

# ANNUAL REPORT

## OF THE

### INDIAN STANDARDS INSTITUTION

*for the year ending 31st March, 1948.*

Government of India in the Department of Industries and Supplies (now Ministry of Industry and Supply), in its Resolution of the 3rd September 1946, decided to set up the Indian Standards Institution (ISI) with its headquarters at Delhi. Apropos of this decision, the ISI was set up, and the Inaugural meeting of its General Council (GC) was held on the 6th January 1947, at which the constitution of the Institution was decided and action initiated to start its activities. Proceedings of this meeting have been separately published.

Preliminary work connected with the setting up of the Institution was conducted with a skeleton staff by Mr. K.K. Nasta, Officer on Special Duty, Department of Industries and Supplies, till the end of May 1947.

#### STAFF

The present Director, Dr. Lal C. Verman, Ph.D. (Cornell), F. Inst. P., F.N.I., took charge of the Institution on the 2nd June 1947, when the activities of the ISI were initiated.

Mr. J.P. Mehrotra, Deputy Director (Engineering), took charge of the Engineering Division Council on the 1st March 1948.

Mr. C.P. Halkatti, Assistant Director (Textiles) took charge of the Textile Division Council on the 14th July 1947.

Mr. S.K. Biswas, Secretary (Administration) joined the Institution on the 6th October 1947.

On 31st March 1948, the Staff of the ISI consisted of the following:

| Designation.                    | Sanctioned | Recruited. | Under Recruitment. |
|---------------------------------|------------|------------|--------------------|
| Director ... ..                 | 1          | 1          | ..                 |
| Dy. Directors ... ..            | 2          | 1          | 1                  |
| Asst. Directors ... ..          | 3          | 1          | ..                 |
| Secretaries ... ..              | 2          | 1          | 1                  |
| Tech. Assistants ... ..         | 7          | 2          | 2                  |
| Librarian ... ..                | 1          | 1          | ..                 |
| Superintendent ... ..           | 1          | 1          | ..                 |
| Clerks in various grades ... .. | 34         | 21         | 4                  |
| Others (Peons, etc.) ... ..     | 22         | 13         | ..                 |

#### GENERAL COUNCIL

The second meeting of the General Council (GC) was held on the 24th February 1948. It adopted, among other things, certain revisions in Rules and Regulations of the Institution necessitated by partition of the country to enable the Institution to function as an Indian body and at the same time to be able to collaborate with neighbouring countries. The revised constitution has been published and circulated to all members.

#### EXECUTIVE COMMITTEE

The Executive Committee (EC) held four meetings during the year—on 4th of July, 15th of October 1947, 19th of January and 23rd of February 1948. The EC dealt with the day-to-day administrative and organisational matters and made important decisions concerning the basic structure of the Institution and its various Councils and Committees to deal with standardisation in the national and international spheres.

#### FINANCE COMMITTEE

The Finance Committee (FC) held three meetings during the period under review. The meetings were held on 14th of October 1947, 17th of January and 23rd of February 1948.

#### MEMBERSHIP

Three hundred and thirty-three Sustaining Members and 23 Ordinary Members have been admitted by the Executive Committee during the period under review. Applications for membership are being continually received, and a fresh drive for membership of States, large and small industries and of individual members is proposed to be launched.

Invitations to neighbouring countries for Sustaining Membership of the Institution and for collaboration in its activities were extended by the First President of the ISI, Shri C. Rajagopalachari. Approaches to these countries have been repeated through the present Ministry of External Affairs and Commonwealth Relations. The Government of Ceylon has already become a Sustaining Member.



## TEXTILE DIVISION COUNCIL

The Textile Division Council (TDC) as constituted by the GC, held its first meeting on the 7th and 8th August, 1947 in New Delhi, and appointed six Sectional Committees to deal with an approved list of subjects falling under the following major groups:

- TDC 1 Textile Standards.  
(Standard methods for testing Textiles).
- TDC 2 Cotton, Yarn and Cloth.
- TDC 3 Jute.
- TDC 4 Wool.
- TDC 5 Textile Chemistry.
- TDC 6 Textile Stores.

First meeting of TDC 1, 2, 4, 5 and 6 were held on 3rd March, 1948, 15th December 1947, 1st March 1948, 12th January and 2nd March 1948, respectively. These Sectional Committees have appointed the following Sub-Committees for the preparation of draft standards:

- TDC 1:1 Standards Sub-Committee for Cotton.
- TDC 1:2 Standards Sub-Committee for Wool.
- TDC 1:3 Standards Sub-Committee for Jute.
- TDC 1:4 Standards Sub-Committee for Silk.
- TDC 2:1 Sub-Committee for Cotton, Yarn and Cloth.
- TDC 4:1 Sub-Committee for Raw Wool.
- TDC 4:2 Sub-Committee for finished products—  
Government (Civil & Defence) Requirements.
- TDC 4:3 Sub-Committee for finished products—Civil  
(Non-Government) Requirements.
- TDC 5:1 Sub-Committee for Identification and analysis  
of Fibres and Fabrics.
- TDC 5:2 Sub-Committee for Specifications for Undyed  
(Grey and Bleached) cotton materials.
- TDC 5:3 Sub-Committee for Fastness.
- TDC 5:4 Sub-Committee for Proofed Fabrics.
- TDC 5:5 Sub-Committee for Determination of Shrinkage.
- TDC 5:6:1 Sub-Committee for Inorganic Textile Chemicals.
- TDC 5:6:2 Sub-Committee for Textile Auxiliary Agents.
- TDC 5:7 Sub-Committee for Water.
- TDC 5:8 Sub-Committee for Desizing Agents.
- TDC 6:1 Sub-Committee for Wooden Articles (Jute).
- TDC 6:2 Sub-Committee for Wooden Articles (Cotton,  
Silk and Wool).
- TDC 6:3 Sub-Committee for Hide and Leather Articles.
- TDC 6:4 Sub-Committee for Textile and Metal Articles.

TDC 3 is scheduled to meet on 5th April 1948

The Textile Division Council has also been entrusted with the work of drawing up a specification for the Indian National Flag in consultation with the Ministry of Defence. The specification for the National Flag is under preparation.

Standardisation of Filter Cloth for shellac is another subject under the active consideration of the Institution.

## ENGINEERING DIVISION COUNCIL

The Engineering Division Council (EDC) constituted by the GC, held its first meeting on

17th and 18th November 1947, and appointed 23 Sectional Committees to deal with an approved list of technical subjects falling under following major groups:

- EDC 1 Engineering Standards.
- EDC 2 Cement.
- EDC 3 Basic Ferrous Metals.
- EDC 4 Basic Non-Ferrous Metals.
- EDC 5 Electrical Conductors and Insulators.
- EDC 6 Electrical Plant and Switchgear.
- EDC 7 Electrical Instruments.
- EDC 8 Electrical Accessories.
- EDC 9 Timber Products.
- EDC 10 Lubricants.
- EDC 11 Machine Tools and Small Tools.
- EDC 12 Hand Tools.
- EDC 13 Abrasives.
- EDC 14 Belting and Rubber Products.
- EDC 15 Engineering Hardware.
- EDC 16 Gas Cylinders.
- EDC 17 Refractories.
- EDC 18 Refrigeration.
- EDC 19 Radio Equipment.
- EDC 20 Drawings.
- EDC 21 ISO Secretariat Committee for Mica.
- EDC 22 Bitumen and Tar Products.
- EDC 23 Paints and Allied Products.

(For the time being the formation of EDC 7 has been deferred).

In addition to the above Sectional Committees a Standing Working Committee (SWCE) was also set up by the EDC to deal with the day-to-day affairs of the EDC. This Committee held its first meeting on the 26th January 1948 and appointed the personnel and designated the Chairmen of various Sectional Committees.

A report suggesting the adoption of the Metric System of Weights and Measures was prepared by the Director and forwarded to the Ministry of Industry and Supply as directed by the EC. Another Special Sectional Committee on Weights and Measures, to function under the EDC, has also been constituted by the EC. The Government of India have been requested to place at the disposal of the ISI all the information they might have collected on the subject and permit the ISI to formulate recommendations for consideration of the Government.

## CHEMICAL DIVISION COUNCIL

The Executive Committee, at its meeting held on 15th October 1947, decided that a Chemical Division Council (CDC) be set up forthwith. The establishment of the CDC is being expedited. Meanwhile nearly 100 subjects for standardisation have been proposed by members and other bodies for consideration of the CDC. Certain subjects actually pertaining to the CDC but requiring immediate attention of the ISI, have been taken up by the EDC, pending the formation of the CDC.



## AGRICULTURAL AND FOOD PRODUCTS DIVISION COUNCIL

In view of the heavy work on hand and difficulties connected with the appointment of sanctioned staff, the EC decided that the formation of the Agricultural and Food Products Division Council (ADC) be postponed for consideration until after the CDC has come into being. However, an *Ad Hoc* Standing Committee, to deal with the work of Technical Division ISO/TC/34—Agricultural Products, has been set up by the EC.

## BUILDING DIVISION COUNCIL

For similar reasons the Building Division Council (BDC) is not expected to be formed in the near future, but certain subjects coming under the purview of this Division are being attended to by the EDC for the time being.

## COLLABORATION WITH OTHER BODIES IN INDIA

In addition to the various organisations represented on the Councils and Committees of the Institution, ISI has established a close liaison with the following bodies.

1. Central Standards Office, Railway Board, New Delhi.
2. Directorate General of Industries & Supplies, New Delhi.
3. Bureau of Standards (Medical Institutions), D.G.I.M.S., New Delhi.
4. Central Board of Irrigation, Simla.
5. Indian Roads Congress, New Delhi.
6. Hyderabad Engineering Standards Committee.

## COIN SERIES FOR INDIA

At the instance of the First President of the ISI, Shri C. Rajagopalachari, the Director prepared a report on the rationalisation of Indian coinage on the basis of the decimal system. As per the EC's decision, the report was forwarded to the Government of India as a study by an Officer of the ISI, with a view to eliciting public opinion.

## INTERNATIONAL ACTIVITIES

The ISI represents India on the International Organization for Standardisation (ISO) which has now established its headquarters at Geneva. The ISO has proposed to set up 67 Technical Committees, of which the Secretariats for two have been entrusted to the ISI, viz., Shellac and Mica.

## Shellac

The EC at its second meeting held on 15th of October 1947, decided to set up an ISO Secretariat Committee for Shellac. This Committee approved the draft terms of reference prepared by the Director, which have since been communicated to the ISO Secretariat for circulation to the National Standards Bodies.

## Mica

The Interim Mica Advisory Committee functioning under the auspices of the Ministry of Works, Mines and Power held its last meeting on the 26th November 1947, at which the Director explained the advantages of standardisation in the national and international spheres. Members representing trade interests were finally persuaded to withdraw their long outstanding opposition to the introduction of standards in the Mica Industry. The Committee then recommended that the ISI might organize and initiate the work of introducing Indian Standards and take an active part in the international work. For this purpose an ISI Committee consisting of ten members has been set up. This Committee will meet in due course to decide terms of reference for the ISO Committee.

## Agricultural Products

An *Ad Hoc* Standing Committee for Technical Division ISO/TC/34—Agricultural Products, was up by the EC at its second meeting on 15th October 1947. This Committee held its first meeting on the 17th December 1947, and considered the draft proposals made by the USSR regarding the list of agricultural products for setting up separate committees.

The Committee accepted the USSR proposals with certain additions and alterations and decided to offer the services of the ISI as Secretariat for the ISO Committees, if they were set up to deal with subjects in which India is keenly interested, such as condiments and spices, jute, oil seeds, etc.

## Textiles

The EC at its second meeting decided to send a delegation consisting of members of the ISI staff, viz., the Director and Assistant Director (Textiles) and three members from Industry to represent India at the meeting of the ISO/TC/38—Textiles, to be held in Buxton from 7th to 12th June 1948. This delegation will also attend the Annual Convention of the British Textile Institute in Buxton from 2nd to 5th June, 1948.

## Documentation

The EC set up a Sectional Committee to deal with the work of the ISO/TC/46—



Documentation consisting of seven members. This Committee will hold its first meeting on 12th April 1948 to consider the various documents submitted by the Secretariat of the International Committee, namely, Netherland Standardisation Commission.

The EC also agreed to depute the Director to participate in the ISO Technical Committee meeting to be held at the Hague from 17th to 19th June 1948.

#### ISO Council Meeting

The ISO Council, to which the ISI has been elected as a member, is expected to hold its second meeting in Geneva from 31st May to 2nd June 1948. It was not possible to send a delegate from India to the first meeting of the Council held in July 1947, but the EC decided that the Director, ISI, should attend the second meeting. The EC also decided that the Director, after attending the Council meeting and the Textile and Documentation Meetings, should proceed for a short visit to U.S.A. and Canada to obtain first-hand knowledge of the working of Standards Bodies and to establish personal contacts in those countries.

#### NATIONAL STANDARDS BODIES

Close liaison now exists, through the ISI, between India and National Standards Bodies of all countries, members of the International Organization for Standardization (ISO) and the British Commonwealth of Nations. Information on standardisation is being constantly exchanged between India and these countries. More than 170 references have been received, inviting opinions on draft specifications, etc., from a number of National Bodies. Some documents of special interest to India were referred to competent authorities for comments, which were transmitted to the National Bodies concerned.

#### SALE OF PUBLICATIONS

It has been tentatively agreed that the sale of publications in India of foreign Standards Bodies, particularly those of the British Standards Institution, be undertaken by the ISI. Detailed arrangements are being made by negotiation.

#### DR. SHEWHART'S VISIT TO INDIA

The Institution, in collaboration with the Indian Statistical Institute, invited Dr. W.A. Shewhart of the Bell Telephone Laboratories to initiate a movement on Quality Control in Indian Industry. Dr. Shewhart arrived in India on the 13th December 1947 and was engaged on this work till the 4th March 1948.

Under Dr. Shewhart's Presidency a Conference on Standardisation and Quality Control was

held at Calcutta from 8th to 14th February 1948, which was inaugurated by Shri C. Rajagopalachari. This Conference, organized in collaboration with the Indian Statistical Institute, was attended by some two hundred delegates representing industry, governments and technological organizations. Technical discussions created such a lively interest among the delegates present that they decided to organize a permanent Indian Society for Quality Control to carry on the work initiated at this Conference.

During his stay in India, Dr. Shewhart also visited important centres of industry and held a number of discussions with industrialists, officials and technologists. In Delhi, he was invited to attend the second meeting of the GC, where he complimented the ISI, on its rapid development within so short a period of eight months after establishment.

#### QUALITY CONTROL

A Sectional Committee on Quality Control and Industrial Statistics consisting of 18 members including Dr. Shewhart has been appointed by the EC for the purpose of finalizing draft standards on Quality Control Methods for India on the basis of existing standards. This Committee held its first meeting at Calcutta on the 5th and 6th of February 1948.

The Committee decided to reprint the ASA Standard Z-1.3 on "Control Chart Method of Controlling Quality during Production," pending the development of an Indian Standard, on which a Sub-Committee is now working.

#### PUBLICATIONS

##### Library

A start has been made for building up a Central Standards Library for India wherein all Standards issued in any part of the world will be available. The present collection includes standards issued by various bodies in India, Great Britain, United States, Canada, Russia, Australia and a few other countries. Important reference books are also being added, and 36 technical journals are received in the library. Briefly, during the period under review, 5412 specifications, 171 draft specifications and 89 proceedings of Committee meetings of various National Organisations were received in the Library.

##### Publicity

An article, written by the Director on the "INDIAN STANDARDS INSTITUTION" was published in various periodicals and daily papers, viz., in "The Hindu," Madras, "Amrita Bazar Patrika", (Puja Number), Calcutta, "Perspective", Delhi, etc. The "National Herald"



of Lucknow and the "Commerce" of Bombay reviewed the activities of the ISI. Press notes on meetings and other important activities of the ISI have been issued and received wide publicity. The Director broadcast a speech on the Indian Standards Institution over the All India Radio, Delhi, on the 11th August 1947.

#### BYE-LAWS

Tentative draft Bye-Laws have been prepared for consideration of the Sub-Committee set up for the purpose.

#### ACCOUNTS

Revised Budget for the year 1947-48, and

Budget estimates for the year 1948-49, as approved by the GC at its second meeting held on the 24th February 1948, are given in Appendix I.

Audited Accounts for the year 1947-48 are detailed in Appendix II. The accounts of the ISI were duly audited by the Auditor General in India, and were found correct. Various constructive suggestions made by the Audit Officer are receiving attention in a satisfactory manner.

The audited accounts include contributions made by the Central and Provincial Governments, firms and trades and individuals which are shown in Appendix III.



APPENDIX I

REVISED BUDGET FOR 1947-48

I N C O M E

|  | Budget for 1948-49 |     |     | Revised Estimate for 1947-48 |     |     | Budget for 1947-48 |     |     |
|--|--------------------|-----|-----|------------------------------|-----|-----|--------------------|-----|-----|
|  | Rs.                | As. | Ps. | Rs.                          | As. | Ps. | Rs.                | As. | Ps. |
| 1. Approximate balance for the year ended 31-3-1948 including Fixed Deposit of Rs.1,25,000 ..  | 2,46,374           | 0   | 3   | 1,57,444                     | 13  | 0*  | 1,57,344           | 13  | 0   |
| 2. Imprest with Cashier and Despatcher ..  | 700                | 0   | 0   | ..                           | ..  | ..  | ..                 | ..  | ..  |
| 3. Government Grant for the year 1948-49 ..  | 2,00,000           | 0   | 0   | 2,00,000                     | 0   | 0   | 200,000            | 0   | 0   |
| 4. Approximate subscription to be received from the old 302 Sustaining Members and 20 Ordinary Members <i>plus</i> special Donations of Bengal, Bombay Governments and Nizam, Hyderabad State .. | 94,000             | 0   | 0   | 32,688                       | 8   | 0   | 15,713             | 0   | 0   |
| 5. Approximate subscription from the New Members to be recruited in 1948—estimated 100 members. ..   | [25,000            | 0   | 0   | ..                           | ..  | ..  | 7,000              | 0   | 0   |
| Interest on Fixed Deposit for Rs. 1,25,000/- made out of budget for the year 1947-48. ..   | 1,875              | 0   | 0   | ..                           | ..  | ..  | ..                 | ..  | ..  |
| 7. Miscellaneous receipt ..  | ..                 | ..  | ..  | 0                            | 10  | 0   | ..                 | ..  | ..  |
| Total ..   | 5,67,949           | 0   | 3   | 3,90,133                     | 15  | 0   | 3,80,057           | 13  | 0   |

\*The opening balance of Rs. 1,57,444-13-0, shown in the revised estimate for the year 1947-48, includes Rs. 63,150/- on account of subscription of the members for the year 1947, received prior to 1-4-47.



AND BUDGET ESTIMATES FOR 1948-49

EXPENDITURE

|   | Budget Estimate<br>for 1948-49 |     |    | Revised Budget for<br>1947-48 |     |    | Budget<br>for 1947-48 |     |    |
|---|--------------------------------|-----|----|-------------------------------|-----|----|-----------------------|-----|----|
|   | Rs.                            | As. | P. | Rs.                           | As. | Ps | Rs.                   | As. | Ps |
| 1. Pay of Officers ..   | 85,000                         | 0   | 0  | 30,540                        | 12  | 0  | 42,700                | 0   | 0  |
| 2. Allowances of Officers ..  | 16,000                         | 0   | 0  | 3,974                         | 2   | 0  | 10,000                | 0   | 0  |
| 3. Provident Fund Contribution for Officers ..  | 8,000                          | 0   | 0  | 1,788                         | 0   | 0  | 2,700                 | 0   | 0  |
| 4. T.A. for--   |                                |     |    |                               |     |    |                       |     |    |
| (i) Officers ..   | 22,000                         | 0   | 0  | 5,086                         | 10  | 0  | 15,000                | 0   | 0  |
| (ii) Committee Members ..   | 25,000                         | 0   | 0  | 6,958                         | 10  | 0  | 15,000                | 0   | 0  |
| (iii) Dr. Shewhart's expenses. ..   | ..                             |     |    | 2,000                         | 0   | 0  | ..                    |     |    |
| 5. Pay of Establishment ..  | 73,680                         | 0   | 0  | 29,615                        | 0   | 0  | 32,300                | 0   | 0  |
| 6. Allowances of Establishment ..   | 34,000                         | 0   | 0  | 15,655                        | 10  | 0  | 18,600                | 0   | 0  |
| 7. Provident Fund Contribution for Staff ..   | 6,000                          | 0   | 0  | 1,708                         | 11  | 0  | 1,900                 | 0   | 0  |
| 8. T.A. for Staff. ..   | 6,000                          | 0   | 0  | 2,000                         | 0   | 0  | 2,000                 | 0   | 0  |
| 9. Subscription including Rs. 10,000/- for ISO<br>for 1947 & 1948 and Rs. 2,000/- for IEC. .. | 12,000                         | 0   | 0  | 5,000                         | 0   | 0  | 5,000                 | 0   | 0  |
| 10. Printing (Publication) Charges ..   | 10,000                         | 0   | 0  | ..                            |     |    | 5,000                 | 0   | 0  |
| 11. OTHER CHARGES.  |                                |     |    |                               |     |    |                       |     |    |
| (i) Stationery including printing ..  | 8,000                          | 0   | 0  | 4,486                         | 14  | 0  | 5,000                 | 0   | 0  |
| (ii) Postage and Telegrams ..   | 5,000                          | 0   | 0  | 2,461                         | 1   | 9  | 5,000                 | 0   | 0  |
| (iii) Purchase of Publications ..   | 5,000                          | 0   | 0  | 3,316                         | 11  | 0  | 5,000                 | 0   | 0  |
| (iv) Telephone ..   | 10,000                         | 0   | 0  | 888                           | 0   | 0  | 1,500                 | 0   | 0  |
| (v) Furniture and Office Equipment ..   | 6,000                          | 0   | 0  | 20,507                        | 10  | 0  | 25,000                | 0   | 0  |
| (vi) Rent of Building ..  | 10,000                         | 0   | 0  | 1,500                         | 0   | 0  | 8,000                 | 0   | 0  |
| (vii) Electric and Water charges ..   | 1,000                          | 0   | 0  | 200                           | 0   | 0  | 500                   | 0   | 0  |
| (viii) Miscellaneous ..   | 6,000                          | 0   | 0  | 3,447                         | 4   | 0  | 6,000                 | 0   | 0  |
| (ix) Advertisement ..   | 4,000                          | 0   | 0  | 1,924                         | 15  | 0  | 2,500                 | 0   | 0  |
| 12. Cost of transferring Headquarters ..  | 15,000                         | 0   | 0  | ..                            |     |    | ..                    |     |    |
|   | 3,67,680                       | 0   | 0  | 1,43,059                      | 14  | 9  | 2,08,700              | 0   | 0  |
| Imprest held by Cashier and Despatcher ..   | 700                            | 0   | 0  | 700                           | 0   | 0  | ..                    |     |    |
| Balance for the next year 1949-50 ..  | 1,99,569                       | 0   | 3  | Fixed deposit.<br>1,25,000    | 0   | 0  | ..                    |     |    |
|   | Balance                        |     |    | 1,21,374                      | 0   | 3  | 1,71,357              | 13  | 0  |
|   | 5,67,949                       | 0   | 3  | 3,90,133                      | 15  | 0  | 3,80,057              | 13  | 0  |



**APPENDIX II**

**Indian  
RECEIPTS AND PAYMENTS**

**RECEIPTS**

|  | Budget Grant    |           |          | Revised Budget  |           |          | Actual Receipts |          |          |
|--|-----------------|-----------|----------|-----------------|-----------|----------|-----------------|----------|----------|
|  | Rs.             | As.       | Ps.      | Rs.             | As.       | Ps.      | Rs.             | As.      | Ps.      |
| 1. (i) Balance on 1.4.1947   | *1,57,344       | 13        | 0        | 1,57,444        | 13        | 0        | 1,57,465        | 4        | 0 (A)    |
| (ii) Readjustments for the year 1946-47  | ..              |           |          | ..              |           |          | 240             | 9        | 0 (B)    |
| 2. Government Grant  | 2,00,000        | 0         | 0        | 2,00,000        | 0         | 0        | 2,00,000        | 0        | 0        |
| 3. Subscription from   |                 |           |          |                 |           |          |                 |          |          |
| (i) Sustaining as well as Ordinary Members for the year 1947.<br>(Sus. 32,151-8-0<br>Ord. 287-0-0)   | 15,713          | 0         | 0        | 32,688          | 8         | 0        | 32,438          | 8        | 0 (C)    |
| (ii) Sustaining as well as Ordinary Members for the year 1948.<br>(Sus. 68,801-8-0<br>Ord. 455-10-0) | ..              |           |          | ..              |           |          | 69,257          | 2        | 0        |
| (iii) Expected   | 7,000           | 0         | 0        | ..              |           |          | ..              |          |          |
| 4. Miscellaneous Receipts  | ..              |           |          | 0               | 10        | 0        | 20              | 10       | 0        |
| 5. Provident Fund  | ..              |           |          | ..              |           |          | 33,688          | 0        | 0        |
| 6. Sale of Books   | ..              |           |          | ..              |           |          | 498             | 2        | 6        |
| <b>Grand Total</b>   | <b>3,80,057</b> | <b>13</b> | <b>0</b> | <b>3,90,133</b> | <b>15</b> | <b>0</b> | <b>4,93,608</b> | <b>3</b> | <b>6</b> |

(A) Opening balance in the Receipts and Payments Account differs from the budget by Rs. 120-7-0 which is due to the fact that Rs. 100 which was advanced to the Cashier as imprest prior to 1-4-47 was not shown in the budget approved by EC and this has now been done.

(ii) A discount of Rs. 20-7-0 charged by the Bank during March 1947 was taken into books in April 1948 which has increased the opening balance by Rs. 20-7-0. Thus the total increase comes to Rs. 120-7-0 (Genl.) The Opening balance also includes Rs. 63,150 on account of subscription of members (Sustaining and Ordinary) for the year 1947 received prior to 1-4-1947.

(B) This figure represents the cost of one steel cabinet and one book purchased for the library and it was treated as expenditure whereas it is an asset of the Institution.

(C) The amount of subscription shown in the Receipts and Payments Account is short by Rs. 250 from the figures shown in the revised budget, and this is due to the fact that the sum of Rs. 250 received from Messrs Birla Bros. (for Keso Ram Cotton Mills Limited) was taken against them for the year 1947, but on enquiring from them they advised us to account for this amount as subscription for the year 1948 for Messrs. Keso Ram Cotton Mills.

Sd/- S. K. BISWAS,  
Secretary (Administration),  
INDIAN STANDARDS INSTITUTION,  
'P' Block, Raisina Road,  
New Delhi.

\*Details are given in Appendix IV.



## Standards Institution

ACCOUNT AS AT 31-3-1948

## PAYMENTS

|  | Budget Grant |     |     | Revised Budget. |     |     | Actual Payments. |     |       |
|--|--------------|-----|-----|-----------------|-----|-----|------------------|-----|-------|
|  | Rs.          | As. | Ps. | Rs.             | As. | Ps. | Rs.              | As. | Ps.   |
| 1. Pay of Officers                       | 42,700       | 0   | 0   | 30,540          | 12  | 0   | 26,260           | 12  | 0     |
| 2. Allowances of Officers                | 10,000       | 0   | 0   | 3,974           | 2   | 0   | 3,015            | 2   | 0     |
| 3. Provident Fund of Officers            | 2,700        | 0   | 0   | 1,788           | 0   | 0   | 188              | 0   | 0     |
| 4. T.A. for—                             |              |     |     |                 |     |     |                  |     |       |
| (i) Officers                             | 15,000       | 0   | 0   | 5,086           | 10  | 0   | 4,158            | 2   | 0     |
| (ii) Committee Members                   | 15,000       | 0   | 0   | 6,958           | 10  | 0   | 4,091            | 0   | 0     |
| (iii) Dr. Shewhart's expenses            | ..           |     |     | 2,000           | 0   | 0   | 2,000            | 0   | 0     |
| 5. Pay of Establishment                  | 32,300       | 0   | 0   | 29,615          | 0   | 0   | 26,199           | 10  | 0     |
| 6. Allowances of Establishment           | 18,600       | 0   | 0   | 15,655          | 10  | 0   | 13,936           | 13  | 0     |
| 7. Provident Fund contribution for staff | 1,900        | 0   | 0   | 1,708           | 11  | 0   | 58               | 11  | 0     |
| 8. T.A. for Staff                        | 2,000        | 0   | 0   | 2,000           | 0   | 0   | 2,958            | 7   | 0     |
| 9. Subscription for ISO for 1947         | 5,000        | 0   | 0   | 5,000           | 0   | 0   | ..               |     |       |
| 10. Printing (pub.) Charges.             | 5,000        | 0   | 0   | ..              |     |     | ..               |     |       |
| 11. Other Charges                        |              |     |     |                 |     |     |                  |     |       |
| (i) Stationery including printing        | 5,000        | 0   | 0   | 4,486           | 14  | 0   | 4,442            | 2   | 6     |
| (ii) Postage and Telegrams               | 5,000        | 0   | 0   | 2,461           | 1   | 9   | 2,082            | 2   | 3     |
| (iii) Purchase of publications           | 5,000        | 0   | 0   | 3,316           | 11  | 0   | 2,497            | 1   | 0 (a) |
| (iv) Telephones                          | 1,500        | 0   | 0   | 888             | 0   | 0   | 579              | 1   | 0     |
| (v) Furniture & Office Equipment         | 25,000       | 0   | 0   | 20,507          | 10  | 0   | 19,177           | 6   | 0 (d) |
| (vi) Rent of Building                    | 8,000        | 0   | 0   | 1,500           | 0   | 0   | 250              | 0   | 0 (b) |
| (vii) Electric & Water charges           | 500          | 0   | 0   | 200             | 0   | 0   | ..               |     |       |
| (viii) Miscellaneous charges             | 6,000        | 0   | 0   | 3,447           | 4   | 0   | 2,638            | 3   | 9     |
| (ix) Advertisements                      | 2,500        | 0   | 0   | 1,924           | 15  | 0   | 1,664            | 8   | 0     |
| (x) Advances recoverable                 | ..           |     |     | ..              |     |     | 154              | 0   | 0 (c) |
|  | 2,08,700     | 0   | 0   | 1,43,059        | 14  | 9   | 1,16,351         | 1   | 6     |
| Imprest                                  | ..           |     |     | 700             | 0   | 0   | 700              | 0   | 0     |
| Fixed Deposit                            | ..           |     |     | 1,25,000        | 0   | 0   | 1,25,000         | 0   | 0     |
| Balance to be carried over               | 1,71,357     | 13  | 0   | 1,21,374        | 0   | 3   | 2,51,557         | 2   | 0     |
| Grand Total                              | 3,80,057     | 13  | 0   | 3,90,133        | 15  | 0   | 4,93,608         | 3   | 6     |

- (a) Rs. 2,497/1/0 is made up of Rs. 278/13/0 on account of miscellaneous publications treated as expenditure and Rs. 2,218/4/0 on account of Library Books which have been treated as assets.
- (b) Advance made to Messrs. Kashmir Emporium for the supply of a Carpet.
- (c) Advance of Rs. 154/0 for the air passage of Dr. Shewhart recoverable from the Ministry of I.&S.
- (d) Rs. 19,177/6/0 is made up of Rs. 859/14/0 for petty purchases and treated as contingent expenditure and Rs. 18,317/8/- as value of assets.

Checked and found correct.

Sd/- G. C. DAS,

Assistant Accounts Officer,

Office of the D.A.G.I. &amp; S.,

New Delhi.



**APPENDIX II—Continued**

**The Indian  
INCOME AND EXPENDITURE**

**EXPENDITURE**

|  | Budget Grant |     |     | Revised Budget |     |     | Actual Expenditure |     |       |
|--|--------------|-----|-----|----------------|-----|-----|--------------------|-----|-------|
|  | Rs.          | As. | Ps. | Rs.            | As. | Ps. | Rs.                | As. | Ps.   |
| 1. Pay of Officers                         | 42,700       | 0   | 0   | 30,540         | 12  | 0   | 26,260             | 12  | 0     |
| 2. Allowances of Officers                  | 10,000       | 0   | 0   | 3,974          | 2   | 0   | 3,015              | 2   | 0     |
| 3. Provident Fund Contribution of Officers | 2,700        | 0   | 0   | 1,788          | 0   | 0   | 188                | 0   | 0     |
| 4. T.A. for—                               |              |     |     |                |     |     |                    |     |       |
| (i) Officers                               | 15,000       | 0   | 0   | 5,086          | 10  | 0   | 4,158              | 2   | 0     |
| (ii) Committee Members                     | 15,000       | 0   | 0   | 6,958          | 10  | 0   | 4,091              | 0   | 0     |
| (iii) Dr. Shewhart's expenses              | ..           |     |     | 2,000          | 0   | 0   | 2,000              | 0   | 0     |
| 5. Pay of Establishment                    | 32,300       | 0   | 0   | 29,615         | 0   | 0   | 26,199             | 10  | 0     |
| 6. Allowances of Establishmen              | 18,600       | 0   | 0   | 15,655         | 10  | 0   | 13,956             | 13  | 0     |
| 7. Provident Fund for Staff                | 1,900        | 0   | 0   | 1,708          | 11  | 0   | 58                 | 11  | 0     |
| 8. T.A. for Staff                          | 2,000        | 0   | 0   | 2,000          | 0   | 0   | 2,958              | 7   | 0     |
| 9. Stationery                              | 5,000        | 0   | 0   | 4,486          | 14  | 0   | 4,442              | 2   | 6     |
| 10. Postage and Telegrams                  | 5,000        | 0   | 0   | 2,461          | 1   | 9   | 2,082              | 2   | 3     |
| 11. Purchase of Publications               | 5,000        | 0   | 0   | 3,316          | 11  | 0   | 278                | 13  | 0 (a) |
| 12. Telephones                             | 1,500        | 0   | 0   | 888            | 0   | 0   | 579                | 1   | 0     |
| 13. Furniture and Office Equipment         | 25,000       | 0   | 0   | 20,507         | 10  | 0   | 866                | 12  | 0 (b) |
| 14. Miscellaneous Charges                  | 6,000        | 0   | 0   | 3,447          | 4   | 0   | 2,638              | 3   | 9     |
| 15. Advertisement                          | 2,500        | 0   | 0   | 1,924          | 15  | 0   | 1,664              | 8   | 0     |
|  |              |     |     |                |     |     |                    |     |       |
|  |              |     |     | 1,90,200       | 0   | 0   | 1,36,359           | 14  | 9     |
|  |              |     |     |                |     |     | 95,418             | 3   | 6 ✓   |
| Excess of Income over Expenditure          | 25,513       | 0   | 0   | 96,329         | 3   | 3   | 1,37,020           | 14  | 6     |
|  |              |     |     | 2,15,713       | 0   | 0   | 2,32,689           | 2   | 0     |

(a) Library books value Rs. 2,218-4-0 has been taken to the Balance Sheet as assets and not included against this item.

(b) Furniture value Rs. 18,349 has been taken to the balance sheet as assets and not included against this item.

**BALANCE SHEET**

**LIABILITIES**

|   | Rs. | As. | Ps. | Rs.      | As. | Ps. |
|---|-----|-----|-----|----------|-----|-----|
| 1. Provident Fund of Staff  | ..  |     |     | 33,688   | 0   | 0   |
| 2. Sale-proceeds of books sold on commission basis                | ..  |     |     | 667      | 8   | 6   |
| 3. Payable to Director, Indian Statistical Institute, Calcutta    | ..  |     |     | 20       | 0   | 0   |
| 4. Subscriptions for old (Sustaining & Ordinary) Members for 1948 | ..  |     |     | 58,456   | 14  | 0   |
| 5. Subscriptions for new (Sustaining & Ordinary) Members for 1948 | ..  |     |     | 10,800   | 4   | 0   |
| 6. Bills payable  | ..  |     |     | 38       | 6   | 0   |
| 7. (i) Balance of last year                                       | ..  |     |     | 1,57,705 | 13  | 0   |
| (ii) Excess of income over Expenditure for this year              | ..  |     |     | 1,37,020 | 14  | 6   |
|   |     |     |     |          |     |     |
|   |     |     |     | 2,94,726 | 11  | 6   |
|   |     |     |     | 3,98,397 | 12  | 0   |

Sd/- S. K. BISWAS,

(Secretary Administration).

INDIAN STANDARDS INSTITUTION,

'P' Block, Raisina Road, New Delhi.





### APPENDIX III

#### Contributions by the Central and Provincial Governments, Firms and Trades and Individuals

|  |    |    |    |    |                |
|--|----|----|----|----|----------------|
| 1. Central Government's Grant-in-aid.  | .. | .. | .. | .. | Rs. 2,00,000   |
| 2. Provincial Governments' Sustaining Membership Subscription                                      | .. | .. | .. | .. | Rs. 15,250     |
| i. East Punjab   | .. | .. | .. | .. | Rs. 250        |
| ii. Bihar  | .. | .. | .. | .. | Rs. 250        |
| iii. Assam   | .. | .. | .. | .. | Rs. 250        |
| iv. Madras   | .. | .. | .. | .. | Rs. 1,000      |
| v. West Bengal   | .. | .. | .. | .. | Rs. 4,000      |
| vi. U.P.   | .. | .. | .. | .. | Rs. 250        |
| vii. C.P. and Berar  | .. | .. | .. | .. | Rs. 500        |
| viii. Bombay   | .. | .. | .. | .. | Rs. 7,500      |
| ix. Orissa   | .. | .. | .. | .. | Rs. 500        |
| x. N.W.F.P.  | .. | .. | .. | .. | Rs. 250        |
| xi. Sind   | .. | .. | .. | .. | Rs. 500        |
| 3. Firms, Trade Associations, Non-Government bodies, etc. (Subscription for Sustaining Membership) | .. | .. | .. | .. | Rs. 79,801-8-0 |
| The above includes the following bodies paying Rs. 500 or more as indicated against each:-         |    |    |    |    |                |
| The Electric and Mechanical Engineer, Bikaner State  | .. | .. | .. | .. | Rs. 500        |
| The Abestos Cement Ltd., Bombay  | .. | .. | .. | .. | Rs. 1,000      |
| Messrs Firestone Tyre & Rubber Co. of India Ltd., Bombay   | .. | .. | .. | .. | Rs. 500        |
| The Indian Merchants' Chamber, Bombay  | .. | .. | .. | .. | Rs. 1,000      |
| The Tata Iron & Steel Co. Ltd., Bombay   | .. | .. | .. | .. | Rs. 1,000      |
| The Associated Cement Companies Ltd., Bombay   | .. | .. | .. | .. | Rs. 1,000      |
| Messrs. Jeevan Lal (1929) Ltd., Calcutta   | .. | .. | .. | .. | Rs. 500        |
| The Bengal Immunity Co. Ltd., Calcutta   | .. | .. | .. | .. | Rs. 500        |
| The Philips Electrical Co. (India) Ltd., Calcutta  | .. | .. | .. | .. | Rs. 500        |
| The East India Pharmaceutical Works Ltd., Calcutta   | .. | .. | .. | .. | Rs. 500        |
| The Indian Jute Mills' Association, Calcutta   | .. | .. | .. | .. | Rs. 500        |
| The Bengal Chemical & Pharmaceutical Works Ltd., Calcutta  | .. | .. | .. | .. | Rs. 500        |
| The Paint Federation, Calcutta   | .. | .. | .. | .. | Rs. 800        |
| The Federation of Indian Chambers of Commerce and Industry, New Delhi                              | .. | .. | .. | .. | Rs. 1,000      |
| The Madura Mills Company Ltd., Madura  | .. | .. | .. | .. | Rs. 500        |
| The Saru Smelting & Refining Corporation Ltd., Meerut  | .. | .. | .. | .. | Rs. 500        |
| 4. Individuals (Ordinary membership Subscription)  | .. | .. | .. | .. | Rs. 557        |

### APPENDIX IV

#### STATEMENT OF ACCOUNTS FOR THE YEAR 1946-47

| INCOME                  |          |         | EXPENDITURE                                |          |         |
|-------------------------|----------|---------|--|----------|---------|
|                         | Rs.      | As. Ps. |  | Rs.      | As. Ps. |
| Government Contribution | 1,00,000 | 0 0     | Miscellaneous (Staff, contingencies, etc.) | 5,807    | 9 0     |
| Subscriptions received  | 63,150   | 0 0     | Balance                                    | 1,57,344 | 13 0    |
| Sale-proceeds           |          | 2 6 0   |  |          |         |
|                         | 1,63,152 | 6 0     |  | 1,63,152 | 6 0     |



ARCHIVES.

INDIAN STANDARDS INSTITUTION

ANNUAL REPORT

FOR THE YEAR ENDING 31 MARCH 1949



BLOCK 11, OLD SECRETARIAT  
DELHI 2

# INDIAN STANDARDS INSTITUTION

FOUNDED 1947

## *President*

THE HONOURABLE DR. SYAMA PRASAD MOOKERJEE  
MINISTER FOR INDUSTRY & SUPPLY, GOVERNMENT OF INDIA

## *Vice-Presidents*

DR. K. S. KRISHNAN  
DIRECTOR, NATIONAL PHYSICAL LABORATORY, DELHI

DR. J. C. GHOSH  
DIRECTOR GENERAL OF INDUSTRIES & SUPPLIES, NEW DELHI

## EXECUTIVE COMMITTEE

### *Chairman*

DR. K. S. KRISHNAN

## FINANCE COMMITTEE

### *Chairman*

MR. A. K. ROY  
JOINT SECRETARY, MINISTRY OF FINANCE, GOVERNMENT OF INDIA

## ENGINEERING DIVISION COUNCIL

### *Chairman*

MR. S. L. KIRLOSKAR  
KIRLOSKAR BROTHERS, KIRLOSKARWADI

### *SWCE Vice-Chairman*

MR. R. G. BURT  
DEPUTY DIRECTOR GENERAL (INSPECTION), NEW DELHI

## TEXTILE DIVISION COUNCIL

### *Chairman*

MR. BHARAT RAM  
DELHI CLOTH & GENERAL MILLS CO. LTD., DELHI

## CHEMICAL DIVISION COUNCIL

### *Chairman*

DR. H. L. ROY  
JADAVPUR COLLEGE OF ENGINEERING & TECHNOLOGY, JADAVPUR, W. BENGAL

### *SWCC Vice-Chairman*

DR. S. KRISHNA  
DIRECTOR OF FOREST RESEACH  
FOREST RESEARCH INSTITUTE & COLLEGE, DEHRA DUN

## STAFF

|                               |     |     |     |                |                     |     |     |                 |
|-------------------------------|-----|-----|-----|----------------|---------------------|-----|-----|-----------------|
| Director                      | ... | ... | ... | LAL C. VERMAN  | Technical Officer   | ... | ... | A. B. RAO       |
| Deputy Director (Chemicals)   | ... | ... | ... | K. L. MOUDGILL | Technical Officer   | ... | ... | K. VYASULU      |
| Deputy Director (Engineering) | ... | ... | ... | J. P. MEHROTRA | Technical Officer   | ... | ... | S. K. SEN       |
| Assistant Director (Textiles) | ... | ... | ... | C. P. HALKATTI | Technical Assistant | ... | ... | T. BALAKRISHNAN |
| Secretary (Administration)    | ... | ... | ... | B. L. BHATIA   | Superintendent      | ... | ... | HARBANS LAL     |
| Secretary (Publications)      | ... | ... | ... | K. S. RANGAPPA | Librarian           | ... | ... | G. L. GULATI    |



INDIAN STANDARDS INSTITUTION

ANNUAL REPORT

FOR THE YEAR ENDING 31 MARCH 1949



BLOCK 11, OLD SECRETARIAT  
DELHI 2

INDIAN STANDARDS INSTITUTION

INDIAN STANDARDS INSTITUTION



INDIAN STANDARDS INSTITUTION



## CONTENTS

|  | PAGE |
|--|------|
| 0. LIST OF ABBREVIATIONS USED IN ISI .. .. .                         | ii   |
| 1. GENERAL .. .. .   | 1    |
| 2. DIRECTORATE .. .. .   | 1    |
| 2.1 Location .. .. .   | 1    |
| 2.2 Staff .. .. .  | 2    |
| 2.3 Organization .. .. .   | 2    |
| 3. GENERAL COUNCIL .. .. .   | 3    |
| 4. EXECUTIVE COMMITTEE .. .. .                                       | 4    |
| 5. FINANCE COMMITTEE .. .. .   | 4    |
| 6. MEMBERSHIP .. .. .  | 4    |
| 7. DIVISION COUNCILS .. .. .   | 5    |
| 7.1 Creation of New Divisions .. .. .                                | 5    |
| 7.2 Meetings of Existing Divisions .. .. .                           | 5    |
| 7.2.1 Engineering Division Council Meetings .. .. .                  | 5    |
| 7.2.2 Textile Division Council Meetings .. .. .                      | 5    |
| 7.2.3 Chemical Division Council Meetings .. .. .                     | 6    |
| 7.3 Meetings of Committees and Subcommittees .. .. .                 | 7    |
| 8. PROGRESS OF STANDARDS .. .. .                                     | 11   |
| 9. LABORATORY FACILITIES .. .. .                                     | 15   |
| 10. INTERNATIONAL ORGANIZATION FOR STANDARDIZATION .. .. .           | 16   |
| 10.1 ISO/TC Secretariats .. .. .                                     | 16   |
| 10.1.1 Shellac .. .. .   | 16   |
| 10.1.2 Mica .. .. .  | 17   |
| 10.2 ISO Conferences .. .. .   | 18   |
| 10.2.1 ISO Council .. .. .   | 18   |
| 10.2.2 ISO/TC 38 Textiles .. .. .                                    | 19   |
| 10.2.3 ISO/TC 46 Documentation .. .. .                               | 19   |
| 10.3 International Electro-technical Commission .. .. .              | 20   |
| 11. OTHER INTERNATIONAL ACTIVITIES .. .. .                           | 20   |
| 11.1 Director's Tour Abroad .. .. .                                  | 20   |
| 11.2 Commonwealth Relations .. .. .                                  | 22   |
| 12. CONTROL OF QUALITY OF EXPORT GOODS .. .. .                       | 22   |
| 13. PUBLICATIONS .. .. .   | 23   |
| 13.1 Standards .. .. .   | 23   |
| 13.2 ISI Bulletin .. .. .  | 23   |
| 13.3 Articles Published in Other Journals .. .. .                    | 23   |
| 13.4 Press Notes .. .. .   | 23   |
| 13.5 Quality Control Publicity .. .. .                               | 24   |
| 13.6 Sale of Standards .. .. .                                       | 24   |
| 14. LIBRARY .. .. .  | 24   |
| 15. FINANCES .. .. .   | 25   |
| 16. APPENDICES .. .. .   |      |
| 16.1 Amendments to Rules and Regulations .. .. .                     | 27   |
| 16.2 ISO Council 1948 — Agenda .. .. .                               | 27   |
| 16.3 India's Participation in ISO Technical Committees .. .. .       | 28   |
| 16.4 First Meeting of ISO/TC 38 — Textiles .. .. .                   | 28   |
| 16.5 Director's Tour Abroad .. .. .                                  | 29   |
| 16.6 Contributions and Subscriptions by Provinces and States .. .. . | 33   |
| 16.7 Budget .. .. .  | 34   |
| 16.8 Audited Accounts for 1948-49 .. .. .                            | 36   |

## 0. LIST OF ABBREVIATIONS USED IN THE INDIAN STANDARDS INSTITUTION

### OFFICERS

|      |                                 |
|------|---------------------------------|
| DR   | Director                        |
| DDC  | Deputy Director ( Chemicals )   |
| DDE  | Deputy Director ( Engineering ) |
| ADT  | Assistant Director ( Textiles ) |
| SA   | Secretary ( Administration )    |
| SP   | Secretary ( Publications )      |
| TO   | Technical Officer               |
| TA   | Technical Assistant             |
| Lib  | Library & Librarian             |
| Supt | Superintendent                  |

### BODIES

|           |   |
|-----------|---|
| ADC       | Agricultural and Food Products Division Council     |
| BDC       | Building Division Council                           |
| CDC       | Chemical Division Council                           |
| CSO       | Central Standards Office                            |
| DC        | Division Council(s)                                 |
| D G I & S | Director ( Directorate ) General, Industry & Supply |
| EC        | Executive Committee                                 |
| EDC       | Engineering Division Council                        |
| FC        | Finance Committee                                   |
| GC        | General Council                                     |
| IEC       | International Electro-technical Commission          |
| IE(I)     | The Institution of Engineers ( India )              |
| ISI       | Indian Standards Institution                        |
| ISO       | International Organization for Standardization      |
| ISO (GS)  | General Secretariat of ISO                          |
| ISO/TC    | Technical Committee of ISO                          |
| ISO/TC 56 | Technical Committee 56 of ISO                       |
| SWCC      | Standing Working Committee of CDC                   |
| SWCE      | Standing Working Committee of EDC                   |
| SWCT      | Standing Working Committee of TDC                   |
| TDC       | Textile Division Council                            |
| TDC 6     | Sectional Committee 6 of TDC                        |
| TDC 6 : 3 | Subcommittee 3 of TDC 6                             |

### DOCUMENTS, REFERENCES, ETC.

|                 |  |
|-----------------|--|
| UDC             | Universal Decimal Classification   |
| BL 10           | Bye-law 10   |
| Doc : D(6)      | Document No. 6 concerning Directorate of ISI   |
| Doc : GC(4)     | Document No. 4 concerning GC's activities  |
| Doc : TDC 6(58) | Document No. 58 concerning TDC 6 activities  |
| IS : 2          | Indian Standard 2  |
| MA 3            | Memorandum of Association, para 3  |
| RR 6            | Rules and Regulations, para 6  |
| TDC 5 : 2/A     | Administrative file of Subcommittee 2 of Sectional Committee 5 of TDC                                    |
| TDC 5 : 2/3T    | Technical file concerning subject No. 3 assigned to Subcommittee 2 of Sectional Committee 5 of TDC       |
| TDC 5 : 2/3.1T  | Technical file concerning subject No. 3.1 assigned to Subcommittee No. 2 of Sectional Committee 5 of TDC |



# SECOND ANNUAL REPORT

OF THE

## INDIAN STANDARDS INSTITUTION

( 1948-1949 )

### 1. GENERAL

**1.1** The period following the First Annual Report witnessed intensive activity, both in the national sphere of ISI work and India's participation in the international work on standardization. As in the case of the International Organization for Standardization (ISO), which was inaugurated about a year earlier, the ISI, during the period under review, was to a great extent occupied with organizational matters, which included, for example, recruitment and training of staff in methods and procedures of the ISI and developing among them attitudes and the background necessary to deal with tasks of standardization and with the personnel of committees; inauguration of the third Division of the Institution, namely the Chemical Division Council; consolidation and extension of the activities of the two existing Divisions, Textile and Engineering; appointment of numerous new committees and allocation of tasks to each; development of detailed procedures to prepare the groundwork for committees and to ensure a constant two-way flow of information and assistance between the staff and the committee members; compilations of card indexes of organizations, firms, experts and other interests concerned with various subjects under consideration for standardization; organizing a reference library of standards and stocking it with all available publications from India and abroad; making available for reference and sale standards published overseas; membership drives among leading associations and organizations; approaches to provincial and state governments for additional financial support; etc.

It will be apparent from the material presented in the following pages that simultaneously with organizational activities, considerable progress has been made towards development of national standards in several fields. Normally it takes from one to two years for a well-organized standards institution abroad to finalize a national standard developed in accordance with the co-operative procedure roughly parallel to that of the ISI. The progress reported here will bear out that the ISI has gone ahead at a pace more than commensurate with the existing state of industry in the country. Basic structure of the Institution may be regarded as having been fully developed and ready to cope with most problems of standardization of interest to India, whether within the

country or in the international sphere. The following year, we hope, will see concrete results of lasting value in the form of a large number of standards being issued by the Institution.

During the period just ahead, it is hoped to initiate the first move towards the introduction of certification marking in which a great deal of interest is already being evinced by important sections of industry. It is also expected to call meetings of the International Committees on Shellac and Mica in India during the winter of 1949-50.

**1.2** The Honourable President, Dr. Syama Prasad Mookerjee, Minister for Industry and Supply, Government of India, in several speeches to the General Council and Executive Committee and also to other bodies outside the ISI, has repeatedly emphasized the importance of the work entrusted to the Institution, and said that he is fully convinced that the ISI can do a great deal through co-operative effort to raise the standard of production in the country. He has pointed out that at some stage the Institution may be called upon to organize an enforcement branch as is being done, for example, in Canada in respect of electrical appliances. This will require not only greater co-operation from industry but also some legislative support and sanction. He has also expressed the hope that, in view of its fully representative character, it will be possible for the Institution before long to recommend to the Government legislation to ensure production of goods complying with Indian standards.

**1.3** The Honourable President paid a visit to the ISI Headquarters on 8 January 1949, when it was still located at 'P' Block, New Delhi. He was shown the organization of the various Divisions and Sections of the office and was also apprised of the progress of work on the large number of subjects under consideration for standardization. The keen interest in the details of the ISI work which he evinced was a source of encouragement to members of the staff.

### 2. DIRECTORATE

**2.1 Location** — In view of the difficulty in getting adequate accommodation from the Government of India, the question of location of the directorate of the ISI received a good deal of attention from the Executive Committee throughout the year. Attempts were made to persuade the Government of India to consider



accommodating the Institution in Bombay or Calcutta. Both the governments of Bombay and West Bengal were also approached. Due partly to the situation created by the recent migration of populations and partly to other factors, no tangible results could, however, be obtained.

The Institution had an offer at one time for the purchase of a suitable property in Delhi Civil Lines at the cost of Rs 3,00,000. But the EC decided against it for several reasons. It has now been finally decided to make an attempt to have the office and residential accommodation built either in Delhi, Bombay, Calcutta or Poona by some entrepreneur on the understanding that it will be taken on rent for an agreed period by the Institution, with the option to continue tenancy if desired.

This will take at least a year or perhaps more to mature, if at all. In the meantime, the Government of India has given the Institution office accommodation in Block 11, Old Secretariat, Civil Lines, Delhi, of about 3500 sq ft, against its immediate need of 4500 sq ft, on the understanding that no additional staff will be recruited or additional activity started which may lead to the demand for additional space. The headquarters was shifted from 'P' Block, New Delhi, to the new location on 22 January 1949. As a result of careful planning and systematic utilization of corridors, etc., the available floor area has been utilized to meet the barest needs of the Institution directorate for the present.

The Government has also been helpful in affording the permanent staff of the ISI the privilege to draw on the central pool of residential accommodation. While this has proved a useful privilege in case of some members of the staff, many of them are not in a position to derive immediate benefit from it, because of the long waiting list.

**2.2 Staff**—Dr. K. L. Moudgill, Deputy Director (Chemicals), took charge of the Chemical Division Council on 2 September 1948.

Dr. K. S. Rangappa, Secretary (Publications), joined the Institution on 16 June 1948.

Mr. B. L. Bhatia took charge of the office of Secretary (Administration) on 1 September 1948 vice Mr. S. K. Biswas.

Mr. K. Vyasulu, Technical Officer, joined the Institution on 19 December 1948.

Mr. S. K. Sen, Technical Officer, joined the Institution on 17 January 1949.

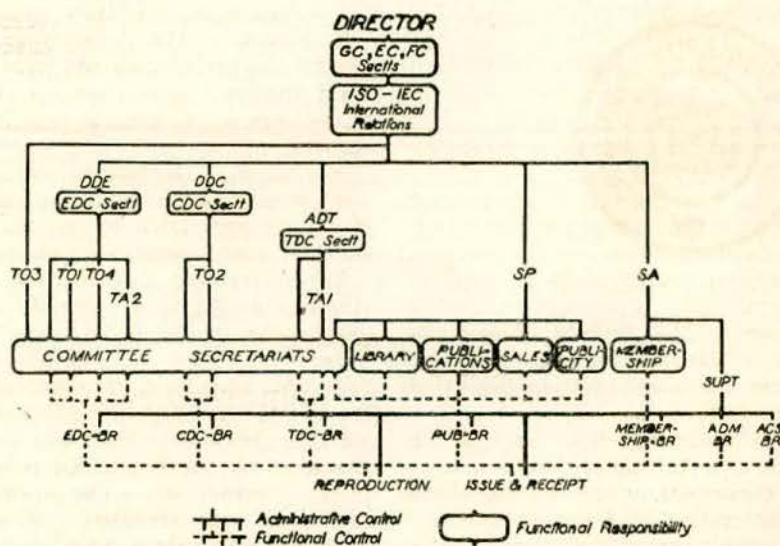
On 31 March 1949, the staff position of the ISI was as given in Table I.

**TABLE I—STAFF POSITION ON  
31 MARCH 1949**

| DESIGNATION          | SANCTIONED | RECRUITED |
|----------------------|------------|-----------|
| Director             | 1          | 1         |
| Deputy Director      | 2          | 2         |
| Assistant Director   | 3          | 1         |
| Secretary            | 2          | 2         |
| Technical Officer    | 4          | 3         |
| Technical Assistant  | 2          | 1         |
| Superintendent       | 1          | 1         |
| Librarian            | 1          | 1         |
| Clerical Staff       | 34         | 26        |
| Others (peons, etc.) | 22         | 15        |

**2.3 Organization**—The organization at the Directorate is gradually tending towards a definite pattern of its own suited to the peculiar needs of the Institution. In respect of establishment, accounts and several other matters, the Institution is unavoidably tied up with Government procedures while its dealings with a large body of industrialists and other interests require that the exacting and time-absorbing practices of Government offices be eliminated. The pattern which is now developing aims at meeting both these somewhat conflicting requirements.

In Fig 1 is given a chart to indicate diagrammatically how this is attempted to be accomplished. It will be seen that the responsibility for the Secre-



**FIG 1 — ORGANIZATION CHART.**



tariats of Councils and Committees is distributed among officers, both in senior and junior cadres including technical assistants. The senior officers, besides dealing with Secretariats of Division Councils and a certain number of committees, supervise the work of their junior officers in respect of remaining committees. This procedure expedites the disposal of business and at the same time furnishes opportunities for junior officers to be trained up to carry increasing responsibility.

Furthermore, it will be noted that administrative control is distinguished from functional control. This makes possible expeditious disposal of business without all papers having to be handled through the so-called proper channels. The separation of administrative and functional control presupposes the existence of mutual understanding and co-operative spirit among the members of the staff and a general atmosphere of give-and-take aimed at the ultimate well-being of the organization as a whole. It can be said that the present members of the staff are all working in close harmony and everyone is encouraged to develop a feeling of devotion to the Institution. The Director has received few criticisms or complaints, but a large number of unsolicited compliments, both verbal and in writing, concerning the efficiency with which the directorate works have been received. He is particularly grateful for constructive criticism as it enables improvements to be effected.

### 3. GENERAL COUNCIL

Two meetings of the General Council (GC) were held on 19 September 1948 and 24 March 1949. Both of these meetings were presided over by the Honourable President, Dr. Syama Prasad Mookerjee. Among other decisions taken by the GC were the following:

1) *Seal of the ISI* — Design for the ISI seal to be affixed to instruments executed under the authority of the GC was approved, the specimen of which is reproduced in Fig 2.



FIG 2 — SEAL OF THE ISI.

2) *Annual Report* — The Annual Report for the period ending 31 March 1948 was approved. It was subsequently published and supplied to all members of the Institution.

3) *Election of Vice-Presidents* — Dr. K. S. Krishnan and Dr. J. C. Ghosh were elected as the two Vice-Presidents of the ISI by postal ballot for the year ending 31 March 1949.

Subsequently a convention was adopted that, hereafter, election of the two Vice-Presidents should be made from among non-official members only.

Dr. K. S. Krishnan and Dr. L. C. Jariwala were elected as the two Vice-Presidents for the year 1949-50.

4) *Election of GC Representatives* — Mr. M. P. Pai was elected by postal ballot as the GC representative on the Finance Committee (FC).

Subsequently it was decided that election of representatives of the GC on the EC and FC should be conducted at a meeting of the GC; in case of casual vacancies, nominations should be called for from the GC for election by postal ballot.

Nawab Zain Yar Jung Bahadur was elected as the representative of the GC on the FC vice Mr. M. P. Kanga, Director of Industries, Bombay.

5) *Representation of States on the GC* — In view of the constitutional changes taking place in the country, the EC's proposal to defer for the time being the election of states' representatives on the GC was accepted.

6) *Indian Standards* — Eight Indian standards were approved during the year.

7) *Approval and Adoption of Draft Indian Standards* — Proposals made by the EC to simplify procedure for passing the draft standards through various stages which, when strictly adhered to, involves a great deal of expenditure, routine office work and delay in publication of standards, were considered and they were accepted as follows:

a) After a Sectional Committee has prepared a draft, its circulation under para 27(e) of Rules and Regulations may include circulation to members of the Division Council concerned.

b) When the Sectional Committee has finalized the draft according to para 27 (f) of Rules and Regulations, it need not be circulated again to all members of the Division Council, but its chairman may be authorized to endorse it in his discretion, on behalf of the Division Council.

c) Similarly, the Chairman of the Executive Committee may be authorized to approve, in his discretion on behalf of the Executive Committee, the draft so endorsed.

8) *Editing* — The decision of the EC, that in general the Director should have the power to edit draft standards up to the stage of publication so as to conform to the general practice of the ISI, was ratified.

9) *Budget* — The budget estimates for the year 1949-50 along with the revised estimates for 1948-49, as recommended by the FC and approved by the EC, were sanctioned (see APPENDIX 16.7).

10) *Government Textile Control Scheme* — The Honourable President desired that the ISI should participate in the Government Textile Control Scheme so far as the standard of quality of textiles was concerned, thus obviating the necessity for setting up a separate governmental machinery for the purpose. This has subsequently been taken up by the Textile Division Council.

11) *Nominations* — The procedure for the nomination of representatives of industries on the Division Councils was considered and it was decided that whenever nominations of firms were called for, the firms should be requested to furnish,



wherever possible, the names, designations and qualifications of those persons whom they could depute as their representatives. It was further agreed that all such nominations should be scrutinized in the first instance by the EC and thereafter they should be submitted for the consideration of the GC, along with recommendations of the EC.

12) *Delegation of Power* — The GC delegated to the EC powers to make appointments, etc., in the ISI.

13) The GC adopted the following rules and amendments as proposed by the EC with slight modifications :

- a) Bye-laws of the ISI
- b) ISI Employees Classification, Control and Appeal Rules
- c) Amendments to Rules and Regulations of the ISI as given in Appendix 16.1

#### 4. EXECUTIVE COMMITTEE

The Executive Committee met five times during the year on 24 May, 31 August, 29 September 1948; 11 January and 23 March 1949. The following important decisions of interest among others were taken :

1) *Bye-laws and ISI Employees Classification and Appeal Rules* — The rules prepared by the subcommittee were considered and finalized for submission to the GC for approval.

2) *Contributory Provident Fund, Medical Benefits and PTO Concession Rules* — These rules prepared by the subcommittee were approved and made applicable to the staff of the ISI.

3) *Election of Chairman* — Dr. K. S. Krishnan, one of the two Vice-Presidents, was elected as the Chairman of the EC for the year ending 31 March 1949; he was re-elected on 24 March 1949 to continue his office for another year.

4) *Budget* — Proposals for 1949-50 and revised estimates for 1948-49 were passed for submission to the GC.

5) *Pakistan Jute Industry* — Proposal to invite representatives of jute industry in Pakistan to serve on the ISI Jute Sectional Committee was accepted.

6) *Indian Standards* — Eight draft Indian standards of the ISI were approved.

7) *Rules and Regulations* — Proposals for alterations to the Rules and Regulations of the ISI were formulated for approval of the GC.

#### 5. FINANCE COMMITTEE

The Finance Committee (FC) held two meetings during the period under review on 30 August 1948 and 10 January 1949. In these meetings all aspects of financial matters were dealt with.

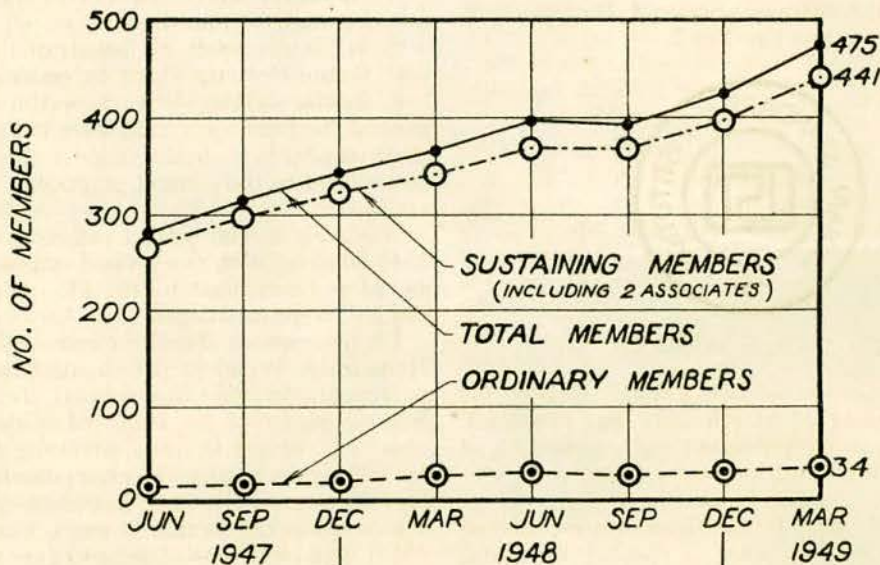
#### 6. MEMBERSHIP

The upward trend in membership at the average rate of about 10 new members enrolling per month continued during the year. The EC admitted 106 Sustaining, 2 Sustaining (Associates) and 11 Ordinary members. On 31 March 1949, the membership stood as follows :

|                            |     |
|----------------------------|-----|
| Sustaining ..              | 439 |
| Sustaining (Associates) .. | 2   |
| Ordinary ..                | 34  |

The graph in Fig 3 shows the growth in the subscribing membership.

During the year under review, under directives of the EC, a drive among associations of trades and industries and chambers of commerce for enrolling members was launched. More than 1600 parties were approached, of whom 100 responded by becoming members of the Institution. Associations of trade and industries were also requested to have their constituents enrolled as



DATA BY QUARTERS ENDING IN MONTHS SHOWN

FIG 3 — GROWTH OF MEMBERSHIP.



members of the ISI, and some of them have complied. The campaign is being continued.

In order to enrol small-scale industries which are unable to pay Rs 250/- per year, a special class of membership known as Sustaining Members (Associates), annual subscription for which is Rs 100/-, was introduced in the constitution of the ISI, but so far very few members have taken advantage of this provision.

The Honourable President and the Director of the ISI made an approach to provincial and state premiers and governments to increase their membership subscriptions. Response so far received is encouraging.

It is gratifying to record that the Hyderabad State Government has decided to make an *ad hoc* contribution of Rs 10,000/- for 1949 to the ISI funds.

## 7. DIVISION COUNCILS

### 7.1 Creation of New Divisions

**7.1.1 Chemical Division Council**—As reported in last year's report, the EC in its meeting on 15 October 1947 had approved of the formation of the Chemical Division Council. It took some time, however, before nominations from all constituencies could be finalized. The newly formed CDC held its first meeting on 30 September 1948 (see 7.2.3).

**7.1.2 Building Division Council**—Though a definite demand for this Division Council has existed for some time, due to lack of funds and insufficient accommodation, it has been decided to defer its formation for the present. Certain subjects which would normally come under the purview of this Division Council but which are considered urgent from point of view of industrial development, have been assigned for the time being to the Engineering Division Council.

**7.1.3 Agricultural and Food Products Division Council**—For similar reasons, the Agricultural and Food Products Division Council is not expected to be formed in the immediate future. The EC decided to dissolve the *ad hoc* Standing Committee set up earlier to deal with the work of Technical Division ISO/TC 34 Agricultural Products.

Instead of proceeding with the creation of an ISO Division on Agricultural Products, the ISO Council at its last meeting, at India's suggestion, decided that ISO member bodies interested in particular subjects might propose the creation of technical committees to deal with those subjects and that all member bodies might send in to the ISO General Secretariat national standards and regulations, etc., concerning agricultural products.

Accordingly, the possibility of proposing the formation of ISO Committees on Condiments and Spices, and Oleaginous Seeds and Products, in which India is vitally interested, is being investigated with the assistance of the Directorate of Marketing and Inspection of the Government of India.

### 7.2 Meetings of Existing Division Councils and Their Standing Working Committees

**7.2.1 Engineering Division Council (EDC)**—The Standing Working Committee of the EDC

(SWCE) held its second meeting on 14 April 1948. Following were the main features of the business transacted:

1) Progress of the various sectional committees was reviewed and certain directives for the guidance of sectional committees were issued.

2) Nominations of Chairmen and Members of Sectional Committees which were pending were finalized.

3) A proposal from the Central Standards Office for Railways for the standardization of certain additional items were considered and accepted.

The SWCE held its third meeting on 28 August 1948. Besides reviewing the general activities of the Sectional Committees, the SWCE took the following decisions:

1) A Sectional Committee on Manganese Ore was decided to be formed under the chairmanship of a representative of the Geological Survey of India, Calcutta.

2) The Committee decided to transfer administrative responsibilities for the following four Sectional Committees to the Chemical Division Council:

- a) Lubricants (EDC 10)
- b) Belting and Rubber Products (EDC 14)
- c) Bitumen and Tar Products (EDC 22)
- d) Paints and Allied Products (EDC 23)

The EDC, however, retains joint responsibility with the CDC for endorsement of standards in respect of the drafts prepared by the Lubricants, the Belting and Rubber Products and the Bitumen and Tar Products Sectional Committees.

3) The Committee accepted the proposal for standardizing certain additional items.

**7.2.2 Textile Division Council (TDC)**—The Textile Division Council was reconstituted according to the amended Rules and Regulations of the Institution and held its second meeting on 1 October 1948 in New Delhi. Among various decisions taken, some of the important ones are as follows:

1) Mr. Surottam P. M. Hutheesing and Mr. S. D. Oke were renominated to represent the TDC on the General Council for the periods 1 April 1948 to 31 March 1951 and 1 April 1949 to 31 March 1952 respectively.

2) A ruling was issued regarding appointment on the Sectional Committees of technical experts irrespective of nationality and nature of interest.

3) The following organizations were co-opted to TDC to represent silk and woollen carpet industries respectively:

- a) The Central Silk Board, New Delhi
- b) The Oriental Carpet Manufacturers (India) Ltd., Amritsar

4) It was decided that the Chairman would approach all cotton millowners' associations in India for provisions of necessary funds to meet the expenditure for the two full-time Secretaries for the Sectional Committees for Cotton Yarn and Cloth and for Textile Chemistry.

5) A vote of thanks to the Indian Jute Mills' Association for the grant of Rs 10,000/- for appointing a whole-time Secretary for the Jute Sectional Committee was unanimously passed.



- 6) The following new Committees were formed :
  - a) Standing Working Committee of the TDC (SWCT)
  - b) Textile Building Code Sectional Committee (TDC 7)
  - c) Indian National Flag Sectional Committee (TDC 8)

**7.2.2.1 The Standing Working Committee of TDC (SWCT)**—The SWCT held its first meeting on 28 February 1949 in New Delhi. Among the decisions taken, the following may be mentioned :

- 1) The personnel on the Textile Building Code Sectional Committee was finalized.

- 2) A Sectional Committee was set up on Coir and Coir Products.

- 3) The standardization of the following items was postponed :

- a) Silk
- b) Garments and household textiles
- c) Textile machinery

- 4) A recommendation for providing a statutory representation on the TDC for the Central Silk Board was adopted for submission to the GC for approval.

- 5) It was agreed that preparation of Seaworthy Packaging Code for Cotton and Wollen Textiles should be taken up.

**7.2.3 Chemical Division Council (CDC)**—The Chemical Division Council (CDC) held its first meeting on 30 September 1948 in New Delhi. Among the various decisions taken in that meeting, some of the important ones are :

- 1) Dr. H. L. Roy, Professor of Chemical Engineering, Jadavpur College of Engineering and Technology, Bengal, was elected the Chairman of the Division and Dr. S. Krishna, Director, Forest Research Institute and College, Dehra Dun, was elected Vice-Chairman.

- 2) In line with the practice of other Division Councils, a Standing Working Committee of CDC (SWCC) was formed to deal with routine business.

- 3) The CDC agreed to accept administrative responsibility in respect of the undermentioned Sectional Committees which were transferred from the EDC without any change in their personnel :

- a) Lubricants (CDC 5)
- b) Belting and Rubber Products (CDC 6)
- c) Bitumen and Tar Products (CDC 7)
- d) Paints and Allied Products (CDC 8)

- 4) The CDC decided to accept the administrative responsibility of the ISO Secretariat Committee for Shellac (CDC 9) which had originally been set up by the EC to carry out, *inter alia*, the function of the International Secretariat of ISO/TC 50 Shellac assigned to India. No change in the personnel was made.

- 5) Formation of the following additional Sectional Committees was agreed to :

- a) Chemical Standards (CDC 1)
- b) Heavy Chemicals (Organic) (CDC 2)
- c) Heavy Chemicals (Inorganic) (CDC 3)
- d) Fine Chemicals (Organic and Inorganic) (CDC 4)
- e) Laboratory Glassware (the title was subsequently changed to Glassware) (CDC 10)
- f) Essential Oils (CDC 11)
- g) Oils, Fats and Soaps (CDC 12)
- h) Inks (Writing) (CDC 13)
- j) Solid Mineral Fuels (Coal, Coke, etc.) (CDC 14)

**7.2.3.1 Standing Working Committee of the CDC (SWCC)**—The SWCC held its first (emergent) meeting on 30 September 1948. The main item on the agenda was the consideration of proposals for standardization put forward by members of the GC, the CDC, Sustaining and Ordinary Mem-

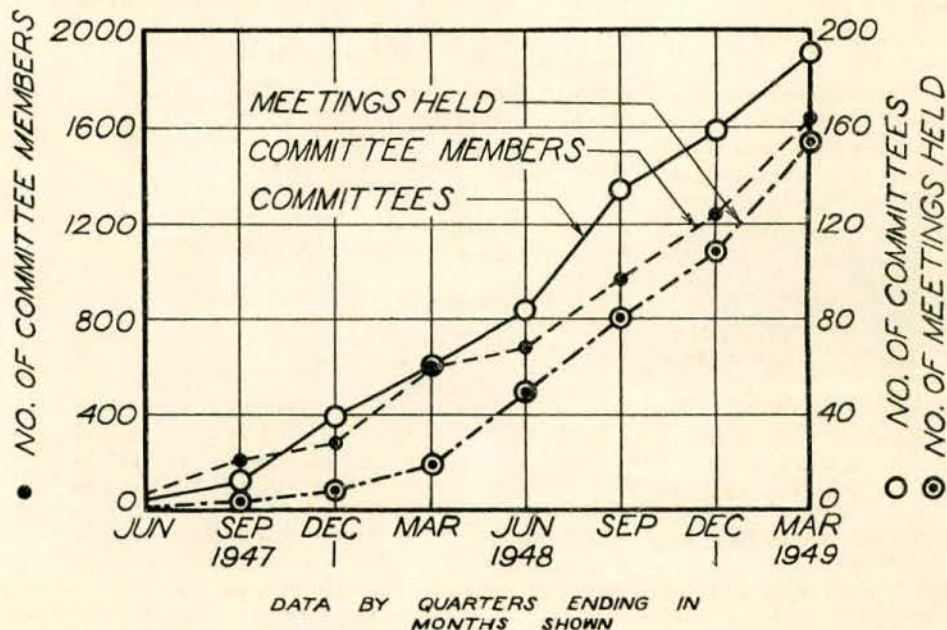


FIG 4 — GROWTH OF ACTIVITIES OF COMMITTEES.



bers and others and the allocation of approved subjects to the Sectional Committees.

The SWCC met for the second time on 12 January 1949 and appointed the personnel of the various sectional committees decided earlier to be set up by the CDC.

**7.3 Meetings of Committees and Subcommittees** — During the year under review ISI Committees and

Subcommittees held 125 meetings which are summarized in Table II together with information regarding previous meetings. In Fig 4 are presented graphs indicating the general growth of activities of the ISI Councils, Committees, Subcommittees, etc., data being given by quarters of the year for numbers of committees, committee members and meetings held.

**TABLE II — SECTIONAL COMMITTEES & SUBCOMMITTEES OF THE ISI UNDER THE EC, EDC, TDC & CDC : THEIR CHAIRMEN & MEETINGS**

| COMMITTEES  | CHAIRMEN OR CONVENERS   | MEETING DATES                    |                     |         |
|---|-------------------------|----------------------------------|---------------------|---------|
|   |                         | First                            | Second              | Third   |
| <b>Executive Committee</b>                            |                         |                                  |                     |         |
| EC 1 Agricultural Products                            | Lala Shri Ram           | 17.12.47                         | (dissolved 11.1.49) |         |
| EC 2 Documentation                                    | Dr. S. R. Ranganathan   | 12.4.48                          | 3.6.48              | 27.2.49 |
| EC 2 : 1 Paragraph Numbering                          | do                      |                                  |                     |         |
| EC 2 : 2 Documentary Reproduction                     | Mr. K. K. Guha Roy      | 25.4.48                          | ...                 | ...     |
| EC 2 : 3 Layout of Periodicals                        | Dr. S. R. Ranganathan   | 26.4.48                          | ...                 | ...     |
| EC 2 : 4 U.D.C. Numbers                               | do                      | ...                              | ...                 | ...     |
| EC 2 : 5 Abbreviations for Titles of Periodicals      | Mr. B. N. Sastry        | ...                              | ...                 | ...     |
| EC 3 Quality Control                                  | Prof. P. C. Mahalanobis | 5.2.48                           | ...                 | ...     |
| EC 3 : 1 Quality Control and Sampling Inspection      | Prof. U. S. Nair        | ...                              | ...                 | ...     |
| EC 3 : 2 Training of Personnel                        | Prof. S. N. Roy         | Completed work by correspondence |                     |         |
| EC 4 Weights & Measures                               | Dr. J. C. Ghosh         | 17.3.49                          |                     |         |
| EC 5 Style Manual                                     | Dr. Lal C. Verman       | ...                              | ...                 | ...     |
| EC 6 Export Goods                                     | Dr. T. G. Shirname      | ...                              | ...                 | ...     |
| <b>Engineering Division Council</b>                   |                         |                                  |                     |         |
| EDC 1 Engineering Standards                           | Dr. K. S. Krishnan      | 20.12.48                         | ...                 | ...     |
| EDC 1 : 1 Standard Atmospheric Conditions for Testing | do                      | ...                              | ...                 | ...     |
| EDC 2 Cement and Concrete                             | Mr. E. A. Nadirshah     | 2.7.48                           | 15.11.48            | ...     |
| EDC 2 : 1 Portland Cement                             | Mr. E. P. Nicolaides    | 3.7.48                           | ...                 | ...     |
| EDC 2 : 2 Concrete                                    | Mr. S. B. Joshi         | 15.11.48                         | ...                 | ...     |
| EDC 3 Basic Ferrous Metals                            | Mr. J. S. Vatchagandhy  | 26.7.48                          | ...                 | ...     |
| EDC 3 : 1 Sampling Methods                            | Dr. A. V. Sukhatme      | ...                              | ...                 | ...     |
| EDC 3 : 2 Methods of Chemical Analysis                | Dr. J. C. Ghosh         | ...                              | ...                 | ...     |
| EDC 3 : 3 Methods for Physical Tests                  | Mr. P. Hinde            | ...                              | ...                 | ...     |
| EDC 3 : 4 Pig Iron ( Charcoal & Coke )                | Mr. D. K. Coutts        | ...                              | ...                 | ...     |
| EDC 3 : 5 Rolled Steel Products                       | Dr. D. R. Dhanbhoora    | 11.2.49                          | ...                 | ...     |
| EDC 3 : 6 Iron Castings & Malleable Castings          | Mr. N. N. Rakshit       | 27.10.48                         | ...                 | ...     |
| EDC 3 : 7 Steel Castings                              | Mr. I. N. Gandhi        | ...                              | ...                 | ...     |
| EDC 3 : 8 Galvanized Steel Sheet                      | Mr. H. N. Coomar        | ...                              | ...                 | ...     |
| EDC 3 : 9 Steel Wire, black & galvanized              | Mr. S. C. Lahiri        | ...                              | ...                 | ...     |
| EDC 4 Basic Non-ferrous Metals                        | Mr. N. P. Gandhi        | 28.6.48                          | 31.3.49             | ...     |
| EDC 4 : 1 Aluminium & its alloys                      | do                      | 28.6.48                          | 24.1.49             | 30.3.49 |
| EDC 4 : 2 Copper & its alloys                         | do                      | 28-29.6.48                       | 30.3.49             | ...     |
| EDC 4 : 3 Lead, Zinc, Tin, Antimony & their alloys    | do                      | 28-29.6.48                       | 30.3.49             | ...     |
| EDC 4 : 4 Cooking Utensils made from aeroscrap        | do                      | 30.3.49                          | ...                 | ...     |
| EDC 5 Electrical Conductors & Insulators              | Mr. J. N. Goswami       | 19.1.49                          | ...                 | ...     |
| EDC 5 : 1 Bare Conductors                             | do                      | ...                              | ...                 | ...     |



TABLE II — contd.

| COMMITTEES  | CHAIRMEN OR CONVENERS  | MEETING DATES |                      |          |
|---|------------------------|---------------|----------------------|----------|
|   |                        | First         | Second               | Third    |
| <b>Engineering Division Council — contd.</b>                      |                        |               |                      |          |
| EDC 5 : 2 Instruments & Machine Winding Wires                     | Mr. T. S. Sitapati     | ...           | ...                  | ...      |
| EDC 5 : 3 Insulated Cables  | Mr. D. J. F. McIntosh  | ...           | ...                  | ...      |
| EDC 5 : 4 Insulators  | Mr. I. K. Gupta        | ...           | ...                  | ...      |
| EDC 6 Electrical Plant & Switchgear                               | Mr. F. Wade-Cooper     | 28.3.49       |                      |          |
| EDC 6 : 1 Standard Frequency & Voltages                           | Mr. R. P. Patel        |               |                      |          |
| EDC 6 : 2 Marking & Arrangement for Switchgear, etc.              | Mr. K. B. Patel        | ...           | ...                  | ...      |
| EDC 6 : 3 Industrial Motors                                       | ...                    | ...           | ...                  | ...      |
| EDC 6 : 4 Fractional Horse Power Motors                           | ...                    | ...           | ...                  | ...      |
| EDC 6 : 5 Transformers for Power & Lighting                       | ...                    | ...           | ...                  | ...      |
| EDC 6 : 6 Electric Fans   | ...                    | ...           | ...                  | ...      |
| EDC 6 : 7 Tropic Proofing   | ...                    | ...           | ...                  | ...      |
| EDC 8 Electrical Accessories & Batteries                          | Mr. M. B. Sarwate      | 22.12.48      | ...                  | ...      |
| EDC 8 : 1 Primary Cells   | Mr. G. D. Joglekar     | ...           | ...                  | ...      |
| EDC 8 : 2 Secondary Cells   | do                     | ...           | ...                  | ...      |
| EDC 8 : 3 Domestic Electrical Appliances                          | ...                    | ...           | ...                  | ...      |
| EDC 8 : 4 Plastic Electrical Accessories                          | Mr. G. N. Bhattacharya | ...           | ...                  | ...      |
| EDC 8 : 5 Fuses   | Dr. N. V. Raghunath    | ...           | ...                  | ...      |
| EDC 9 Timber Products   | Dr. S. N. Kapur        | 6-7.7.48      | 7-8.1.49             | ...      |
| EDC 9 : 1 Timber  | do                     | 7.7.48        | 5-6.1.49             | ...      |
| EDC 9 : 2 Plywood   | Lt.-Col. J. B. Howell  | 7.7.48        | ...                  | ...      |
| EDC 9 : 3 Treatment   | Dr. D. Narayanamurti   | 30.9.48       | ...                  | ...      |
| EDC 11 Machine Tools & Small Tools                                | Mr. S. L. Kirloskar    | 18.11.48      | ...                  | ...      |
| EDC 11 : 1 Machine Tool Elements & Materials                      | Mr. Stanley Wagget     | ...           | ...                  | ...      |
| EDC 11 : 2 Expectation of Accurate Performance of Machine Tools   | Mr. K. I. N. Iyengar   | ...           | ...                  | ...      |
| EDC 11 : 3 Small Cutting Tools                                    | Mr. R. N. Gandhi       | 15.12.48      | ...                  | ...      |
| EDC 11 : 4 Safety Codes   | Col. R. C. Paranjoti   | ...           | ...                  | ...      |
| EDC 12 Hand Tools   | Mr. A. B. Banerji      | ...           | ...                  | ...      |
| EDC 13 Abrasives  | Mr. S. L. Kirloskar    | 22.3.49       | ...                  | ...      |
| EDC 13 : 1 Grinding Wheels  | Mr. S. S. Iyengar      | ...           | ...                  | ...      |
| EDC 13 : 2 Coated Abrasives                                       | Mr. K. I. N. Iyengar   | ...           | ...                  | ...      |
| EDC 15 Engineering Hardware                                       | Mr. Yousuf Mowjee      | 16.12.48      | ...                  | ...      |
| EDC 15 : 1 Bolts, Door & Tower                                    | Mr. Ajeyendu Paul      | ...           | ...                  | ...      |
| EDC 15 : 2 Hinges   | Mr. Yousuf Mowjee      | ...           | ...                  | ...      |
| EDC 15 : 3 Locks & Padlocks                                       | Mr. P. G. Vidwans      | ...           | ...                  | ...      |
| EDC 15 : 4 Miscellaneous Hardware items                           | ...                    | ...           | ...                  | ...      |
| EDC 16 Gas Cylinders  | Mr. A. K. Sen          | 9.11.48       | ...                  | ...      |
| EDC 17 Refractories   | Dr. H. K. Mitra        | 21-22.4.48    | 22-23.7.48           | 28.10.48 |
|   |                        |               | (Fourth on 7-8.3.49) |          |
| EDC 17 : 1 Sampling   | Mr. T. W. Talwalkar    | ...           | ...                  | ...      |
| EDC 17 : 2 Refractories for Cement Manufacturing Industry         | Mr. W. K. Dixon        | 4.2.49        | ...                  | ...      |
| EDC 17 : 3 Refractories for Railways                              | Mr. J. Buchanan        | 7.1.49        | ...                  | ...      |
| EDC 17 : 4 Refractories for the Navy                              | Dr. H. K. Mitra        | 22.4.48       | ...                  | ...      |
| EDC 17 : 5 Refractories for the Basic Non-ferrous Metals Industry | Mr. R. Sneddon         | ...           | ...                  | ...      |
| EDC 18 Refrigeration  | Mr. M. L. Khanna       | 1.3.49        | ...                  | ...      |
| EDC 18 : 1 Safety Code in Refrigeration Plant                     | Mr. E. Bertsch         | ...           | ...                  | ...      |



TABLE II — contd.

| COMMITTEES  | CHAIRMEN OR CONVENERS                                     | MEETING DATES         |                                |          |
|---|---|-----------------------|--------------------------------|----------|
|   |   | First                 | Second                         | Third    |
| <b>Engineering Division Council — contd.</b>  |   |                       |                                |          |
| EDC 18 : 2 Packaging Code for Perishable Foodstuffs   | Agricultural Marketing Adviser to the Government of India | ...                   | ...                            | ...      |
| EDC 18 : 3 Terms of Reference Subcommittee  | Representative, Air-Conditioning Corporation Ltd.         | ...                   | ...                            | ...      |
| EDC 19 Radio Equipment  | Mr. B. V. Baliga  | 25.6.48               | 8.10.48                        | ...      |
| EDC 19 : 1 Capacitors & Resistors   | Mr. T. V. Ramamurty                                       | 18.8.48               | 27.12.48<br>(Fourth on 7.1.49) | 31.12.48 |
| EDC 19 : 2 Radio Receivers Audio Equipment & Accoustical                                      | Mr. P. Van Wijk   | ...                   | ...                            | ...      |
| EDC 19 : 3 Radio Insulators, Crystal for Transmitters & Crystal holders & miscellaneous parts | Prof. K. Srinivasan                                       | ...                   | ...                            | ...      |
| EDC 19 : 4 Transformers & Chokes  | Lt.-Col. H. O. Bates                                      | 1.10.48               | 6.12.48                        | ...      |
| EDC 19 : 5 Testing Facilities   | Mr. S. R. Kantebet  | 7.10.48               | ...                            | ...      |
| EDC 19 : 6 Nomenclature   | Mr. H. J. Mulleneux                                       | ...                   | ...                            | ...      |
| EDC 19 : 7 Tropic Proofing  | Dr. M. B. Sarwate   | ...                   | ...                            | ...      |
| EDC 20 Drawings   | Mr. N. R. Jurarkar  | 13.9.48               | ...                            | ...      |
| EDC 20 : 1 Drawings   | Mr. K. S. Raghavachary                                    | 13.9.48               | ...                            | ...      |
| EDC 21 Mica   | Mr. Chandmull Rajgarhia                                   | 7-10.9.48             | 10-11.3.49                     | ...      |
| EDC 21 : 1 Mica   | do  | ...                   | ...                            | ...      |
| EDC 24 Manganese Ore  | Dr. W. D. West  | ...                   | ...                            | ...      |
| <b>Textile Division Council</b>   |   |                       |                                |          |
| TDC 1 Textile Standards   | Lt.-Col. J. H. Tayler                                     | 3.3.48                | 19.5.48                        | ...      |
| TDC 1 : 1 Cotton  | Mr. D. L. Sen   | 5.7.48                | 15.7.48                        | 28.7.48  |
| TDC 1 : 2 Wool  | Mr. H. B. Shroff  | 11.6.48               | 11.1.49                        | 3.3.49   |
| TDC 1 : 3 Jute  | Dr. W. G. Macmillan                                       | 18.6.48               | 8.3.49                         | ...      |
| TDC 1 : 4 Silk  | ...   | ...                   | ...                            | ...      |
| TDC 2 Cotton Yarn & Cloth   | Mr. Bharat Ram  | 15.12.47              | 22.10.48                       | ...      |
| TDC 2 : 1 Cotton Yarn & Cloth   | Mr. C. J. Soneji  | 15.11.48 &<br>6.12.48 | ...                            | ...      |
| TDC 2 : 2 Cloth, Tapes & Ropes  | ...   | ...                   | ...                            | ...      |
| TDC 3 Jute  | Mr. J. R. Walker  | 5.4.48                | 8.9.48                         | ...      |
| TDC 3 : 1 Katcha Bales  | Mr. J. N. Smart   | 7.7.48                | 18.1.49                        | ...      |
| TDC 3 : 2 Pucca Bales   | Mr. J. C. Niven   | 9.2.49                | ...                            | ...      |
| TDC 3 : 3 Manufactures  | Mr. J. R. Walker  | 1.9.48                | ...                            | ...      |
| TDC 3 : 4 Bales, Truses, etc.   | Mr. J. A. Murray  | ...                   | ...                            | ...      |
| TDC 4 Wool  | Mr. A. A. Statter   | 1.3.48                | ...                            | ...      |
| TDC 4 : 1 Raw Wool  | Mr. A. K. Wattal  | 24.9.48               | ...                            | ...      |
| TDC 4 : 2 Finished Products   | Mr. A. A. Statter   | ...                   | ...                            | ...      |
| TDC 5 Textile Chemistry   | Dr. T. S. Subramanian                                     | 12.1.48               | 22.5.48                        | 18.12.48 |
| TDC 5 : 1 Analysis of Fibres & Fabrics  | Dr. W. G. Macmillan                                       | 20.5.48               | ...                            | ...      |
| TDC 5 : 2 Undyed Cotton Materials   | Dr. G. M. Nabar   | 10.4.48               | ...                            | ...      |
| TDC 5 : 3 Fastness  | Dr. F. S. Tomlinson                                       | 6.4.48                | ...                            | ...      |
| TDC 5 : 4 Proofed Fabrics   | Dr. T. S. Subramanian                                     | 1.4.48                | ...                            | ...      |
| TDC 5 : 5 Shrinkage   | Dr. C. E. Salkeld   | 7.4.48                | 19.2.49                        | ...      |
| TDC 5 : 6 : 1 Inorganic Chemicals   | Dr. A. Nagaraja Rao                                       | 31.8.48               | (Transferred to CDC)           |          |
| TDC 5 : 6 : 2 Auxiliary Agents  | Dr. D. R. Nanji   | 21.12.48              | 15.2.49                        | ...      |
| TDC 5 : 7 Water   | Dr. S. M. Kaji  | 15.5.48               | 22.11.48                       | ...      |
| TDC 5 : 8 Desizing Agents   | Dr. S. R. Ramachandran                                    | 15.9.48               | ...                            | ...      |
| TDC 6 Textile Stores  | Mr. Narottam P. Hutheesing                                | 2.3.48                | ...                            | ...      |
| TDC 6 : 1 Wooden Articles (Jute)  | Mr. T. W. Scroggie  | 12.4.48               | 10.8.48<br>(Fourth on 18.3.49) | 15.11.48 |
| TDC 6 : 2 Wooden Articles (Cotton, Wool & Silk)   | Mr. Narottam P. Hutheesing                                | 22.11.48              | ...                            | ...      |
| TDC 6 : 3 Hide & Leather Articles   | Mr. D. C. Karaka  | 8.4.48                | 7.3.49                         | ...      |



TABLE II—*contd.*

| COMMITTEES  | CHAIRMEN OR CONVENERS  | MEETING DATES                        |         |       |
|---|--|--------------------------------------|---------|-------|
|   |  | First                                | Second  | Third |
| <b>Textile Division Council — <i>contd.</i></b>           |  |                                      |         |       |
| TDC 6 : 4 Textile Metal Articles                          | Mr. B. B. Joshi  | 21.2.49                              | ...     | ...   |
| TDC 7 Textile Building Code                               | Mr. Bharat Ram   | ...                                  | ...     | ...   |
| TDC 8 National Flag of India                              | do   | 28.1.49                              | ...     | ...   |
| TDC 9 Coir & Coir Products                                | ...  | ...                                  | ...     | ...   |
| <b>Chemical Division Council</b>                          |  |                                      |         |       |
| CDC 1 Chemical Standards                                  | Dr. T. S. Subramanian  | ...                                  | ...     | ...   |
| CDC 2 Heavy Chemicals ( Organic )                         | Mr. M. B. Amin   | ...                                  | ...     | ...   |
| CDC 3 Heavy Chemicals ( Inorganic )                       | Dr. A. Nagaraja Rao  | 17.3.49                              | ...     | ...   |
| CDC 3 : 1 Acids   | Mr. M. L. Seth   | ...                                  | ...     | ...   |
| CDC 3 : 2 Fertilizers & Allied Products                   | Mr. M. C. Verghese   | ...                                  | ...     | ...   |
| CDC 3 : 3 Alkali & Allied Products                        | Mr. M. B. Bhagwat  | ...                                  | ...     | ...   |
| CDC 3 : 4 Salt & Marine Products                          | Dr. Mata Prasad  | ...                                  | ...     | ...   |
| CDC 3 : 5 Heavy Chemicals<br>( Sulphates )                | Mr. S. M. Machiraju  | ...                                  | ...     | ...   |
| CDC 3 : 6 Heavy Chemicals<br>( Miscellaneous )            | ...  | ...                                  | ...     | ...   |
| CDC 3 : 7 Industrial Gases                                | Dr. R. Venkateswaran   | ...                                  | ...     | ...   |
| CDC 4 Fine Chemicals ( Organic & Inorganic )              | Dr. J. N. Ray  | 18.3.49                              | ...     | ...   |
| CDC 4 : 1 Organic Acids                                   | Dr. K. A. Hamied   | ...                                  | ...     | ...   |
| CDC 4 : 2 Alcohols & Esters                               | Dr. B. D. Laroia   | ...                                  | ...     | ...   |
| CDC 4 : 3 Percompounds                                    | ...  | ...                                  | ...     | ...   |
| CDC 4 : 4 Chloroderivatives                               | Dr. J. N. Ray  | ...                                  | ...     | ...   |
| CDC 4 : 5 Inorganic Salts                                 | Dr. L. A. Bhatt  | ...                                  | ...     | ...   |
| CDC 5 Lubricants  | Mr. J. J. Bagchi   | 12.5.48                              | ...     | ...   |
| CDC 5 : 1 Standard Methods of Tests & Sampling            | do   | ...                                  | ...     | ...   |
| CDC 5 : 2 Castor Oil                                      | Dr. D. R. Dhingra  | 8.9.48                               | ...     | ...   |
| CDC 5 : 3 Defence Lubricants                              | Mr. J. J. Bagchi   | ...                                  | ...     | ...   |
| CDC 5 : 4 Gear Transmission & Axle Oil                    | Mr. B. S. Duegan   | ...                                  | ...     | ...   |
| CDC 5 : 5 Internal Combustion Engine Oils                 | Mr. S. N. Mukerjee   | ...                                  | ...     | ...   |
| CDC 5 : 6 Steam Cylinder Oils                             | Director ( or his representative ), Government Test House, Alipore, Calcutta | ...                                  | ...     | ...   |
| CDC 5 : 7 Greases & Graphited Lubricants                  | Mr. M. L. Khanna   | ...                                  | ...     | ...   |
| CDC 5 : 8 Anti-corrosives                                 | Mr. N. K. Chakravarti  | ...                                  | ...     | ...   |
| CDC 5 : 9 Special Products                                | ...  | ...                                  | ...     | ...   |
| CDC 5 : 10 Machinery & Spindle Oils                       | Mr. K. V. Gopalan  | ...                                  | ...     | ...   |
| CDC 5 : 11 Turbine, Transformer Crank Case & Switches Oil | Mr. A. W. Johnstone  | ...                                  | ...     | ...   |
| CDC 6 Belting & Rubber Products                           | Prof. S. K. Roy  | 1.12.48                              | ...     | ...   |
| CDC 6 : 1 Terms of Reference Subcommittee                 | Mr. B. C. Mallick  | ( Completed work by correspondence ) |         |       |
| CDC 6 : 2 Belting   | Prof. S. K. Roy  | ...                                  | ...     | ...   |
| CDC 6 : 3 Hoses   | Mr. S. C. De   | ...                                  | ...     | ...   |
| CDC 6 : 4 Rubber Products                                 | Dr. D. Bannerjee   | ...                                  | ...     | ...   |
| CDC 7 Bitumen & Tar Products                              | Mr. K. K. Nambiar  | 17.4.48                              | ...     | ...   |
| CDC 7 : 1 Road Tar  | Mr. C. J. Fielder  | 15.11.48                             | ...     | ...   |
| CDC 7 : 2 Crude Tar                                       | Mr. D. S. Naidu  | 15.9.48                              | ...     | ...   |
| CDC 7 : 3 Bitumen for Roads                               | Mr. K. K. Nambiar  | 18.10.48                             | 13.1.49 | ...   |
| CDC 7 : 4 Oxidized Bitumen                                | Mr. V. N. Rangaswamy   | ...                                  | ...     | ...   |
| CDC 7 : 5 Cable Compound                                  | Mr. J. P. Mehrotra   | 9.9.48                               | ...     | ...   |
| CDC 7 : 6 Mastic  | Mr. K. K. Nambiar  | 18.10.48                             | ...     | ...   |
| CDC 7 : 7 Coal Tar Creosote                               | Dr. D. Narayanamurthi  | 24.9.48                              | 22.1.48 | ...   |



TABLE II — contd.

| COMMITTEES                                     | CHAIRMEN OR CONVENERS | MEETING DATES |        |       |
|--|-----------------------|---------------|--------|-------|
|  |                       | First         | Second | Third |
| <b>Chemical Division Council — contd.</b>      |                       |               |        |       |
| CDC 8 Paints & Allied Products                 | Mr. P. C. Chanda      | 29.11.48      | ...    | ...   |
| CDC 8 : 1 Drafting                             | Dr. K. L. Moudgill    | ...           | ...    | ...   |
| CDC 8 : 2 Durability Test                      | Mr. S. V. Satheye     | ...           | ...    | ...   |
| CDC 8 : 3 Printing Inks                        | Mr. Emil Fjermeros    | ...           | ...    | ...   |
| CDC 8 : 4 Brushes for Paints & Var-nishes      | Mr. S. S. Nayudu      | ...           | ...    | ...   |
| CDC 8 : 5 Packaging                            | Mr. S. V. Satheye     | ...           | ...    | ...   |
| CDC 9 ISO Secretariat Committee for Shellac    | Dr. P. K. Bose        | 4.11.48       | ...    | ...   |
| CDC 9 : 1 Sealing Wax                          | do                    | ...           | ...    | ...   |
| CDC 10 Glassware                               | Dr. Atma Ram          | ...           | ...    | ...   |
| CDC 11 Essential Oils                          | Mr. A. K. Menon       | ...           | ...    | ...   |
| CDC 12 Oils, Fats & Soaps                      | Mr. S. C. Ghose       | ...           | ...    | ...   |
| CDC 13 Inks ( Writing )                        | Dr. P. N. Sahai       | ...           | ...    | ...   |
| CDC 14 Solid Mineral Fuels ( Coal, Coke, etc.) | Dr. J. W. Whitaker    | ...           | ...    | ...   |

8. PROGRESS OF STANDARDS

The total number of subjects, duly investigated by the Division Councils and approved for standardization by the EC, reached 587 during the year. All of these have been assigned to various sectional committees and subcommittees, some of which have been appointed directly by the EC instead of by a Division Council. The reason for this is that the subjects concerned are of such

general interest that they do not fall under the field of activity of any particular Division, but may be of interest to almost all of them.

A good many of these subjects have to be further subdivided by the sectional committees or subcommittees for the purpose of drafting standards. For instance, paints and allied products require something like 200 subdivisions, each having a separate standard. At Stage B the subject as

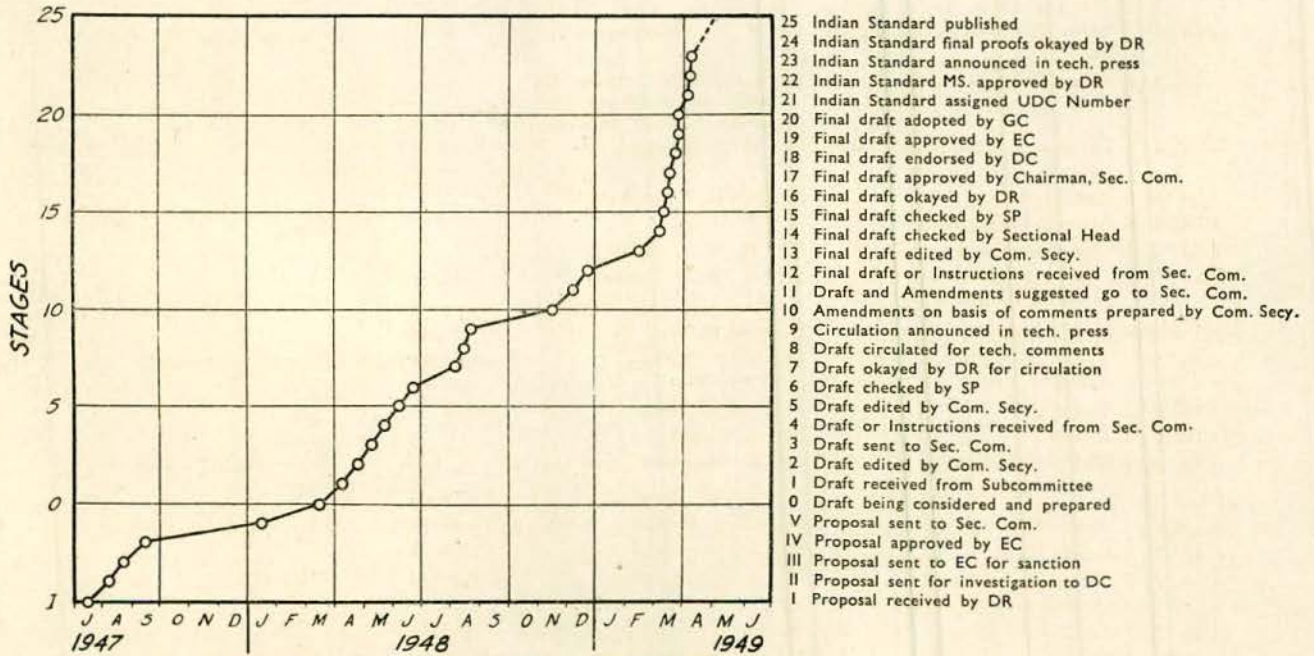


FIG.5. PROGRESS CHART OF AN INDIAN STANDARD (SHRINKAGE OF COTTON CLOTH)



proposed has progressed far enough so that discrete titles can be assigned to each of these subdivisions and the drafts proceeded with. At the close of the period under review, 209 standards reached various stages of drafting and publication.

In order to keep track of the progress of hundreds of such standards during the course of processing, it has been found necessary to chalk out a standard procedure as given in Table III, defining each stage of progress.

**TABLE III — PROCEDURE FOR DEALING WITH INDIAN STANDARDS FROM PROPOSAL TO FINAL STAGE**

| EXTERNAL ACTION  | INTERNAL ACTION   |
|--|---|
| <b>Stage A</b>   |   |
| II. Proposal goes for investigation to DC  | I. DR receives a proposal   |
| III. Proposal goes to EC for sanction  |   |
| IV. EC approves proposal   |   |
| V. DC forms Sectional Committee or its subcommittee takes up proposal and considerations for drafting          |   |
| <b>Stage B</b>   |   |
| 0. <i>Draft</i> under preparation  |   |
| 1. <i>Draft</i> is received from Subcommittee  | 2. Committee Secretary edits <i>Draft</i>   |
| → 3. <i>Draft</i> goes to Sectional Committee for consideration  |   |
| 4. <i>Draft</i> or instructions for amending the <i>Draft</i> are returned by Sectional Committee              | 5. Committee Secretary edits <i>Draft</i> , securing assistance of such other Sections who may be in a position to assist   |
|  | 6. SP checks <i>Draft</i> for conformity with general ISI practice and gives it a Document Number   |
|  | ↖ 7. Sectional Head passes <i>Drafts</i> to DR for OK before circulation  |
| ✓ 8. <i>Draft</i> is circulated by Sectional Heads to all interests concerned including Commonwealth countries |   |
| 9. SP simultaneously issues a Technical Press Note   | 10. Committee Secretary collects and collates all comments, and drafts amendments   |
| 11. <i>Draft</i> and suggested amendments go to Sectional Committee for finalizing                             |   |
| 12. <i>Final Draft</i> or instructions for finalizing <i>Draft</i> are received from Sectional Committee       |   |
|  | 13. Committee Secretary edits or prepares <i>Final Draft</i>  |
|  | 14. Sectional Head checks <i>Final Draft</i> in consultation with such other Sectional Heads whose work may be related to the subject-matter of the <i>Final Draft</i>  |
|  | 15. SP re-checks <i>Final Draft</i> for conformity with general ISI practice and gives it a new Document Number, which consists of the old number with 'F' added to it. |
|  | 16. DR okays <i>Final Draft</i>   |
| 17. Sectional Head obtains concurrence of Chairman of Sectional Committee to <i>Final Draft</i>                |   |
| 18. <i>Final Draft</i> goes to Division Council for endorsement  |   |
| 19. <i>Final Draft</i> goes to EC for approval   |   |
| 20. <i>Final Draft</i> goes to GC for adoption   | 21. SP assigns Indian Standard Number and U.D.C. Number   |
| 22. SP with DR's approval sends the Standard for printing  |   |
| 23. SP simultaneously issues a Technical Press Note  | 24. SP gets DR's OK on final page proofs before he gives orders for final printing  |
|  | 25. SP arranges for stock entries, etc.   |



From Table III it will be seen that all steps under Stage A pertain to major subjects which, as proposed, may have to be covered by a fairly large number of individual standards. Under Stage B all subjects have already been subdivided, titles have been assigned to the subdivisions and drafting under these titles initiated.

By way of typical illustration, in Fig 5 is indicated graphically the progress of the Indian Standard of Shrinkage of Woven, Cotton and Linen Cloth on Washing.

The titles of standards which have reached Stage B and their present position in this scheme of development are summarized in Table IV. It will be noted that 2 standards have already been issued and that 6 are now in the press and will shortly be issued.

**TABLE IV—STANDARDS IN DIFFERENT STAGES OF DRAFTING**

(Stages indicated are in accordance with Table III)

**Standards in Stage B 0**

EC

- 1) Abbreviations for Titles of Periodicals

EDC

- 2) Ceiling Fan
- 3) Leclanche Type Dry Cells and Batteries for Flash Lamps
- 4) Storage Batteries for Motor Cars
- 5) Butt Hinges
- 6) Tee and Strap Hinges
- 7) Door Bolts (Tower)
- 8) Sliding Door Bolts for Padlocks

TDC

- 9) Woollen and Worsted Yarns
- 10) Woollen and Worsted Fabrics
- 11) Water-repellent and Waterproof Fabrics
- 12) Standard Code for Seaworthy Packaging (Woollen and Cotton Textiles)

CDC

- 13) Coal Tar Creosote
- 14) Common Grades of Internal Combustion Engine Oil
- 15) Steam Cylinder Oils
- 16) Machinery and Spindle Oils
- 17) Hydraulic Brake Fluids

**Standards in Stage B 2**

TDC

- 18) Standard Methods of Analysis and Tolerances of Water for Textile Purposes
- 19) Cotton Yarn
- 20) Dhoties
- 21) Sarees
- 22) Mulls
- 23) Voils
- 24) Long Cloth
- 25) Poplin
- 26) Crepes
- 27) Twills
- 28) Shirtings
- 29) Sheetings
- 30) Leopard Cloth
- 31) Drills
- 32) Coatings
- 33) Mazri
- 34) Bed Sheets
- 35) Flannelette
- 36) Dosutie
- 37) Solid Bobbins for Dry Jute Spinning Frames
- 38) Pickers Used in Cotton and Jute Mills
- 39) Test Method for Cotton Fabrics
- 40) Test Method for Cotton Yarns

**TABLE IV—contd.**

- 41) Test Method for Cotton Fibres
- 42) Standard Definitions of Textile Yarns
- 43) Grading of Raw Jute (Katcha Bales)
- 44) Grading of Raw Jute (Pucca Bales)

CDC

- 45) Castor Oil
- 46) Road Tar
- 47) Coal Tar and Crude Tar
- 48) Residual, Bitumen and Fluxed Native Asphalt for Road Making Purposes
- 49) Cut Backs, Rc., Mc. and Sc. Grades
- 50) Solid Bituminous Filling Compounds for Cable Boxes up to and including 11000 Volts

**Standard in Stage B 3**

EDC

- 51) Plywood, Commercial

**Standards in Stage B 4**

EDC

- 52) 98 Percent Aluminium Notched Bars and Ingots for Remelting Purposes
- 53) 99 Percent Aluminium Notched Bars and Ingots for Remelting for Aircraft Purposes
- 54) Aluminium Sheets and Coils for Aircraft Purposes
- 55) Aluminium-coated High Tensile Aluminium Alloy Sheets and Coils for Aircraft Purposes
- 56) Aluminium-manganese Alloy Sheets and Coils for General Purposes
- 57) Pig Lead
- 58) Anti-friction Bearing Alloys
- 59) Zinc
- 60) Tin, Ingots
- 61) Soft Solder
- 62) Silver Solder
- 63) Cast Aluminium Utensils
- 64) Wrought Aluminium Utensils
- 65) Copper
- 66) Phosphor Bronze Ingots and Castings
- 67) Brazing Metals

TDC

- 68) National Flag of India
- 69) Identification and Analysis of Textile Fibres
- 70) Estimation of Moisture; Starch; Total Size; Wax; Copper Number in Undyed Cotton Materials and Fluidity Method of Viscosity Measurement

**Standards in Stage B 5**

CDC

- 71) Seedlac
- 72) Shellac
- 73) Bleached Shellac
- 74) Standard Methods for Testing of Dry Pigments and Extenders
- 75) Basic Carbonate White Lead for Paints
- 76) Zinc Oxide for Paints
- 77) Leaded Zinc Oxide for Paints
- 78) Lithophone for Paints
- 79) Titanium Dioxide for Paints
- 80) Antimony Oxide for Paints
- 81) Basic Sulphate for White Lead for Paints
- 82) Carbon Black for Paints
- 83) Bone Black for Paints
- 84) Vegetable Black for Paints
- 85) Lamp Black for Paints
- 86) Black Oxide of Iron for Paints
- 87) Manufactured Red Oxides of Iron for Paints
- 88) Natural Red Oxide of Iron for Paints
- 89) Ochre for Paints :
  - a) Red
  - b) Yellow
- 90) Natural Sienna (Raw and Burnt) for Paints
- 91) Natural Amber (Raw and Burnt) for Paints
- 92) Lead Chrome for Paints :
  - a) Primrose
  - b) Lemon



TABLE IV — contd.

## Standards in Stage B 5 — contd.

- c) Middle
- d) Orange
- e) Scarlet
- 93) Zinc Chrome for Paints
- 94) Cadmium Lithophone for Paints
- 95) Brunswick Orange for Paints :
  - a) Genuine
  - b) Reduced
- 96) Green Oxide for Chromium for Paints
- 97) Ultramarine Blue for Paints
- 98) Prussian Blue for Paints
- 99) Red Lead for Paints and Jointing Purposes
- 100) Litharge for Paints
- 101) Pigment Dyestuff for Paints
- 102) Lake Pigment for Paints
- 103) Slate Powder for Paints
- 104) Graphites for Paints
- 105) Whiting for Paints
- 106) Barytes for Paints
- 107) Asbestine for Paints
- 108) Blanc Fixe for Paints
- 109) Silica for Paints
- 110) Aluminium Powder for Paints
- 111) Kaolin for Paints
- 112) Gypsum ( Calcium Sulphate ) for Paints
- 113) Cuprous Oxide for Paints
- 114) Mercuric Oxide for Paints
- 115) Standard Test Methods for Oil Paste for Paints
- 116) Oil Pastes for Paints ( 29 colours )
- 117) Oil Pastes for Paints : Oxford Blue
- 118) Oil Pastes for Paints :
  - Royal Blue
  - Dark Blue
- 119) Oil Pastes for Paints :
  - Middle Brown
  - Dark Brown
  - Nut Brown
- 120) Oil Pastes for Paints :
  - Golden Brown
- 121) Oil Pastes for Paints ( 10 colours )
- 122) Oil Pastes for Paints ( 5 colours )
- 123) Oil Pastes for Paints ( 8 colours )
- 124) Oil Pastes for Paints :
  - Lemon
  - Golden Yellow
  - Orange
  - Traffic Yellow
- 125) Oil Pastes for Paints : Exterior — White
- 126) Oil Pastes for Paints : Interior — White
- 127) Oil Pastes for Paints Joining Purposes, etc. :
  - White Lead
- 128) Oil Pastes for Paints : Zinc Oxide
- 129) Oil Pastes for Paints : Zinc Oxide — Reduced
- 130) Oil Pastes for General Purposes — Black
- 131) Standard Test Methods for Testing of Ready Mixed Paints and Enamels
- 132) Ready Mixed Paints Brushing, Red Lead, Non-setting, Priming
- 133) Ready Mixed Paint Brushing White Lead for Priming and General Purposes
- 134) Ready Mixed Paint Brushing Zinc Chrome Priming for use on Aluminium and Light Alloys
- 135) Ready Mixed Paint Brushing Priming for Enamels for use on Metals
- 136) Ready Mixed Paint Brushing Priming for Enamels for use on Wood
- 137) Ready Mixed Paint Brushing Red Oxide Priming for General Purposes
- 138) Ready Mixed Paint Spraying Red Oxide Priming for General Purposes
- 139) Ready Mixed Paint Brushing Priming Plaster Light Stone Indian Standard Colour No. 361 for use as a Sealer on new Plaster, Brickwork, Asbestos Sheetting, etc.
- 140) Ready Mixed Paint Brushing Grey Filler for Enamels for use on Primers

TABLE IV — contd.

- 141) Ready Mixed Paints Undercoating Brushing for Exterior Oil Paints ( 6 colours )
- 142) Ready Mixed Paint Undercoating Spraying for Exterior Oil Paints ( 6 colours )
- 143) Ready Mixed Paint Brushing Undercoating for Interior Oil Paints ( 6 colours )
- 144) Ready Mixed Paint Spray Undercoating for Interior Oil Paints ( 6 colours )
- 145) Ready Mixed Paint Undercoating Brushing for Exterior Matt Finish Paints :
  - Pale Green
  - Dark Battleship Grey
  - Dark, Drab, Standard Camouflage (I)
- 146) Ready Mixed Paint Undercoating Spraying for Exterior Matt Finish Paints :
  - Pale Green
  - Dark Battleship Grey
  - Dark, Drab, Standard Camouflage (I)
- 147) Ready Mixed Paint Brushing Finishing Exterior Oil Gloss for General Purposes ( 29 colours )
- 148) Ready Mixed Paint Brushing Finishing Oil Gloss for General Purposes :
  - Lemon
  - Golden Yellow
  - Traffic Yellow
  - Orange
- 149) Ready Mixed Paint Brushing Finishing Oil Gloss for General Purposes ( 10 colours )
- 150) Ready Mixed Paint Brushing Finishing Oil Gloss for General Purposes ( 5 colours )
- 151) Ready Mixed Paint Brushing Finishing Oil Gloss for General Purposes : Golden Brown
- 152) Ready Mixed Paint Brushing Finishing Oil Gloss for General Purposes :
  - Middle Brown
  - Dark Brown
  - Nut Brown
- 153) Ready Mixed Paint Brushing Finishing Oil Gloss for General Purposes ( 9 colours )
- 154) Ready Mixed Paint Brushing Finishing Oil Gloss for General Purposes : Oxford Blue
- 155) Ready Mixed Paint Brushing Finishing Oil Gloss for General Purposes :
  - Royal Blue
  - Dark Blue
- 156) Ready Mixed Paint Brushing Finishing Exterior Oil Gloss for General Purposes :
  - Middle Graphite
  - Dark Graphite
- 157) Ready Mixed Paint Brushing Finishing Exterior Oil Gloss for General Purposes : White
- 158) Ready Mixed Paint Brushing Finishing Oil Gloss for General Purposes : Black
- 159) Ready Mixed Paint Brushing Finishing Interior Oil Gloss for General Purposes ( 29 colours )
- 160) Ready Mixed Paint Spraying Finishing for Railway Wagon Stock :
  - Red Oxide
  - Red Oxide : Colour Unspecified
- 161) Ready Mixed Paint Spraying Finishing for Railway Under Frames : Black
- 162) Ready Mixed Paint Spraying Exterior Oil Gloss for General Purposes ( 29 colours )
- 163) Enamel Brushing Interior Natural Resins :
  - a) Undercoating
  - b) Finishing : Colours as Required
- 164) Enamel Spraying Interior Natural Resins :
  - a) Undercoating
  - b) Finishing : Colours as Required
- 165) Ready Mixed Paint Brushing Matt Finish Exterior : Colour as Required
- 166) Ready Mixed Paint Spraying Matt Finish Exterior : Colour as Required
- 167) Ready Mixed Paint Brushing Matt Finish Interior ( 29 colours )
- 168) Ready Mixed Paint Marking for Packages and Petrol Containers for Stencilling by Brush or Roller : Colour as Required



TABLE IV — contd.

## Standards in Stage B 5 — contd.

- 169) Ready Mixed Paint Marking Quick Drying for Marking with Rubber Stamps: Colours as Required
- 170) Ready Mixed Paint Brushing Petrol Resisting Air Drying for Exterior Paintings of Containers: Colours as Required
- 171) Ready Mixed Paint Spraying Petrol Resisting Air Drying for Exterior Painting of Containers. Colours as Required
- 172) Ready Mixed Paint Brushing Petrol Resisting Stoving for Exterior Painting of Containers: Colours as Required
- 173) Ready Mixed Paint Spraying Petrol Resisting Stoving for Exterior Painting of Containers: Colours as Required
- 174) Ready Mixed Paint Brushing Petrol Resisting Air Drying for Interior Painting of Tanks and Containers — Red Oxide: Colour Unspecified
- 175) Ready Mixed Paint Slushing Petrol Resisting Air Drying for Interior Painting of Tanks and Containers — Red Oxide: Colours Unspecified
- 176) Ready Mixed Paint Brushing Petrol Resisting Stoving for Interior Painting of Tanks and Containers — Red Oxide: Colour Unspecified
- 177) Ready Mixed Paint Slushing Petrol Resisting Stoving for Interior Painting of Tanks and Containers — Red Oxide: Colour Unspecified
- 178) Enamel Undercoating Brushing Stoving: Colours as Required
- 179) Enamel Undercoating Spraying Stoving: Colours as Required
- 180) Enamel Finishing Brushing Stoving: Colours as Required
- 181) Enamel Finishing Spraying Stoving: Colours as Required
- 182) Ready Mixed Paint Brushing Stoving Lead Free for General Purposes: Colours as Required
- 183) Ready Mixed Paint Spraying Stoving Lead Free for General Purposes: Colours as Required
- 184) Ready Mixed Paint Brushing Dead Black for use on Metals
- 185) Ready Mixed Paint Brushing Dead Black for use on Wood
- 186) Ready Mixed Paint Brushing for use on Floors
- 187) Ready Mixed Paint Brushing Acid and Alkali Resisting Lead Free for General Purposes (5 colours)
- 188) Ready Mixed Paint Brushing Bituminous Black Lead Free Acid Alkali Water and Heat Resisting for General Purposes
- 189) Ready Mixed Paint Brushing Acid Resisting for Fume Cupboards: Colours as Required
- 190) Ready Mixed Paint Spraying Acid Resisting for Fume Cupboards
- 191) Ready Mixed Paint Brushing Heat Resisting: Colours as Required
- 192) Ready Mixed Paint Brushing Fire Resisting Silicate Type for use on Wood: Colours as Required

## Standards in Circulation (Stages B 8 &amp; B 9)

- EC
- 193) Style Manual for Drafting Indian Standards
- EDC
- 194) Classification of Processed Mica
- 195) Methods for Grading Processed Mica
- 196) Coniferous Sawn Timber Intended for Further Conversions
- 197) Ground Fireclay as a Mortar for Laying Fireclay Bricks
- TDC
- 198) Grading of Raw Wool for Export
- 199) Procedures for Testing Cotton Textiles and Cordages for Resistance to Attack by Micro-organism

## Standards Having Finished Circulation (Stages B 10 to B 21)

- EDC
- 200) Classification of Commercial Timber Species and their Zonal Distribution

TABLE IV — contd.

- 201) Plywood Tea-Chests

## Standards in Press (Stage B22 to B24)

- EC
- 202) IS: 4-1949 Make-up of Periodicals (Price As 8)
- EDC
- 203) IS: 6-1949 Moderate Heat Duty Fireclay Refractories, Group 'A' (Price Rs 2)
- 204) IS: 7-1949 Moderate Heat Duty Fireclay Refractories, Group 'B' (Price Re 1)
- 205) IS: 8-1949 High Heat Duty Fireclay Refractories (Price Rs 2)
- TDC
- 206) IS: 9-1949 Method for Determining Shrinkage of Woven, Cotton and Linen Cloth on Washing (Price As 8)
- CDC
- 207) IS: 5-1949 Colours for Ready Mixed Paints (Price Rs 4)

## Standards Published

- EDC
- 208) IS: 2-1949 Rules for Rounding Off Numerical Values (Price As 8)
- 209) IS: 3-1949 Inch-millimeter Conversion for Industrial Use (Price As 8)

## 9. LABORATORY FACILITIES

In drafting most standards a great deal of assistance is generally derived from the standards already published by overseas standards organizations as well as those issued by various procurement agencies in India such as the D G I & S, CSO, Defence Services, etc., and the Indian standards are designed to meet the specific needs of all the interests in India concerned with the subject-matter. Nevertheless, in several cases it becomes necessary to initiate practical investigations for the purpose of determining physical, chemical and other characteristics of materials under consideration for standardization.

If the ISI were to undertake the organization of laboratories for the purposes of such investigations, it would mean that a large number of specialized laboratories would be necessary to deal with the vast number of fields which the ISI is called upon to cover. Fortunately there exist in India a fair number of laboratories dealing with specialized branches of knowledge. In addition a number of laboratories are being planned to be set up by the Council of Scientific & Industrial Research. The present plan of the Institution involves enlisting the active co-operation of these laboratories through their official representatives working on various committees of the ISI. As and when the need arises for instituting an investigation, the committees concerned are encouraged to allocate the work among their own members. Sometimes, however, it becomes necessary for the ISI Directorate to approach organizations controlling certain laboratories for the purpose of obtaining necessary sanctions so that the work may be undertaken without the ISI having to pay for it from its meagre resources.



During the period under review several such instances arose of which the following may be mentioned :

1) *Government Test House, Alipore* — The Government of India in the Ministry of Industry and Supply were approached to make available facilities at the Government Test House for the work of the ISI. They have very kindly agreed to this request and arranged that the work of the ISI will be dealt with on the same lines as that of other non-commercial departments of the Central Government. Accordingly the ISI will be able to get laboratory work executed at the Government Test House free of charge.

2) *Directorate of Technical Development* — The Government of India in the Ministry of Defence have agreed to placing at the disposal of the ISI facilities for testing a large number of cotton textile samples at the laboratories of the Technical Development Establishment, Laboratory Stores, Kanpur.

3) *Geological Survey of India* has agreed to the preparation, with the assistance of the ISI Committee, and maintenance of two sets of master standard samples of mica, one of which will be transferred to the ISI Headquarters. The Geological Survey has also agreed to arrange to supply copies of these standards to those who might need them at nominal cost.

4) *Technological Laboratories, Matunga, Bombay* — The Indian Central Cotton Committee have extended the facilities of their Technological Laboratory at Matunga, Bombay, for the testing of a limited number of samples of cotton yarn.

5) *Indian Lac Research Institute, Ranchi* — The Indian Lac Research Institute has undertaken an investigation on *Kiri* (refuge lac) with the object of evolving standard specifications for this purpose. They have also been approached to arrange to prepare and supply to those who might need standard samples of seedlac and dry bleached shellac.

6) *Tata Research Laboratories, Jamshedpur* — Tata Iron & Steel Company, Jamshedpur, in their Research Laboratories, arranged for the chemical analysis of certain samples of foreign coins required in connection with an investigation on the possibility of minting stainless steel coins in India.

7) *Delhi Cloth & General Mills, Delhi* — Delhi Cloth & General Mills, Delhi, extended their co-operation by preparing a large number of samples of yarn and cloth required in connection with the development of Indian standards on the subject. They further extended the facilities of their laboratories for the testing of these samples.

8) *Other Textile Mills* — Messrs Khatau Mahanji Spinning & Weaving Co. Ltd., Bombay, the Bradhury Mills Ltd., Bombay, and the Hindustan Spinning & Weaving Mills, Bombay, also prepared certain samples of cloth for similar purposes.

The ISI wishes to place on record its appreciation of the co-operation extended by these organizations for undertaking, free of charge, investigations and related practical work connected

with the standardization activities of the ISI. It is hoped that in future also this type of co-operation will be forthcoming from these and other organizations who may be called upon to assist the ISI in their own respective fields of activity. The work will naturally increase considerably when the ISI Certification Marking Scheme comes into operation.

## 10. INTERNATIONAL ORGANIZATION FOR STANDARDIZATION ( ISO )

### 10.1 ISO Technical Committee Secretariats

10.1.0 The work of the two Secretariats of ISO/TC 50 Shellac and ISO/TC 56 Mica has now been organized, as a result of full co-operation from most of the national and international interests concerned.

10.1.1 *ISO/TC 50 Shellac* — As reported in last year's report, the scope of work of ISO/TC 50 was circulated to all the member bodies of the ISO; this has now been accepted by the TC, whose participation position is as follows :

#### a) Active participants ( ' P ' Member Bodies ) :

|           |             |                          |
|-----------|-------------|--------------------------|
| Australia | India       | Switzerland              |
| Belgium   | Netherlands | United Kingdom           |
| France    | New Zealand | United States of America |
| Hungary   | Poland      |                          |

#### b) Countries interested in receiving all papers and literature ( ' + ' Member Bodies ) :

|         |          |              |
|---------|----------|--------------|
| Austria | Italy    | South Africa |
| China   | Mexico   | Sweden       |
| Finland | Portugal | USSR         |

#### c) Countries not interested in the work ( ' - ' Member Bodies ) :

|        |        |
|--------|--------|
| Brazil | Norway |
|--------|--------|

#### d) Countries whose replies are still due :

|                |         |
|----------------|---------|
| Canada         | Denmark |
| Chile          | Israel  |
| Czechoslovakia |         |

The ISI Committee responsible for the Secretariat of ISO/TC 50, known as the ISO Secretariat Committee for Shellac ( CDC 9 ), Chairman Dr. P. K. Bose, Director, Indian Lac Research Institute, Namkum, Ranchi, met on 4 November 1948 in New Delhi and finalized India's draft proposals on seedlac, shellac and bleached lac.

These drafts after further consultations will shortly be circulated as Draft Indian Standards, and as Secretariat Proposals for International Standardization.

An Annual Report on the work of ISO/TC 50 for 1948 was issued in January 1949.

It is hoped that by next winter, the ISO member bodies will have studied the Indian proposals and time will be ripe to call a meeting of the ISO/TC 50, which the EC desires to be held in India.

During his visit to the UK and USA ( May-August 1948 ), the Director took the opportunity to discuss informally the work of this Committee with national standards organizations and other interests in those countries. Fortunately, Dr. P. K. Bose's visit to those countries coincided with the Director's visit and advantage was taken



of his presence to arrange for joint conferences and discussions.

Through the courtesy of the BSI, arrangements were made for Dr. P. K. Bose and the Director to meet the Chairman of the BSI Committee on Lac on 20 May 1948. It so happened that the Chairman could not attend this meeting, but in his place Dr. Ferguson, a Consulting Chemist and an important member of the BSI Committee, attended the discussions. Draft proposals for international shellac standards were informally considered at this meeting and it was found that there was a considerable degree of agreement between the Indian proposals and the general views so far held by the BSI Committee. Dr. Ferguson undertook to examine further the Indian draft and let us have any comments that he might personally have to make.

Through contacts with the American Standards Association (ASA), the American Society for Testing Materials (ASTM) and the Bureau of Standards, it was possible to arrange for a meeting of the ASTM Subcommittee on Shellac on 5 August 1948, at the ASA headquarters in New York. Dr. Bose was also present. The Committee was informed of the ISO procedure for international standardization, and the ISI draft terms of reference for ISO Committee on Shellac were considered and accepted by the Committee. Here again, it was the general feeling that various requirements of different grades of shellac were fairly close to each other and that there should be no difficulty in further bringing them together.

Representatives of the U.S. Shellac Importers' Association, who were present at this meeting, informed the committee that their own specifications were being revised in consultation with Dr. Bose and that these would be made available for consideration by the ISO Committee. It also came to light that the subject of shellac had been previously discussed at the international level under the International Electro-Technical Commission which is now a division of the ISO.

Contacts established at these meetings in the UK and USA are expected to be highly useful in facilitating the work of the ISO/TC 50 and that of the ISI Committee on the subject.

**10.1.2 ISO/TC 56 Mica** — As reported last year, the ISI has set up the ISO Secretariat Mica Sectional Committee (EDC 21), under the chairmanship of Mr. Chandmull Rajgarhia, to deal with the Secretariat of ISO/TC 56 Mica, whose participation position is as follows:

a) Active participants ('P' Member Bodies):

|                |         |
|----------------|---------|
| Brazil         | Hungary |
| Czechoslovakia | India   |
| France         |         |

NOTE: UK and USA have informally agreed to participation, but official confirmation is still due.

b) Countries interested in receiving all papers and literature ('+' Member Bodies):

|           |             |                |
|-----------|-------------|----------------|
| Australia | Mexico      | Switzerland    |
| Austria   | Netherlands | Union of South |
| Belgium   | Poland      | Africa         |
| Italy     | Sweden      | USSR           |

c) Countries not interested in the work ('-' Member Bodies):

|         |        |
|---------|--------|
| Denmark | Norway |
| Finland |        |

d) Countries from whom replies are still due

|        |             |
|--------|-------------|
| Canada | Israel      |
| Chile  | New Zealand |
| China  | Portugal    |

In the first meeting of EDC 21 (Calcutta, 7 and 10 September 1948), among other things, the scope of work for ISO/TC 56 Mica was drafted which has subsequently been circulated and generally accepted by the ISO member bodies. In the second meeting (Calcutta, 10 and 11 March 1949), EDC 21 finalized two draft proposals on Grading of Mica, and Classifications of Mica, which have now been circulated as Draft Indian Standards, and as Secretariat Proposals for International Standardization.

It is hoped that next winter the ISO Member Bodies will have studied the Indian proposals and time will be ripe for calling a meeting of the ISO/TC 56, which the EC desires to be held in India.

During his visit abroad, previously referred to, the Director, in anticipation of the work of the Committee on Mica, took the opportunity to establish close contacts both with the mica consumers of the USA as well as the ASTM group dealing with this subject, who represents the USA in matters of standardization on this subject.

It appears that several difficulties in procuring mica in accordance with present standards were being experienced and that the consumers in the past had no means of consulting producers in India on matters of standardization except through mica importing houses, who in turn had to depend on their representatives operating in the Indian market. Creation of the ISI and ISO machinery to deal with standards on mica was, therefore, generally welcomed and mutual offers of close collaboration were exchanged.

One of the working groups of the ASTM Subcommittee on Mica held its meeting in the Bell Telephone Laboratories on 5 August 1948 at which the Director was invited. Details of discussions held at this meeting have been recorded elsewhere. It may, however, be stated that this group of ASTM welcomed the creation of the ISO Technical Committee and offered its full co-operation. They were desirous that direct interchange of information on standardization matters between the ASTM group and the ISI committee be established.

Through efforts of the Bell Telephone Laboratories, the ASTM has in recent years developed objective methods of testing and classifying mica for electrical use, but no American consumers have yet been able to buy mica classified on the basis of these tests. One of the features of these methods is that certain types of mica which, under the present visual classification system, comes under lower grades, could be upgraded. One of the tasks recommended for the ISI committee on the subject is to examine these methods for use by the Indian producers.



The Bell Telephone Laboratories have prepared a cinema film demonstrating the operation of these methods and they were requested to let the ISI have a copy of this film together with a set of mica samples demonstrating the up-grading process. The film has since been loaned to the ISI for two years and it was exhibited at the second meeting of EDC 21.

As a result of procurement difficulties during peace and war, numerous attempts have been made at finding substitutes for natural mica. A good deal of information on this aspect was also collected and may be stated briefly under three heads:

1) *Substitutes of non-mica type*, such as silicon-bonded glass fabric and other synthetic materials, are being utilized to some extent in specific applications where mica was originally used. Nothing by way of synthetics has, however, been developed which could take the place of mica in general.

2) *Mica powder film* was reported to have been developed in Switzerland which utilized mica powder obtained from waste mica. It was said that a factory for the manufacture of this film is being contemplated. It is claimed that this film does not contain any bonding material and certain consumers appear to be satisfied with its electrical properties. They feel that this film would be more useful than natural mica particularly in the preparation of mica tape where dimensional requirements are rather rigorous.

3) *Synthetic mica* prepared by crystallization of high temperature melts, using inexpensive raw materials, is being actively developed jointly by the US Army and Navy. In this connection, a special last-minute visit was arranged to Washington and discussions were held with the Office of Naval Research and the Bureau of Standards, who freely furnished most of the information available on the subject and agreed to keep us posted on future developments. Though this development has not gone far enough to make economical production of synthetic mica possible today, there is little doubt that such a development holds serious threat to the mica interests of India.

In view of these developments, it is fortunate that Indian producers of mica have taken active steps to initiate the introduction of standards in the mica trade through the agency of the ISI and ISO. Once the object is accomplished and confidence of consumers abroad is established, it would become quite a difficult proposition for any synthetic product to find its way quickly into the established practices of manufacture.

## 10.2 ISO Conferences

10.2.0 The Institution participated in the following meetings of the ISO bodies during the year under report:

- 1) ISO Council, Geneva (Switzerland), 31 May-2 June 1948
- 2) ISO/TC 38 Textiles, Buxton (UK), 7-12 June 1948

3) ISO/TC 46 Documentation, The Hague (Netherlands), 17-19 June 1948

10.2.1 *ISO Council* — Since India's election to the ISO Council in 1946, the ISI was represented by its Director for the first time at this second meeting of the Council. Members of the Council are:

|           |             |                  |
|-----------|-------------|------------------|
| Australia | France      | United Kingdom   |
| Belgium   | India       | United States of |
| Brazil    | Norway      | America          |
| China     | Switzerland | USSR             |

All countries with the exception of Brazil, China and USSR were represented at the meeting. Mr. Howard Coonley, President of the ISO, presided at all sessions. Items on the agenda are detailed in Appendix 16.2. Unconfirmed minutes of the meeting have been received and noted by the EC. The Indian delegate took active part in all discussions and was responsible for initiating several resolutions, almost all of which were adopted.

The question of co-operation with other international organizations was considered at some length. This question is complicated by the fact that some of the organizations have on their membership countries who are not yet members of the UNO. The ISO is a recognized non-official organization of the UNO having consultative relationship through the Economic and Social Council under Article 71 of the UN Charter. It is necessary for the ISO to evolve a mechanism of co-operation with other international organizations consistent with its own status and functions. The Indian delegate made concrete proposals and indicated six distinct levels at which co-operation could be established with different international organizations and proposed that a committee of the Council be appointed and entrusted with the task of working out details. This was accepted.

Under the item of technical committees, a detailed report giving up-to-date position of the appointment of these committees was considered. In relation to the 69 ISO Technical Committees, India's participation position as decided by the EC is given in Appendix 16.3.

Report of up-to-date work of the two Secretariats carried by India was given by the Indian delegation to the ISO Council (*see* 10.1 for latest position).

The document on draft directives for the guidance of ISO Technical Committees, as prepared by the Secretary-General of the ISO, was considered in some detail by the Council and, at the Indian delegate's suggestion, it was decided to circulate the modified draft for comments to members of the Council before its final adoption. Comments of the ISI were transmitted by the Director from Washington, D.C., USA, while he was still on tour, in anticipation of EC's approval, which has since been received.

A Committee of the Council was appointed by the President of the ISO to consider various proposals received for amendment to the



constitution of the ISO. Members of this Committee are :

Mr. W. R. Hebblewhite (Australia), Chairman  
 Mr. Kaare Heiberg (Norway)  
 Admiral G. F. Hussey (USA)  
 General P. Salmon (France)  
 Dr. Lal C. Verman (India)

It was decided to hold the next meeting of the Council at the same time as the General Assembly of the ISO at Paris some time in June 1949.

The Indian delegate made useful contacts and had the pleasure to note that the attitude of all other delegations present at the Council was appreciative of India's efforts and indicative of a desire for closer collaboration.

**10.2.2 ISO/TC 38 Textiles** — At this first meeting of the ISO/TC 38, the following countries were represented :

|                |     |        |
|----------------|-----|--------|
| Australia      | ... | ( 1 )  |
| Belgium        | ... | ( 1 )  |
| Czechoslovakia | ... | ( 4 )  |
| Finland        | ... | ( 3 )  |
| France         | ... | ( 5 )  |
| India          | ... | ( 5 )  |
| Netherlands    | ... | ( 5 )  |
| New Zealand    | ... | ( 2 )  |
| Sweden         | ... | ( 1 )  |
| Switzerland    | ... | ( 1 )  |
| UK             | ... | ( 49 ) |
| USA            | ... | ( 14 ) |
| USSR           | ... | ( 2 )  |
| ISO            | ... | ( 2 )  |

TOTAL (95)

( Figures within brackets indicate the number of members in each delegation. )

The Indian delegation consisted of :

- 1) Mr. Bharat Ram ( Leader ) ( Chairman, Textile Division Council of the ISI )
- 2) Mr. B. M. Bagri ( Representing Textile Control Board )
- 3) Mr. G. L. Longdin ( Representing Federation of Wool Manufacturers in India )
- 4) Dr. Lal C. Verman ( Director, Indian Standards Institution )
- 5) Mr. C. P. Halkatti ( Assistant Director, Indian Standards Institution )

Agenda of the meeting is given in Appendix 16.4. Indian delegation participated actively in the discussion on all topics and its members served on various subcommittees appointed during the conference for formulating recommendations on specific topics.

On the subject of conditioning of test specimens, India presented a detailed document recommending the adoption by the ISO of two standard atmospheres instead of one as at present in vogue. Due to differences in climatic conditions prevailing in India as compared to European countries, it is most desirable that standard atmosphere conditions be consistent with the needs of the country. After considerable discussion at the committee stage, India's proposal was adopted. There are now two Standard Atmospheres recognized by the ISO — one for temperate zone countries and the other for tropical and sub-tropical countries ( *ISI Bulletin*, V. 1, No. 1, pp. 5-10, 1949 ).

Desirability of adopting a universal yarn count system for various sections of the textile industry was generally agreed to, and the particular system

proposed by, the UK, namely the gK system, in which yarn count is expressed in terms of gram per kilometre, was accepted. It was considered desirable to limit the varieties of yarn counts and member organizations were invited to examine the position and report for further action.

It was recommended that standardization of cloth width merits consideration.

Under principles and practice of tensile strength testing, discussions mainly centred around merits and demerits of the so-called 'strip' and 'grab' tests. For the purpose of international recommendation, the strip method was favoured.

UK's proposal for redefining the term 'rayon' to include all 'man-made' fibres was not generally favoured, but the desirability of coining a new generic term was agreed to. However, neither the subcommittee concerned nor the General Body could arrive at an agreement on what exactly should be the generic term to designate 'man-made' fibres of all types including those that may be developed in future.

After some discussions on the subject of textile machinery, it was felt that this subject was not within the scope of the committee on textiles. A resolution was adopted to refer the matter to the Secretary-General of the ISO for action.

The international agreement on 'S' and 'Z' twists arrived at before the war was endorsed for adoption by the ISO.

Discussions regarding the scope of work of this committee and its future programme led to the decisions given in Appendix 16.4.

The conference provided an excellent opportunity to observe how international work of technical character could be expeditiously dealt with in a short space of time. Presence of leaders of various sections of the Indian textile industry in the Indian delegation at this conference was very valuable for taking decisions on the spot on matters of policy and procedure. It was, however, felt that in addition to the ISI staff members, inclusion in the delegation of one or two leading textile technologists engaged in standardization would have been valuable. In future appointments of delegations to meetings of ISO technical committees of this nature, it is hoped that the ISI executive will consider this point.

**10.2.3 ISO/TC 46 Documentation** — Following countries were represented at this meeting :

|                |                             |
|----------------|-----------------------------|
| Belgium        | India                       |
| Czechoslovakia | Netherlands ( Secretariat ) |
| Denmark        | Sweden                      |
| Finland        | Switzerland                 |
| France         | United Kingdom              |

The Indian delegation consisted of :

- 1) Prof. S. R. Ranganathan ( Leader ) ( Chairman, ISI Committee on Documentation )
- 2) Mr. N. D. Gulhati ( Secretary, Central Board of Irrigation )
- 3) Dr. Lal C. Verman ( Director, Indian Standards Institution )

In view of his international reputation, Prof. Ranganathan's leadership of the Indian delegation earned for India a specially privileged position



at this conference. Important items on the agenda were :

- 1) Terms of documentary reproduction
- 2) Microprints in roll film
- 3) Sizes of light prints
- 4) Microprint readers
- 5) Sizes of index cards and other forms of documentation
- 6) Layout of periodicals
- 7) Title references for literature — general directives
- 8) Abbreviations of titles of periodicals
- 9) Transcription of cyrillic characters

India's point of view on all these items with the exception of the last one was presented to the conference in the form of documents prepared by the ISI committee on the subject. Members of the Indian delegation served on all subcommittees with the exception of the one on cyrillic characters. Generally speaking, agreements on various points under each item were arrived at, and points requiring further study were left over for future negotiations.

**10.3 International Electro-technical Commission (IEC)**—The International Electro-technical Commission became the Electrical Division of the ISO in 1947 and adopted its constitution, but retained its basic structure. The IEC retained its right to collect its subscriptions either directly or through the ISO. Its headquarter was shifted to Geneva early in 1948 and amalgamated with that of the ISO.

The Institution of Engineers (India) (IEI) had been acting as the Indian National Committee of the IEC for many years prior to this affiliation and prior to the organization of the ISO and the ISI. In view of the ISI's membership of the ISO and consequently also that of the IEC, the EC of the ISI had to give considerable thought to the complications arising out of this merger of the IEC with the ISO. The EC finally evolved a scheme for reorganizing the national work consistent with the new international situation, and in January 1948, adopted the following resolution :

“The Indian Standards Institution accepts that the relative position of the Institution of Engineers (India) to the Indian Standards Institution, in so far as standards are concerned, is the same as that of the International Electro-technical Commission to the International Organization for Standardization, except that the Institution of Engineers (India) is not a division of the Indian Standards Institution. This being the case, there is no question of the Indian Standards Institution nominating representatives on the National Committee of the International Electro-technical Commission proposed to be appointed by the Institution of Engineers (India); the position being that the Institution of Engineers (India) is the representative of the Indian Standards Institution for the time being. Further, the membership privileges of the International Electro-technical Commission will naturally be exercised by the Indian Standards Institution in future.”

This ISI resolution was accepted by the Council of the IEI in June 1948 and the ISI was accordingly informed in November 1948. During the same month, the arrangement as arrived at between the ISI and the IEI was communicated to the ISO and the IEC. The IEC was requested to send all communications in duplicate to India, one copy to the ISI and another to the IEI. The IEI was requested to keep the ISI informed of its activities concerning the IEC.

In view of these arrangements, it has been proposed to the IEI that India's subscription to the IEC may, from now on, be paid through the ISI. But the ISI has been informed that this subscription is being paid directly by the Ministry of WMP. In view of the fact that the IEI acts as a representative of the ISI and the membership privileges of the IEC are in fact being exercised by the IEI, it is necessary that the subscription to the IEC may be paid through the ISI. Ministry of WMP is being approached to regularize this matter.

The question of technical work connected with the IEC, however, presents further complications. Some of the subjects which are under consideration of the IEC on the international plane are also being considered on the national plane by the various committees under the Engineering Division Council of the ISI. It would, therefore, be an unnecessary duplication, so far as these subjects are concerned, to appoint separate committees under the IEI. The IEI, however, may continue to have committees on those subjects for which the ISI has no committees.

Detailed proposals to reorganize the technical work of the IEC in India have now been made by the Director to the IEI and the Ministry of WMP. The Director has also proposed a meeting with Mr. A. N. Khosla, Chairman, Central Waterpower and Navigation Commission, who is the President of the IEI, together with certain responsible officers of the IEI and the ISI. It is hoped that satisfactory arrangements mutually agreeable to both organizations will soon be finalized.

## 11. OTHER INTERNATIONAL ACTIVITIES

**11.1 Director's Tour Abroad**—This tour was undertaken under the authority of the EC with the concurrence of the Honourable President, with the object of attending certain ISO Conferences (see 10.1 and 10.2), studying the national standards organizations and associated institutions of certain countries and making personal contacts.

Although close contact and cordial relations were established with heads of all standards organizations represented at Geneva, Buxton and The Hague Conferences, no serious attempt could be made to study in detail the organizational structure and *modus operandi* of all these organizations, except those of the UK, USA and Canada. In Appendix 16.5 is given a brief account of the visits to these three countries.

In the material presented, no attempt has been made to reproduce details of constitutions of the standards bodies concerned, which can readily



be obtained from printed literature. Attention has rather been confined to those matters that can only be studied on the spot by personal discussions, that vitally affect the day-to-day working of the institutions, and that determine the authority and status of standards within the national frame-work of industry.

In every case national standards bodies work in close collaboration with numerous other associated institutions who have vital interests in some sphere of industry or research. These associated institutions carry varying degrees of responsibility in relation to their national standards bodies, but in general exercise considerable influence on standardization in the fields with which they are particularly concerned. In order, therefore, to obtain a fairly complete picture of the standards organizations, it was necessary to visit a number of associated institutions in each of these countries.

As a result of these visits and personal discussions with responsible heads and staffs of standards organizations and associated institutions, the Director has come to the general conclusion that in different countries standards organizations have evolved on independent lines with different constitutions and procedures designed to meet the prevailing needs and circumstances. Although main objectives may be similar, detailed working of each differs substantially from one another.

The constitution and procedure of the ISI are no exceptions to this general rule and it is in this that the strength of the ISI lies. So long as we proceed along lines dictated by sound judgement based on correct appraisal of our national needs and always keep in view the community of interest between the producer and the consumer, we can confidently look forward to a successful future.

Although in some countries such as China, South Africa, New Zealand, etc., standards organizations are purely government institutions, in most other countries both government and industry participate in their standards bodies. Relative extent of participation, however, differs a great deal in different countries. In the three countries visited by the Director, active participation by the State was not generally considered desirable, although government support was always sought after. For instance, the BSI, even after 50 years of existence, derives almost one-third of its income from government but government has no voice whatever in its administration. In the United States of America, on the other hand, although government participation in the ASA existed until recently, industry in general did not favour such a participation.

No direct or indirect emulation of practices abroad can be contemplated in India as conditions in India present peculiar problems demanding purely Indian solutions. In the past, as at present, Indian industry has always looked up to the Government for support by way of subsidies, tariff protections, capital loans or capital participation and various other forms of concessions. Besides, the present policy of the Government in

nationalizing certain section of the industry and actively participating in the control of others has created a situation peculiar to India. Under these circumstances, there could be little doubt about the responsibility that the Government of India should shoulder in the field of standardization.

At the same time, it cannot be overlooked that private enterprise and individual initiative still form an important part of the present-day industrial set-up of the country. In order, therefore, to secure voluntary and thorough application of standards to industrial production, it is necessary that the industry itself should carry a substantial portion of responsibility in the development of Indian standards and voluntarily share it with the consumer interest.

Judged in this context, the present constitution and procedure of the ISI may be considered quite adequate to meet the existing needs of the country, with the proviso, however, that governments, in order to ensure its full and rapid development, should undertake to finance the Institution during the first few years to such an extent as indicated by the slowly accumulating experience, at the same time gradually relaxing its administrative control. Experience so far has shown that the industry is already financing the Institution to more than four times the extent that was initially estimated by the Government. By the same token Government should now reconsider increasing its contribution so that development may proceed at an accelerated pace to meet the growing demand in the country for rapid development of standards.

At a later stage of development when the Institution has published a fairly large number of standards which have found widespread application in industry, Government support may not be needed to a similar extent, for it is natural that industry will gradually begin to appreciate the services rendered by the Institution and willingly undertake to finance its activities. In the meantime, however, every endeavour should be made by the Institution executive to maintain and enhance the confidence that already exists in the ISI so as to make the industry and the consumer feel more and more that the ISI is their own organization intended to serve their common interests.

Question has already arisen, whether the ISI should confine its activities to the development and publication of standards in accordance with its procedures or should also undertake, in certain restricted and well-defined fields, the task of ensuring the adherence to its standards. For example, the Sectional Committee on Cotton Yarn and Cloth recommended that machinery be immediately created under the ISI to test and certify all cloth exported from India. Textile Division Council was consulted by letter ballot and it was found not to be entirely in favour of this proposal. Neither did the existing finances of the Institution permit the building up of such an expensive organization.

Occasion may, however, arise at a later stage when it becomes absolutely necessary for ISI to undertake such tasks, as in fact the CSA is doing



in Canada today in the field of electrical appliances. Such development will necessarily have to be related to legislation and one of its prerequisites will be the existence of agreed national standards, the development of which is the immediate task in hand.

In the international sphere, the Director's participation in three ISO Conferences has been most instructive and illuminating. Generally speaking, the outside world appears to have a great deal of respect for what India has accomplished and for her endeavours to create a permanent place for herself in the community of advanced nations. Everyone appears to be looking forward to this development and is willing to co-operate and assist us in our efforts.

In the field of international standardization in particular, it may be safely stated that the ISI has earned a privileged position in the community of leading nations. But the fact should never be overlooked that our continued success in the international sphere can only be ensured if our national programmes make rapid strides.

**11.2 Commonwealth Relations**—Relations of the ISI with the national standards bodies of the Commonwealth have been strengthened steadily during the year under report. Extensive exchange of publications, draft standards and minutes of technical committee meetings takes place freely. These exchanges are considered to be of mutual benefit, but the ISI is particularly assisted in having on hand advance information on projects under way elsewhere dealing with subjects in which it is itself engaged.

A total of 414 draft standards and 191 proceedings of first meetings of technical committees were received from Commonwealth countries, as detailed in Table V.

**TABLE V—DRAFT STANDARDS AND PROCEEDINGS OF FIRST MEETINGS FROM COMMONWEALTH COUNTRIES AND OTHERS**

| COUNTRY         | DRAFT STANDARDS | PROCEEDINGS OF FIRST MEETINGS |
|-----------------|-----------------|-------------------------------|
| 1. Australia    | 35              | 18                            |
| 2. Eire         | 15              | 4                             |
| 3. New Zealand  | 13              | 10                            |
| 4. South Africa | 78              | 56                            |
| 5. UK           | 233             | 88                            |
| 6. Others       | 40              | 15                            |
|                 | 414             | 191                           |

During the year under report, the ISI sent out 7 draft standards for comments and 23 proceedings of first meetings to Commonwealth countries.

## 12. CONTROL OF QUALITY OF EXPORT GOODS

During his foreign tour, the Director held discussions with the Indian Trade Commissioner at Toronto, Canada (July 24), as well as the Consulate General of India in New York (August 2 and 6) concerning the question of standardization of products exported from India to those

countries. In addition to shellac and mica, major items of Indian exports of interest were stated to be :

Jute  
Carpet Wool  
Coir Products  
Carpets  
Manganese Ore  
Chromium Ore  
Sports Goods

In the opinion of the Indian Trade Commissioners abroad, the absence of standards has been particularly felt in relation to carpet wool and floor coverings including coir mattings. Both these officers were requested to let the ISI have technical details concerning which standardization would be desirable, to which they agreed. This material representing the foreign consumers' point of view has not been available to the Indian producer to any large extent and is expected to be of value to the ISI Committee.

On the Director's return to India, enquiries were instituted, and the Ministry of Commerce was contacted to determine the extent of interest, to obtain technical data and to compile a list of parties concerned with the manufacture and export of these goods.

The Commerce Ministry called an inter-ministerial meeting on 23 February 1949 to consider the question of control over the quality of goods exported out of the country. It noted and reviewed the activities of the Agricultural Marketing Adviser (Directorate of Marketing and Inspection) and those of the ISI. It made certain recommendations with respect to commodities and other goods which were considered desirable for standardization and to which control of this kind could be applied. It also decided that the question of enforcement of standards in the export goods trade should be considered specifically in respect of individual commodities and that it might be taken up when standards for individual commodities were laid down.

The Honourable Minister for Industry and Supply, at the meeting of the Executive Committee of the ISI held on 23 March 1949, emphasized the need for developing immediately suitable machinery for enforcing control of quality of export goods. The EC decided to set up a special committee for Control of Quality of Export Goods (EC 6) to go into the details of this question and formulate specific recommendations for the inspection and testing of important items of export and recommend legislation required to enforce such a control.

Under the scheme for certification marking, which is now under consideration of the ISI, manufacturers producing goods conforming to ISI standards shall have, under certain conditions, the privilege to obtain licences from the ISI for marking their goods with the ISI Certification Mark. When this scheme is put into operation in respect of export goods, part of the inspection and testing machinery now being contemplated will become unnecessary. It may, therefore, be borne in mind that any scheme developed by this



committee may only need to be of a temporary character, so far as manufactured goods are concerned. The certification marking scheme will, however, require legislation of its own giving the ISI the necessary powers.

Commodities requiring immediate attention are as follows :

- 1) Tobacco
- 2) Sann Hemp
- 3) Skins (Goat and Sheep)
- 4) Bristles
- 5) Kapok
- 6) Hair
- 7) Wool
- 8) Oil Seeds
- 9) Vegetable Oils
- 10) Seedlac
- 11) Shellac
- 12) Coir and Coir Products
- 13) Tea-chests
- 14) Cotton Textiles
  - a) Seaworthy packing for cotton textiles
- 15) Mica
- 16) Manganese Ore
- 17) Sports Goods

In addition to these commodities, the question of standardizing all kinds of floor coverings produced in India has recently been raised. Indian carpets used to find their way into export trade to a large extent in the past, but it is understood that this trade is fast dwindling, chiefly due to the fall in quality of goods more recently exported. In addition to quality considerations, there is the important question of developing new designs and styles to suit the taste of the foreign consumers. Little or no attempt has been made in an organized manner by the Indian industry to determine the tastes and needs of their foreign customers. In order to revive this trade, it is not only necessary to consider standardization, but also the organization of an agency to investigate the problems of design and styling and to advise the Indian producers.

The Director has proposed the organization of a large export corporation mainly financed and controlled by the Government with the object of (1) co-ordinating production and procurement of floor coverings from all parts of India in collaboration with provincial and state Directors of Industries; (2) investigating tastes of foreign consumers to guide designs and styling; (3) organizing training of skilled workers; (4) assisting the ISI in developing standards for cottage-industry products of this nature; (5) supplying technical guidance, data on preferred designs, raw materials, and tools to cottage-scale producers; etc.

It is understood that the Commerce Ministry is considering a similar scheme in relation to all cottage industries. If such a corporation materializes, it will greatly facilitate the work of the ISI in relation to standardization of products, practices and raw materials for all cottage industries, which may yet form the backbone of the economic life of the masses in the country.

Work of the ISI Committee for Control of Quality of Export Goods (EC 6) is being expedited and its recommendations will soon be in the hands of the Government.

### 13. PUBLICATIONS

**13.1 Standards** — Publication and progress of standards has already been dealt with under 8. For the benefit of Indian manufacturers, industrialists and others, the ISI, on recommendations of its Sectional Committee on Quality Control and Industrial Statistics, has reprinted the American Standard Z1.3:1942 "Control Chart Method of Controlling Quality During Production". The technical journals of the country fully endorsed the importance of the publication, and gave wide publicity to the press note on the subject issued by the ISI.

**13.2 ISI Bulletin** — Publication of the quarterly *ISI Bulletin* was commenced from January 1949. Messages of goodwill were received from several national standards bodies abroad. The *Bulletin* has at present a circulation of about 1300, and the number is steadily rising. Widespread interest is being evinced in India by industrialists and technical institutions in the activities of the ISI as reported in the journal from time to time.

The *ISI Bulletin* is the first and only journal in India that has undertaken the publication of reports on standardization activities in India and overseas. The object of the periodical is to make the country standards-conscious by bringing to the notice of manufacturers, technologists, scientists and consumers the need for the technique of, and benefits accruing from, systematic rationalization of methods of production, limitations of number of varieties of commercial products, introduction of methods of quality control in production and inspection, popularization of codes of practice to guide industrial activity in general, etc.

**13.3 Articles Published in Other Journals** — During the year, a number of articles dealing with the organization and activities of the ISI were contributed to various periodicals in India and overseas, as given in Table VI.

TABLE VI — ARTICLES CONTRIBUTED

| TITLE   | JOURNAL                                       | DATE                  |
|---|---|-----------------------|
| Indian Standards Institution                        | I & S Quarterly                               | April-June 1948       |
| India Gives Priority to Standardization of Industry | Board of Trade Journal (UK)                   | 19 June 1948          |
| Indian Standards Institution                        | I & S Quarterly                               | July-September 1948   |
| India Reports Active Program                        | Industrial Standardization (USA)              | September 1948        |
| Indian Standards Institution Established            | Standards World (USA)                         | Winter 1948           |
| Indian Standards Institution                        | I & S Quarterly                               | October-December 1948 |
| Indian Standards Institution                        | Hindustan Times (Science Congress Supplement) | 3 January 1949        |



**13.4 Press Notes** — The Institution has kept the public well informed of its activities by issuing press notes regularly on every draft Indian standard at the time of its circulation among interested parties and on other activities of interest. These are published by the popular press and also by the technical journals that are interested in the subject-matter of the draft standard. A list of the press notes issued during the period under review is given in Table VII.

**TABLE VII — PRESS NOTES ISSUED**

| DATE          | SUBJECT   |
|---------------|---|
| 18 Aug 1948   | International Conference on Standardization   |
| 27 Aug 1948   | Synthetic Mica  |
| 20 Sept 1948  | Sectional Committee on Mica (first meeting)   |
| 29 Sept 1948  | Inauguration of CDC and GC meetings   |
| 2 Sept 1948   | Draft Indian Standard on Methods of Test for Shrinkage of Woven, Cotton and Linen Cloth on Laundering |
| 7 Sept 1948   | Reprint Z1.3-1942 — Control Chart Method of Controlling Quality During Production                     |
| 14 Dec 1948   | Draft Indian Standards for Refractories   |
| 8 Jan 1949    | Indian Standards Institution Issues Quarterly Bulletin  |
| 18 March 1949 | Draft Indian Standard on Wool for Export  |

Certain important technical journals, like the *Metal Market Review*, *Current Science*, *Journal of Scientific & Industrial Research*, *Commercial Publications*, *Textile Digest*, *Journal of the Indian Chemical Society*, etc., have been regularly reporting ISI activities in their columns.

The *Indian Concrete Journal* brought out the importance of the rôle played by the ISI in an editorial in its 15 June 1948 issue. The activities of the ISI were surveyed by the *Free Press Journal* in its issue dated 16 March 1949.

The All India Radio contributed its share in making the general public standards-conscious by

reporting General Council meetings of the ISI and the addresses by the Honourable President relating to the policies of the ISI.

**13.5 Quality Control Publicity** — The Quality Control movement, initiated last year by the Indian Statistical Institute, Indian Science Congress Association and the Indian Standards Institution, was given due publicity by the technical press of the country. On the invitation of the ISI Sectional Committee on Quality Control, a number of technicians and specialists have contributed articles on quality control to technical journals, as given in Table VIII.

**13.6 Sale of Standards** — The ISI has continued and further developed the sale of standards literature in India and is fast becoming an effective clearing house for all information and literature regarding standardization activities of the world. Since January 1949 it has formally taken over the sales agency of the BSI in India. During the period under review, about 1600 publications, worth about Rs 5600/-, were sold through the ISI as given in Table IX.

**TABLE IX — APPROXIMATE SALE OF PUBLICATIONS**

| ORGANIZATION  | PUBLICATIONS | AMOUNT<br>Rs |
|---------------|--------------|--------------|
| ISI           | 182          | 600          |
| BSI           | 1030         | 3,000        |
| ASA           | 262          | 600          |
| ASTM          | 69           | 1,300        |
| Miscellaneous | 30           | 100          |
| <b>TOTAL</b>  | <b>1573</b>  | <b>5,600</b> |

**13.7 Library** — Collection of standard specifications from all national and international organizations was continued. During the year under report, 2240 new specifications were received and accessioned in the library. The ISI now stocks standards of the following organizations and countries:

**TABLE VIII — ARTICLES ON QUALITY CONTROL PUBLISHED ON THE INITIATIVE OF THE ISI**

| AUTHOR                            | TITLE   | JOURNAL  | DATE           |
|-----------------------------------|---|--|----------------|
| 1. W. A. Shewhart                 | Quality Control Methods   | Textile Digest   | Apr-June 1948  |
| 2. S. N. Shilvant                 | Quality Control in Practice   | Textile Digest   | Apr-June 1948  |
| 3. K. M. P(armeshwar)             | Quality Control   | Textile Digest   | Apr-June 1948  |
| 4. N. S. R. Sastry                | Economic Implications of Quality Control                                    | Textile Digest   | Apr-June 1948  |
| 5. B. Sarkar & T. N. Ramachandran | Statistical Method of Quality Control in Textile Industry                   | Indian Textile Journal   | May 1948       |
| 6. N. S. R. Sastry                | Quality Control Technique   | Capital  | Aug 5, 1948    |
| 7. J. Singh                       | Quality Control in Industry and Its Application to Railway Statistics       | Quarterly Technical Bulletin of the Ministry of Railways and Journal of Scientific & Industrial Research | Aug 1948       |
| 8. "Spot Kick"                    | Quality Control under Microscope  | Textile Digest   | July-Sept 1948 |
| 9. N. S. R. Sastry                | Quality Control (Reply to "Spot Kick")                                      | Textile Digest   | July-Sept 1948 |
| 10. P. C. Mahalanobis             | W. A. Shewhart and Statistical Quality Control in India                     | Sankhya  | Part 1, 1948   |
| 11. K. R. Nair                    | Application of Statistical Quality Control Methods in Wood-based Industries | Indian Forester  | 1948           |



- 1) American Standards Association (USA)
- 2) American Society for Testing Materials (USA)
- 3) Institute of Radio Engineers (USA)
- 4) Radio Manufacturers' Association (USA)
- 5) National Bureau of Standards, United States Department of Commerce
- 6) British Standards Institution (UK)
- 7) Canadian Standards Association
- 8) Canadian Government Specifications Board
- 9) Standards Institute of Israel
- 10) Standards Association of Australia
- 11) South African Bureau of Standards
- 12) Oesterreichischer Normenausschuss (Austria)
- 13) Institut Belge de Normalisation (Belgium)
- 14) National Bureau of Standards (China)
- 15) Ceskoslovenska Spolocnost Normalisacni (Czechoslovakia)
- 16) Association Francaise de Normalisation (France)
- 17) Institute for Industrial Research and Standards (Eire)
- 18) Suomen Standardisoimislahtakunta (Finland)
- 19) Magyar Szabvanyugyi Intezet (Hungary);
- 20) Ente Italiano di Unificazione (Italy)
- 21) Board of Patents and Standards (Japan)
- 22) Hoofdcommissie voor de Normalisatie in Nederland (Netherlands)
- 23) Norges Standardiserings-Forbund (Norway)
- 24) Polski Komitet Normalisacyjny (Poland)
- 25) Reparticao de Normalizacao (Portugal)
- 26) Sveriges Standardiseringskommission (Sweden)
- 27) Association Suisse de Normalisation (Switzerland)
- 28) Vsesojuznyj Komitet Standartov (USSR)

The number of standard specifications in the library now exceeds 7500. These have been catalogued and indexed for ready reference.

All new accessions to the library are being published in the *ISI Bulletin* every quarter for the information of members and other subscribers.

Over a hundred reference books were also added to the library for the use of officers and staff of the Institution and for consultation by members.

Arrangements were made, according to the need, for translation of standards literature in French, German, Italian and Russian.

The resources of the Library were freely utilized by the various committees and subcommittees set up by the Institution. Bibliographies for the use of committee members were prepared on more than 25 subjects. The number of specifications lent outside for the use of members in their committee work was of the order of 2000.

The Library also collected and supplied information on standards literature on various subjects in India and abroad. Eighty-six such enquiries were attended to by the Library during the year.

## 15. FINANCES

During the period under review, the Institution operated well within its income and financial

position was satisfactory. Against the anticipated expenditure of Rs 3,03,352/- the actual amount spent was Rs 2,58,462/6/5. The difference in these figures is partly accounted for by the fact that the posts provided from the beginning of the year could be filled up only during the second half of the year.

As regards income, it may be noted that the Institution received Rs 1,15,932/10/- as subscription as against last year's figure of Rs 95,588/8/-. Besides, the fixed deposit of Rs 1,25,000/- was further increased by Rs 50,000/-.

Although the year's balance exceeds the anticipated opening balance of the next year by Rs 55,286/5/6, the Institution is likely to face a budget deficit of Rs 1,44,675/- during 1949-50.

Urgent demands from various important quarters including Government Ministries for extending the activities of the ISI are being received from time to time. Most of these demands are justified from the point of view of their importance to the development of either the industrial production within the country or of expansion of export trade. But all these require a reasonable assurance of increase in revenue before the Institution can undertake additional work. In view of the rapid development and added activities and increased cost of commodities and services, a request was made to the Government to increase their grant-in-aid from Rs 2 lacs to Rs 4.5 lacs for the next financial year, but the Government of India have deferred the decision for the present.

The Government of India have since been requested to sanction an annual grant of Rs. 10,000/- to meet the extra expenditure involved in connection with the payment of increased allowances to the lower-paid ISI staff in line with those approved by the Government of India.

In order to implement the decisions of the inter-ministerial meeting for expediting the standardization of important items of export, such as sports goods, coir and coir products, etc. (see 12), the Ministry of Commerce have been approached to sanction an annual grant of Rs 25,000/- to the ISI.

The EC gave serious thought to the deficit budget for the next year. In this connection, the EC approved, for necessary action, an important recommendation of the FC on the steps to be taken to make up the large gap between the financial needs and the income of the Institution. According to this recommendation, the provincial and state governments have been approached through the Honourable President to raise their subscriptions to a level commensurate with their interest and the benefits that accrue to them from standardization of industrial and agricultural commodities. It was also decided to intensify the drive for enrolling more members and to make the Indian industry more standards-conscious.

A very large majority of subscribing members subscribed at the minimum rates prescribed for their respective classes of membership. From Appendix 16.6 it will be seen that only 26, out of 439 members, have subscribed during this year, amounts in excess of the minimum rate for this class of membership. The EC feels that the time



has now come for members to give serious consideration to increasing their annual subscription to a level more commensurate with their status and their interest in the work of the ISI.

The Institution has much pleasure in placing on record its appreciation of the support, both technical and financial, rendered freely by its members and others in the technical work of numerous committees and subcommittees. The members representing industries, quasi-government bodies, central, provincial and state governments generally meet the expenses for travelling, etc., for their employees. This includes travelling expenses for members of delegations sent to international conferences to represent the ISI in several ISO committees. It is estimated that during the year under review, indirect contributions of this kind amounted to approximately Rs 10,900/-.

The Indian Jute Mills' Association has agreed to the proposal for financing the post of a secretary for the Jute Sectional Committee, to the extent of Rs 10,000/- per year. Similarly, the

Cotton Yarn and Cloth Sectional Committee and the Textile Chemistry Sectional Committee require the services of full-time secretaries. Requests were thus made to associations of cotton textile industry for financing the posts of these two secretaries. So far the Ahmedabad Millowners' Association has agreed to contribute Rs 3,000/- for one year. But until an adequate contribution is assured, it will not be possible to appoint full-time secretaries for these two committees.

Revised budget for the year 1948-49, and budget estimates for the year 1949-50, as approved by the GC at its fourth meeting held on 24 March 1949, are given in Appendix 16.7.

Contributions and subscriptions made by the central, provincial and state governments, firms and trades and individuals are shown in Appendix 16.6.

The accounts of the ISI were duly audited by the Auditor-General in India and were found correct. Audited accounts for the year 1948-49 are detailed in Appendix 16.8.



## 16. APPENDICES

### APPENDIX 16.1

#### AMENDMENTS TO THE RULES AND REGULATIONS OF THE ISI

The GC unanimously approved the following alterations to the existing Rules and Regulations of the ISI proposed by the EC :

- 1) To alter the text of para 26 to read as follows :  
" 26 (a) A Sectional Committee shall be empowered to co-opt additional members if in its opinion such co-option will make the Committee more fully representative of the interests concerned with its work, provided that consumers' interests remain predominant in accordance with para 24 above.
- (b) A Sectional Committee may appoint subcommittees and panels from among its own members and others, and may invite interests to nominate representatives on such subcommittees and panels.
- (c) Subcommittees and panels may co-opt additional members who by reason of specific attainments are qualified to assist them in the task allotted to them."
- 2) To delete existing para 28(b).
- 3) To re-number paras 28(c) and 28(d) as 28(b) and 28(c) respectively.
- 4) To substitute the existing para 30 by the following :

- " 30 (a) The Annual Report of the proceedings of the Institution and all work undertaken during the year, including the audited accounts, shall be prepared and published by the Executive Committee, within nine months from the end of the year to which it relates for the information of the Central Government and of the members of the Institution.
- (b) The Annual Report will be formally presented by the Chairman of the Executive Committee to the General Council at a subsequent meeting.
- (c) The Annual Report shall also be laid upon the tables of the Dominion Legislature."
- 5) To add the following paragraph at the end of para 27(e) :  
" On recommendation of a Sectional Committee entrusted with the preparation of a draft, this procedure for circulation may be dispensed with by the Division Council concerned in specific cases where the subject-matter of the draft specification or code in question is considered to be of non-controversial nature or where the need for the standard in question is considered urgent."

### APPENDIX 16.2

#### ISO COUNCIL MEETING 1948 — AGENDA

- 1) Opening Remarks by the President
- 2) Apologies for absence
- 3) Confirmation of Minutes of 1947 Council Meeting
- 4) Report of General Secretary
- 5) Application of Argentine Standards Organization (IRAM) for Membership of ISO
- 6) Co-operation with other International Organizations
  - a) United Nations Educational, Scientific and Cultural Organization (UNESCO)
  - b) International Office for the Standardization of Artificial Fibres (BISFA)
  - c) International Federation on Documentation (FID)
  - d) International Air Transport Association (IATA)
  - e) International Commission on Illumination (ICI)
  - f) International Dairy Federation (IDF)
  - g) International Civil Aviation Organization (ICAO)
  - h) International Labour Organization (ILO)
  - j) International Wool Textile Organization (IWTO)
  - k) International Broadcasting Organization (OIR)
  - m) International Meteorological Organization (IMO)
  - n) International Union of Chemistry (UIC)
- 7) Technical Committees
  - a) Existing Technical Committees
  - b) Inauguration of New Technical Committees Relations with DNA, Germany
  - c) Draft Directives for Technical Committees
- 8) Finance
- 9) Election of Vice-President
- 10) Titles of National Standards in the three Official Languages
- 11) Participation by Member Bodies in Exhibitions, etc., held abroad
- 12) Publication of an ISO Periodical
- 13) Modifications to Statutes
- 14) Date and Place of Next Meeting
- 15) Other Business
  - Nomination of Council Member
  - Election of Officers
  - Brief Reports on Council Proceedings.



## APPENDIX 16.3

### INDIA'S PARTICIPATION IN ISO TECHNICAL COMMITTEES

| <p>1) The ISI is the Secretariat ('S' Member) for ISO/TC 50 — Shellac, and ISO/TC 56 — Mica</p> <p>2) The ISI is actively participating ('P' Member) in the following 26 committees:</p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">ISO TC No.</th> <th style="text-align: left;">TITLE</th> </tr> </thead> <tbody> <tr><td>10</td><td>Drawings (general principles)</td></tr> <tr><td>12</td><td>Quantities, Symbols, Units, Conversion Tables</td></tr> <tr><td>17</td><td>Iron and Steel</td></tr> <tr><td>19</td><td>Standard Diameters and Preferred Numbers</td></tr> <tr><td>23</td><td>Agricultural Machines</td></tr> <tr><td>25</td><td>Cast Iron and Cast Steel</td></tr> <tr><td>27</td><td>Solid Mineral Fuels (Coal, Coke, etc.)</td></tr> <tr><td>29</td><td>Small Tools</td></tr> <tr><td>33</td><td>Refractories</td></tr> <tr><td>34</td><td>Agricultural Products</td></tr> <tr><td>35</td><td>Raw Material for Paints, Varnishes and Lacquers</td></tr> <tr><td>36</td><td>Cinematography</td></tr> <tr><td>37</td><td>Terminology (general principles and co-ordination)</td></tr> <tr><td>38</td><td>Textiles</td></tr> <tr><td>39</td><td>Machine Tools</td></tr> <tr><td>40</td><td>Upholstery Material</td></tr> <tr><td>41</td><td>Pulleys and Belts (including Vee-belts)</td></tr> <tr><td>46</td><td>Documentation</td></tr> <tr><td>47</td><td>Chemistry</td></tr> <tr><td>48</td><td>Laboratory Glassware</td></tr> <tr><td>54</td><td>Essential Oils</td></tr> <tr><td>55</td><td>Timber (sizing, defects)</td></tr> <tr><td>58</td><td>Gas Cylinders</td></tr> <tr><td>59</td><td>Building Construction</td></tr> <tr><td>65</td><td>Manganese Ore</td></tr> <tr><td>69</td><td>General Definitions relating to Chemical and Physical Test Results</td></tr> </tbody> </table> <p>3) The ISI is interested in receiving all papers, documents and literature, etc. ('+' Member), in the respect of following 38 committees:</p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">ISO TC No.</th> <th style="text-align: left;">TITLE</th> </tr> </thead> <tbody> <tr><td>1</td><td>Screw Threads</td></tr> <tr><td>2</td><td>Bolts, Nuts and Accessories</td></tr> <tr><td>3</td><td>Limits and Fits</td></tr> <tr><td>4</td><td>Ball and Roller Bearings</td></tr> <tr><td>5</td><td>Pipe and Fittings</td></tr> <tr><td>6</td><td>Paper</td></tr> <tr><td>7</td><td>Rivets</td></tr> <tr><td>11</td><td>Test Pressures for the Acceptance of Stationary Boilers and Unification of Boiler Construction Codes</td></tr> <tr><td>13</td><td>Axle Heights for Machines</td></tr> </tbody> </table> | ISO TC No.  | TITLE            | 10 | Drawings (general principles) | 12 | Quantities, Symbols, Units, Conversion Tables | 17 | Iron and Steel | 19 | Standard Diameters and Preferred Numbers | 23 | Agricultural Machines | 25 | Cast Iron and Cast Steel | 27 | Solid Mineral Fuels (Coal, Coke, etc.) | 29 | Small Tools | 33 | Refractories | 34 | Agricultural Products | 35 | Raw Material for Paints, Varnishes and Lacquers | 36 | Cinematography | 37 | Terminology (general principles and co-ordination) | 38 | Textiles | 39 | Machine Tools | 40 | Upholstery Material | 41 | Pulleys and Belts (including Vee-belts) | 46 | Documentation | 47 | Chemistry | 48 | Laboratory Glassware | 54 | Essential Oils | 55 | Timber (sizing, defects) | 58 | Gas Cylinders | 59 | Building Construction | 65 | Manganese Ore | 69 | General Definitions relating to Chemical and Physical Test Results | ISO TC No. | TITLE | 1 | Screw Threads | 2 | Bolts, Nuts and Accessories | 3 | Limits and Fits | 4 | Ball and Roller Bearings | 5 | Pipe and Fittings | 6 | Paper | 7 | Rivets | 11 | Test Pressures for the Acceptance of Stationary Boilers and Unification of Boiler Construction Codes | 13 | Axle Heights for Machines | <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">ISO TC No.</th> <th style="text-align: left;">TITLE</th> </tr> </thead> <tbody> 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<tr><td>60</td><td>Gears</td></tr> <tr><td>61</td><td>Plastics</td></tr> <tr><td>62</td><td>Sheet and Wire Gauges (designations of diameters and thicknesses)</td></tr> <tr><td>63</td><td>Screw Threads for Glass Containers</td></tr> <tr><td>64</td><td>Method of Testing for Performance and Efficiency of Fuel using Equipment, excluding Internal Combustion Engines</td></tr> <tr><td>66</td><td>Determination of Viscosity</td></tr> <tr><td>67</td><td>Material for Pipe Lines and other fixed Installations in the field of the Petroleum Industry</td></tr> <tr><td>68</td><td>Standardization in the sphere of Banking</td></tr> </tbody> </table> <p>4) The ISI is not interested ('-' Member) in the work of the following 3 committees:</p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">ISO TC No.</th> <th style="text-align: left;">TITLE</th> </tr> </thead> <tbody> <tr><td>8</td><td>Shipbuilding Details for Sea Navigation</td></tr> <tr><td>9</td><td>Shipbuilding Details for Inland Navigation</td></tr> <tr><td>32</td><td>Splined Shafts and Hubs</td></tr> </tbody> </table> <p>In addition, there are proposals afoot for setting up of 4 more committees as follows in respect of which India's interest is indicated against each:</p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">ISO/TC/P No.</th> <th style="text-align: left;">TITLE</th> <th style="text-align: left;">INDIA'S INTEREST</th> </tr> </thead> <tbody> <tr><td>a</td><td>Definition of Engines</td><td>+</td></tr> <tr><td>d</td><td>Printing Standards</td><td>+</td></tr> <tr><td>e</td><td>Textile Machinery</td><td>P</td></tr> <tr><td>g</td><td>Watches and Clocks</td><td>+</td></tr> </tbody> </table> | ISO TC No. | TITLE | 14 | Shaft Ends | 15 | Couplings | 16 | Keys | 18 | Commercial Zinc | 20 | Aircraft | 21 | Fire Fighting Equipment | 22 | Automobiles | 24 | Sieves | 26 | Copper and Copper Alloys | 28 | Petroleum Products | 30 | Measurement of Fluid Flow | 31 | Tyres, Rims and Valves (general) | 42 | Photography | 43 | Acoustics | 44 | Welding | 45 | Rubber | 49 | Thread Tolerances | 51 | Pallets for Unit Load Method of Materials Handling | 52 | Metal Food Containers | 53 | Package of Frozen Foods | 57 | Surface Finish | 60 | Gears | 61 | Plastics | 62 | Sheet and Wire Gauges (designations of diameters and thicknesses) | 63 | Screw Threads for Glass Containers | 64 | Method of Testing for Performance and Efficiency of Fuel using Equipment, excluding Internal Combustion Engines | 66 | Determination of Viscosity | 67 | Material for Pipe Lines and other fixed Installations in the field of the Petroleum Industry | 68 | Standardization in the sphere of Banking | ISO TC No. | TITLE | 8 | Shipbuilding Details for Sea Navigation | 9 | Shipbuilding Details for Inland Navigation | 32 | Splined Shafts and Hubs | ISO/TC/P No. | TITLE | INDIA'S INTEREST | a | Definition of Engines | + | d | Printing Standards | + | e | Textile Machinery | P | g | Watches and Clocks | + |
|--|---|------------------|----|-------------------------------|----|---|----|----------------|----|--|----|-----------------------|----|--------------------------|----|--|----|-------------|----|--------------|----|-----------------------|----|---|----|----------------|----|--|----|----------|----|---------------|----|---------------------|----|---|----|---------------|----|-----------|----|----------------------|----|----------------|----|--------------------------|----|---------------|----|-----------------------|----|---------------|----|--|------------|-------|---|---------------|---|-----------------------------|---|-----------------|---|--------------------------|---|-------------------|---|-------|---|--------|----|--|----|---------------------------|---|------------|-------|----|------------|----|-----------|----|------|----|-----------------|----|----------|----|-------------------------|----|-------------|----|--------|----|--------------------------|----|--------------------|----|---------------------------|----|----------------------------------|----|-------------|----|-----------|----|---------|----|--------|----|-------------------|----|--|----|-----------------------|----|-------------------------|----|----------------|----|-------|----|----------|----|---|----|------------------------------------|----|---|----|----------------------------|----|--|----|--|------------|-------|---|---|---|--|----|-------------------------|--------------|-------|------------------|---|-----------------------|---|---|--------------------|---|---|-------------------|---|---|--------------------|---|
| ISO TC No.   | TITLE   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 10   | Drawings (general principles)   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 12   | Quantities, Symbols, Units, Conversion Tables   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 17   | Iron and Steel  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 19   | Standard Diameters and Preferred Numbers  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 23   | Agricultural Machines   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 25   | Cast Iron and Cast Steel  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 27   | Solid Mineral Fuels (Coal, Coke, etc.)  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 29   | Small Tools   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 33   | Refractories  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 34   | Agricultural Products   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 35   | Raw Material for Paints, Varnishes and Lacquers   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 36   | Cinematography  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 37   | Terminology (general principles and co-ordination)  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 38   | Textiles  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 39   | Machine Tools   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 40   | Upholstery Material   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 41   | Pulleys and Belts (including Vee-belts)   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 46   | Documentation   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 47   | Chemistry   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 48   | Laboratory Glassware  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 54   | Essential Oils  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 55   | Timber (sizing, defects)  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 58   | Gas Cylinders   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 59   | Building Construction   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 65   | Manganese Ore   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 69   | General Definitions relating to Chemical and Physical Test Results  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| ISO TC No.   | TITLE   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 1  | Screw Threads   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 2  | Bolts, Nuts and Accessories   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 3  | Limits and Fits   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 4  | Ball and Roller Bearings  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 5  | Pipe and Fittings   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 6  | Paper   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 7  | Rivets  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 11   | Test Pressures for the Acceptance of Stationary Boilers and Unification of Boiler Construction Codes            |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 13   | Axle Heights for Machines   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| ISO TC No.   | TITLE   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 14   | Shaft Ends  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 15   | Couplings   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 16   | Keys  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 18   | Commercial Zinc   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 20   | Aircraft  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 21   | Fire Fighting Equipment   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 22   | Automobiles   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 24   | Sieves  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 26   | Copper and Copper Alloys  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 28   | Petroleum Products  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 30   | Measurement of Fluid Flow   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 31   | Tyres, Rims and Valves (general)  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 42   | Photography   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 43   | Acoustics   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 44   | Welding   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 45   | Rubber  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 49   | Thread Tolerances   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 51   | Pallets for Unit Load Method of Materials Handling  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 52   | Metal Food Containers   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 53   | Package of Frozen Foods   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 57   | Surface Finish  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 60   | Gears   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 61   | Plastics  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 62   | Sheet and Wire Gauges (designations of diameters and thicknesses)   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 63   | Screw Threads for Glass Containers  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 64   | Method of Testing for Performance and Efficiency of Fuel using Equipment, excluding Internal Combustion Engines |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 66   | Determination of Viscosity  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 67   | Material for Pipe Lines and other fixed Installations in the field of the Petroleum Industry                    |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 68   | Standardization in the sphere of Banking  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| ISO TC No.   | TITLE   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 8  | Shipbuilding Details for Sea Navigation   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 9  | Shipbuilding Details for Inland Navigation  |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| 32   | Splined Shafts and Hubs   |                  |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| ISO/TC/P No.   | TITLE   | INDIA'S INTEREST |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| a  | Definition of Engines   | +                |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| d  | Printing Standards  | +                |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| e  | Textile Machinery   | P                |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |
| g  | Watches and Clocks  | +                |    |                               |    |   |    |                |    |  |    |                       |    |                          |    |  |    |             |    |              |    |                       |    |   |    |                |    |  |    |          |    |               |    |                     |    |   |    |               |    |           |    |                      |    |                |    |                          |    |               |    |                       |    |               |    |  |            |       |   |               |   |                             |   |                 |   |                          |   |                   |   |       |   |        |    |  |    |                           |   |            |       |    |            |    |           |    |      |    |                 |    |          |    |                         |    |             |    |        |    |                          |    |                    |    |                           |    |                                  |    |             |    |           |    |         |    |        |    |                   |    |  |    |                       |    |                         |    |                |    |       |    |          |    |   |    |                                    |    |   |    |                            |    |  |    |  |            |       |   |   |   |  |    |                         |              |       |                  |   |                       |   |   |                    |   |   |                   |   |   |                    |   |

## APPENDIX 16.4

### FIRST MEETING OF ISO/TC 38 — TEXTILES

#### AGENDA

- 1) Conditioning of test specimens
- 2) Universal Yarn Count
- 3) Simplification of Yarn Counts
- 4) Standardization of cloth width
- 5) Principles and practice of tensile strength testing
- 6) Definition of the term 'Rayon'
- 7) Methods of Test for rayon yarn, rayon staple and rayon fabrics

- 8) Textile Machinery
- 9) Adoption of 'S' and 'Z' twists
- 10) Future programme of work

#### SCOPE OF WORK

"To ensure a common understanding among producers, manufacturers, converters, distributors and consumers, the committee shall concern itself with the co-ordination and unification of national standards for all kinds of fabricated textiles and



for the fibres, yarns, threads and cords entering therein including :

- i) textile agents or auxiliaries and chemical products required in processing for testing and not otherwise covered by existing or future ISO technical committees ;
- ii) methods of tests for each of the above ;
- iii) terms and definitions."

A list of subjects representing the immediate programme of the committee was adopted, of which the following were assigned to be dealt with by the Secretariat, namely the UK :

- a) Cloth strength test
- b) Humidity, temperature and conditioning
- c) Sampling and statistical methods of analysis
- d) Analysis of fibre mixtures
- e) Commercial weights and moisture regain

- f) Definitions and nomenclature
- g) Methods of measurement for cloth width, length, thickness, weight and structure

Subcommittees were established to deal with the following subjects with secretariats as indicated in brackets :

- 1) Colour fastness tests with particular reference to light, washing and perspiration ( USA )
- 2) Shrinkage of fabrics in washing ( USA )
- 3) Systematic reduction of cloth widths ( Czechoslovakia and USSR )
- 4) Systematic restriction of the number of yarn counts ( Netherlands )
- 5) Yarn testing — general methods and special methods ( USA )
- 6) Fibre testing with special reference to man-made fibres ( France )

India agreed to be a member of all these subcommittees with the exception of the last.

## APPENDIX 16.5

### DIRECTOR'S TOUR ABROAD

#### 1. UNITED KINGDOM

*British Standards Institution (BSI)* — The Director, Mr. P. Good, and other officers of the British Standards Institution very kindly undertook to make all necessary arrangements for the Director's visits to various places and gave every facility to study the BSI organization. In fact, they went out of their way to place at his disposal all office facilities and actually incurred a good deal of expense. It is hoped that the ISI will have a similar opportunity to reciprocate these courtesies in future.

The funds of the BSI are derived approximately equally from three sources, Government grant-in-aid, industry's contributions and sale of publications. The Government, however, exercise no control in any manner on the affairs of the Institution.

The Director of the BSI is assisted by a Personal Assistant who constantly works alongside of him and is in continuous touch with every phase of the Director's activities, so that she can deputize for him at any meeting or conference whenever necessary. Under the Director there are four Assistant Technical Directors. In addition to these there is an Office Manager and a Public Relations Officer.

Each of the Assistant Technical Directors is responsible for a certain number of industry committees and is assisted by either a principal Technical Assistant, of whom there are three, or Committee Secretaries, of whom there are twenty. The Committee Secretaries are not always technically qualified but generally have some experience of the particular industries with which they deal.

Such Secretaries either rise from the staff as a result of their experience within the organization or are recruited from outside, having had previous experience as Committee Secretaries in industry.

Principal Technical Assistants as also Committee Secretaries deal directly with technical committee meetings and report to Assistant Technical Directors. One of these Committee Secretaries, who is a statistician and looks after Quality Control and Statistics Committee of the BSI, has the additional responsibility of guiding the work of drafting inspection clauses of the BSI specifications and assisting in the design and planning of experimental work connected with certain specification projects requiring investigation.

The Office Manager controls all the services required for various branches of the organization including clerical staff, printing, purchases, sales, etc.

The Director has full powers to fix salaries of all his staff within fixed limits and grant increments from time to time as he thinks fit.

Sales Department deals with several hundred orders daily, and is responsible for an income of approximately one-third of the total revenue. The organization is rather complex for it has not only to handle orders from outside, but also from members getting various rates of rebate, from overseas bodies getting certain number of free copies, and also to look after direct sales over the counter.

The estimated cost of producing a standard is roughly £800 to £900 and it takes from one to two years. There are some 1700 Technical Committees who produce some 120 new standards every year.



Of the present 1500 standards, 1300 are actually in force. Three presses deal with the printing of standards and other material. Prices of standards are based on the number of pages, with, of course, a definite minimum. In 1947 income from Sales Department was roughly £36,000 and expenses on the sales side including printing, salaries of staff, rental of space, overhead, etc., was roughly £30,000. The difference, however, does not represent net profit because the cost connected with the actual drafting of standards is not taken into account.

The Library is chiefly concerned with standards, and has complete sets from every country in the world, properly classified under subjects and not according to the Universal Decimal Classification (UDC). (It is understood that arrangements are now being made for introducing UDC Classification.) The Library has facilities for translating literature and documents from most foreign languages, with the exception of a few. This service is utilized by a number of members as well as others.

BSI standards, generally speaking, are voluntary but the Government makes free use of them in various activities and in certain cases actually enforces their use. Following points in this connection are of interest:

- 1) Standards dealing with safety and health matters are incorporated in Government Statutes.
- 2) Government specifies materials conforming to British Standards for use in certain subsidized projects, for example, public buildings, roads, bridges, etc.
- 3) In cases where subsidies are granted to local authorities for certain developments, terms for enforcement are relaxed in case British Standards are adhered to.
- 4) Army, Navy and Air Force Services generally make use of British Standards in their activities, in addition to their own standards which may deal with finished products or which may be supplementary to British Standards.
- 5) Civil Services, on the other hand, do not make use of British Standards so freely, although the general policy is in favour of doing so. This situation arose partly due to scarcity of materials during last war.
- 6) Use of standards in industry is generally connected with the placing of contracts.
- 7) Consumer goods present certain difficult problems mainly concerning enforcement.
- 8) Progress of BSI standard marks has not been very satisfactory, due chiefly to inadequate legislation. Under the present Trade Marks Act all trade associations are entitled to issue licences for the use of their own certification marks. There are some fifty such organizations in addition to the BSI who issue licences for the use of standard marks. The BSI mark itself is used on certain number of products which include clinical thermometers, electrical lamps, dust bins, etc.

During his stay, the Director was enabled to participate in the meetings of the following BSI Councils and Committees:

- 1) Building Division Council (May 25)
- 2) Chemical Division Council (May 26)
- 3) Engineering Division Council (June 14)
- 4) Managing Committee (May 10)
- 5) Documentation Committee (May 20)
- 6) Quality Control Committee (June 3)

An informal meeting with certain members of the BSI Committee on Jute was arranged at the time of the Buxton Conference (June 8, 1948). The BSI Group welcomed the ISI initiative in setting up the Jute Sectional Committee under the Textile Division Council for developing jute and jute products standards in India and felt that there should be free exchange of information between the two Committees. The Liaison Officer of the Indian Jute Mills' Association in London, with whom the Director had held detailed discussions prior to this meeting, was particularly keen to see this liaison develop. The BSI Group was, however, not in favour of initiating an international programme of standardization in the field of jute except perhaps that concerned with methods of test.

The associated institutions that were visited are as follows:

- 1) Rubber Research Association Research Station, Croydon (May 13)
- 2) Road Research Laboratories, Harmondsworth (May 14)
- 3) Fuel Research Station, Greenwich (May 19)
- 4) GEC Research Laboratories, North Wembley (May 19)
- 5) Building Research Station, Watford (May 21)
- 6) Paint Research Station, Teddington (May 24)
- 7) National Physical Laboratories, Teddington (May 24)

Considerable amount of information was collected from these visits, giving an idea how the work of these associated organizations is linked with that of the BSI.

## 2. UNITED STATES OF AMERICA

*American Standards Association (ASA)* — The ASA is the national standards body which represents the country in the international sphere, but its constitution, procedure and status within the country is considerably different from that of others. The ASA is basically an organization of some 50 member bodies, which until recently included certain Government Departments. These member bodies act as standardization agencies within their respective fields of activity, for instance, Society of Automotive Engineers (SAE) deals with the fields of automobiles and aircraft; American Iron and Steel Institute (AISI) with iron and steel; American Petroleum Institute (API) with the petroleum industry, and so forth. One of the sponsoring member bodies, the American Society for Testing Materials (ASTM), is unique inasmuch as it cuts across the whole field of



industry, but concerns itself with methods of testing materials.

In view of the historical background, each sponsoring member body holds a special privileged position in its own sphere. Consequently relatively few of their standards are referred to the ASA for adoption as American Standards. At present there are roughly 800 to 900 nationally adopted American Standards which represent a mere fraction of the total number of standards in force in the country. Of these 800 or 900, only about 200 are actually published by the ASA directly, others being just approved by the ASA. The ASA also publishes a monthly magazine known as *Standardization*.

Vice-Admiral George F. Hussey, Jr., who is the present Secretary of the ASA, was extremely helpful in arranging visits to various associated institutions and provided all office facilities. Dr. P. G. Agnew, who has just retired from the secretaryship of the ASA, is still attached to the organization in the capacity of a Consultant. Mr. Cyril Ainsworth is the Technical Director of the organization assisted by several engineers dealing with various branches of technical work. Among these Dr. Geillard, in addition to carrying his responsibilities in the ASA, has independently organized a course of lectures on standardization, which he delivers at occasional seminars held roughly twice a year. These seminars are intended to give an overall picture of the basic principles of standardization and are very popular among the technical personnel of American firms. They may also prove useful to some of the Indian students specializing in industrial administration in American universities. The Education Secretary of the Indian Embassy in Washington is being kept informed of these seminars from time to time.

Until recently ASA has been operating as a non-corporate body in which Federal Government Agencies and Departments could readily participate both at administrative and at technical levels, but it has now been registered as a corporation in one of the States of the Union; so that Federal Government Agencies cannot participate to the same extent, but will continue to be associated with its technical activities.

In discussions with the executives of certain associated institutions it appeared that, with the exception of a few, their attitude towards the International Organization for Standardization was rather cautious. This might be due to the fact that the American industry finds bulk of its market within the USA and its dependence on international trade is relatively small.

Following associated institutions were visited where Director's reception, without any exception, was cordial and discussions held were free and frank:

#### *Government Agencies*

- 1) US Government Rubber Evolution Laboratories, Akron, O. (June 29)
- 2) National Bureau of Standards, Washington, D.C. (July 8, 14 16 and August 4)

- 3) US Government Department of Agriculture, Washington, D.C. (July 9)
- 4) Federal Specifications Board of the Bureau of Federal Supply, Treasury Department, Washington, D.C. (July 12)
- 5) US Patent Office, Washington, D.C. (July 15, 16)
- 6) Office of Naval Research, Washington, D.C. (August 4)

#### *Others*

- 1) General Motors Corporation, Detroit, Mich., Standards Department, and Research Laboratories (June 28)
- 2) Firestone Research Laboratories, Akron, O. (June 29)
- 3) American Society of Heating and Ventilating Engineers Research Laboratories, Cleveland, O. (June 30)
- 4) Mellon Institute, Pittsburgh, Pa. (July 1)
- 5) Westinghouse Research Laboratories, Pittsburgh, Pa. (July 2)
- 6) National Paint, Varnish and Lacquer Research Association, Washington, D.C. (July 15)
- 7) General Electric Co., Schenectady, N.Y., Engineering Research Laboratories and Factory (July 26)
- 8) Mica Insulators Co., Schenectady, N.Y. (July 27)
- 9) American Iron and Steel Institute, New York (July 29)
- 10) Bell Telephone Laboratories, Murray Hill, N.J. (July 30); New York City (August 5)
- 11) American Petroleum Institute, New York (August 2)
- 12) American Society for Testing Materials, Philadelphia, Pa. (August 3); Convention, Detroit, Mich. (June 25)
- 13) Society of Automotive Engineers, New York (August 6)

Notes concerning these visits have been prepared separately and need not be reproduced here but a few points of importance may perhaps be mentioned.

With most of these organizations, the question of exchange of publications was discussed. In some cases it was agreed that free exchange of all publications will be arranged. In other cases only exchange of publications of standards could be arranged. In some cases, however, such as the Federal Specifications Board, it would be necessary for us to purchase their standards.

Organizations of the Federal Specifications Board under the Bureau of Federal Supply in the Department of Treasury of the US Government is quite an interesting one. Its specifications are drafted in the first instance by committees consisting of officers of the Federal Government only, drawn from various Departments and Agencies concerned with the subject. These drafts are then circularized to the industry for comments which are used by committees for finalizing the specifications before issue. Federal Specifications are used by all Departments of the Government for official purchases, with the exception of the Army



and Navy, who in addition to the Federal Specifications use their own specifications.

Dr. S. P. Kaidanovsky, who is the Technical Consultant of the Federal Specifications Board, has in his personal capacity organized a new journal, the *Standards World*. A number of prominent leaders in the field within the States and abroad including Dr. E. U. Condon, Director, National Bureau of Standards, has agreed to be members of the editorial board of this journal and the Director, ISI, was also invited to join as a regional member of the board of editors.

### 3. CANADA

*Canadian Standards Association (CSA)* — The CSA is the national standards body that represents Canada in the international field of standardization. It is partly subsidized by the Government but largely by the industry. In view of close economic ties with the USA, the Canadian industry generally follows American practices. Important members of Canadian industry actually take active part in American standardization organizations, as for example the ASTM.

Mr. W. R. McCaffrey, General Manager of the CSA, very kindly arranged for all the visits in Canada and gave full information about the activities of his organization.

An important feature of the CSA, which apparently does not find its counterpart in the UK and USA, is the so-called Approvals Division. This is a laboratory organization concerned with approval and certification of electrical equipment. Under local legislation of almost all Canadian provinces, it is required that any electrical equipment offered for sale should conform to the CSA Standards and carry the appropriate certification mark. These laboratories, although financed and controlled by the CSA from Ottawa, are actually housed in, and operated by, the Ontario Hydro-Electric Power Commission Research Laboratories at Toronto.

The Government organization dealing with standardization is the Canadian Government Specifications Board (CGSB) which works

independently of the CSA. It supplements the activities of the CSA by providing government purchasing agencies with such purchase specifications as may not have been issued by the national standards organization.

Time did not permit visits to any of the industrial centres in Canada, but the following associated organizations were visited:

- 1) Canadian National Council of Research, Ottawa (July 20)
- 2) Forest Products Research Laboratories, Ottawa (July 21)
- 3) Canadian Bureau of Mines Laboratories, Ottawa (July 21)
- 4) Ontario Hydro-Electric Power Commission Research Laboratories, Toronto (July 23)
- 5) Approvals Division of CSA, Toronto (July 23)
- 6) Ontario Research Foundation, Toronto (July 23)

The National Research Council is somewhat similar to our Council of Scientific and Industrial Research. It runs extensive laboratories to deal with requirements of both the Canadian industry and Government Departments. Apart from development and research activities, the Council undertakes routine testing on behalf of Government Departments and is closely associated with the CSA and CGSB in standardization activities.

Both the Forest Products Research Laboratories and the Canadian Bureau of Mines Laboratories are operated by the Government to deal with problems within their respective fields of activity and to collaborate in the standardization activities of the CSA and CGSB.

The Ontario Hydro-Electric Power Commission controls production and distribution of electric power within the territory of the province. In its extensive research laboratories a great many problems connected with power production and distribution are dealt with. In addition, it looks after the approvals division of the CSA.

The Ontario Research Foundation is a non-profit making industrial research organization established on the lines of the Mellon Institute in the USA.



## APPENDIX 16.6

### CONTRIBUTIONS AND SUBSCRIPTIONS BY THE CENTRAL, PROVINCIAL AND STATE GOVERNMENTS, FIRMS, TRADES AND INDIVIDUALS

#### Contributions

|  | Rs  | As  | P   | Rs       | As | P |
|--|-----|-----|-----|----------|----|---|
| 1. i) Central Government's Grant-in-aid ... .. | ... | ... | ... | 2,00,000 | 0  | 0 |
| ii) Central Government's Grant-in-aid ... ..   | ... | ... | ... | 100      | 0  | 0 |
|  |     |     |     | 2,00,100 | 0  | 0 |

#### Membership Subscriptions

##### 2. Provincial and State Governments

|  |       |   |   |          |    |   |
|--|-------|---|---|----------|----|---|
| i) Bombay ... ..   | 7,500 | 0 | 0 |          |    |   |
| ii) West Bengal ... ..   | 4,000 | 0 | 0 |          |    |   |
| iii) Madras ... ..   | 1,000 | 0 | 0 |          |    |   |
| iv) U.P. ... ..  | 250   | 0 | 0 |          |    |   |
| v) C.P. ... ..   | 250   | 0 | 0 |          |    |   |
| vi) Orissa ... ..  | 250   | 0 | 0 |          |    |   |
| vii) Assam ... ..  | 250   | 0 | 0 |          |    |   |
| viii) East Punjab ... ..   | 250   | 0 | 0 |          |    |   |
| ix) Bihar ... ..   | 250   | 0 | 0 |          |    |   |
| x) Bikaner ... ..  | 250   | 0 | 0 |          |    |   |
| xi) Baroda ... ..  | 250   | 0 | 0 |          |    |   |
| xii) Mayurbhanj ... ..   | 250   | 0 | 0 |          |    |   |
| xiii) Patiala ... ..   | 250   | 0 | 0 |          |    |   |
| xiv) Himachal Pradesh ... ..   | 250   | 0 | 0 |          |    |   |
| xv) Jaipur ... ..  | 250   | 0 | 0 |          |    |   |
| xvi) Banaras ... ..  | 250   | 0 | 0 |          |    |   |
| xvii) Mysore ... ..  | 250   | 0 | 0 |          |    |   |
|  |       |   |   | 16,000   | 0  | 0 |
| 3. Firms, Trade Associations, Non-Government Bodies, etc., including the following bodies paying more than the minimum : |       |   |   | 99,101   | 8  | 0 |
| Tata Iron & Steel Co. Ltd., Bombay   | 1,000 | 0 | 0 |          |    |   |
| Associated Cement Companies Ltd., Bombay   | 1,000 | 0 | 0 |          |    |   |
| Federation of Indian Chambers of Commerce and Industry, New Delhi  | 1,000 | 0 | 0 |          |    |   |
| Firestone Tyre & Rubber Co. of India Ltd., Bombay  | 500   | 0 | 0 |          |    |   |
| Bengal Immunity Co. Ltd., Calcutta   | 500   | 0 | 0 |          |    |   |
| East India Pharmaceutical Works Ltd., Calcutta   | 500   | 0 | 0 |          |    |   |
| Indian Jute Mills' Association, Calcutta   | 500   | 0 | 0 |          |    |   |
| Bengal Chemical & Pharmaceutical Works Ltd., Calcutta  | 500   | 0 | 0 |          |    |   |
| Madura Mills Co. Ltd., Madura  | 500   | 0 | 0 |          |    |   |
| Saru Smelting & Refining Corporation Ltd., Meerut  | 500   | 0 | 0 |          |    |   |
| B. M. Singh & Sons, Calcutta   | 500   | 0 | 0 |          |    |   |
| Ghasiram Nagarmal, Manbhum   | 500   | 0 | 0 |          |    |   |
| Lever Bros. India Ltd., Bombay   | 500   | 0 | 0 |          |    |   |
| Hindustan Vanaspati Mfg. Co. Ltd., Bombay  | 500   | 0 | 0 |          |    |   |
| Rallis India Ltd., Calcutta  | 500   | 0 | 0 |          |    |   |
| Pankaja Mills Ltd., Coimbatore   | 400   | 0 | 0 |          |    |   |
| Sukh Sancharak, Mathura  | 400   | 0 | 0 |          |    |   |
| Madhusudan Mills Ltd., Bombay  | 300   | 0 | 0 |          |    |   |
| New Union Mills Ltd., Bombay   | 300   | 0 | 0 |          |    |   |
| Sassoon Spinning & Weaving Co. Ltd., Bombay  | 300   | 0 | 0 |          |    |   |
| The Assoc. of Merchant & Manufacturers of Textile Stores & Machinery, Bombay   | 300   | 0 | 0 |          |    |   |
| Indian Copper Corporation, Ghatsila ( India )  | 300   | 0 | 0 |          |    |   |
| Bengal Silk & Art Mills Owners' Assoc., Calcutta   | 300   | 0 | 0 |          |    |   |
|  |       |   |   | 100      | 0  | 0 |
| 4. Sustaining Members ( Associates )   |       |   |   | 731      | 2  | 0 |
| 5. Ordinary Membership Subscription  |       |   |   | 1,15,932 | 10 | 0 |





## APPENDIX 16.7

### BUDGET AND REVISED BUDGET FOR 1948-49 AND BUDGET ESTIMATES FOR 1949-50

| PART I   | I N C O M E   |    |   |                            |     |     | E X P E N D I T U R E |     |     |   |   |    |          |                            |     |          |                    |     |     |
|--|---|----|---|----------------------------|-----|-----|-----------------------|-----|-----|---|---|----|----------|----------------------------|-----|----------|--------------------|-----|-----|
| HEADS OF INCOME  | BUDGET ESTIMATE FOR 1949-50 FOR 3 DIVISION COUNCILS |    |   | REVISED BUDGET FOR 1948-49 |     |     | BUDGET FOR 1948-49    |     |     | HEADS OF EXPENDITURE  | BUDGET ESTIMATE FOR 1949-50 FOR 3 DIVISION COUNCILS |    |          | REVISED BUDGET FOR 1948-49 |     |          | BUDGET FOR 1948-49 |     |     |
|  | Rs  | As | P | Rs                         | As  | P   | Rs                    | As  | P   |   | Rs  | As | P        | Rs                         | As  | P        | Rs                 | As  | P   |
| 1. Government Grant  | 2,00,000  | 0  | 0 | 2,00,000                   | 0   | 0   | 2,00,000              | 0   | 0   | 1. Pay of Officers  | 93,000  | 0  | 0        | 70,000                     | 0   | 0        | 85,000             | 0   | 0   |
| 2. Contribution from other sources   | 100   | 0  | 0 | 100                        | 0   | 0   | ...                   | ... | ... | 2. Allowances of Officers                                       | 26,000  | 0  | 0        | 10,000                     | 0   | 0        | 16,000             | 0   | 0   |
| 3. Subscription :<br>Sustaining Members }<br>Ordinary Members }<br>Associate Members } | 1,40,000  | 0  | 0 | 1,15,000                   | 0   | 0   | 94,000                | 0   | 0   | 3. Provident Fund of Officers                                   | 7,700   | 0  | 0        | 7,000                      | 0   | 0        | 8,000              | 0   | 0   |
| 4. Interest on Fixed Deposits  | 2,625   | 0  | 0 | 1,875                      | 0   | 0   | 1,875                 | 0   | 0   | 4. T.A. for<br>(i) Officers                                     | 30,000  | 0  | 0        | 35,000                     | 0   | 0        | 22,000             | 0   | 0   |
| 5. Miscellaneous   | 500   | 0  | 0 | 500                        | 0   | 0   | ...                   | ... | ... | (ii) Committee Members  | 10,000  | 0  | 0        | 7,000                      | 0   | 0        | 25,000             | 0   | 0   |
| 6. Sale Proceeds of ISI (Publications)   | 5,000   | 0  | 0 | ...                        | ... | ... | ...                   | ... | ... | 5. Pay of Establishment   | 88,000  | 0  | 0        | 60,000                     | 0   | 0        | 73,680             | 0   | 0   |
| 7. Commission on sale of Overseas Publications   | 2,000   | 0  | 0 | 1,000                      | 0   | 0   | ...                   | ... | ... | 6. Allowances of Establishment                                  | 50,700  | 0  | 0        | 29,000                     | 0   | 0        | 34,000             | 0   | 0   |
|  |   |    |   |                            |     |     |                       |     |     | 7. Provident Fund Contribution for Staff                        | 7,000   | 0  | 0        | 5,000                      | 0   | 0        | 6,000              | 0   | 0   |
|  |   |    |   |                            |     |     |                       |     |     | 8. T.A. for Staff   | 10,000  | 0  | 0        | 10,000                     | 0   | 0        | 6,000              | 0   | 0   |
|  |   |    |   |                            |     |     |                       |     |     | 9. Subscription for ISO and IEC                                 | 9,500   | 0  | 0        | 12,000                     | 0   | 0        | 12,000             | 0   | 0   |
|  |   |    |   |                            |     |     |                       |     |     | 10. Printing (Publication) Charges                              | 25,000  | 0  | 0        | 10,000                     | 0   | 0        | 10,000             | 0   | 0   |
|  |   |    |   |                            |     |     |                       |     |     | 11. Other Charges :   |   |    |          |                            |     |          |                    |     |     |
|  |   |    |   |                            |     |     |                       |     |     | (i) Stationery including printing                               | 13,000  | 0  | 0        | 8,000                      | 0   | 0        | 8,000              | 0   | 0   |
|  |   |    |   |                            |     |     |                       |     |     | (ii) Postage and Telegrams                                      | 8,000   | 0  | 0        | 5,000                      | 0   | 0        | 5,000              | 0   | 0   |
|  |   |    |   |                            |     |     |                       |     |     | (iii) Purchase of Publications                                  | 10,000  | 0  | 0        | 10,000                     | 0   | 0        | 5,000              | 0   | 0   |
|  |   |    |   |                            |     |     |                       |     |     | (iv) Telephone including Inter-communication system             | 3,000   | 0  | 0        | 1,500                      | 0   | 0        | 10,000             | 0   | 0   |
|  |   |    |   |                            |     |     |                       |     |     | (v) Furniture, Office Equipments and Partitions                 | 16,000  | 0  | 0        | 10,000                     | 0   | 0        | 6,000              | 0   | 0   |
|  |   |    |   |                            |     |     |                       |     |     | (vi) Rent of Building   | 20,000  | 0  | 0        | ...                        | ... | ...      | 10,000             | 0   | 0   |
|  |   |    |   |                            |     |     |                       |     |     | (vii) Electric and Water Charges                                | 2,000   | 0  | 0        | ...                        | ... | ...      | 1,000              | 0   | 0   |
|  |   |    |   |                            |     |     |                       |     |     | (viii) Misc. Charges  | 8,000   | 0  | 0        | 8,000                      | 0   | 0        | 6,000              | 0   | 0   |
|  |   |    |   |                            |     |     |                       |     |     | (ix) Advertisement  | 1,500   | 0  | 0        | 1,500                      | 0   | 0        | 4,000              | 0   | 0   |
|  |   |    |   |                            |     |     |                       |     |     | (x) Audit Charges   | 1,000   | 0  | 0        | 624                        | 0   | 0        | ...                | ... | ... |
|  |   |    |   |                            |     |     |                       |     |     | (xi) Depreciation on Head (11-v)                                | 1,500   | 0  | 0        | 1,728                      | 0   | 0        | ...                | ... | ... |
|  |   |    |   |                            |     |     |                       |     |     | (xii) Medical Relief  | 4,000   | 0  | 0        | 2,000                      | 0   | 0        | ...                | ... | ... |
|  |   |    |   |                            |     |     |                       |     |     | 12. Cost of Transferring Headquarters                           | 30,000  | 0  | 0        | ...                        | ... | ...      | 15,000             | 0   | 0   |
|  |   |    |   |                            |     |     |                       |     |     | 13. Charges for convening ISO meetings on Lac and Mica in India | 20,000  | 0  | 0        | ...                        | ... | ...      | ...                | ... | ... |
| TOTAL  | 3,50,225  | 0  | 0 | 3,18,475                   | 0   | 0   | 3,20,875              | 0   | 0   | 4,94,900  | 0   | 0  | 3,03,352 | 0                          | 0   | 3,67,680 | 0                  | 0   |     |



**BUDGET AND REVISED BUDGET FOR 1948-49 AND BUDGET ESTIMATES FOR 1949-50 (contd.)**

| PART II<br>HEADS OF INCOME | I N C O M E   |             |                            |             |                    |            | HEADS OF EXPENDITURE                                       | E X P E N D I T U R E                               |             |                            |             |                    |            |
|----------------------------|---|-------------|----------------------------|-------------|--------------------|------------|--|---|-------------|----------------------------|-------------|--------------------|------------|
|                            | BUDGET ESTIMATE FOR 1949-50 FOR 3 DIVISION COUNCILS |             | REVISED BUDGET FOR 1948-49 |             | BUDGET FOR 1948-49 |            |  | BUDGET ESTIMATE FOR 1949-50 FOR 3 DIVISION COUNCILS |             | REVISED BUDGET FOR 1948-49 |             | BUDGET FOR 1948-49 |            |
|                            | Rs  | As P        | Rs                         | As P        | Rs                 | As P       |  | Rs  | As P        | Rs                         | As P        | Rs                 | As P       |
| <i>Brought forward</i>     | 3,50,225  | 0 0         | 3,18,475                   | 0 0         | 3,20,875           | 0 0        | <i>Brought forward</i>                                     | 4,94,900  | 0 0         | 3,03,352                   | 0 0         | 3,67,680           | 0 0        |
| 8. Opening Bank Balance    | 1,16,010  | 7 6         | 1,49,159                   | 7 6         | 2,46,374           | 0 3        | Head (11-iii) Library books as per balance sheet (1947-48) | 2,218   | 4 0         | 2,218                      | 4 0         | ...                | ...        |
|                            |   |             |                            |             | 700                | 0 0        | Head (11-v) Furniture and Office Equipment                 | 15,121  | 0 0         | 16,621                     | 0 0         | ...                | ...        |
| 9. Fixed Deposit           | 1,75,000  | 0 0         | 1,25,000                   | 0 0         | ...                | ...        | (b)  | (b)   | (a)         |                            |             |                    |            |
| 10. Assets                 | 18,839  | 4 0         | 20,567                     | 4 0         | ...                | ...        | (a)  | Rs  | As P        |                            |             |                    |            |
|                            |   |             |                            |             |                    |            | (a)  | 18,349  | 0 0         |                            |             |                    |            |
|                            |   |             |                            |             |                    |            | Depre.   | 1,728   | 0 0         |                            |             |                    |            |
|                            |   |             |                            |             |                    |            |  | 16,621  | 0 0         |                            |             |                    |            |
|                            |   |             |                            |             |                    |            | (b)  | 16,621  | 0 0         |                            |             |                    |            |
|                            |   |             |                            |             |                    |            | Depre.   | 1,500   | 0 0         |                            |             |                    |            |
|                            |   |             |                            |             |                    |            |  | 15,121  | 0 0         |                            |             |                    |            |
|                            |   |             |                            |             |                    |            | Fixed Deposit during the year 1948-49                      | ...   | 50,000      | 0 0*                       | ...         | ...                | ...        |
|                            |   |             |                            |             |                    |            | Fixed Deposit for the year 1947-48                         | 1,25,000  | 0 0         | 1,25,000                   | 0 0         | ...                | ...        |
|                            |   |             |                            |             |                    |            | Balance { Cash   | ...   | ...         | 700                        | 0 0         | ...                | ...        |
|                            |   |             |                            |             |                    |            | Bank   | 22,835  | 7 6         | 1,16,010                   | 7 6         | 1,99,569           | 0 3        |
| <b>GRAND TOTAL</b>         | <b>6,60,074</b>                                     | <b>11 6</b> | <b>6,13,201</b>            | <b>11 6</b> | <b>5,67,949</b>    | <b>0 3</b> |  | <b>6,60,074</b>                                     | <b>11 6</b> | <b>6,13,201</b>            | <b>11 6</b> | <b>5,67,949</b>    | <b>0 3</b> |

NOTE : The Budget for the year 1949-50 is prepared on the basis of ISI headquarters at Bombay.

\* Liquidated in the year 1949-50.



**APPENDIX 16.8**  
**AUDITED ACCOUNTS FOR 1948-49**  
**RECEIPTS AND PAYMENTS ACCOUNT AS AT 31 MARCH 1949**

|   | RECEIPTS     |    |   |                |    |   |                 |    |   | PAYMENTS  |          |   |                |          |   |                 |          |    |   |
|---|--------------|----|---|----------------|----|---|-----------------|----|---|---|----------|---|----------------|----------|---|-----------------|----------|----|---|
|   | BUDGET GRANT |    |   | REVISED BUDGET |    |   | ACTUAL RECEIPTS |    |   | BUDGET GRANT  |          |   | REVISED BUDGET |          |   | ACTUAL PAYMENTS |          |    |   |
|   | Rs           | As | P | Rs             | As | P | Rs              | As | P | Rs  | As       | P | Rs             | As       | P | Rs              | As       | P  |   |
| 1) Opening Balance  | 2,46,374     | 0  | 3 | 1,49,159       | 7  | 6 | 2,51,557        | 2  | 0 | 5) Pay of Officers  | 85,000   | 0 | 0              | 70,000   | 0 | 0               | 66,251   | 7  | 0 |
| Office Cash   | 700          | 0  | 0 | ...            |    |   | 700             | 0  | 0 | 2) Allowances of Officers                                 | 16,000   | 0 | 0              | 10,000   | 0 | 0               | 8,349    | 9  | 0 |
| Fixed Deposit   | ...          |    |   | 1,25,000       | 0  | 0 | 1,25,000        | 0  | 0 | 3) Provident Fund of Officers (contribution and interest) | 8,000    | 0 | 0              | 7,000    | 0 | 0               | 6,833    | 0  | 0 |
| 2) Government Grant   | 2,00,000     | 0  | 0 | 2,00,000       | 0  | 0 | 2,00,000        | 0  | 0 | 4) T.A. for :   |          |   |                |          |   |                 |          |    |   |
| 3) Contribution from other sources during 1948                      | ...          |    |   | 100            | 0  | 0 | 100             | 0  | 0 | i) Officers   | 22,000   | 0 | 0              | 35,000   | 0 | 0               | 29,601   | 7  | 4 |
| Contribution from other sources during 1949                         | ...          |    |   | ...            |    |   | 100             | 0  | 0 | ii) Committee Members                                     | 25,000   | 0 | 0              | 7,000    | 0 | 0               | 6,211    | 13 | 0 |
| 4) Subscriptions for 1948 :   |              |    |   |                |    |   |                 |    |   | 5) Pay of Establishment                                   | 73,680   | 0 | 0              | 60,000   | 0 | 0               | 54,801   | 14 | 0 |
| Rs   As   P   |              |    |   |                |    |   |                 |    |   | 6) Allowances of Establishment                            | 34,000   | 0 | 0              | 29,000   | 0 | 0               | 25,844   | 3  | 0 |
| Sustaining  | 23,800       | 0  | 0 |                |    |   |                 |    |   | 7) Provident Fund Contribution and interest for staff     | 6,000    | 0 | 0              | 5,000    | 0 | 0               | 3,650    | 0  | 0 |
| Members old   |              |    |   |                |    |   |                 |    |   | 8) T.A. for staff   | 6,000    | 0 | 0              | 10,000   | 0 | 0               | 5,205    | 1  | 0 |
| Sustaining  | 22,500       | 0  | 0 |                |    |   |                 |    |   | 9) Subscription for ISO and IEC                           | 12,000   | 0 | 0              | 12,000   | 0 | 0               | 10,003   | 4  | 0 |
| Members new   |              |    |   |                |    |   |                 |    |   | 10) Printing ( Publication charges )                      | 10,000   | 0 | 0              | 10,000   | 0 | 0               | 5,633    | 0  | 6 |
| Associates  | 100          | 0  | 0 | 94,000         | 0  | 0 | 1,15,000        | 0  | 0 | *46,675   | 8        | 0 |                |          |   |                 |          |    |   |
| Ordinary old  | 100          | 4  | 0 | 25,000         | 0  | 0 |                 |    |   | 11) Other charges :                                       |          |   |                |          |   |                 |          |    |   |
| Ordinary new  | 175          | 4  | 0 |                |    |   |                 |    |   | i) Stationery including printing                          | 8,000    | 0 | 0              | 8,000    | 0 | 0               | 7,958    | 10 | 3 |
|   | 46,675       | 8  | 0 |                |    |   |                 |    |   | ii) Postage and Telegrams                                 | 5,000    | 0 | 0              | 5,000    | 0 | 0               | 4,858    | 12 | 2 |
| Subscription for 1949 :   |              |    |   |                |    |   |                 |    |   | iii) Purchase of publications                             | 5,000    | 0 | 0              | 10,000   | 0 | 0               | 2,129    | 7  | 0 |
| Rs   As   P   |              |    |   |                |    |   |                 |    |   | iv) Telephones including Inter-communication system       | 10,000   | 0 | 0              | 1,500    | 0 | 0               | 1,173    | 0  | 0 |
| Sustaining  | 39,500       | 8  | 0 |                |    |   |                 |    |   | v) Furniture, office equipment and partitions             | 6,000    | 0 | 0              | 10,000   | 0 | 0               | 9,712    | 8  | 0 |
| Members, old  |              |    |   |                |    |   |                 |    |   | vi) Rent of building                                      | 10,000   | 0 | 0              | ...      |   |                 | ...      |    |   |
| Sustaining  | 14,150       | 8  | 0 |                |    |   |                 |    |   | vii) Electric and water charges                           | 1,000    | 0 | 0              | ...      |   |                 | ...      |    |   |
| Members, new  |              |    |   |                |    |   |                 |    |   | viii) Misc.   | 6,000    | 0 | 0              | 8,000    | 0 | 0               | 7,619    | 14 | 2 |
| Associates  | 100          | 0  | 0 |                |    |   |                 |    |   | ix) Advertisement   | 4,000    | 0 | 0              | 1,500    | 0 | 0               | 972      | 14 | 0 |
| Ordinary, old   | 285          | 4  | 0 |                |    |   |                 |    |   | x) Audit charges  | ...      |   |                | 624      | 0 | 0               | 624      | 0  | 0 |
| Ordinary, new   | 100          | 0  | 0 |                |    |   |                 |    |   | xi) Depreciation on Head ( 11-v )                         | ...      |   |                | 1,728    | 0 | 0               | ...      |    |   |
|   | 54,136       | 4  | 0 |                |    |   |                 |    |   | xii) Medical relief                                       | ...      |   |                | 2,000    | 0 | 0               | 1,028    | 10 | 0 |
| 5) Interest on fixed deposit  | 1,875        | 0  | 0 | 1,875          | 0  | 0 | 1,875           | 0  | 0 | 12) Cost of Transferring Headquarters                     | 15,000   | 0 | 0              | ...      |   |                 | ...      |    |   |
| 6) Misc. receipts   | ...          |    |   | 500            | 0  | 0 | 700             | 9  | 6 |   |          |   |                |          |   |                 |          |    |   |
| 7) Sale proceeds of ISI Publications during the year 1948-49        | ...          |    |   | ...            |    |   | 517             | 4  | 0 |   |          |   |                |          |   |                 |          |    |   |
| 8) Commission on sale of overseas publications for the year 1947-48 | ...          |    |   | 1,000          | 0  | 0 | 425             | 4  | 6 |   |          |   |                |          |   |                 |          |    |   |
| 9) Sale proceeds of overseas pub. during 1948-49                    | ...          |    |   | ...            |    |   | 4,156           | 8  | 0 |   |          |   |                |          |   |                 |          |    |   |
| <i>Carried over</i>   | 5,67,949     | 0  | 3 | 5,92,634       | 7  | 6 | 6,85,948        | 8  | 0 | <i>Carried over</i>                                       | 3,67,680 | 0 | 0              | 3,03,352 | 0 | 0               | 2,58,462 | 6  | 5 |

\* Rs 46,675-8-0 represents amount received for 1948 during the financial year 1948-49 and to this if the collections of Rs 58,456-14-0 and Rs 10,800-4-0 for the year 1948 made during 1947-48 be added, the total collection will sum up to Rs 1,15,932-10-0 which exceeds our figure shown in the revised budget.



**RECEIPTS AND PAYMENTS ACCOUNT AS AT 31 MARCH 1949 ( contd. )**

|  | RECEIPTS        |          |          |                 |           |          |                 |          |          | PAYMENTS  |                 |          |                |                 |           |                 |                 |           |           |
|--|-----------------|----------|----------|-----------------|-----------|----------|-----------------|----------|----------|---|-----------------|----------|----------------|-----------------|-----------|-----------------|-----------------|-----------|-----------|
|  | BUDGET GRANT    |          |          | REVISED BUDGET  |           |          | ACTUAL RECEIPTS |          |          | BUDGET GRANT  |                 |          | REVISED BUDGET |                 |           | ACTUAL PAYMENTS |                 |           |           |
|  | Rs              | As       | P        | Rs              | As        | P        | Rs              | As       | P        | Rs  | As              | P        | Rs             | As              | P         | Rs              | As              | P         |           |
| <i>Brought forward</i>   | 5,67,949        | 0        | 3        | 5,92,634        | 7         | 6        | 6,85,948        | 8        | 0        | <i>Brought forward</i>  | 3,67,680        | 0        | 0              | 3,03,352        | 0         | 0               | 2,58,462        | 6         | 5         |
| 10) Suspense account, Indian Iron & Steel Co.  | ...             |          |          | ...             |           |          | 4               | 8        | 0        |   |                 |          |                |                 |           |                 |                 |           |           |
| 11) Received for credit of ASA   | ...             |          |          | ...             |           |          | 16              | 13       | 0        | <i>Misc. remittances</i>  |                 |          |                |                 |           |                 |                 |           |           |
| 12) Amount received from the Director to the credit of the High Commissioner for India in UK | ...             |          |          | ...             |           |          | 1,332           | 0        | 0        | Director, Indian Statistical Institute, Calcutta. ( 154/- + 20/- )    | ...             |          |                | ...             |           |                 | 174             | 0         | 0         |
| 13) Bills for Sale of ( Pub. ) during 1947-48 recovered                                      | ...             |          |          | ...             |           |          | 169             | 6        | 0        | Misc. advances ( cycle advances ) paid to staff                       | ...             |          |                | ...             |           |                 | 790             | 0         | 0         |
| 14) Misc. advance recovered  | ...             |          |          | ...             |           |          | 250             | 0        | 0        | Transferred to current account of C.P.F.                              | ...             |          |                | ...             |           |                 | 42,134          | 0         | 0         |
| 15) Received from Ministry of I & S  | ...             |          |          | ...             |           |          | 308             | 0        | 0        | Payments made against the sale of overseas publications for 1947-48 : |                 |          |                |                 |           |                 |                 |           |           |
| 16) Misc. advances ( cycle advances ) recovered from staff                                   | ...             |          |          | ...             |           |          | 436             | 0        | 0        | BSI   | Rs              | As       | P              |                 |           |                 |                 |           |           |
| 17) C.P.F. Subscription of staff from April 1948 to October 1948                             | ...             |          |          | ...             |           |          | 8,446           | 0        | 0        | 203   | 7               | 0        |                |                 |           |                 |                 |           |           |
| 18) Amount of security money taken from M/s Sada Nand & Sons                                 | ...             |          |          | ...             |           |          | 155             | 0        | 0        | ASA   | 28              | 14       | 0              |                 |           |                 |                 |           |           |
|  |                 |          |          |                 |           |          |                 |          |          | CSA   | 9               | 15       | 0              |                 |           |                 |                 |           |           |
|  |                 |          |          |                 |           |          |                 |          |          | ISI share   | 425             | 4        | 6              | ...             |           |                 | 667             | 8         | 6         |
|  |                 |          |          |                 |           |          |                 |          |          |   | 667             | 8        | 6              |                 |           |                 |                 |           |           |
| <b>TOTAL</b>   | <b>5,67,949</b> | <b>0</b> | <b>3</b> | <b>5,92,634</b> | <b>7</b>  | <b>6</b> | <b>6,97,061</b> | <b>3</b> | <b>0</b> |   | <b>3,67,680</b> | <b>0</b> | <b>0</b>       | <b>3,03,352</b> | <b>0</b>  | <b>0</b>        | <b>3,02,227</b> | <b>14</b> | <b>11</b> |
| <i>Assets</i>  |                 |          |          |                 |           |          |                 |          |          | <i>Fixed deposits</i>   |                 |          |                |                 |           |                 |                 |           |           |
|  | Rs              | As       | P        |                 |           |          |                 |          |          | 1947-48   | ...             |          |                | 1,25,000        | 0         | 0               | 1,25,000        | 0         | 0         |
| Books  | 2,218           | 4        | 0        |                 |           |          |                 |          |          | 1948-49   | ...             |          |                | 50,000          | 0         | 0               | 50,000          | 0         | 0         |
| Furniture  | 18,349          | 0        | 0        |                 |           |          |                 |          |          | Security deposit with Delhi Safe Vault                                | ...             |          |                | ...             |           |                 | 80              | 0         | 0         |
|  |                 |          |          | ...             | 20,567    | 4        | 0               | ...      |          | Office Cash   | 700             | 0        | 0              | ...             |           |                 | 900             | 0         | 0         |
|  | 20,567          | 4        | 0        |                 |           |          |                 |          |          | Assets  | ...             |          |                | 18,839          | 4         | 0               | ...             |           |           |
|  |                 |          |          |                 |           |          |                 |          |          | Bank Balance  | 1,99,569        | 0        | 3              | 1,16,010        | 7         | 6               | 2,18,853        | 4         | 1         |
| <b>GRAND TOTAL</b>   | <b>5,67,949</b> | <b>0</b> | <b>3</b> | <b>6,13,201</b> | <b>11</b> | <b>6</b> | <b>6,97,061</b> | <b>3</b> | <b>0</b> |   | <b>5,67,949</b> | <b>0</b> | <b>3</b>       | <b>6,13,201</b> | <b>11</b> | <b>6</b>        | <b>6,97,061</b> | <b>3</b>  | <b>0</b>  |

37

Sd. T. N. DUTTA  
Assistant Accounts Officer  
Office of the Deputy Accountant General  
Industry & Supply  
New Delhi

Sd. B. L. BHATIA  
Secretary ( Administration )  
Indian Standards Institution  
Block 11, Old Secretariat  
Delhi 2



INCOME AND EXPENDITURE ACCOUNT AS AT 31 MARCH 1949 ( contd. )

| HEADS OF ACCOUNT  | EXPENDITURE     |          |          |                 |          |          | HEADS OF ACCOUNT | INCOME             |          |  |                 |          |          |                 |          |          |                 |          |          |
|---|-----------------|----------|----------|-----------------|----------|----------|------------------|--------------------|----------|--|-----------------|----------|----------|-----------------|----------|----------|-----------------|----------|----------|
|   | BUDGET GRANT    |          |          | REVISED BUDGET  |          |          |                  | ACTUAL EXPENDITURE |          |  | BUDGET GRANT    |          |          | REVISED BUDGET  |          |          | ACTUAL INCOME   |          |          |
|   | Rs              | As       | P        | Rs              | As       | P        |                  | Rs                 | As       | P  | Rs              | As       | P        | Rs              | As       | P        | Rs              | As       | P        |
| 1. Pay of Officers  | 85,000          | 0        | 0        | 70,000          | 0        | 0        | 66,251           | 7                  | 0        | 1. Government Grant                            | 2,00,000        | 0        | 0        | 2,00,000        | 0        | 0        | 2,00,000        | 0        | 0        |
| 2. Allowances of Officers                                 | 16,000          | 0        | 0        | 10,000          | 0        | 0        | 8,349            | 9                  | 0        | 2. Contribution from other sources             | ...             |          |          | 100             | 0        | 0        | 100             | 0        | 0        |
| 3. Provident Fund of Officers (Contribution and interest) | 8,000           | 0        | 0        | 7,000           | 0        | 0        | 6,661            | 0                  | 0        | 3. Subscriptions                               | 94,000          | 0        | 0        | 1,15,000        | 0        | 0        | 1,15,932        | 10       | 0        |
| 4. T.A. for :   |                 |          |          |                 |          |          |                  |                    |          |  | 25,000          | 0        | 0        |                 |          |          |                 |          |          |
| i) Officers   | 22,000          | 0        | 0        | 35,000          | 0        | 0        | 29,601           | 7                  | 4        | 4. Interest on Fixed Deposit                   | 1,875           | 0        | 0        | 1,875           | 0        | 0        | 1,875           | 0        | 0        |
| ii) Committee Members                                     | 25,000          | 0        | 0        | 7,000           | 0        | 0        | 6,211            | 13                 | 0        | 5. Miscellaneous Receipts                      | ...             |          |          | 500             | 0        | 0        | 700             | 9        | 6        |
| 5. Pay of Establishment                                   | 73,680          | 0        | 0        | 60,000          | 0        | 0        | 54,801           | 14                 | 0        | 6. Commission on Sale of Overseas Publications | ...             |          |          | 1,000           | 0        | 0        | 425             | 4        | 6        |
| 6. Allowances of Establishment                            | 34,000          | 0        | 0        | 29,000          | 0        | 0        | 25,844           | 3                  | 0        | 7. Sale Proceeds of ISI Publications           | ...             |          |          | ...             |          |          | 623             | 14       | 0        |
| 7. Provident Fund Contribution and interest for Staff     | 6,000           | 0        | 0        | 5,000           | 0        | 0        | 3,650            | 0                  | 0        | 8. Excess of Expenditure over Income           | 46,805          | 0        | 0        | ...             |          |          | ...             |          |          |
| 8. T.A. for Staff   | 6,000           | 0        | 0        | 10,000          | 0        | 0        | 5,205            | 1                  | 0        |  |                 |          |          |                 |          |          |                 |          |          |
| 9. Subscription for ISO and IEC                           | 12,000          | 0        | 0        | 12,000          | 0        | 0        | 10,003           | 4                  | 0        |  |                 |          |          |                 |          |          |                 |          |          |
| 10. Printing ( Pub. ) Charges                             | 10,000          | 0        | 0        | 10,000          | 0        | 0        | 4,384            | 2                  | 6        |  |                 |          |          |                 |          |          |                 |          |          |
| 11. Other Charges :                                       |                 |          |          |                 |          |          |                  |                    |          |  |                 |          |          |                 |          |          |                 |          |          |
| i) Stationery including Printing                          | 8,000           | 0        | 0        | 8,000           | 0        | 0        | 7,948            | 14                 | 3        |  |                 |          |          |                 |          |          |                 |          |          |
| ii) Postage and Telegrams                                 | 5,000           | 0        | 0        | 5,000           | 0        | 0        | 4,858            | 12                 | 2        |  |                 |          |          |                 |          |          |                 |          |          |
| iii) Purchase of Publications                             | 5,000           | 0        | 0        | 10,000          | 0        | 0        | 758              | 11                 | 1        |  |                 |          |          |                 |          |          |                 |          |          |
| iv) Telephone including Inter-communication System        | 10,000          | 0        | 0        | 1,500           | 0        | 0        | 1,173            | 0                  | 0        |  |                 |          |          |                 |          |          |                 |          |          |
| v) Furniture, Office Equipment and Partitions             | 6,000           | 0        | 0        | 10,000          | 0        | 0        | 792              | 1                  | 0        |  |                 |          |          |                 |          |          |                 |          |          |
| vi) Rent of Building                                      | 10,000          | 0        | 0        | ...             |          |          | ...              |                    |          |  |                 |          |          |                 |          |          |                 |          |          |
| vii) Electric and Water Charges                           | 1,000           | 0        | 0        | ...             |          |          | ...              |                    |          |  |                 |          |          |                 |          |          |                 |          |          |
| viii) Misc. Charges                                       | 6,000           | 0        | 0        | 8,000           | 0        | 0        | 7,619            | 14                 | 2        |  |                 |          |          |                 |          |          |                 |          |          |
| ix) Advertisements  | 4,000           | 0        | 0        | 1,500           | 0        | 0        | 972              | 14                 | 0        |  |                 |          |          |                 |          |          |                 |          |          |
| x) Audit Charges  | ...             |          |          | 624             | 0        | 0        | 624              | 0                  | 0        |  |                 |          |          |                 |          |          |                 |          |          |
| xi) Depreciation  | ...             |          |          | 1,728           | 0        | 0        | 2,507            | 7                  | 0        |  |                 |          |          |                 |          |          |                 |          |          |
| xii) Medical Relief                                       | ...             |          |          | 2,000           | 0        | 0        | 1,028            | 10                 | 0        |  |                 |          |          |                 |          |          |                 |          |          |
| Cost of Transferring of Headquarters                      | 15,000          | 0        | 0        | ...             |          |          | ...              |                    |          |  |                 |          |          |                 |          |          |                 |          |          |
| Excess of Income over Expenditure                         | ...             |          |          | 15,123          | 0        | 0        | 70,409           | 5                  | 6        |  |                 |          |          |                 |          |          |                 |          |          |
| <b>TOTAL</b>  | <b>3,67,680</b> | <b>0</b> | <b>0</b> | <b>3,18,475</b> | <b>0</b> | <b>0</b> | <b>3,19,657</b>  | <b>6</b>           | <b>0</b> |  | <b>3,67,680</b> | <b>0</b> | <b>0</b> | <b>3,18,475</b> | <b>0</b> | <b>0</b> | <b>3,19,657</b> | <b>6</b> | <b>0</b> |







# Indian Standards

**IS : 2-1949 RULES FOR ROUNDING OFF NUMERICAL VALUES** As 8

The specification enunciates the problem that arises in rounding off of numbers which have to be expressed correct to several decimal places and provides an agreed method to be followed by the industry in various mathematical problems which call for standard rules on the subject.

**IS : 3-1949 INCH-MILLIMETER CONVERSION FOR INDUSTRIAL USE** As 8

The standard contains, in addition to the accepted ratio of conversion of inch to millimeters, conversion tables of inches to millimeters, millimeters to inches and binary fractions of an inch to millimeters. Explanatory notes are also appended to facilitate the use of the tables.

**IS : 4-1949 MAKE-UP OF PERIODICALS** As 8

The standard provides an agreed set of rules for the layout of periodicals. The purpose of these rules is to enable editors and publishers so to shape the form of their periodicals as to facilitate their use by readers and librarians.

The standard covers the requirements of individual issues, annual compilations and cumulative indices, and guiding rules to deal with abnormalities in the make-up of periodicals.

**IS : 5-1949 COLOURS FOR READY-MIXED PAINTS** Rs 4

The standard corresponds to the 1948 edition of the B.S. 381C issued in March 1948 by the British Standards Institution. This comprises a schedule of 93 colours identified by a number and illustrated in colour on glossy surface. Colour quality is defined and a formula given together with colorimetric values of each colour.

**IS : 6-1949 MODERATE HEAT DUTY FIRECLAY REFRACTORIES, GROUP 'A'** Rs 2

**IS : 7-1949 MODERATE HEAT DUTY FIRECLAY REFRACTORIES, GROUP 'B'** Re 1

**IS : 8-1949 HIGH HEAT DUTY FIRECLAY REFRACTORIES** Rs 2

These are standard specifications for different types of refractories produced in India, and cover the methods for chemical analysis, the determination of pyrometric cone equivalent under load for full-size bricks as well as for sections of bricks, the determination of porosity and resistance to spalling.

**IS : 9-1949 TEST FOR DETERMINING SHRINKAGE IN WOVEN COTTON AND LINEN CLOTH ON WASHING** As 8

The standard describes the test for estimating shrinkage on laundering of woven cotton and linen cloth, in order that the manufacturers may be able to make due allowances in every type of fabric produced by them. The standard gives the description of the washing machine, the test sample and the procedure for the estimation of shrinkage after laundering.

**IS : 10-1949 PLYWOOD TEA-CHESTS** Rs 1/12

The standard lays down the definitions used in the plywood industry and the trade requirements for plywood for tea-chests, standard sizes for tea-chest components, the tare and the tests for plywood and tea-chests.

**QUALITY CONTROL** Rs 3/8

Reprint of American War Standard ZI.3-1942 "The Control Chart Method of Controlling Quality During Production". It details the statistical procedure to be adopted during inspection of samples, the interpretation of data and application of results, leading to well co-ordinated and most economic utilization of raw materials and labour in industry, and significant improvement in the quality of finished products.

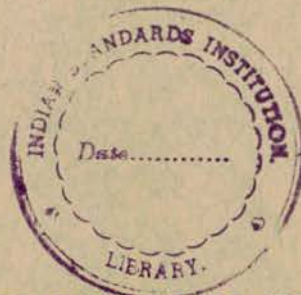
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1949-50

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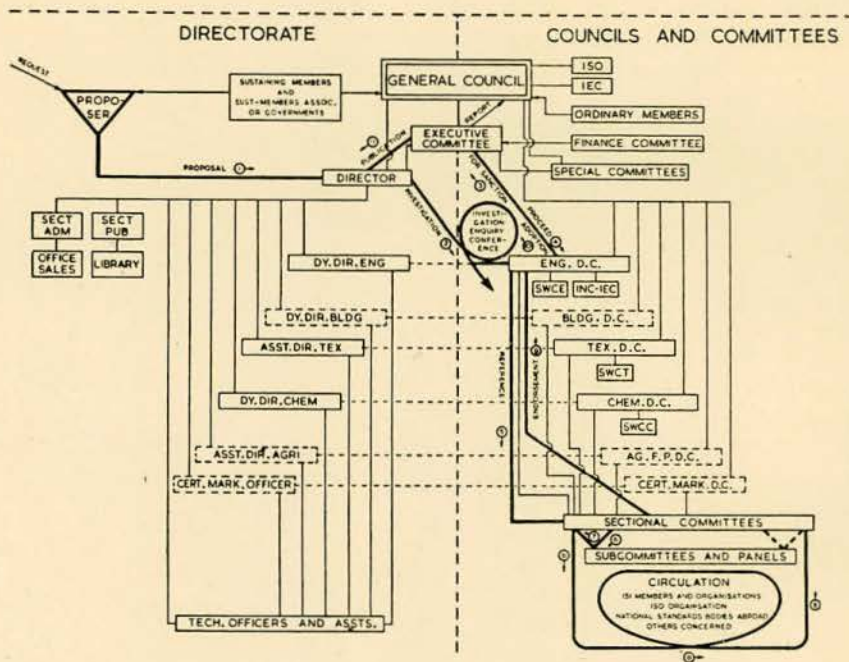
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# INDIAN STANDARDS INSTITUTION ORGANIZATION



THICK LINES INDICATE TYPICAL PROCEDURE FOR STANDARDIZATION FROM  
PROPOSAL TO PUBLICATION STAGE



# CONTENTS

|  | PAGE  |
|--|-------|
| 0. LIST OF ABBREVIATIONS USED IN ISI ... ..  | ii    |
| 1. GENERAL ... ..  | 1     |
| 2. DIRECTORATE ... ..  | 1     |
| 2.1 Location ... ..  | 1     |
| 2.2 Staff ... ..   | 2     |
| 2.3 Organization ... ..  | 2     |
| 3. GENERAL COUNCIL ... ..  | 2     |
| 4. EXECUTIVE COMMITTEE ... ..  | 3     |
| 5. FINANCE COMMITTEE ... ..  | 4     |
| 6. MEMBERSHIP ... ..   | 4     |
| 7. DIVISION COUNCILS ... ..  | 5     |
| 7.1 Creation of New Divisions ... ..   | 5     |
| 7.1.1 Building Division Council ... ..   | 5     |
| 7.1.2 Certification Marks Division Council ... ..  | 5     |
| 7.2 Activities of the Existing Division Councils ... ..  | 5     |
| 7.2.1 Engineering Division Council ... ..  | 5     |
| 7.2.2 Textile Division Council ... ..  | 5     |
| 7.2.3 Chemical Division Council ... ..   | 6     |
| 7.3 Meetings of Committees and Subcommittees ... ..  | 6     |
| 8. PROGRESS OF STANDARDS ... ..  | 7     |
| 9. LABORATORY FACILITIES ... ..  | 8     |
| 10. INTERNATIONAL ORGANIZATION FOR STANDARDIZATION ... ..  | 9     |
| 10.1 ISO/TC 50 — Shellac ... ..  | 9     |
| 10.2 ISO/TC 56 — Mica ... ..   | 9     |
| 10.3 Other ISO Conferences ... ..  | 9     |
| 10.4 International Electrotechnical Commission ... ..  | 10    |
| 11. RELATIONS WITH COMMONWEALTH AND OTHER FOREIGN COUNTRIES ... ..   | 10    |
| 12. CONTROL OF QUALITY AND ISI CERTIFICATION MARKS BILL ... ..   | 11    |
| 13. WEIGHTS AND MEASURES ... ..  | 12    |
| 14. EXHIBITIONS ... ..   | 13    |
| 15. OTHER ACTIVITIES ... ..  | 13    |
| 15.1 Documentary Films ... ..  | 13    |
| 15.2 Waiving of Income Tax on Membership Subscription ... ..   | 13    |
| 15.3 Participation of ISI Staff in Meetings Outside ... ..   | 13    |
| 15.4 Other Contacts ... ..   | 14    |
| 15.5 Distinguished Visitors ... ..   | 14    |
| 16. PUBLICATIONS ... ..  | 14    |
| 16.1 Standards ... ..  | 14    |
| 16.2 ISI Bulletin ... ..   | 14    |
| 16.3 Articles Published in Other Journals ... ..   | 14    |
| 16.4 Press Notes ... ..  | 14    |
| 16.5 Sale of Standards ... ..  | 14    |
| 17. LIBRARY ... ..   | 15    |
| 18. FINANCE ... ..   | 16    |
| 19. APPENDICES ... ..  | 17    |
| 19.1 Members of the General Council ... ..   | 17    |
| 19.2 Members of the Executive Committee ... ..   | 18    |
| 19.3 Members of the Finance Committee ... ..   | 18    |
| 19.4 List of Subscribing Members ... ..  | 19    |
| 19.5 Members of the Engineering Division Council ... ..  | 24    |
| 19.6 Members of the Textile Division Council ... ..  | 26    |
| 19.7 Members of the Chemical Division Council ... ..   | 27    |
| 19.8 Sectional Committees and Subcommittees of the ISI under the EC, EDC, TDC and CDC: Their Chairmen and Meetings ... ..                    | 29    |
| 19.9 Standards in Different Stages of Drafting ... ..  | 33    |
| 19.10 Contributions and Subscriptions by the Central and State Governments, Firms, Traders and Individuals for the Calendar Year 1949 ... .. | 39    |
| 19.11 Budget and Revised Budget for the Year 1949-50 and Budget for the Year 1950-51... ..   | 40-41 |
| 19.12 Audited Accounts for 1949-50 ... ..  | 42-47 |



## 0. LIST OF ABBREVIATIONS USED IN THE INSTITUTION

|                 |   |
|-----------------|---|
| ADC             | Agricultural and Food Products Division Council                 |
| ADT             | Assistant Director ( Textiles )                                 |
| BDC             | Building Division Council                                       |
| BL 10           | Bye-Law 10 of ISI   |
| CDC             | Chemical Division Council                                       |
| CM              | Committee Member of ISI   |
| CSO             | Central Standards Office  |
| DC              | Division Council(s)   |
| DDC             | Deputy Director ( Chemicals )                                   |
| DDE             | Deputy Director ( Engineering )                                 |
| DG I & S        | Director ( Directorate ) General, Industries & Supplies         |
| Doc : D(6)      | Document No. 6 concerning Directorate of ISI                    |
| Doc : GC(4)     | Document No. 4 concerning GC's activities                       |
| Doc : TDC 6(58) | Document No. 58 concerning TDC 6 activities                     |
| DR              | Director  |
| EC              | Executive Committee   |
| EDC             | Engineering Division Council                                    |
| FC              | Finance Committee   |
| GC              | General Council   |
| IEC             | International Electrotechnical Commission                       |
| IE(I)           | Institution of Engineers ( India )                              |
| INC-IEC         | Indian National Committee of IEC                                |
| IS              | Indian Standard   |
| IS : 2-1949     | Indian Standard No. 2 published in 1949                         |
| ISI             | Indian Standards Institution                                    |
| ISO             | International Organization for Standardization                  |
| ISO (GS)        | General Secretariat of ISO                                      |
| ISO/TC          | Technical Committee of ISO                                      |
| ISO/TC 56       | Technical Committee 56 of ISO                                   |
| Lib             | Library ( Librarian )   |
| MA 3            | Memorandum of Association of ISI, para 3                        |
| MDC             | Certification Marks Division Council                            |
| OM              | Ordinary Member of ISI  |
| OSD             | Officer on Special Duty   |
| ' P ' Member    | Member Body of ISO participating actively in an ISO/TC          |
| RR 6            | Rules and Regulations of ISI, para 6                            |
| SA              | Secretary ( Administration )                                    |
| SM              | Sustaining Member of ISI  |
| SM(A)           | Sustaining Member ( Associate ) of ISI                          |
| SP              | Secretary ( Publications )                                      |
| Supt            | Superintendent  |
| SWCC            | Standing Working Committee of CDC                               |
| SWCE            | Standing Working Committee of EDC                               |
| SWCT            | Standing Working Committee of TDC                               |
| TA              | Technical Assistant   |
| TDC             | Textile Division Council  |
| TDC 6           | Sectional Committee 6 of TDC                                    |
| TDC 6 : 3       | Subcommittee 3 of TDC 6   |
| TDC 5 : 2/A     | Administrative file of TDC 5 : 2                                |
| TDC 5 : 2/3.1T  | Technical file concerning subject No. 3.1 assigned to TDC 5 : 2 |
| TO              | Technical Officer   |
| UDC             | Universal Decimal Classification                                |
| ' + ' Member    | Member Body of ISO interested to receive documents of an ISO/TC |
| ' - ' Member    | Member Body of ISO not interested in the work of an ISO/TC      |



# THIRD ANNUAL REPORT

## OF THE INDIAN STANDARDS INSTITUTION

( 1949-50 )

### 1. GENERAL

**1.1** Unlike the previous years, which were mainly occupied with organizational work and the creation of a proper background for the Institution, it was possible during this year to plan and publish a number of standards in accordance with a time schedule. The target for the year had been fixed at 100, but by the end of March 1950, 110 Indian Standards had either been printed and published, or were mature for the press.

**1.2** The Institution, though entering only the third year of its existence, can claim to have made a creditable and fruitful contribution to standardization in the international field. During the July 1949 meeting of the Council of the International Organization for Standardization ( ISO ), Dr. Lal C. Verman, the Director of the Institution, was elected as the Vice-President of the ISO, the highest elective office in the ISO to which the head of a national standards organization may aspire. In consequence of this election, India will now continue to be a member of the ISO Council up to December 1951.

**1.3** In January 1950, the Institution called meetings of the ISO Technical Committees on Shellac and Mica, for which India provides the Secretariats. The meetings were inaugurated at a joint session on the 16th January at the Imperial Hotel, New Delhi, by the Honourable Dr. S. P. Mookerjee, Minister for Industry and Supply and President of the ISI. The countries represented at these meetings included the USA, the UK, France, Belgium, the Netherlands, Finland, Switzerland, Portugal, Italy and India and the ISO was represented by its General Secretary, Mr. Henry St. Leger. Along with these meetings, an exhibition of mica and shellac products was also organized in the premises of the Cottage Industries Emporium in New Delhi. The sessions led to agreement on the majority of important points regarding international standards on shellac and mica.

**1.4** Among the proceedings of the ISI Committees, special mention may be made of the recommendation of the Special Committee on Weights and Measures. The Committee has recommended that the national loss and confusion caused by the divergent systems of weights and measures now prevalent in India has reached a point when standardization should not be delayed. After determining the consensus of opinion of the

more important interests in the country, the Committee came to the unanimous opinion that the metric system would be best suited to the present and future needs of India. The report of the Committee has been submitted to the Government of India for further action.

**1.5** It was reported last year that a scheme of Certification Marking was under consideration of the Institution. The President, the Honourable Dr. S. P. Mookerjee, emphasized in several speeches the importance of the implementation of the ISI standards. The Certification Marking scheme, besides helping to achieve this purpose, will also serve to convey to the consuming public a guarantee of quality in respect of goods to which the Mark is applied. A draft Bill has been submitted to the Government of India and is now under the consideration of the Ministry of Law. It is expected to be introduced in the next session of the Parliament.

**1.6** During the year, the membership rose from 475 to 563 and the subscriptions collected rose from Rs 1,15,933/- to Rs 1,53,088/-.

**1.7** Whatever has been accomplished is in a large measure due to the ungrudging co-operation and active assistance received from the large number of Committee Members who have freely served on the various Councils and Committees of the Institution. The ISI considers it a privilege to be in a position to record its unreserved appreciation of the various services rendered by its Committee Members, Contributing Members and other agencies and individuals who by their valuable advice, considered comments, and financial assistance have contributed to the development of the national standards. It is the sincere hope of all concerned with the ISI work that similar co-operation will be forthcoming in future also in a measure increasing with the growth of the Institution.

### 2. DIRECTORATE

**2.1 Location** — The question of providing adequate accommodation for the office of the Directorate of the ISI received the attention of the Executive Committee throughout the year. Advertisements were published in important newspapers calling for offers for providing, on contract, office as well as residential accommodation for the ISI, but the response was rather



discouraging. In December 1949, the Government of India in the Ministry of Works, Mines and Power gave notice to the ISI to shift its headquarters from Delhi to Jodhpur, Baroda, Bombay or any other place. On investigation it was found that Jodhpur and Baroda would not suit, but at Hyderabad a bungalow free of rent was offered by the Hyderabad Government for use as office. The Honourable President, however, felt that it was of utmost importance that the Institution should either be in Delhi so that it might remain in close contact with the different ministries, or it should move to some big industrial city like Calcutta or Bombay which would provide close contact with industry. As accommodation could not be provided in either of these cities, the President decided that the Institution should stay in Delhi and move its office to Shri Ram Institute for Industrial Research, which had made a good offer. The headquarters was accordingly shifted on 16 March 1950 from Block 11, Old Secretariat, to 19 University Road, Shri Ram Institute for Industrial Research. Regarding residential accommodation, the Honourable President very kindly arranged with the Honourable Minister for Works, Mines and Power to allow the ISI officers to remain in Government accommodation for at least a period of six months.

The General Council at its meeting held on 25 March 1950 reviewed the position and, convinced of the desirability of providing the required buildings, approved the proposal to create a Building Fund, and authorized the Executive Committee to suggest concrete steps in this direction.

**2.2 Staff**—The following changes occurred during the year :

- a) The ISI lost one experienced officer, Mr. C. P. Halkatti, Assistant Director ( Textiles ), whose untimely death on 13 February 1950 has left a serious void.
- b) Mr. B. N. S. Murthy, Technical Officer, joined the Institution on 13 June 1949.
- c) Dr. D. N. Mazumdar was appointed as Officer on Special Duty to look after the drive for membership and some aspects of the preliminary work connected with the organization of the Certification Marks scheme. He took charge of his office on 26 November 1949.
- d) Mr. T. Balakrishnan, Technical Assistant, was promoted to officiate as Assistant Director ( Textiles ) *vice* late Mr. C. P. Halkatti.

On 31 March 1950, the staff position of the ISI was as shown in Table I.

During the course of the first two years the duties and responsibilities of the staff have become well defined, and most of the members of the staff are now well trained for efficient team work. The sense of responsibility and loyalty to the Institution that has developed and the *esprit de corps* that prevails among the staff is a source of pride to the Director and credit to the Institution.

**TABLE I STAFF POSITION ON  
31 MARCH 1950**

| DESIGNATION             | SANCTIONED | RECRUITED |
|-------------------------|------------|-----------|
| Director                | 1          | 1         |
| Deputy Director         | 2          | 2         |
| Officer on Special Duty | 1          | 1         |
| Assistant Director      | 3          | 1         |
| Statistician            | 1          | —         |
| Secretary               | 2          | 2         |
| Technical Officer       | 4          | 4         |
| Superintendent          | 1          | 1         |
| Technical Assistant     | 2          | 2         |
| Librarian               | 1          | 1         |
| Clerical Staff          | 43         | 37        |
| Others ( peons, etc )   | 23         | 17        |
| <b>TOTAL</b>            | <b>84</b>  | <b>69</b> |

**2.3 Organization**—The organizational set-up, reported last year, has now been further consolidated, generally following the lines indicated in the last report. It will be seen from Fig 1, which shows the present organization, that in the light of further experience, certain changes have been made in operating the administrative control.

The experiment of separating the administrative control from the functional control has proved to be satisfactory, leading to expeditious disposal of business which was anticipated when this experiment was started.

The practice of holding weekly staff meetings attended by officers in charge of each Division or Section was initiated some time ago and is being continued. These meetings help to co-ordinate the activities of the various units of the Directorate as well as of the Committee structure of the ISI. Besides, everyone is given an opportunity to participate in the evolution of new policies and procedures and kept informed of what may be going on in sections or divisions other than his own. No formal minutes of these meetings are recorded, but the participating officers are expected to take action on their own initiative on all matters discussed and decided in the meetings. The meetings contribute materially to the smooth working of the administration.

### 3. GENERAL COUNCIL ( GC )

**3.1** The fifth meeting of the General Council, the composition of which is given in Appendix 19.1, was held on 25 March 1950, when the Honourable Dr. Syama Prasad Mookerjee, Minister for Industry and Supply, presided. The Annual Report for the year 1948-49 was adopted. Dr. K. S. Krishnan and Lala Shri Ram were elected as Vice-Presidents of the ISI for the year 1950-51, and the representatives of the GC on the Executive Committee ( EC ) and the Finance Committee ( FC ) were elected for a term of three years. Nawab Zain Yar Jung Bahadur, a former Vice-President, the Chairman of the Cotton Textile Fund Committee, Bombay, and the Deputy Director General ( Inspection ), Directorate General of Industries and Supplies, were co-opted as members for three years.



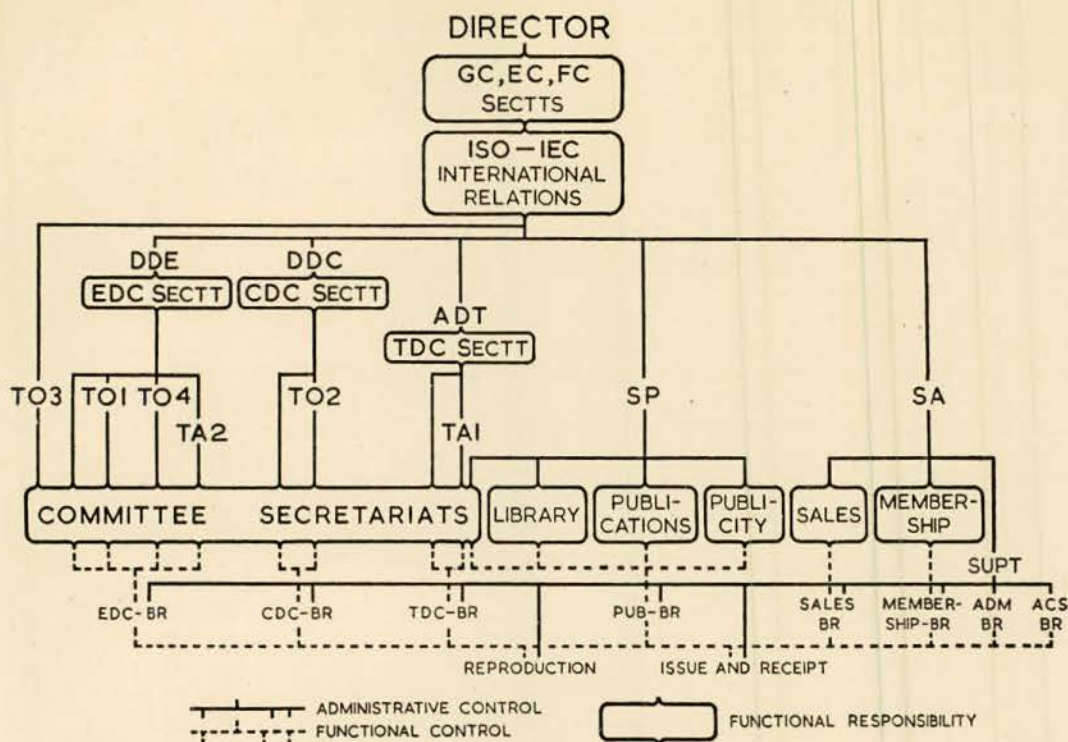


FIG 1 ORGANIZATION CHART

3.2 In view of the promulgation of the Constitution of India, consequential changes were made in the Constitution of the ISI. Further amendments to the Constitution, proposed by the Directorate and recommended by the EC, were also accepted. Bye-laws concerning procedure for holding election of representatives of different bodies of the Institution to other bodies, and simplification of the existing procedure for standardization were adopted.

3.3 Budget estimates for the year 1950-51 along with the revised estimates for 1949-50, as recommended by the FC and approved by the EC, were sanctioned, and the GC delegated to the EC the power to control finance under para 11(g) of the Rules and Regulations of the ISI.

#### 4. EXECUTIVE COMMITTEE (EC)

4.1 The EC met five times during the year, on 14 June, 14 September and 15 November 1949 and 11 February and 25 March 1950. A list of members on the EC is given in Appendix 19.2. Among the decisions taken the following are noteworthy :

*Standardization of Preserved Foods* — The proposal of the All-India Food Preservers' Association that preserved foods should be standardized was considered and it was decided that, pending the formation of the Agricultural and Food Products Division Council (ADC), the standardization of

preserved foods should be taken up by the Chemical Division Council, provided the Government of India sanctioned an *ad hoc* grant of Rs 5,000/- for the year 1949-50. Since the grant was not received, the work was not undertaken.

*Compulsory Savings Scheme* — The compulsory savings scheme proposed by the Government of India for its employees was extended to the ISI staff.

*Advisory Body of the Government Test House* — The EC agreed to the nomination of the Director of the ISI or his representative to the Advisory Body of the Government Test House, which had been set up by the Ministry of Industry and Supply, Government of India.

*Development Committees* — The EC approved the action of the ISI Directorate in deputing officers to attend the meetings of the Development Committees convened by the Directorate General of Industry and Supply, Government of India.

*ISO/TC 46 Documentation Committee Meeting at Ascona (Switzerland)* — The EC decided to request Dr. S. R. Ranganathan to represent the ISI at the Documentation Committee meeting at Ascona (Switzerland) from 28 to 30 April 1950.

*Royalty for Reproduction of Indian Standards* — The principle of permitting reproduction of approved extracts or summaries of Indian Standards by commercial firms and educational and scientific institutions, the former on payment of royalties



and the latter gratis, was agreed with the provision that appropriate acknowledgement indicating the source of supply, price, etc, of the complete standard should be included in the publication.

## 5. FINANCE COMMITTEE (FC)

5.1 The composition of the FC is given in Appendix 19.3. It held two meetings during the period under review, on 14 September 1949 and 11 February 1950, and dealt with financial matters.

## 6. MEMBERSHIP

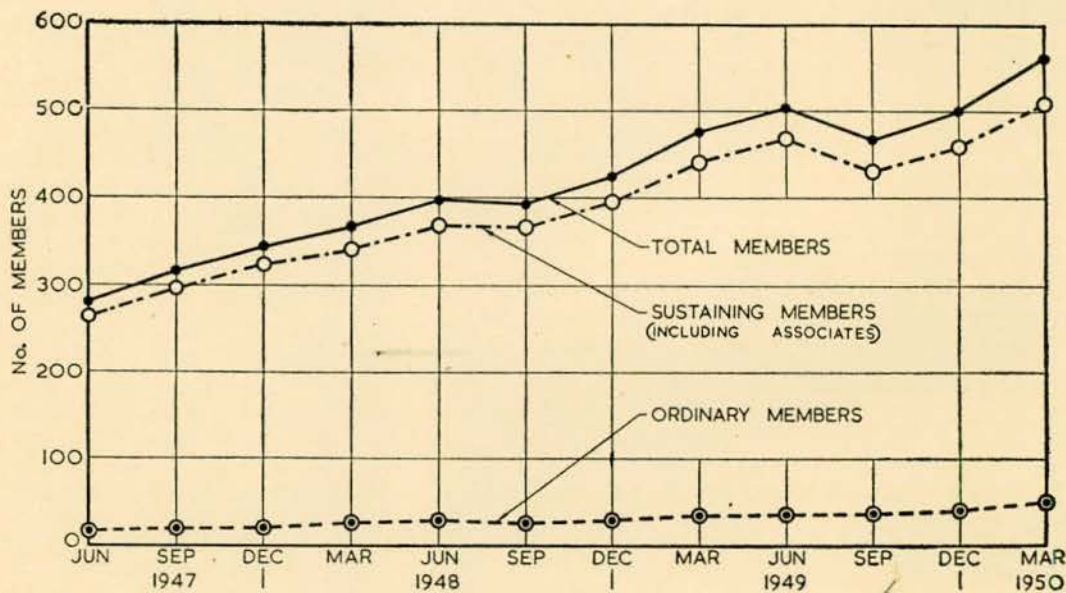
6.1 In spite of some withdrawals the upward trend in the number of members was well main-

tained throughout the year. The list of Subscribing Members is given in Appendix 19.4. 153 Sustaining Members, 11 Sustaining Members ( Associates ) and 20 Ordinary Members were admitted. Fig 2 shows the growth of membership. The detailed figures for gain and loss in membership and the net position as on 31 March is given in Table II.

6.2 Notwithstanding the steady overall gain, the loss of 118 Sustaining Members from resignations and non-payment of dues is serious, but despite our repeated efforts to re-enlist them we could reinstate only 27. Enquiries made from each member as to the reason for his withdrawal did not result in determining the real causes in most cases.

TABLE II MEMBERSHIP IN 1949-50

| CLASS OF MEMBERSHIP               | MEMBERSHIP   |               | LOSSES DUE TO |             |       | ADDITIONS BY |               |       | NET INCREASE |
|-----------------------------------|--------------|---------------|---------------|-------------|-------|--------------|---------------|-------|--------------|
|                                   | 1 April 1949 | 31 March 1950 | Resig-nation  | Non-payment | Total | Admission    | Reinstatement | Total |              |
| Sustaining Members                | 439          | 501           | 57            | 61          | 118   | 153          | 27            | 180   | 62           |
| Sustaining Members ( Associates ) | 2            | 12            | 1             | 1           | 2     | 11           | 1             | 12    | 10           |
| Ordinary Members                  | 34           | 50            | —             | 5           | 5     | 20           | 1             | 21    | 16           |
| TOTAL                             | 475          | 563           | 58            | 67          | 125   | 184          | 29            | 213   | 88           |



DATA BY QUARTERS ENDING IN MONTHS SHOWN

FIG 2 GROWTH OF MEMBERSHIP



**6.3** In spite of these losses, the statement shows a net gain of 88 members, which is encouraging. A large number of members including some of the State Governments responded to our appeal and increased their subscription. Appendix 19.10 includes a list of all such members who are subscribing more than the prescribed minimum.

## 7. DIVISION COUNCILS

### 7.1 Creation of New Division Councils

**7.1.1 Building Division Council** — It had been reported last year that in spite of a pressing demand, the Building Division Council could not be started for lack of funds. During 1949-50 the demand for the creation of this Council increased considerably. So far we have received 110 proposals for standardization of subjects which ought to come under this Division Council. 58 of these subjects have been allotted to the existing Division Councils despite the fact that these Divisions are already heavily committed. The rest of the proposals have had to be deferred or refused. The situation was reviewed by the Cement and Concrete Sectional Committee at their meeting on 3 and 5 January 1950. They recommended to the Executive Committee that serious consideration should now be given to the creation of this Division Council. The Finance and the Executive Committees discussed the question at their last meetings in March 1950 and at the suggestion of the Finance Committee, it was decided to request the Ministry of Industry and Supply to call an inter-ministerial meeting of representatives of the Ministries of Works, Mines and Power, Transport, Rehabilitation, Health, and Industry and Supply, with a view to determining whether the creation of the Building Division Council would assist in their projects and effect economy in the long run.

**7.1.2 Certification Marks Division Council** — The initiation of the activities in respect of Certification Marking scheme brings the need for a Certification Marks Division Council, which is provided for in the Certification Marks Bill submitted to the Government of India. As the Bill is expected to be placed before the Parliament during the current year, a provision for this Division Council has been made in the budget for the year, subject to the sanction by the Government of an extra grant for this purpose. In the meantime an Officer on Special Duty has taken up the preliminary work of contacting and interesting various industries in this scheme.

### 7.2 Activities of the Existing Division Councils and the Standing Working Committees

**7.2.1 Engineering Division Council (EDC)** — The EDC expanded its activities and took up a number of additional subjects for standardization, despite its heavy programme of work which prevented it from accepting all the proposals made to it. The composition of the Council is given in Appendix 19.5.

The EDC agreed to set up a committee to act as the Indian National Committee for the International Electrotechnical Commission.

The second meeting of the EDC was held on 17 November 1949, when, besides reviewing the activities of the Standing Working Committee and of the sectional committees since its first meeting, it received the report of the Director on the efforts being made in the international sphere for the standardization of screw threads and the agreement which had been reached among the USA, the UK and Canada on a screw thread system now designated as the Unified Screw Thread System. It visualized the possibility of constituting a Sectional Committee on Screw Threads and suggested for consideration of the Standing Working Committee a number of organizations interested in engineering industry who may be given representation on the proposed sectional committee.

The Standing Working Committee of the EDC (SWCE) met thrice during the year, on 5 September, 19 December 1949 and 9 March 1950. Following were the main features of the business transacted:

- a) A request received from the Ministry of Commerce for assisting the sports goods industry by standardization was considered. It was decided to make enquiries with the different associations interested in the use of the more important items of sports goods and then to call a conference of representatives of leading sports associations and associations of sports goods manufacturers for recommending a composition of the sectional committee and its terms of reference.
- b) The request of the Indian Tariff Board for standardizing bicycles, bicycle parts and accessories was accepted and it was decided to set up a sectional committee for this purpose.
- c) The recommendation of the Tariff Board for standardizing expanded metal was also accepted and the subject was assigned to the Basic Ferrous Metals Sectional Committee.
- d) The recommendation of the Manganese Ore Sectional Committee (EDC 24) that Government be requested to set up a Manganese Ore Advisory Committee was approved. The SWCE also approved the suggestion of the Sectional Committee that in the event of the USSR — Secretariat for ISO/TC 65 Manganese Ore — not being desirous of proceeding further with the work, India may offer to undertake the work of the Secretariat.
- e) Following the decision of an inter-ministerial conference held on 23 December 1949, the SWCE recommended the appointment of an Indian National Committee for the International Electrotechnical Commission to work in much the same manner as a standing working committee under the Engineering Division Council dealing exclusively with electrical subjects.

**7.2.2 Textile Division Council (TDC)** — In Appendix 19.6 is given the composition of the



TDC. The TDC and its Standing Working Committee held no meetings during the year. Decisions of the Council on matters requiring its attention were obtained by correspondence, the important ones being as follows:

- a) A number of new proposals for standardization was accepted. Mention may be made of woollen carpets, druggets and foot-rugs.
- b) It was agreed that new sectional committees would be set up on the following subjects:
  - i) Rayon and Rayon Products
  - ii) Hosiery and Knitted Garments
  - iii) Textile Sizing and Finishing Materials

At the request of the Travancore Mats and Matting Manufacturers' Association, the Sectional Committee on Coir and Coir Products was reconstituted to improve its representative character.

- c) A proposal from the International Wool Secretariat, New Delhi, for registration of dealers was accepted. It was further decided that the proposal should be forwarded to the Directorate of Marketing and Inspection of the Ministry of Agriculture.

**7.2.3 Chemical Division Council (CDC)** — The CDC whose composition is given in Appendix 19.7 held its second meeting on 18 November 1949 in

New Delhi and took decisions on the various recommendations of the Standing Working Committee of the CDC (SWCC). Some of the important decisions taken in that meeting relate to the following:

- a) Creation of two new sectional committees, namely Paper Sectional Committee (CDC 15) and Leather Sectional Committee (CDC 16) and nomination of various interests and organizations to these two Committees.
- b) Approval of the proposal to entrust the international work of ISO/TC 6 Paper to the Paper Sectional Committee (CDC 15).
- c) Approval of the co-option of the Indian Central Sugar-cane Committee on CDC pending the formation of the Agricultural and Food Products Division Council on which they have statutory representation.
- d) Approval of the suggestion that particulars of leading private testing organizations in the country should be collected by the ISI Directorate with a view to co-opting the most important one among them on the CDC.

### 7.3 Meetings of Committees and Subcommittees

During the year under review, ISI Committees and Subcommittees held 163 meetings which are

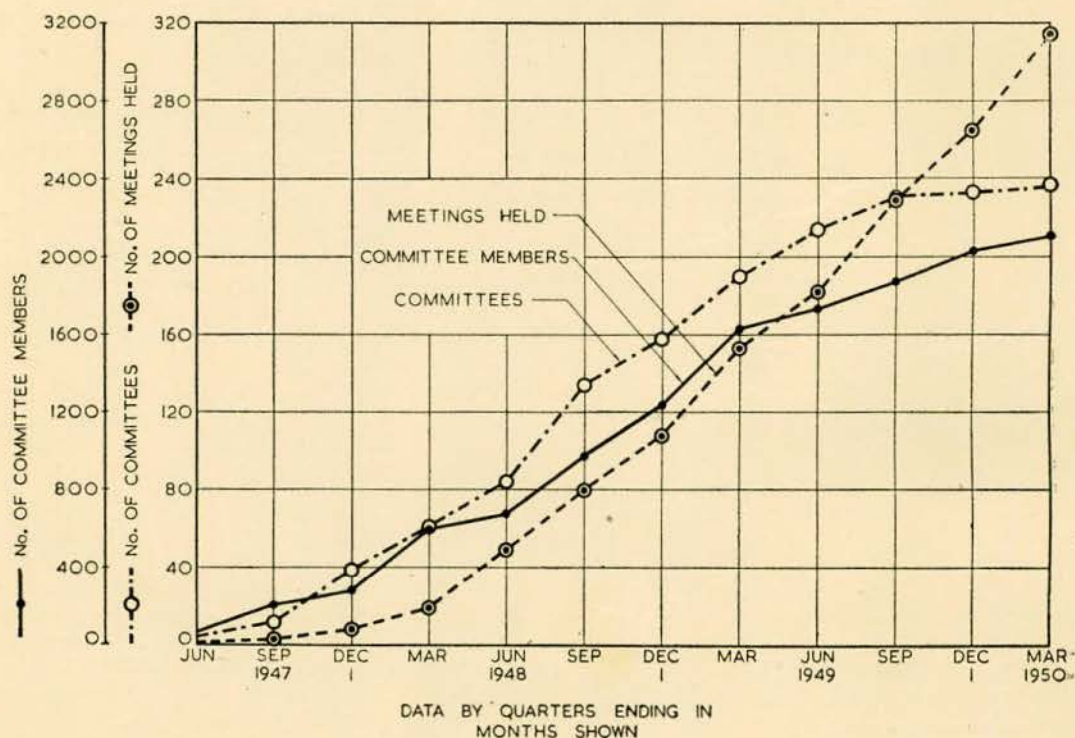


FIG 3 GROWTH OF ACTIVITIES OF COMMITTEES



summarized in Appendix 19.8. In Fig 3 are presented graphs indicating the general growth of the activities of the Committees and Subcommittees, data being given by quarters of the year.

## 8. PROGRESS OF STANDARDS

**8.1** The total number of subjects approved by the Executive Committee for standardization reached 664 in this year. On 31 March 1950, 69 standards had been published already, 41 were in or about to go to the press, 157 standards were in circulation for eliciting comments, and 213 were in other stages of drafting. In Fig 4 is shown the growth of standards published and drafts under circulation.

**8.2** With a view to avoid unnecessary delays caused by bottlenecks in typing and comparing the drafts in the office, the Executive Committee agreed to make certain simplifications in the procedure for dealing with standards from the proposal to the final stage. The simplified procedure, though retaining the essentials of the earlier one, has proved to be helpful in speedier disposal of drafts. In Table III are reproduced the details of the new set-up, in which it will be noticed that the stages have been demarcated anew for convenience of reference.

**TABLE III PROCEDURE FOR DEALING WITH INDIAN STANDARDS FROM PROPOSAL TO FINAL STAGE**

In the following procedure, at any stage, the draft may be referred back to an earlier stage or taken up to a later stage on the advice of the authority concerned.

### STAGE A Proposal Received

1. Director receives proposal.
2. DC or SWC considers proposal, and
  - a) orders investigation, or
  - b) recommends the subject to EC and allocates it to a new or an existing SC.
3. Divisional Head initiates investigation, if so decided under 2(a), and sees it through to stage 2(b).
4. EC approves recommendation under 2(b).

### STAGE B Proposal Approved

5. SC undertakes drafting or assigns the subject to a new or an existing Subcommittee, with directives, if any, concerning circulation.
6. Draft under preparation.

### STAGE C Draft Under Compilation

7. Committee Secretary edits the draft in consultation with such other sections as may be in a position to assist.
8. SC and/or Subcommittee considers the draft and prepares it for circulation.
9. The Divisional Head gets the draft documented and circulates for comments; he also passes on one

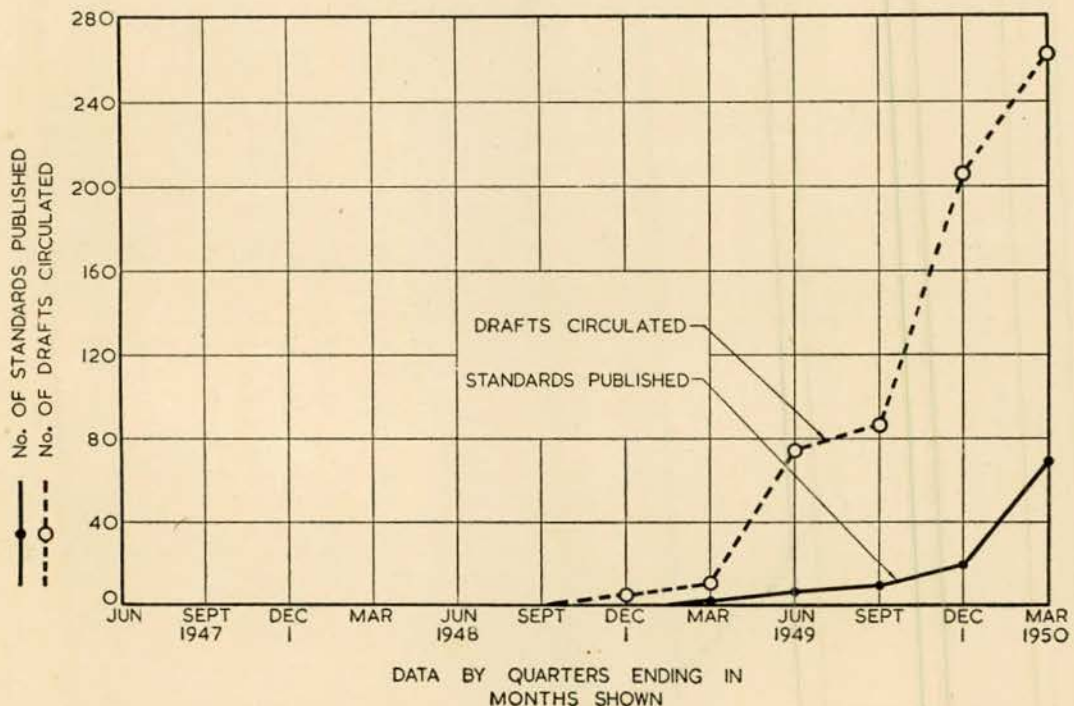


FIG 4 STANDARDS CIRCULATED AND PUBLISHED



**TABLE III PROCEDURE FOR DEALING WITH INDIAN STANDARDS FROM PROPOSAL TO FINAL STAGE (contd.)**

copy each to SP (for editing) and DR (for comments), and four copies to Librarian (for classification).

**STAGE D Draft Under Circulation**

10. SP issues press note on the draft in consultation with the Divisional Head.
11. Committee Secretary collects and collates all comments.
12. SC and/or Subcommittee considers the draft with all comments for finalization.

**STAGE E Draft Finalized**

13. Committee Secretary prepares final draft.
14. The Divisional Head gets SP to edit the draft and gets DR's approval.
15. The Divisional Head sends the draft simultaneously to
  - a) Chairman, SC, for approval,
  - b) Chairman, DC, for endorsement, and
  - c) Chairman, EC, for adoption.
16. Divisional Head passes the standard to SP for printing, giving estimate of number (excluding free circulation) to be printed.

**STAGE F Standard Under Print**

17. SP assigns IS and UDC numbers and sends the standard to press; he also passes on a copy to SA along with necessary data for estimation of cost, etc.
18. SA prepares estimate of cost and price, gets DR's sanction, and arranges distribution with press.
19. Divisional Head and SP correct one copy of page-proofs each; SP incorporates all corrections on both copies, gets the approval of DR and returns one copy to press within 24 hours after receipt from the press.
20. SP issues technical press note announcing publication of the Indian Standard.

**STAGE G Standard Published**

21. SA receives printed standard and puts it on sale.

**8.3** The titles of standards, which are at Stage B and subsequent stages, are reported in Appendix 19.9. In Table IV is shown the progress of standards under each sectional committee.

**TABLE IV SUMMARY OF PROGRESS OF STANDARDS UNDER EACH SECTIONAL COMMITTEE IN 1949-50**

(For Stage Designations reference may be made to Table III)

| SL. No. | SECTIONAL COMMITTEE | STAGE                  |     |     |            |     |     | TOTAL |
|---------|---------------------|------------------------|-----|-----|------------|-----|-----|-------|
|         |                     | B                      | C   | D   | E          | F   | G   |       |
| 1       | EC 1                | Dissolved January 1949 |     |     |            |     |     |       |
| 2       | EC 2                | ...                    | ... | ... | ...        | ... | 2   |       |
| 3       | EC 3                | 1                      | ... | ... | ...        | ... | 1   |       |
| 4       | EC 4                | Submitted report       |     |     | Nov. 1949  |     |     |       |
| 5       | EC 5                | ...                    | ... | ... | ...        | ... | 1   |       |
| 6       | EC 6                | Submitted report       |     |     | April 1949 |     |     |       |
| 7       | EDC 1               | ...                    | ... | ... | ...        | 1   | 1   |       |
| 8       | EDC 2               | 1                      | 6   | ... | ...        | ... | 7   |       |
| 9       | EDC 3               | 8                      | ... | 7   | ...        | ... | 15  |       |
| 10      | EDC 4               | 3                      | 1   | 12  | ...        | 3   | 31  |       |
| 11      | EDC 5               | 2                      | ... | ... | ...        | ... | 2   |       |
| 12      | EDC 6               | 3                      | ... | ... | ...        | ... | 3   |       |
| 13      | EDC 8               | ...                    | ... | ... | ...        | ... | ... |       |
| 14      | EDC 9               | 2                      | ... | 3   | ...        | 1   | 7   |       |
| 15      | EDC 11              | 2                      | 2   | 2   | ...        | ... | 6   |       |
| 16      | EDC 12              | ...                    | 14  | ... | ...        | ... | 14  |       |

**TABLE IV SUMMARY OF PROGRESS OF STANDARDS UNDER EACH SECTIONAL COMMITTEE IN 1949-50 (contd.)**

| SL. No. | SECTIONAL COMMITTEE | STAGE |     |     |     |     |     | TOTAL |
|---------|---------------------|-------|-----|-----|-----|-----|-----|-------|
|         |                     | B     | C   | D   | E   | F   | G   |       |
| 17      | EDC 13              | ...   | ... | ... | ... | ... | ... |       |
| 18      | EDC 15              | ...   | 1   | 1   | 5   | ... | 7   |       |
| 19      | EDC 16              | ...   | ... | ... | ... | ... | ... |       |
| 20      | EDC 17              | ...   | ... | ... | ... | 2   | 3   |       |
| 21      | EDC 18              | ...   | ... | ... | ... | ... | ... |       |
| 22      | EDC 19              | ...   | 2   | ... | ... | ... | 2   |       |
| 23      | EDC 20              | 1     | ... | ... | ... | ... | 1   |       |
| 24      | EDC 21              | ...   | ... | ... | ... | ... | 2   |       |
| 25      | EDC 24              | ...   | 2   | ... | ... | ... | 2   |       |
| 26      | EDC 25              | ...   | 3   | 1   | 1   | ... | 5   |       |
| 27      | TDC 1               | ...   | 16  | ... | ... | ... | 16  |       |
| 28      | TDC 2               | ...   | ... | 1   | 18  | ... | 19  |       |
| 29      | TDC 3               | 1     | ... | 2   | ... | ... | 3   |       |
| 30      | TDC 4               | ...   | ... | ... | ... | ... | 2   |       |
| 31      | TDC 5               | 1     | 2   | 1   | ... | 3   | 2   |       |
| 32      | TDC 6               | 6     | 7   | 1   | ... | ... | 14  |       |
| 33      | TDC 7               | ...   | ... | ... | ... | ... | ... |       |
| 34      | TDC 8               | ...   | 1   | ... | ... | ... | 1   |       |
| 35      | TDC 9               | ...   | ... | ... | ... | ... | ... |       |
| 36      | TDC 10              | ...   | ... | ... | ... | ... | ... |       |
| 37      | TDC 11              | ...   | ... | ... | ... | ... | ... |       |
| 38      | TDC 12              | ...   | ... | ... | ... | ... | ... |       |
| 39      | CDC 1               | ...   | ... | ... | ... | ... | ... |       |
| 40      | CDC 2               | ...   | 4   | ... | ... | ... | 4   |       |
| 41      | CDC 3               | ...   | 3   | 20  | ... | ... | 23  |       |
| 42      | CDC 4               | 7     | ... | 7   | 1   | ... | 15  |       |
| 43      | CDC 5               | 21    | 11  | ... | ... | ... | 32  |       |
| 44      | CDC 6               | 1     | 4   | ... | ... | ... | 5   |       |
| 45      | CDC 7               | ...   | 4   | 1   | 2   | ... | 7   |       |
| 46      | CDC 8               | 1     | 49  | 96  | ... | ... | 41  |       |
| 47      | CDC 9               | ...   | ... | ... | ... | 3   | 3   |       |
| 48      | CDC 10              | 1     | 1   | ... | ... | ... | 2   |       |
| 49      | CDC 11              | 10    | 2   | ... | ... | ... | 12  |       |
| 50      | CDC 12              | 3     | ... | 2   | ... | ... | 5   |       |
| 51      | CDC 13              | ...   | ... | ... | 4   | ... | 4   |       |
| 52      | CDC 14              | 2     | 1   | ... | ... | ... | 3   |       |
| TOTAL   |                     | 77    | 136 | 157 | 31  | 10  | 69  | 480   |

**9. LABORATORY FACILITIES**

**9.1** The ISI continued to receive from various organizations active assistance for laboratory investigations and practical trials. The Central Standards Office, Ministry of Railways, arranged with the authorities of the East Indian and the Bengal Nagpur Railways to carry out trials of firebricks used in the locomotive brick arches. In connection with the preparation of Indian Standard Specifications for Insulators, the Director, Government Test House, Alipore, arranged to conduct certain tests on insulators and stalks. In the absence of authentic figures for the life of Indian-made storage batteries required for the proposed Standard Specification for Lead-Acid Storage Batteries, and on the recommendation of the Batteries Sectional Committee (EDC 25), the following organizations were kind enough to undertake to conduct life tests on batteries in their laboratories:

1. The Chloride and Exide Batteries (Eastern) Ltd., Calcutta
2. Posts and Telegraphs Workshops, Alipore, Calcutta
3. Amco Ltd., Bangalore
4. Technical Development Establishment (Instruments and Electronics), Dehra Dun
5. The Bharat Battery Manufacturing Co. Ltd., Calcutta
6. Standard Batteries Ltd., Bombay
7. National Physical Laboratory, Delhi



9.2 Dr. B. D. Laroia of the National Chemical Laboratory, Poona, has undertaken to collect data on certain chemicals at the Indian standard temperature of 27°C. Messrs Lever Brothers (India) Ltd. and Tata Oil Mills have agreed to test samples of curd soap for which a specification is being drawn up. Samples of sodium and potassium bichromate of indigenous make were tested by the Western India Match Company to ascertain if they conformed with the prescribed standards.

## 10. INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

### 10.1 ISO/TC 50 — Shellac

It was reported in the last annual report that the ISO Secretariat Committee for Shellac was proposing to call a meeting of the ISO/TC in the winter of 1949-50. By the middle of the year, the Secretariat Committee had finalized its proposals on seedlac, shellac and dry bleached lac, and in September 1949 it took steps to convene a meeting of the Committee in New Delhi on 16-19 January 1950.

The international meeting was inaugurated by the Honourable Dr. Syama Prasad Mookerjee, Minister for Industry and Supply and President of the ISI, in a joint session along with the meeting of ISO/TC 56 — Mica. The technical sessions were presided over by Sardar Datar Singh, Vice-Chairman of the Indian Council of Agricultural Research and President of the Indian Lac Cess Committee. Delegates from the UK, the USA, France and India attended the meeting, while Belgium, the Netherlands, Finland, Switzerland and Portugal sent observers. The Indian delegation was led by Dr. P. K. Bose, Director of the Indian Lac Research Institute and Chairman of the ISI Committee on Shellac.

The Committee approved with slight modifications the scope of the ISO/TC that the Secretariat had circulated earlier and then considered the proposals put forward by India on seedlac, shellac and dry bleached lac. After four days of deliberations, the Committee succeeded in formulating international proposals for standardization of these commodities. It is premature to assess the achievement of the international meeting, but it may be said safely that the extent of agreement reached has been beyond the most liberal expectation.

The membership of the Committee, as it stood on 31 March 1950, is as follows:

| 'P' MEMBER BODIES | '+' MEMBER BODIES |
|-------------------|-------------------|
| 1. Australia      | 1. Austria        |
| 2. Belgium        | 2. Chile          |
| 3. France         | 3. Finland        |
| 4. Netherlands    | 4. Hungary        |
| 5. Poland         | 5. Italy          |
| 6. United Kingdom | 6. Mexico         |
| 7. USA            | 7. New Zealand    |
|                   | 8. Portugal       |
|                   | 9. Switzerland    |
|                   | 10. Sweden        |
|                   | 11. South Africa  |
|                   | 12. USSR          |

### 10.2 ISO/TC 56 — Mica

As was reported last year, the ISO Secretariat Committee for Mica was also planning for a meeting of the international committee in India. The Secretariat Committee circulated to the 'P' and '+' Members of the ISO/TC two draft proposals on grading and classification of mica. These proposals were later finalized in the light of comments received from various interests in India and abroad and subsequently published as tentative Indian Standards on Grading and Classification. This enabled the Secretariat Committee to invite a meeting of the ISO/TC in New Delhi on 16-19 January 1950.

After the inauguration in a joint session with the meeting of ISO/TC 50 — Shellac, the technical sessions were presided over by Mr. Chandmull Rajgarhia, President of the Federation of Mica Associations of Bihar and Chairman of the ISI Committee on Mica. Member bodies of the UK, the USA, France and India appointed delegates to the meeting, while Italy, the Netherlands and Switzerland appointed observers. The Indian delegation was led by Shri Baijnath Sharma of Bihar. ISO was represented by its General Secretary, Mr. Henry St. Leger.

The Committee accepted the scope circulated by the Secretariat in the previous year and went on to consider the proposals on grading and classification of mica. It was found possible to achieve a considerable degree of agreement on both the proposals, but a few points, on which immediate agreement was not possible, were referred to a Working Commission. The considerable amount of agreement reached leads to the expectation that in the near future complete agreement will be achieved on all points.

The composition of the ISO/TC as reported in the previous year underwent a further change by the UK and the USA agreeing to take active part in it. The present composition is as follows:

| 'P' MEMBER BODIES | '+' MEMBER BODIES |
|-------------------|-------------------|
| 1. Brazil         | 1. Australia      |
| 2. France         | 2. Austria        |
| 3. Hungary        | 3. Belgium        |
| 4. Czechoslovakia | 4. Chile          |
| 5. United Kingdom | 5. Italy          |
| 6. USA            | 6. Mexico         |
|                   | 7. Netherlands    |
|                   | 8. New Zealand    |
|                   | 9. Poland         |
|                   | 10. Portugal      |
|                   | 11. Switzerland   |
|                   | 12. Sweden        |
|                   | 13. South Africa  |
|                   | 14. USSR          |
|                   | 15. Yugoslavia    |

### 10.3 Other ISO Conferences

*ISO Council and General Assembly* — The Institution was represented by its Director for the second time at the ISO Council and for the first time at the General Assembly meeting held at Paris in July 1949. The Director was elected by the Council as the Vice-President of the ISO up to 31 December 1951, as a consequence of which India's membership in the ISO Council,



which was to expire in December 1949, will continue up to the end of 1951. It is a matter of extreme satisfaction that the Director of the youngest standards organization in the world has been elected to this position. The Director also attended meetings of the ISO Statutes Committee, of which he is a member, set up to consider the proposals for amendment of the ISO Constitution.

*ISO Technical Committees* — While in Paris for the ISO Council and General Assembly meetings, the Director took the opportunity to attend meetings of the following ISO Technical Committees in which India was interested:

- 1) ISO/TC 1 Screw Threads
- 2) ISO/TC 19 Standard Diameters and Preferred Numbers
- 3) ISO/TC 59 Building Construction.

A suggestion had been made that the subject of reinforced concrete should be included under the scope of ISO/TC 59 Building Construction, but the Executive Committee of the ISI thought that it would be more useful if a separate ISO Technical Committee could be set up for Reinforced Concrete. The Director, while attending the meeting, supported this view and after some discussions it was resolved that a Technical Committee on "Concrete and Reinforced Concrete" should be constituted.

**10.4 International Electrotechnical Commission (IEC)** — Consequent on the decision of the Executive Committee (EC) that the ISI should agree to act as the National Committee of the International Electrotechnical Commission (IEC), an inter-ministerial conference of the Government of India was held on 23 December 1949 which decided that the ISI should, for the time being, discharge its functions in this respect in much the same way as the Institution of Engineers (India) had hitherto been doing and that, pending the formation of the Electrical Engineering Division Council, an *ad hoc* Committee of representatives of organizations vitally concerned in the activities of the IEC should be appointed to function as the National Committee for India. The Standing Working Committee of the Engineering Division Council (SWCE) considered the recommendations of the inter-ministerial conference and recorded that:

- a) The SWCE considers it desirable that the EDC appoint the Indian National Committee for IEC, which should work in much the same manner as a Standing Working Committee under the Engineering Division Council and deal exclusively with electrical subjects,
- b) The following membership be considered for this committee, which will have as its Chairman, the Chairman of the EDC, and a Vice-Chairman who may be appointed by the EDC:
  - i) Two members from the Institution of Engineers (India)

- ii) One member from the Central Water-power, Irrigation and Navigation Commission
- iii) One member from the Central Electricity Commission
- iv) One member from the Council of Scientific & Industrial Research
- v) Head of the Power Engineering and Electrical Technology Departments of the Indian Institute of Science
- vi) Three representatives of the electrical industry: one from the Federation of Electricity Supply Undertakings in India, one from the Indian Electrical Manufacturers' Association and the third representative to be nominated by the committee itself, when necessary.

## 11. RELATIONS WITH COMMONWEALTH AND OTHER FOREIGN COUNTRIES

**11.1** Relations of the ISI with national standards bodies of the Commonwealth and other foreign countries were further strengthened during this year. Exchange of publications, draft standards and minutes of technical committee meetings continued throughout the year. This exchange of information and experience has proved to be very helpful in the development of Indian Standards and it is hoped that this desirable practice will lead to mutual understanding and adjustment even in the wider field of international co-ordination of standards.

**11.2** A total of 607 draft standards and 142 proceedings of first meetings of technical committees was received from various countries as detailed in Table V, and 243 draft standards and 12 proceedings of first meetings of technical committees were sent out from the ISI.

**TABLE V DRAFT STANDARDS AND PROCEEDINGS OF FIRST MEETINGS FROM FOREIGN COUNTRIES**

| COUNTRY        | DRAFT STANDARDS | PROCEEDINGS OF FIRST MEETINGS |
|----------------|-----------------|-------------------------------|
| Australia      | 10              | 18                            |
| Austria        | 10              | ...                           |
| Belgium        | 13              | ...                           |
| Chile          | 19              | ...                           |
| Denmark        | 14              | ...                           |
| Eire           | 10              | 5                             |
| France         | 62              | ...                           |
| Israel         | 17              | 15                            |
| Italy          | 6               | ...                           |
| Netherlands    | 61              | ...                           |
| New Zealand    | 41              | 8                             |
| Norway         | 12              | ...                           |
| Poland         | 58              | ...                           |
| South Africa   | 43              | 49                            |
| United Kingdom | 231             | 47                            |
| <b>TOTAL</b>   | <b>607</b>      | <b>142</b>                    |



## 12. CONTROL OF QUALITY AND ISI CERTIFICATION MARKS BILL

12.1 In the report for 1948-49 mention was made of the inter-ministerial meeting called by the Ministry of Commerce for considering the question of controlling the quality of goods exported from India. A reference was also made to the Honourable Minister for Industry and Supply's directive to the Executive Committee for developing immediately a suitable scheme for the purpose. It was also stated that the EC had set up a Special Committee on Control of Quality of Export Goods (EC 6) to consider the question and formulate specific recommendations for the Government of India. EC 6 met on 30 April 1949, under the Chairmanship of Dr. T. G. Shirname, Agricultural Marketing Adviser to the Government of India, Ministry of Agriculture, and considered the general principles involved and the specific problems pertaining to some 17 commodities forming the bulk of the export trade of India. Apart from the specific recommendations in respect of the individual commodities, the Committee recommended that provision be made to the following effect in the legislation on ISI Certification Marks, which was then being drafted by the ISI Directorate:

- a) Goods to which the ISI Certification Marks have been applied shall not, when being exported out of the country, be subject to any further control or check in respect of quality beyond what is undertaken by the ISI as a part of their routine check to guard against misuse of the Certification Marking.
- b) The Government of India may declare from time to time that certain goods or class of goods coming within the purview of the ISI Certification Marks Act shall not be allowed to be exported unless the ISI Certification Mark has been applied to them.

12.2 The detailed recommendations of the Committee including a schedule of actions to be taken by the various Ministries and Departments of the Government of India was forwarded to the Government under the authority of the EC. While no authoritative statement is available to indicate what action the Government has taken on these recommendations, it would appear that the Government and particularly the Ministry of Commerce are no more interested in taking any measures to control the quality of export goods. So far, however, as the implementation of Indian Standards is concerned, the proposals dealing with the ISI Certification Marks scheme were vigorously pursued, as in fact desired by various sections of the industries as well as by the Honourable Minister for Industry and Supply. Throughout this period the Ministry of Industry and Supply gave their constant support to various aspects of this work and assisted the ISI in other ways to bring it to a head.

12.3 It may be recalled here that at the very beginning of the activities of the ISI, attempts were made to register the ISI Certification Marks

with the Registrar of Trade Marks, under the existing Trade Marks Act. The Registrar had, however, pointed out that the object of the Institution would not be met by such a registration, and could only be achieved through a legislation. Similar legislations, existing and proposed, in other countries were studied and a proposed draft ISI Certification Marks Bill was prepared incorporating, among others, the following provisions:

- a) That power be conferred on the ISI for issuing licences for the use of ISI Certification Marks on products complying with Indian Standards, produced by manufacturers who satisfy the ISI that they have the necessary equipment and personnel to control the quality of their products during production.
- b) That power be conferred on the ISI to make all regulations necessary for ensuring proper use of the licences thus issued and to organize a supervisory machinery to ensure against misuse of the ISI Marks.

The recommendation of the Special Committee on Control of Quality of Export Goods (EC 6) concerning application of ISI Marks to export goods, referred to above, was also incorporated in the early draft.

12.4 This draft was submitted to the Ministry of Industry and Supply, which referred it to the Central Advisory Council of Industries and the Standing Advisory Committee of the Legislature attached to the Ministry. The Standing Committee of the Central Advisory Council for Industries generally agreed with the provisions of the Bill, but the Advisory Committee of the Legislature, while fully approving the fundamental provisions of the proposed Bill, recommended that provision should be made to the effect that the primary responsibility for inspection, testing and other controls be delegated to organized associations of different industries concerned, wherever possible. On the basis of this recommendation, the ISI Executive Committee directed that the proposed Bill be suitably modified, which, in its new form, provided for the creation of representative organizations of industries which could be authorized by the ISI to issue licences for the use of the ISI Certification Marks to individual production units forming the membership of the organization. It was also provided that the industries organizations would function under the overall control of the Institution which shall be entitled to issue similar licences direct to suitable production units not covered by the industries organizations.

12.5 The revised draft, after being approved by the EC on 15 November 1949, was circulated to the General Council, which adopted it on 10 December 1949. It was then again submitted to the Ministry of Industry and Supply. The Ministry called an inter-ministerial meeting on 24 January 1950 to consider the proposed measure. At this meeting the representative of the Ministry of Commerce stated that his Ministry did not favour the extension of the scheme to the control of quality of export goods under any



circumstance. The provision for empowering the Central Government to declare the use of ISI Certification Marks as compulsory in respect of selected export goods was, therefore, agreed to be deleted from the Bill. It was also agreed to exclude drugs from the purview of this Bill, which were already covered by the Drugs Act of 1940. With a view to further defining the scope of this Bill *vis-à-vis* the Agricultural Produce (Grading and Marking) Act 1937, it was agreed that a new and more precise definition of agricultural produce should be formulated after consultation between the Ministries of Agriculture and Industry and Supply, and that the APM Act should be amended to incorporate the new definition. The agricultural produce could then be summarily excluded from the scope of the ISI Certification Marks Bill.

**12.6** Although the provision concerning agricultural produce was agreed to at the meeting by the representative of the Ministry of Agriculture, but later it appeared necessary to arrange further discussions between the Secretaries of the Ministries of Industry and Supply and Agriculture, which took place on 10 March 1950, and at which the Director, ISI, was also present. It appeared that the proposal to incorporate the new definition of agricultural produce, as an amendment to the APM Act 1937, was not acceptable to the Ministry of Agriculture. It was, however, decided that the articles at present covered by the schedule of APM Act of 1937 should be excluded from the ISI Certification Marks Bill and that, in future, additions to this schedule should be made only after specific agreement between the Ministry of Agriculture and the Ministry of Industry and Supply. Furthermore, it was agreed that a reference to this schedule would be included in the ISI Certification Marks Act.

**12.7** The Ministry of Industry and Supply is now understood to have obtained the approval of the Cabinet to the principles of the Bill and has forwarded it to the Ministry of Law for the purpose of final drafting. It is expected that the Bill will be introduced at an early session of the Parliament.

### 13. WEIGHTS AND MEASURES

**13.1** From the very beginning of the activities of the Institution the question of standardization of weights and measures used in India has engaged the attention of the Directorate. The Director compiled a report on the subject in September 1947 which was published in the ISI Bulletin of January 1949. The necessity for setting up a Committee to review the position and arrive at a recommendation to be submitted to the Government of India was raised in the first meeting of the Engineering Division Council in November 1947, when a resolution was passed by the Council requesting the Executive Committee to take necessary action for the creation of a Sectional Committee on Weights and Measures. The Executive Committee, while fully approving of the

resolution, sent it to the Government of India for concurrence.

**13.2** In May 1948 approval of the Government was received and a Special Committee on Weights and Measures (EC 4) was formed under the Chairmanship of Dr. J. C. Ghosh, Director General of Industries and Supplies. The Ministries of Industry and Supply, Defence, Education, Agriculture, Railways, Finance, Home, Commerce, W.M.P., and the Department of Scientific and Industrial Research were represented on the Committee. Amongst organizations outside the Government of India represented on the Committee were the Federation of Chambers of Commerce and Industries, Associated Chambers of Commerce of India, All-India Manufacturers' Organization, Institution of Engineers (India), and the National Institute of Sciences of India.

**13.3** The Committee first met on 17 March 1949 in New Delhi. At this meeting it was felt that the State Governments should be requested to participate in future meetings as they were directly responsible for the enforcement of the standards of weights and measures. Further, in order to ascertain the consensus of opinion in the country, a questionnaire was issued to all interests concerned. The second meeting of the Committee took place on 17 March 1949, also in New Delhi. Most of the State Governments sent representatives at the meeting. After prolonged deliberations on the various points of view expressed by the different authorities in reply to the questionnaire, it was unanimously decided to recommend the adoption of the metric system as the standard system for the whole of India.

**13.4** The question of expenditure required for the change-over was discussed in detail and it was felt by some that it would be prohibitive if the change-over were attempted in a short time. It was, however, generally felt that a prolonged transitional period would mitigate this difficulty and accordingly a change-over in three stages covering a period of 11 to 15 years was agreed upon. Details of the procedure to be adopted to carry out the change-over in the three approved stages were also worked out by a Subcommittee under the convenership of Dr. Lal C. Verma.

**13.5** A report was drafted by the Directorate and was approved by the Committee at its third meeting on 14 November 1949. The Executive Committee considered the report and directed its circulation to the General Council which adopted it on 22 December 1949. The following are the essential points of the recommendations of the Committee:

- a) That the diversity of weights and measures now in use in India is causing great loss to the country in national and international trade, and it is time that the various systems were standardized. It is also the considered opinion of the Committee that the metric system of weights and measures should be adopted as the standard system.



- b) That the metric system should be introduced in the agencies under the Central Government as early as possible, while introduction in public life may be gradual.
- c) That the international nomenclature for the units be adopted *in toto* for the basic units. Indian nomenclature for multiples and sub-multiples may be allowed provided the basic metric unit nomenclature is incorporated in it.
- d) That the change-over be carried out in three distinct stages as follows :
  - i) Preparatory stage of 3 to 5 years in which intensive education and dissemination of information on the metric system would be carried out,
  - ii) A change-over stage of about 5 years in which the change-over will be effected in agencies under the Central and Provincial administrations and in public life,
  - iii) The final stage of 3 to 5 years when the country should be brought up to the metric system entirely, no other system of weights and measures being regarded as possessing legal sanction.
- e) That a central agency should be created for guiding and co-ordinating the activities of the State Governments in respect of measures concerned with the change-over. As a related measure of great advantage to the adoption of the metric system, the Committee recommended decimalization of the currency. The Committee further felt that with the above objects in view, a legislation should be initiated at the earliest possible opportunity to introduce the new system.

**13.6** The report of the Committee, after adoption by the General Council, was forwarded to the Government of India. It is understood that the report is now receiving the consideration of the Ministry of Industry and Supply.

#### 14. EXHIBITIONS

**14.1** During the meetings of the International Committees on Shellac and Mica, the Directorate organized an exhibition of mica and shellac products in the premises of the Cottage Industries Emporium at Queensway, New Delhi. A fine collection of lac, mica and their products was secured. The lac exhibits extended from raw forms of lac, seedlac, shellac, etc, to divergent lac products such as paints, lacquers, gramophone records, plastics and various composite products of shellac and mica. The mica exhibits covered rocks and crude slabs as extracted from mines, a collection of various grades and quality classes of mica, and mica products such as commutator rings, wrappers for spark plugs, mica condenser units, parts for vacuum tubes and radio and wireless accessories.

Among the organizations and individuals who helped in collecting these exhibits, mention may be made of the Indian Lac Research Institute, Ranchi, the Geological Survey of India, Calcutta, and Mr. C. M. Rajgarhia, President of the Federation of Mica Associations of Bihar.

**14.2** The Institution received an invitation from the All-India Manufacturers' Organization to participate in the Manufacturers' Industrial Exhibition sponsored by them. The invitation was accepted and it was decided that in addition to displaying the various standards already published by the Institution, attempts should be made to display as far as possible standard products covered by the standards. The exhibition was opened on 26 February 1950 by the President of the Indian Republic. Contacts with individuals and manufacturers made at the exhibition have proved to be fruitful in enrolling more members and in disseminating information regarding the activities of the ISI.

**14.3** At the invitation of Nawab Zain Yar Jung Bahadur, ISI also participated in the All-India Industrial Exhibition at Hyderabad from 20 December 1949 to 20 January 1950.

#### 15. OTHER ACTIVITIES

**15.1 Documentary Films** — In connection with the meetings of the ISO Technical Committees on Shellac and Mica, a proposal was made that it would add to the success of the meetings, if documentary films on the two subjects could be prepared and shown to the delegates. The Ministry of Information and Broadcasting was persuaded through the Ministry of Industry and Supply to undertake this task, but the films could not be finished in time. The two films have, however, been completed and have been released for public exhibition.

**15.2 Waiving of Income Tax on Membership Subscription** — The question whether the membership dues paid by the sustaining and other members of the Institution were subject to income tax or not was taken up by the ISI Directorate with the Central Board of Revenue. The Board agreed that the subscriptions would be admissible as deductions under section 10(3) (XV) of the Indian Income Tax Act, provided it could be shown that the payment was in the interest of the business.

**15.3 Participation of ISI Staff in Meetings Outside** — Meetings of the following committees were attended by the ISI staff :

| COMMITTEES   | DATES OF MEETINGS |
|--|-------------------|
| 1. Exploratory meeting called by the Ministry of Railways to consider appointment of a Committee for Increased Production and Supply of Railway Engineering Components | 13.7.1949         |
| 2. Subcommittee of the Central Board of Irrigation for Drafting Standard Instructions on Determination of Detritus Load in Rivers and Canals                           | 15.7.1949         |



| COMMITTEES  | DATES OF MEETINGS   |
|---|---|
| 3. Permanent Committee of the Central Board of Irrigation to review the Standardization of Methods and Apparatus used in Soil Testing and Classification of Soils | 17.7.1949   |
| 4. Mysore Chamber of Commerce   | 27.2.1950   |
| 5. Ministry of Agriculture — Bristles Merchants Meeting   | 15.9.1949   |
| 6. DG I&S Development Committees :  |   |
| i) Ceramics, Refractories and Insulators  | 2.7.1949  |
| ii) Plywood   | 1.7.1949  |
| iii) Electrical Machinery and other Electrical Equipment  | 19.12.1949  |
| iv) Light Electrical Industries   | 1.7.1949  |
| v) Matches  | 30.6.1949   |
| vi) Paints and Varnishes  | 2.7.1949  |
| vii) Heavy Chemicals  | 18.2.1950   |
| viii) Plastics  | 30.6.1949   |
| ix) Soap, Glycerine and Cosmetics   | 3.7.1949  |
| x) Electro-chemical and Electro-metallurgical   | 29.6.1949   |
| xi) Tar Products, Fine Chemicals and Pharmaceutical   | 4.7.1949  |
| xii) Paper, Newsprint and Board   | 2.7.1949  |
| xiii) Bidi, Cigarette and Cigar   | 4.7.1949  |
| xiv) Miscellaneous Rubber Goods   | 29.6.1949   |
| xv) Power Alcohol   | 6.7.1949  |
| xvi) Glass and Enamelware   | 1.7.1949  |
| xvii) Leather   | 29.6.1949   |
| 7. Ministry of Industry and Supply— Salt Experts Committee  | 3.12.1949   |
| 8. Research Committees of the Council of Scientific and Industrial Research :   | More than 100 meetings were held and tours undertaken to salt-producing centres in Kathiawar, Kutch, Travancore, Madras and Orissa. |
| i) Salt   | 21.2.1949   |
| ii) Plastics  | 18.4.1949   |
| 9. Board of Scientific and Industrial Research  | 11.7.1949   |

**15.4 Other Contacts** — Dr. Lal C. Verman was invited to preside over the Cottage Industries' Conference of Technologists and Technicians at Lucknow on 20-21 September 1949 which was inaugurated by the Honourable Pandit Keshav Deo Malviya. His presidential address was on "Standardization in Cottage Industries". He also addressed the members of the Delhi Rotary Club on "Standardization in India" on 10 November 1949. A similar address was delivered by Mr. J. P. Mehrotra to the Mysore Chamber of Commerce in Bangalore on 27 February 1950. The ISI sponsored the broadcast of a talk on mica by Mr. Chandmull Rajgarhia, the Chairman of the ISI Sectional Committee on Mica, on 20 February 1950.

**15.5 Distinguished Visitors** — Dr. S. Trone, Planning Expert to the Government of India, visited the ISI headquarters on 13 October 1949 and addressed the members of the staff.

Mr. Henry St. Leger, the General Secretary of the ISO, was another distinguished visitor to the ISI.

Nawab Zain Yar Jung Bahadur, Minister of Works, Government of Hyderabad State, paid a visit to the ISI headquarters on 23 January 1950.

## 16. PUBLICATIONS

**16.1 Standards** — During the year, 69 Indian Standards were published. A list of these together with those in other stages of preparation is given in Appendix 19.9.

**16.2 ISI Bulletin** — The *ISI Bulletin* completed its first volume with the October 1949 issue and commenced the second volume with the January 1950 issue. The circulation of the *Bulletin* has gone up from 1,300 to 1,750 in the course of the year. Of these, 60 copies are distributed against cash subscriptions, the rest being distributed free to committee members and other members of the ISI.

Fifteen technical papers were published in the first volume of the *Bulletin* and reports on the organization and functions of National Standards. Bodies of four countries were included. Sections on Standards News, ISI Activities and Accessions to the ISI Library have become permanent and useful features of the *Bulletin*.

**16.3 Articles Published in Other Journals** — Apart from standards and the quarterly periodical, a number of articles and papers was contributed during the year to various journals on invitation. A list of these is given in Table VI.

**16.4 Press Notes** — With a view to keeping the industrial, commercial and other interests in the country constantly informed, the practice of issuing press notes through the Press Information Bureau was continued. According to this practice, a press note is issued whenever a standard is issued in draft form for comments, and again when it is published in its final form. Press notes are also issued concerning other important events connected with the ISI activities.

On 32 published Indian Standards 13 press notes, and on 238 draft Indian Standards 48 press notes were issued during the year. In respect of other activities of the Institution another set of 8 press notes was issued.

Besides the daily and weekly press, important technical journals, like the *Metal Market Review*, *Current Science*, *Journal of Scientific and Industrial Research*, *Commercial Publications*, *Textile Digest*, *Journal of the Indian Chemical Society*, *Siam Trade Journal*, etc, have continued to evince keen interest in the activities of the ISI and to feature our press notes in their columns.

Important activities like the sessions of the General Council of the ISI and the ISO Technical Committee Meetings on Mica and Shellac were broadcast over the All India Radio, which should have contributed their share in making the general public standards-conscious.

**16.5 Sale of Standards** — The sale of standards recorded a rapid rise during this period. It may be regarded as a measure of success of the efforts.



TABLE VI ARTICLES CONTRIBUTED

| TITLE  | AUTHOR             | PUBLICATION   | DATE            |
|--|--------------------|---|-----------------|
| Indian Standards Institution                                     | ...                | I & S Quarterly   | April-June 1949 |
| Le Mica  | Dr. Lal C. Verman  | Courrier de la Normalization                            | May-June 1949   |
| Indian Standards Institution                                     | ...                | Siam Trade & Economic Review                            | July 1949       |
| Standardization and Economic Life                                | Dr. K. S. Rangappa | Hindu   | 10 July 1949    |
| Standardization and Economic Life                                | Dr. K. S. Rangappa | Engineering News of India                               | August 1949     |
| Indian Standards Institution                                     | ...                | I & S Quarterly   | July-Sept 1949  |
| Indian Standards Institution                                     | ...                | I & S Quarterly   | Oct-Dec 1949    |
| Indian Standards Institution                                     | Dr. Lal C. Verman  | Brochure for the Central Advisory Council of Industries | January 1950    |
| Standardization in Cottage Industries of India                   | Dr. Lal C. Verman  | Standards World   | January 1950    |
| Standardization and Indian Metal Industry                        | Mr. J. P. Mehrotra | The Metal Market Review                                 | February 1950   |
| Brief History and Activities of the Indian Standards Institution | Dr. Lal C. Verman  | Catalogue of the Manufacturers' Industrial Exhibition   | February 1950   |
| Brief History and Activities of the Indian Standards Institution | Dr. Lal C. Verman  | Statesman, Special Number                               | 6 March 1950    |
| Indian Standards Institution                                     | ...                | I & S Quarterly   | Jan-March 1950  |

of the ISI in making the industry standards-minded. In Table VII are given some details of the sales.

TABLE VII SALE OF PUBLICATIONS

| ORGANIZATION | 1948-49         | 1949-50          |
|--------------|-----------------|------------------|
|              | Rs              | Rs               |
| ISI          | 624             | 4,336            |
| BSI          | 5,095           | 16,668           |
| ASA and ASTM | ...             | 3,891            |
| Others       | ...             | 336              |
| <b>TOTAL</b> | <b>Rs 5,719</b> | <b>Rs 25,231</b> |

18. Czechoslovenska Spolecnost Normalisacni (Czechoslovakia)
19. Dansk Standardiseringsraad (Denmark)
20. Association Francaise de Normalisation (France)
21. Institute for Industrial Research and Standards (Eire)
22. Suomen Standardisoimislahtakunta (Finland)
23. Magyar Szabvanyugyi Intezet (Hungary)
24. Ente Italiano di Unificazione (Italy)
25. Board of Patents and Standards (Japan)
26. Secretaria de la Economia Nacional (Mexico)
27. Hoofdcommissie voor de Normalisatie in Nederland (Netherlands)
28. Norges Standardiserings-Forbund (Norway)
29. Polski Komitet Normalisacyjny (Poland)
30. Reparticao de Normalizacao (Portugal)
31. Comisiunea de Standardizare (Roumania)
32. Sveriges Standardiseringskommission (Sweden)
32. Association Suisse de Normalisation (Switzerland)
34. Vsesojuznyj Komitet Standartov (USSR)

17. LIBRARY

17.1 The collection of standard specifications from all national and international organizations was continued. During the year, 2,988 new specifications were received and accessioned in the library. The ISI now stocks standards of the following organizations and countries:

1. American Standards Association (USA)
2. American Society for Testing Materials (USA)
3. Institute of Radio Engineers (USA)
4. Radio Manufacturers' Association (USA)
5. National Bureau of Standards, Department of Commerce (USA)
6. National Electrical Manufacturers' Association (USA)
7. Society of Automobile Engineers (USA)
8. British Standards Institution (UK)
9. Canadian Standards Association (Canada)
10. Canadian Government Specifications Board (Canada)
11. Standards Institute of Israel (Israel)
12. Standards Association of Australia (Australia)
13. South African Bureau of Standards (South Africa)
14. Oesterreichischer Normenausschuss (Austria)
15. Institut Belge de Normalisation (Belgium)
16. Instituto Nacional de Investigaciones Tecnologicas Normalizacion (Chile)
17. National Bureau of Standards (China)

17.2 The number of standard specifications in the library now exceeds 10,000. These have all been catalogued and indexed for ready reference. All new accessions to the library are being published in the *ISI Bulletin* every quarter for the information of members and other subscribers. Over a hundred reference books were also added to the library for the use of officers and staff of the Institution and for consultation by members. Arrangements were made from time to time for translation of standards literature from French, German, Italian and Russian. The resources of the library were freely utilized by the committees and subcommittees of the Institution. Bibliographies for the use of committee members were prepared on more than 25 subjects. The number of specifications lent outside for the use of members for committee work was of the order of 2,500. The library also collected and supplied information on standards literature on various subjects in India and abroad. Table VIII gives an idea of the increase in the number of accessions and other activities in the course of 1949-50.

Total  
Foreign  
Basian  
Federal Govt

6091

(Germany)

(New Zealand)

(Spain)

(Uruguay)

14,000

Total

27

2800

1950-51

Use monthly supply, 200 specifications  
of Radio Interference Components  
Standardization Com. Inc.  
Society of Motor Manufacturers & Traders



**TABLE VIII LIBRARY RECEIPTS AND SERVICE**

|   | 1948-49 | 1949-50 | 1950-51 INCREASE |     |
|---|---------|---------|------------------|-----|
| Standards   | 2,240   | 2,988   | 409              | 748 |
| Draft Standards   | 414     | 607     | 943              | 193 |
| Proceedings of ISI Meetings                                       | 191     | 142     | 208(-)           | 49  |
| Periodicals   | 43      | 72      | 96               | 29  |
| Standards and Draft Standards loaned and consulted in the Library | 1,920   | 2,450   | 280              | 530 |
| Bibliographies prepared and supplied                              | 25      | 25      | 27               | ... |
| Translations of Literature  | 21      | 57      |                  | 36  |

## 18. FINANCE

**18.1** The Institution managed to operate within its income, though the preliminary budget estimates had indicated a heavy deficit of Rs 1.45 lakhs. Against the anticipated expenditure of Rs 4,94,900/- the actual amount spent was Rs 3,67,780/-. The saving was achieved by exercising extreme economy in every item of expenditure, particularly by curtailing travelling expenses, postponing recruitment of sanctioned staff, economizing in international meetings, etc.

As regards income, the Institution received Rs 3,75,657/- against the anticipated income of Rs 3,50,225/-. The increase was largely due to the enrolment of new members and increase in the sale proceeds of the publications. The Institution collected Rs 1,53,087/10/- as subscription against the previous two years' figures of Rs 95,588/8/- for 1947 and Rs 1,15,932/10/- for 1948. Contributions and subscriptions made by the Central and State Governments and by firms, and individuals paying more than the minimum are shown in Appendix 19.10.

The total sale proceeds were Rs 25,231/3/- against the anticipated income of Rs 18,000/-.

**18.2** Although the actual closing balance of the year exceeds the anticipated opening balance of the next year by Rs 7,877/1/3, the Institution is to face an estimated budget deficit of Rs 1.14 lakhs during the year 1950-51. The budget estimates for 1950-51 have been divided into two groups, the normal budget and an additional budget for the creation of the Certification Marks Division Council. The position concerning the latter has been shown separately in the budget on both the income and the expenditure sides. It is hoped

that the Government of India will consider making a special grant to the ISI for initiating the work in 1950-51, when the income from licensing fees can hardly be expected to be appreciable. During subsequent years, the scheme is expected to become self-supporting.

The normal part of the budget for the year 1950-51 is deficit by Rs 1.14 lakhs. It has been felt that the ISI is in need of funds for expanding its activities and for building its own office and residential accommodation. On the income side for 1950-51, an increase of Rs 63,000/- in the normal budget over the last year's income is expected. The expenditure is also expected to exceed the last year's figure by Rs 1.85 lakhs, mainly due to the increasing number of Standards to be published, increase in pay, allowances and travelling expenses of the employees and other consequential increments under various heads.

It is a matter of gratification to record that in spite of the drastic budget cuts which the various Government Ministries and Departments had had to accept as a result of financial stringency, the Government of India has been pleased to supplement its grant of Rs 2 lakhs by an additional sum of Rs 20,000/- during 1950-51.

**18.3** The Institution places on record its appreciation of the financial support rendered freely by its members and others in the technical work of numerous committees and subcommittees, by way of meeting the expenses of their representatives attending the ISI or the ISO meetings within India and abroad. It is estimated that indirect contributions of this kind amounted to approximately Rs 1,24,000/-. Acknowledgement is also made of the contribution of Rs 1,500/- from the Federation of Mica Associations of Bihar, Hazaribagh, towards the expenses of the two international meetings convened in New Delhi in January 1950.

**18.4** The revised budget for 1949-50 and the budget estimates for 1950-51, as approved by the General Council at its fifth meeting held on 25 March 1950, are given in Appendix 19.11. The accounts of the ISI were duly audited by the Comptroller and Auditor General of India and were found correct. Audited accounts for the year 1949-50 are detailed in Appendix 19.12.

The Assistant Accountant General, Industry and Supply, in his audit report remarked that all the records and documents were maintained properly and were in excellent condition.



# 19. APPENDICES

## APPENDIX 19.1

### MEMBERS OF THE GENERAL COUNCIL

PRESIDENT: Honourable Dr. Syama Prasad Mookerjee  
VICE-PRESIDENTS: Dr. K. S. Krishnan  
Dr. L. C. Jariwala

| <i>Organization/Interest</i>                | <i>Representative</i>   |
|---|---|
| MINISTRY OF INDUSTRY AND SUPPLY             | Mr. K. Sen, Joint Secretary   |
| MINISTRY OF COMMERCE                        | Mr. K. K. Chettur, Joint Secretary  |
| MINISTRY OF DEFENCE                         | Dr. D. S. Kothari, Scientific Adviser   |
| MINISTRY OF FOOD                            | Mr. T. M. Gurbaxani, Director of Inspection   |
| MINISTRY OF HEALTH                          | Mr. P. M. Menon, Joint Secretary  |
| MINISTRY OF AGRICULTURE                     | Dr. T. G. Shirname, Agricultural Marketing Adviser  |
| MINISTRY OF RAILWAYS                        | Mr. B. S. Sindhu, Deputy Chief Controller of Standardization,<br>Railway Board  |
| MINISTRY OF TRANSPORT                       | Mr. G. M. Mckelvie, Consulting Engineer ( Roads )   |
| MINISTRY OF COMMUNICATIONS                  | Chief Engineer, Posts & Telegraphs  |
| MINISTRY OF FINANCE                         | Mr. A. K. Roy, Joint Secretary  |
| MINISTRY OF WORKS, MINES AND POWER          | Dr. M. S. Krishnan, Director, India Bureau of Mines   |
| MINISTRY OF INFORMATION AND BROADCASTING    | Mr. C. L. Bhardwaj, Information Officer   |
| GOVERNMENT OF PUNJAB                        | Mr. S. N. Kapur, Director of Industries   |
| GOVERNMENT OF BIHAR                         | Dr. K. R. Krishnaswami, Director of Industries  |
| GOVERNMENT OF ASSAM                         | Director of Statistics  |
| GOVERNMENT OF MADRAS                        | Mr. M. T. Raju, Director of Industries and Commerce   |
| GOVERNMENT OF WEST BENGAL                   | Mr. D. N. Ghose, Director of Industries   |
| GOVERNMENT OF U.P.                          | Dr. D. R. Dhingra, Officiating Deputy Director of Industries  |
| GOVERNMENT OF C.P. AND BERAR                | Mr. K. A. N. Rao, Director of Industries  |
| GOVERNMENT OF BOMBAY                        | Mr. D. N. Kowshik, Director of Industries   |
| GOVERNMENT OF ORISSA                        | Mr. R. P. Padhi, Director of Agriculture and Food Production  |
| GOVERNMENT OF CEYLON                        | Mr. W. J. A. van Langenberg, Director of Industries   |
| CENTRAL GOVERNMENT NOMINEES                 | Lala Shri Ram, New Delhi<br>Shri Biren Mookerji, Martin Burn & Co., Calcutta  |
| COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH | Dr. S. S. Bhatnagar, Director, Scientific & Industrial Research<br>Dr. K. S. Krishnan, Director, National Physical Laboratory |
| INDIAN COUNCIL OF AGRICULTURAL RESEARCH     | Mr. R. L. Sethi, Agricultural Commissioner with the Govern-<br>ment of India  |
| CENTRAL BOARD OF IRRIGATION                 | Member, Central Waterpower, Irrigation and Navigation<br>Commission   |
| NATIONAL INSTITUTE OF SCIENCES OF INDIA     | Prof. G. R. Pranjpe, Poona  |
| INSTITUTION OF ENGINEERS ( INDIA )          | Nawab Zain Yar Jung Bahadur, Hyderabad<br>Mr. K. F. Antia, Bombay   |
| INDIAN INSTITUTE OF ARCHITECTS              | Mr. H. N. Dallas, Bombay  |
| FEDERATION OF INDIAN CHAMBERS OF COMMERCE   | Mr. Nanubhai B. Amin, Baroda<br>Dr. K. A. Hamied, Bombay  |
| ASSOCIATED CHAMBERS OF COMMERCE             | Mr. J. F. Sinclair, New Delhi   |
| ALL-INDIA MANUFACTURERS' ORGANIZATION       | Dr. L. C. Jariwala, Bombay  |
| INDIAN STATISTICAL INSTITUTE                | Prof. P. C. Mahalanobis, Calcutta   |
| TEXTILE DIVISION COUNCIL                    | Mr. Bharat Ram, Delhi<br>Mr. Surottam P. M. Hutheesing, Ahmedabad   |
| ENGINEERING DIVISION COUNCIL                | Mr. S. L. Kirloskar, Poona<br>Col. A. G. C. Northcroft, New Delhi<br>Prof. S. K. Roy, Calcutta                                |



| <i>Organization/Interest</i>                               | <i>Representative</i>  |
|--|--|
| CHEMICAL DIVISION COUNCIL                                  | Dr. H. L. Roy, Calcutta<br>Dr. Mata Prasad, Bombay<br>Dr. Sri Krishna, Dehra Dun   |
| SUSTAINING MEMBERS   | Dr. R. R. Hathiagadi, Bombay<br>Mr. J. S. Vatchagandhi, Jamshedpur<br>Mr. B. K. Rohatgi, Calcutta<br>Mr. C. J. Gardner, Calcutta |
| ORDINARY MEMBERS   | Dr. K. M. Chakravarty, Sindri  |
| ALL-INDIA COUNCIL FOR TECHNICAL EDUCATION<br>(Co-opted)    | Dr. J. C. Ghosh, Calcutta  |
| DIRECTORATE GENERAL OF INDUSTRIES &<br>SUPPLIES (Co-opted) | Deputy Director General (Inspection)   |
| SECRETARY  | Dr. Lal C. Verman, Director, ISI   |

## APPENDIX 19.2

### MEMBERS OF THE EXECUTIVE COMMITTEE

CHAIRMAN : Dr. K. S. Krishnan

| <i>Organization/Interest</i>                | <i>Representative</i>   |
|---|---|
| VICE-PRESIDENTS                             | Dr. K. S. Krishnan, New Delhi<br>Dr. L. C. Jariwala, Bombay                                 |
| CHAIRMAN, TDC                               | Mr. Bharat Ram, Delhi   |
| MEMBER, TDC                                 | Mr. Surottam P. M. Hutheesing, Ahmedabad  |
| CHAIRMAN, EDC                               | Mr. S. L. Kirloskar, Poona  |
| MEMBER, EDC                                 | Prof. S. K. Roy, Calcutta   |
| CHAIRMAN, CDC                               | Dr. H. L. Roy, Calcutta   |
| MINISTRY OF FINANCE                         | Mr. A. K. Roy, Joint Secretary  |
| MINISTRY OF INDUSTRY AND SUPPLY             | Mr. K. Sen, Joint Secretary   |
| MINISTRY OF DEFENCE                         | Dr. D. S. Kothari, Scientific Adviser   |
| MINISTRY OF AGRICULTURE                     | Dr. T. G. Shirname, Agricultural Marketing Adviser  |
| INSTITUTION OF ENGINEERS (INDIA)            | Nawab Zain Yar Jung Bahadur, Hyderabad  |
| COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH | Dr. S. S. Bhatnagar, Director, Scientific & Industrial Research                             |
| GENERAL COUNCIL (Elected)                   | Prof. G. R. Pranjpe, Poona<br>Mr. G. M. Mckelvie, New Delhi<br>Mr. Nanubhai B. Amin, Baroda |
| SECRETARY                                   | Dr. Lal C. Verman, Director, ISI  |

## APPENDIX 19.3

### MEMBERS OF THE FINANCE COMMITTEE

CHAIRMAN : Mr. A. K. Roy

| <i>Organization/Interest</i> | <i>Representative</i>   |
|------------------------------|---|
| MINISTRY OF FINANCE          | Mr. A. K. Roy, Joint Secretary  |
| CHAIRMAN, TDC                | Mr. Bharat Ram, Delhi   |
| CHAIRMAN, EDC                | Mr. S. L. Kirloskar, Poona  |
| CHAIRMAN, CDC                | Dr. H. L. Roy, Calcutta   |
| GENERAL COUNCIL (Elected)    | Dr. K. S. Krishnan, New Delhi<br>Nawab Zain Yar Jung Bahadur, Hyderabad<br>Mr. K. Sen, Joint Secretary, Ministry of Industry and Supply<br>Lala Shri Ram, New Delhi |
| SECRETARY                    | Dr. Lal C. Verman, Director, ISI  |



## APPENDIX 19.4

### LIST OF SUBSCRIBING MEMBERS

(\*Organization of Industries, Trade or Commerce)

#### SUSTAINING MEMBERS

1. Aaron Spinning and Weaving Mills Ltd., Pappinisseri P.O. ( N. Malabar )
2. Acme Manufacturing Co. Ltd., Bombay
3. Adcco Ltd., Calcutta 27
4. Addison's Paints & Chemicals Ltd., Madras 11
5. Agra Iron Founders' Association, Agra
6. Agrico Department, Tata Iron & Steel Co. Ltd., Jamshedpur
7. Ahmedabad Advance Mills Ltd., Fort, Bombay
8. Ahmedabad Manufacturing & Calico Printing Co. Ltd., Ahmedabad
- \*9. Ahmedabad Millowners' Association, Ahmedabad
10. Ajax Products Ltd., Madras
11. Alcock Ashdown & Co. Ltd., Bombay
12. Alembic Chemical Works Co. Ltd., Baroda
13. Alfred Herbert ( India ) Ltd., Calcutta
14. Alkali & Chemical Corporation of India Ltd., Calcutta
- \*15. All-India Bobbin Manufacturers' Association, Bombay
- \*16. All-India Exporters' Association, Fort, Bombay
- \*17. All-India Food Preservers' Association, New Delhi
- \*18. All-India Glass Manufacturers' Federation, Malaknagar, Meerut
- \*19. All-India Manufacturers' Organization, Fort, Bombay
- \*20. All-India Non-Ferrous Metalware Manufacturers' Association, Bombay 1
- \*21. All-India Plastics Manufacturers' Association, Bombay 7
- \*22. All-India Radio Merchants' Association, Bombay 4
- \*23. All-India Soap Makers' Association, Calcutta 1
- \*24. All-India Spinners' Association, Sevagram (Wardha)
25. Aluminium Corporation of India Ltd., Calcutta
26. Aluminium Industries Ltd., Kundara, Travancore
27. Aluminium Hindustan Ltd., Bombay
28. Amco Ltd., Bombay
29. Angelo Brothers Ltd., Calcutta
30. A. M. Arathoon Ltd., Calcutta
31. Arvind Mills Ltd., Ahmedabad
32. Asbestos Cement Ltd., Bombay
- \*33. Ashok Exporters and Importers, Calcutta
34. Asia Chemicals Ltd., Delhi
35. Asiatic Oxygen & Acetylene Co. Ltd., Calcutta 1
36. Assam Government, The Director of Statistics, Shillong, Assam
37. Assam Bengal Cement Co. Ltd., Calcutta
38. Assam Bengal Veneer Industries, Calcutta 1
39. Assam Railways & Trading Co. Ltd., P.O. Margherita ( Upper Assam )
40. Assam Saw Mills & Timber Co. Ltd., Calcutta
41. Associated Cement Companies Ltd., Bombay 1
- \*42. Associated Chambers of Commerce of India, Calcutta 1
43. Associated Electrical Industries ( India ) Ltd., Calcutta
44. Associated Electrical Industries Mfg. Co. Ltd., Calcutta
45. Associated Research Laboratories, Bombay
- \*46. Association of British Chemical Manufacturers, Bombay 1
- \*47. Association of Indian Industries, Fort, Bombay
- \*48. Association of Merchants & Manufacturers of Textile Stores & Machinery, Bombay
49. Avery Company Ltd., Calcutta
50. B. S. & Company, Calcutta 1
51. Baijnath Jugalkishore, Lac Shellac Merchants & Commission Agents, Calcutta 1
52. Balmer Lawrie & Co. Ltd., Calcutta
53. Bangur Brothers Ltd., Calcutta
54. Bararee Coke Co. Ltd., Calcutta
55. Bata Shoe Company Limited, Calcutta 16
56. Batala Engineering Co. Ltd., Batala ( East Punjab )
57. Behar Chemical Traders, Howrah
58. Behar Firebricks & Potteries Ltd., P.O. Mugma, Manbhum Dist.
- \*59. Bengal Chamber of Commerce, Royal Exchange, Calcutta 1
60. Bengal Chemical & Pharmaceutical Works Ltd., Calcutta
61. Bengal Electric Lamp Works Ltd., Calcutta 29
62. Bengal Enamel Works Ltd., P.O. Palta, Dist. 24 Parganas
63. Bengal Hosiery Manufacturers' Association, Calcutta 6
64. Bengal Immunity Co. Ltd., Calcutta
- \*65. Bengal Millowners' Association, Calcutta
- \*66. Bengal National Chamber of Commerce, Calcutta 1
67. Bengal Potteries Ltd., Calcutta
68. Bengal Silk & Art Silk Millowners' Association, Calcutta 13
69. M. Best Cotton Rope Mfg. Co., Bombay 1
70. Bhandari Iron & Steel Co., Indore
71. Bharat Battery Manufacturing Co. Ltd., Calcutta
72. Bharat Electrical Industries Ltd., Calcutta 13
73. Bharat Glass Works Ltd., Belgharia P.O.
74. Bharat Sheet Metal Industries Ltd., Calcutta 13
75. Bharat Tiles & Marble Ltd., Fort, Bombay
76. Bhartia Electric Steel Co. Ltd., Calcutta
77. Binani Metal Works Ltd., Calcutta 1
78. Bihar Government, The Director of Industries, Patna
79. Bombay Government, The Director of Industries, Fort, Bombay
- \*80. Bombay Chamber of Commerce, Bombay
- \*81. Bombay Country Fancy and Grey Piecegoods Merchants' Association, Bombay 2
- \*82. Bombay Piecegoods Merchants' Association, Bombay 2
- \*83. Bombay Wool Merchants' Association, Bombay 1
84. Bowreah Cotton Mills Co. Ltd., Calcutta
85. Braithwaite & Co. ( India ) Ltd., Calcutta
86. Braithwaite Burn & Jessop Construction Co. Ltd., Calcutta 1
87. British Drug Houses ( India ) Ltd., Bombay 1
88. British India Corporation Ltd., Kanpur
89. British Insulated Callenders Cables Ltd., Fort, Bombay 1
90. British Metal Corporation ( India ) Ltd., Calcutta
91. Brocho and Co. Ltd., Calcutta
92. Bungo Steel Furniture Ltd., Kidderpore, Calcutta
93. Burhanpur Tapti Mills Ltd., Fort, Bombay
94. Burmah-Shell Oil Storage & Distributing Co. of India Ltd., Bombay
95. Burn & Co. Ltd., Howrah ( West Bengal )



96. Burn & Co. Ltd. Ceramics ( Dept. ), Calcutta
97. Burrakur Coal Co. Ltd., Calcutta
98. Calcutta Electric Supply Corporation Ltd., Calcutta
99. Calcutta Electrical Manufacturing Co. Ltd., Calcutta
100. Calcutta Expanded Metal Mfg. Co. Ltd., Calcutta 7
101. Calcutta Hardware Co., Calcutta
102. Calcutta Industrial Chemicals & Minerals Co. Ltd., Calcutta 13
- \*103. Calcutta Tea Chest Fittings Manufacturers' Association, Calcutta
104. Caltex ( India ) Ltd., Calcutta
105. Cambata Industries Ltd., Bombay
106. Cawnpore Cotton Mills Co., Kanpur
107. Cawnpore Textiles Ltd., Kanpur
108. Central Board of Irrigation, Simla
109. Central Distillery & Chemical Works Ltd., Meerut Cantt.
110. Central India Spinning, Weaving and Manufacturing Co. Ltd., Fort, Bombay
111. C.P. & Berar Government, The Director of Industries, Nagpur
112. The C.P. Manganese Ore Co. Ltd., Nagpur
113. Central Research Institute, Trivandrum, S.I.
114. Ceylon Government, The Director of Industries, Colombo
115. Chandmull Rajgarhia, Giridih, Hazaribagh
116. P. C. Chanda & Co. Ltd., Calcutta 1
117. B. N. Chatterjee & Sons, Calcutta 25
118. Chatturam Horilram Ltd., P.O. Jhurmi Telaiya
119. Chemical Industrial & Pharmaceutical Laboratories Ltd., Bombay
120. Chhoti Silk Mill Co. Ltd., Bombay
121. Chittaranjan Cotton Mills Ltd., Dacca
122. Chloride and Exide Batteries ( Eastern ) Ltd., Calcutta
123. Chrestien Mica Industries Ltd., Calcutta
124. Ciba Dyes Limited, Fort, Bombay
125. City Soap Works, Kakurgachi, Calcutta
126. Clyde Fan Co. Ltd., Calcutta
127. Coal Consumers' Association of India, Calcutta
128. Continental Export & Import Co., Gudur ( Nellore ), India
129. Cooper Allen & Co., Kanpur
130. Cooper Engineering Ltd., Satara Road, M.S.M.Ry.
131. Council of Scientific & Industrial Research, New Delhi
132. Crompton Engineering Co. ( Madras ) Ltd., Madras 1
133. Crompton Parkinson ( Works ) Ltd., Bombay 18
134. Dalmia Cement Limited, New Delhi
135. Daurala Distillery & Chemical Works, Daurala, Meerut
136. D.C.M. Chemical Works, Delhi
137. Delhi Cloth & General Mills Co. Ltd., Delhi
138. Devidayal & Sons, Bombay 10
139. Dhakeswari Cotton Mills Ltd., Sangattola, Dacca
140. Don Watson & Co. Ltd., Calcutta
141. Dunbar Mills Ltd., Calcutta
142. Dunlop Rubber Co. ( India ) Ltd., Calcutta
143. Eagle Plywood Industries Ltd., Calcutta 12
144. East India Carpet Co. Ltd., Amritsar
145. East India Commercial Co. Ltd., Calcutta
- \*146. East India Cotton Association Ltd., Bombay 2
147. East India Distilleries & Sugar Factories Ltd., Madras
148. East India Paint & Chemical Works Ltd., Calcutta
149. East India Pharmaceutical Works Ltd., Calcutta
150. Eastern Chamber of Commerce, Calcutta
- \*151. Eastern Chemical Co. ( India ), Bombay
152. Eastern Committee of the Overseas Rubber Cable Manufacturers' Association, Calcutta
153. Electric Construction & Equipment Co., Calcutta 12
154. Electric Lamp Manufacturers ( India ) Ltd., Calcutta
155. Electrical Storage Co. Ltd., Calcutta 11
156. Elephant Oil Mills Ltd., Bombay
157. Elgin Mills Co. Ltd., Kanpur
158. Enco Plywood & Sawmill Industries, Siliguri ( Darjeeling )
- \*159. Engineering Association of India, Calcutta
160. English Electric Co. Ltd., Calcutta
161. Estrela Batteries Ltd., Bombay 19
162. European Mofussil Jute Balers' Association, Calcutta
163. F. & O. Lang, Calcutta
- \*164. Fan Makers' Association of India, Calcutta
- \*165. The Federation of Electricity Undertakings of India, Bombay
- \*166. Federation of Gujrat Mills and Industries, Baroda
- \*167. Federation of Indian Chambers of Commerce and Industry, New Delhi
- \*168. Federation of Woollen Manufacturers in India, Bombay
169. Fertilisers & Chemicals Travancore Ltd., Trichinopoly, S. India
170. Fire-Stone Tyre & Rubber Co. of India Ltd., Bombay
171. Ganges Galvanizing Works, Sulkea, Howrah
172. Ganges Rope Co. Ltd., Calcutta
173. Garlick & Co., Bombay 11
174. General Electric Co. ( India ) Ltd., Calcutta 1
175. General Metal Industries, Calcutta
176. General Motors ( India ) Ltd., Bombay
177. General Radio & Appliances Ltd., Bombay 4
178. M. L. Ghosh & Co., Calcutta 1
179. Gladstone Lyall & Co. Ltd., Calcutta
180. Goodlass Wall Ltd., Bombay
181. Gordon Woodroffe Leather Mfg. Co. Ltd., Madras
182. Govan Brothers Ltd., New Delhi
183. Government Porcelain Factory, Bangalore 3
184. Government Sandalwood Oil Factory, Mysore
185. Government Silk Weaving Factory, Mysore
186. Government Soap Factory, Bangalore
187. Gramophone Co. Ltd., Dum Dum
188. Greaves Cotton & Co. Ltd., Bombay
189. Greaves Cotton & Crompton Parkinson Ltd., Bombay
190. Gresham & Graven of India Ltd., Calcutta 14
191. Grindwell Ltd., Bombay
192. Guest Keen Williams Ltd., Calcutta
193. Gurjars Ltd., Calcutta 1
194. Hardcastle, Wand & Co. Ltd., Bombay
195. Hasambhoy Jetha, Bombay 27
196. Heatly & Gresham Ltd., Calcutta
197. W. T. Henley's Telegraph Co. Ltd., Calcutta
198. A. & S. Henry & Co. Ltd., Calcutta 1
199. Himani Limited, P.O. Belghurriah, 24 Parganas
200. Himco ( India ) Ltd., Bombay
201. Hind Cycles Ltd., Worli, Bombay
202. Hind Tank Manufacturing Co., Bombay 4
203. Hindustan Aircraft Ltd., Bangalore
204. Hindusthan Development Corporation Ltd., Calcutta 13
205. Hindustan Gas Company Ltd., Calcutta
206. Hindustan Motors Ltd., Calcutta 1
207. Hindustan Tyres Ltd., Bombay 11



208. Hindustan Vanaspati Mfg. Co. Ltd., Bombay  
 209. Hindusthan Wire & Metal Products Ltd., Calcutta  
 210. Hooghly Docking & Engineering Co. Ltd., Howrah  
 \*211. Hosiery Manufacturers' Association, Ludhiana (Punjab)  
 212. Hovanesian Brothers, Calcutta  
 213. Hoyle Robson, Barnett & Co. (India) Ltd., Calcutta  
 214. Hyderabad Government, Hyderabad (Deccan)  
 215. Hyderabad Allwyn Metal Works Ltd., Hyderabad, Deccan  
 216. Imperial Chemical Industries (India) Ltd., Calcutta  
 217. Imperial Tobacco Co. of India Ltd., Calcutta  
 218. India Alkalies Ltd., Calcutta 1  
 219. India Electric Works Ltd., Behala (24 Parganas)  
 220. India Paint Colour & Varnish Co. Ltd., Calcutta  
 221. India United Mills Ltd., Bombay  
 \*222. Indian & Eastern Newspaper Society, New Delhi  
 223. Indian Aluminium Co. Ltd., Calcutta  
 \*224. Indian Battery Manufacturers' Association, Calcutta  
 225. Indian Battery Manufacturing Co. Ltd., Calcutta  
 226. Indian Cable Co. Ltd., Calcutta  
 227. Indian Central Coconut Committee, Ernakulam  
 228. Indian Central Cotton Committee, Bombay  
 229. Indian Central Jute Committee, Calcutta  
 230. Indian Central Sugarcane Committee, New Delhi  
 \*231. Indian Chamber of Commerce, Calcutta  
 \*232. Indian Chemical Manufacturers' Association, Calcutta  
 233. Indian Coal Grading Board, Calcutta  
 234. Indian Coffee Board, Bangalore  
 \*235. Indian Colliery Owners' Assoc., Jharia  
 236. Indian Copper Corporation Ltd., Ghatsila  
 \*237. Indian Electrical Manufacturers' Association, Calcutta  
 \*238. Indian Engineering Association, Calcutta  
 239. Indian Expanded Metals Ltd., Bombay  
 240. Indian Galvanizing Co. (1926) Ltd., Calcutta  
 \*241. Indian Hemp Association, Calcutta  
 242. Indian Institute of Architects, Bombay  
 243. Indian Institute of Metals, New Delhi  
 244. Indian Iron & Steel Co. Ltd., Calcutta  
 \*245. Indian Jute Mills Association, Calcutta 1  
 246. Indian Lac Cess Committee, Ranchi  
 \*247. Indian Lamp Factories' Association, Calcutta  
 \*248. Indian Machine Tool Manufacturers' Association, Fort, Bombay  
 249. Indian Malleable Castings Ltd., Calcutta  
 \*250. Indian Merchants' Chamber, Bombay  
 251. Indian Mineral Agency, Calcutta  
 \*252. Indian Mining Association, Calcutta  
 253. Indian Motion Picture Producers' Association, Bombay 4  
 \*254. Indian Non-Ferrous Metals Manufacturers' Association, Calcutta  
 255. Indian Oilseeds Committee, New Delhi  
 256. Indian Oxygen & Acetylene Co. Ltd., Calcutta  
 \*257. Indian Paint Manufacturers' Association, Calcutta 1  
 \*258. Indian Paper Makers' Association, Calcutta  
 \*259. Indian Paper Mills' Association, Calcutta 1  
 260. Indian Plywood Mfg. Co. Ltd., Bombay  
 \*261. Indian Plywood Manufacturers' Association, Calcutta  
 262. Indian Research Fund Association, New Delhi  
 263. Indian Roads Congress, New Delhi  
 \*264. Indian Rope Manufacturers' Association, Calcutta  
 265. Indian Rubber Board, Kottayam, Travancore  
 \*266. Indian Rubber Industries' Association, Bombay 1  
 267. Indian Rubber Manufacturers Ltd., Calcutta 1  
 \*268. Indian Salt Manufacturers' Association, Fort, Bombay  
 269. Indian Smelting & Refining Co. Ltd., Fort, Bombay  
 270. Indian Standard Wagon Co. Ltd., Calcutta  
 271. Indian Statistical Institute, Calcutta 7  
 272. Indian Steel & Wire Products Ltd., Indranagar, Singhbhum  
 \*273. Indian Sugar Mills' Association, Calcutta  
 \*274. Indian Sugar Syndicate Ltd., Kanpur  
 \*275. Indian Tea Association, Calcutta  
 \*276. Indian Tea-Chest Batten Manufacturers' Association, Calcutta 1  
 277. Indian Tool Manufacturers Ltd., Bombay  
 278. Indian Turpentine & Rosin Co. Ltd., Clutterbuckganj, Bareilly  
 \*279. Industrial & Power Alcohol Distillers' Association, Kanpur  
 280. Industrial Gases Ltd., Calcutta  
 281. Institution of Engineers (India), Calcutta  
 282. International General Electric Co. (India) Ltd., Bombay 1  
 283. International Wool Secretariat, New Delhi  
 284. Investa Machine Tools & Engineering Co. Ltd., Fort, Bombay  
 285. IRP (Radio) Ltd., Calcutta  
 286. Jagatjit Distilling & Allied Industries Ltd., Kapurthala  
 287. J. D. Jones & Co. Ltd., Calcutta  
 288. J. K. Cotton Manufacturers Ltd., Kanpur  
 289. J. K. Cotton Spinning & Weaving Mills Co. Ltd., Kanpur  
 290. J. K. Iron & Steel Co. Ltd., Kanpur  
 291. J. K. Jute Mills Co. Ltd., Kanpur  
 292. J. Thomas & Co. Ltd., Calcutta  
 293. Jammu and Kashmir Government, Director of Industries and Commerce  
 294. Janak Limited (Prabha Mills), Bombay  
 295. L. C. Jariwalla & Co., Fort, Bombay  
 296. Jeewanlal (1929) Ltd.  
 297. Jenson & Nicholson (India) Ltd., Calcutta 1  
 298. Jessop & Co. Ltd., Calcutta  
 299. Johnson & Phillips Ltd., Bombay 1  
 300. S. B. Joshi & Co., Bombay  
 301. Jyoti Limited, Baroda  
 302. Kailas Carpet Co., New Delhi  
 303. Kale's Ink Manufacturing Co., Kurla, Bombay  
 304. Kalla Properties & Industrial Corporation Ltd., Calcutta 7  
 305. Kamani Brothers Ltd., New Delhi  
 306. Kassels Ltd., Delhi  
 307. Kaycee Industries Ltd., Bombay  
 308. Kaye, Marden & Co. (Eastern) Ltd., Calcutta  
 309. Kesoram Cotton Mills Ltd., Calcutta  
 310. Khandelwal Brothers Ltd., Bombay  
 311. Kirloskar Brothers Ltd., Kirloskarvadi, Satara  
 312. Kirloskar Electric Company Ltd., Bangalore 3  
 313. Kohinoor Mills Co. Ltd., Fort, Bombay  
 314. Krishnalal Thirani & Co. Ltd., Calcutta  
 315. Kumardhubi Engineering Works, Calcutta  
 316. Kumardhubi Fireclay & Silica Works Ltd., Calcutta  
 \*317. Leather Goods Manufacturers' and Dealers' Association, Bombay 2



318. Lever Brothers (India) Ltd., Bombay  
319. Liluah Iron Works, Howrah  
320. Lister Antiseptics & Dressings Co. (1928) Ltd.,  
Cossipore, Calcutta 2  
321. Machinery Manufacturers' Corporation Ltd.,  
Calcutta  
322. Mackar Pillay & Sons Ltd., Alwaye, South India  
323. Madras Government, The Director of Industries and  
Commerce, Madras  
\*324. Madras Chamber of Commerce, Madras  
325. Madhya Bharat Government, The Director of  
Industries, Indore  
326. Madura Mills Co. Ltd., Madura  
327. Mahadeoprasad Kashiprasad, Calcutta 16  
\*328. Maharashtra Chamber of Commerce, Fort,  
Bombay 1  
329. Malleable Iron and Steel Castings Co. Ltd., Bombay  
330. Maskati Cloth Market Association, Ahmedabad  
331. Matchwel Electricals (India) Ltd., Delhi  
332. McGregor & Balfour Ltd., Calcutta  
333. Medical Council of India, New Delhi  
334. Merz and McLellan (India), Calcutta  
335. Metal Container Company, Calcutta  
336. Mettur Chemical & Industrial Corporation Ltd.,  
Mettur  
337. Meyer Mills Ltd., Fort, Bombay  
338. Mining, Geological and Metallurgical Institute of  
India, Calcutta 13  
339. Modi Soap Works, Modinagar  
340. H. P. Modi & Co., Bombay 3  
341. Mohini Mills Ltd. (No. 2), Calcutta  
342. Mond Nickel Co. Ltd., Bombay  
343. M. C. Mowjee & Co., Calcutta 1  
344. Mukand Iron & Steel Works Ltd., Bombay 15  
345. S. N. Mullick and Co., Calcutta  
346. The Murarka Paint & Varnish Works Ltd., Calcutta  
347. Mysore Government, Bangalore  
348. Mysore Chemicals & Fertilisers Ltd. Belagula  
(Mysore Railway)  
349. Mysore Electric Industries Ltd., Bangalore  
350. Mysore Glass & Enamel Works Ltd., Bangalore  
351. Mysore Industrial & Testing Laboratory Ltd.,  
Bangalore  
352. Mysore Iron & Steel Works, Bhadravati (Mysore  
State)  
353. Mysore Lamp Works Ltd., Bangalore 3  
354. Napier Paint Works Ltd., Calcutta  
355. National Art Silk Mills Ltd., Bombay 14  
356. National Carbon Company (India) Ltd., Calcutta  
357. National Ekco Radio Engineering Co. Ltd., Bombay  
358. National Forests & General Mills Co. Ltd., Fort,  
Bombay 1  
359. National Institute of Sciences of India, Delhi  
360. National Insulated Cable Co. of India Ltd.,  
Calcutta 1  
361. National Iron & Steel Co. Ltd., Calcutta 1  
362. National Rayon Corporation Ltd., Bombay 1  
363. National Rolling Mills Ltd., Calcutta 1  
364. National Rubber Manufacturers Ltd., Calcutta  
365. Native Chemical Industries, New Delhi  
366. New India Industries Ltd., Baroda  
367. New Kaiser-i-Hind Spg. & Wvg. Co. Ltd., Fort,  
Bombay  
368. New Standard Engineering Co. Ltd., Bombay 13  
369. New Victoria Mills Co. Ltd., Kanpur  
370. Nizam Sugar Factory Ltd., Hyderabad, Deccan  
371. Noble Paint, Colour & Varnish Co. Ltd., Bombay 13  
\*372. Northern India Carpet Manufacturers' Association,  
Mirzapur  
\*373. Northern India Hosiery Manufacturers' Corpora-  
tion, Ludhiana  
374. Northern India Paint, Colour & Varnish Co. Ltd.,  
New Delhi  
375. Nursing & Co. Ltd., Calcutta  
376. Ogale Glass Works Ltd., Ogalevadi, Satara  
\*377. Oil Merchants' Chamber, Bombay 9  
378. Oriental Metal Pressing Works, Bombay 11  
379. Orissa Government, The Director of Agriculture,  
Cuttack  
380. P. S. G. & Sons Charity Industrial Institute,  
Coimbatore, S. India  
\*381. Paint Federation, Calcutta  
382. Parry & Co. Ltd., Madras  
383. Parshuram Pottery Works Co. Ltd., Morvi  
(Kathiawar)  
384. Patiala and East Punjab States Union, The Director  
of Industries, Patiala  
\*385. Pharmaceutical & Allied Manufacturers' &  
Distributors' Association Ltd., Bombay  
386. Philips Electrical Co. (India) Ltd., Calcutta  
387. Pickers Ltd., Ahmedabad 6  
388. Pioneer Chromate Works Ltd., Bombay  
389. Pioneer Magnesia Works Ltd., Fort, Bombay  
390. Plywood Products, Sitapur (U.P.)  
391. Prabhat Products Co., Bombay 1  
392. Premier Automobiles Ltd., Bombay  
393. Pritchett & Gold and E.P.S. Co. Ltd., Calcutta  
394. Punjab Government, The Director of Industries,  
Simla  
395. Punjab Chamber of Commerce, New Delhi  
396. Punjab Paint, Colour & Varnish Works, Kanpur  
397. Radio & Electricals Ltd., Madras 2  
398. Radio & Electricals Manufacturing Co. Ltd.,  
Bangalore 2  
\*399. Radio Industries' Association (Registered),  
Calcutta 13  
400. Radio Lamp Works Ltd., Shikohabad, E.I.Ry.  
\*401. Radio Manufacturers' Association of India,  
Calcutta  
402. Raipur Soap Works, Raipur (C.P.)  
\*403. Rajasthan Industrial & Mining Association,  
Bhilwara  
404. Rajnagar Spg., Wvg. & Mfg. Co. Ltd., Ahmedabad  
405. Rallis India Ltd., Calcutta  
406. Rampur Distillery & Chemicals Co. Ltd., Rampur,  
U.P.  
407. Raymond Woollen Mills Ltd., Bombay  
408. Reliance Firebrick Pottery Co. Ltd., Calcutta 1  
409. Resa Co., Madras 10  
410. Rohtas Industries Ltd., Dehri-on-Sone  
411. Salim Soap Co., Calcutta 11  
412. Sanitex Chemical Industries Ltd., Baroda  
413. Sankey Electrical Stampings Ltd., Bhandup,  
via Bombay  
414. Saru Smelting & Refining Corporation Ltd., Meerut  
415. Saurashtra Government, The Director of Industries,  
Rajkot  
416. Saxby & Farmer (India) Ltd., Calcutta 14  
417. Scientific Indian Glass Co. Ltd., Calcutta 1  
418. Scindia Steam Navigation Co. Ltd., Bombay  
\*419. Screen Printers' Association, Bombay 2  
420. Seraikella Glass Works Ltd., P.O. Kandra,  
Singhbhum  
421. Seth Pusalal Mansinghka Ltd., Bhilwara  
422. Shalimar Paint, Colour & Varnish Co. Ltd., Calcutta  
423. Shalimar Tar Products (1935) Ltd., Calcutta  
424. J. N. Sharma & Sons, Delhi  
425. Shri Ambica Mills Ltd., Ahmedabad



426. Shree Digvijay Cement Co. Ltd., Seeka, via Jamnagar
427. Shree Digvijaya Woollen Mills Ltd., Jamnagar
428. Shree Gopal Paper Mills Ltd., Calcutta 1
429. Shree Karan Singh Woollen Mills Ltd., Srinagar, Kashmir
- \*430. Silk & Art Silk Mills' Association Ltd., Fort, Bombay
- \*431. Silk Merchants' Association, Bombay
432. B. M. Singh and Son, Calcutta 1
433. Sinclair Murray & Co. Ltd., Calcutta
434. Sino-Indian Shellac Co. Ltd., Bangkok, Siam
435. Sirsilk Ltd., Hyderabad (Deccan)
436. Sisir Oil Industries Ltd., Belgharia, 24 Parganas
437. Small Tools Mfg. Co. of India Ltd., Calcutta
438. Sodepore Glass Works Ltd., Calcutta 1
439. Solar Paint & Varnish Manufacturing Co., Calcutta
440. Sonawala Industries Ltd., Bombay 2
441. South Indian Export Co. Ltd., Madras
442. South Madras Electric Supply Corporation Ltd., Trichinopoly
- \*443. Southern India Chamber of Commerce, Madras 1
- \*444. Southern India Millowners' Association, Coimbatore
- \*445. Southern India Skin & Hide Merchants' Association, Madras 3
446. Standard Batteries Ltd., Fort, Bombay
447. Standard Chemical & Pharmaceutical Co., Bombay
448. Standard Furniture Co. Ltd., Kallai, S. Malabar
449. Standard Vacuum Oil Co., Bombay
450. Star Metal Refinery, Bombay
451. Steel Corporation of Bengal Ltd., Calcutta
- \*452. Steel Re-Rolling Mills' Association of India, Calcutta 1
453. Stewarts & Lloyds Ltd., Glasgow
454. Stewarts & Lloyds of India Ltd., Calcutta
455. J. Stone & Co. (India) Ltd., Calcutta
456. Swadeshi Mills Co. Ltd., Fort, Bombay
457. Swadeshi Cotton Mills Co. Ltd., Kanpur
458. Swaika Stand Oil & Varnish Co. Ltd., Calcutta
459. Swastik Oil Mills Ltd., Bombay 15
460. Swastika Metal Works, Jagadhri, East Punjab
- \*461. Tanners' Federation of India, Kanpur
462. Tata Chemicals Ltd., Fort, Bombay
463. Tata Iron & Steel Co. Ltd., Fort, Bombay
464. Tata Locomotive & Engineering Co. Ltd., Tatanagar
465. Tata Mills Ltd., Fort, Bombay
466. Tata Oil Mills Co. Ltd., Fort, Bombay
467. Tatanagar Foundry Co. Ltd., Calcutta 1
468. Texmaco (Gwalior) Ltd., Gwalior
469. Textile Association (India), Bombay 12
- \*470. Textile Manufacturers' Association (Regd.), Amritsar
471. Thomas Duff & Co. Ltd., Calcutta
472. Tide Water Oil Co. (India) Ltd., Calcutta
473. Titaghur Paper Mills Co. Ltd., Calcutta
474. Tarwary Mica Works, Giridih
475. Travancore Cement Ltd., Kottayam (Travancore State)
- \*476. Travancore Coir Mats & Matting Manufacturers' Association, Alleppey, Travancore
477. Travancore Ogale Glass Mfg. Co. Ltd., Alwaye (South India)
478. Travancore Rayons Limited, Perambavoor P.O. (Travancore)
479. Travancore Rubber Works, Trivandrum
480. Trinidad Lake Asphalt Operating Co. Ltd., Madras
481. Union Drug Co. Ltd., Calcutta
482. U.P. Government, The Director of Industries and Commerce, Kanpur
483. U.P. Glass Manufacturers' Syndicate, Shikohabad
484. Union Conduits Ltd., Bombay
485. United Salt Works & Industries Ltd., Bombay
486. United Trading Co., Delhi
487. United State of Travancore and Cochin Government, Trivandrum
- \*488. Upper India Chamber of Commerce, Kanpur
- \*489. Vanaspati Manufacturers' Association of India, Bombay 1
490. Vasanta Mills Ltd., Singanallur, Coimbatore
491. Victory Chemical & Pharmaceutical Works Ltd., Chalakudi (Cochin State)
492. Volkart Brothers, Bombay
493. C. C. Wakefield & Co. Ltd., Bombay 1
494. D. Waldie & Co. Ltd., Calcutta
495. West Bengal Government, The Director of Industries, Calcutta
- \*496. Western India Chamber of Commerce Ltd., Bombay
- \*497. Western India Glass Manufacturers' Association, Fort, Bombay
498. Western India Match Co. Ltd., Bombay
499. Western India Plywood Ltd., P.O. Baliapatam
500. Westinghouse Trading & Engineering Co. (Asia) Ltd., Bombay
501. William Jacks & Co. Ltd., Calcutta

#### SUSTAINING MEMBERS (ASSOCIATES)

1. Ahmedabad Star Engineering Works Ltd., Ahmedabad 11
- \*2. All-India Bichromate Manufacturers' Association, Fort, Bombay
- \*3. All-India Federation of Cycle Traders, Kanpur
4. Durga Dutt Devi Dutt, Allahabad
- \*5. East Punjab Cycle Parts Manufacturers' Association, Ludhiana
6. General Lead Batteries Co. Ltd., Calcutta
7. Jyothi Paint & Varnish Industries Ltd., Madras 10
8. Krishna Mining Co., Gudur, Dist. Nellore
9. Pannalal Girdharlal, Delhi
10. Srimathi Muthukrishnammal, Adirampatnam (Tanjore Dist.)
11. Tims Products Ltd., Belghurriah (E.I.Ry.)
12. Variety Industrial Works Ltd., Calcutta

#### ORDINARY MEMBERS

1. Agarwal, P. R., Jodhpur
2. Arora, Hari Krishna Lal, Delhi
3. Bannerjee, G. N., Bombay 14
4. Bannerjee, H. N., Seeka, via Jamnagar
5. Basu, B., Bombay
6. Bhandarkar, M.S., Pallom (Travancore)
7. Bhutta, P. H., Nagpur, C.P.
8. Chianani, R. W., Willingdon Island (South India)
9. Chakravarty, K. M., Sindri, Manbhum
10. Das, H. C., Calcutta
11. Desai, H. M., Bombay
12. Doshi, R. V., Anand (Dist. Kaira)
13. Fazalbhoj, Y. A., Bombay 4
14. Fielder, C. J., Calcutta
15. Friendlaender, F., Calcutta
16. Gangadharan, G., Bombay 11
17. Garga, Madan Mohan Lal, Meerut
18. Ghosh, Siddhartha, Bally, Howrah



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|--|--|
| 19. Gurcharan Singh, Bombay                | 35. Puranik, G. V., Panvel, Kolaba       |
| 20. Holdar, N., Calcutta                   | 36. Ram Narain, Abdullapur, Ambala       |
| 21. Jain, Sultan Singh, Meerut             | 37. Raman, G. A., Bombay 19              |
| 22. Kagalwala, A., Bombay                  | 38. Ramamurti, T. V., Madras             |
| 23. Kedia Mahabir Prasad, Calcutta         | 39. Rangaswamy, V. N., New Delhi         |
| 24. Kesavan, T. A., Madras 8               | 40. Narayana Rao, T. S., Bangalore 4     |
| 25. Krishan Deva, Nawabganj, Gonda, U.P.   | 41. Nanabhoy, R., Bombay                 |
| 26. Lath, Mohanlal, Calcutta 7             | 42. Sankar Aiyer, V., New Delhi          |
| 27. Limaye, P. S., Khalasi, Dist. Pialamau | 43. Sastry, S. G., Bangalore 4           |
| 28. MacGregor, J. C., Calcutta             | 44. Sharma, Motilal Shamaldas, Ahmedabad |
| 29. Man Singh, Delhi                       | 45. Sharoff, M. L., Calcutta             |
| 30. Menon, B. V. D., Udyogmandal, Alwaye   | 46. Sitapati, T. S., Calcutta 1          |
| 31. Mozumdar, M., Calcutta                 | 47. Sohan Singh, Amritsar                |
| 32. Owen, C. W., Bombay                    | 48. Soneji, C. J., Bombay                |
| 33. Patel, Manilal M., Bombay              | 49. Talia, Mohanlal Bhukhandas, Surat    |
| 34. Prem Narain, Ludhiana                  | 50. Vijayaraghavan, C., Madras           |

## APPENDIX 19.5

### MEMBERS OF THE ENGINEERING DIVISION COUNCIL ( EDC )

CHAIRMAN : Mr. S. L. Kirloskar  
 VICE-CHAIRMAN : Mr. D. Narayanaswamy Chetty

| <i>Organization/Interest</i>   | <i>Representative</i>   |
|--|---|
| CENTRAL STANDARDS OFFICE, MINISTRY OF RAILWAYS   | Mr. D. Narayanaswamy Chetty, Deputy Chief Controller of Standardization                                 |
| CENTRAL PUBLIC WORKS DEPARTMENT, MINISTRY OF WORKS, MINES AND POWER                                | Mr. C. B. Patel, Personal Assistant to the Chief Engineer   |
| CENTRAL WATERPOWER, IRRIGATION & NAVIGATION COMMISSION, MINISTRY OF WORKS, MINES AND POWER         | Dr. R. C. Hoon, Deputy Director   |
| CENTRAL ELECTRICITY COMMISSION, MINISTRY OF WORKS, MINES AND POWER                                 | Mr. R. P. Patel, Project Officer  |
| BUREAU OF MINES, MINISTRY OF WORKS, MINES AND POWER  | Dr. M. S. Kirshnan, Director  |
| ROADS ORGANIZATION, MINISTRY OF TRANSPORT  | Mr. H. P. Mathrani, Additional Consulting Engineer  |
| DIRECTORATE OF POSTS AND TELEGRAPHS, MINISTRY OF COMMUNICATIONS                                    | Chief Engineer  |
| CIVIL AVIATION DIRECTORATE, MINISTRY OF COMMUNICATIONS   | Mr. D. Chakarvarti, Deputy Director General ( Dr. P. Nilakantan, Deputy Director — <i>Alternative</i> ) |
| DIRECTORATE OF TECHNICAL DEVELOPMENT, MINISTRY OF DEFENCE  | Col. A. G. C. Northcroft, Controller of Armament Development  |
| DIRECTORATE OF MECHANICAL ENGINEERING, MINISTRY OF DEFENCE   | Col. W. J. Redmond-Lyon, Deputy Director  |
| ENGINEER-IN-CHIEF'S BRANCH, MINISTRY OF DEFENCE  | Brig. Partap Narain, Brigadier Engineer, Staff  |
| DIRECTORATE OF ORDNANCE FACTORIES, MINISTRY OF DEFENCE   | Mr. M. A. Cook, Ordnance Factory, Muradnagar  |
| INDIAN AIR FORCE, MINISTRY OF DEFENCE  | F/Lt. H. C. Bharadwaj, Assistant Director, Technical Services, Air Headquarters                         |
| INDIAN NAVY, MINISTRY OF DEFENCE   | Commander (E) B. S. Baswani, Deputy Director of Naval Engineering, Naval Headquarters                   |
| DIRECTORATE GENERAL OF INDUSTRIES AND SUPPLIES (INSPECTION WING), MINISTRY OF INDUSTRY AND SUPPLY  | Mr. F. Ashmore, Deputy Director General ( Inspection )  |
| DIRECTORATE GENERAL OF INDUSTRIES AND SUPPLIES (DEVELOPMENT WING), MINISTRY OF INDUSTRY AND SUPPLY | Mr. Jang Bir Singh, Deputy Director General ( Development ), Engineering                                |
| DIRECTORATE GENERAL OF HEALTH SERVICES, MINISTRY OF HEALTH   | Mr. Ramesh S. Mehta, Superintending Engineer  |
| DIRECTOR OF AGRICULTURAL MACHINERY, MINISTRY OF AGRICULTURE  | Mr. A. G. Menon, Central Tractor Organization   |
| FOREST RESEARCH INSTITUTE, MINISTRY OF AGRICULTURE   | Mr. C. R. Ranganathan, Forest Research Institute and Colleges, Dehra Dun                                |



| <i>Organization/Interest</i>                                     | <i>Representative</i>  |
|--|--|
| ALL INDIA RADIO, MINISTRY OF INFORMATION AND BROADCASTING        | Mr. B. V. Baliga, Chief Engineer   |
| ALL-INDIA COUNCIL FOR TECHNICAL EDUCATION, MINISTRY OF EDUCATION | Mr. H. N. Shrivastava, Additional Chief Engineer, Posts & Telegraphs   |
| COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH                      | Sardar Teja Singh Mallick, New Delhi<br>Dr. K. S. Krishnan, Director, National Physical Laboratory   |
| CENTRAL BOARD OF IRRIGATION                                      | Mr. S. L. Malhotra, Secretary  |
| INSTITUTION OF ENGINEERS (INDIA)                                 | Mr. H. J. Mulleneux, Messrs Mulleneux & Mulleneux Ltd., Bombay   |
|  | Mr. S. A. Gadkary, Central Waterpower, Irrigation and Navigation Commission  |
|  | Mr. S. V. Ramaswami, Superintending Engineer, Indian Telephone Industries, Bangalore   |
| INDIAN ROADS CONGRESS  | Mr. K. S. Raghavachary, Deputy Consulting Engineer (Roads)   |
| INDIAN INSTITUTE OF ARCHITECTS                                   | Mr. H. N. Dallas, Bombay   |
| INDIAN INSTITUTE OF METALS                                       | Dr. D. P. Antia, Honorary Secretary  |
| MINING, GEOLOGICAL & METALLURGICAL INSTITUTE OF INDIA            | Mr. D. M. Smith, M/S General Electric Co. of India Ltd., Calcutta  |
| INDIAN MINING ASSOCIATION  | Mr. L. J. Barraclough, Messrs Andrew Yule and Co. Ltd., Disiergarh P.O.  |
|  | Mr. H. Gibson, Messrs Burn & Co. Ltd., Howrah  |
| INDIAN ENGINEERING ASSOCIATION                                   | Prof. S. K. Roy, Jadavpur  |
| ENGINEERING ASSOCIATION OF INDIA                                 | Mr. G. M. Modi, Managing Director, Modi Industries, Modinagar  |
| ALL-INDIA MANUFACTURERS' ORGANIZATION                            | Mr. S. L. Kirloskar, Modi Baug, Poona  |
|  | Mr. N. H. Mapara, Messrs Mapra Parekh & Co., Bombay  |
| ASSOCIATION OF INDIAN INDUSTRIES                                 | Mr. C. M. Shaw, General Electric Co. of India Ltd., Calcutta   |
| INDIAN ELECTRICAL MANUFACTURERS' ASSOCIATION                     | Mr. W. H. Adcock, General Electric Co. of India Ltd., New Delhi  |
|  | Sardar Inder Singh, Singh Engineering Works Ltd., Kanpur   |
| STEEL RE-ROLLING MILLS' ASSOCIATION OF INDIA                     | Mr. M. B. Jambhekar, Managing Director, Messrs Mysore Kirloskar Ltd., Harihar  |
| MACHINE TOOL MANUFACTURERS' ASSOCIATION                          | Mr. S. C. Ghosh, The Tata Iron & Steel Co. Ltd., Calcutta  |
| COAL CONSUMERS' ASSOCIATION OF INDIA                             | Mr. J. S. Vatchagandhy, Chief Metallurgist, The Tata Iron & Steel Co. Ltd., Jamshedpur   |
| IRON AND STEEL   | (Dr. D. R. Dhanbhoora, Deputy Chief Metallurgist— <i>Alternative</i> )<br>Mr. B. A. Narayana Murti, Works Manager, The Mysore Iron & Steel Works, Bhadravati |
|  | Mr. A. J. Lund, General Manager, Cooper Engineering Ltd., Satara   |
| MECHANICAL ENGINEERING   | Mr. N. K. Joshi, Kirloskar Brothers Ltd., Kirloskarvadi  |
|  | Mr. C. D. Jhamb, Director, Messrs Kamani Metals and Alloys Ltd., Calcutta  |
| NON-FERROUS METALS   | Mr. J. G. Berry, Works Manager, Indian Copper Corporation Ltd., Ghatsila<br>(Mr. R. M. Hannah, Assistant Works Manager— <i>Alternative</i> )                 |
|  | Mr. B. K. Rohatgi, Calcutta  |
| ELECTRICAL   | Mr. J. D. Meijer, Managing Director, Philips Electrical Co. (India) Ltd., Calcutta   |
|  | Mr. D. Samanta, Patherdih Sudamdih Colliery, Patherdih   |
| MINING   | Mr. M. K. Ray, Consulting Geologist and Mining Engineer, Pillanshat  |
|  | Mr. S. K. Datta, Sales and Planning Engineer, The Tata Iron & Steel Co. Ltd., Jamshedpur   |
| AGRICULTURAL MACHINERY AND IMPLEMENTS                            | Mr. E. Smith, Superintendent and Manager, The Hooghly Docking & Engineering Co. Ltd., Howrah   |
| SHIPBUILDING   | Mr. R. Natarajan, General Manager, Indian Telephone Industries, Bangalore  |
| TELEPHONE AND TELEGRAPH ENGINEERING                              | Mr. R. K. Phatak, Messrs Radio Services, Bombay<br>(Mr. Hari Krishan Lal Arora, Messrs Radio Centre, Delhi— <i>Alternative</i> )                             |
| RADIO AND ELECTRONICS  | Dr. V. M. Ghatage, Chief Designer, Hindustan Aircraft Ltd., Bangalore  |
| AIRCRAFT   | Mr. Lakshmiapati Misra, General Manager, Hindustan Motors Ltd., Calcutta   |
| AUTOMOBILE   | Mr. B. M. Tata, Government Gate Road, Bombay   |
| CINEMATOGRAPHY   | Mr. P. C. Mahajan, Works Manager, Mathematical Instruments Office, Calcutta  |
| SCIENTIFIC INSTRUMENTS   | Pandit Bhaskar Kulkarni, Chief Engineer, The Swadeshi Electric Clock Manufacturing Co. Ltd., Bombay  |
| WATCHES AND CLOCKS   |  |



| <i>Organization/Interest</i>  | <i>Representative</i>  |
|---|--|
| CHEMICAL ENGINEERING  | Mr. J. D. Adhia, Chemical Engineer, Tata Chemicals Ltd.,<br>Mithapur<br>(Mr. C. M. Shah, Construction Engineer— <i>Alternative</i> ) |
| GOVERNMENT TEST HOUSE, ALIPORE, CALCUTTA<br>(Co-opted)                      | Director   |
| METALS COMMITTEE, COUNCIL OF SCIENTIFIC &<br>INDUSTRIAL RESEARCH (Co-opted) | Director, National Metallurgical Laboratory<br>(Dr. G. P. Contractor, Assistant Director— <i>Alternative</i> )                       |
| ENGINEERING RESEARCH DEPARTMENT, HYDERABAD<br>(Co-opted)                    | Dr. S. P. Raju, Director   |

## APPENDIX 19.6

### MEMBERS OF THE TEXTILE DIVISION COUNCIL

CHAIRMAN: Mr. Bharat Ram

| <i>Organization/Interest</i>  | <i>Representative</i>  |
|---|--|
| TEXTILE COMMISSIONER, MINISTRY OF INDUSTRY<br>AND SUPPLY  | Mr. T. P. Barat, Textile Commissioner  |
| DIRECTORATE GENERAL OF INDUSTRIES AND<br>SUPPLIES (INSPECTION WING), MINISTRY OF<br>INDUSTRY AND SUPPLY | Mr. Randhir Singh, Assistant Director of Inspection (Textiles)<br>(Mr. Y. S. Mirza, Deputy Director of Inspection— <i>Alternative</i> )  |
| GOVERNMENT TEST HOUSE, MINISTRY OF INDUSTRY<br>AND SUPPLY   | Director   |
| DIRECTORATE OF TECHNICAL DEVELOPMENT,<br>MINISTRY OF DEFENCE  | Col. N. N. Chopra, Controller of Stores<br>(Mr. M. Krishnamurthy — <i>Alternative</i> )  |
| DIRECTORATE OF TECHNICAL DEVELOPMENT,<br>MINISTRY OF DEFENCE  | Lt.-Col. J. H. Taylor, Chief Superintendent (Development),<br>Textiles and Clothing  |
| DIRECTORATE OF TECHNICAL DEVELOPMENT,<br>MINISTRY OF DEFENCE  | Dr. T. S. Subramanian, Superintendent  |
| FOREST RESEARCH INSTITUTE, MINISTRY OF<br>AGRICULTURE   | Mr. M. P. Bhargava, Chief Research Officer   |
| ALL-INDIA COUNCIL FOR TECHNICAL EDUCATION,<br>MINISTRY OF EDUCATION                                     | Mr. M. P. G. Nair, Principal, Institute of Textile Technology,<br>University of Travancore   |
| DIRECTORATE OF MARKETING & INSPECTION,<br>MINISTRY OF AGRICULTURE                                       | Dr. T. G. Shirname, Agricultural Marketing Adviser<br>(Mr. T. Prasad, Senior Marketing Officer — <i>Alternative</i> )  |
| INSTITUTION OF ENGINEERS (INDIA)  | Mr. P. V. S. Iyengar, Manager and Chief Engineer, Shree Sadul<br>Textiles Ltd.   |
| COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH   | Mr. G. M. Nabar, Department of Chemical Technology,<br>University of Bombay  |
| INDIAN COUNCIL OF AGRICULTURAL RESEARCH   | Mr. R. L. Sethi, Agricultural Commissioner   |
| INDIAN CENTRAL COTTON COMMITTEE   | Mr. R. G. Saraiya, Bombay<br>(Mr. Chimanlal B. Parikh, Messrs Parekh & Co — <i>Alternative</i> )   |
| TECHNOLOGICAL LABORATORY, INDIAN CENTRAL<br>COTTON COMMITTEE  | Mr. D. L. Sen, Director  |
| INDIAN CENTRAL JUTE COMMITTEE   | Dr. B. C. Kundu, Director  |
| TRAVANCORE COIR MATS AND MATTING MANUFAC-<br>TURERS' ASSOCIATION  | Mr. M. L. Janardana Pillai, President<br>(Mr. N. Sankara Mannar — <i>Alternative</i> )   |
| TEXTILE ASSOCIATION (INDIA)   | Mr. Y. T. Mondkar, Weaving Master, Kamla Mills   |
| ALL-INDIA SPINNERS' ASSOCIATION   | Shri Dwarka Nath Lele  |
| AHMEDABAD MILLOWNERS' ASSOCIATION   | Mr. Surettam P. M. Hutheesing, Ahmedabad   |
| BENGAL MILLOWNERS' ASSOCIATION  | Dr. N. Dutt, Bangeswari Cotton Mills Ltd.  |
| SOUTH INDIA MILLOWNERS' ASSOCIATION   | Awaited  |
| BOMBAY PIECEGOODS ASSOCIATION   | Mr. Navnitlal Lallubhai Shah, Seth Moolji Jetha Cloth<br>Market Hall   |
| MASKATI CLOTH MARKET ASSOCIATION  | Shri Ramanlal Fakirchand Mashruwals, Hony. Secretary<br>(Shri Hiralal Harilal Bhagwati — <i>Alternative</i> )  |
| BOMBAY GAMTI FANCY AND KORA CLOTH MER-<br>CHANTS' ASSOCIATION   | Mr. Gordhandas Vandravan, The Bombay Country Fancy and<br>Grey Piecegoods Merchants' Association<br>(Mr. Vasantrai Kakalbhaji Mehta, Messrs N. Vasantrai &<br>Co. — <i>Alternative</i> ) |
| FEDERATION OF WOOLLEN MANUFACTURERS IN INDIA  | Maganlal B. Patel, Shri Dinesh Mills Ltd.  |



| <i>Organization/Interest</i>                             | <i>Representative</i>   |
|--|---|
| INDIAN JUTE MILLS' ASSOCIATION                           | Mr. J. A. Murray, Messrs Jardine Henderson Ltd.                                     |
| INDIAN JUTE MILLS' ASSOCIATION RESEARCH INSTITUTE        | Dr. W. G. Macmillan, Chief Chemist<br>( Mr. F. C. Price — <i>Alternative</i> )      |
| INDIAN HEMP ASSOCIATION                                  | Mr. B. L. Jalan, Calcutta   |
| EAST INDIA COTTON ASSOCIATION, BOMBAY                    | Mr. Madan Mohan R. Ruia, Ramnarain & Sons Ltd.                                      |
| CENTRAL SILK BOARD                                       | Mr. S. K. Chaudhuri, Secretary  |
| COTTON TEXTILES  | Mr. Bharat Ram, Delhi Cloth & General Mills Co. Ltd.                                |
| COTTON TEXTILES  | Mr. Kasturbhai Lalbhai, The Arvind Mills Ltd.                                       |
| COTTON GROWING   | Mr. J. R. Deshmukh Raje, Raver, East Khandesh                                       |
| JUTE TEXTILES  | Dr. P. B. Sarkar, Technological Laboratory, Indian Central Jute Committee           |
| JUTE GROWING   | Mr. Indu Bhusan Mazumdar, President, Polarbat Union Board and Union Jute Committee  |
| SILK   | Mr. M. Aurifulla Meccai, General Manager, Government Silk Weaving Factory, Mysore   |
| SILK   | Mr. K. C. Biswas, Hony. Secretary, Bengal Silk and Art Silk Millowners' Association |
| WOOL   | Mr. A. K. Wattal, Shree Karan Singh Woolen Mills Ltd.                               |
| ARTIFICIAL SILK AND OTHER SYNTHETIC FIBRES AND TEXTILES  | Mr. Ramdeo A. Podar, Podar Chambers, Bombay   |
| HEMP AND COIR  | Mr. J. S. Quin, President, Indian Rope Manufacturers' Association                   |
| TEXTILE MACHINERY  | Mr. D. P. Mandelia, Director, Texmaco ( Gwalior ) Ltd.                              |
| TEXTILE MILL STORES                                      | Mr. B. C. Munshaw, Bombay   |
| KNITTED GARMENTS AND HOSIERY                             | L. Kidar Nath, Lever Hosiery, Ludhiana  |
| IMPERIAL CHEMICAL INDUSTRIES ( INDIA ) LTD. ( Co-opted ) | Mr. C. O. Tattersall, Calcutta  |
| GOVERNMENT OF U.P. ( Co-opted )                          | Sri J. C. Seth, Principal, Government Central Weaving Institute                     |
| EAST INDIA CARPET CO. LTD. ( Co-opted )                  | Mr. Kirpa Shanker, Director   |

## APPENDIX 19.7

### MEMBERS OF THE CHEMICAL DIVISION COUNCIL (CDC)

CHAIRMAN : Dr. H. L. Roy

| <i>Organization/Interest</i>  | <i>Representative</i>  |
|---|--|
| DIRECTORATE GENERAL OF HEALTH SERVICES, MINISTRY OF HEALTH                      | Mr. P. M. Nabar, Chief Advisory Chemist<br>( Mr. P. S. Ramchandran, Assistant Drugs Controller — <i>Alternative</i> )        |
| INDIAN AGRICULTURAL RESEARCH INSTITUTE, MINISTRY OF AGRICULTURE                 | Dr. J. N. Mukherjee, Director  |
| FOREST RESEARCH INSTITUTE, MINISTRY OF AGRICULTURE                              | Dr. Sri Krishna, Director  |
| CENTRAL STANDARDS OFFICE, MINISTRY OF RAILWAYS                                  | Mr. R. G. Bhatawadekar, Research Officer ( Metallurgical and Chemical )  |
| DIRECTORATE OF TECHNICAL DEVELOPMENT, MINISTRY OF DEFENCE                       | Dr. R. S. Thakur, Scientific Adviser to the Master General of Ordnance   |
| DIRECTORATE OF MEDICAL SERVICES, MINISTRY OF DEFENCE                            | Major T. M. Seethapathy, D.A.D.G. ( Stand ), Office of the DGAFMS  |
| DIRECTORATE GENERAL OF INDUSTRIES AND SUPPLIES, MINISTRY OF INDUSTRY AND SUPPLY | Dr. J. N. Ray, Deputy Director General ( Development )<br>( Dr. D. C. Sen, Deputy Development Officer — <i>Alternative</i> ) |
| GOVERNMENT TEST HOUSE, MINISTRY OF INDUSTRY AND SUPPLY                          | Director   |
| ALL-INDIA COUNCIL FOR TECHNICAL EDUCATION, MINISTRY OF EDUCATION                | Dr. T. N. Mehta, Head of Applied Science Department, Delhi Polytechnic   |
| COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH                                     | Dr. B. D. Laroia, Asst. Director, National Chemical Laboratory   |
| COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH                                     | Dr. Krishna Gopal Mathur, Assistant Director, National Chemical Laboratory   |
| COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH                                     | Dr. Mata Prasad, Principal, Royal Institute of Science   |
| NATIONAL INSTITUTE OF SCIENCES ( INDIA )  | Dr. B. Mookerjee, Director, Central Drugs Laboratory<br>( Dr. K. N. Bagchi — <i>Alternative</i> )                            |



*Organization/Interest*

*Representative*

|   |  |
|---|--|
| INDIAN RESEARCH FUND ASSOCIATION  | Prof. B. C. Guha, Head of the Department of Applied Chemistry, Calcutta University   |
| MEDICAL COUNCIL OF INDIA  | Dr. A. K. Sen Gupta, Mental Hospital, Nagpur   |
| INDIAN CHEMICAL SOCIETY   | Dr. B. N. Ghosh, Reader in Chemistry, University College of Science, Calcutta  |
| INSTITUTION OF ENGINEERS (INDIA)  | Dr. H. L. Roy, College of Engineering and Technology, Bengal   |
| ALL-INDIA MANUFACTURERS' ORGANIZATION                                       | Dr. A. Nagaraja Rao, Eastern Chemicals (India), Bombay   |
| INDIAN CHEMICAL MANUFACTURERS' ASSOCIATION                                  | Dr. I. B. Amin, Alembic Chemical Works Co. Ltd., Baroda  |
| INDIAN CHEMICAL MANUFACTURERS' ASSOCIATION                                  | Mr. M. L. Schroof, Birla Laboratories, Calcutta  |
| PHARMACEUTICAL AND ALLIED MANUFACTURERS' AND DISTRIBUTORS' ASSOCIATION LTD. | Dr. T. A. Schinzel, Sandoz Products Ltd., Bombay   |
| INDIAN PAINT MANUFACTURERS' ASSOCIATION                                     | Dr. A. Karim, Solar Paint & Varnish Manufacturing Co., 24 Parganas<br>(Mr. Krishan Kapur, Messrs Nagrah Oil Mills, Kanpur — <i>Alternative</i> )   |
| PAINT FEDERATION  | Mr. K. C. Mukherjee, Hoyle Robson Bennett & Co. Ltd., Calcutta<br>(Mr. J. R. Surridge, Elephant Oil Mills Ltd., Bombay — <i>Alternative</i> )  |
| INDIAN PAPER MILLS' ASSOCIATION   | Mr. V. Poddar, Works Manager, Rohtas Industries Ltd., Dalmianagar<br>(Mr. K. Lenz, Paper Expert — <i>Alternative</i> )   |
| INDIAN RUBBER BOARD   | Mr. Lalit Mohan Jamnadas, Indian Rubber Industries, Association, Bombay  |
| TEXTILE ASSOCIATION (INDIA)   | Mr. Y. G. Phathak, Manager, Vasant-Bijay Mills, Bombay   |
| COAL CARBONIZATION AND TAR PRODUCTS   | Mr. C. J. Fielder, General Manager, Shalimar Tar Products (1935) Ltd., Calcutta<br>(Mr. Basil Gray, Manager, North India Shalimar Tar Products (1935) Ltd., New Delhi — <i>Alternative</i> )   |
| HEAVY CHEMICALS   | Dr. S. K. Sircar, Works Manager, Bararee Coke Co. Ltd., Kasunda<br>Mr. M. B. Bhagvat, Works Superintendent, Tata Chemicals Ltd., Mithapur<br>(Mr. J. D. Adhia, Chemical Engineer — <i>Alternative</i> )<br>Dr. K. L. Ramaswamy, General Manager, The Mysore Chemicals & Fertilizers Ltd., Belagula<br>(Mr. S. Gopala Rao, Chief Chemist — <i>Alternative</i> ) |
| PETROLEUM PRODUCTS  | Mr. O. H. De St. Croix, The Burmah-Shell Oil Storage & Distributing Co. of India Ltd.<br>(Mr. N. Baywater — <i>Alternative</i> )<br>Mr. Raj Kumar, Sales Engineer, Caltex (India) Ltd., Calcutta   |
| OILS, FATS, GREASES AND SOAPS   | Mr. K. P. Rau, Manager, Tata Oil Mills Co. Ltd., Tatapuram<br>(Mr. P. T. John, Manager, Tata Oil Mills Co. Ltd., Bombay — <i>Alternative</i> )   |
| OILS, FATS, GREASES AND SOAPS   | Dr. Vikram A. Sarabhai, Chairman, Swastik Oil Mills Ltd., Ahmedabad<br>(Dr. J. S. Badami — <i>Alternative</i> )  |
| PLASTIC AND RUBBER  | Mr. B. H. Parker, Assistant Technical Manager, Dunlop Rubber Co. (India) Ltd., Sahgunj<br>(Mr. P. K. Bose, Section Manager — <i>Alternative</i> )<br>Dr. H. A. Shah, Technical Expert, Dominion Plastics Industries, Bombay<br>(Mr. B. L. Ghia, Rubako Industries, Bombay — <i>Alternative</i> )   |
| LEATHER AND TANNING   | Mr. T. Abdul Wahid, Southern India Skin and Hide Merchants' Association, Madras<br>Mr. Shankerlal C. Parikh, Gold Filled Leather Works, Bombay<br>(Mr. Charles A. Fernes, Premier Leather Krafts, Bombay — <i>Alternative</i> )  |
| PAINTS, VARNISHES, PIGMENTS AND RELATED PRODUCTS                            | Mr. P. K. Adhikari, Jenson & Nicholson (India) Ltd., Calcutta<br>(Mr. P. W. Archard — <i>Alternative</i> )<br>Mr. G. A. Raman, Goodlass Wall Ltd., Bombay<br>(Mr. S. V. Sathaya, Production Manager — <i>Alternative</i> )   |
| DRUGS AND PHARMACEUTICAL PRODUCTS   | Dr. Mahdi Hassan, Chemical, Industrial & Pharmaceutical Laboratories Ltd., Bombay<br>(Mr. Ajoy Gupta — <i>Alternative</i> )<br>Capt. N. N. Ghosh, Bengal Immunity Co. Ltd., Calcutta<br>(Mr. N. Desarkar — <i>Alternative</i> )  |
| GLASS AND CERAMICS  | Mr. T. Gupta, Radio Lamp Works Ltd., Shikohabad  |
| PAPER   | Mr. K. B. Sen, Chief Chemist, Titaghur Paper Mills Co., Calcutta   |
| DISINFECTANTS   | Mr. J. Chakravarti, Managing Agent, Lister Antiseptics & Dressings Co. (1928) Ltd., Calcutta<br>(Mr. Bepin Behari Dutta, Chief Chemist — <i>Alternative</i> )  |



| Organization/Interest                 | Representative   |
|---------------------------------------|--|
| FERTILIZERS                           | Mr. N. D. Gopinath, Chief Chemist, The Fertilizer and Chemical (Travancore) Ltd., Alwaye<br>(Mr. K. K. Sankunni Nair, Assistant Chief Chemist — <i>Alternative</i> ) |
| FINE CHEMICALS                        | Mr. N. Adhikari, Assistant Manager, Bengal Chemical & Pharmaceutical Works Ltd., Calcutta<br>(Mr. A. Lahiri — <i>Alternative</i> )                                   |
| DYESTUFFS                             | Dr. F. S. Tomolinson, Imperial Chemical Industries (India) Ltd., Calcutta<br>(Mr. C. W. Perry — <i>Alternative</i> )   |
| COAL CONSUMERS' ASSOCIATION OF INDIA  | Mr. G. S. Tupta, Central Distillery & Chemical Works Ltd., Meerut Cantt.   |
| INDIAN RUBBER INDUSTRIES' ASSOCIATION | Mr. F. Zinsenheim, Shett Minar, Bombay<br>(Mr. K. V. Modak — <i>Alternative</i> )  |
| INDIAN CENTRAL SUGARCANE COMMITTEE    | Prof. J. M. Saha, Professor, Indian Institute of Sugar Technology, Kanpur<br>(Dr. K. S. G. Doss, Physical Chemist — <i>Alternative</i> )                             |

## APPENDIX 19.8

### SECTIONAL COMMITTEES AND SUBCOMMITTEES OF THE ISI UNDER THE EC, EDC, TDC AND CDC : THEIR CHAIRMEN AND MEETINGS

| Committee   | Chairman or Convener    | Meeting Dates                |
|---|-------------------------|------------------------------|
| <b>Executive Committee</b>                            |                         |                              |
| EC 2 Documentation                                    | Dr. S. R. Ranganathan   | 28.8.49 & 19.3.50            |
| EC 2 : 1 Paragraph Numbering                          | Dr. S. R. Ranganathan   | ...                          |
| EC 2 : 2 Documentary Reproduction                     | Mr. K. K. Guha Roy      | ...                          |
| EC 2 : 3 Layout of Periodicals                        | Dr. S. R. Ranganathan   | ...                          |
| EC 2 : 4 U.D.C. Numbers                               | Dr. S. R. Ranganathan   | 6.4.49, 30.4.49 & 6.9.49     |
| EC 2 : 5 Abbreviations for Titles of Periodicals      | Mr. B. N. Sastry        | 11.10.49                     |
| EC 3 Quality Control                                  | Prof. P. C. Mahalanobis | ...                          |
| EC 3 : 1 Quality Control and Sampling Inspection      | Prof. U. S. Nair        | 15.12.49 & 1.3.50            |
| EC 4 Weights and Measures                             | Dr. J. C. Ghosh         | 25.7.49 & 14.11.49           |
| EC 4 : 1 Weights and Measures                         | Dr. Lal C. Verman       | 26.7.49                      |
| EC 5 Style Manual                                     | Dr. Lal C. Verman       | 10/11.8.49                   |
| EC 6 Export Goods                                     | Dr. T. G. Shirname      | 30.4.49                      |
| <b>Engineering Division Council</b>                   |                         |                              |
| EDC 1 Engineering Standards                           | Dr. K. S. Krishnan      | ...                          |
| EDC 1 : 1 Standard Atmospheric Conditions for Testing | Dr. K. S. Krishnan      | ...                          |
| EDC 2 Cement & Concrete                               | Mr. E. A. Nadirshah     | 29.7.49, 2.8.49 & 3/4/5.1.50 |
| EDC 2 : 1 Portland Cement                             | Mr. E. P. Nicolaidis    | 1.8.49 & 3.1.50              |
| EDC 2 : 2 Concrete                                    | Mr. S. B. Joshi         | 29/30.7.49 & 4/5.1.50        |
| EDC 3 Basic Ferrous Metals                            | Mr. J. S. Vatchagandhy  | 21/22/23.11.49               |
| EDC 3 : 1 Sampling Methods                            | Dr. A. V. Sukhatme      | ...                          |
| EDC 3 : 2 Methods of Chemical Analysis                | Dr. J. C. Ghosh         | ...                          |
| EDC 3 : 3 Methods for Physical Tests                  | Mr. M. N. Goon          | ...                          |
| EDC 3 : 4 Pig Iron (Coke and Charcoal)                | Mr. D. K. Coutts        | 6.7.49 & 15.9.49             |
| EDC 3 : 5 Rolled Steel Products                       | Dr. D. R. Dhanbhora     | 24.10.49                     |
| EDC 3 : 6 Iron Castings and Malleable Castings        | ...                     | 18/22.6.49                   |
| EDC 3 : 7 Steel Castings                              | ...                     | ...                          |
| EDC 3 : 8 Galvanized Steel Sheets                     | Mr. H. N. Coomar        | 2.3.50                       |
| EDC 3 : 9 Steel Wire, Black and Galvanized            | Mr. S. C. Lahiry        | ...                          |
| EDC 3 : 10 Expanded Metals (Ferrous)                  | Mr. M. N. Goon          | ...                          |
| EDC 3 : 11 Special Quality Steel Sheets               | Mr. J. R. Cuthbert      | ...                          |
| EDC 4 Basic Non-Ferrous Metals                        | Mr. N. P. Gandhi        | 8/10, 12.9.49 & 12/13.1.50   |
| EDC 4 : 1 Aluminium and Its Alloys                    | Mr. N. P. Gandhi        | 10.9.49                      |
| EDC 4 : 2 Copper and Its Alloys                       | Mr. N. P. Gandhi        | 12.9.49                      |
| EDC 4 : 3 Lead, Zinc, Tin, Antimony and their Alloys  | Mr. N. P. Gandhi        | 12.9.49                      |
| EDC 4 : 4 Aluminium for Cooking Utensils              | Mr. N. P. Gandhi        | ...                          |



| <i>Committee</i>  | <i>Chairman or Convener</i>                               | <i>Meeting Dates</i>    |
|---|---|-------------------------|
| EDC 4:5 Methods of Chemical Analysis  | Mr. N. P. Gandhi  | 12.1.50                 |
| EDC 4:6 Methods of Physical Tests   | Mr. N. P. Gandhi  | 12.1.50                 |
| EDC 5 Electrical Conductors and Insulators  | Mr. V. Venugopalan  | ...                     |
| EDC 5:1 Bare Conductors   | Mr. V. Venugopalan  | ...                     |
| EDC 5:2 Instruments and Machine Winding Wires   | Mr. T. S. Sitapati  | ...                     |
| EDC 5:3 Insulated Cables  | Mr. D. J. F. McIntosh                                     | 25/26.5.49              |
| EDC 5:4 Insulators  | Mr. I. K. Gupta   | 10.11.49                |
| EDC 6 Electrical Plant and Switchgear   | Mr. F. Wade Cooper  | ...                     |
| EDC 6:1 Standard Frequency and Voltage  | Mr. R. P. Patel   | ...                     |
| EDC 6:2 Marking and Arrangement for Switchgear, etc   | Mr. K. B. Patel   | ...                     |
| EDC 6:3 Industrial Motors   | Mr. R. L. Kirloskar                                       | 24/25.2.50              |
| EDC 6:4 Fractional Horsepower Motors  | Mr. L. M. Krishnan  | ...                     |
| EDC 6:5 Transformers for Power and Lighting   | ...   | ...                     |
| EDC 6:6 Electric Fans   | Mr. B. K. Rohatgi   | ...                     |
| (A number of meetings were held—details not available)  |   |                         |
| EDC 6:7 Tropic Proofing   | Mr. T. B. Merchant  | ...                     |
| EDC 8 Electrical Accessories  | Dr. M. B. Sarwate   | 29/30.8.49              |
| EDC 8:1 Domestic Electrical Appliances  | Mr. H. S. Kulkarni  | ...                     |
| EDC 8:2 Wiring Accessories  | Dr. G. N. Bhattacharya                                    | ...                     |
| EDC 8:3 Fuses   | Dr. N. V. Raghunath                                       | ...                     |
| EDC 9 Timber Products   | Dr. S. N. Kapur   | 6.10.49                 |
| EDC 9:1 Timber  | Dr. S. N. Kapur   | ...                     |
| EDC 9:2 Plywood   | Lt.-Col. J. B. Howell                                     | ...                     |
| EDC 9:3 Treatment   | Dr. D. Narayanamurti                                      | ...                     |
| EDC 9:4 Standard Names of Indian Timbers  | Dr. S. N. Kapur   | ...                     |
| EDC 9:5 Investigation into Grading of Commercial Plywood  | Lt.-Col. J. B. Howell                                     | ...                     |
| EDC 9:6 Investigation into Coniferous Sawn Timbers  | ...   | ...                     |
| EDC 11 Machine Tools and Small Tools  | Mr. S. L. Kirloskar                                       | ...                     |
| EDC 11:1 Machine Tool Elements and Materials  | Mr. K. N. Sharma  | ...                     |
| EDC 11:2 Expectation of Accurate Performance of Machine Tools                                   | Mr. K. I. N. Iyengar                                      | ...                     |
| EDC 11:3 Small Cutting Tools  | Mr. R. N. Gandhi  | 30.6.49                 |
| EDC 11:4 Safety Codes   | Chief Mechanical Engineer, G.I.P. Railway, Bombay         | ...                     |
| EDC 12 Hand Tools   | Mr. A. B. Banerji   | 3.8.49 & 8/10.3.50      |
| EDC 12:1 Earth Work Tools   | Mr. S. K. Datta   | 31.10.49                |
| EDC 12:2 Black Smiths Tools   | Mr. P. Subramanian  | 26.2.50                 |
| EDC 13 Abrasives  | Mr. S. L. Kirloskar                                       | ...                     |
| EDC 13:1 Grinding Wheels  | Mr. S. S. Iyengar   | ...                     |
| EDC 13:2 Coated Abrasives   | Mr. K. I. N. Iyengar                                      | ...                     |
| EDC 15 Engineering Hardware   | Mr. Yousuf Mowjee   | 19/20.8.49 & 16/17.2.50 |
| EDC 15:1 Bolts, Door  | Mr. Ajoyendu Paul   | ...                     |
| EDC 15:2 Hinges   | Mr. Yousuf Mowjee   | ...                     |
| EDC 15:3 Locks and Padlocks   | Mr. P. G. Vidwans   | 8.2.50                  |
| EDC 15:4 Miscellaneous  | Mr. G. K. Pradhan   | ...                     |
| EDC 16 Gas Cylinders  | Mr. A. K. Sen   | ...                     |
| EDC 17 Refractories   | Dr. H. K. Mitra   | 22/23.9.49              |
| EDC 17:1 Sampling   | Mr. T. W. Talwalkar                                       | 22.9.49                 |
| EDC 17:2 Refractories for Cement Manufacturing Industry   | Mr. J. Hammond  | 22.9.49                 |
| EDC 17:3 Refractories for Railways  | Mr. J. Buchanan   | 22.9.49                 |
| EDC 17:4 Refractories for the Navy  | Dr. H. K. Mitra   | ...                     |
| EDC 17:5 Refractories for the Basic Non-Ferrous Metals Industry                                 | Mr. R. Sneddon  | 22.9.49                 |
| EDC 18 Refrigeration  | Mr. M. L. Khanna  | ...                     |
| EDC 18:1 Safety Code in Refrigeration Plant   | Mr. E. Bertsch  | ...                     |
| EDC 18:2 Packaging Code for Perishable Foodstuffs   | Agricultural Marketing Adviser to the Government of India | ...                     |
| EDC 18:3 Terms of Reference   | Mr. J. J. Harvey  | ...                     |
| EDC 19 Radio Equipment  | Mr. B. V. Baliga  | 20.9.49                 |
| EDC 19:1 Capacitors and Resistors   | Mr. T. V. Ramamurty                                       | ...                     |
| EDC 19:2 Radio Receivers, Audio Equipment and Acoustical  | Mr. P. van Wijk   | ...                     |
| EDC 19:3 Radio Insulators, Crystal for Transmitters and Crystal Holders and Miscellaneous Parts | Prof. K. Srinivasan                                       | ...                     |
| EDC 19:4 Transformers and Chokes  | Lt.-Col. H. O. Bates                                      | ...                     |
| EDC 19:5 Testing Facilities   | Mr. S. R. Kantebet  | ...                     |
| EDC 19:6 Nomenclature   | Mr. H. J. Mulleneux                                       | ...                     |
| EDC 19:7 Tropic Proofing  | Dr. M. B. Sarwate   | ...                     |
| EDC 20 Drawings   | Mr. N. R. Junarkar  | 14/15.9.49              |
| EDC 20:1 Drawings   | Mr. K. S. Raghavachary                                    | 10.6.49 & 14/15.9.49    |



| <i>Committee</i>  | <i>Chairman or Convener</i> | <i>Meeting Dates</i>          |
|---|-----------------------------|-------------------------------|
| EDC 21 Mica   | Mr. Chandmull Rajgarhia     | 1/2.8.49                      |
| EDC 21:1 Master Standard                                  | Mr. Chandmull Rajgarhia     | 20.12.49                      |
| EDC 24 Manganese Ore                                      | Dr. W. D. West              | 20.5.49                       |
| EDC 24:1 Sampling and Chemical Analysis                   | Dr. D. S. Naidu             | 26.11.49                      |
| EDC 25 Batteries  | Mr. G. D. Joglekar          | 8.3.50                        |
| EDC 25:1 Primary Cells                                    | Mr. G. D. Joglekar          | 25.4.49 & 6.3.50              |
| EDC 25:2 Secondary Cells                                  | Mr. G. D. Joglekar          | 9.5.49 & 7.3.50               |
| EDC 26 Bicycles, Bicycle Parts and Accessories            | ...                         | ...                           |
| EDC 27 Screw Threads                                      | ...                         | ...                           |
| EDC 28 Sports Goods (Preliminary Conference held)         | Dr. Lal C. Verman           | 20.3.50                       |
| <b>Textile Division Council</b>                           |                             |                               |
| TDC 1 Textile Standards                                   | Mr. D. L. Sen               | ...                           |
| TDC 1:1 Cotton  | Mr. D. L. Sen               | ...                           |
| TDC 1:2 Wool  | Mr. V. Calloway             | ...                           |
| TDC 1:3 Jute  | Dr. K. R. Sen               | 10.11.49                      |
| TDC 1:4 Silk  | Mr. Dara H. Kooka           | 20.5.49 (informal)            |
| TDC 2 Cotton Yarn and Cloth                               | Mr. Bharat Ram              | 11.8.49                       |
| TDC 2:1 Cotton Yarn and Cloth                             | Mr. C. J. Soneji            | 25/26.6.49 & 14.7.49          |
| TDC 2:2 Mercerized Cotton Cloth, Tapes and Ropes          | Mr. S. Ramamritham          | 30.7.49                       |
| TDC 3 Jute  | Mr. G. J. Gardner           | 29.6.49                       |
| TDC 3:1 Katcha Bales                                      | Mr. J. N. Smart             | 13.2.50                       |
| TDC 3:2 Pucca Bales                                       | Mr. R. Fleming              | 31.1.50                       |
| TDC 3:3 Manufactures                                      | Mr. G. J. Gardner           | 22.6.49                       |
| TDC 3:4 Bales, Trusses and Bundles                        | Mr. T. C. Saboo             | 17.8.49                       |
| TDC 4 Wool  | Mr. A. K. Wattal            | 22.6.49 & 28.10.49            |
| TDC 4:1 Raw Wool  | Mr. A. K. Wattal            | ...                           |
| TDC 4:2 Finished Products                                 | Mr. A. K. Wattal            | 18.5.49                       |
| TDC 4:2:1 Finished Woollen and Worsted Materials          | Mr. C. J. Sukhadwalla       | 9.10.49                       |
| TDC 4:2:2 Hosiery and Knitting Yarn                       | ...                         | ...                           |
| TDC 4:3 Carpet, Druggets and Rugs (floor covering)        | Mr. A. K. Wattal            | 26.9.49                       |
| TDC 4:3:1 Carpet and Rugs                                 | Mr. O. L. Tellery           | 25.11.49                      |
| TDC 4:3:2 Druggets  | Mr. V. S. Rangasayi         | 21.11.49                      |
| TDC 5 Textile Chemistry                                   | Dr. T. S. Subramanian       | 25.6.49, 23.9.49 & 10.1.50    |
| TDC 5:1 Identification and Analysis of Fibres and Fabrics | Dr. W. G. Macmillan         | ...                           |
| TDC 5:2 Undyed Cotton Materials                           | Dr. G. M. Nabar             | 19.11.49                      |
| TDC 5:3 Fastness  | Dr. S. R. Ramachandran      | ...                           |
| TDC 5:4 Proofed Fabrics                                   | Dr. T. S. Subramanian       | ...                           |
| TDC 5:5 Determination of Shrinkage                        | Dr. C. E. Salkeld           | ...                           |
| TDC 5:6 Auxiliary Agents                                  | Dr. D. R. Nanji             | ...                           |
| TDC 5:7 Water   | Dr. S. M. Kaji              | ...                           |
| TDC 6 Textile Stores                                      | Mr. Narottam P. Hutheesing  | ...                           |
| TDC 6:1 Wooden Articles (Jute)                            | Mr. T. W. Scroggie          | 2.12.49                       |
| TDC 6:2 Wooden Articles (Cotton, Silk and Wool)           | Mr. Narottam P. Hutheesing  | 20.1.50                       |
| TDC 6:3 Hide and Leather Articles                         | Mr. D. C. Karaka            | 20.12.49 & 6.3.50             |
| TDC 6:4 Textile Metal Articles                            | Mr. B. B. Joshi             | 11.1.50                       |
| TDC 7 Textile Building Code                               | Mr. Bharat Ram              | 22.7.49                       |
| TDC 8 National Flag of India                              | Mr. Bharat Ram              | 21/22.7.49, 12.8.49 & 30.1.50 |
| TDC 9 Coir and Coir Products                              | Mr. K. C. Karunakaran       | 25.8.49                       |
| TDC 9:1 Scientific Survey of Coir Fibre, Yarns, etc       | Mr. K. C. Karima Karan      | ...                           |
| TDC 10 Rayon and Rayon Products                           | Mr. D. N. Shroff            | 27.10.49                      |
| TDC 10:1 Rayon Yarn                                       | Dr. M. D. Parekh            | ...                           |
| TDC 10:2 Rayon Grey and Finished Products                 | Mr. D. N. Shroff            | ...                           |
| TDC 11 Hosiery and Knitted Garments                       | Mr. Amal Kumar Chaudhuri    | ...                           |
| TDC 12 Textile Sizing and Finishing Materials             | Mr. B. N. Atrishi           | ...                           |
| <b>Chemical Division Council</b>                          |                             |                               |
| CDC 1 Chemical Standards                                  | Dr. T. S. Subramanian       | 16.11.49                      |
| CDC 2 Heavy Chemicals (Organic)                           | Mr. M. B. Amin              | 28.4.49 & 14.12.49            |
| CDC 2:1 Alcohol   | Mr. A. N. Misra             | 13.12.49                      |
| CDC 2:2 Wood Distillation                                 | Mr. B. Sivappa              | ...                           |
| CDC 2:3 Acetic Acid                                       | Mr. B. Sivappa              | ...                           |
| CDC 2:4 Charcoal (for industrial purposes)                | Dr. M. L. Khanna            | ...                           |
| CDC 2:5 Ether   | Mr. M. B. Amin              | ...                           |
| CDC 3 Heavy Chemicals (Inorganic)                         | Dr. A. Nagaraja Rao         | 8/9.12.49                     |
| CDC 3:1 Acids   | Mr. M. L. Seth              | 27/28.10.49                   |



| <i>Committee</i>   | <i>Chairman or Convener</i>  | <i>Meeting Dates</i>  |
|--|------------------------------|---|
| CDC 3:2 Fertilizers and Allied Products                    | Mr. M. C. Verghese           | ...   |
| CDC 3:3 Alkali and Allied Products                         | Mr. M. B. Bhagvat            | 23.7.49   |
| CDC 3:4 Salt and Marine Products                           | Dr. Mata Prasad              | 25.7.49   |
| CDC 3:5 Heavy Chemicals ( Sulphates )                      | Mr. M. L. Seth               | 26.9.49   |
| CDC 3:6 Heavy Chemicals ( Miscellaneous )                  | Dr. R. K. Trivedi            | 7.12.49   |
| CDC 3:7 Industrial Gases                                   | Dr. R. Venkateswarn          | 26.7.49   |
| CDC 4 Fine Chemicals ( Organic and Inorganic )             | Dr. J. N. Ray                | 19.11.49  |
| CDC 4:1 Organic Acids                                      | Dr. K. A. Hamied             | ...   |
| CDC 4:2 Alcohols and Esters                                | Dr. B. D. Laroia             | 15.11.49  |
| CDC 4:3 Percompounds                                       | Mr. N. Adhikari              | ...   |
| CDC 4:4 Chloroderivatives                                  | Dr. J. N. Ray                | Has completed work by correspondence                            |
| CDC 4:5 Inorganic Salts                                    | Dr. L. A. Bhatt              | 26.7.49   |
| CDC 5 Lubricants   | Mr. J. J. Bagchi             | 2.3.50  |
| CDC 5:1 Standard Methods of Tests and Sampling             | Mr. J. J. Bagchi             | 16.9.49 & 28.2.50   |
| CDC 5:2 Castor Oil   | Dr. D. R. Dhingra            | 17.5.49 & 19.10.49  |
| CDC 5:3 Defence Lubricants                                 | Mr. J. J. Bagchi             | ...   |
| CDC 5:4 Gear Transmission and Axle Oil                     | Mr. B. S. Duegan             | ...   |
| CDC 5:5 Internal Combustion Engine Oils                    | Mr. S. N. Mukerjee           | 4.4.49 & 29.11.49   |
| CDC 5:6 Steam Cylinder Oils                                | Mr. K. C. Bhattacharya       | 6.6.49  |
| CDC 5:7 Greases and Graphited Lubricants                   | Dr. M. L. Khanna             | 26.7.49   |
| CDC 5:8 Anti-Corrosives                                    | Mr. N. K. Chakravarti        | 20.5.49, 5/6.8.49 & 3/4.3.50                                    |
| CDC 5:9 Special Products                                   | Dr. J. S. Aggarwal           | 6.6.49  |
| CDC 5:10 Engine Machinery and Spindle Oils                 | Mr. K. V. Gopalan            | 7.6.49  |
| CDC 5:11 Turbine, Transformer, Crank Case and Switches Oil | Mr. A. W. Johnstone          | ...   |
| CDC 6 Belting and Rubber Products                          | Prof. S. K. Roy              | ...   |
| CDC 6:1 Terms of Reference                                 | Mr. B. C. Mallick            | Has completed work by correspondence                            |
| CDC 6:2 Belting  | Prof. S. K. Roy              | ...   |
| CDC 6:3 Hoses  | Mr. S. C. De                 | 7.11.49   |
| CDC 6:4 Rubber Products                                    | Dr. D. Bannerjee             | 9/10.1.50   |
| CDC 7 Bitumen and Tar Products                             | Mr. K. K. Nambiar            | 28.3.50   |
| CDC 7:1 Road Tar   | Mr. C. J. Fielder            | ...   |
| CDC 7:2 Crude Tar  | Mr. D. S. Naidu              | ...   |
| CDC 7:3 Bitumen for Roads                                  | Mr. K. K. Nambiar            | 26.3.50   |
| CDC 7:4 Oxidized Bitumen                                   | Mr. V. N. Rangaswamy         | ...   |
| CDC 7:5 Cable Compounds                                    | Mr. J. P. Mehrotra           | 1.4.49  |
| CDC 7:6 Mastic   | Mr. K. K. Nambiar            | ...   |
| CDC 7:7 Coal Tar Creosote                                  | Dr. D. Narayanamurthi        | ...   |
| CDC 8 Paints and Allied Products                           | Mr. P. C. Chanda             | 26/27/28.10.49  |
| CDC 8:1 Drafting   | Dr. K. L. Moudgill           | 27/28.5.49 & 22/23/24/25.8.49                                   |
| CDC 8:2 Durability Test                                    | Mr. S. V. Satheye            | ...   |
| CDC 8:3 Printing Inks                                      | Mr. Emil Fjermers            | ...   |
| CDC 8:4 Brushes for Paints & Varnishes                     | Mr. G. K. Pardhan            | ...   |
| CDC 8:5 Packaging  | Mr. S. V. Satheye            | ...   |
| CDC 9 Lac and Lac Products                                 | Dr. P. K. Bose               | 19/20.8.49  |
| CDC 9:1 Sealing Wax  | Dr. P. K. Bose               | ...   |
| CDC 10 Glassware   | Dr. Atma Ram                 | 2.4.49  |
| CDC 10:1 Sheet Glass                                       | Mr. H. C. Varshnei           | ...   |
| CDC 10:2 Hollow Ware                                       | Pt. Vishnu Datt              | ...   |
| CDC 10:3 Bottleware  | Mr. K. N. Desai              | ...   |
| CDC 10:4 Ampoules  | Mr. J. Chakravarti           | 19.7.49 & 18.2.50   |
| CDC 10:5 Glass Shells ( for Electric Lamps )               | Mr. T. Gupta                 | 14.1.50   |
| CDC 10:6 Laboratory Glassware                              | Mr. J. B. Mukherjee          | 27.2.50   |
| CDC 10:7 Signals ( Glassware )                             | Mr. S. M. Brahma             | ...   |
| CDC 10:8 Glass Raw Materials                               | Dr. Y. P. Varshney           | ...   |
| CDC 11 Essential Oils                                      | Mr. A. K. Menon              | 10.11.49  |
| CDC 11:1 Methods of Tests                                  | Dr. S. Krishna               | ...   |
| CDC 12 Oils, Fats and Soaps                                | Mr. S. C. Ghose              | 20.5.49 & 3.2.50  |
| CDC 12:1 Oils and Fats                                     | Mr. K. P. Jain               | ...   |
| CDC 12:2 Soaps   | Mr. A. J. C. Hoskyns-Abraham | 28.10.49 & 2.2.50   |
| CDC 13 Inks ( Writing )                                    | Dr. P. N. Sahai              | 18.5.49 & 14/15.3.50  |
| CDC 14 Solid Mineral Fuels ( Coal, Coke, etc )             | Dr. J. W. Whitaker           | 1.4.49  |
| CDC 14:1 Sampling  | Dr. J. Sanjana               | 18.7.49, 5.9.49, 11.11.49, 27.12.49, 30.1.50, 15.2.50 & 17.3.50 |
| CDC 14:2 Testing   | Dr. J. W. Whitaker           | 30.8.49, 11.10.49, 28.12.49, 17.2.50 & 17.3.50                  |
| CDC 14:3 Standard Sizes ( for marketing )                  | Mr. W. Wallace               | 9.8.49, 6.9.49 & 16.2.50  |
| CDC 14:4 Terminology of Coal Types                         | Dr. J. W. Whitaker           | ...   |
| CDC 15 Paper   | Mr. K. B. Sen                | ...   |
| CDC 16 Leather   | Mr. B. M. Das                | ...   |



STANDARDS IN DIFFERENT STAGES OF DRAFTING

STAGE B 6 : DRAFTS UNDER PREPARATION

EC

1. Statistical Quality Control

EDC

2. Concrete Code
3. Galvanized Iron and Steel Wire for Telephones, Telegraphs and Cables
4. Austenitic Manganese Steel Castings
5. Mild Steel Wire
6. Barbed Steel Wire for Fencing
7. Hard Drawn Steel Wire for Springs
8. Steel Core Wire for Electrodes
9. Galvanized Steel Sheets
10. Steel Sheets for Special Purposes
11. Chemical Analysis of Aluminium and Its Alloys
12. Chemical Analysis of Pig Lead
13. Chemical Analysis of Slab Zinc and Zinc Base Alloys
14. Rubber Insulated Cables and Flexible Cords for Electric Power and Lighting for Working Voltages up to and Including 11 kv
15. Marking and Arrangement for Switchgear Bus-Bars, Main Connections and Auxiliary Wiring
16. Ceiling Fans
17. Electrical Performance of Polyphase Induction Motors for Industrial Use with Class A Insulation
18. Insulators
19. Machine Tools
20. Safety Codes for Operation of Machine Tools
21. Definitions of Technical Terms Used in Timber
22. Preservative Treatment of Timber
23. Code of Practice for General Engineering Drawings

TDC

24. Specification for Calcutta Hessian
25. Code for Bobbin for Cotton Textile Industry
26. Round Reed Wires
27. Picking Bands
28. Check Strapping
29. Leather Beltings
30. Roller Skin
31. Testing Water-repellant and Water-proof Fabrics

CDC

32. Formic Acid
33. Oxalic Acid
34. Tartaric Acid
35. Chromic Acid
36. Chrome Salt
37. Chrome Alum Potash
38. Hydroquinone
39. Gear Transmission and Axle Oils
40. Grease, Hard for Locomotive Journal and Rod Lubrication
41. Soft Sodium Soap Grease for Locomotive Lubrication
42. Grease RD (Al. Base)
43. Grease, Non-floating
44. Grease No. 4 (Water-pump Grease)
45. Lithium base Grease (low temperature)

46. Grease No. 1
47. Gasoline and Oil Resistant Grease
48. Grease GS
49. Grease GS Graphited
50. Grease O
51. Grease High Melting Point (Sodium base)
52. Grease Wide Temperature Range
53. Anti-Corrosives
54. Machinery Oil -- Superior Quality of Red I Vis about 105 sec at 140°F
55. General Machinery Oils of approx. Red I Vis between 75 and 85 sec at 140°F
56. General Machinery Oils of approx. Red I Vis between 90 and 100 sec at 140°F
57. General Engine Oils of approx. Red I Vis between 120 and 140 sec at 140°F
58. General Engine Oils of approx. Red I Vis between 160 and 190 sec at 140°F
59. General Engine Oils of approx. Red I Vis between 210 and 250 sec
60. Fire Fighting Hoses
61. Brushes for Paints and Varnishes, Flat
62. Glass Shells for General Lighting Service Lamps
63. Lemongrass Oil, 2 grades (soluble in 70 percent alcohol and insoluble)
64. Palmarosa Oil (motia and sofia)
65. Vetivert Oil
66. Cinnamon Leaf Oil
67. Citronella Oil (Java and Ceylon)
68. Linaloe Oil
69. Camphor Oil
70. Clove Oil
71. Geranium Oil
72. Methods of Tests of Essential Oils
73. Methods of Testing Vegetable Oils and Fats
74. Edible Groundnut and Mustard Oils
75. Methods of Sampling and Tests for Soaps
76. Testing and Analysis of Solid Mineral Fuels, Coal and Coke
77. Size Grading of Coal

STAGE C 7-9 : DRAFTS UNDER COMPILATION

EDC

78. Reinforcement for Concrete
79. Production and Control of Mass Concrete
80. Coarse and Fine Aggregates from Natural Sources for Concrete
81. Natural Aggregates and Manufactured Aggregates for Use in Mass Concrete
82. Plain and Reinforced Concrete for Dams and other Massive Structures
83. Ordinary Portland Cement, Rapid Hardening Cement and Low Heat Cement
84. Leclanché Type Inert Cells for Telecommunication Purposes
85. Sack Type Wet Leclanché Primary Cells for Signalling and Telecommunication Purposes
86. Stationary Accumulators (Lead Acid Type)
87. Picks and Beaters
88. Shovels
89. Reamers
90. Braces, Smith





91. Anvils
92. Punches
93. Drilling Jig Bushes
94. T-Slots, T-Bolts and T-Nuts
95. Chisels
96. Smiths Tongs
97. Smiths Bits
98. Swage Blocks and Stand
99. Smiths Fullers
100. Smiths Flatters
101. Smiths Swages
102. Hand Hammers
103. Padlocks
104. Fixed Paper Dielectric Capacitors
105. Mica Capacitors
106. Manganese Ore — Metallurgical Grade
107. Manganese Ore — Battery Grade
108. Rolled, Brass, Sheet, Strip and Foil

#### TDC

109. Definitions of Textile Terms
110. Determination of Mean Fibre Length and Fibre-Length Distribution (Cotton)
111. Determination of Unit Fibre-Weight and Mean Fibre-Weight per Unit Length (Cotton)
112. Determination of Fibre Strength and Intrinsic Strength (Cotton)
113. Determination of Fibre-Maturity Count (Cotton)
114. Determination of Cotton Yarn Count
115. Determination of Twist in Cotton Yarns
116. Determination of Lea Breaking Strength of Cotton Yarns
117. Determination of Number of Ends and Picks per Inch in Woven Cotton Fabrics
118. Determination of Cotton Fabric Dimensions
119. Determination of Weight per Unit Area or Unit Length of Cotton Fabrics
120. Determination of Breaking Strength and Extension of Woven Cotton Fabrics
121. Definitions of Textile Terms Relating to Wool
122. Methods for Testing Raw Wool
123. Methods for Testing Woollen and Worsted Yarns
124. Methods for Testing Woollen and Worsted Fabrics
125. Code for Solid Bobbins for Dry Jute Spinning Frames
126. Code for Spinning Rollers (Jute)
127. Code for Bobbins for Jute Roving Frames
128. Code for Spool Centres for Jute Spool Winding Machines
129. Code for Swells for Jute Looms
130. Code for Picking Arms (Jute)
131. Code for Cotton Healds
132. Test for Identification of Textile Fibres
133. Estimation of Small Quantities of Sulphuric Acid and Hydrochloric Acid in Cotton Materials
134. National Flag

#### CDC

135. Ethyl Alcohol
136. Power Alcohol
137. Rectified Spirit
138. Denatured Spirit
139. IR Feed Pipe for Locomotives
140. IR Articles used in Railway Carriage
141. IR Buffing Draw and Auxiliary Bearing Springs for Railways
142. IR Vacuum Brake Fittings for Railways

143. Methods of Tests for Varnishes and Lacquers
144. Varnish Finishing Interior
145. Varnish Undercoating Exterior Natural Resin
146. Varnish Undercoating Exterior Synthetic Resin
147. Varnish Mixing for use as Binding Medium in Fillers and Colour Coats
148. Varnish Gold Size for General Purposes and Temporary Protection
149. Varnish Black Japan
150. Varnish Acid Resisting for Accumulator Labels and Floats
151. Varnish Paper for Protection of Maps and Charts
152. Varnish Stoving for Interior Use on Metal Transparent Liquid Wood Filler
153. Varnish Spirit Clear Hard
154. Varnish Shellac 40 percent — Lead Free for General Purposes and Knotting
155. French Polish
156. Cellulose Clear Lacquer
157. Insulating Oil Varnish Clear Baking for Electrical Purposes
158. Insulating Varnish Baking Bitumen Type for Electrical Purposes
159. Insulating Varnish Clear Air Drying with Alcoholic Solvent for Electrical Purposes
160. Insulating Varnish Clear Air Drying with Non-Alcoholic Solvent for Electrical Purposes
161. Coal Tar Naphtha Light for Paints
162. Coal Tar Naphtha Heavy for Paints
163. Benzol for Paints
164. Xylol for Paints
165. Cyclohexane for Paints
166. Amyl Alcohol for Paints
167. Butyl Alcohol for Paints
168. Dipentene for Paints
169. Decalin (Decahydronaphthalene) for Paints
170. Ethylene Dichloride for Paints
171. Methylene Chloride for Paints
172. Distempers Dry Colours
173. Distemper Oil Emulsion
174. Putty for Use on Wooden Frames
175. Putty for Use on Metal Frames
176. Jointing Paste for Bedding Mouldings on Coaching Stock
177. Sealing Paste for Prevention of Leaks in Steel Wagons
178. Plastic Wood for Joiners Filler
179. Plastic Asphalt for Use as a Leak Stop for Roofs and Protection of Underground Tanks
180. Shellac Adhesive for Steam Flange Joints
181. Paint Remover Solvent Type Inflammable
182. Paint Remover Solvent Type Non-Inflammable
183. Driers Liquid
184. Driers Liquid Lead Free
185. Driers Liquid Concentrated
186. Paste Filler for Colour Coats
187. Shellac for Paints and Allied Materials
188. Rosin for Paints
189. Ester Gum for Paints
190. Gum Dammar White for Paints
191. Glass Ampoules
192. Sandalwood Oil
193. Eucalyptus Oil
194. Sampling of Coal
195. Coal Tar Black Paint
196. Dissolved Acetylene
197. Carbon Dioxide
198. Oxygen



199. Road Tar
200. Liquid Asphalt
201. Creosote and Anthracene Oils as Wood Preservatives
202. Coal Tar Pitch
203. Sampling and Tests of Lubricants
204. Oil, Cylinder, Pure Mineral, Ordinary
205. Oil, Cylinder, Compounded, Ordinary
206. Oil, Cylinder, Pure Mineral, Super Heat
207. Oil, Cylinder, Compounded, Super Heat
208. Oil, Cylinder, Pure Mineral, Filtered
209. Oil, Cylinder, Compounded, Filtered
210. Automotive Hydraulic Brake Fluid
211. Internal Combustion Engine Oil, Ordinary
212. Internal Combustion Engine Oil, Regular
213. Castor Oil

#### STAGE D : DRAFTS UNDER CIRCULATION

##### EDC

214. Aluminium Alloy Ingots and Castings for Aircraft Purposes
215. Zinc (Spelter)
216. Antimony Ingots
217. Lead Acid Storage Batteries for Motor Vehicles, Light Duty
218. Structural Steel
219. Tensile Testing of Metals (Ferrous)
220. Chemical Analysis for Pig Iron, Cast Iron, Plain Carbon Steel and Low Alloy Steel
221. Pig Iron (Coke)
222. Pig Iron (Charcoal)
223. Grey Iron Castings
224. Black Heart Malleable Iron Castings
225. Brass Ingots and Castings
226. High Tensile Brass Ingots and Castings
227. Aluminium Bronze Ingots and Castings
228. Leaded Tin Bronze Ingots and Castings
229. Tin Bronze Ingots and Castings
230. Sliding Door Bolts for use with Padlocks
231. Free Cutting Brass Rods and Bars Used in Screw Machines
232. Copper Rods for Boiler Stays
233. Naval Brass Rods, Bars and Sections
234. High Strength Brass Rods, Bars and Sections
235. Classification of Commercial Timbers and Their Zonal Distribution
236. Recommendations for Maximum Permissible Moisture Contents of Timber Used for Different Purposes in Different Climatic Zones
237. Commercial Plywood
238. Twist and Straight Flute Drills
239. Combined Drills and Countersinks

##### TDC

240. Seaworthy Packaging Code for Cotton Textiles
241. Grading of Raw Jute (Kutchha Assortment)
242. Grading of Raw Jute (Pucca Assortment)
243. Methods for Determination of Viscosity of Cellulose Solutions in Cupramonium Hydroxide
244. Code for Pickers

##### CDC

245. Sulphuric Acid
246. Nitric Acid
247. Hydrochloric Acid

248. Boric Acid
249. Soda Ash
250. Caustic Soda, Commercial
251. Common Salt, Edible
252. Magnesium Chloride, Commercial
253. Sodium Sulphate, Technical
254. Glauber's Salt, Technical
255. Epsom Salt, Technical
256. Potash Alum, Technical
257. Ammonia Alum, Technical
258. Copper Sulphate, Technical
259. Aluminium Sulphate (Non-ferric)
260. Ferrous Sulphate, Technical
261. Alumino-ferric
262. Alum Cake
263. Sodium Bichromate, Commercial
264. Potassium Bichromate
265. Trichlorethylene
266. Ethyl Acetate
267. Butyl Acetate
268. Amyl Acetate
269. Sodium Sulphite
270. Sodium Bisulphite
271. Sodium Thiosulphate
272. Laundry Soap
273. Toilet Soap
274. Solid Bituminous Filling Compound for Cable Boxes on Systems up to and including 11,000 volts
275. Methods for the Testing of Ready Mixed Paints and Enamels
276. Ready Mixed Paint Brushing, Red Lead, Non-setting, Priming
277. Ready Mixed Paint Brushing, White Lead, for Priming and General Purposes
278. Ready Mixed Paint Brushing, Zinc Chrome, Priming for Use on Aluminium and Light Alloys
279. Ready Mixed Paint Brushing, Priming for Enamels, for Use on Metals
280. Ready Mixed Paint Brushing, Priming for Enamels, for Use on Wood
281. Ready Mixed Paint Brushing, Red Oxide, for Priming and General Purposes
282. Ready Mixed Paint, Spraying, Red Oxide, for Priming and General Purposes
283. Ready Mixed Paint Brushing, Priming, Plaster, Light Stone, IS colour No. 361
284. Ready Mixed Paint Brushing, Grey Filler, for Enamels, for Use over Primers
285. Ready Mixed Paint Brushing, Undercoating, for Exterior Oil Paints (7 colours)
286. Ready Mixed Paint Spraying, Undercoating, for Exterior Oil Paints (7 colours)
287. Ready Mixed Paint Brushing, Undercoating, for Interior Oil Paints (7 colours)
288. Ready Mixed Paint Spraying, Undercoating, for Interior Oil Paints
289. Ready Mixed Paint Brushing, Undercoating, for Exterior Matt Finish Paints (3 colours)
290. Ready Mixed Paint Spraying, Undercoating, for Exterior Matt Finish Paints
291. Ready Mixed Paint Brushing, Finishing, Exterior, Oil Gloss, for General Purposes (29 colours)
292. Ready Mixed Paint Brushing, Finishing, Oil Gloss, for General Purposes (4 colours)
293. Ready Mixed Paint Brushing, Finishing, Oil Gloss, for General Purposes (7 colours)
294. Ready Mixed Paint Brushing, Finishing, Oil Gloss, for General Purposes



295. Ready Mixed Paint Brushing, Finishing, Oil Gloss, for General Purposes, Golden Brown, IS colour No. 414
296. Ready Mixed Paint Brushing, Finishing, Oil Gloss, for General Purposes ( 3 colours )
297. Ready Mixed Paint Brushing, Finishing, Oil Gloss, for General Purposes ( 9 colours )
298. Ready Mixed Paint Brushing, Finishing, Oil Gloss, for General Purposes, IS Colour No. 105
299. Ready Mixed Paint Brushing, Finishing, Oil Gloss, for General Purposes, IS Colour No. 106 and Dark Blue
300. Ready Mixed Paint Brushing, Finishing, Exterior, Oil Gloss, for General Purposes ( 2 colours )
301. Ready Mixed Paint Brushing, Finishing, Exterior, Oil Gloss, for General Purposes ( White )
302. Ready Mixed Paint Brushing, Finishing, Oil Gloss, for General Purposes ( Black )
303. Ready Mixed Paint Brushing, Finishing, Interior, Oil Gloss, for General Purposes ( 29 colours )
304. Ready Mixed Paint Spraying, Finishing, for Railway Wagon Stock ( 2 colours )
305. Ready Mixed Paint Spraying, Finishing, for Railway Under Frames ( Black )
306. Ready Mixed Paint Spraying, Exterior, Oil Gloss, for General Purposes ( 27 colours )
307. Enamel Brushing, Interior, Natural Resin (1) Undercoating, (2) Finishing
308. Enamel Spraying, Interior, Natural Resin (1) Undercoating, (2) Finishing
309. Ready Mixed Paint Brushing, Matt Finish, Exterior (colours as required)
310. Ready Mixed Paint Spraying, Matt Finish, Exterior (colours as required)
311. Ready Mixed Paint Brushing, Matt Finish, Interior (30 colours)
312. Ready Mixed Paint Marking, for Packages and Petrol Containers (colours as required)
313. Ready Mixed Paint Marking, Quick Drying, for Marking with Rubber Stamps (colours as required)
314. Ready Mixed Paint Brushing, Petrol Resisting, Air Drying, for Exterior Protection of Containers
315. Ready Mixed Paint Spraying, Petrol Resisting, Air Drying, for Exterior Painting of Containers
316. Ready Mixed Paint Brushing, Petrol Resisting, Stoving, for Exterior Painting of Containers
317. Ready Mixed Paint Spraying, Petrol Resisting, Stoving, for Exterior Painting of Containers
318. Ready Mixed Paint Brushing, Petrol Resisting, Air Drying, for Interior Painting of Tanks and Containers
319. Ready Mixed Paint Slushing, Petrol Resisting, Air Drying, for Interior Painting of Tanks and Containers
320. Ready Mixed Paint Brushing, Petrol Resisting, Stoving, for Interior Painting of Tanks and Containers
321. Ready Mixed Paint Slushing, Petrol Resisting, Stoving, for Interior Painting of Tanks and Containers
322. Enamel Brushing, Undercoating, Stoving
323. Enamel Spraying, Undercoating, Stoving
324. Enamel Brushing, Finishing, Stoving
325. Enamel Spraying, Finishing, Stoving
326. Ready Mixed Paint Brushing, Stoving, Lead Free, for General Purposes (colours as required)
327. Ready Mixed Paint Spraying, Stoving, Lead Free, for General Purposes (colours as required)
328. Ready Mixed Paint Brushing, Dead Black, for Use on Metals
329. Ready Mixed Paint Brushing, Dead Lead, for Use on Wood
330. Ready Mixed Paint Brushing, for Use on Floors
331. Ready Mixed Paint Brushing, Acid and Alkali Resisting, Lead Free, for General Purposes ( 5 colours )
332. Ready Mixed Paint Brushing, Bituminous Black, Lead Free, Acid, Alkali, Water and Heat Resisting, for General Purposes
333. Ready Mixed Paint Brushing, Acid Resisting, for Protection Against Acid Fumes (colours as required)
334. Ready Mixed Paint Spraying, Acid Resisting, for Protection Against Acid Fumes
335. Ready Mixed Paint Brushing, Heat Resisting
336. Ready Mixed Paint Brushing, Fire Resisting, Silicate Type, for Use on Wood
337. Ready Mixed Paint Dipping, Fire Resisting, for Gangways of Coaching Stock ( Black, and as required )
338. Ready Mixed Paint Brushing, for Road Marking
339. Aluminium Paint Brushing for General Purposes in Dual Containers
340. Aluminium Paint Spraying for General Purposes in Dual Containers
341. Ready Mixed Paint, White, for Lettering
342. Ready Mixed Paint Brushing, Quick Drying, Lead Free ( 6 colours )
343. Ready Mixed Paint Spraying, Quick Drying, Lead Free, for General Purposes ( 6 colours )
344. Methods for the Testing of Oil Pastes for Paints
345. Oil Pastes for Paints ( IS colour Nos. 101, 102, 103, 104, 169, 216, 217, 219, 352, 353, 354, 358, 359, 360, 361, 362, 363, 364, 410, 443, 444, 628, 629, 630, 631, 632, 633, 634 and 635 )
346. Oil Pastes for Paints ( Oxford Blue, IS colour No. 105 )
347. Oil Pastes for Paints ( Royal Blue, IS colour No. 106 )
348. Oil Pastes for Paints ( IS colour Nos. 411, 412 and 413 )
349. Oil Pastes for Paints ( IS colour No. 414 )
350. Oil Pastes for Paints ( IS colour Nos. 218, 220, 221, 222, 223, 224, 225, 226, 227 and 267 )
351. Oil Pastes for Paints ( IS colour Nos. 537, 538, 540, 541 and 570 )
352. Oil Pastes for Paints ( IS colour Nos. 445, 446, 448, 449, 451, Light Indian Red, Deep Purple Brown, Gulf Red, and Red Oxide-colour unspecified )
353. Oil Pastes for Paints ( IS colour Nos. 355, 356, 368, 557 )
354. Oil Pastes for Paints ( Exterior, White )
355. Oil Pastes for Paints ( Interior, White )
356. Oil Pastes for Paints and Jointing Purposes, etc ( White Lead )
357. Oil Pastes for Paints ( Zinc Oxide )
358. Oil Pastes for Paints ( Zinc Oxide Reduced )
359. Oil Pastes for General Purposes ( Black )
360. Methods for the Testing of Drying Oils
361. Linseed Oil, Raw
362. Linseed Oil, Refined
363. Linseed Oil, Boiled
364. Linseed Oil, Pale Boiled
365. Stand Oil
366. Tung Oil
367. Dehydrated Castor Oil, Polymerized
368. Methods for the Testing of Thinners and Solvents for Paints
369. Turpentine for Paints
370. White Spirit for Paints



19.10.4

**STAGE E 13-16 : DRAFTS FINALIZED**

**EDC**

- 371. Leclanché Type Dry Cells and Batteries for Flash Lamps
- 372. Door Bolts, Tower and Barrel Types
- 373. Tee and Strap Hinges
- 374. Butt Hinges
- 375. Door Handles
- 376. Gate and Shutter Hooks and Eyes

**TDC\***

- 377. Dhoties
- 378. Sarees
- 379. Mulls
- 380. Long Cloth
- 381. Poplins
- 382. Crepes
- 383. Twills
- 384. Susies
- 385. Cotton Yarn
- 386. Voils
- 387. Sheetings
- 388. Leopard Cloth
- 389. Drills
- 390. Mazri
- 391. Bed Sheets
- 392. Bed Tickings
- 393. Flannelettes
- 394. Dosutie

**CDC**

- 395. Crude Coal Tar
- 396. Asphaltic Bitumen and Fluxed Native Asphalt for Roadmaking Purposes
- 397. Ink Powders, Blue-black and Red
- 398. Blue-black and Red Fountain Pen Inks
- 399. Fluid Ink for Registration and for Cheques and Records
- 400. Blue-black Superior Fluid Ink for Writing
- 401. Acetone

**STAGE F 17-20 : STANDARDS IN PRESS**

**EDC**

- 402. IS : 190 - 1950 Coniferous Sawm Timber Intended for Further Conversion (Price Rs 1/4/-)
- 403. IS : 191 - 1950 Copper (Price As -/12/-)
- 404. IS : 192 - 1950 Silver Solder (Price As -/12/-)
- 405. IS : 193 - 1950 Soft Solder (Price As -/12/-)
- 406. IS : 194 - 1950 Recommendations for Refractories for Railways (Price Rs 1/-)
- 407. IS : 195 - 1950 Fireclay Mortar for Laying Fireclay Bricks (Price As -/12/-)
- 408. IS : 196 - 1950 Atmospheric Conditions for Testing (Price Rs 1/-)

**TDC**

- 409. IS : 199 - 1950 Methods for the Estimation of Moisture, Total Size, Starch, Ash and Wax Content in Grey and Bleached Cotton Textile Materials (Price Rs 1/-)
- 410. IS : 200 - 1950 Method for Determination of Copper Number of Cotton Textile Materials (Price Rs 1/-)

\*Since writing this report standards on items 377 to 394 have been further modified and circulated for comments.

- 411. IS : 201 - 1950 Methods of Analysis of and Tolerances for Water for Textile Purposes (Price Rs 1/-)

**STANDARDS PUBLISHED**

**EC**

- 412. IS : 4 - 1949 Practice for Make-up of Periodicals (Price As -/8/-)
- 413. IS : 12 - 1949 Style Manual for Drafting Indian Standards (Price Rs 1/8/-)
- 414. IS : 18 - 1949 Abbreviations for Titles of Periodicals (Price Rs 1/4/-)

**EDC**

- 415. IS : 6 - 1949 Moderate Heat Duty Fireclay Refractories, Group 'A' (Price Rs 2/-)
- 416. IS : 7 - 1949 Moderate Heat Duty Fireclay Refractories, Group 'B' (Price Rs 1/-)
- 417. IS : 8 - 1949 High Heat Duty Fireclay Refractories (Price Rs 2/-)
- 418. IS : 10 - 1949 Plywood Tea-Chests (Price Rs 1/12/-)
- 419. IS : 13 - 1949 Methods for Grading Processed Mica (Price Rs 2/-)
- 420. IS : 14 - 1949 Classification of Processed Muscovite Mica (Price Rs 1/4/-)
- 421. IS : 20 - 1950 Cast Aluminium for Utensils (Price As -/12/-)
- 422. IS : 21 - 1950 Wrought Aluminium for Utensils (Price As -/12/-)
- 423. IS : 22 - 1950 98 Percent Aluminium Notched Bars and Ingots for Remelting Purposes (Price As -/12/-)
- 424. IS : 23 - 1950 99 Percent Aluminium Notched Bars and Ingots for Remelting for Aircraft Purposes (Price As -/12/-)
- 425. IS : 24 - 1950 Brazing Solder (Price As -/12/-)
- 426. IS : 25 - 1950 Antifriction Bearing Alloys (Price As -/12/-)
- 427. IS : 26 - 1950 Tin Ingots (Price As -/12/-)
- 428. IS : 27 - 1950 Pig Lead (Price As -/12/-)
- 429. IS : 28 - 1950 Phosphor Bronze Ingots and Castings (Price As -/12/-)
- 430. IS : 29 - 1950 Aluminium Sheets and Coils for Aircraft Purposes (Price Rs 1/-)
- 431. IS : 30 - 1950 Aluminium-Coated High-Tensile Aluminium Alloy Sheets and Coils for Aircraft Purposes (Price Rs 1/4/-)
- 432. IS : 31 - 1950 Aluminium-Manganese Alloy Sheets and Coils (Price Rs 1/-)

**TDC**

- 433. IS : 9 - 1949 Method of Test for Determining Shrinkage in Woven Cotton and Linen Cloth on Washing (Price As -/8/-)
- 434. IS : 11 - 1949 Grading of Wool for Export (Price As -/8/-)
- 435. IS : 19 - 1949 Procedures for Testing Cotton Textiles and Cordages (other than Jute) for Resistance to Attack by Micro-Organisms (Price Rs 1/-)
- 436. IS : 32 - 1950 Code for Seaworthy Packaging of Woollen Textiles (Price Rs 1/-)

**CDC**

- 437. IS : 5 - 1949 Colours for Ready-Mixed Paints (Price Rs 4/-)
- 438. IS : 15 - 1949 Seedlac (Price Rs 1/12/-)



439. IS : 16 - 1949 Shellac ( Price Rs 2/12/- )
440. IS : 17 - 1949 Dry Bleached Lac ( Price Rs 2/- )
441. IS : 33 - 1950 Methods of Test for Dry Pigments and Extenders for Paints ( Price Rs 1/4/- )
442. IS : 34 - 1950 Basic Carbonate of Lead ( White Lead ) for Paints ( Price Rs 1/- )
443. IS : 35 - 1950 Zinc Oxide for Paints ( Price Rs 1/- )
444. IS : 36 - 1950 Leaded Zinc Oxide for Paints ( Price Rs 1/- )
445. IS : 37 - 1950 Lithopone for Paints ( Price Rs 1/4/- )
446. IS : 38 - 1950 Antimony Oxide for Paints ( Price Rs 1/- )
447. IS : 39 - 1950 Basic Sulphate of Lead for Paints ( Price Rs 1/- )
448. IS : 40 - 1950 Carbon Black for Paints ( Price As -/12/- )
449. IS : 41 - 1950 Bone Black for Paints ( Price Rs 1/- )
450. IS : 42 - 1950 Vegetable Black for Paints ( Price As -/12/- )
451. IS : 43 - 1950 Lamp Black for Paints ( Price As -/12/- )
452. IS : 44 - 1950 Black Oxide of Iron for Paints ( Price Rs 1/- )
453. IS : 45 - 1950 Manufactured Red Oxides of Iron for Paints ( Price Rs 1/- )
454. IS : 46 - 1950 Natural Red Oxides of Iron for Paints ( Price Rs 1/- )
455. IS : 47 - 1950 Ochre for Paints ( Price Rs 1/- )
456. IS : 48 - 1950 Natural Sienna ( Raw and Burnt ) for Paints ( Price As -/12/- )
457. IS : 49 - 1950 Natural Umber ( Raw and Burnt ) for Paints ( Price As -/12/- )
458. IS : 50 - 1950 Lead Chrome and Lead Molybdate for Paints ( Price Rs 1/- )
459. IS : 51 - 1950 Zinc Chrome for Paints ( Price Rs 1/- )
460. IS : 52 - 1950 Cadmium Lithopone for Paints ( Price Rs 1/- )
461. IS : 53 - 1950 Brunswick Green for Paints ( Price Rs 1/- )
462. IS : 54 - 1950 Green Oxide of Chromium for Paints ( Price Rs 1/- )
463. IS : 55 - 1950 Ultramarine Blue for Paints ( Price As -/12/- )
464. IS : 56 - 1950 Prussian Blue for Paints ( Price Rs 1/- )
465. IS : 57 - 1950 Red Lead for Paints and Jointing Purposes ( Price Rs 1/- )
466. IS : 58 - 1950 Litharge for Paints ( Price Rs 1/- )
467. IS : 59 - 1950 Pigment Dyestuff for Paints ( Price Rs 1/- )
468. IS : 60 - 1950 Lake Pigments for Paints ( Price Rs 1/- )
469. IS : 61 - 1950 Slate Powder for Paints ( Price As -/12/- )
470. IS : 62 - 1950 Graphite for Paints ( Price As -/12/- )
471. IS : 63 - 1950 Whiting for Paints ( Price Rs 1/- )
472. IS : 64 - 1950 Barytes for Paints ( Price Rs 1/- )
473. IS : 65 - 1950 Blanc Fixe for Paints ( Price Rs 1/- )
474. IS : 66 - 1950 Asbestine for Paints ( Price As -/12/- )
475. IS : 67 - 1950 Silica for Paints ( Price Rs 1/- )
476. IS : 68 - 1950 Kaolin for Paints ( Price Rs 1/- )
477. IS : 69 - 1950 Gypsum ( Calcium Sulphate ) for Paints ( Price Rs 1/- )
478. IS : 70 - 1950 Cuprous Oxide for Paints ( Price Rs 1/- )
479. IS : 71 - 1950 Mercuric Oxide for Paints ( Price Rs 1/- )
480. IS : 72 - 1950 Aluminium Powder for Paints ( Price Rs 1/- )



# APPENDIX 19.10<sup>11</sup>

## CONTRIBUTIONS AND SUBSCRIPTIONS BY THE CENTRAL AND STATE GOVERNMENTS, FIRMS, TRADERS AND INDIVIDUALS FOR THE CALENDAR YEAR 1949

| Contributions   | Rs       | As | P  | Rs       | As              | P         |
|---|----------|----|----|----------|-----------------|-----------|
| 1. Central Government's Grant-in-Aid ... ..   | 2,00,000 | 0  | 0  |          |                 |           |
| Federation of the Mica Associations of Bihar, Hazaribagh ... ..   | 1,500    | 0  | 0  |          |                 |           |
| New Mahaluxmi Oil Mills, Bombay ... ..  | 250      | 0  | 0  |          |                 |           |
| Cochin State ... ..   | 100      | 0  | 0  |          |                 |           |
| Firestone Tyre & Rubber Co. Ltd., Bombay ... ..   | 100      | 0  | 0  | 2,01,950 | 0               | 0         |
| <b>Membership Subscriptions</b>   |          |    |    |          |                 |           |
| 2. Provincial and State Governments :   |          |    |    |          |                 |           |
| Hyderabad ... ..  | 10,000   | 0  | 0* |          |                 |           |
| Bombay ... ..   | 7,500    | 0  | 0  |          |                 |           |
| U.P. ... ..   | 5,250    | 0  | 0  |          |                 |           |
| West Bengal ... ..  | 4,000    | 0  | 0  |          |                 |           |
| Saurashtra ... ..   | 1,250    | 0  | 0  |          |                 |           |
| Madras ... ..   | 1,000    | 0  | 0  |          |                 |           |
| Baroda ... ..   | 1,000    | 0  | 0  |          |                 |           |
| Himachal Pradesh... ..  | 1,000    | 0  | 0  |          |                 |           |
| Patiala and East Punjab States Union ... ..   | 500      | 0  | 0  |          |                 |           |
| Travancore and Cochin ... ..  | 500      | 0  | 0  |          |                 |           |
| Orissa ... ..   | 250      | 0  | 0  |          |                 |           |
| Punjab ... ..   | 250      | 0  | 0  |          |                 |           |
| Bihar ... ..  | 250      | 0  | 0  |          |                 |           |
| Assam ... ..  | 250      | 0  | 0  |          |                 |           |
| C.P. ... ..   | 250      | 0  | 0  |          |                 |           |
| Mysore ... ..   | 250      | 0  | 0  |          |                 |           |
| Jammu and Kashmir ... ..  | 250      | 0  | 0  |          |                 |           |
| Jodhpur ... ..  | 250      | 0  | 0  |          |                 |           |
| Bikaner ... ..  | 250      | 0  | 0  |          |                 |           |
| Banaras State ... ..  | 250      | 0  | 0  | 34,500   | 0               | 0         |
| 3. Firms, Trade Associations, non-Government Bodies, etc, including the following bodies paying more than the minimum : |          |    |    |          |                 |           |
| Delhi Cloth & General Mills Co. Ltd., Delhi ... ..  | 1,500    | 0  | 0  |          |                 |           |
| Associated Cement Companies, Bombay ... ..  | 1,000    | 0  | 0  |          |                 |           |
| *Federation of Indian Chambers of Commerce and Industry, New Delhi ... ..   | 1,000    | 0  | 0  |          |                 |           |
| Tata Iron & Steel Co. Ltd., Bombay ... ..   | 1,000    | 0  | 0  |          |                 |           |
| D. C. M. Chemical Works, Delhi ... ..   | 1,000    | 0  | 0  |          |                 |           |
| Saru Smelting & Refining Corporation Ltd., Meerut ... ..  | 500      | 0  | 0  |          |                 |           |
| *Indian Jute Mills' Association, Calcutta ... ..  | 500      | 0  | 0  |          |                 |           |
| B. M. Singh & Son, Calcutta ... ..  | 500      | 0  | 0  |          |                 |           |
| Madura Mills Co. Limited, Madura ... ..   | 500      | 0  | 0  |          |                 |           |
| Engineering Association of India, Calcutta ... ..   | 500      | 0  | 0  |          |                 |           |
| Lever Brothers (India) Ltd., Bombay ... ..  | 500      | 0  | 0  |          |                 |           |
| P. C. Chanda & Co. Ltd., Calcutta ... ..  | 500      | 0  | 0  |          |                 |           |
| Hindustan Vanaspati Manufacturing Co. Ltd., Bombay ... ..   | 500      | 0  | 0  |          |                 |           |
| Associated British Machine Tool Makers Ltd., Calcutta ... ..  | 500      | 0  | 0  |          |                 |           |
| Sinclair Murray & Co. Ltd., Calcutta ... ..   | 500      | 0  | 0  |          |                 |           |
| Dalmia Cement Limited, New Delhi ... ..   | 500      | 0  | 0  |          |                 |           |
| Shree Karan Singh Woollen Mills Ltd., Srinagar ( Kashmir ) ... ..   | 500      | 0  | 0  |          |                 |           |
| Chloride and Exide Batteries Eastern Ltd., Calcutta ... ..  | 500      | 0  | 0  |          |                 |           |
| Indian Copper Corporation Ltd., Ghatsila ... ..   | 350      | 0  | 0  |          |                 |           |
| Crompton Parkinson ( Works ) Ltd., Bombay ... ..  | 350      | 0  | 0  |          |                 |           |
| Estrela Batteries Ltd., Bombay ... ..   | 350      | 0  | 0  |          |                 |           |
| Indian Galvanizing Co. ( 1926 ) Ltd., Calcutta ... ..   | 300      | 0  | 0  |          |                 |           |
| Ganges Galvanizing Works, Sulkia, Howrah ... ..   | 300      | 0  | 0  |          |                 |           |
| Angelo Brothers Ltd., Calcutta ... ..   | 300      | 0  | 0  |          |                 |           |
| Association of Merchants & Manufacturers of Textile Stores & Machinery, Bombay ... ..                                   | 300      | 0  | 0  |          |                 |           |
| Texmaco ( Gwalior ) Ltd., Gwalior ... ..  | 300      | 0  | 0  |          |                 |           |
| Coal Consumers' Association of India, Calcutta ... ..   | 300      | 0  | 0  |          |                 |           |
| Kaycee Industries Ltd., Bombay ... ..   | 300      | 0  | 0  |          |                 |           |
| The I. R. P. ( Radio ) Ltd., Calcutta ... ..  | 300      | 0  | 0  |          |                 |           |
| The British Metal Corporation ( India ) Ltd., Calcutta ... ..   | 300      | 0  | 0  |          |                 |           |
| Bengal Silk & Art Silk Millowners' Association, Calcutta ... ..   | 300      | 0  | 0  |          |                 |           |
| C. C. Wakefield & Co. Ltd., Bombay ... ..   | 300      | 0  | 0  |          |                 |           |
| Hasanbhoy Jetha, Bombay ... ..  | 300      | 0  | 0  |          |                 |           |
| Bungo Steel Furniture Ltd., Calcutta ... ..   | 300      | 0  | 0  |          |                 |           |
| Others at Rs 250/- each ... ..  | 1,00,002 | 0  | 0  | 1,16,952 | 0               | 0         |
| 4. Sustaining Members ( Associates ) ... ..   |          |    |    |          | 600             | 0         |
| 5. Ordinary Members ... ..  |          |    |    |          | 1,035           | 10        |
| <b>Total Subscription</b> ... ..  |          |    |    |          | <b>1,53,087</b> | <b>10</b> |
| <b>Grand Total</b> ... ..   |          |    |    |          | <b>3,55,037</b> | <b>10</b> |

\*Ad hoc grant for 1949.



# APPENDIX

## BUDGET AND REVISED BUDGET FOR

| PART I<br>HEADS OF INCOME                                    | INCOME                |   |   |  |   |   | REVISED BUDGET<br>FOR 1949-50 |      | BUDGET<br>FOR 1949-50 |          |   |   |
|--|-----------------------|---|---|--|---|---|-------------------------------|------|-----------------------|----------|---|---|
|  | ESTIMATES FOR 1950-51 |   |   |  |   |   |                               |      |                       |          |   |   |
|  | Normal Budget         |   |   | Certification Mark<br>Division Council |   |   | Rs                            | As P | Rs                    | As P     |   |   |
| 1. Government Grant  | 2,20,000              | 0 | 0 | 72,000                                 | 0 | 0 | 2,00,000                      | 0    | 0                     | 2,00,000 | 0 | 0 |
| 2. Contribution from other sources                           | ...                   |   |   | ...                                    |   |   | 1,950                         | 0    | 0                     | 100      | 0 | 0 |
| 3. Subscription :  |                       |   |   |  |   |   |                               |      |                       |          |   |   |
| i) Sustaining  |                       |   |   |  |   |   |                               |      |                       |          |   |   |
| ii) " (A)  |                       |   |   |  |   |   |                               |      |                       |          |   |   |
| iii) Ordinary  | 1,75,000              | 0 | 0 | ...                                    |   |   | 1,52,000                      | 0    | 0                     | 1,40,000 | 0 | 0 |
| 4. Interest on Fixed Deposits and other Investments          | 4,000                 | 0 | 0 | ...                                    |   |   | 2,635                         | 0    | 0                     | 2,625    | 0 | 0 |
| 5. Miscellaneous   | 100                   | 0 | 0 | ...                                    |   |   | 115                           | 0    | 0                     | 500      | 0 | 0 |
| 6. Sale Proceeds of ISI Publications                         | 20,000                | 0 | 0 | ...                                    |   |   | 3,000                         | 0    | 0                     | 5,000    | 0 | 0 |
| 7. Sale Proceeds of Overseas Publications                    | 20,000                | 0 | 0 | ...                                    |   |   | 15,000                        | 0    | 0                     | ...      |   |   |
| 8. Commission Earned on Overseas Publications during 1948-49 | ...                   |   |   | ...                                    |   |   | 2,000                         | 0    | 0                     | 2,000    | 0 | 0 |
| 9. Suspense Account  | ...                   |   |   | ...                                    |   |   | 50                            | 0    | 0                     | ...      |   |   |
| 10. Licensing Fees   | ...                   |   |   | 4,700                                  | 0 | 0 | ...                           |      |                       | ...      |   |   |
|  | 4,39,100              | 0 | 0 | 76,700                                 | 0 | 0 |                               |      |                       |          |   |   |
| <i>Total carried over to Part II</i>                         | 5,15,800 0 0          |   |   | 3,76,750 0 0                           |   |   | 3,50,225 0 0                  |      |                       |          |   |   |

| PART II<br>HEADS OF INCOME                          | LIABILITIES                  |    |    |          |    |    | REVISED BUDGET<br>FOR 1949-50 |    | BUDGET<br>FOR 1949-50 |   |
|---|------------------------------|----|----|----------|----|----|-------------------------------|----|-----------------------|---|
|   | BUDGET ESTIMATES FOR 1950-51 |    |    |          |    |    |                               |    |                       |   |
|   |                              | Rs | As | P        | Rs | As | P                             | Rs | As                    | P |
| <i>Brought forward from Part I</i>                  | 5,15,800                     | 0  | 0  | 3,76,750 | 0  | 0  | 3,50,225                      | 0  | 0                     |   |
| 1. Balance of Excess of Income over Expenditure     | 3,09,714                     | 1  | 0  | 3,65,136 | 1  | 0  | 1,16,010                      | 7  | 6*                    |   |
|   |                              |    |    |          |    |    | 1,75,000                      | 0  | 0†                    |   |
|   |                              |    |    |          |    |    | 18,839                        | 4  | 0‡                    |   |
| 2. i) Sales of Overseas Publications during 1948-49 | ...                          |    |    | 3,930    | 9  | 0  | ...                           |    |                       |   |
| ii) Liability                                       | ...                          |    |    | 0        | 12 | 0  | ...                           |    |                       |   |
| 3. Suspense Account                                 | ...                          |    |    | 4        | 8  | 0  | ...                           |    |                       |   |
| 4. Bills payable                                    | ...                          |    |    | 38       | 6  | 0  | ...                           |    |                       |   |
| 5. Indian Embassy in Paris                          | ...                          |    |    | 1,652    | 0  | 0  | ...                           |    |                       |   |
| 6. B.S.I.   | ...                          |    |    | 15       | 3  | 0  | ...                           |    |                       |   |
| <b>GRAND TOTAL</b>                                  | 8,25,514                     | 1  | 0  | 7,47,527 | 7  | 0  | 6,60,074                      | 11 | 6                     |   |

\* This figure represents Bank balance. † This figure represents fixed deposits. ‡ This figure represents assets.



19,11

## THE YEAR 1949-50 AND BUDGET FOR THE YEAR 1950-51

| PART I<br>HEADS OF EXPENDITURE                                  | EXPENDITURE           |          |   |  |    |   | REVISED BUDGET<br>FOR 1949-50 |    | BUDGET<br>FOR 1949-50 |          |   |   |
|---|-----------------------|----------|---|--|----|---|-------------------------------|----|-----------------------|----------|---|---|
|   | ESTIMATES FOR 1950-51 |          |   |  |    |   | Rs                            |    | As P                  |          |   |   |
|   | Normal Budget         |          |   | Certification Mark<br>Division Council |    |   |                               |    |                       |          |   |   |
|   | Rs                    | As       | P | Rs                                     | As | P | Rs                            | As | P                     |          |   |   |
| 1. Pay of Officers  | 1,22,000              | 0        | 0 | 26,400                                 | 0  | 0 | 1,08,000                      | 0  | 0                     | 93,000   | 0 | 0 |
| 2. Allowances of Officers                                       | 25,000                | 0        | 0 | 5,460                                  | 0  | 0 | 19,000                        | 0  | 0                     | 26,000   | 0 | 0 |
| 3. Provident Fund Contribution for Officers                     | 11,000                | 0        | 0 | 1,650                                  | 0  | 0 | 9,000                         | 0  | 0                     | 7,700    | 0 | 0 |
| 4. T.A. for :   |                       |          |   |  |    |   |                               |    |                       |          |   |   |
| i) Officers   | 35,000                | 0        | 0 | 8,000                                  | 0  | 0 | 27,000                        | 0  | 0                     | 30,000   | 0 | 0 |
| ii) Committee Members   | 10,000                | 0        | 0 | ...                                    |    |   | 8,000                         | 0  | 0                     | 10,000   | 0 | 0 |
| 5. Pay of Establishment   | 92,000                | 0        | 0 | 13,860                                 | 0  | 0 | 64,700                        | 0  | 0                     | 88,000   | 0 | 0 |
| 6. Allowances of Establishment                                  | 61,000                | 0        | 0 | 6,900                                  | 0  | 0 | 41,300                        | 0  | 0                     | 50,700   | 0 | 0 |
| 7. Provident Fund Contribution for Staff                        | 5,000                 | 0        | 0 | 880                                    | 0  | 0 | 4,000                         | 0  | 0                     | 7,000    | 0 | 0 |
| 8. T.A. for Staff   | 5,000                 | 0        | 0 | 2,000                                  | 0  | 0 | 4,000                         | 0  | 0                     | 10,000   | 0 | 0 |
| 9. Subscription for ISO and IEC                                 | 10,000                | 0        | 0 | ...                                    |    |   | 12,500                        | 0  | 0                     | 9,500    | 0 | 0 |
| 10. Printing ( Pub.) Charges                                    | 65,000                | 0        | 0 | ...                                    |    |   | 45,000                        | 0  | 0                     | 25,000   | 0 | 0 |
| 11. Other Charges :   |                       |          |   |  |    |   |                               |    |                       |          |   |   |
| i) Stationery including printing                                | 13,000                | 0        | 0 | 2,200                                  | 0  | 0 | 15,000                        | 0  | 0                     | 13,000   | 0 | 0 |
| ii) Postage and Telegrams                                       | 12,000                | 0        | 0 | 1,000                                  | 0  | 0 | 8,000                         | 0  | 0                     | 8,000    | 0 | 0 |
| iii) Purchase of Publications :                                 |                       |          |   |  |    |   |                               |    |                       |          |   |   |
| a) Books for Sale   | 15,000                | 0        | 0 | ...                                    |    |   | 12,000                        | 0  | 0                     | 10,000   | 0 | 0 |
| b) Books for Library  | 3,000                 | 0        | 0 | ...                                    |    |   | 2,000                         | 0  | 0                     | ...      |   |   |
| iv) Telephones  | 3,000                 | 0        | 0 | 600                                    | 0  | 0 | 1,500                         | 0  | 0                     | 3,000    | 0 | 0 |
| v) Furniture, Office Equipment and Partitions                   | 15,500                | 0        | 0 | 2,400                                  | 0  | 0 | 13,000                        | 0  | 0                     | 16,000   | 0 | 0 |
| vi) Rent of Building  | 20,000                | 0        | 0 | 1,600                                  | 0  | 0 | 20,000                        | 0  | 0                     | 20,000   | 0 | 0 |
| vii) Electric and Water Charges                                 | 3,500                 | 0        | 0 | 200                                    | 0  | 0 | 2,500                         | 0  | 0                     | 2,000    | 0 | 0 |
| viii) Miscellaneous   | 10,000                | 0        | 0 | 1,000                                  | 0  | 0 | 8,000                         | 0  | 0                     | 8,000    | 0 | 0 |
| ix) Advertisement   | 2,500                 | 0        | 0 | 1,500                                  | 0  | 0 | 2,500                         | 0  | 0                     | 1,500    | 0 | 0 |
| x) Audit Charges  | 1,000                 | 0        | 0 | 150                                    | 0  | 0 | 672                           | 0  | 0                     | 1,000    | 0 | 0 |
| xi) Depreciation on Head 11-v                                   | ...                   |          |   | ...                                    |    |   | ...                           |    |                       | 1,500    | 0 | 0 |
| xii) Medical Relief   | 3,000                 | 0        | 0 | 900                                    | 0  | 0 | 1,500                         | 0  | 0                     | 4,000    | 0 | 0 |
| 12. Cost of Transferring Headquarters                           | 1,000                 | 0        | 0 | ...                                    |    |   | ...                           |    |                       | 30,000   | 0 | 0 |
| 13. Charges for Convening ISO Meetings on Lac and Mica in India | 10,000                | 0        | 0 | ...                                    |    |   | 3,000                         | 0  | 0                     | 20,000   | 0 | 0 |
|   | 5,53,500              | 0        | 0 | 76,700                                 | 0  | 0 |                               |    |                       |          |   |   |
| <i>Total carried over to Part II</i>                            |                       | 6,30,200 | 0 | 0                                      |    |   | 4,32,172                      | 0  | 0                     | 4,94,900 | 0 | 0 |

| PART II<br>HEADS OF EXPENDITURE  | ASSETS                          |    |   |          |    |    | REVISED BUDGET<br>FOR 1949-50 |    | BUDGET<br>FOR 1949-50 |  |
|--|---------------------------------|----|---|----------|----|----|-------------------------------|----|-----------------------|--|
|  | BUDGET ESTIMATES<br>for 1950-51 |    |   |          |    |    | Rs                            |    | As P                  |  |
|  | Rs                              | As | P | Rs       | As | P  |                               |    |                       |  |
| <i>Brought forward from Part I</i>   | 6,30,200                        | 0  | 0 | 4,32,172 | 0  | 0  | 4,94,900                      | 0  | 0                     |  |
| 1. Advances Recoverable  | ...                             |    |   | 573      | 0  | 0  | ...                           |    |                       |  |
| 2. Furniture and Office Equipment  | 24,762                          | 0  | 0 | 24,762   | 0  | 0  | 15,121                        | 0  | 0                     |  |
| 3. Publications (Liby. Books)  | 3,477                           | 10 | 8 | 3,477    | 10 | 8  | 2,218                         | 4  | 0                     |  |
| 4. Overseas Adjustable Advances :  |                                 |    |   |          |    |    |                               |    |                       |  |
| i) H.M. Stationery Office  | ...                             |    |   | 62       | 3  | 0  | ...                           |    |                       |  |
| ii) Superintendent, Department of Documents                                | ...                             |    |   | 0        | 5  | 6  | ...                           |    |                       |  |
| 5. Balance of Advance with Controller of Printing and Stationery, Calcutta | ...                             |    |   | 9        | 12 | 0  | ...                           |    |                       |  |
| 6. Paper Stock   | ...                             |    |   | 85       | 4  | 0  | ...                           |    |                       |  |
| 7. Bills Recoverable for Sale of Books :                                   |                                 |    |   |          |    |    |                               |    |                       |  |
| i) I.S.I. Pub.   | ...                             |    |   | 13       | 9  | 0  | ...                           |    |                       |  |
| ii) Overseas Pub.  | ...                             |    |   | 131      | 12 | 0  | ...                           |    |                       |  |
| 8. Imprest with Cashier and Despatcher                                     | 900                             | 0  | 0 | 900      | 0  | 0  | ...                           |    |                       |  |
| 9. Fixed Deposit   | 1,25,000                        | 0  | 0 | 1,75,000 | 0  | 0  | 1,25,000                      | 0  | 0                     |  |
| 10. Other Deposits   | 80                              | 0  | 0 | 80       | 0  | 0  | ...                           |    |                       |  |
| 11. Balance in Bank  | 41,094                          | 6  | 4 | 1,10,259 | 14 | 10 | 22,835                        | 7  | 6                     |  |
|  | 8,25,514                        | 1  | 0 | 7,47,527 | 7  | 0  | 6,60,074                      | 11 | 6                     |  |



APPENDIX 19.12.13

RECEIPTS AND PAYMENTS ACCOUNT AS AT 31 MARCH 1950

| RECEIPTS                             |              |    |   |                |    |   |          | PAYMENTS |                      |   |          |    |                |          |    |         |          |    |   |
|--------------------------------------|--------------|----|---|----------------|----|---|----------|----------|----------------------|---|----------|----|----------------|----------|----|---------|----------|----|---|
| HEADS OF RECEIPTS                    | BUDGET GRANT |    |   | REVISED BUDGET |    |   | ACTUALS  |          | HEADS OF EXPENDITURE | BUDGET GRANT                                  |          |    | REVISED BUDGET |          |    | ACTUALS |          |    |   |
|                                      | Rs           | As | P | Rs             | As | P | Rs       | As       |                      | P   | Rs       | As | P              | Rs       | As | P       | Rs       | As | P |
| 1. Opening Bank Balance and Cash     | 1,16,010     | 7  | 6 | ...            |    |   | 2,18,853 | 4        | 1                    | 1. Pay of Officers                            | 93,000   | 0  | 0              | 1,08,000 | 0  | 0       | 1,03,234 | 11 | 0 |
| Fixed Deposits                       | 1,75,000     | 0  | 0 | 3,65,136       | 1  | 0 | 1,75,000 | 0        | 0                    | 2. Allowances of Officers                     | 26,000   | 0  | 0              | 19,000   | 0  | 0       | 12,592   | 15 | 0 |
| Assets                               | 18,839       | 4  | 0 | ...            |    |   | ...      |          |                      | 3. Provident Fund Contribution for Officers   | 7,700    | 0  | 0              | 9,000    | 0  | 0       | 7,741    | 0  | 0 |
| Imprest                              | ...          |    |   | ...            |    |   | 900      | 0        | 0                    | 4. T.A. for :                                 |          |    |                |          |    |         |          |    |   |
| 2. Government Grant                  | 2,00,000     | 0  | 0 | 2,00,000       | 0  | 0 | 2,00,000 | 0        | 0                    | i) Officers                                   | 30,000   | 0  | 0              | 27,000   | 0  | 0       | 18,419   | 13 | 0 |
| 3. Contribution from other sources : |              |    |   |                |    |   |          |          |                      | ii) Committee Members                         | 10,000   | 0  | 0              | 8,000    | 0  | 0       | 7,387    | 4  | 0 |
| 1949                                 | 100          | 0  | 0 | 1,950          | 0  | 0 | 1,850    | 0        | 0                    | 5. Pay of Establishment                       | 88,000   | 0  | 0              | 64,700   | 0  | 0       | 60,687   | 5  | 0 |
| 1950                                 | ...          |    |   | ...            |    |   | 200      | 0        | 0                    | 6. Allowances of Establishment                | 50,700   | 0  | 0              | 41,300   | 0  | 0       | 38,988   | 11 | 0 |
| 4. Subscription for 1949 :           |              |    |   |                |    |   |          |          |                      | 7. Provident Fund Contribution for Staff      | 7,000    | 0  | 0              | 4,000    | 0  | 0       | 2,915    | 0  | 0 |
| Rs As P                              |              |    |   |                |    |   |          |          |                      | 8. T.A. for staff                             | 10,000   | 0  | 0              | 4,000    | 0  | 0       | 2,495    | 2  | 6 |
| i) Sustaining Members, Old           | 64,051       | 0  | 0 | 1,40,000       | 0  | 0 | 1,52,000 | 0        | 0                    | 9. Subscription for ISO and IEC               | 9,500    | 0  | 0              | 12,500   | 0  | 0       | 12,468   | 10 | 0 |
| ii) Sustaining Members, New          | 33,750       | 0  | 0 | ...            |    |   | 98,951   | 6        | 0                    | 10. Printing (Pub.) Charges                   | 25,000   | 0  | 0              | 45,000   | 0  | 0       | 30,651   | 6  | 9 |
| iii) Sustaining (A)                  | 500          | 0  | 0 | ...            |    |   |          |          |                      | 11. Other Charges :                           |          |    |                |          |    |         |          |    |   |
| iv) Ordinary, Old                    | 375          | 6  | 0 | ...            |    |   |          |          |                      | i) Stationery including printing              | 13,000   | 0  | 0              | 15,000   | 0  | 0       | 14,759   | 4  | 6 |
| v) Ordinary, New                     | 275          | 0  | 0 | ...            |    |   |          |          |                      | ii) Postage and Telegrams                     | 8,000    | 0  | 0              | 8,000    | 0  | 0       | 7,945    | 12 | 3 |
| 98,951                               | 6            | 0  |   | ...            |    |   |          |          |                      | iii) Purchase of Publications :               |          |    |                |          |    |         |          |    |   |
| 5. Subscription for 1950 :           |              |    |   |                |    |   |          |          |                      | a) Books for Sale                             | 10,000   | 0  | 0              | 12,000   | 0  | 0       | 4,982    | 0  | 9 |
| Rs As P                              |              |    |   |                |    |   |          |          |                      | b) Books for Library                          | ...      |    |                | 2,000    | 0  | 0       | 2,518    | 1  | 0 |
| i) Sustaining Members, Old           | 71,076       | 12 | 0 | ...            |    |   | 90,528   | 10       | 0                    | iv) Telephones                                | 3,000    | 0  | 0              | 1,500    | 0  | 0       | 1,464    | 11 | 0 |
| ii) Sustaining Members, New          | 17,750       | 0  | 0 | ...            |    |   |          |          |                      | v) Furniture, Office Equipment and Partitions | 16,000   | 0  | 0              | 13,000   | 0  | 0       | 12,167   | 1  | 0 |
| iii) Sustaining Members (A)          | 800          | 8  | 0 | ...            |    |   |          |          |                      | vi) Rent of Building                          | 20,000   | 0  | 0              | 20,000   | 0  | 0       | 10,023   | 12 | 3 |
| iv) Ordinary Members, Old            | 676          | 2  | 0 | ...            |    |   |          |          |                      | vii) Electric and Water Charges               | 2,000    | 0  | 0              | 2,500    | 0  | 0       | 1,812    | 8  | 9 |
| v) Ordinary Members, New             | 225          | 4  | 0 | ...            |    |   |          |          |                      | viii) Miscellaneous                           | 8,000    | 0  | 0              | 8,000    | 0  | 0       | 7,827    | 2  | 0 |
| 90,528                               | 10           | 0  |   | ...            |    |   |          |          |                      | Carried over                                  | 4,36,900 | 0  | 0              | 4,24,500 | 0  | 0       | 3,61,082 | 3  | 9 |
| Carried over                         | 6,49,949     | 11 | 6 | 7,19,086       | 1  | 0 | 7,86,283 | 4        | 1                    |   |          |    |                |          |    |         |          |    |   |



**RECEIPTS AND PAYMENTS ACCOUNT AS AT 31 MARCH 1950 (contd.)**

| RECEIPTS  |              |    |   |                |    |   | PAYMENTS |    |                      |  |          |    |                |          |    |         |          |    |   |
|---|--------------|----|---|----------------|----|---|----------|----|----------------------|--|----------|----|----------------|----------|----|---------|----------|----|---|
| HEADS OF RECEIPTS   | BUDGET GRANT |    |   | REVISED BUDGET |    |   | ACTUALS  |    | HEADS OF EXPENDITURE | BUDGET GRANT   |          |    | REVISED BUDGET |          |    | ACTUALS |          |    |   |
|   | Rs           | As | P | Rs             | As | P | Rs       | As |                      | P  | Rs       | As | P              | Rs       | As | P       |          |    |   |
| <i>Brought forward</i>  | 6,49,949     | 11 | 6 | 7,19,086       | 1  | 0 | 7,86,283 | 4  | 1                    | <i>Brought forward</i>   | 4,36,900 | 0  | 0              | 4,24,500 | 0  | 0       | 3,61,082 | 3  | 9 |
| vi) Ordinary Members, Old for 1951  | ...          |    |   | ...            |    |   | 25       | 0  | 0                    | ix) Advertisement  | 1,500    | 0  | 0              | 2,500    | 0  | 0       | 2,428    | 15 | 0 |
| 6. Interest on Fixed Deposits and other sources   | 2,625        | 0  | 0 | 2,635          | 0  | 0 | 2,639    | 10 | 0                    | x) Audit Charges   | 1,000    | 0  | 0              | 672      | 0  | 0       | 672      | 0  | 0 |
| 7. Miscellaneous  | 500          | 0  | 0 | 115            | 0  | 0 | 348      | 3  | 0                    | xi) Depreciation on Head 11-v  | 1,500    | 0  | 0              | ...      |    |         | ...      |    |   |
| 8. Sale Proceeds of ISI Pub. during 1949-50 (Recoveries)  | 5,000        | 0  | 0 | 3,000          | 0  | 0 | 2,952    | 3  | 0                    | xii) Medical Relief  | 4,000    | 0  | 0              | 1,500    | 0  | 0       | 655      | 7  | 0 |
| 9. Bills Recovered for ISI Sales during 1948-49   | ...          |    |   | ...            |    |   | 106      | 12 | 0                    | 12. Cost of Transferring Headquarters                                    | 30,000   | 0  | 0              | ...      |    |         | ...      |    |   |
| 10. Bills Recovered for Overseas Sales during 1948-49   | ...          |    |   | ...            |    |   | 806      | 14 | 0                    | 13. Charges for Convening ISO Meetings on Lac and Mica in India          | 20,000   | 0  | 0              | 3,000    | 0  | 0       | 2,941    | 15 | 6 |
| 11. Sales of Overseas Pub. 1949-50 :  |              |    |   |                |    |   |          |    |                      |  | 4,94,900 | 0  | 0              | 4,32,172 | 0  | 0       | 3,67,780 | 9  | 3 |
| Rs   As P   |              |    |   |                |    |   |          |    |                      | <i>Miscellaneous Remittances</i>   |          |    |                |          |    |         |          |    |   |
| i) ASA, ASTM and others   | 3,601        | 1  | 0 | ...            |    |   | 14,882   | 5  | 0                    | 14. Advances to Staff for purchase of conveyance                         | ...      |    |                | ...      |    |         | 1,325    | 0  | 0 |
| ii) BSI   | 11,281       | 4  | 0 | 15,000         | 0  | 0 | ...      |    |                      | 15. Paid to High Com. for India in UK                                    | ...      |    |                | ...      |    |         | 1,335    | 10 | 5 |
| 12. Commission on Overseas Sales of Publications during 1948-49   | 2,000        | 0  | 0 | 2,000          | 0  | 0 | ...      |    |                      | 16. Paid to ASA  | ...      |    |                | ...      |    |         | 16       | 13 | 0 |
| 13. Suspense Account  | ...          |    |   | 50             | 0  | 0 | 25       | 0  | 0                    | 17. Paid against the sale of Overseas Pub. during 1948-49                | ...      |    |                | ...      |    |         | 1,163    | 15 | 0 |
|   | 6,60,074     | 11 | 6 | 7,41,886       | 1  | 0 | 8,08,069 | 3  | 1                    | 18. Paid to Sadanand & Sons  | ...      |    |                | ...      |    |         | 155      | 0  | 0 |
| <i>Miscellaneous Credits</i>  |              |    |   |                |    |   |          |    |                      | 19. Adjustable Advances to D.D.G. Phones                                 | ...      |    |                | ...      |    |         | 156      | 5  | 0 |
| 14. Credit of Estate Officer  | ...          |    |   | ...            |    |   | 5,004    | 7  | 6                    | 20. Suspense Account 1948-49 (Paid to Siri Kishan)                       | ...      |    |                | ...      |    |         | 4        | 8  | 0 |
| 15. Received from Director for Credit of :<br>High Commissioner for India in UK, against his tour to Geneva in 1948 | ...          |    |   | ...            |    |   | 3        | 10 | 5                    | 21. Bills Payable (Allibhoy Vallejee & Co.)                              | ...      |    |                | ...      |    |         | 38       | 6  | 0 |
| 16. Credit of Paper Stock   | ...          |    |   | ...            |    |   | 1,163    | 12 | 0                    | 22. Liabilities for the year 1949-50 transferred to regular sale account | ...      |    |                | ...      |    |         | 0        | 12 | 0 |
| <i>Carried over</i>   | 6,60,074     | 11 | 6 | 7,41,886       | 1  | 0 | 8,14,241 | 1  | 0                    | <i>Carried over</i>  | 4,94,900 | 0  | 0              | 4,32,172 | 0  | 0       | 3,71,976 | 14 | 8 |



RECEIPTS AND PAYMENTS ACCOUNT AS AT 31 MARCH 1950 (contd.)

| HEADS OF RECEIPTS  | RECEIPTS     |    |   |                |    |   | HEADS OF EXPENDITURE | PAYMENTS |    |   |              |    |   |                |    |    |          |    |   |
|--|--------------|----|---|----------------|----|---|----------------------|----------|----|---|--------------|----|---|----------------|----|----|----------|----|---|
|  | BUDGET GRANT |    |   | REVISED BUDGET |    |   |                      | ACTUALS  |    |   | BUDGET GRANT |    |   | REVISED BUDGET |    |    | ACTUALS  |    |   |
|  | Rs           | As | P | Rs             | As | P |                      | Rs       | As | P   | Rs           | As | P | Rs             | As | P  | Rs       | As | P |
| <i>Brought forward</i>   | 6,60,074     | 11 | 6 | 7,41,886       | 1  | 0 | 8,14,241             | 1        | 0  | <i>Brought forward</i>                    | 4,94,900     | 0  | 0 | 4,32,172       | 0  | 0  | 3,71,976 | 14 | 8 |
| 17. Received from CPF a/c on account of excess paid in 1948-49 | ...          |    |   | ...            |    |   | 172                  | 0        | 0  | 1. Furniture and Office Equipment         | 15,121       | 0  | 0 | 24,762         | 0  | 0  | ...      |    |   |
| 18. Adjustment of Overseas Advances:                           |              |    |   |                |    |   |                      |          |    | 2. Library Books                          | 2,218        | 4  | 0 | 3,477          | 10 | 8  | ...      |    |   |
| i) H.M. Stationery Office                                      | ...          |    |   | ...            |    |   | 47                   | 9        | 6  | 3. Advances Recoverable from Staff        | ...          |    |   | 573            | 0  | 0  | ...      |    |   |
| ii) Supt. of Documents   | ...          |    |   | ...            |    |   | 1                    | 3        | 3  | 4. Overseas Adjustable Advances:          |              |    |   |                |    |    | ...      |    |   |
| 19. Adjustment of Deputy Controller of Stationery, Calcutta    | ...          |    |   | ...            |    |   | 9                    | 12       | 0  | i) H.M. Stationery Office                 | ...          |    |   | 62             | 3  | 0  | ...      |    |   |
| 20. Credit of Late C. P. Hal-katti, ADT                        | ...          |    |   | ...            |    |   | 581                  | 1        | 0  | ii) Supt. of Documents                    | ...          |    |   | 0              | 5  | 6  | ...      |    |   |
| 21. W. T. Avery & Co. Ltd., Calcutta                           | ...          |    |   | ...            |    |   | 185                  | 0        | 0  | 5. Dy. Controller of Stationery, Calcutta | ...          |    |   | 9              | 12 | 0  | ...      |    |   |
| 22. Electrical Engineer A. Dn., New Delhi                      | ...          |    |   | ...            |    |   | 196                  | 2        | 6  | 6. Paper Stock                            | ...          |    |   | 85             | 4  | 0  | ...      |    |   |
| 23. Bhagwan Singh & Sons                                       | ...          |    |   | ...            |    |   | 212                  | 0        | 0  | 7. Bills Recoverable:                     |              |    |   |                |    |    | ...      |    |   |
| 24. Cycle advances recovered                                   | ...          |    |   | ...            |    |   | 1,004                | 0        | 0  | i) ISI Sales 1948-49                      | ...          |    |   | 13             | 9  | 0  | ...      |    |   |
|  | 6,60,074     | 11 | 6 | 7,41,886       | 1  | 0 | 8,16,649             | 13       | 3  | ii) Overseas Sales 1948-49                | ...          |    |   | 131            | 12 | 0  | ...      |    |   |
| 1. Sales of Overseas Pub. 1948-49                              | ...          |    |   | 3,930          | 9  | 0 | ...                  |          |    | 8. Fixed Deposits                         | 1,25,000     | 0  | 0 | 1,75,000       | 0  | 0  | 2,75,000 | 0  | 0 |
| 2. Liability   | ...          |    |   | 0              | 12 | 0 | ...                  |          |    | 9. Imprest                                | ...          |    |   | 900            | 0  | 0  | 700      | 0  | 0 |
| 3. Suspense Account  | ...          |    |   | 4              | 8  | 0 | ...                  |          |    | 10. Other Deposits                        | ...          |    |   | 80             | 0  | 0  | ...      |    |   |
| 4. Bills Payable (Allibhoy Valleejee)                          | ...          |    |   | 38             | 6  | 0 | ...                  |          |    | 11. Balance in Bank                       | 22,835       | 7  | 6 | 1,10,259       | 14 | 10 | 1,68,972 | 14 | 7 |
| 5. Indian Embassy in Paris BSI                                 | ...          |    |   | 1,652          | 0  | 0 | ...                  |          |    |   |              |    |   |                |    |    |          |    |   |
|  | ...          |    |   | 15             | 3  | 0 | ...                  |          |    |   |              |    |   |                |    |    |          |    |   |
|  | 6,60,074     | 11 | 6 | 7,47,527       | 7  | 0 | 8,16,649             | 13       | 3  |   | 6,60,074     | 11 | 6 | 7,47,527       | 7  | 0  | 8,16,649 | 13 | 3 |

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Indian Standards Institution  
Delhi



**INCOME AND EXPENDITURE ACCOUNT AS AT 31 MARCH 1950**

| EXPENDITURE   |              |      |                |      |          | INCOME |  |              |      |                |              |               |      |
|---|--------------|------|----------------|------|----------|--------|--|--------------|------|----------------|--------------|---------------|------|
| HEADS OF ACCOUNT  | BUDGET GRANT |      | REVISED BUDGET |      | ACTUALS  |        | HEADS OF INCOME  | BUDGET GRANT |      | REVISED BUDGET |              | ACTUALS       |      |
|   | Rs           | As P | Rs             | As P | Rs       | As P   |  | Rs           | As P | Rs             | As P         | Rs            | As P |
| 1. Pay of Officers  | 93,000       | 0 0  | 1,08,000       | 0 0  | 1,03,234 | 11 0   | 1. Govt. Grant   | 2,00,000     | 0 0  | 2,00,000       | 0 0          | 2,00,000      | 0 0  |
| 2. Allowances of Officers                                       | 26,000       | 0 0  | 19,000         | 0 0  | 12,592   | 15 0   | 2. Contribution from other sources :                         |              |      |                |              |               |      |
| 3. Provident Fund of Officers (contribution and interest)       | 7,700        | 0 0  | 9,000          | 0 0  | 7,741    | 0 0    | Rs As P  |              |      |                |              |               |      |
| 4. T.A. for :   |              |      |                |      |          |        | i) During 1948-49  | 100          | 0 0  | } 100 0 0      | 1,950 0 0    | 1,950 0 0     |      |
| i) Officers   | 30,000       | 0 0  | 27,000         | 0 0  | 18,419   | 13 0   | ii) During 1949-50   | 1,850        | 0 0  |                |              |               |      |
| ii) Committee Members   | 10,000       | 0 0  | 8,000          | 0 0  | 7,387    | 4 0    | 3. Subscription for 1949 :                                   |              |      |                |              |               |      |
| 5. Pay of Establishment   | 88,000       | 0 0  | 64,700         | 0 0  | 60,687   | 5 0    | i) Collection made during 1948-49                            | 54,136       | 4 0  | } 1,40,000 0 0 | 1,52,000 0 0 | 1,53,087 10 0 |      |
| 6. Allowances of Establishment                                  | 50,700       | 0 0  | 41,300         | 0 0  | 38,988   | 11 0   | ii) Collection made during 1949-50                           | 98,951       | 6 0  |                |              |               |      |
| 7. Provident Fund of Staff (contribution and interest)          | 7,000        | 0 0  | 4,000          | 0 0  | 2,915    | 0 0    | 4. Interest on Fixed Deposits and Other Investments          | 2,625        | 0 0  | 2,635          | 0 0          | 2,639         | 10 0 |
| 8. T.A. for Staff   | 10,000       | 0 0  | 4,000          | 0 0  | 2,495    | 2 6    | 5. Miscellaneous Receipts                                    | 500          | 0 0  | 115            | 0 0          | 348           | 3 0  |
| 9. Subscription for ISO and IEC                                 | 9,500        | 0 0  | 12,500         | 0 0  | 12,142   | 6 0    | 6. Sale Proceeds of ISI Pub. 1949-50 :                       |              |      |                |              |               |      |
| 10. Printing (Pub.) Charges                                     | 25,000       | 0 0  | 45,000         | 0 0  | 23,084   | 11 9   | Rs As P  |              |      |                |              |               |      |
| 11. Other Charges :   |              |      |                |      |          |        | a) i) Recoveries   | 2,952        | 3 0  | } 5,000 0 0    | 3,000 0 0    | 4,336 6 0     |      |
| i) Stationery including Printing                                | 13,000       | 0 0  | 15,000         | 0 0  | 14,474   | 0 6    | ii) Bills Outstanding  | 1,384        | 3 0  |                |              |               |      |
| ii) Postage and Telegrams                                       | 8,000        | 0 0  | 8,000          | 0 0  | 7,550    | 9 0    | b) Books in Hand   | ...          | ...  | ...            | ...          | 23,122 6 0    |      |
| iii) Purchase of Pub :  |              |      |                |      |          |        | 7. Commission on Overseas Pub. for sales made during 1948-49 | 2,000        | 0 0  | 2,000          | 0 0          | 2,325         | 11 6 |
| a) Books for Sale   | 10,000       | 0 0  | 12,000         | 0 0  | 4,914    | 0 9    | 8. Sales of Overseas Pub. during 1949-50 :                   |              |      |                |              |               |      |
| b) Books for Library  | ...          |      | 2,000          | 0 0  | 334      | 5 9    | Rs As P  |              |      |                |              |               |      |
| iv) Telephone   | 3,000        | 0 0  | 1,500          | 0 0  | 1,464    | 11 0   | i) ASA, ASTM & other (Recoveries)                            | 3,601        | 1 0  | } 4,227 3 0    |              |               |      |
| v) Furniture and Office Equipment                               | 16,000       | 0 0  | 13,000         | 0 0  | 1,475    | 9 0    | ii) ASA, ASTM & other (Out-standing)                         | 626          | 2 0  |                |              |               |      |
| vi) Rent of Building  | 20,000       | 0 0  | 20,000         | 0 0  | 10,023   | 12 3   | iii) ASA, ASTM & other (Books in Hand)                       | ...          | ...  | ...            | 3,299        | 13 0          |      |
| vii) Electric and Water Charges                                 | 2,000        | 0 0  | 2,500          | 0 0  | 1,812    | 8 9    | iv) BSI during 1949-50 (Recoveries)                          | 11,281       | 4 0  | } 15,000 0 0   |              |               |      |
| viii) Miscellaneous   | 8,000        | 0 0  | 8,000          | 0 0  | 7,827    | 2 0    | v) BSI during 1949-50 (Outstanding)                          | 5,386        | 6 0  |                |              |               |      |
| ix) Advertisement   | 1,500        | 0 0  | 2,500          | 0 0  | 2,428    | 15 0   | Less amount Payable to BSI                                   | 16,667       | 10 0 |                |              |               |      |
| x) Audit Charges  | 1,000        | 0 0  | 672            | 0 0  | 672      | 0 0    |  | 9,924        | 11 0 |                |              |               |      |
| xi) Depreciation on Head 11-v                                   | 1,500        | 0 0  | ...            |      | 3,678    | 11 0   |  | 6,742        | 15 0 |                |              | 6,742         | 15 0 |
| xiii) Medical Relief  | 4,000        | 0 0  | 1,500          | 0 0  | 655      | 7 0    | 9. Suspense Account  | ...          | ...  | 50             | 0 0          | ...           |      |
| 12. Cost of Transferring Headquarters                           | 30,000       | 0 0  | ...            |      | ...      |        | 10. Excess of Expenditure over Income                        | 1,44,675     | 0 0  | 55,422         | 0 0          | ...           |      |
| 13. Charges for Convening ISO Meetings on Lac and Mica in India | 20,000       | 0 0  | 3,000          | 0 0  | 2,941    | 15 6   |  | 4,94,900     | 0 0  | 4,32,172       | 0 0          | 4,02,079      | 13 6 |
| 14. Excess of Income over Expenditure                           | ...          |      | ...            |      | 52,137   | 2 9    |  |              |      |                |              |               |      |
|   | 4,94,900     | 0 0  | 4,32,172       | 0 0  | 4,02,079 | 13 6   |  |              |      |                |              |               |      |

45







BALANCE SHEET AS AT 31 MARCH 1950 ( contd. )

| LIABILITY              | Rs | As | P | Rs       | As | P | ASSETS  | Rs     | As | P | Rs       | As | P |
|------------------------|----|----|---|----------|----|---|---|--------|----|---|----------|----|---|
| <i>Brought forward</i> |    |    |   | 5,25,760 | 1  | 3 | <i>Brought forward</i>  |        |    |   | 4,90,849 | 3  | 3 |
|                        |    |    |   |          |    |   | 12. Bills Recoverable for Sales of Pub.   |        |    |   |          |    |   |
|                        |    |    |   |          |    |   | i) ISI for 1949-50  | 1,384  | 3  | 0 |          |    |   |
|                        |    |    |   |          |    |   | ii) ASA, ASTM and other Overseas 1949-50  | 626    | 2  | 0 |          |    |   |
|                        |    |    |   |          |    |   |   | 2,010  | 5  | 0 |          |    |   |
|                        |    |    |   |          |    |   | iii) BSI : 1948-49  | 131    | 12 | 0 |          |    |   |
|                        |    |    |   |          |    |   | 1949-50   | 5,386  | 6  | 0 |          |    |   |
|                        |    |    |   |          |    |   |   | 5,518  | 2  | 0 |          |    |   |
|                        |    |    |   |          |    |   |   | 7,528  | 7  | 0 | 7,528    | 7  | 0 |
|                        |    |    |   |          |    |   | 13. Advances Recoverable from Staff:  |        |    |   |          |    |   |
|                        |    |    |   |          |    |   | Balance for 1948-49   | 354    | 0  | 0 |          |    |   |
|                        |    |    |   |          |    |   | During 1949-50  | 1,325  | 0  | 0 |          |    |   |
|                        |    |    |   |          |    |   | <i>Less recovered</i>   | 1,679  | 0  | 0 |          |    |   |
|                        |    |    |   |          |    |   |   | 1,004  | 0  | 0 |          |    |   |
|                        |    |    |   |          |    |   |   | 675    | 0  | 0 | 675      | 0  | 0 |
|                        |    |    |   |          |    |   | 14. Balance of Advance with the Controller of Printing and Stationery, Calcutta |        |    |   | 285      | 4  | 0 |
|                        |    |    |   |          |    |   | 15. Publications in Hand :  |        |    |   |          |    |   |
|                        |    |    |   |          |    |   | i) Foreign Pub. other than BSI  | 3,299  | 13 | 0 |          |    |   |
|                        |    |    |   |          |    |   | ii) ISI Pub.  | 23,122 | 6  | 0 |          |    |   |
|                        |    |    |   |          |    |   |   | 26,422 | 3  | 0 | 26,422   | 3  | 0 |
|                        |    |    |   |          |    |   | TOTAL   |        |    |   | 5,25,760 | 1  | 3 |

47

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# Indian Standards

|  | Rs as |   | Rs as |
|--|-------|---|-------|
| IS : 10-1949 PLYWOOD TEA-CHESTS ...  | 1 12  | IS : 51-1950 ZINC CHROME FOR PAINTS ...   | 1 0   |
| IS : 11-1949 GRADING OF WOOL FOR EXPORT ...  | 0 8   | IS : 52-1950 CADMIUM LITHOPONE FOR PAINTS ...   | 1 0   |
| IS : 12-1949 STYLE MANUAL FOR DRAFTING INDIAN STANDARDS ...  | 1 8   | IS : 53-1950 BRUNSWICK GREEN FOR PAINTS ...   | 1 0   |
| IS : 13-1949 METHODS FOR GRADING PROCESSED MICA ...  | 2 0   | IS : 54-1950 GREEN OXIDE OF CHROMIUM FOR PAINTS ...   | 1 0   |
| IS : 14-1949 CLASSIFICATION OF PROCESSED MUSCOVITE MICA ...  | 1 4   | IS : 55-1950 ULTRAMARINE BLUE FOR PAINTS ...  | 0 12  |
| IS : 15-1949 SEEDLAC ...   | 1 12  | IS : 56-1950 PRUSSIAN BLUE FOR PAINTS ...   | 1 0   |
| IS : 16-1949 SHELLAC ...   | 2 12  | IS : 57-1950 RED LEAD FOR PAINTS AND JOINTING PURPOSES ...  | 1 0   |
| IS : 17-1949 DRY BLEACHED LAC ...  | 2 0   | IS : 58-1950 LITHARGE FOR PAINTS ...  | 1 0   |
| IS : 18-1949 ABBREVIATIONS FOR TITLES OF PERIODICALS ...   | 1 4   | IS : 59-1950 PIGMENT DYESTUFF FOR PAINTS ...  | 1 0   |
| IS : 19-1949 PROCEDURES FOR TESTING COTTON TEXTILES AND CORDAGES (OTHER THAN JUTE) FOR RESISTANCE TO ATTACK BY MICRO-ORGANISMS ... | 1 0   | IS : 60-1950 LAKE PIGMENTS FOR PAINTS ...   | 1 0   |
| IS : 20-1950 CAST ALUMINIUM FOR UTENSILS ...   | 0 12  | IS : 61-1950 SLATE POWDER FOR PAINTS ...  | 0 12  |
| IS : 21-1950 WROUGHT ALUMINIUM FOR UTENSILS ...  | 0 12  | IS : 62-1950 GRAPHITE FOR PAINTS ...  | 0 12  |
| IS : 22-1950 98 PERCENT ALUMINIUM NOTCHED BARS AND INGOTS FOR REMELTING PURPOSES ...   | 0 12  | IS : 63-1950 WHITING FOR PAINTS ...   | 1 0   |
| IS : 23-1950 99 PERCENT ALUMINIUM NOTCHED BARS AND INGOTS FOR REMELTING FOR AIRCRAFT PURPOSES ...                                  | 0 12  | IS : 64-1950 BARYTES FOR PAINTS ...   | 1 0   |
| IS : 24-1950 BRAZING SOLDER ...  | 0 12  | IS : 65-1950 BLANC FIXE FOR PAINTS ...  | 1 0   |
| IS : 25-1950 ANTIFRICTION BEARING ALLOYS ...   | 0 12  | IS : 66-1950 ASBESTINE FOR PAINTS ...   | 0 12  |
| IS : 26-1950 TIN INGOT ...   | 0 12  | IS : 67-1950 SILICA FOR PAINTS ...  | 1 0   |
| IS : 27-1950 PIG LEAD ...  | 0 12  | IS : 68-1950 KAOLIN FOR PAINTS ...  | 1 0   |
| IS : 28-1950 PHOSPHOR BRONZE INGOTS AND CASTINGS ...   | 0 12  | IS : 69-1950 GYPSUM (CALCIUM SULPHATE) FOR PAINTS ...   | 1 0   |
| IS : 29-1950 ALUMINIUM SHEETS AND COILS FOR AIRCRAFT PURPOSES ...  | 1 0   | IS : 70-1950 CUPROUS OXIDE FOR PAINTS ...   | 1 0   |
| IS : 30-1950 ALUMINIUM-COATED HIGH-TENSILE ALUMINIUM ALLOY SHEETS AND COILS FOR AIRCRAFT PURPOSES ...                              | 1 4   | IS : 71-1950 MERCURIC OXIDE FOR PAINTS ...  | 1 0   |
| IS : 31-1950 ALUMINIUM-MANGANESE ALLOY SHEETS AND COILS ...  | 1 0   | IS : 72-1950 ALUMINIUM POWDER FOR PAINTS ...  | 1 0   |
| IS : 32-1950 CODE FOR SEAWORTHY PACKAGING OF WOOLLEN TEXTILES ...  | 1 0   | IS : 170-1950 SPECIFICATION FOR ACETONE ...   | 1 8   |
| IS : 33-1950 METHODS OF TEST FOR DRY PIGMENTS AND EXTENDERS FOR PAINTS ...   | 1 4   | IS : 190-1950 CONIFEROUS SAWN TIMBER INTENDED FOR FURTHER CONVERSION ...  | 1 4   |
| IS : 34-1950 BASIC CARBONATE OF LEAD (WHITE LEAD) FOR PAINTS ...   | 1 0   | IS : 191-1950 COPPER ...  | 0 12  |
| IS : 35-1950 ZINC OXIDE FOR PAINTS ...   | 1 0   | IS : 192-1950 SILVER SOLDER ...   | 0 12  |
| IS : 36-1950 LEADED ZINC OXIDE FOR PAINTS ...  | 1 0   | IS : 193-1950 SOFT SOLDER ...   | 0 12  |
| IS : 37-1950 LITHOPONE FOR PAINTS ...  | 1 4   | IS : 194-1950 RECOMMENDATIONS FOR REFRACTORIES FOR RAILWAYS ...   | 1 0   |
| IS : 38-1950 ANTIMONY OXIDE FOR PAINTS ...   | 1 0   | IS : 195-1950 FIRECLAY MORTAR FOR LAYING FIRECLAY BRICKS ...  | 0 12  |
| IS : 39-1950 BASIC SULPHATE OF LEAD FOR PAINTS ...   | 1 0   | IS : 196-1950 ATMOSPHERIC CONDITIONS FOR TESTING ...  | 1 0   |
| IS : 40-1950 CARBON BLACK FOR PAINTS ...   | 0 12  | IS : 199-1950 METHODS FOR THE ESTIMATION OF MOISTURE, TOTAL SIZE, STARCH, ASH AND WAX CONTENT IN GREY AND BLEACHED COTTON TEXTILE MATERIALS ... | 1 0   |
| IS : 41-1950 BONE BLACK FOR PAINTS ...   | 1 0   | IS : 200-1950 METHOD FOR DETERMINATION OF COPPER NUMBER OF COTTON TEXTILE MATERIALS ...   | 1 0   |
| IS : 42-1950 VEGETABLE BLACK FOR PAINTS ...  | 0 12  | IS : 201-1950 METHODS OF ANALYSIS OF AND TOLERANCES FOR WATER FOR TEXTILE PURPOSES ...  | 1 0   |
| IS : 43-1950 LAMP BLACK FOR PAINTS ...   | 0 12  | IS : 202-1950 ALUMINIUM-ALLOY INGOTS AND CASTINGS FOR AIRCRAFT PURPOSES ...   | 1 4   |
| IS : 44-1950 BLACK OXIDE OF IRON FOR PAINTS ...  | 1 0   | IS : 203-1950 LECLANCHE TYPE DRY CELLS AND BATTERIES FOR FLASH LAMPS ...  | 1 4   |
| IS : 45-1950 MANUFACTURED RED OXIDES OF IRON FOR PAINTS ...  | 1 0   | IS : 204-1950 MILD STEEL AND BRASS DOOR BOLTS, TOWER AND BARREL TYPES ...   | 1 4   |
| IS : 46-1950 NATURAL RED OXIDES OF IRON FOR PAINTS ...   | 1 0   | IS : 205-1950 BUTT HINGES ...   | 1 4   |
| IS : 47-1950 OCHRE FOR PAINTS ...  | 1 0   | IS : 206-1950 TEE AND STRAP HINGES ...  | 1 0   |
| IS : 48-1950 NATURAL SIENNA (RAW AND BURNT) FOR PAINTS ...   | 0 12  | IS : 207-1950 GATE AND SHUTTER HOOKS AND EYES ...   | 1 0   |
| IS : 49-1950 NATURAL UMBER (RAW AND BURNT) FOR PAINTS ...  | 0 12  | IS : 208-1950 DOOR HANDLES ...  | 1 4   |
| IS : 50-1950 LEAD CHROME AND LEAD MOLYBDATE FOR PAINTS ...   | 1 0   | IS : 209-1950 ZINC (SPELTER) ...  | 1 0   |
|  |       | IS : 210-1950 GREY IRON CASTINGS ...  | 1 8   |
|  |       | IS : 211-1950 SPECIFICATION FOR ANTIMONY ...  | 0 12  |
| ANNUAL REPORT 1948-49 ...  | ...   |   | 2 0   |
| ANNUAL REPORT 1949-50 ...  | ...   |   | 2 0   |
| REPORT OF THE ISI SPECIAL COMMITTEE ON WEIGHTS AND MEASURES ...  | ...   |   | 2 0   |
| ASA Z1-3-42 CONTROL CHART METHOD OF CONTROLLING QUALITY DURING PRODUCTION ...  | ...   |   | 5 0   |

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