (Lt. Col.), B. A. (Hons.), N. Commn. Zone, Signal Regt., C/o 99 A P. O.
1966	2627	Jirafe, W. J. (Dr.), B. E. (Hons.) (Telecommunication), M. Tech., Ph. D., Department of Electrical Engineering, Indian Institute of Technology, Powai, Bombay-76.
1959	2792	John, A. G., M. Sc., Asstt. Chief Engineer, All India Radio, Akashvani Bhawan, New Delhi-1.
1954	831	Joseph, T. T., M. A., 15, Arjun Bhawan, Shahjahanabad, Bhopal (M. P.)
1954	1417	Joshi, Dinshaw F. D., B. Sc., B. E. (Elect. and Mech.), A. M. I. E., General Manager, Telephones, Telephone Building, Waudby Road, Bombay-1.
1960	2865	Joshi, K. L., B. Sc. (Hons.), M. Sc., Department of Electrical Communication Engineering, College of Engineering, Poona-5.
1958	2680	Joshi, M. V., B. E. (Elect. and Mech.), D. I. C., 76, Sunder Nagar, New Delhi-11.

Year of Election Mem. No.

Service on Council

1954	989	Juneja, R. R., B.A., Elektrogears Pvt. Ltd., 27, Rowland, Calcutta-20.
1964	7346	Juneja, S. L. (Col.), Commandant, Army Head Quarter, Signal Regiment (Signals Enclave), New Delhi-10
1954	4019	Juneja, S. V. S. (Col.), DCISO, HQ. 101, Comm. Zone Area, C/o 99 A. P. O.
1965	9162	Kabraji, R. Z. (Maj. Gen.), General Officer Commanding, HQ 6 Mountain Division, C/o 56 A. P. O.
1954	3	Kagalwala, Abid, M.E.E. (U. S. A.), A.M.I.E.E., A. M. I. E. (India), Chartered Electrical Engineer, Glolite Electricals, Champs Bhimji Road, Mazagaon, Bombay-10.
1960	1704	Kale, R. S., B. Sc. (Hons.), 888, Laxmibai Nagar, New Delhi-3.
1954	1112	Kalra, S. N. Secretary, Commonwealth Telecommunication Board, London.
1963	5982	Kapoor, B. N. (Maj.), M. Sc., 26 Mountain Division, Signal Regiment, C/o 99 A. P. O.
1964	6854	Kapoor, G. D. (Lt. Col.), B. Sc., Y, Comm. Zone, Sig. Regt., C/o 56 A. P. O.
1967	10558	Kapur, H. S. (Maj.), B. Sc., XI Corps Signal Regiment, C/o 56 A. P. O.
1967	11164	Karnik, K. J. (Cdr.), I. N. (Retd.) B-2/24, Safdarjung Enclave, New Delhi-16.
1954	629	Karnik, V. R., (Gp. Capt.) M. Sc., F-19, Green Park, New Delhi-16.
1965	8758	Kasturi, G. (Maj.), B. Sc., Inspector of Electronics, Chief Inspectorate of Electronics Wing, Gun Carriage Factory, P. O. Jabalpur (M. P.)
1960	2928	Katarya, C. P. (Lt. Col.), B. Sc., Military College of Telecommunication Engg., School of Signals, Mhow (M. P.)
1962	981	Kaul, P. M., D. E. T., 16, Narris Road, Bangalore-25.
1954	148	Keshava Chandra, M. Sc., Planning Officer, (Tape Recording Unit), All India Radio, Akashvani Bhavan, Parliament Street, New Delhi-1
1965	9131	Ketkar, L. G. (Maj.), B. S. Sc. (Hons.), Special Signal Regt., Delhi Cantt.
1968	2419	Kharkar, S. V., B. Sc., 345, Old 2688 (New), Narayan Poona-2
1960	724	Kheterpal, S.P. (Maj.), M.Sc., B.S.F. Trg. School, R.K. Puram, New Delhi-22.
1953	674	Kini, M.M., B.E. (Elect.), Addl. General Manager, Bombay Telephones, Waudby Road, Telephone Exchange, 4th Floor, Fort, Bombay-1.

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1967	11514	Kohli, P.L. (Maj.), 19, Infantry Division, Signal Regiment, C/o. 56 A.P.O.	
1954	157	Kohli, S.S., M.Sc., Engineer, Shiela Theatre, D.B. Gupta Road, New Delhi-1.	
1957	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.	
1968	12921	Kotwal, C.L. (Sqn. Ldr.), B.Sc., M. Tech. (Elect. Engg.), A.M.I.E. (India), A.M.A.S.I., C/o. Aircraft & Armament Testing Unit, Air Force Station, Chakori, Kanpur-8.	
1957	4628	Kotwal, M.K. (Maj.), B.Sc., T. Communication Zone Sig. Regt., C/o. 56 A.P.O.	
1958	2608	Krishnamoorthy, K.S., B.Sc. (Hons.), D.M.I.T., Officer on Special Duty, Bharat Electronics Ltd., Jalahalli, Bangalore-13.	
1960	3219	Krishnamurthy, N., M.Sc., Assistant Station Engineer, Radio Kashmir, Srinagar (J. & K.).	
1966	9652	Krishnaswamy, M.V., B.Sc. (Hons.), D.I.I.Sc., Engineer-in-Charge, Overseas Communication Service, Industrial Assurance Building, 2nd Floor, Veer Nariman Road, Churchgate, Bombay-1.	
1968	12083	Kudva, K.V. (Major), B.Sc., A.M.I.E. (India), Military College of Electronics and Mechanical Engg., Secunderabad. (A.P.)	
1967	11061	Kulkarni, V.P. (Dr.) M.Sc., M.Tech., Ph.D., Control & Guidance Division, S.S.T.C., Post Box No. 35, Trivandrum.	
1964	1720	Kulshrestha, A.P., Regional Manager, Indian Telephone Industries Ltd., 12-B, Faiz Bazar, Delhi-6.	
1956	2687	Lahiri, D.B. (Lt. Col.), 2, Technical Training Regiment, I Signal Training Centre, Jabalpur (M.P.)	
1965	3159	Lakshminarayana, N., B.Sc., Assistant Professor in Telecommunication Engineering, College of Engineering, Kakinada-3 (A.P.).	
1963	6055	Lam, D.M., B.Sc., (Hons.), D.I.I.Sc., Dy. General Manager (M.), Bombay Telephones, Telephone Bhawan, Colaba, Bombay-5.	
1958	2623	Lazarus, N.P., A.M.I.E.R.E., A.R.Ae.S., A.M.Ae.S.I., Communication Superintendent, Air India T.H.Q., Bombay-29.	
1955	2403	Madan, P. (Brig.), B.Sc. (Hons.), Officer on Special Duty (Planning), Bharat Electronics Ltd., Jalahalli P.O., Bangalore-13.	1953-55
1964	6879	Madhava Raja, V., B.Sc. (Hons.), M.Sc., C/o. Shri K.R.N. Jairam 'Tripathi', 1st Floor, 3rd Road, Khar, Bombay-52.	
1963	92	Mahajan, D.R., B.E., Assistant Chief Engineer (Wireless), P. & T. Directorate, Parliament Street, New Delhi-1.	

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1955	74	Maiya, B.C.S., M.A., Divisional Engineer Telegraphs, Telecommunication Training Centre, G. P.O. Building, Nagpur.
1954	453	Major, D.S. (Lt. Col.), Petit Mansions, 85, Sleater Road, Bombay-7
1954	602	Malhans, J.S. (Lt. Col.), Comdr. N.C.C. Gp. H.Q., Ludhiana.
1963	2114	Marathe, B.R. (Dr.), M.Sc. (Wireless), Ph.D. (Physics), Senior Scientific Officer, Central Electronics Engineering Research Institute, Pilani (Rajasthan).
1956	2480	Masand, C.W., B.Sc. (Engg.), D.I.I. Sc., M.S. (U.S.A.), A.M.I.E. (India), M.A.S. H.R. A.E. (U.S.A.), Technical Director, Masand Industries, Kapurthala, Pb.
1958	3654	Mathew, Thomas, M.Sc., 131, Nehru Road, Santa Cruz (East), Bombay-55.
1967	11697	Mathur, Mukesh Narain, Principal's Residence, S.R. College of Commerce, Delhi University, Delhi.
1955	699	Mathur, N.S. (Col.), Commandant, HQ No. 1, Signal Training Centre, Jabalpur (M.P.).
1963	6177	Mehra, S.C. Major, 7 Inf. Div. Sig. Regt., C/o 56 A.P.O..
1965	8748	Mehrotra, S.L. (Maj.) M.Sc., GSO-2, Sigs. Dte., 108, Plot, Church Road, New Delhi-1.
1957	456	Mehra, K.M., B.Sc., D.I.I. Sc., Engineer-in-Charge, High Power Transmitters, All India Radio, Bombay.
1968	2123	Menon, G.U., B.Sc., (Engg.), A.C.G.I., Grad. I.E.E., General Manager, Indian Telephone Industries Ltd., Bangalore-16.
1958	2641	Menon, K.G. (Gp. Capt.), Deputy Director of Signals (Tech.), Vayu Bhawan, New Delhi-11.
1954	1556	Mirchandani, H.J., B.E. (Mech. & Elect.), Chief Engineer (Transmission), Indian Telephone Industries Ltd., Bangalore-16.
1956	2494	Mishra, S.C., B.Sc., Regional Manager, Indian Telephone Industries, 9.B, Govindpur Road, Calcutta-31
1957	2686	Mital, R.N., B.Sc., B.E. (Hons.), 2, Ram-kishore Road, Civil Lines, Delhi-6.
1962	2418	Mithal, G.K., B.E. (Hons.), Reader in Advance Electronics, Government Engineering College, Jabalpur (M.P.)
1965	735	Mitra, S.K., M.Sc., Station Engineer, All India Radio, Sarnath, Varanasi.
1955	1853	Mitter, E.A. (Maj.), B.A., 4, Boulevard Road, Delhi-6.

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1960	3095	Mohan, M. Ananda, Senior Technical Officer (Retd.), 73, Victoria Layout, Bangalore-7.
1958	584	Mohantry, A.P., B.Sc., Supdt. of Police, (Signals), Cuttack (Orissa).
1965	8504	Mukherjee, S. C., M. Sc., D. Phil. (Sc.), E. S. G. Division, Saha Institute of Nuclear Physics, 92, Acharya Prafulla Chandra Road, Calcutta-9.
1957	2506	Mukherji S.N., B.Sc., (Hons.), M.Sc., Governing Director, W.J. Alcock & Co. 7, Hasings Street, Calcutta.
1968	12710	Mukhi, Lajpat Mangharam, B.Sc. (Engg.), D P. I. I., G. M. I. E. E. (London), "Nanaknivas", 3rd Block, 5th Floor, Flat No. 52, Warden Road, Bombay-26.
1957	2586	Murgai, B.S. Divisional Engineer (Telegraphs), Technical and Development Circle. P & T, Ridge Road, Jabalpur (M. P.).
1966	9484	Murthy, B. S., B. Sc. (Engg. Hons.), Director, Coaxial Trunk Cable Project, Jayanagar, Bangalore-11.
1967	11556	Murthy B. Srinivasa, B. Sc., D. I. I. Sc. (E. C. E.), M. E. (Adv. Elec.), Senior Scientific Officer I, Solidstate Physics Laboratory, Lucknow Road, Delhi-7.
1968	12754	Murthy, S. N. (Major), B. Sc. (Hons.), M. A., Deputy Assistant Director, Vehicles Research and Developments Estt. (R & D), Ahmednagar (Maharashtra).
1967	11063	Murthy, Y. N. Keshava, B. Sc., D. I. I. Sc., C/o Voltas Limited, (Project Engineering Division) 19, Graham Road, Ballard Estate, Bombay-1.
1955	75	Nabar, S. M., B. Sc. (Hons.), D. I. I. Sc., A. M. I. E., Deputy Inspector General of Police, Director of Police Wireless, Poona, (Maharashtra State).
1965	8747	Nagar, B.L., B.Sc., 5/3, West Patel Nagar, New Delhi-8.
1955	2417	Nagaraja, N.S. (Dr.), B.Sc. (Hons.), Ph.D., D.I.I.Sc. Lecturer, Indian Institute of Science, Bangalore.
1955	4312	Nagarajan, M.S. (Lt.Col.), M.A., A M.I.E., Chief Inspectorate of Electronics, Deputy Chief Inspector (Elect.), Ministry of Defence (DGI), P.O. Hebbal, Bangalore-6.
1954	5	Nageswaran, K., B.A. (Hons.), D.I.C. (London), RESA Company, 3/6, Mount Road, Madras-2.
1954	660	Naidu, R.K.P., (Maj.), B.A., 'Q' Communication Zone, Signal Regiment, Poona-1.
1954	540	Naidu, V.K.P., B.Sc. International Civil Aviation Organisation, Technical Assistance Mission, P.O. Box 1165, Jeddah, Saudi Arabia

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1966	10335	Nair B.K.S. (Cdr.), B.Sc., M.I.E.E.E., A.M.I.E.R.E. A.M.I.E. (India), Institute of Armament Technology, Girinagar, Poona-25.
1964	6171	Nair, B.R., B.Sc. (Engg.), Senior Engineer Crossbar, Indian Telephone Industries Ltd., Dooravani Nagar, Bangalore-16.
1954	652	Nair, C.U.K. (Lt.Col.), B.A., National Cadet Corps Directorate, Kerala and Laccadives, Pangodi, Trivandrum-6.
1960	1135	Nair, K.K. (Prof.), M.Sc., D.I.I.Sc., M.I.E.E.E., Professor of Telecommunications Engineering, University College of Engineering, Osmania University, Hyderabad-7 (A.P.).
1963	1615	Nair, V.G., B.Sc., Regional Director Telecommunication, Madras.
1958	851	Nambiar, K.M.K. (Wg Cdr.), Communication Officer, Hindustan Aeronautics Limited, Nasik Road, (Maharashtra).
1964	6716	Nambiar, K.P.P., M.Sc. (London), D.I.C., A.M.I.E.E. (London), M.I.E.E.E. (U.S.A.), 14, Park View, Little Gibbs Road, Malabar Hill, Bombay-6.
1958	4209	Nambudiripad, M.N., B.Sc., A.M.I.E.R.E., St. Albert's College, Ernakulam (Kerala).
1959	2766	Nanda C.M. (Col.) M.A., A.M.I.E.R.E., Mil. Naval and Air Attache Embassy of India in Japan, Tokyo.
1959	887	Narasimhan, P.R., B.E., Assistant Planning Officer, All India Radio, P & D Unit, Akashwani Bhavan, New Delhi-1.
1961	3706	Narasimhan, R. (Lt.Col.), Signal Coy NCC, Pondicherry-3.
1955	933	Narasimiah, B.N., 18, I-Main Road, Ramamohan-pura, Sreerampuram P.O. Bangalore-21.
1958	918	Narayanan, V. S. (Gr. Cap.), B.Sc. (Hons.), Deputy Director, Guided Weapons Air Head quarters, New Delhi-11
1954	532	Narayanaswamy, A. S., M.Sc., Deputy Planning Officer, Planning and Development Unit, All India Radio, Akashwani Bhavan, Parliament Street, New Delhi-1.
1967	11048	Narula, V. P., B.Sc. (Engg.), D.I.I. Sc., C/o The Bharat Transformer Corporation, 'A' Tank, Patiala.
1966	9767	Natu, K. V., B.E., Factory Manager, Phillips India Ltd., Loni Kalbhor (C. R.), NR, Poona.
1964	6109	Nayar, K. R., Director of Telegraphs, Kerala Circle, Trivandrum-1.
1954	1546	Nilkantan, P.S., M.Sc., Planning Officer, All India Radio, Akashwani Bhavan, Parliament Street, New Delhi-1.

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1959	2780	Ohri, D. D. (Wg. Cdr.) Signal Wing, Wireless Experimental Centre, Delhi Cantt-10.
1954	457	Pai, K. V., B. E. (Electrical), Technical Expert, C/o E.C.A.F.E., Bangkok, Thailand.
1966	2611	Pai, K.N., B.Sc. 18, Sunder Mansion, 91, Govandi Road, Chembur, Bombay-71.
1954	501	Pai, M. V., B.Sc., (Engg.), A.M.I.E. (India), A.I.R.E., C/o Shri K. G. Pai, 'Guru Nanak Nivas', Block No. 8, Plot No. 183, Sion Road (West), Sion, Bombay-22-DD.
1957	2545	Pal, P. C. (Prof.) B. Sc. (Hons.) M.Sc., M.I.R.E. (New York), Reader, Government Engineering College, Jabalpur (M.P.)
1968	12081	Pandit, R. N. (Major), M.A., A.M.I.E. (India), Senior Inspection Officer, Chief Inspectorate of Electronics Detachment, C/o Defence Electronics Research Laboratory, Hyderabad-5 (A.P.)
1959	2630	Pandhi, Ranbir, (Sqn. Ldr.), Air Force Station, Baroda-6.
1965	9198	Pant, N. (Maj.), M.Sc., Project Engineer, Experimental Satellite Communication Earth Station, 4-5, Vijay Park Cooperative Housing Society, Navrangpura, Ahmedabad-9.
1954	905	Panwar, B.Sc. (Col.), Commandant, Headquarters, 2 STC., Panjim (Goa).
1958	2645	Parthasarthy, M. N., M.A., A.M.I.E.R.E., 76, North Tank Square, Triplicane, Madras-5.
1955	567	Patil, N. A. (Col.), Admn., HQ. 19 Inf. Divn., C/o 56 A.P.O.
1966	10406	Patil, S.T., B.E., A-61/580, Gandhi Nagar, Bandra (East), Bombay-51 (AS).
1954	1610	Pattabhiraman, J., B.Sc., D.I.I.Sc., C/o Resident Representative of the U. N. Development Programme in Ghana, a.i. P.O. Box No. 1423, Accra (Ghana).
1965	895	Pendhakar, S. B., B. E. (Telecommunication), Phillips India Ltd., 68, Najafgarh Road, New Delhi-15.
1954	159	Phatak, D.V., B.E., Planning Officer, Planning and Development Unit, All India Radio, Parliament Street, New Delhi-1.
1954	747	Pichumani, K. K. Divisional Engineer (Retired), P & T, 16, Benwell Road, Cantt., Tiruchirapalli.
1960	972	Pinto, K. A. J. (Wg. Cdr.), B.E. (Telecom), A.M.I.E. (India), A.M.Ac.S.I., Directorate of Signals, Air Head Quarters, New Delhi-11.
1965	819	Prabhakar, Alladi (Prof.): M.E., M.I.E.E.E. (U.S.A.), Professor, Department of Telecommunication Engineering, College of Engineering, Osmania University, Hyderabad-7 (A.P.)

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1960	2836	Prabhu, M.A., B.A., Manager, Systems Planning and Installation Dept., Bharat Electronics Limited, Jalahalli, Bangalore.
1957	2591	Puri, Y.R. (Lt.Col.), Assistant Director (Comm.), BSF., Government of India, Ministry of Home Affairs, Dtc. Gen. Border Security Force, (Communication Directorate), 'E' Block (Def. Wing), New Delhi-11.
1964	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.), Professor and Head of the Electrical Engineering Department, Assam Engineering College, Julukhari Gauhati-13 (Assam).
1958	2646	Rajagopal D. (Gr.Capt.), B.Sc., Director of Aeronautics R & D, Ministry of Defence, Room No. 172, 'F' Block, New Delhi-16.
1965	9276	Rajan R.A., (Lt. Col.), B. Sc., TSO-1, CD, Directorate G.S. Branch, Army Headquarters, DHQ P.O. New Delhi-11.
1954	4327	Rajan, R.M. (Lt.Col.), B.Sc., Officer Commanding, Southern Command Signal Regiment, Poona-1
1964	1683	Raju, D. V. S., B.Sc., D.M.I.T., M.I.E.E.E., Electronic and Industrial Instruments Co. Pvt. Ltd. 17/B, Industrial Estate, Sanatnagar, Hyderabad-18 (A.P.).
1967	11209	Ramachandran, V. (Dr), B.Sc., D.I.I.Sc. (E.C.E.) 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.
1960	720	Ramados, E.N. (Lt.Col.), B.Sc., GSO-I, Headquarters, 23 Mountain Division, C/o 99 A.P.O.
1963	6056	Ramados, K. C., B.E. (Telecommunication), Director of Telegraphs Microwave Project, 3-6-106 Himayatnagar, Hyderabad-29, (A.P.)
1956	1689	Rama Kant, B.Sc. (Elect. & Mech.) General Manager, Telephone, Calcutta-1.
1962	2184	Ramakrishna (Maj.), B.Sc., M.A., Det, Tech. G.P., E. M. E., No. 6, 515, Army Base Workshop, Bangalore-8.
1955	3922	Raman, S. (Maj.) B.Sc., M.A. (Maths), M.I.R.E., A.M.I.E.R.E., OC 250 Field Workshop, E.M.E., C/o 99 A.P.O.
1965	701	Ramanand, V. S. (Lt. Col.), B. Sc., Officer Commanding, IV Corps Signal Regiment, C/o 99 A P. O.
1958	2603	Ramanany, P. U. (Wg. Cdr), Directorate of Signals, Air Headquarters, New Delhi-11.
1960	568	Ramanathan, G., B. Sc., D. I. I. Sc., D. I. C. (London), Installation Engineer, All India Radio, Western Project Circle, New Broadcasting House, Bombay-1.
1963	1953	Ramanathan, P. M., B. E. (Telecommunication), Lecturer in Telecommunication Engineering, College of Engineering, Guindy, Madras-25.

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1965	8537	Ramaswami, N., Production Manager, Transmission, Indian Telephone Industries Ltd., Bangalore-16.	
1966	7628	Ramesh Chander (Maj.), B. A. (Hons.), A.M.I.E., E.M.E. Directorate, (EME 3A1) Army Headquarters, New Delhi-11.	
1954	1411	Ranganathan, S. N., B. E. (Electrical), Postmaster General, Kerala Circle, Trivandrum.	1963-64 H.T. 1964-66 1967-68
1953	607	Ranji, H. K. (Lt. Col.) (Retired), B. E. (Electrical), Secretary, The Institution of Telecommunication Engineers (India), 72, Ring Road, Lajpat Nagar III, New Delhi-24; Res: 116, Kaka Nagar, New Delhi-3.	S. 1967-68
1965	8427	Rao, B. S. (Dr.), M. Sc. (Tech.) Ph. D., Scientist, Central Electronics Engineering Research Institute, Pilani (Rajasthan).	
1963	16	Rao, B. S. S., M. Sc., A. M. I. E. R. E. Principal, A. V. Parekh Technical Institute, Rajkot (Gujarat).	
1963	231	Rao, G. Prabhakara (Maj.), M. Sc., A. M. I. E. R. E., XXXIII Corps Signal Regiment, C/o 99 A. P. O.	
1960	2911	Rao, K. L., B. Sc., B. A., D. I. C., M. A. (Cantab), M. I. R. E., A. M. I. E. E., Dy Regional Engineer, All India Radio, Madras-4.	
1962	2597	Rao, R. N. (Wg. Cdr.), B. E., D. I. I. Sc., D. C. Ac., A. M. I. E., A. F. R. Ac. S., Assistant Director, Defence Electronics Research, Laboratory, Hyderabad-5 (A. P.)	
1958	2607	Rao, S. (Wg. Cdr.), ALISDA, D. T. D. & P. (AIR), 275, Ragamahal Extension, Bangalore-6.	
1955	3928	Rao, V. Hanumantha, B. E. (Telecommunication), Deputy Superintendent, Police Communications, Hyderabad (A. P.).	
1958	1520	Rao, V. Kuppa, B. A., Divisional Engineer Telephones (Retd.), P & T, 1st Floor, Kamal Kunj, Telong Cross Road No. 2, Matunga, Bombay-19.	
1957	397	Rao, V. V., B.Sc, C/o Naciones Unidas, Apartado, 4480, Lima, Peru.	
1963	5531	Rathan, J. L. (Maj.), B.Sc., OC-4, Madras Sig. Regt. N.C.C., Madras-6.	
1966	10124	Ravindran, P.M. (Maj.), B.Sc., A.M.I.E. (India), Defence Services Staff College, Wellington, Nilgiris (South India).	
1954	10	Ray, N.C., M.Sc., D.I.I.C., Senior Superintendent of Police (Radio), Bhopal (M.P.)	
1963	6054	Reddi, C.K., B.E. (Electrical), Regional Director, Telecommunication Western Region, Central Telegraph Office Building, Bombay-1.	
1962	3883	Reddy, K. L. B.E. (Electrical), District Manager Telephones, Hyderabad (A.P.).	

Year of Election	Mem. No.		Service on Council
1965	8447	Revanker, G. N., B.E. (Hons.) Telecommunication), Assistant Professor, Type IV, Quarter No. 8, Indian Institute of Technology, Powai, Bombay-76.	
1967	10449	Rishi, K. (Commander), B.Sc., Commanding Officer, Indian Navalship TIR., C/o Fleet Mail Office, Mint Road, Bombay-1.	
1955	1696	Row, K. S. (Lt. Col.), B.Sc., Headquarters, 2, Signal Training Centre, Panjim (Goa).	
1955	1090	Row, C. V. Suryanarayana (Wg. Cdr.), B.E., D.I.I.Sc., A.M.I.E., A.M.Ac.S.I., Command Signals Officer, HQ Central Air Command, Indian Air Force, Bamrauli, Allahabad,	
1961	3797	Roy, R.N. (Dr.), B.Sc. (Hons.), M.Sc. D. Phil., Associate Professor, Saha Institute of Nuclear Physics, 92, Acharya Profulla Chandra Road, Calcutta-9.	
1964	7284	Roy, S.C. (Lt. Col.), Commander, NCC Groups Headquarters, Kalyani (W.B.)	
1954	564	Sabhaney, I.W. (Air Commodore), Headquarters Maintenance Command, I. A. F., Nagpur (Maharashtra).	1965-68
1967	4627	Sachdev, D. K. B.Sc., D.I.I. Sc. (E.C.E.), Assistant Director, Telecommunication Research Centre, Janpath, New Delhi-1.	
1957	2	Sahadev, N. L., B.A. (Hons.), M.Sc. (Physics), Project Officer, All India Radio, Eden Garden, 4th Floor, Calcutta-1.	
1968	12442	Sahai, S.P. (Wg. Cdr.) M.Sc., A.M.I.E.R.E., Deputy Director of Signals, Air Headquarters, New Delhi-11.	
1965	1413	Sahgal, N.S.D. (Maj.), C/o Chief Inspectorate of Electronics, P.O. Hebbal, Bangalore-6.	
1954	1472	Sajnani, N.B., B.Sc., 133-24, Sanford Ave., Apt. IP, Flushing, New York.	
1956	77	Samant, M.G. (Prof.), B.Sc., D.I.I.Sc., College of Engineering, Poona-5.	
1958	2638	Sampath, S. (Prof.), B.Sc. (Hons.), D.I.I.Sc., M.S. (Electronic Engineering), Deputy Director, Indian Institute of Technology, Madras.	1961-63
1957	2590	Sampson, D. S. (Sqn. Ldr.), Air Force Station, Bamrauli, Allahabad (U.P.)	
1958	2670	Sandhu, G. S. B.Sc. (Hons.), Divisional Engineer, Telegraphs (Construction), Jammu.	
1967	10834	Sangal, D.K., B.E., M.I.E.E.E. (New York) Deputy Chief Engineer, P & T Board, Parliament Street, New Delhi-1.	
1965	205	Sankaranarayan, P.H., B.Sc. (Hons.), M.A., Divisional Engineer, Telegraphs (Long Distance), Telephone Kendra, Patna-1.	

Year of Election	Mem. No.	Service on Council
1959	2782	Sankararaman, S., B.E., Works Manager (Transmission), Indian Telephone Industries Limited, Dooravaninagar, Bangalore-16.
1954	1745	Sapre, S.D. (Air Commodore), B.A. (Hons.), B.Sc., D.I.I.Sc., Directorate of Signals, Air Headquarters, Vayu Bhavan, New Delhi-11.
1967	2557	Sardesai, S.N., B.Sc., B.E. (Hons.) (Telecom), M.I.E.E.E., Divisional Engineer, 15A/23, Sector 4, Bhilai-1 (M.P.).
1954	45	Sarin, D.D., B.Sc. (Engg.) Planning Officer, Planning and Development Unit, All India Radio, Akashvani Bhavan, New Delhi-1.
1954	2261	Sarin, J.C. (Maj.), B.Sc., Grad. I.E.R.E., GSO-2, Signals Directorate, 108, Plot, Church Road, New Delhi-1.
1964	7261	Sarin, Tej (Brig.), B.A., C.S.O.-IV Corps, C/o 99 A.P.O.
1958	925	Satish Chand (Wg. Cdr.) B.Sc., (Engg.), No. 505 S.U.A.F., C/o 56 A.P.O.
1967	11067	Satish Chandra (Maj.) M.Sc., Corps Signal Regiment, C/o 99 A.P.O.
1954	815	Swahny, R.N.R. (Lt. Col.), Officer Commanding, 1, Air Support Signal Regiment, Delhi Cantt-10.
1963	6042	Saxena, A.P., M.I.E.E.E., Commandant, Signals Bn, Central Reserve Police, Neemuch.
1954	2866	Sehgal, J.L., B.A., Scientific and Technical Officer Telecommunication Research Centre, P & T Directorate, Parliament Street, New Delhi-1.
1968	12917	Selot, M. (Dr.), M.E. (Advanced Electronics), Ph.D., Reader in Telecom. Engineering, Govt. Engineering College, Jabalpur (M.P.).
1956	2431	Sen, D.N., B.Sc. (Hons.), M.Sc., Martin Burn Limited, 12, Misson Road, Calcutta.
1968	12080	Sen, T.C., M.Sc., 764, West Newardganj, Agarwal Colony, Jabalpur-2 (M.P.).
1954	698	Seshamani, B. (Brig.) B.Sc., Deputy Director (WE.) GS Branch, Army Headquarters, South Block, DHQ P.O., New Delhi-11.
1961	3589	Sethi, N.J.S. (Col.), Commandant, Border Security Force, Signal Training School, Ministry of Home Affairs, East Block No. 9, R.K. Puram, New Delhi-22.
1967	11671	Sethi, S.C. (Lt.Col.), B.Sc. (Engg.), A.M.I.E. (India), Chief Inspector of Vehicles, Govt. of India, Ministry of Defence (DGI), Chief Inspectorate of Vchs., Ahmednagar (Maharashtra).
1967	10766	Setty, C.S.G.K., (Dr.), B.Sc. (Hons.), M.Sc., Ph.D., A. Inst. P., Department of Physics and Astrophysics, University of Delhi, Delhi-7.
1957	392	Shah, J.G. (Dr.), B.E. (Electrical), D.I.I.Sc., Ph.D., A.M.I.E., M.I.E.E.E. (U.S.A.), C.V.M. Bungalow, No. 14, Vallabh Vidyanagar (Via) Anand (Gujrat State).
1959	1968	Shamarao, P.L., M.I.R.E. (U.S.A.), No. 124 Srikrishnarajindra Road, Basavangudi, Bangalore-4.
1963	6057	Shanta, B.H. (Miss), B.Sc. (Hons.), M.A., D.I. I.Sc., Deputy Director, Telecommunication Research Centre, P. & T. Directorate, Parliament Street, New Delhi-1.

Year of Election	Mem. No.		Service of Council
1959	2124	Shenoi, N.V., B.E. (Electrical), Director, Telecommunication Research Centre, P. & T. Directorate Eastern Court Compound, New Delhi-1.	1963-65 V.P. 1965-66 1967-68
1968	12920	Shome, A.K., B.Sc., 83, Indra Biswas Road, Calcutta-37.	
1960	3535	Shrivastava, K.K. (Prof.), B.E. (Hons.), M.E., Professor of Telecommunication Engineering, Government Engineering College, Jabalpur (M.P.).	
1957	2580	Shukla, R. (Wg. Cdr.) Air Force Liaison Cell (Bharat Electronics Ltd.), Jallahalli Post, Bangalore-13.	
1954	557	Singh, Ajit (Brig.), B.A., HQ XV Corps, C/o. 56 A.P.O.	
1958	2651	Singh Gurmukh (Wg. Cdr.), No. 2 Delhi (Tech.), Air Sqn. N.C.C., I.I.T., Hauz Khas, New Delhi-29.	
1962	5535	Singh, Hardayal (Lt. Cdr.), B.E., I.N.S., 'Valsura', Jamnagar (Gujarat).	
1954	1532	Singh, Hazara (Lt. Col.), Officer Commanding Eastern Command, Signal Regiment, Lucknow.	
1954	655	Singh, Jagir (Wg. Cdr.), B.A., Directorate of Signals, Air Headquarters, New Delhi-11.	
1954	829	Singh, Joginder (Maj.), B.A., CAFSO Branch, Air Headquarters, New Delhi-11.	
1963	6320	Singh, Joginder (Maj.), TOT Eastern Command, Sig. Regt., Calcutta-21.	
1964	7303	Singh, R.C. (Maj.) (Retired), L-27, Kailash Colony, New Delhi-24.	
1954	475	Singh, Shiv (Lt. Col.), 1st Punjab Signals N.C.C., Thapar Institute of Engineering and Technology, Patiala.	
1968	4741	Singh Vishnu Prakash (Maj.), M.Sc., 41 Clay Square, Lucknow (U.P.)	
1967	11614	Singhal, R.K. (Wg. Cdr.), B.Sc., B.E., D.E.A., A.M.I.E., 36, C.V. Hostel, Dr. Rajendra Prasad Road, New Delhi-1.	
1968	12142	Singhal, S.S. (Maj.), M.Sc., Ministry of Defence, (DGI), HQ DPIL : 53-G Block, New Delhi-11.	
1954	4760	Sinha, A., Divisional Engineer Telegraphs, Varanasi (U.P.).	
1965	8067	Sinha, Ananda Mohan (Lt. Col.), B.Sc., A.M.I.E., 2 Trg. Bn No. 1, E.M.E. Centre, Belaram Post Office, Secunderabad-10.	
1958	2619	Sinha, K.N. (Wg. Cdr.), B.Sc., Senior Signals Officer, No. 2 Wing, Air Force C/o 56 A.P.O.	
1947	1331	Smith, D.C. (Lt. Col.), 10 Infantry Division, Signal Regiment, C/O 56 A.P.O.	
1960	3530	Sobti B.K. (Maj.), B.Sc. H.Q. Rajasthan and Gujrat Comm. Zone Sub Area, Jaipur. (Raj.)	
1964	6892	Sodhi, M.S. (Lt. Col.), Officer Commanding, XXXIII, Crops Sig. Regt., C/o 99 A.P.O.	
1965	2462	Somasundaram, R.S., B.S. (Hons.), Divisional Engineer Telegraphs, Coaxial Equipment Division, 79, Golkhole Street, Ram Nagar, Coimbatore-9 (Madras State).	

Year of Election	Mem. No.	Service on Council
1968	3608	Sonde, B.S. (Dr.), M.E. (Telecom), 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.
1959	384	Srinivasan, S., M. Sc., Director, Indian Standards Institution, Bombay Branch Office, Novelty Chambers, Grant Road, Bombay-7.
1958	2617	Srinivasan, T. (Air. Cdr.), B. Sc. (Hons.), 'GITA', 5, 17-A, Cross Road, 10-A, Main Road, Malleswaram, Bangalore-3,
1967	10663	Srirangan, T. V., B. E., D. I. I. Sc., Deputy Director, Telecommunication Research Centre, P and T Board, Eastern Court, New Delhi-1.
1966	9192	Srivatsan, B. S., B. E. (Electrical), D. I. I. Sc., Engineer (Electrical), Department of Lighthouses and Lightship, 6, Chapel Road, Hastings, Calcutta-22.
1954	1470	Subburatnam, S., B. Sc. (Hons.), Chief Controller of Telegraphy Stores, 22, G. G. O. Flats, Behedevu, Alipore, Calcutta-27.
1955	1460	Subrahmanyam, Ganti (Prof.), B. E., M. A., (Elect. Engg.), M. I. R. E., Professor of Telecommunication Engineering, College of Engineering, Kakinada-3 (A. P.).
1958	1842	Subramanian, A., B. A. (Hons.), A. M. I. E. E. Director of Telegraphs, 146, Chittaranjan Avenue, Calcutta-7.
1955	1569	Subramanian, C. R., B. Sc., M. S. (E. E.), D. I. I. Sc., 'Rajam House', 6-Palace Cross Road, Bangalore-20.
1964	6942	Subramanian, H. (Maj.), B. Sc., 2 I C, 1 Armoured Divisional Signal Regiment, C/o 56 A. P. O.
1958	1934	Subramanian, T. S., B. Sc. (Engg.), Deputy Director, Telecommunication Research Centre, P & T Directorate, Parliament Street, New Delhi-1.
1955	1087	Sud, B. D., C. E. (Hons.), M. I. E., Industrial Adviser, The Bank of Baroda Ltd., 12, Apollo Street, Bombay-1.
1965	8423	Sud, K. C. (Maj.), 26, Infantry Division, Signal Regiment, C/o 56 A.P.O.
1954	582	Sujan, V. B., D. F. H., A. M. I. E.E. (London), 8, Jenkins House, Henry Road, Applo Bunder, Bombay-1
1963	6110	Sundaram, V. M. (Lt. Col.), B. E. (Telecommunication), XV Corps Signal Regiment, C/o 56 A. P. O.
1957	11021	Suri, S. K., B. Sc. (Hons.), M. Sc. (Hons.), M. S. (U.S.A.), A.M.I.E.R.E., Scientist-in-Charge Instrumentation, Room No. 222, National Physical Laboratory, Hill Side Road, New Delhi-12.
1965	8817	Sushil Nath (Maj.), A.M.I.E., G. S. O. 2 (INT HQ.) XXXIII Corps, C/o 99 A.P.O.

Year of Election	Mem. No.	Service on Council
1954	43	Tandon, R. K., B.Sc. (Elect. Comm. Engg.), M.Sc. A.C.G.I., Scientist, National Physical Laboratory, New Delhi-12.
1954	808	Taskar, N.T., B.Sc., B.E., C/o Dr. K. T. Taskar, 'Udyam', 16th Road, Bombay-71.
1956	2493	Tod, D. S., B.Sc., M.S.R.E., Associate Partner, Henn-Collins Crocker Associates, McMillan House, Cheam Common Road, Worcester Parle, Surrey (England)
1967	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.
1954	961	Vaidya, K.D., B.E., C/o Director Telecommunication, Edith Covell Street, Port Louis, Marutius.
1954	1168	Vardan, B.R.V.E. (Elect Engg.) A.M.I.E.E. (London), A.M.A.S.I., Electronics Engineers (Adviser), I.C.A.O., T.A.M., Box No. 8531, Salmiyah P.O., Kuwait.
1966	9853	Varma, K. R. Sukumara (Maj.), B.Sc., 250 Field Workshop Coy, E.M.E., C/o 99 A P.O.
1866	4114	Vedwa, R. K. (Sqn. Ldr.), B.Sc. 33, C.V. Hostels, Dr. Rajendra Prasad Road, New Delhi-1.
1965	805	Venkataraman, K., M.A., M.E., Associate Professor, Department of Electronics Engineering, Birla Institute of Technology and Science, Pilani (Rajasthan).
1968	12948	Venkataraman, K.I. (Lt. Col.), B.E.A., M.I.E. (India), 613, E.M.E. BN., C/o 99 A.P.O.
1968	571	Venkataraman, K.R., B.A. Senior Engineer, Hindustan Teleprinters Ltd., Guindy, Madras-32.
1967	10781	Venkataraman, S., B.A. (Hons.), Divisional Engineer, (Telegraphs), Telecommunication Training Centre, P & T, Trivandrum-1.
1966	10144	Venkateswaran, P.S. (Maj.), B.Sc. A.M.I.E. (India), 206. Field Workshop Company (641 EME Battalion), C/o 99 A.P.O.
1954	4347	Verma, B.D. (Maj.), B.Sc., B.E. (Hons.), A.M.I.E. (India), E.M.E., Chief Inspectorate of Electronics, Ministry of Defence (DGI), Government of India, Jalahalli P.O., Bangalore-13.
1959	2748	Virdee, K.S., B.Sc., Semiconductors, Behind Block No. 26, West Patel Nagar, New Delhi-8.
1960	3268	Virdi, T.S. (Lt. Cdr.), B.Sc., B.T., Training Directorate, Naval Headquarters, New Delhi-11.
1965	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.)
1968	12916	Vries J.J. H.de., Technical Director, Philips India Ltd., Shivsagar Estate, Block 'A', Dr. Annie Besant Road, Worli, Bombay-18 (DD)
1966	10805	Wad, B.Y. (Commodore), I.N., B.Sc., M.I.E., Director of Electrical Engineering, Naval Headquarters, New Delhi-11.
1957	429	Yadav, Ram, B.Sc. Statiton Engineer, All India Radio, Indore.

APPENDIX—I

List of Papers Published in the Journal of the Institution of Telecommunication Engineers and the Students' Journal from October 1967 to September 1968

Journal of the Institution of Telecommunication Engineers

Vol. 13, No. 10 October-67

- A Transistor Multivibrator with very Long Time Periods and Wide Mark to Space Ratio—
P. K. Basu & T. Singh
On the design of an Ultrasonic Tester—Km. Arunima Kedar, Kamlesh Arora & N. K. D.
Choudhury
Electronic Components and Printed Circuits—J. Wijtsma
A Study of Microwave Horn and Lens Antennas—B. V. Rao & K. K. Reddy
Solar Wind and F_2 —Layer Ionization—Chaman Lal

Vol. 13, No. 11 November-67

- Development of a Circularly Polarized L and S Band Antenna with Omnidirectional
Pattern—S. P. Kosta and M. D. Singh
Anisotropy Parameters of the Irregularities in the E Region of the Ionosphere over
Ahmedabad—C. M. Patel
Avalanche Diodes as Noise Source—K. C. Chadha
Design of an X-Band Vane Type Phase Shifter—V. Narayana Rao, Y. S. N. Murthy and
B. K. Sinha
On Powerflow through Anisotropic Circular, Cylindrical Dielectric Rod Waveguide—D. K.
Paul

Vol. 13, No. 12 December-67

- Metal Masks—Harsh Vardhan and D. K. Gupta
Horizontal Drifts in the F_2 -Region at Waltair—P. S. Kesava Rao & B. Ramachandra
Rao
L-Band CW Oscillator using Pencil Tube—O. P. N. Calla
Linearization of Input Line Phase Characteristic of a Transistorized Distributed Amplifier—
G. N. Garud
Transient Characteristics of Electrically heated Nickel Filaments—Y. V. I. N. Rao and
M. Satyam

Vol. 14, No. 1 January-68

- Development of Cathode Ray Oscilloscope Tubes—G. K. Bhide, R. L. Verma, A. Authi-
narayanan, L. M. Rangarajan, M. D. Vaidya and G. N. Kelkar
Using Negative Impedances in Analog Simulation—G. K. Aggarwal
Frequency Domain Specifications in the Parameter Plane—Purnendu Das and M. N.
Sarma
A Two's Complement Generator—S. R. Srivastva
Notes—An Approximation to the Current Amplification Factor of a Drift Transistor—
G. R. Mohan Rao & B. Ramachandra Rao

Vol. 14, No. 2 February-68

- L-Band Negative Resistance Parametric Amplifier—V. Narayana Rao, Y. S. N. Murthy,
B. Lakshminarayana & M. D. Rajnarayan
S-Band Transponder Antenna for Centaur Rocket—O. P. N. Calla
Fading Characteristics of Radio Waves in the E-Region of the Ionosphere over Ahmedabad
and Thumba during IQSY —R. G. Rastogi, M. R. Deshpande & N. D.
Kaushika
Directional Couplers with Exponential Variation of Coupling Co-efficients—Miss Dipti
Das

Vol. 14, No. 3 March-68

- A Retransmission Scheme for Data Communication in the Presence of Atmospheric No Bursts—N. S. Jayant
An Airborne FM/FM Telemetry System—U. R. Rao, R. S. Prakasa Rao & S.R.K. Khadpe
An S-Band Cavity Backed Helical Antenna—V. Narayana Rao & Y. S. N. Murthy
Analytical Determination of Optimum conditions in Class A Power Amplifiers—P. L. Bhatia
Synchronous Operation of Reflex Klystrons in Parallel under Pulse, Square Wave and Frequency Modulation—K. Chandra, R. Parshad and R. C. Kumar (Letter to the Editor).

Vol. 14, No. 4 April-68

- Germanium Epitaxial Tunnel Diodes—B. S. Murthy, S. P. Naik & Km. S. Bahl
Frequency Domain Criteria for Optimization of Linear Feedback Control Systems—V. Seshadri & P. Raghavan
Synthesis of a Two-Port Network with one controlled Source—N. Sarkar
Dielectric Measurements in Plasma at very High Frequencies (150–200 Mc/s.)—G. K. Bhagavat & D. P. Nandedkar
Excitation of the Circular Symmetric E-Mode on Dielectric Rods by an Open-ended Waveguide—K. C. Gupta & Amarjit Singh
Transistorized Control System Analyser—B. N. Chatterji & B. Chatterjee

Vol. 14, No. 5 May-68

- Staggered Modulation in Beam Riding Guidance—Col. S. Mishra & K. B. Mahajan
Germanium Diode and Triode PNP Switches—B. S. Murthy, Km. K. Khanna & R. R. Singh
The Statistics of Time Shifts in Measurements of Ionospheric Movements—N. D. Kaushika
A High Speed Parallel Binary Arithmetic Unit for Demonstration—S. R. Srivastava
Design of Unequally Spaced Antenna Arrays using Dynamic Programming—R.K. Arora & N. C. V. Krishnamacharyulu

Vol. 14, No. 6 June-68

- Plate-Pulsed S-Band Oscillator—O. P. N. Calla
Diffusion in Zinc in GaAs Arsenic Pressure—S. N. Mukerjee, P. B. Parikh & B. L. Sharma
High Frequency Acoustic Scattering from Ellipsoids and Cylinders—M. S. Narayanan & D. D. Garg
Investigations on Waveguide-fed Slot Antenna: Equivalent Network Representation—B. N. Das & G. S. Sanyal
Fresnel Zone Plate Antenna—G. S. Sanyal & Mahendra Singh

Vol. 14, No. 7 July-68

- Preparation, Purification and Single Crystal Growth of Indium Antimonide—W. V. Ramana & P. R. Bastidar
A Report on the Development of Solid Electrolytic Tantalum Capacitor—Harsh Vardhan & Rajendra Kumar
Boron Diffusion into Silicon using Boron-tribromide (BBr_3) as Source—B. S. Murthy, K. R. Wadhwa & P. R. S. Rao
A Power Supply for Ruby Laser—N. Mansharamani, R. P. Arora & V. V. Rampal
Cascaded Exponential Line Directional Coupler—Dipti Das (Miss)
The Stabilization of the Frequency of a Klystron—A. K. Roy & R. Roy
Microwaves Sources with Frequency Multipliers—D. K. Sachdev

Vol. 14, No. 8 August-68

- Further Correlations between Time Domain and Frequency Domain Parameters for Linear Control Systems—V. Seshadri & C. Eswaran

Some effects of Metal Flanges on Radiation Patterns of H-Plane Sectoral Horns—K. G. Nair, G. P. Srivastava & S. B. Singh
 Low Noise Front End Amplifier for Wide Band Receivers—R. Chandrasekaran & (Miss) B. Mudita Reddy
 Designing Gridded Tube Oscillators—O.P.N. Calla
 Report on the work on Growth of Semiconductor Grade Silicon Single Crystals—W. N. Borle, Sudhakar Tata & Wishwa Prakash
 Effects of Inherent Couplings on Control Systems—A Computer Study—B. Chatterjee & B. N. Chatterji

Vol. 14, No. 9 September-68

Fading Characteristics of the Radio Waves Reflected from Two different heights in the F-Region of the Ionosphere over Ahmedabad—C. M. Patel
 The Study of the Photodielectric Effect in Zinc Sulphide Powder doped with Copper and Chlorine—T. K. Bandopadhyaya
 Optimum Control of a Fourth Order Digital Control System—M. R. Datta and N. Sarkar
 Life Time Measurement in Degenerate GaAs—D. K. Roy
 The Phenomenon of Pulsed Subharmonic Oscillation—B. N. Biswas & (Miss) J. Chatterjee
 Man Made Noise (Letter to the Editor)—S.V.C. Aiya & S. J. Bhat

Student's Journal

Vol. 9, No. 4 December-67

Transistor Parameter Calculations—R. Ramaswamy
 Radiation from Travelling Wave Antenna and Design of Horizontal Rhombic Antenna—R. K. Gupta
 Dielectrics—A Review—Km. K. Bhagyalakshmi

Vol. 8, No. 9 March 68

Transistor Equivalent Circuits—R. Ramaswamy
 Traffic and Trunking Principles—R. P. Agerwala

Vol. 9, No. 2 June 68

A. C. Control Motors—B. Chatterjee
 Pentaconta System
 I-Switching Principles and Basic Operation—R. K. Roychoudhary

Vol. 9, No. 3 September 68

Elements of Principle Circuits—J. D. Raje
 Communication Transmitter—Lt. Col. M. S. Nagarajan
 The Reactance Image Networks—V. Ramachandran

APPENDIX—II

List of Journals Received in Exchange of the Journal of the Institution

1. Acta Electronica, 23, Rue du Retrait, Paris-20, France.
2. Council for Applied Research, Stockholm-5.
3. Aerial—Marconi's Wireless Telegraph Co. Ltd., Marconi House, Chelmsford, Essex (U.K.).
4. A.W.A. Technical Review, Amalgamated Wireless Australasia, 554-Paramatta Road, Ashfield, New South Wales.
5. Alta Frequenza-Associazione Electrotecnica Italiana, Via Sam Paolo 10, Milano (Italy).
6. Ann. Radioelect. Annales de Radioelectricite-Compagnia Generale de T.S.F. Centre d'Information et de Documentation, 12, Tue Carducci, Paris-19.
7. Annales de Telecommunication, Centre National d'Etude des Telecommunications, Paris.
8. Australian Journal of Physics, Commonwealth Scientific and Industrial Research Organisation, 314, Albert Street, East Melbourne, C.2, Victoria.
9. Bell Laboratories Record, Bell Telephone Laboratories, 463, West Street, New York.
10. Bell System Technical Journal, Bell Telephone Laboratories, 463, West Street, New York.
11. Bulletin of the Electro-Technical Laboratory, 2, Chome, Nagea-cho. Chioyoda-Ku, Tokyo.
12. Bulletin of the Institution of Engineers (India), 8, Gokhale Road, Calcutta.
13. Bulletin Signalique Des Telecommunication, Paris.
14. Bruel and Kjaer Technical Review, —Denmark.
15. Cables et Transmission, SOTELEC, 16, Rue de la Baume, Paris-8.
16. Chartered Engineers, Institution of Chartered Engrs, Anand Parbat, New Delhi.
17. Defence Science Journal, Defence Research and Development Organisation, Ministry of Defence, New Delhi-11.
18. Electrical and Mechanical Engineering Transactions, Institution of Engineers, Australia.
19. Electrical Communication, International Telephone and Telegraph Corporation, 67, Broad Street, New York-4, N.Y.
20. Electrical Engineering Abstracts—Institution of Elect. Engineers, Savoy Place, London W. C. 2.
21. Electrical-India, 14, Sidh Prasad, Ghatkopar Mahu Road, Bombay-71.
22. Electronic Engineering, Morgan Brothers, 28, Essex Street, Strand, London, W.C. 2.
23. Electro-Technology, High Grounds, Bangalore.
24. Electrotechniek, Radactie Electrotechniek, Zwarteweg 1, Den Haag (Holland).
25. Electronic Records, Institution of Electrical Engineers, Savoy Place, London.
26. Elektronik, Francis-Verlag, 13B-Munchen-37.
27. Electronic Age, RCA, 30 Rockefeller Plaza, New York.
28. Electronic Industries. (U.S.A.) Chestnut and 56th Streets, Philadelphia, Pennsylvania 19139.
29. Engineering and Instrumentation, Superintendent of Documents, US Govt. Printing Office, Washington.
30. English Electric Journal, English Ci. Stafford.
31. Entwicklungs Berichte der Siemens and Halske AG, Munchen-25, Hofmannstr-51.
32. Engineering and Instrumentation, Sec. C, Journal of Research NB5, US Dept. of Commerce.
33. Fujit Scientific and Technical Journals, Fujitsu Ltd., 1015.
34. G.E.C. Journal of Science and Technology, Erith, Kent.
35. G.E.C. Telecommunications, Central Electric Co. Ltd., Telephone, Radio and Television Works, Coventry.
36. General Radio Experiments (U.S.A.). General Radio Company, West Concord, Massachusetts.
37. Geomagnetism : Aerologia (Russian)—The Library of the Sciences of the U.S.S.R., Exchange Department, Leningrad, V.O. 164 Birgevaia Linija-1, U.S.S.R.

37. Het PTT-Bedrijf-The Netherland PTT-Netherlands Postal and Telecommunication Services, 12, Kortenaackade, The Hague, Netherlands.
38. IBM Journal of Research and Development, Post Box No. 218, Yorktown, Heights, New York.
39. IBM System Journal, IBM Corporation, New York.
40. Indian Journal of Meteorology and Geophysics, Metrological Department, Civil Lines, Delhi-6.
41. Instrument India, Navyuag Nivas, Opp. Minerva Cinema, Lamington Road, Bombay-7.
42. Indian Journal of Technology, C.S.I.R. Hillside Road, New Delhi.
43. International Electronics, 386, Park Avenue, New York.
44. Industrial Electronics, Iliffe Electrical publication, Worset House, Stamford street, London. S.E. 1.
45. Indian Science Abstracts, INSDOC, Hillside Road, New Delhi-12.
46. Ionospheric Data, National Physical Laboratory of India, Hillside Road, New Delhi-12.
47. Ionospheric Prediction, US Dept. of Commerce.
48. Ionospheric Prediction, N.P.L. Hillside Road, New Delhi-12.
49. I.S.I. Bulletin, Indian Standards Institution, Manak Bhawan, New Delhi-1.
50. Journal of the Acoustical Society of America, American Institute of Physics, East 45th Street, New York-17 N.Y.
51. Journal of the Aeronautical Society of India, Aeronautical Society of India, Indra-prastha Estate, New Delhi-1.
52. Journal of the Audio Engineering Society, Post Box No. 12, Old Chelsea Station, New York-11, N.Y.
53. Journal of the Franklin Institute, Benjamin Franklin, Parkway at Twentieth St., Philadelphia, 3, Pennsylvania.
54. Journal of the Geophysical Research, 5241, Broad Road, Northwest, Washington-15.
55. Journal of the Indian Institute of Science, Bangalore.
56. Journal of the Institute of Electrical Communication Engineers of Japan, 2-8 Fujimicho Chiyoda-ky, Tokyo.
57. Journal of the Institution of Engineers India, 8-Gokhale Road, Calcutta.
58. Journal of the Institution of the Military Engineers, College of Military Engineering, Kirkee, Poona.
59. Journal of the Institution of Electrical Communication Engineers, 2-8 Fujiwicho, Chiyodaku, Tokyo.
60. Journal of the Invention Intelligence Board, Invention Promotion Board, Defence Colony, New Delhi-3.
61. Journal of the Institute of Electronic and Communication Engineers of Japan, Kikai-Shinko-Kalkan Bldg., Tokyo.
62. Journal of Mathematics and Physics, Massachusetts Institute of Technology Cambridge 39, Mass.
63. Journal of the Physical Society of Japan, Kikai-Shinko Bldg., Tokyo.
64. Journal of the Radio Research Laboratories, Ministry of Posts and Telecommunication, Kokubunji, P.O. Katitama-gun, Tokyo.
65. Journal of Research of the National Bureau of Standards, U.S. Government Printing Office, Washington 25, D.C.
66. Journal of Scientific and Industrial Research, Council of Scientific and Industrial Research, Old Mill Road, New Delhi.
67. Journal of the Society of Motion Picture and Television Engineers, 55-West 42nd Street, New York-36, N.Y.
68. Kami Kodanaka, Kawasaki City, Kanagawa, Japan.
69. Marconi Review, Marconi House, Chelmsford.
70. Memoirs of Scientific and Industrial Research, Osaka University, Osaka, Japan.
71. NBS Technical News Bulletin, US Department of Commerce, Washington.
72. New Zealand Journal of Science, Department of Scientific and Industrial Research, Post Box 8018, Wellington.
73. NBC Review, National Electronic Council, Abell House, John Islip Street London SW1.
74. Nippon Electric Company Review, National Electronics Council.
75. l' Onde Electrique, l'Onde Electrique, Societe des Radioelectriciens, 161, BD Street, Germany.
76. Philips Research Reports, Philips Gloeilampenfabrieken, Eindhoven, Holland.
77. Philips Technical Review, Philips Gloeilampenfabrieken, Eindhoven, Holland.
78. Philip Telecommunication Review, Philips, Gloeilampenfabrieken, Eindhoven, Holland.
79. Point to Point Telecommunication, Marconi House, Chelmsford.

80. Post Office Electrical Engineers' Journal, Institution of Post Office Electrical Engineers, G.P.O. 2-12, Gresham Street, London E.C.
81. Poste E Telecommunication, Via della Vite Rome.
82. Proceeding of Cambridge Philosophical Society, Free School Lane, Cambridge.
83. Proceeding of the Institution of Radio Engineers-Part-B (Radio and Electronic Engineers), Savoy Place, London W.C. 2.
84. Proceedings of the National Institute of Science in India, High Ground, Bangalore.
85. Q.S.T. American Radio Relay League, 30, La Salle Road, West Hartford, Connecticut.
86. R.C.A. Review, Radio Corporation of America, R.C.A. Laboratories Division, Princeton, New Jersey.
87. Radio and Electronic Engineering, Beford Square, London.
88. Radio and Electronics, 6, Shilaja, Peddar Road, Bombay-26.
89. Radio Science, Sec.D, US Department of Commerce, Wasington.
90. Radio Times of India, 27, New Queen's Road, Bombay-26.
91. Revista Esplenolada Electronica Paris.
92. Revista de Telecommunication Consejo Technico de Telecommunication Palacio de Comunications, Madrid.
93. Rundfunktechnische Mitteilungen, Institute for Rundfunktechnik, Mittelweg, 113, Hamburg-13.
94. Science and Engineering, Indian Society of Engineers, 12-B, Netaji Subhash Road, Calcutta-1.
95. Solar and Geophysical Data, National Physical Laboratory, New Delhi-12.
96. Sound and Vision Broadcasting, Marconi House, Chelmsford.
97. System Technology, Plessey Company Ltd., Essex, England.
98. Technische Mitteilungen P.T.T. Schweizerische Post-Telegraphen and T. Telephone Verwaltung, Speicher gasse 6 Bern.
99. Telecommunications, Ridge Road, Jabalpur.
100. Telecommunication Journal of Australia, Telecommunication Society of Australia, Box No. 4050, G.P.O. Melbourne, Victoria, Australia.
101. Teletnik, 16, Kannikegade, Arthus C, Denmark.
102. Telonde Compagnie General de Telegraphic San Fil, 99, Boulevard Haussman, Paris-8.
103. Wireless World, Iliffe and Sons, Dorset House, Stamford Street, London, S.E.I.

APPENDIX—III

The following is the Pannel of referees appointed at the different towns in accordance with regulation 5(a) (ii)

ANDHRA PRADESH

- Shri Ganti Subramanya, Professor in Telecommunication Engineers, College of Engineering, Kakinada. (1460-AM)
Prof. K. K. Nair, Professor of Telecommunication Engineering, College of Engineering, Osmania University, Hyderabad. (3135-AM)
Air Com. V. Ganesan, Defence Research & Development Laboratory, Chandrayangutta Lines, Hyderabad. (656-AM)
Shri V. Hanumantha Rao, Deputy Superintendent, Police Communications, Hyderabad. (3928-AM)
Shri S. Ramakrishna, Deputy Chief Scientific Officer, Defence Research Laboratory, Hyderabad.

ASSAM STATE

- Col. P. N. Luthra, Advisor to Governor of Assam, Shillong.

BIHAR STATE

- Lt. Col. S. S. Bedi, Cdr. N.C.C., Group Headquarters, Muzaffarpur.

DELHI

- Shri S. M. Agarwal, Joint Secretary, Department of Defence Supplies, Ministry of Defence, New Delhi-11. (1774-M)
Shri K.R.K. Iyengar, Deputy Director, Intelligence Bureau, Ministry of Home Affairs, New Delhi. (2690-M)
Maj. General M. N. Batra, Director, Military Intelligence, Army Headquarters, New Delhi.
Shri A. S. Balasubramanian, Deputy Planning Officer, All India Radio, Akashvani Bhavan, New Delhi. (820-AM)
Shri Keshava Chandra, Planning Officer (Tape Recording Unit) All India Radio, Akashvani Bhavan, New Delhi-1. (140-AM)
Shri S. S. Kohli, Engineer, Shiela Theatre, D. B. Gupta Road, New Delhi. (157-AM)
Gr. Capt. H. Chandra, Director of Joint Communications & Electronic, Cabinet Secretariat, New Delhi-11. (438-AM)
Lt. Col. Y. R. Puri, Assistant Director, Communication Directorate, Ministry of Home Affairs, E-Block, DHQ P.O., New Delhi-11. (2591-AM)
Air Cdr. S. D. Sapre, Directorate of Signals, Air Headquarters, New Delhi-11. (1754-AM)
Dr. Saroj Datta, Director of Communications, Civil Aviation Department, Block 2 East, R. K. Puram, New Delhi-22. (1330-M)
Shri R. K. Tandon, Senior Scientific Officer, National Physical Laboratory, New Delhi-12. (43-AM)
Maj. Gen. Jaswant Singh, DGR, Jind House, Lytton Road, New Delhi.
Shri N. V. Shenoi, Director (TRC), Eastern Court Compound, New Delhi. (2124-AM)
Wg. Cdr. K. N. Sinha, Senior Signals Officer, No. 2 Wing, Air Force, C/o 56 A.P.O. (2619-AM)
Lt. Col. J. C. Anand, ADPIL, Ministry of Defence (DGI) Block, Room No. 51, New Delhi-11. (2741-AM)

GUJARAT STATE

- Wg. Cdr. G. Biswas, Air Force Station, Baroda. (2647-AM)
Shri J. G. Shah, Bungalow No. 14, Vallabh Vidyanagar, Via Anand, Gujrat. (392-AM)

Shri Yadav Ram, Station Engineer, All India Radio, Rajkot. (429-AM)
 Shri S. R. Bhashyam, Post Master General, Ahmedabad. (41-M)
 Shri A. K. Ghosh, Assistant Executive Engineer (Radio), Deptt. of Lighthouses & Lightships, Deep Bhavan, Pandit Nehru Marg, Jamnagar. (3596-AM)

KERALA STATE

Shri A. G. John, Station Engineer, All India Radio, Calicut. (2792-AM)
 Shri M. N. Namboodripad, Lecturer, St. Albert's College, Ernakulam. (4209-AM)

MADHYA PRADESH

Shri P. C. Pal, Reader, Govt. Engineering College, Jabalpur. (2545-AM)
 Prof. V. V. Sarwate, Govt. College of Engineering & Technology, Raipur. (2415-AM)
 Brig. K. N. Talwar, Comdt. Military College of Telecommunication Engineering, Mhow. (611-M)
 Shri N. C. Ray, Senior, Superintendent of Police, Radio, Bhopal. (10-AM)
 Shri G. K. Mithal, Reader in Advance Electronics, Government Engineering College, Jabalpur. (2418-AM)
 Prof. K. K. Shrivastava, Professor of Telecommunication Engineering College, Jabalpur. (3535-AM)

MADRAS STATE

Prof. K. S. Hedge, Principal, Govt. Engineering College, Guindy, Madras-25. (1922-AM)
 Shri K. Nageswaran, C/o RESA Company, 3/6 Mount Road, Madras-2. (5-AM)
 Prof. S. Sampath, Deputy Director, Indian Institute of Technology, Madras-36 (2638-AM)
 Prof. K. Srinivasan, Director, Madras Institute of Technology, Chrompet, Madras. (775-F)
 Shri C. A. Cornelius, Managing Director, Hindustan Teleprinters Ltd, Industrial Estate, Guindy Madras-32. (2051-M)
 Shri C. J. Clement, General Manager, Telephones, Madras. (1518-AM)

MAHARASHTRA STATE

Shri K. L. Joshi, Department of Electrical Communication Engineering, College of Engineering, Poona. (2865-AM)
 Shri M. M. Kini, Addl. General Manager, Bombay Telephones, Waudby Road, Telephone Exchange, 4th floor, Fort Bombay-1. (674-AM)
 Shri D. D. Lakhanpal, Director, Murphy Radio of India Ltd., 29, New Queens Road, Bombay. (210-M)
 Shri K. M. Mehta, Engineer in-charge, High Power Transmitters, All India Radio, Bombay. (456-AM)
 Shri B. C. S. Maiya, Divisional Engineer Telegraphs, Telecommunication Training Centre, G.P.O. Building, Nagpur. (74-AM)
 Shri D. F. D. Joshi, General Manager, Bombay Telephones, Telephone Bhavan, Colaba, Bombay-5. (1798-M)
 Shri G. R. S. Rao, 5, 'Girishant', 351-A, V. P. Road, Khar, Bombay - 52 - AS. (2432-M)
 Prof. M. G. Samant, Department of Electrical Communication Engineering, College of Engineering, Poona-5. (97-AM)
 Shri B. Rajagopalan, Director of Telegraphs, Nagpur-1.
 Fr. W. J. Borges, St. Xavier's Technical Institute, Near Mahim Bus Depot, Mahim, Bombay-16. (6902-AM)
 Shri M. M. Wagle, Engineer-in-Charge, Rural Broadcasting, Eros Building, Queens Road, Bombay-1. (388-M)
 Shri K. M. Balchandani, D.G. O.C.S., Industrial Assurance Building, 2nd floor, Veer Nariman Road, Church Gate, Bombay-1. (233-AM)
 Shri P. B. Chetty, Station Engineer, All-India Radio, Poona.
 Wg. Cdr. G. S. Harris, Red Shield House, 30 Mere Weather Road, Fort, Bombay-1 (BR). (3505-AM)

Shri G. Ramanathan, Installation Engineer, All India Radio, Western Project Circle, New Broadcasting House, Bombay-1. (568-AM)

MYSORE STATE

Shri V. N. Chiplunkar, Lecturer, Department of Electrical Communication Engineering, Indian Institute of Science, Bangalore. (781-AM)

Shri N. S. Nagaraja, Lecturer, Indian Institute of Science, Bangalore. (2417-AM)

Shri C. R. Subramanian, Rajam House, 5, Palace Cross Road, Bangalore-20. (1569-AM)

Shri Uma Shankar, Managing Director, Indian Telephone Industries Ltd., Dooravaninagar, Bangalore. (2362-AM)

Brig. P. Madan, Officer on Special duty (Planning), M/s Bharat Electronics Ltd., Jalahalli, Bangalore-13. (2403-AM)

Shri P. S. Nagarkar, Engineer-in-charge, All India Radio, Bangalore.

Shri V. Arunachalam, Divisional Engineer Telegraphs, Long Distance, Division No. 175, Vasanthanagar, Bangalore-1. (5533-AM)

ORISSA STATE

Shri A. P. Mohanty, Superintendent of Police (Signals), Cuttack. (584-AM)

HARYANA STATE

Prof. J. S. Gupta, Professor of Electrical Engineering, Regional College of Engineering, Kurukshetra. (2592-AM)

Shri N. Balasundaram, Director and Chief Engineer, Eastern Electronics, New Industrial Town, Faridabad. (1721-AM)

UTTAR PRADESH

Shri C. P. Joshi, State Radio Officer, Police Radio Headquarters, Mahanagar, Lucknow. (2639-M)

Shri N.K.D. Choudhury, Assistant Director, Central Building Research Institute, Roorkee. (1948-M)

Shri A. K. Ghose, Reader in Line Communication Engineering, Engineering College, B. H. University, Varanasi-5. (2415-AM)

Lt. Col. H.B.S. Garwal, HQ Indian Military Academy, P.O. Prem Nagar, Dehradun. (6903-AM)

WEST BENGAL

Dr. K. K. Bose, Electro-control Devices Corporation, 13, North Road, Jadavpur, Calcutta-32. (673-AM)

Shri Shanti Swarup, General Manager, P & T Electrification Circle, 4 New Road, Calcutta-1. (919-M)

Shri R. R. Juneja, Electro-gears Pvt. Ltd., 27, Rowland Road, Calcutta-20. (989-AM)

Prof. S. S. Baral, Deptt. of Communication Engineering, B. E. College, Howrah-3. (3209-AM)

Shri A. B. Bhattacharya, Ericsson Telephones Sales Corporation, A. B. No. 5, Commissariat Road, Calcutta-22. (3218-M)

Dr. R. N. Roy, Associate Professor, Saha Institute of Nuclear Physics, 92, Acharya Profulla Chandra Road, Calcutta-9. (3797-AM)

Dr. Paresb Nath Das, Assistant Professor, Jalpaiguri Engineering College, P.O. Dangajhar, Jalpaiguri. (2211-AM)

Lt. Col. B. K. Rai, Inspector, Inspectorate of Electronics, Commissariat Road, Hastings, Calcutta-22. (2621-M)

Shri A. C. Ghosh, Assistant Project Officer, Easter Project Circle, All India Radio, Eden Garden, Calcutta-1. (155-AM)

JAMMU & KASHMIR STATE

Shri H. L. Bharara, Deputy Director Telecommunication, J & Kashmir Circle, Srinagar. (2423-AM)

APPENDIX--IV

List of Papers Presented at the 11th Technical Convention-1967

1. Characteristics of VHF Signal at 50 KM Beyond Radio Horizon—S. C. Majumdar.
2. Linearly Tapered Zig-Zag Antenna—S. Balram.
3. Synthesis of Nonuniformly Spaced Antenna Arrays—R.K. Arora.
4. Modern Trends in the Design of Automatic Control Systems—V. K. Jain.
5. Effects of Inherent Coupling on Control Systems—A Computer Study—B. N. Chatterjee.
6. Optimum Dimensioning of Telephone Circuits among Three Stations with Alternate Routing—K. Sahai.
7. Interaction of Laser Beams with Nonlinear Media—N.K.D. Choudhury.
8. An A.C. Phase Lead Network Fluctuating Carrier Frequencies—Alladi Prabhakar.
9. Fading Characteristics of the Radio Waves Reflected from two different heights in the F-region of the Ionosphere over Ahmedabad—C.M. Patel.
10. Some studies of Long Wave Propagation of Radio Tashkent on 164 Kc/s—M.K. Rao.
11. Transistor Switching Amplifiers in D.C. On-Off Control Systems—T.R. Narang.
12. A Direct Readout System for Reversible Counters—S.P. Suri.
13. High Frequency Acoustic Scattering from Ellipsoids and Cylinders—D.D. Garg.
14. The network of digital Transmission systems in the Bell System—K.R. Swaminathan.
15. (A paper presented by J.D. Jain.)
16. Silicon Vapour Epitaxy—R. Kesavan.
17. Influence of Fabrication Techniques on Breakdown and Current Gain Characteristics of Planar, Silicon Transistors—K.S. Balain.
18. Encapsulation of And Measurement on Tunnel Diodes—S.P. Naik.
19. Control of Parameters of Varactor Diodes—A.K. Ray.
20. Vacuum Annealing—B.S. Patel.
21. Growth of Silicon Dioxide Using Wet Oxygen—O.P. Wadhawan.
22. Report on the work on Growth of Semiconductor Grade Silicon Crystals—Sudhakar Tata.
23. Boron diffusion into Silicon using Boron Tribromide—K.R. Wadhera.
24. Synthesis and Crystal Growth of Compound Semiconductors GaAs and CdTe—R. Thyagarajan.
25. Diffusion of Zn in GaAs under As Pressure—P.B. Parikh.
26. Button Type Ni-Cd Cells—K.C. Tewari.
27. Thin Film Transistor—G.C. Dubey.
28. The Solid Electrolytic Tantalum Capacitor—Rajendra Kumar.
29. Semiconductor Strain Gauge—M. Gopal Rao.
30. The Study of Photo-dielectric offset in Zinc Sulfide doped with copper and chlorine—T.K. Bandopadhyay.
31. Investigation of effects at Metal Ceramic Contact at X-Band Frequencies—S.P. Luthra.
32. Designing of Gridded Tube Oscillators—C.M. Patel.
33. Development of a Co-axial 5 KW Triode—G.S. Sidhu.

ANNUAL REPORT

34. Active Network Realisation of Inductance-Using Gyrator Circuit—R.K. Datta.
35. Microwave Measurement of Saturation Magnetisation of Ferrites—G.P. Sharma.
36. Ferromagnetic Spinel and Rare Earth Garnets for Microwave applications—Pran Kishan.
37. Development of a 2.25 Watts Thermoelectric Power Source for A.I.R. Community Receiver—N. Chaudhuri.
38. Two Simple Methods of Standardizing A.C. Voltage in Terms of D.C.—R. Parshad.
39. On the Locking of Oscillators for Frequency Standardization—R. Parshad.
40. A Transistor r.f. Oscillator with Negative feedback for obtaining Constant Amplitude Output—Mr. P.S. Devi.
41. Oscillation and Instability Phenomenon in Crossed-Field Devices—R.P. Wadhwa.
42. A New Approach to the Design of Crossed-Field Gun—G.S. Sidhu.
43. Some Experimental Results on Tilted-Cathode Crossed-Field Guns—R.P. Wadhwa.
44. Development and Batch-Production of Microwave Components at G.E.E.R.I., Pilani—R.C. Kumar.
45. Transit-Time Effects and Noise Transport in Solid State Devices—R.P. Wadhwa.
46. A Novel Time Base Circuit using Complementary Transistor—Uma Shanker Singh.
47. Excitation of Electromagnetic waves on Plasma column by Ring source outside Plasma—K.C. Gupta.
48. Processing of Oxide Coated Cathodes for long pulse operation—J.L. Bahri.
49. Formant Tracking for Speech Bandwidth Compression—P.V. Indiresan.
50. An Experimental 24-Channel Pulse Code Modulation System for use on Audio Junction Cables—G.S.S. Murthy.
51. An Estimation of Performances of Unidigit and Multidigit Communication Systems—P.K. Chatterjee.
52. Electronic Telephone Exchanges—G.B. Meemamsi.
53. A Single Channel V.E.F. Trans-receiver for Rural Trunk Public Call Offices—K. Natarajan.
54. 70 Mc/s Frequency Modulator for Wideband Radio Relay systems—D.K. Sachdev.
55. Intermediate Frequency Amplifier for a Large Capacity Radio Relay System—H.P. Wagle.
56. Accurate Measurement of Dielectric Constant of Loss-Less Solids at Microwave Frequencies—D.C. Dube.

ERRATA

PART III

Page I, bottom line :

For November 22nd, 1968

read December 9th, 1968

Page 3, Item 3 (b) Sundry Dues :

For Rs. 613.54 read Rs. 170.84

For Rs. 709.37 read Rs. 613.54

PART—III

ACCOUNTS FOR THE YEAR ENDED 30th SEPTEMBER, 1968

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 1968 and also the accompanying Income and Expenditure Account for the year-ended on that date in which are incorporated the returns of the Bangalore and Bombay Centres certified by the persons in-charge, and have to report as follows :

1. Formal Trust Deed for the staff provident fund has not been executed yet and the amounts representing 'employees' and 'employers' contribution are being deposited in a separate bank account and not accounted for in the Institution's Accounts. We have not audited these accounts.

2. No provision has been made in the accounts for Income-tax.

3. Bangalore Centre's income & expenses are incorporated in the accounts on the basis of unaudited accounts received from them. The audited statements received after closure of accounts at Headquarters indicate some variations. These are proposed to be adjusted in the next year's accounts.

4. The accounts have been properly drawn up and we have obtained necessary information and explanations required.

5. That according to the best of our information and as per explanations given to us, the Accounts give a true and correct view :

(a) in the case of the Balance Sheet, of the affairs of the Institution as at 30th September 1968;

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

Asaf Ali Road, New Delhi-1,
November 22nd, 1968

Khanna and Annadhanam
Chartered Accountants

		Balance Sheet as at			
As at 30-9-1967 Rs	LIABILITIES	Rs.	P.	Rs.	P.
	<i>Surplus Fund :</i>				
3,62,373	Balance as per last Balance Sheet	3,62,373	17		
	Add : Excess of Income over Expenditure for the year as per annexed Account.	67,065	77	4,29,438	94
	<i>Reserve Fund :</i>				
9,393	Balance as per last Balance Sheet			9,392	62
	<i>Building Fund :</i>				
1,45,472	As per last Balance Sheet	1,78,261	70		
	Add :				
	Admission Fees	18,818	00		
19,943	Transfer Fees	3,661	00		
3,802	Interest received or accrued on				
9,045	Fixed Deposits	10,437	00	32,916	00
				2,11,177	70
1,78,262					
	<i>Reserve for Bad Debts :</i>				
6,782	Balance as per last Balance Sheet	2,816	55		
25,000	Add : Provision for the year	32,000	00		
	Amounts written off in earlier years				
4,378	recovered during the year	3,846	00	35,846	00
36,160				38,662	55
	Less : Amount written off during the year			37,707	98
33,344					
2,816					954 57
	<i>Liabilities :</i>				
3,876	Members at Credit	4,395	50		
	Journal Subscription received in Advance				
5,329		2,142	54		
	Sundry Creditors :				
11,432	(a) For Expenses	13,715	24		
1,242	(b) Others	162	00	13,877	24
2,595	Deposit from Staff			1,668	65
1,11,410	Examination Fees received in Advance			1,31,530	00
6,500	Registration Fee Suspense			3,245	00
				1,56,858	93
6,95,228	TOTAL CARRIED OVER			8,07,882	76

30th September, 1968.

As at 30-9-1967 Rs.	ASSETS	Rs.	P.	Rs.	P.
	<i>Fixed Assets :</i>				
78,881	As per Schedule attached			92,053	35
	<i>Investment at Cost :</i>				
	<i>Government Securities :</i>				
30,000	4½% Ten Year Defence Deposit Certificate (Lying with Bankers)*)			30,000	00
	<i>Current Assets :</i>				
8,931	1. Interest accrued on Fixed De- posits and Investments	33,455	80		
8,381	2. Stock of paper at cost (as certified by the Secretary)	9,842	78		
25,452	3. <i>Sundry Dues :</i>				
	(a) Due from Members for Fees	33,363	00		
1,167	(b) Due for Journal Subscrip- tion (includes Rs. 613.54 Considered Doubtful—Last year Rs. 709.37)	960	86		
	(c) Due for Advertisement				
	(i) Institution's Journal— (includes Rs. 1,605.66 Considered Doubtful— last year Rs. 159.38)	11,789	85		
9,808	(ii) Student Journal (includes nil Considered Doubtful— Last year Rs. 182.75)	82	51	11,872	36
560	(d) Sundry Debtors (includes Rs. 477.00 Considered doubtful—Last year Rs. 178.50)			2,146	75
2,163	4. <i>Advances and Prepayments :</i>				
1,627	(a) Advances to staff & Others	259	00		
4,850	(b) Advance against Printing of Publication	4,850	00		
3,275	(c) Prepaid Expenses	1,194	23		
	(d) Income Tax Deducted at source	462	00	6,765	23
				98,406	78
1,75,095	TOTAL CARRIED OVER			2,20,460	13

As at 30-9-1967 Rs.	LIABILITIES	Rs.	P.
6,95,228	TOTAL BROUGHT FORWARD	8,07,822	76
6,95,228	TOTAL	8,07,822	76

Auditors' Report

Asaf Ali Road, New Delhi
November, 22nd 1968.

(Sd.) Khanna and Annadhanam
Chartered Accountants

30th September, 1968.

As at 30-9-1967 Rs.	ASSETS	Rs.	P.	Rs.	P.
1,75,095	TOTAL BROUGHT FORWARD			2,20,460	13
	<i>Cash and Bank Balances :</i>				
898	(a) Cash in hand	2,085	67		
938	(b) Postage and Revenue Stamps in hand	1,061	86		
8,508	(c) Imprest with Local Centres— (as certified by the Secretaries of the Local Centres)	9,304	72		
	(d) With Scheduled Banks :				
3,95,480	(i) On fixed Deposits—Rs. 1,78,233.00 earmarked against Building Fund	4,37,980	50		
2,742	(ii) On Current Account	1,24,113	48		
1,11,567	(iii) On Savings Account— Rs. 1,668.65 earmarked against Staff Deposit	12,816	40	5,87,362	63
6,95,228	TOTAL			8,07,822	76
AVM K. A. Joseph President	Shri S. Thiruvengkatachari Honorary Treasurer			H. K. Ranji Secretary	

Income & Expenditure Account for the

As on 30-9-1967 Rs.	EXPENDITURE	Rs.	P.	Rs.	P.
	To Establishment (including Rs. 8,719.72 Salary and Honorarium paid to Secretary—Last year Rs. 13,275.72)			97,891	00
94,712	„ Employers' Contribution to Provident Fund			3,653	72
2,086	„ Medical Aid to Staff.			1,974	32
2,023	„ Rent and Electricity			32,749	34
32,043	„ Printing and Stationary			7,975	45
9,307	„ Postage and Telegrams			3,623	40
3,874	„ Telephone Charges			2,514	57
3,112	„ Sundry Expenses			10,575	50
7,764	„ Bank Charges			364	31
109	„ Audit Fee			1,750	00
1,000	„ Institution's Journal Expenses :				
	Cost of Paper	14,125	85		
12,375	Printing Charges	22,330	74		
19,623	Block Making Charges	12,034	37		
10,510	Postage and Packing	9,571	34		
7,636	Reprints Cost	2,617	97	60,680	27
2,669	„ Student Journal Expenses :				
	Cost of Paper	3,165	51		
3,179	Printing Charges	5,919	90		
5,923	Block Making Charges	601	04		
663	Postage and Packing	3,601	40		
3,054	Cost of Reprints	309	00		
282	Honorarium	175	00	13,771	85
200	„ Examination Expenses			50,115	96
39,525	„ Insurance			532	50
442	„ Local Centre Expenses	8,108	59		
430	Less : Receipts	3,710	24	4,398	35
	„ Hot and Cold Weather Charges				
111	„ I.T.E. Award			1,200	00
1,200	„ Student Award			200	00
200	„ Expenses Pertaining to previous year			2,066	19
2,076	„ Annual General Meeting Expenses			19,341	00
27,533	„ Depreciation			12,097	29
7,688	„ Provision for Bad Debts			32,000	00
25,000	„ Excess of Income over Expenditure for the year transferred to Surplus Fund			67,065	77
41,769					
				4,26,540	79
3,68,118					

November, 22nd 1968

Asaf Ali Road, New Delhi

(Sd.) Khanna & Annadhanam

Chartered Accountants

ANNUAL REPORT

Year Ended 30th September, 1968

[illegible]

(Sd.) AVM K. A. Joseph
President

(Sd.) Shri S. Thiruvengkatachari
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 on 30th September, 1968.

PARTICULARS	Cost or Book Value as on 30-9-67	Additions during the year 1967-68	Total Cost or Book Value as on 30-9-68	Written off upto 30-9-67	Written off during 67-68	Total W/O	Net Value of Assets as on 30-9-68	Net Value of Assets as on 30-9-67
1. Adrema Machine	1,003.28	21,931.35	22,934.63	733.71	3,330.14	4,063.85	18,870.78	269.57
2. Cycle	279.50		279.50	267.20	2.46	269.66	9.84	12.30
3. Duplicating Machine	4,985.25		4,985.25	2,053.72	439.73	2,493.45	2,491.80	2,931.53
4. Fans	1,126.12		1,126.12	556.22	56.99	613.21	512.91	569.90
5. Franking Machine	1,468.50		1,468.50	397.97	160.58	558.55	909.95	1,070.53
6. Fire Extinguisher	325.50		325.50	61.85	26.37	88.22	237.28	263.65
7. Furniture	17,092.72	3,338.30	20,431.02	3,157.39	1,560.45	4,717.84	15,713.18	13,935.33
8. Library Books	66,651.91		66,651.91	26,524.80	4,012.71	30,537.51	36,114.40	40,127.11
9. Library Equipments	13,773.70		13,773.70	5,103.93	866.98	5,970.91	7,802.79	8,669.77
10. Numbering Machine	45.62		45.62	26.66	1.90	28.56	17.06	18.96
11. Typewriters	11,624.41		11,624.41	3,562.72	1,209.25	4,771.97	6,852.44	8,061.69
12. Wall Clocks	286.00		286.00	28.60	25.74	54.34	231.66	257.40
13. Water Cooler	2,835.00		2,835.00	141.75	403.99	545.74	2,289.26	2,693.25
TOTAL Rs.	1,21,497.51	25,269.65	1,46,767.16	42,616.52	12,097.29	54,713.81	92,053.35	78,880.99
Last year's figures Rs.	1,09,865.83	11,631.68	1,21,497.51	34,928.53	7,687.99	42,616.52	78,880.99	

Asaf Ali Road, New Delhi
November 22nd, 1968

(Sd.) AVM K.A. Joseph
President

As per our report on the Balance Sheet,

(Sd.) Shri S. Thiruvengkatachari
Honorary Treasurer

Sd. Khanna and Annadhanam
Chartered Accountants

(Sd.) H. K. Ranji
Secretary

