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INDIAN STANDARDS INSTITUTION (ISI)

SIXTEENTH ANNUAL REPORT

APRIL 1962 - MARCH 1963

MANAK BHAVAN, 9 MATHURA ROAD
NEW DELHI 1

Price Rs 2·00
Free to Members

(As on 31 March 1963)

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Minister for Commerce & Industry, Government of India

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THIS REPORT WILL BE PRESENTED BY THE EXECUTIVE COMMITTEE TO THE GENERAL COUNCIL OF ISI AT ITS NEXT ANNUAL MEETING

Headquarters

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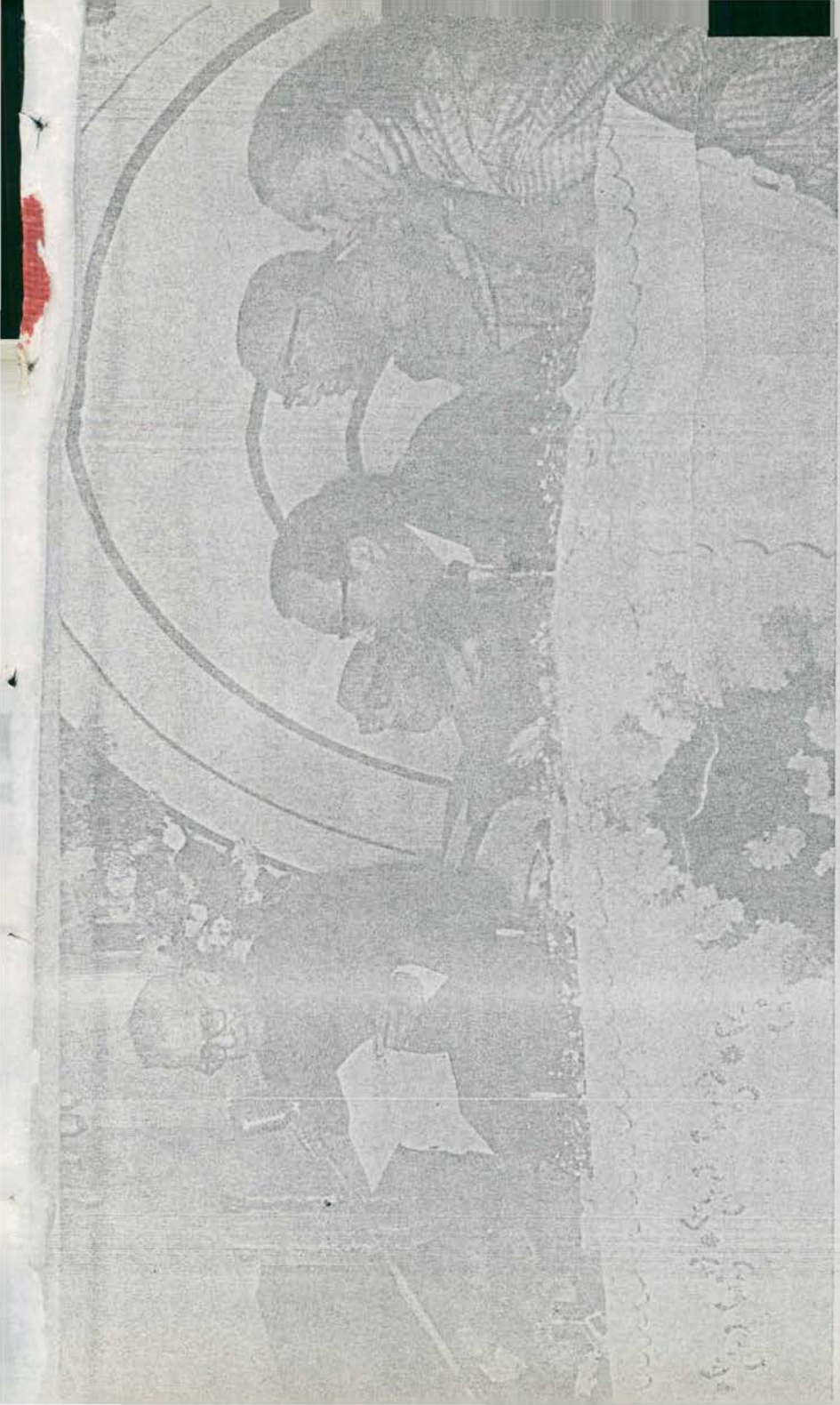

SHRI P. C. SEN, CHIEF MINISTER OF WEST BENGAL, INAUGURATING THE SEVENTH INDIAN STANDARDS CONVENTION HELD AT CALCUTTA IN JANUARY 1963. SEATED FROM *r* TO *l* ARE : DR. SUSHILA NAYAR, UNION MINISTER FOR HEALTH; DR. LAL C. VERMAN, DIRECTOR ISI; SHRI K. K. BIRLA, CHAIRMAN RECEPTION COMMITTEE; SHRI K. C. REDDY, UNION MINISTER FOR COMMERCE & INDUSTRY; AND SHRI O. V. ALAGESAN, UNION MINISTER OF STATE, MINISTRY OF IRRIGATION AND POWER (*see* p. 11)

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OF THE

INDIAN STANDARDS INSTITUTION

(APRIL 1962-MARCH 1963)

PART I GENERAL REVIEW

Steady and sustained progress marked the activities of the Institution during the year 1962-63. The targets set for establishing new standards in various fields were not only achieved but were exceeded in some cases.

Considerable progress was made in the implementation of standards, issue of licences under ISI Certification Marks Scheme, and creation of standards consciousness.

At the international level, the Institution took active part in both technical and administrative work of the international organizations devoted to standardization.

The eighteenth annual meeting of the General Council of the Institution was held on 25 March 1963 under the chairmanship of its President, Shri K. C. Reddy, Union Minister for Commerce & Industry. The Executive Committee and the Finance Committee held five meetings each during the year.

Standards Published — The number of Indian Standards in force including those under print on 31 March 1962 was 1 926. During the year under report, 16 standards were withdrawn and 304 new standards (as against 259 during the previous year) were sent to press. The total number of Indian Standards in force including those under print on 31 March 1963 was, therefore, 2 214. Of these, 92 standards were revised during the year. Lists of new and revised standards and of standards withdrawn are given in Appendix A (*see* p. 42).

To facilitate and expedite the preparation of Emergency Indian Standards, a simplified procedure was evolved with the approval of the Government of India; three Emergency Standards were prepared and published under this procedure.

Under the scheme of publishing Hindi translations of Indian Standards, which have a sizable demand, translations of three more Indian Standards were published (*see* Appendix A). So far 9 Indian Standards have been published in Hindi, and one each in Kannada and Tamil.

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Membership — The subscribing membership of the Institution increased from 2 310 to 2 705. The revenue realized through this source was Rs 7·12 lakhs as against Rs 6·51 lakhs in the previous year.

Consumer Products Division — With a view to dealing with matters relating to consumer products and ensuring proper programming, co-ordination and supervision of work under one specialized unit, the General Council at its last meeting held on 25 March 1963 decided to create a new Division, namely, the Consumer Products Division. The name of the present Engineering Division was changed to Mechanical Engineering Division.

Metric System — During the period under review, 145 non-metric standards were revised or amended to conform to metric system. The number of non-metric standards which was 357 or 19 percent of those published up to 31 March 1962 was reduced to 212 or 10 percent of those published up to 31 March 1963. Metricized versions of 44 standards due for revision were prepared for further processing by the concerned Divisions.

A pamphlet on 'Training in Metric System for Engineering Industry', designed to assist those planning to change their designs and production to conform to the metric system and to induce others to do likewise, was brought out. It was published by the Union Ministry for Commerce & Industry.

ISI Certification Marks Scheme — During the period under review, 125 new licences were granted as compared to 112 issued during the preceding year. The new items covered during the year included battery separators, bitumen products, cast iron spun pipes, centrifugal pumps, ready mixed paints and enamels, electric wiring accessories, food colours, milk bottles, padlocks, pressure lanterns, shoe polish, sluice valves, twist drills and welding electrodes.

The total number of licences granted under the Scheme since its inception was 526 on 31 March 1963. For the names of licensees and the products covered under the Scheme, *see* Handbook of ISI Publications 1962 and its Addendum. The annual value of the goods covered under the Scheme amounted to Rs 60 crores as against 48·50 crores at the end of 1961-62. This figure is soon expected to rise to some Rs 200 crores when structural steel licences granted under the Scheme become operative.

New applications for the grant of licences received during the year were 275 compared to 171 received during 1961-62. This brought the total number of applications received since the beginning of the Scheme to 1 055 out of which 310 were under consideration at the close of the year.

Figure 1 gives graphical representation of the progress of the Scheme through the years.

Compulsory Control of Quality for Portland Cement — Under the *Essential Commodities Act*, 1955, the Government of India has issued

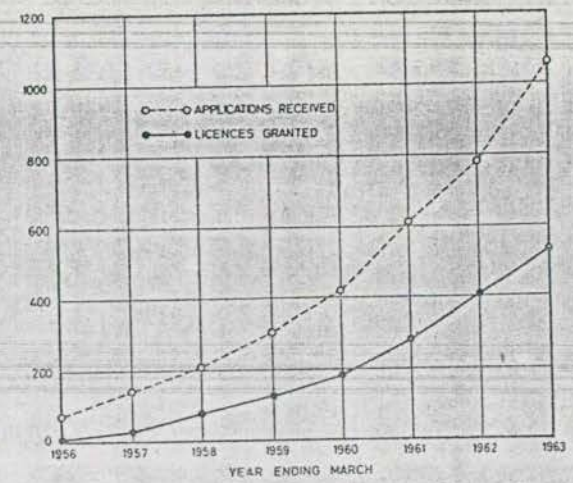

FIG. 1 PROGRESS OF ISI CERTIFICATION MARKS SCHEME

orders declaring cement as an essential commodity and making it obligatory for manufacturers to produce it according to the relevant Indian Standard. A scheme for ISI Certification Marking for the entire cement industry in the country has been submitted to the Government of India.

Setting Up of ISI Laboratory — Under its Third Five-Year Plan, ISI has a scheme to establish its own laboratory for conducting tests and investigations on products under ISI Certification Marks Scheme. A beginning was made in this direction by setting up a small testing laboratory equipped for testing of pesticides, biscuits, chemicals, inks, soaps, metal containers, storage batteries, electrical cables and conductors, metal clad switches, etc.

Recognition of ISI Certification Marks Scheme — The Scheme continued to receive greater recognition from different authorities and organizations. The Conference on Implementation of Indian Standards convened by the Government of Madhya Pradesh on 12 September 1962 *inter alia* emphasized the need for giving preference to ISI certified goods. The Chief Director of Purchase, Army Purchase Organization, Ministry of Food & Agriculture, made it obligatory upon suppliers of vanaspati for Defence purposes to supply the product in 18-litre square tins carrying ISI Certification Mark. The Central Public Works Department decided to purchase with effect from 1 October 1963 paints bearing ISI Certification Mark. The decision applies to all categories of paints for which Indian Standards are available. The MES (Southern Command) has also taken a similar decision in respect of paints. The first All-India Sports Congress held in New Delhi on 12-14 April 1962 recommended that sports goods should be certified under the Scheme. The Development Commissioner, Small Scale Industries Organization,

has advised all approved bicycle assemblers that ISI certified bicycle components may be preferred for use in the assembly of bicycles.

Inspection of ISI Certified Goods — The Director General, Supplies & Disposals, and Chairman of the ISI Advisory Committee on Implementation of Indian Standards, observed at the meeting of the Committee held on 5 June 1962 that the goods bearing ISI Certification Mark should be given preference by buyers and there need not be elaborate inspection of these products by them, as was necessary in the case of uncertified goods. Directorate General of Supplies & Disposals is collecting statistics of the results of inspection of ISI certified goods to enable it to decide the issue. The Standing Working Committee of the Agricultural and Food Products Division Council of ISI at its third meeting held on 25 September 1962 resolved that the Ministry of Health should incorporate a provision in the Prevention of Food Adulteration Rules to exempt the foodstuffs packed in sealed containers bearing the ISI Certification Mark or the Agmark from the routine inspection under the PFA Rules.

Certification Marks Advisory Committee (CMAC) — The Committee noted with satisfaction that the targets fixed for applications and licences during the Third Five-Year Plan had already been achieved and recommended that a meeting be arranged between the representatives of ISI, DGS & D and licensees for steel to discuss the difficulties encountered by them in following the Scheme of Testing and Inspection for commencing the use of ISI Mark for steel products.

Amendment to the ISI (Certification Marks) Rules and Regulations — In exercise of the powers conferred upon it, the Government have amended the ISI (Certification Marks) Rules and Regulations to enable the Institution, with the previous approval of the Government of India, to recognize any standard established by any Institution other than the Indian Standards Institution in India or elsewhere, in relation to any article or process. The Institution may also amend or cancel the recognized standard.

Recognition of Other Standards as Indian Standards — Accordingly ISI has recognized three British Standards B.S. 3036 : 1958, B.S. 816 : 1952 and B.S. 2818 : Part 3 : 1957 as Indian Standards and designated them as IS : 2086-1962, IS : 2120-1962 and IS : 2215-1962, respectively.

Modification of the Provision of an Indian Standard — In exercise of the powers conferred on him by Sub-Regulation (4) of Regulation 3 of ISI (Certification Marks) Regulations, Director, ISI, with a view to expediting the use of the Standard Mark, without in any way affecting the quality of the product covered by the standard, modified tentatively clause 6.3.2 of IS : 814-1957 Specification for Covered Electrodes for Metal Arc Welding of Mild Steel

Revision of Marking Fee in Metric Units — During the year under report, the marking fee rates in non-metricized units were revised in terms of metric units in 26 cases, and Gazette Notifications were issued.

Implementation of Indian Standards — Implementation of Indian Standards touched a new height of 1 812 (representing 84 percent of the total standards in force on 31 March 1963) as against 1 604 during the previous year, registering an increase of 208.

The Advisory Committee on Implementation of Indian Standards held two meetings during the period under report at which a number of recommendations on the adoption of Indian Standards by different bodies were made.

As on 31 March 1963, the following organizations had adopted the number of Indian Standards mentioned against them:

Directorate General of Supplies & Disposals (DGS & D)	1 781
Controller General of Defence Production (CGDP)	841
Research, Designs and Standards Organization (RDSO)	829

In addition, many industrial undertakings, State electricity boards, public works departments, municipal corporations, purchase organizations, production units, etc, implemented Indian Standards in their manufacturing and purchase programmes, resulting in production of goods and services conforming to Indian Standards.

To enable the Institution to provide information about manufacturers implementing Indian Standards in their manufacturing programmes, 38 enquiries were issued covering 253 Indian Standards on different subjects. A list of such manufacturers is maintained by the ISI Directorate.

A Conference on Implementation of Indian Standards at State level was convened by the Government of Madhya Pradesh at Bhopal on 12 September 1962 at which recommendations relating to (a) implementation of Indian Standards, (b) recognition of ISI Certification Marks Scheme, and (c) extending the scope of standardization activity, were adopted. The Conference also emphasized the need for (1) purchasing organizations giving preference to ISI certified goods, and (2) calling upon technical institutions to (i) set up reference libraries on Indian Standards and other literature on standardization for the use of purchasers, manufacturers, etc, and (ii) introduce in their teaching curricula a programme of training and education to familiarize the students with standardization techniques and use of standards. Similar conferences had earlier been held in Orissa, Kerala, West Bengal, Punjab, Himachal Pradesh, Bihar, Maharashtra, Mysore, Gujarat and Uttar Pradesh.

The All-India Manufacturers' Organization arranged a special session to discuss implementation of Indian Standards during their 22nd Annual Conference held at Bombay on 22-24 June 1962. The Conference recommended to its regional bodies to arrange similar discussions for wider adoption of Indian Standards.

Industrial Safety Advisory Committee — The Industrial Safety Advisory Committee (ISAC) set up by he Institution held its first meeting on 1 May 1962. A number of recommendations for formulation and implementation of Indian Stardards on Safety Items were made. The Committee constituted a Subcommittee for formulation of a standard on 'Computation of Injury Rates of Accidents' in industry.

Company Standardization — A project to promote and develop company standardization activities in Indian industries was started by the Institution during the period under review. The project was planned to (a) initiate and promote among top management of Indian industry the idea of establishing internal standards and company standards departments, (b) organize and direct intensive short-term training courses to create a nucleus of company standards engineers as a distinct professional group, and (c) make factory visits for practical demonstrations and for evaluation of the training courses. To organize the project, the services of an expert, Shri Madhu S. Gokhale of Radio Corporation of America, were secured for a period of one year under the United Nations Technical Assistance Programme.

To promote and develop company standardization practices in industries, the following plan of action was initiated:

a) *Factory Visits* — To visit the firms interested in surveying the position of their activities within the orbit of company standardization practices and interest them in further work in this direction.

   Fifteen factories in Calcutta and Bombay regions were visited and records kept of their activities relating to company standardization practices.

b) *Survey Programmes* — To train a group of participants to survey and evaluate the state of existing company standardization in their respective firms as a first step towards the establishment of an organized standards activity.

   These programmes were organized in collaboration with the Local Productivity Councils of Calcutta, Bombay and Madras, the National Productivity Council and the Bombay Productivity Centre.

c) *Training Programmes* — To give detailed training in standardization methods and techniques to create a nucleus of standards engineers in the country.

   Two training programmes were scheduled — the first to be held at Hyderabad (1-13 April 1963) and the second at Mussoorie (15-28 May 1963).

Library and Information Services — During the year, 10 219 new publications were accessioned in the library at the Headquarters. The

total collection of standards and other technical publications in the Headquarter's Library now exceeds 101 000. The number of technical, trade and scientific journals received was 449 including 35 new journals added during the year.

More than 40 000 publications were consulted or loaned out from the Headquarter's Library and 156 bibliographies were prepared for the use of technical personnel and committee members. Arrangements were also made for translation into English of standards and other literature in foreign languages.

Public Relations — During the year under review, several measures were adopted to create standards-consciousness and to propagate the ISI Certification Marks Scheme.

Seven hundred and fifty-six press notes on published and draft Indian Standards and other important activities of ISI were issued. A number of thought-provoking articles, write-ups, reviews, etc, were published in regular as well as special issues of various journals. Display advertisements in English, Hindi and regional languages were released. Pamphlets in English and Hindi were brought out on the activities of the Institution in general and the ISI Certification Marks Scheme in particular.

Seventh Indian Standards Convention — The Seventh Indian Standards Convention held at Calcutta from 27 January to 2 February 1963 was inaugurated by Shri P. C. Sen, Chief Minister of West Bengal, with Shri K. C. Reddy (President, ISI, and Union Minister for Commerce & Industry) in the chair. Three technical sessions of the Convention were held under the chairmanship of Dr. Sushila Nayar, Shri O. V. Alagesan, and Shri Manubhai Shah, ministers of the Central Government.

Shri P. C. Sen also gave away the fifth K. L. Moudgill prize for 1962 to Shri B. S. Krishnamachar, Deputy Director ISI, for his outstanding contribution to the work of standardization.

A total of 662 delegates (with 44 accompanying ladies) representing the Union and State Government departments, manufacturing organizations, business undertakings, chambers of commerce, associations of trade and industry, technical institutions and research bodies attended the Convention. The United States of America, United Kingdom, West Germany, Saudi Arabia and Ceylon were also represented.

In all, 149 papers were presented and discussed in the following nine technical sessions held during the Convention:

S-1 Food Purity and Food Quality Standards

S-2 Aluminium in Electrical Technology

S-3 Standardization in Automobile Industry

S-4 *Informative Labelling*

S-5 *Standardization in Multipurpose Projects*

S-6 *Export Promotion and Standardization*

S-7 Consumers' Organizations and Standardization

S-8 Promotion of Company Standardization in India

S-9 Training and Education of Engineers in Metric System

A Reception Committee consisting of leading citizens of Calcutta was formed under the chairmanship of Shri K. K. Birla, who made necessary arrangements for accommodation, transport, local visits, etc, for the delegates. Social functions, entertainments and excursions proposed to be held during the Convention were cancelled owing to national emergency.

The proceedings of the Convention evoked great interest in the columns of the press all over the country. Special Supplements with contributions from leading experts in different fields on various aspects of standardization were brought out by 22 leading periodicals.

Finances — A certified statement of accounts for the year under review appears in Appendix B (*see* p. 58). Total income of ISI from various sources, such as contributions of the Government of India, membership subscription, sale of standards and certification marks fee amounts to Rs 4 289 380·85 as against an expenditure of Rs 4 158 312·20. In addition, consideration may be given to the direct contribution made by way of expenses incurred by committee members from Government and private organizations to attend meetings of ISI within India and abroad. Such invisible contribution for the year under report is estimated at Rs 852 592·25.

National Defence Efforts — The Institution and its employees made their contributions to the National Defence efforts. Up to 31 March 1963, ISI employees contributed Rs 9 394·76 to the National Defence Fund. In addition, regular voluntary contributions continue to be made to the fund. The staff have also voluntarily increased their contributions towards Contributory Provident Fund by about Rs 4 000·00 per month and decided to invest the amount in the National Defence Certificates.

Acquisition of Land — A plot of land measuring 1·267 acres adjacent to Manak Bhavan has been allotted to ISI, under usual lease terms, for the expanding activities of the Institution. Plans for the new building have been finalized and submitted to Delhi Municipal Corporation, and the actual construction work is likely to be started soon.

Branch Offices — During the year under report, the four Branch Offices of the Institution located at Bombay, Calcutta, Madras and Kanpur continued to render useful service to industry, trade and commerce in their respective zones by disseminating information

relating to standardization, effecting sale of Indian and foreign standards, doing inspection work under the ISI Certification Marks Scheme, and maintaining liaison with industry and commerce.

International Activities — The Institution served as an elected member of the Council of International Organization for Standardization (ISO); participated actively in the work of 71 technical committees of ISO and 54 technical committees of the International Electrotechnical Commission (IEC); and held the Secretariats of the following international committees:

a) ISO/TC 50 Lac

b) ISO/TC 56 Mica

c) ISO/TC 88 Pictorial Marking of Handling Instructions for Goods

d) IEC/TC 43 Electric Fans

e) ISO/TC 30 SC 1 Measurement of Liquid Flow in Open Channels

f) ISO/TC 34 SC 7 Spices and Condiments

The Director, ISI, served as the Chairman of ISO Planning Committee (PLACO), as a member of ISO Standing Committee for the Study of Scientific Principles of Standardization (STACO), and as the ISO Liaison Officer for the Economic Commission for Asia and Far East (ECAFE).

A notable event during the year under review was the acceptance by the ISO Council of India's invitation to hold the next triennial session of ISO General Assembly in India. Accordingly, meetings of ISO General Assembly, Council, some important technical committees and special committees will be held in New Delhi from 9 to 21 November 1964. This will be the first time in the history of ISO that it will be holding such meetings in the East.

The Institution acted as the host for the first meeting of Working Group 8 Hot Rolled Steel Sections, of ISO Technical Committee 17 Steel, which was held in New Delhi on 22-24 January 1963 under the chairmanship of Shri O. S. Murthy, General Manager, Western Railway. Five delegates from France, Germany, United Kingdom, and United States of America, and eight delegates from India attended the meeting.

Dr. A. N. Ghosh, Joint Director, ISI, attended the Fifth Commonwealth Standards Conference held in Sydney (Australia) during 8-17 October 1962. The Conference discussed matters of common interest relating to standardization, and appreciated the work done by ISI particularly on the application of statistical methods in standardization.

Shri B. S. Krishnamachar, Deputy Director, Structural and Metals Division of ISI, was sent on deputation to assist the Latin American countries in organizing a programme of standards engineering and formulating the recommendations relating to semi-finished steel products and steel bars for structural purposes. The gesture was highly appreciated and resulted in close collaboration being established between India and Latin American countries in the field of standardization.

PART II DIVISIONAL REPORTS

0. INTRODUCTION

0.1 Brief summaries of the technical work done by different Divisions/Sections of the Institution during the year 1962-63 are reported in this part of the report.

0.2 During the period under review, 304 new Indian Standards were adopted and sent to press, and 92 were revised (*see* Appendix A); 522 new proposals for formulation of Indian Standards were received; and 479 proposals (including some proposals made during the previous year) were accepted and referred to various committees for further action.

0.3 As on 31 March 1963, 1 148 committees with a membership of 13 317 experts representing manufacturers, consumers, research and technical organizations, purchasers, and Government departments were at work for the formulation of Indian Standards.

0.4 Table I gives the cumulative information about the work pertaining to different Divisions/Sections of the Institution, and Fig. 2 to 4 show the rapid increase in the activities of the Institution.

TABLE I RECORD OF ISI TECHNICAL DIVISIONS
(FOR THE YEAR 1962-63)

(For details of standards published and under print during 1962-63, *see* Appendix A)

Division or Section	No. of Committees	No. of Meetings	New Standards and Revised Standards Published and Under Print	Amendments to Standards	Draft Standards Circulated	New Subjects Taken Up
Agricultural and Food Products	103	74	38	31	40	42
Building	149	94	64	6	56	67
Chemical	272	215	85	54	104	54
Electrotechnical	93	64	55	18	45	37
Mechanical Engineering	181	127	56	10	101	154
Structural and Metals	200	57	54	3	58	88
Textile	129	88	44	14	72	33
Miscellaneous	21	29	—	1	2	4
Total	1 148	748	396	142	478	479

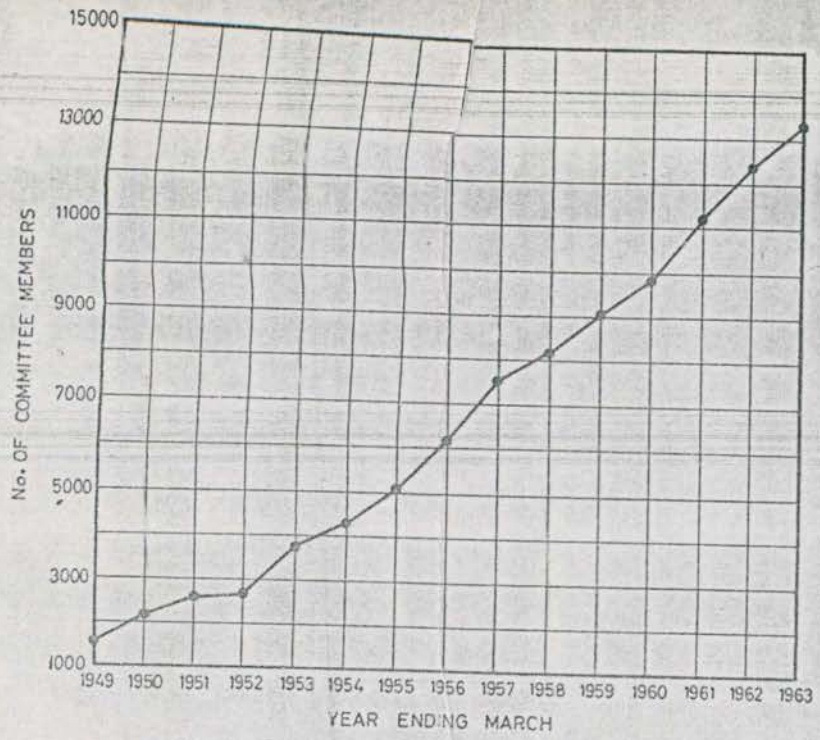

FIG. 2 GROWTH OF COMMITTEE MEMBERSHIP

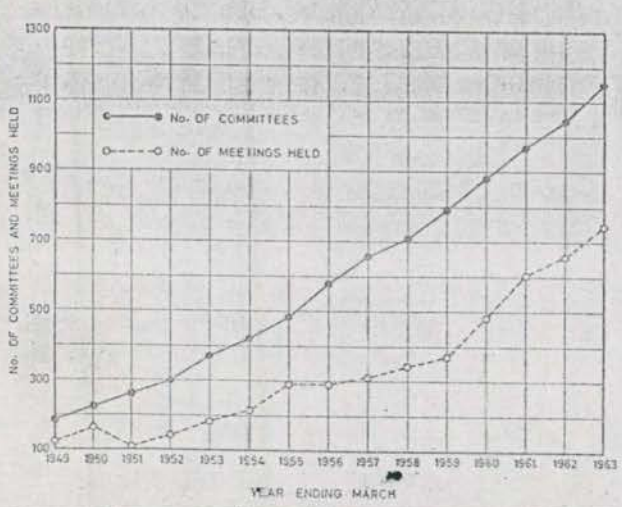

FIG. 3 GROWTH OF COMMITTEES AND THEIR ACTIVITIES

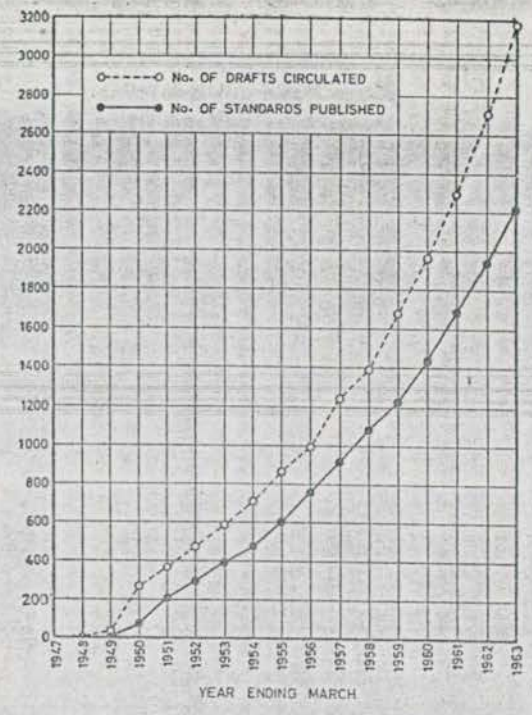

FIG. 4 GROWTH OF INDIAN STANDARDS

1. AGRICULTURAL AND FOOD PRODUCTS DIVISION

1.1 The standards sent to press covered pest control chemicals and equipment; dairy equipment and apparatus, and methods of testing dairy products; layout for regulated market yards for tobacco; animal feeds, such as wheat bran, maize bran and balanced feed mixtures for cattle; fishery products; and agricultural implements.

1.2 The Standing Working Committee of the Agricultural and Food Products Division Council (SWCAF) and the Agricultural and Food Products Division Council (AFDC) held their meetings on 25 September 1962 and 25 March 1963, respectively. At the instance of the AFDC, SWCAF recommended a number of measures to achieve effective implementation of Indian Standards on agricultural and food items. Besides reconstituting the Tabacco Products, and the Food Colours Sectional Committees, SWCAF amalgamated the seven sectional committees on storage and marketing structures (AFDC 1 to AFDC 7) into one committee and designated it as the Storage and Marketing Structures for Agricultural Commodities Sectional Committee, AFDC 28. AFDC reconstituted the Dairy Industry, the Farm Implements and Machinery, and the Spices and Condiments Sectional Committees.

1.3 *Indian Standards formulated by the Agricultural and Food Products Division, which were sent to press during the year under review, are given in Appendix A.*

2. BUILDING DIVISION

2.1 The standards sent to press covered the recommendations for earthquake resistant design of structures; criteria for the design of reinforced concrete shell structures and folded plates; codes of practice for brickwork, for laying *in-situ* terrazzo floor finish, for sound insulation of non-industrial buildings and for site investigations for foundations; and specifications for portland pozzolana cement, for high tensile steel bars used in prestressed concrete, for perforated burnt clay building bricks, for wooden flush door shutters, for mortice locks, and for distributors for hot tar and bitumen.

2.2 Three emergency standards relating to helmets and stirrup pumps required for civil defence purposes were formulated in accordance with the simplified emergency procedure agreed to by the Government of India.

2.3 The work of a number of committees was reorganized resulting in the setting up of the following new sectional committees:

a) Painting, Varnishing and Allied Finishes Sectional Committee
b) Furniture Sectional Committee
c) Fire Safety Sectional Committee
d) Structural Safety Sectional Committee
e) Criteria for Design of Structures Sectional Committee
f) Earthquake Engineering Sectional Committee
g) Waterproofing and Damp-Proofing Sectional Committee

In addition, a new Sectional Committee to deal with Public Health, Engineering Plants and Equipment was also set up.

2.4 Indian Standards formulated by the Building Division, which were sent to press during the year under review, are given in Appendix A.

3. CHEMICAL DIVISION

3.1 Noteworthy among the standards processed by the Division were those on alcohol, perfumery grade; common proofed paulins (tarpaulins); free-flowing table salt; glass beer bottles; glass liquor bottles; letterpress ink, black, general purposes; method for olfactory assessment of natural and synthetic perfumery materials; method for measurement of bulk quantities of liquid petroleum and liquid petroleum products; methods of test for petroleum and its products; miners' boots and shoes;

oils of bergamot and rosemary; round tins for general purposes; square tins for general purposes; tables for alcoholometry.

3.2 The Standing Working Committee of the Chemical Division Council met twice on 26 June and 19 November 1962, and the Chemical Division Council held its annual meeting on 4 March 1963.

3.3 In view of the rapidly increasing demand for chemical standards in the wake of heavy expansion of chemical industry, a new Sectional Committee for Cotton Linters, CDC 41, was established and the status of various subcommittees was raised, resulting in the setting up of the following Sectional Committees:

a) *Kattha*, Vegetable Tans and Allied Products, CDC 36
b) Thermal Insulation Materials, CDC 37
c) Industrial Gases, CDC 38
d) Cosmetics and Toilet Goods, CDC 39
e) Footwear, CDC 40

3.4 Indian Standards formulated by the Chemical Division, which were sent to press during the year under review, are given in Appendix A.

4. ELECTROTECHNICAL DIVISION

4.1 The new standards and draft standards processed by the Division to meet the growing needs of the fast developing electrical and electronic industries in the country covered cables and conductors, textile motors, oil circuit-breakers, contactors, rewirable type fuses, HRC cartridge type fuses, power transformers, transistorized radio receivers, radio transmitters and electronic components.

4.2 The Electrical Conductors and Accessories Sectional Committee was re-organized into (a) Conductors and Insulated Cables Sectional Committee, and (b) Winding Wires Sectional Committee, with a view to accelerating the rate of production of standards for cables and wires.

4.3 This Division also holds the Secretariat of the Indian National Committee of the International Electrotechnical Commission (IEC). Consequently, it continued to take active part in the deliberations of several committees of the organization.

4.4 Indian Standards formulated by the Electrotechnical Division, which were sent to press during the year under review, are given in Appendix A.

5. MECHANICAL ENGINEERING DIVISION

5.1 The important standards processed were those on metric fasteners, spanners, recommendations for limits and fits above 500 mm, and test

charts for various types of machin tools. Work was also done on consumer items, such as sports goods, sewing machine parts, pencils, etc.

5.2 Considerable progress was made in the preparation of Indian Standards for machine tools and small tools with the assistance of Mr. Frantisek Danek, United Nations' Expert on Machine Tools, whose services had been made available to ISI initially for one year and then extended for another year. In addition to assisting in the preparation of Indian Standards, Mr. Danek prepared a programme of work in the field of machine tools, which, it is expected, will assist in the orderly development of the industry.

5.3 The following new sectional committees were set up:

a) EDC 56 Marine Engineering Sectional Committee

b) EDC 57 Chemical Engineering Sectional Committee

c) EDC 58 Gaskets and Packings Sectional Committee
(by raising the status of the existing subcommittee on the subject)

d) EDC 59 Gears Sectional Committee
(by raising the status of the existing subcommittee on the subject)

5.4 Indian Standards formulated by the Mechanical Engineering Division, which were sent to press during the year under review, are given in Appendix A.

6. STRUCTURAL AND METALS DIVISION

6.1 Of the standards sent to press, mention may be made of the specification for structural steel (ordinary) covering the so-called 'untested steel' which was being marketed in the country for a very long time. Other standards published include revision of the Indian Standard Code of Practice for the Use of Structural Steel in General Building Construction, and specifications for grey iron castings and malleable iron castings, formulation of standards for silver and silver alloys and methods of assaying gold, gold alloys, and silver and silver alloys. The code relating to vertical mild steel cylindrical welded oil storage tanks, work on which was taken up as a part of Steel Economy Programme, was also published during the year. Indian Standards relating to methods of sampling and chemical analysis of some of the important minerals, such as bauxite, quartzite, dolomite, limestone, etc, used in the metallurgical industry, were published.

6.2 Indian Standards formulated by the Structural and Metals Division, which were sent to press during the year under review, are given in Appendix A.

7. TEXTILE DIVISION

7.1 The standards sent to press covered, among others, important items, such as revision of IS : 11-1949 Specification for Grading of Wool for Export, and formulation of IS : 2231-1962 Method of Grading Hand-Made Wool Carpets (superseding IS : 433-1953), which were taken up on the recommendations of the *ad hoc* Committee on Quality Control and Pre-shipment Inspection set up by the Ministry of Commerce & Industry, Government of India. Indian Standard Specifications for Lappets for Cotton Ring Spinning Frame (IS : 836-1962), Doffer and Flat Stripping Comb Blades (IS : 837-1962), and Tin Rollers for Cotton Ring Spinning Frame (IS : 838-1962), were formulated at the instance of the Tariff Commission to assist indigenous manufacturers of textile machinery and its components.

7.2 The Textile Division Council (TDC) held its meeting on 4 May 1962, and the Standing Working Committee of the Council (SWCT) met on 6 December 1962. During the year, 6 sectional committees were reconstituted; three subcommittees were elevated to sectional committees and two new Sectional Committees for Jute Bags for Packing Foodgrains and Jute Bags for Packing Coins were set up.

7.3 Indian Standards formulated by the Textile Division, which were sent to press during the year under review, are given in Appendix A.

8. SECTIONAL COMMITTEES UNDER THE EXECUTIVE COMMITTEE

8.1 Documentation, EC 2 — During the year under report, the draft Indian Standard Glossary of Classification Terms was finalized for printing. This is an important work running into some 100 pages and is a pioneering attempt at establishing standard interpretations of various classification terms.

Another draft standard covered abbreviations for titles of periodicals in Indian languages. The principles to be followed in the preparation of the draft were framed after a comprehensive study in which titles of some 7 000 language periodicals were examined.

9. STATISTICAL SECTION

9.1 During the year under review, the Section scrutinized 385 draft Indian Standards with the object of introducing, wherever possible, statistical quality control concepts in them. In 209 of these cases, statistically sound sampling inspection plans were recommended. In almost all the cases, these recommendations were accepted by the concerned sectional committees. In this connection, mention may be made of the Indian Standard Specifications for Flash Lights (IS : 2083-1962), Ring Spanners (IS : 2029-1962), Fire Fighting Hoses (IS : 636-1962), and Free Cutting Brass Rods and Bars Sections (IS : 318-1962).

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9.2 The Section scrutinized 58 routine sampling inspection schemes referred to it for the issue of licences under the ISI Certification Marks Scheme. The routine inspection data collected from licensees in accordance with the recommended schemes were also statistically analyzed to find out whether or not the certified products conform to relevant Indian Standards.

9.3 The Section also carried out investigations regarding jute bags for cement which helped in reducing the destructive testing for the determination of weight per unit area of the bag, analysis of data on phenol formaldehyde moulding powders which showed how standardization had led to the improvement of the quality of the indigenous material; statistical study of the sale of Indian Standards which led to the adoption of certain measures for the improvement of sales; and prepared a statistical scheme for scoring and grading of canned fruits and vegetables which provided for reliable judgement of quality.

10. RESEARCH

10.1 The Institution continued to undertake research and analytical studies in different fields with the active collaboration and substantial assistance from different national, state and private laboratories, testing organizations and research institutions.

10.2 Investigation and Research were conducted on a number of subjects to collect information for formulation of Indian Standards. The following pamphlets give information about the investigations and research carried out:

Agricultural and Food Products Division — Analysis of *besan*, *papad*, soluble coffee, green and black tea, chewing tobacco, scafflower oil cake, maize germ oil cake and other maize products; and determination of certain characteristics of *idli* mix, toffees, white bread, beeswax, milk for calibration of the density hydrometer, *hooka* tobacco, curry powder, black pepper, BHC, hydrolysable chlorine, canned fish, DDT water dispersible powder concentrates, BHC dusting powders and wheatmeal bread.

Building Division — Investigations on *surkhi*-lime mixture for masonry cement, effect of magnesia content in building lime, quantity of water to be used in the compressive strength test for concrete, water-cement ratio and strength of mortar and concrete, strength of concrete at different temperatures and ages, Ennore sand, use of square and circular plates for load test on soils, vibration on bearing capacity of soils, relation between impact strength and thickness of plywood used for the manufacture of rectangular plywood packing cases, abrasion resistance of abrasive powder and abrasion tester, soil for manufacture of tiles, use of gurjan, hollong and hollock for plywood panels for tea chests, polythene pipes for potable water supply, quantities of water required for flushing

Indian and European type water closets, effect of silt quantity on velocity distribution and rating of current meter, efficacy of wood screws and of test requirements for different characteristics of flush door shutters; and testing of building limes, building stones, thermal efficiency of brick kiln, jointed wood poles, hook ladders for fire fighting purposes, calibration of sieve shaker, bitumen felts for waterproofing and damp-proofing, performance tests for batch type concrete mixers, and sterilization of spun yarn for use in water supply main connections.

Chemical Division — Investigation on oil of peppermint (dementholized), geranium, linalœ, indigenous oil of pine, softening point of greases, Lovibond colour reading of raw and refined groundnut oil, thermal shock tests for transfusion bottles and laboratory glassware, effect of dinitrobenzene on crystallizing point of nitrobenzene, evaporation residue for the oil of bergamot, moisture proof bags for packing fertilizers, leathercloth, raw and washed cottonseed oils, bleaching earths of Indian origin for decolorizing vegetable oils, water absorption and percentage tolerance on gauge dimension of nylon monofilaments, coal tar disinfectant fluids, camphor, rosin and methods of analysis of *kattha*, detection of adulteration in palmarosa and gingergrass oils; determination of calcium and magnesium with EDTA method, phosphorus, iron with thioglycollic acid, tensile strength and elongation at break of braided hose for petrol and diesel fuels, properties of red oxide of iron, whiting and barytes, octane number of diesel fuel by Dumanois method, sp-gr of nitrobenzene at 27°C, physico-chemical requirements of various components of lineman's body belts and safety straps, consistency in plaster of paris, preservatives in hide curing salt, suitable colouring agent for hide curing salt, sodium carbonate in caustic soda, calcium and magnesium in caustic soda pure, *p*H and acidity in hydraulic brake fluid, and acid value, carbonyl value and saponification value of oil of vetiver roots (cultivated).

Structural and Metals Division — Investigation on use of light gauge steel sections in structures; corrosion protection of light gauge steel sections; methods of bend test for steel castings for general engineering purposes; uniformity of zinc coating (Preece Test) on samples of galvanized steel sheet, wire, tube, etc; reference blocks for routine checking of ultrasonic testing equipment; the suitability of standard sand for foundry purposes; performance characteristics of indigenous graphite crucibles up to size 100; lowest ambient temperature below which welding should not be permitted in structural mild steel for fabrication; effect of phosphorus on mechanical properties of both whiteheart and blackheart malleable cast iron.

Textile Division — Evaluation of certain characteristics of cotton *khadi* for national flags, handloom shoddy melton cloth, handloom woollen blankets (single and double faced), handloom silk *kora* cloth, handloom rayon sari cloth, handloom cotton mootus, handloom pile

fabric, woollen kersey cloth (grey), saddle blanket (natural grey), cotton selvedge tapes, circular and round wick, black drill umbrella cloth, jute bags for packing cement, manila and sisal fibres, textile machinery and its parts, casting of bolster and wharve, card and gill used in jute industry; determination of desizing efficiency and relative efficiency of amylolytic enzymes; identification of common commercial textile fibres, sulphur content of rayon yarn; estimation of small quantities of copper, iron manganese, chromium, and zinc in proofed cotton fabrics; and residue starch in cotton fabrics after desizing.

PART III INTERNATIONAL ACTIVITIES

1. INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, ISO

1.1 Out of 104 ISO technical committees, ISI participates actively in the work of 74 committees and is an observer member of 29 committees. Besides, the Institution holds secretariats of three technical committees, two subcommittees and one working group.

1.2 ISO Council — The meeting of ISO Council held during the year was presided over by Mr. A. E. Viatkine (USSR); which Dr. Lal C. Verman, Shri Jehangir Ghandy and Shri K. N. P. Rao attended from India.

On the recommendation of the Development Committee set up by the Council during its previous meeting (with Director ISI as one of the members) to suggest ways and means to propagate, initiate and promote standardization activities in the countries undergoing industrial and technological development, the Council appointed Mrs. Ing. B. Ghirelli de Ciaburri, Director General of the Argentine Standards Body, as the ISO Liaison Officer for the Economic Commission for Latin America.

The Council considered the document on aims of standardization, prepared by the Director ISI and finalized by the Standing Committee for the Study of Scientific Principles of Standardization (STACO), and decided to circulate it to the Member Bodies and technical committees for comments.

The Council considered the report of the General Secretary giving the results of his enquiry on the question of implementation of ISO recommendations in national standards. The report revealed appreciable progress in many countries towards adoption of ISO recommendations and the Council in a comprehensive resolution indicated that the report should be kept up-to-date.

The ISO Council accepted the invitation of India to hold the next triennial session of the General Assembly in New Delhi. Accordingly, meetings of the ISO General Assembly and some of its important technical committees and subcommittees would be held in New Delhi from 9 to 21 November 1964.

1.3 ISO/STACO — The Standing Committee for the Study of Scientific Principles of Standardization (a) evolved a new procedure for submitting its recommendations to the ISO Council to eliminate existing delays; (b) finalized the definitions for 'Standardization' and 'Standard' as a first step in the task of preparation of a vocabulary of terms used in the field of standardization; (c) considered a document on the question of sequence in standardization of products, which originally dealt with industrial products only and, based on the amendments suggested by

Director ISI, revised it to cover agricultural products also; and adopted the document entitled 'Standardization of Products'.

1.4 ISO/PLACO — The Planning Committee (PLACO) of ISO with *Dr. Lal C. Verman as the Chairman*, and representatives of France, UK and USSR, as the members, held two sittings covering several important items which dealt with the finalization of ISO policy in regard to co-ordination of work, assignment of technical committee secretariats, modification of titles and scopes of ISO technical committees and consideration of new proposals on dentistry, treatments of metallic surfaces and automation.

1.5 ISO/METESCO Co-ordinating Committee on the Mechanical Testing of Metals — (Sectt: United Kingdom) — India's approval to three draft ISO Recommendations relating to (a) list of recommended symbols to be used when symbolizing mechanical values, (b) tables of Vickers hardness values (HV), and (c) tables of Brinell Hardness values (HB) was communicated to the ISO General Secretariat.

1.6 ISO Committee Meetings — A brief account of the work of ISO technical committees, subcommittees and working groups of interest to India, and of other important developments is given below. For complete list of ISO Recommendations, attention is invited to p. 155-163 of Handbook of ISI Publications, 1962.

ISO/TC 7 Rivets — (Sectt: Netherlands) — First meeting 8-10 May 1962, Amsterdam (Netherlands). The Committee decided (a) to withdraw ISA Bulletin 13 Rivets in so far as it concerns rivets for general purposes; (b) to have two ranges of sizes for rivets, namely, a metric range and an inch range as in use for screw threads; and (c) to measure the maximum shank diameter for rivet at a distance of 0·5 d from the head with the maximum distance of 6 mm.

ISO/TC 11 Unification of Boiler Codes — (Sectt: USA) — Third meeting 2-14 April 1962, Essen (Germany). The Committee decided to entrust each chapter of the proposed draft to a separate Working Group.

ISO/TC 17 Steel — (Sectt: UK)—India's approval to the draft ISO Recommendation relating to interrupted creep testing of steel at elevated temperatures (temperature, not load, interrupted) was sent to the ISO General Secretariat.

Draft ISO Recommendations on the following subjects were received for comments. India's views on these will be sent to ISO Secretariat in due course:

General principles for fatigue testing; Ring expanding test on steel tubes; Tensile testing of steel tubes; Calibration of pendulum impact testing machines; Calibration of elastic proving devices; Calibration of Rockwell B and C scale hardness testing machines;

Calibration of standardized blocks to be used for Rockwell B and C scale hardness testing machines; Calibration of standardized blocks to be used for Vickers hardness testing machines; Calibration of standardized blocks to be used for Brinell hardness testing machines; General technical delivery requirements for steel; Selection and preparation of samples and test pieces for steel; Chemical analysis of steel — determination of total carbon by gravimetric method and determination of total silicon by gravimetric method.

A new Working Group on Pressure Vessel Steels was set up with Sweden as the Secretariat. India has agreed to be its participating (P) member.

ISO/TC 17/WG 8 Redesign of Hot Rolled Steel Sections — (Sectt: India) — The first meeting of the Working Group was held in New Delhi on 22-24 January 1963 under the chairmanship of Shri O. S. Murthy, General Manager, Western Railway. Five delegates from France, Germany, UK and USA, and eight delegates from India attended this meeting.

The Working Group decided upon certain basic principles for evolving an ISO Series for hot rolled sections and asked the Secretariat (India) to evolve new proposals. The delegate from Germany invited the Working Group to hold its second meeting in the first week of October 1963 in Dusseldorf (Germany).

ISO/TC 22 Automobiles — (Sectt: France) — No meeting was held in 1962; however, a draft ISO Recommendation covering electric horns for vehicles (sound signalling devices) was circulated to Member Bodies for approval.

ISO/TC 25 Cast Iron — (Sectt: UK) — Third plenary meeting 11-12 April 1962, London. India was not represented. The subjects discussed were (a) microscopic examination of iron-carbon alloys and reference standard data sheet for evaluating the micro-structure of graphite, (b) charpy unnotched impact test for grey cast iron, (c) whiteheart malleable iron, (d) blackheart malleable iron, and (e) pearlitic malleable iron.

ISO/TC 26 Copper and Copper Alloys — (Sectt: Germany) — India's approval to draft ISO Recommendations on the following subjects was communicated to the ISO General Secretariat:

Wrapping test for copper and copper alloy wire; Bend test for copper and copper alloys; Vickers hardness test for copper and copper alloys; Tensile test for copper and copper alloys; Tensile test for copper and copper alloy tubes of circular section; Tensile test for copper and copper alloy wire; and Brinell hardness test for copper and copper alloys.

Draft ISO Recommendation No. 530 Specifications for Electrolytic Copper Wire Bars, Cakes, Slabs, Billets, Ingots and Ingot Bars was approved subject to certain editorial modifications.

Draft ISO Recommendations on the following subjects were received:

Classification of brases, leaded brasses, special brasses and *high tensile brasses; Clas*sification of tin bronzes and special tin bronzes; Classification of aluminium bronzes and special aluminium bronzes; Classification of other special copper alloys (copper silicon and copper-beryllium); Classification of copper-nickel alloys; and Classification of copper-nickel-zinc alloys.

ISO/TC 33 Refractories — (Sectt: UK) — Third meeting 26-28 September 1962, Heidelberg (Germany). The following subjects were discussed:

a) Methods of test for refractories under load,

b) Determination of pyrometric cone equivalent of refractory products, and

c) Dimensions of rectangular refractory bricks.

Draft ISO Recommendations concerning (a) vocabulary for refractory industries, (b) determination of pyrometric cone equivalent of refractory products, and (c) dimensions of rectangular refractory bricks, were received and India's approval was communicated for item (a).

ISO/TC 34 Agricultural Food Products — (Sectt: Hungary) — Third meeting 22-23 June 1962, Paris. The Committee considered (a) reports of Subcommittees SC 4 and SC 7, (b) methods of testing oils and fats, and (c) terminology of sampling. A new Subcommittee for stimulant foods was also set up and India agreed to take up the Secretariat of the Subcommittee, if asked to do so.

ISO/TC 34/SC 4 Cereals and Pulses — (Sectt: Hungary) — Second meeting 18-21 June 1962, Paris. The Subcommittee discussed ISO draft proposals on (a) determination of moisture in cereals and pulses; (b) determination of ash content in cereals 'fundamental method', and determination of ash content in cereals 'practical method'; (c) methods of test for whole pulses; (d) determination of mass of 1 000 grains in cereals; and (e) sampling of cereals and pulses. A new Working Group to prepare a draft proposal on methods of sampling cereals and pulses was set up with UK as its Secretariat; Indian Member Body became participating member, and Dr. S. V. Pingale was nominated to deal with the work of the Working Group through correspondence.

ISO/TC 34/SC 7 Spices and Condiments — (Sectt: India) — Second meeting 18-21 June 1962, Paris. The Subcommittee considered the draft ISO proposals on (a) nomenclature for spices and condiments; (b) methods of sampling and test for spices and condiments; (c) specification for pepper, whole and ground; (d) specification for ginger, whole and ground; (e) specification for cardamom; (f) specification for curry powder; and (g) specification for mustard.

The Subcommittee decided to prepare draft proposal on red pepper - paprika and recommended that (a) a new subcommittee under ISO/TC 34 be formed for stimulants, and (b) India may hold the Secretariat of the new subcommittee.

ISO/TC 35/SC 2 Test Methods and Sampling for Raw Materials for Paints, Varnishes and Similar Products — (Sectt: UK) — Second meeting 16-17 October 1962, London. A revised draft on methods of test for pigments was forwarded to ISO/TC 35 Raw Material for Paints, Varnishes and Similar Products for acceptance, and a general decision was taken to include in the appropriate ISO Recommendations test methods specific to particular pigments.

ISO/TC 37 Terminology (Principles and Co-ordination) — (Sectt: Austria) — The first draft ISO Recommendation entitled 'Naming Principles', received for voting, was accepted by India.

ISO/TC 38 Textiles — (Sectt: UK) — Revised texts of the following two draft ISO Recommendations received during the year under review were accepted by India:

a) No. 322 Tests for Colour Fastness of Textiles (Second Series), and

b) No. 405 Tests for Colour Fastness of Textiles (Third Series).

ISO/TC 43 Acoustics — (Sectt: UK) — Seventh meeting 17-21 September 1962, Baden-Baden (West Germany). The Committee set up a small Study Group to draft a Test Code for the measurement of noise emitted by rotating electrical machinery; appointed two new Working Groups to prepare recommendations for (a) objective measurement of the noise produced by aircrafts in the vicinity of airports, and (b) technique for relating the physical parameters of aircraft noise in the vicinity of airports to the human perception of that noise; and approved for circulation to Member Bodies for authorization to circulate as draft ISO Recommendations, four documents covering (1) procedures for calculating loudness, (2) noise rating with respect to conservation of hearing, speech communication and annoyance, (3) general requirements for the preparation of specifications for measuring the noise emitted by machines, and (4) relation between the loudness of narrow bands of noise in a diffuse field and in a frontally-incident free-field.

ISO/TC 44/SC 6 Resistance Welding Equipment — (Sectt: UK) — Eighth meeting 13-15 November 1962, London. The Committee discussed documents relating to (a) taper for spot welding electrodes, (b) dimensions of electrode holders for spot welding machine, and (c) dimensions and pitching of slots in platens for projection welding machine. It agreed to include in its future programme of work

(1) classification of resistance welding machines, and (2) terminology for electronically controlled machines.

ISO/TC 45 Rubber — (Sectt: UK) — Tenth meeting 28 May-2 June 1962, London. The meeting was preceded by meetings of various Working Groups and 3 draft ISO Recommendations relating to standard atmospheres of conditioning and testing of rubber test pieces, determination of volatile fatty acid number of latex, and determination of tensile stress-strain properties of vulcanized natural and synthetic rubbers (Revision of ISO/R 37) were considered for submission to the General Secretariat. Further, 11 draft proposals were also considered by the appropriate Working Groups in the light of comments received from Member Bodies of ISO/TC 45 and were approved for submission to the General Secretariat as draft ISO Recommendations. These relate to determination of coagulum content of latex, sampling of latex, evaluation of a standard vulcanizate, determination of tear strength, compression set, brittleness temperature, etc.

The Leader of the Indian Delegation invited the Committee to hold its 1964 meeting in India.

ISO/TC 46 Documentation — (Sectt: Netherlands) — Ninth plenary meeting 25-28 June 1962, Paris. Considerable progress was made in the preparation of international recommendations concerning bibliographical subjects, layout (index of publication and title leaves of a book), transliteration and documentary reproduction. Two important subjects taken up on the programme of work were (a) standardization of the layout of all types of papers emanating from international congresses and conferences, and (b) transliteration of Japanese characters.

The following draft ISO Recommendations, produced by ISO/TC 46, received during the year were accepted by India:

a) Essential Characteristics of 35 mm Microfilm Readers,
b) ISO Conventional Typographical Character for Legibility Tests (ISO Test Character),
c) Terminology of Microcopy Apparatus,
d) Terminology of Microcopies and Their Bases,
e) Transliteration of Hebrew,
f) Description and Use of ISO Mire (Test Object) — Photography,
g) Description and Use of the Micromire ISO — Reading, and
h) International System of Transliteration of Cyrillic Characters.

ISO/TC 48 Laboratory Glassware and Related Apparatus — (Sectt: UK) — Eighth meeting 12 October 1962, London. Agreement was reached on international recommendations on graduated pipettes, and thermal expansion co-efficients of hydrometer glasses.

ISO/TC 54 Essential Oils — (Sectt: Portugal) — The Committee processed draft ISO Recommendations on (a) standard format for methods of analysis of essential oils, (b) determination of the relative density and apparent density of essential oils, (c) determination of the refractive index of essential oils, and (d) preparation of test sample applicable to methods of test for essential oils.

India accepted the Secretariat of Working Group of Oil of Vetiver of which Canada, France, Netherlands, Portugal and United Kingdom are the other members.

ISO/TC 56 Mica — (Sectt: India) — No meeting was held during 1962-63. The following documents were, however, circulated to Committee members for consideration:

a) Secretariat's proposal regarding rationalized grading table for muscovite mica blocks, thins and films;
b) Summary of comments received on draft ISO proposal for visual classification of muscovite mica; and
c) Draft ISO proposal for methods for grading muscovite mica splittings. Also, the draft ISO Recommendation for Phlogopite Mica Blocks, Thins and Splittings, Methods for Grading by Size, was sent to the ISO General Secretariat for circulation to ISO Member Bodies.

ISO/TC 61 Plastics — (Sectt: USA) — Twelfth meeting 17-22 September 1962, Warsaw (Poland). Draft ISO Recommendations for (a) determination of maximum temperature and rate of increase of temperature during setting of unsaturated polyester resins, and (b) determination of stiffness in torsion as a function of temperature, were approved for submission to the ISO Council for publication.

Draft ISO proposals for (a) definitions of four terms: rigid plastics, semirigid plastic, nonrigid plastic, and unplasticized polyvinyl chloride; (b) methods for maintaining constant relative humidity in small enclosures by means of aqueous solutions; (c) determination of melt flow index of polyethylene and polyethylene compounds (Amendment to ISO/DR 317); and (d) determination of refractive index of transparent plastics, were approved as new draft ISO Recommendations for circulation to the ISO Member Bodies.

ISO/TC 65 Manganese Ores — (Sectt: USSR) — Six draft ISO Recommendations relating to determination of (a) barium oxide, (b) bound water, (c) titanium, (d) zinc, (e) calcium oxide, and (f) vanadium contents of manganese ores, were circulated by the ISO General Secretariat and India's comments were forwarded.

ISO/TC 70 Definitions Relating to Engines and Machines — (Sectt: Netherlands) — First meeting 8-10 May 1962, Amsterdam

(Netherlands). The Committee decided its scope of work as follows:

'Standardization of terms and definitions relating to engines delivering shaft power and rating to machines absorbing such power (excluding aircraft engines and electric motors).'

The principles to be followed for numbering of cylinders of multicylinder engines and the position of the observer were decided, and a Working Group for 'Definitions of Powers' was set up.

ISO/TC 74 Hydraulic Binder — (Sectt: Belgium) — The meetings of the Committee and Subcommittee ISO/TC/74/SC 1 Method of Chemical Analysis of Cement were held on 27-28 September 1962, London. Draft proposals on terminology of cement, test methods of cements, methods of chemical analysis and determination of sulphur in the sulphide state were considered.

ISO/TC 78 Aromatic Hydrocarbons — (Sectt: UK) — Fourth meeting 7-8 June 1962, The Hague. The Committee decided on questions relating to the specification and methods of tests for benzene, toluenes and xylenes; agreed to have a separate draft ISO Recommendation on methods of sampling; and to give preliminary consideration to preparation of specification for solvent naphtha.

ISO/TC 79 Light Metals and Their Alloys — (Sectt: France) — Fourth meeting 20-23 November 1962, Paris. The following draft ISO proposals were discussed:

a) Composition of classic (wrought) magnesium alloys;
b) Composition of wrought products of aluminium alloys;
c) Minimum mechanical (tensile) properties for cast aluminium alloys;
d) Mechanical properties for aluminium and aluminium alloys (1) Rolled products, (2) Extruded products, (3) Forgings, and (4) Rivet stocks;
e) Methods of mechanical test for aluminium and aluminium alloy products (1) Tensile test for tubes, (2) Drift expanding test for tubes, and (3) Simple bend test for sheet and strip;
f) Methods of analysis of magnesium and its alloys (1) Gravimetric determination of zinc, (2) Gravimetric determination of aluminium, (3) Photometric determination of iron, and (4) Photometric determination of copper; and
g) Methods of analysis of aluminium and its alloys (1) Photometric determination of iron, (2) Photometric determination of copper, (3) Electrolytic determination of copper, (4) Gravimetric determination of zinc, and (5) Gravimetric determination of silicon.

ISO/TC 96 Cranes and Excavators — (Sectt: UK) — First meeting of Working Group 1 of this Technical Committee was held on 27-29 June 1962, Paris, to consider the following subjects for preparing proposals:

a) Classification by duty and range of capacities for cranes;
b) Stability including consideration of wind loads;
c) Testing procedure for cranes; and
d) Crane ropes and associated pulleys, drums, etc.

ISO/TC 102 Iron Ores — (Sectt: Japan) — First meeting 18-25 March 1963, Tokyo. Two Subcommittees, one for sampling of iron ores and the other for chemical analysis, and one Working Group for physical tests were set up. The Subcommittee on sampling discussed at length the terminologies and the basic principles of sampling, and the Secretariat was requested to redraft the ISO proposals in the light of the discussions and the agreements reached. The Subcommittee on chemical analysis discussed draft ISO proposal on methods of chemical analysis covering total iron, silica, alumina and phosphorus. The Working Group established a programme for further study and discussion at the next meeting of the Working Group.

ISO/TC 107 Treatments of Metallic Surfaces — (Sectt: Italy) — This Committee, newly set up during the year under review, will undertake work on standardization of the most common treatments of metallic surfaces and their methods of testing. India has agreed to be a participating member of the Committee.

2. INTERNATIONAL ELECTROTECHNICAL COMMISSION, IEC

2.1 As on 31 March 1963, there were 54 IEC Technical Committees, 50 Subcommittees, 86 Working Groups and 4 Expert Committees. India took part in all these committees, besides holding the Secretariat of the Technical Committee on Electric Fans.

2.2 A brief report of the work of IEC Committees of interest to India is given below:

XXVII ANNUAL GROUP MEETINGS

The twenty-seventh Annual Group Meetings of IEC were held at Bucharest (Roumania) from 24 June to 7 July 1962. The eighth Charles le Maistre Memorial Lecture, the last in the series, on the Review of IEC work was delivered by Dr. I. Herlitz (Sweden), immediate past President of IEC.

IEC COUNCIL — The Council examined the draft Revision of Statutes and Rules of Procedure and decided to issue a revised draft under the Six Months' Rule. Two important modifications accepted in this draft Revision relate to (a) the Council meeting every year instead of once in three years as hitherto, and (b) members of the

Committee of Action remaining in office for six years instead of nine as at present.

The draft Revision of the General Directives for the Work of IEC was referred to a Working Group which would submit its Report to the Council at its next meeting.

COMMITTEE OF ACTION — The Committee examined the Australian memorandum on the safety requirements for electrical equipment and accepted the recommendations of the Advisory Panel on Safety Matters (*see* below). It decided to ask TC 10 Insulating Oils to draw up a complete specification for oils, and prepare a memorandum concerning other materials, namely, liquids and gases. The Committee gave detailed thought to the question of adopting the document on protective enclosures of electrical equipment, prepared by SC 17B, by other interested technical committees; they were advised to follow the document in their work to the extent possible, and also send suggestions for modifications.

ADVISORY PANEL ON SAFETY MATTERS — The Panel discussed the Australian memorandum for more attention being given to safety matters in the IEC work. It recommended that (a) work be taken up on the preparation of a terminology on safety concepts to be used as a guide for technical committees, (b) information concerning wiring rules for low voltage installations be compiled, and (c) the information available with regard to technical obstacles to international trade concerning low-voltage electrical equipment be investigated; and proposed that TC 23 Electrical Accessories should start work on switches for appliances.

MEETINGS AT BUCHAREST

TC 1 Nomenclature — (Sectt: France) — The Committee decided to set up two Working Groups to examine matters relating to the electrotechnical vocabulary with the following terms of reference:

a) To establish general directives concerning principles to be adopted in the field of terminology work carried out in IEC, and

b) To define the respective tasks of TC 1 and specialized technical committees as well as the means of ensuring co-ordination between them.

TC 2 Rotating Machinery — (Sectt: UK) — It was decided (a) to withdraw Publication 53 Schedule of Information to be Given with Enquiries and Orders for Electrical Machinery, considered to be obsolete; (b) to set up a new Subcommittee (2 H), with France as the Secretariat to prepare draft recommendations for types of enclosures and methods of cooling rotating machines; and (c) to approve for issue under

the Six Months' Rule the document on clauses relating to the irregularities of wave forms of generators for inclusion in Publication 34-1 dealing with rotating electrical machinery. The Committee also decided to take up work on commutators and slip rings.

TC 8 Standard Voltages, Current Ratings and Frequencies — (Sectt: Italy) — This Committee considered the revision of Publication 38 Standard System Voltages, which was to be prepared by the Secretariat for consideration at its next meeting.

TC 17 Switchgear and Controlgear — (Sectt: Sweden) — The Committee approved the draft recommendations on clearance and creepage distances for low voltage contactors for issue under the Six Months' Rule, and decided that the high-voltage fuses be handled by TC 32 Fuses.

TC 20 Electric Cables — (Sectt: UK) — The following six documents were approved for issue under the Six Months' Rule:

a) Tests on Non-Draining Paper Insulated Metal Sheathed Cables for Alternating Voltages from 10 kV Up to and Including 35 kV,

b) Cables Selection,

c) Colours for Cores of Flexible Cables and Cords,

d) Nominal Cross-Sectional Areas and Composition of Copper Conductors for Rubber or PVC-Insulated Cables and Flexible Cords,

e) Recommendations on Rubber-Insulated Cables and Flexible Cords, and

f) PVC-Insulated Cables and Flexible Cords.

TC 22 Static Power Convertors — (Sectt: Switzerland) — The report on IEC work for preparing recommendations for mono-crystalline semi-conductor rectifier cells, stack assemblies and equipments was approved for issue as an IEC Publication; the drafts concerning mercury arc convertors for reversible power, pylistor power convertors and ignitions for resistance welding were discussed.

TC 24 Electric and Magnetic Magnitudes and Units — (Sectt: France) — Among the documents discussed, the one on quantities and electric and magnetic units was approved to be issued under the Six Months' Rule. The Committee also proposed to ascertain the views of national committees concerning the allocation of the name 'Lenz' to the unit of magnetic field in the Giorgi system.

TC 25 Letter Symbols and Signs — (Sectt: USA) — The document on letter symbols to be used in electrical technology was examined taking into consideration the comments from national committees, and a Working Group was authorized to prepare the final draft for issue under the Six Months' Rule.

TC 28 Insulation Co-ordination — (Sectt: France) — The main aspect of discussion was whether the designation of the voltage to which are referred the insulation levels should be with respect to insulation or with respect to the highest system voltage. The Committee decided to substitute 'Highest voltage on the equipment not exceeding' for 'Highest system voltage' in IEC Publication 71 Insulation Co-ordination — Application Guide, and felt that it was too early to introduce in this Publication the highly reduced insulation levels already used in some countries.

TC 30 Extra-High Voltages — (Sectt: Switzerland) — The Committee could not decide on the standardization of the single numerical value of the voltage above 500 kV. Further, it was considered premature to standardize voltage for DC transmission.

TC 31 Electrical Apparatus for Explosive Gas Atmospheres — (Sectt: UK) — A document on method of test for ignition temperatures of gases and vapours was approved for issue under the Six Months' Rule, and the subject of dust-tight enclosures was discussed.

TC 33 Power Capacitors — (Sectt: Netherlands) — Secretariat proposals for (a) capacitor voltage transformers, and (b) AC motor capacitors were discussed and for document (a), a Working Group was appointed to go into details on the chapter on 'guide for installation and operation'.

TC 35 Primary Cells and Batteries — (Sectt: France) — The most important item of interest to India related to storage tests for primary batteries in extreme conditions of temperature and humidity, which had been under consideration for more than four years but could not be finalized owing to strong opposition from some countries. India had earlier proposed that details of dry heat and damp heat tests be included in the International Recommendation for batteries. At this meeting, a compromise test on dry heat was agreed upon for circulation to various national committees, but the decision on damp heat test was postponed. Besides, the Committee discussed a number of subjects including batteries for electronic photoflash sets, batteries for electric fence controller, designation of 'leakproof' batteries, etc, and recommended various additions to IEC Publication 86 Recommendations for Primary Cells and Batteries.

TC 36 Insulators — (Sectt: Italy) — The drafts (a) Testing Specification for Large Porcelains Intended for Use in Electrical Installations, and (b) Specification for Solid Core Insulators for Overhead Traction Lines, with a Voltage of 1 000 Volts and Above were approved for issue under the Six Months' Rule; certain amendments to the document relating to testing specification for indoor and outdoor post insulators were agreed to be circulated under the Two Months' Procedure.

TC 37 Lightning Arresters — (Sectt: USA) — The Committee approved for issue under the Six Months' Rule the draft Guide to the

Application of the Non-Linear Resistor Type Lightning Arresters for inclusion in Publication 99-1 Lightning Arresters, Part I Non-Linear Resistor Type Arresters. The first draft proposal on the revision of Publication 99-1 itself was discussed and it was decided to present a complete document for discussion again at the next meeting.

TC 42 High-Voltage Testing Techniques — (Sectt: Sweden) — The Committee discussed (a) revision of the 1962 edition of Publication 60 High-Voltage Testing Techniques, and (b) draft relating to partial discharge.

TC 46 Cables, Wires and Waveguides for Telecommunication Equipment — (Sectt: Germany) — The three Subcommittees, SC 46A RF Cables and Their Accessories, SC 46B Waveguides and Their Accessories, and SC 46C LF Cables and Wires met at Bucharest. Six documents covering various aspects of cables and waveguides were approved for issue under the Six Months' Rule; five out of 36 documents were approved for publication as IEC Recommendations; and detailed requirements of RF connectors, semi-rigid cables, measuring methods for uniformity of impedance, screening efficiency and electric leakage current were discussed.

TC 54 Domestic Refrigerators — (Sectt: France) — The Committee, functioning as an Experts' Committee since its inception in 1960, decided to work as a technical committee. The draft Safety Requirements for the Electrical Equipment of Household Refrigerators was approved for issue under the Six Months' Rule.

TC 55 Winding Wires — (Sectt: Germany) — The Committee (a) discussed many documents of considerable importance to India, such as Classification of Round Enamelled Wires, Dimensions of Welding Wires, etc; (b) approved for issue under the Six Months' Rule the draft on nominal diameter of conductors for enamelled round copper wire and the maximum overall diameters as a function of the conductor sizes of enamelled round copper wire; and (c) proposed co-ordinated discussion with TC 15 Insulating Materials to examine the whole field of requirements related to materials for the insulation of winding wires.

MEETINGS AT OTHER PLACES

TC 13 Measuring Instruments — (Sectt: Hungary) — The Committee met during 17-28 September 1962 at Portoroz (Yugoslavia). It (a) approved for wide circulation under Six Months' Rule draft Recommendation for Electronic Voltmeters, (b) set up a new Working Group to prepare draft Revision of International Electrotechnical Vocabulary Group 20 Scientific and Industrial Measuring Instruments, (c) formed another Working Group to replace Working Group 4 of SC 13C to deal with safety of measuring instruments in general.

It was agreed to prepare revised draft proposals for (a) meters with maximum demand indicators, and (b) electrical recording measuring instruments for consideration at the next meeting.

TC 14 Power Transformers — (Sectt: UK) — The Committee met during 12-16 November 1962 at Brussels. Draft Revision of Publication 76 Power Transformers and draft recommendations for on-load tap changers were approved for circulation under the Six Months' Rule. A new Subcommittee was setup to prepare draft proposals for reactors.

TC 18 Electrical Instalations in Ships — (Sectt: Netherlands) — The meeting was held during 14-18 May 1962 at Bournemouth (UK). The Committee discussed revision of first edition of IEC Publication 92 Electrical Installations in Ships.

TC 38 Instrument Transformers — (Sectt: UK) — The meeting was held during 12-16 November 1962 at Brussels. The draft recommendation for voltage transformers was approved for circulation under the Six Months' Rule. Two new Working Groups were set up for preparing (a) revised draft recommendations for capacitor voltage transformers, and (b) draft proposal for voltage transformers for protective purposes.

TC 39 Electronic Tubes and Valves — (Sectt: Netherlands) — Meeting during 22-26 October 1962 at Nice, the Committee approved twenty-three documents for circulation under the Six Months' Rule. These included magnoval base and gauges, dimensional standardization of nuvistors, base and base gauge for 10-pin miniature tubes and valves, magnoval outlines, outlines for 10-pin miniature tubes and valves, method of measurement of emission for electronic tubes and valves, measurement of audio-frequency power and distortion of electronic tubes and valves, measurement of electrode resistance, trans-conductance, amplification factor, conversion impedance and conversion trans-conductance, etc.

TC 40 Capacitors and Resistors for Electronic Equipment — (Sectt: Netherlands) — The Committee met during 15-20 October 1962 at Nice. Two draft specifications covering ceramic dielectric capacitors type 2 and fixed wire wound resistors type 2 were approved for circulation under the Six Months' Rule. Draft amendments to documents covering specifications for radio interference suppression capacitors, polyester film dielectric capacitors for direct current, and non-wire wound potentiometers type 2 were approved for circulation under the Two Months' Procedure.

TC 47 Semi-conductor Devices — (Sectt: France) — Meeting during 2-12 October 1962 at Copenhagen, the Committee approved for circulation under the Six Months' Rule 16 documents covering terms and definitions, letter symbols, essential ratings and characteristics and measuring methods for low power small-signal diodes, rectifier diodes, switching transistors, high frequency parameters, etc.

TC 48 Electromechanical Components for Electronic Equipment — (Sectt: Netherlands) — Draft recommendations for sensitive switches, multipole connectors with blade contacts, miniature concentric connectors (types 1 and 2), and proposal for crimp-area dimensions of crimp-type contacts were approved for circulation under the Six Months' Rule. The meeting was held at Nice (France) during 19-23 October 1962.

TC 50 Environmental Testing — (Sectt: UK) — Meeting on 26 October 1962, the Committee agreed on a future layout of Publication No. 68 Recommended Basic Climatic and Mechanical Robustness Testing Procedure for Components for Electronic Equipment, now under revision; and decided not to make any significant changes in test identification or severities already specified without consulting the committees using that Publication. Other important decisions taken at these meetings were: (a) A document covering draft revision of Appendix II Component Classification was approved for publication subject to incorporation of views expressed by India; (b) A new Working Group was set up for reviewing draft Revision of Test Soldering, prepared by the Secretariat; (c) Another Working Group was formed to investigate and provide information on a number of special problems encountered in vibration, shock and bump tests; and (d) A new Working Group was set up to study the problem of damp heat (cycling) test. India agreed to become its Corresponding Member.

TC 51 Ferromagnetic Materials — (Sectt: Netherlands) — Meeting during 18-20 October 1962 at Nice, four draft recommendations covering dimensions of aerial rods; screw cores; cross cores; and tubes, pins and rods made of ferromagnetic oxides were approved.

3. COMMONWEALTH STANDARDS CONFERENCE

3.1 The Fifth Commonwealth Standards Conference was held at Sydney (Australia) from 8 to 17 October 1962. Australia, Canada, Federation of Rhodesia and Nyasaland, India, New Zealand, Pakistan, the United Kingdom, and also South Africa attended this Conference. Dr. A. N. Ghosh, Joint Director, Indian Standards Institution, represented India.

3.2 Unlike the previous conferences, this Conference had no technical sessions. It was recommended, however, that four technical sessions should be held during the next conference. The agenda contained the following 26 items:

1. Review of Recommendations of Previous Conference
2. Development of Test Houses by Standards Organizations
3. Speeding-Up of Procedures for Preparing Standards
4. Style Manual, Format of Standards

5. *Effect of National* Standards on International Trade
6. *Safety Requirement* in Packaging Regulations
7. *Safety of Domestic* Electrical Appliances
8. *Electrical Equipment* of Machine Tools
9. Modular Co-ordination
10. Food Additives
11. UK Report on European Co-ordination of Standards
12. Metric System and Future Developments
13. Use of ISO and IEC Publications in National Standards Work
14. Participation in ISO and IEC Work
15. Operation of Certification Marking Schemes
16. Use of Standards in Approvals Schemes of Other Organizations
17. Reciprocity in Approvals and Certification
18. Standards and Consumer Protection
19. Preparation of Standards for Consumer Goods
20. Certification Marking of Consumer Goods
21. Comparative Testing of Consumer Goods
22. Informative Labelling
23. Developments in Fasteners Standards (Use of UN-Threaded Fasteners, etc)
24. ABC Developments
25. Rationalization of Size Ranges in Standards for Basic Components Tools
26. Inch Sheet and Wire Gauge System

3.3 Items which were of special interest to India were those relating to functions of standards organization on consumer questions, certification marking and quality control; the effect of national legislation on international trade; and the metric system and probable future developments in the Commonwealth countries.

3.4 India submitted five documents and four notes. Papers on (a) application of statistical methods in standardization, and (b) speeding-up preparation of national standards, and the Report of the *ad hoc* Committee, presided over by Dr. Lal C. Verman, were highly appreciated. ISI's work on new subjects, namely (1) design and construction of reinforced concrete shell roof, (2) earthquake engineering, and (3) methods for olfactory assessment of essential oils and allied products, also attracted attention.

3.5 The Conference considered the question of an agreed guide for drafting standards for all Commonwealth countries and a Subcommittee with the Indian delegate as Chairman was appointed for the purpose. An agreed document on drafting purchase specifications was prepared for consideration and has been sent to all the Commonwealth countries with the object of arriving at a final decision in 1964 during the ISO Group Meetings to be held in November in New Delhi.

3.6 The Conference took note of the progress made by ISI in connection with the application of statistical principles in standards. The work received all-round recognition and it was conceded that the Institution was well ahead of other Commonwealth Standards Bodies in this field.

4. COLLABORATION WITH LATIN AMERICAN COUNTRIES

4.1 The Instituto Latinoamericano Del Fierro Y El Acero, Santiago de Chile (ILAFA) organized during August 1962 a Seminar on steel products standardization and simplification in collaboration with Pan American Standards Committee (PASC) and Pan American Union (PAU). On the basis of the desire expressed by ILAFA to secure India's assistance for their project, Shri B. S. Krishnamachar, Head of the Structural and Metals Division of this Institution, went to Santiago de Chile to work as a consultant to this Seminar.

4.2 Shri Krishnamachar who was in Santiago for two and a half months assisted Latin American Countries in organizing a programme of training standards engineers (particularly for steel) and also formulated recommendations relating to the semi-finished steel products and steel bars for structural purposes.

4.3 The work done by Shri Krishnamachar has been appreciated by the authorities of ILAFA. It is hoped that the technical contacts established between India and Latin America will grow closer in the coming years.

PART IV APPENDICES

APPENDIX A

(*See* page 5)

INDIAN STANDARDS PUBLISHED AND IN PRESS DURING 1962-63

(This list gives the new Indian Standards published during 1962-63 and those which were under print on 31-3-1963. It does not include standards which were under print on 31-3-1962 and printed during the year under report. The latter were included in a similar list published as Appendix A in last year's Annual Report.)

Sl No.		Rs
	AGRICULTURAL AND FOOD PRODUCTS	
	Animal Feeds	
1.	IS : 2052-1962 Balanced Feed Mixtures for Cattle	4·50
2.	IS : 2151-1962 Maize Germ Oilcake	2·50
3.	IS : 2152-1962 Maize Gluten Feed	1·00
4.	IS : 2153-1962 Maize Bran	1·00
5.	IS : 2154-1962 Coconut Oilcake as Livestock Feed	1·00
6.	IS : 2239-1962 Wheat Bran	1·50
	Bee-keeping Equipment	
7.	IS : 2072-1962 Comb Foundation Sheets	1·50
	Cereal Products	
8.	IS : 2234-1962 *Idli* Mix	2·50
	Dairy Equipment	
9.	IS : 1373-1962 Tinned Mild Steel Milk Cans (*Revised*)	2·50
10.	IS : 2143-1962 Open Surface Milk Coolers (with Tinned Copper Tubes)	2·00
11.	IS : 2144-1962 Hand Operated Bottle Washer	2·00
12.	IS : 2145-1962 Hand Bottle Filler	2·00
13.	IS : 2146-1962 Hand Operated Cap Sealer for Milk Bottles ...	1·50
14.	IS : 2235-1962 Cheese Vats	1·50
15.	IS : 2242-1962 Ice Chambers for 40- and 50-Litre Milk Cans ...	1·50
	Dairy Industry, Methods of Test	
16.	IS : 1479 (Part III)-1962 Methods of Test for Dairy Industry: Part III Bacteriological Analysis of Milk	6·50
17.	IS : 1479 (Part IV)-1962 Methods of Test for Dairy Industry: Part IV Freezing Point Depression of Milk by Hortvet Method ...	4·00
18.	IS : 1479 (Part V)-1962 Methods of Test for Dairy Industry: Part V Methods of Dairy Plant Control	6·00

Sl No.		Rs
	Dairy Laboratory Apparatus	
19.	IS : 2025-1962 Cylindrical Pipettes for Bacteriological Examination of Milk	2·50
20.	IS : 2311-1963 Fat Extraction Apparatus for Milk and Milk Products	2·00
	Edible Starch and Starchy Products	
21.	IS : 612-1962 Roasted Chicory Powder	2·50
	Farm Implements and Machinery	
22.	IS : 2192-1962 Mouldboard Plough, Turnwrest Type	2·50
23.	IS : 2226-1962 Mouldboard Plough, Fixed Type	2·50
24.	IS : 2238-1962 Transplanting Spade and *Seprang*	2·00
	Fish and Fisheries Products	
25.	IS : 2168-1962 Pomfret Canned in Oil	5·00
26.	IS : 2236-1962 Prawns (Shrimp) Canned in Brine	2·50
27.	IS : 2237-1962 Frozen Prawns (Shrimp)	2·50
	Pest Control Equipment	
28.	IS : 2130-1962 Hand Compression Sprayer for Agricultural Use ...	3·00
	Pesticidal Formulations	
29.	IS : 1053-1962 Dieldrin Water Dispersible Powder Concentrates (*Revised*)	4·00
30.	IS : 1054-1962 Dieldrin Emulsifiable Concentrates (*Revised*) ...	4·00
31.	IS : 2127-1962 Stabilized Methoxy Ethyl Mercury Chloride Concentrates	2·00
32.	IS : 2129-1962 Parathion Emulsifiable Concentrates	4·00
	Pesticides	
33.	IS : 1052-1962 Dieldrin, Technical (*Revised*)	4·50
34.	IS : 2125-1962 Phenyl Mercury Salicylate, Technical	2·50
35.	IS : 2126-1962 Phenyl Mercury Acetate, Technical	2·00
36.	IS : 2128-1962 Parathion, Technical	2·50
	Regulated Market Yards	
37.	IS : 2059-1962 Layout for Regulated Market Yards for Tobacco ...	3·00
	Tobacco Products	
38.	IS : 2111-1962 Snuff	4·50
	BUILDING	
	Air Conditioning	
39.	IS : 655-1963 Metal Air Ducts (*Revised*)	1·50
	Boards and Sheets	
40.	IS : 459-1962 Unreinforced Corrugated Asbestos Cement Sheets (*Revised*)	3·00
	Bricks and Blocks	
41.	IS : 2180-1962 Heavy-Duty Burnt Clay Building Bricks	1·50
42.	IS : 2185-1962 Load Bearing Hollow Concrete Blocks	2·50
43.	IS : 2222-1962 Burnt-Clay Perforated Building Bricks	2·00

Sl No.		Rs
	Builders' Hardware	
44.	IS : 205-1962 Non-Ferrous Metal Butt Hinges (*Revised*)	2·50
45.	IS : 362-1962 Parliament Hinges (*Revised*)	2·00
46.	IS : 364-1962 Fanlight Catch (*Revised*)	1·50
47.	IS : 1341-1962 Steel Butt Hinges (*Revised*)	2·00
48.	IS : 2209-1962 Mortice Locks (Vertical Type)	2·00
	Cement	
49.	IS : 455-1962 Portland Blastfurnace Slag Cement (*Revised*) ...	4·00
50.	IS : 1489-1962 Portland-Pozzolana Cement	2·00
	Codes of Practice	
51.	IS : 658-1962 Code of Practice for Magnesium Oxychloride Composition Floors (*Revised*)	4·00
52.	IS : 1080-1962 Code of Practice for Design and Construction of Simple Spread Foundations	4·00
53.	IS : 1414-1962 Code of Practice for Fixing Wall Coverings ...	4·50
54.	IS : 1625-1962 Code of Practice for Preparation and Use of Lime Mortar in Buildings	3·50
55.	IS : 1649-1962 Code of Practice for Design and Construction of Flues and Chimneys for Domestic Heating Appliances	6·00
56.	IS : 1892-1962 Code of Practice for Site Investigations for Foundations	6·00
57.	IS : 1950-1962 Code of Practice for Sound Insulation of Non-Industrial Buildings	5·00
58.	IS : 2064-1962 Code of Practice for Selection, Installation and Maintenance of Sanitary Appliances	5·00
59.	IS : 2110-1962 Code of Practice for *In-Situ* Construction of Walls in Buildings with Soil-Cement	3·00
60.	IS : 2114-1962 Code of Practice for Laying *In-Situ* Terrazzo Floor Finish	4·00
61.	IS : 2115-1962 Code of Practice for Flat Roof Finish: Mud *Phuska* ...	2·00
62.	IS : 2118-1962 Code of Practice for Construction of Jack-Arch Type of Built-Up Floor or Roof	3·00
63.	IS : 2119-1962 Code of Practice for Construction of Brick-Cum-Concrete Composite (Madras Terrace) Floor or Roof	4·50
64.	IS : 2132-1963 Code of Practice for Thin Walled Tube Sampling of Soils	2·00
65.	IS : 2189-1962 Code of Practice for Automatic Fire Alarm System ...	2·50
66.	IS : 2190-1962 Code of Practice for Selection, Installation and Maintenance of Portable First-Aid Fire Appliances	4·00
67.	IS : 2204-1962 Code of Practice for Construction of Reinforced Concrete Shell Roof	4·50
68.	IS : 2212-1962 Code of Practice for Brickwork	7·00
	Construction Plant and Machinery	
69.	IS : 2093-1962 Distributors for Hot Tar and Bitumen	2·50
70.	IS : 2094-1962 Heaters for Tar and Bitumen	1·50
	Doors and Windows	
71.	IS : 2191-1962 Wooden Flush Door Shutters (Cellular and Hollow Core Type)	2·50
72.	IS : 2202-1962 Wooden Flush Door Shutters (Solid Core Type) ...	3·00

Sl No.		Rs
	Fire Fighting	
73.	IS : 2171-1962 Portable Fire Extinguishers, Dry Powder Type ...	2·50
74.	IS : 2175-1962 Heat Sensitive Fire Detectors	2·00
75.	IS : E2298-1963 Single-Barrel Stirrup Pump for Fire Fighting Purposes	2·00
76.	IS : E2299-1963 Metal Helmets for Civil Defence	2·00
77.	IS : E2300-1963 Non-Metal Helmets for Civil Defence	2·00
	Flexible Coverings	
78.	IS : 653-1962 Sheet Linoleum (*Revised*)	2·50
	General Structural Design and Construction	
79.	IS : 1893-1962 Recommendations for Earthquake Resistant Design of Structures	8·00
80.	IS : 2210-1962 Criteria for Design of Reinforced Concrete Shell Structures and Folded Plates	6·00
	Method of Test	
81.	IS : 1888-1962 Method of Load Tests on Soils	2·50
82.	IS : 2131-1963 Method for Standard Penetration Test for Soils ...	2·00
	Miscellaneous Timber Products	
83.	IS : 620-1962 General Requirements for Wooden Tool Handles (*Revised*)	2·00
84.	IS : 2133-1962 Wooden Tent Pins	1·50
85.	IS : 2203-1962 Wooden Cross Arms	2·00
	Pipes	
86.	IS : 651-1962 Salt-Glazed Stoneware Pipes and Fittings (*Revised*) ...	4·50
	Poles	
87.	IS : 2193-1962 Prestressed Concrete Street Lighting Columns ...	3·00
	Refrigeration	
88.	IS : 2167-1962 Bottle Coolers	2·50
	Reinforcement	
89.	IS : 2090-1962 High Tensile Steel Bars Used in Prestressed Concrete	2·00
	Tiles	
90.	IS : 654-1962 Clay Roofing Tiles, Mangalore Pattern (*Revised*) ...	3·00
	Timber	
91.	IS : 2178-1962 Timber for Use in Aircraft Propeller Construction ...	2·00
92.	IS : 2179-1962 Timber for Lorry Bodies	2·00
93.	IS : 2184-1962 Tables for Volume of Round Timber Logs ...	10·00
	Water Supply, Sanitation and Drainage Fittings	
94.	IS : 772-1962 General Requirements of Enamelled Cast Iron Sanitary Appliances (*Revised*)	2·00
95.	IS : 773-1962 Enamelled Cast Iron Water Closets, Railway Coaching Stock Type (*Revised*)	2·00

Sl No.		Rs
96.	IS : 775-1962 Brackets and Supports for Wash Basins and Sinks (*Revised*) ...	2·50
97.	IS : 776-1962 Wooden Water-Closet Seats and Covers (*Revised*) ...	2·50
98.	IS : 782-1962 Caulking Lead (*Revised*) ...	1·50
99.	IS : 1703-1962 Ball Valves (Horizontal Plunger Type) Including Floats for Water Supply Purposes ...	3·00
100.	IS : 2104-1962 Water Meter Boxes (Domestic Type) ...	2·00
	Unclassified	
101.	IS : 657-1962 Materials for Use in the Manufacture of Magnesium Oxychloride Flooring Compositions (*Revised*) ...	4·50
102.	IS : 2174-1962 Reinforced Concrete Dust Bins ...	2·00
	CHEMICALS	
	Acids	
103.	IS : 265-1962 Hydrochloric Acid (*Revised*) ...	4·00
	Adhesives	
104.	IS : 2257-1962 Paper Adhesives, Liquid Gum and Office Paste Type ...	2·00
	Alcohols	
105.	IS : 361-1962 Normal Butyl Alcohol, Technical (*Revised*) ...	2·50
106.	IS : 1049-1962 Alcohol, Perfumery Grade (*Revised*) ...	2·50
107.	IS : 2252-1962 Diacetone Alcohol ...	2·50
	Chemical Products	
108.	IS : 245-1962 Trichloroethylene, Technical (*Revised*) ...	3·50
109.	IS : 251-1962 Soda Ash, Technical (*Revised*) ...	2·50
110.	IS : 252-1962 Caustic Soda, Technical (*Revised*) ...	3·50
111.	IS : 254-1962 Magnesium Chloride (*Revised*) ...	3·50
112.	IS : 263-1962 Boric Acid, Technical (*Revised*) ...	2·50
113.	IS : 299-1962 Alumino-Ferric (*Revised*) ...	2·50
114.	IS : 594-1962 Common Salt for Fish-Curing (*Revised*) ...	1·00
115.	IS : 2035-1961 Free-Flowing Table Salt ...	4·00
116.	IS : 2080-1962 Stabilized Hydrogen Peroxide ...	4·50
117.	IS : 2088-1962 Modified Gutzeit Method of Test for Arsenic ...	1·00
118.	IS : 2124-1962 Sodium Bicarbonate ...	4·50
119.	IS : 2142-1962 Bromine, Technical ...	2·00
120.	IS : 2211-1962 Anhydrous Sodium Thiosulphate, Photographic Grade	2·00
121.	IS : 2214-1962 Silver Nitrate, Technical and Analytical Reagent ...	2·00
122.	IS : 2263-1962 Methods of Preparation of Indicator Solutions for Volumetric Analysis ...	3·50
123.	IS : 2290-1962 Zinc Sulphate for Electroplating ...	3·00
124.	IS : 2307-1962 Magnesium Powder for Explosives and Pyrotechnic Compositions ...	4·50
125.	IS : 2316-1963 Method of Preparation of Standard Solutions for Colorimetric and Volumetric Analysis ...	2·00
126.	IS : 2317-1963 Method for Gravimetric Determination of Sulphates ...	1·00
127.	IS : 2318-1963 Silver Nitrate, Photographic Grade ...	2·00
	Fertilizers	
128.	IS : 294-1962 Superphosphate (*Revised*) ...	2·50
129.	IS : 2256-1962 Ammonium Sulphate Nitrate ...	2·50

Sl No.		Rs
	Footwear	
130.	IS : 1989-1962 Miners' Boots and Shoes ...	5·50
131.	IS : 2051-1962 Methods for Sampling of Leather Footwear ...	1·50
132.	IS : 2060-1962 Gents' Leather Shoes ...	4·50
	Glassware	
133.	IS : 1662-1962 Glass Liquor Bottles (*Revised*) ...	2·00
134.	IS : 2091-1962 Glass Beer Bottles ...	2·50
	Industrial Gases	
135.	IS : 308-1962 Dissolved Acetylene (Gas) (*Revised*) ...	3·50
	Inks and Allied Products	
136.	IS : 219-1962 Ink Powder and Tablets (*Revised*) ...	2·50
137.	IS : 221-1962 Ink Fluid, Blue-Black, for Permanent Records (*Revised*)	1·50
138.	IS : 222-1962 Ink Fluid for General Purposes (*Revised*) ...	1·50
139.	IS : 2230-1962 Dye, Methylene Blue, for Ink Industry ...	3·00
140.	IS : 2247-1962 Dye, Ink, Blue, for Ink Industry ...	3·00
	Laboratory Glassware	
141.	IS : 1996-1962 Glass Stopcocks ...	3·00
	Leather and Leather Products	
142.	IS : 579-1962 Sole Leather (*Revised*) ...	1·50
143.	IS : 580-1962 Harness Leather (*Revised*) ...	1·50
144.	IS : 2276-1962 Vegetable and Aluminium Tanned Snakeskins ...	4·00
	Liquid Driers for Paints	
145.	IS : 385-1962 Liquid Driers for Paints (*Revised*) ...	1·50
146.	IS : 386-1962 Liquid Driers, Concentrated for Paints (*Revised*) ...	1·50
	Metal Containers	
147.	IS : 2087-1962 Square Tins for General Purposes ...	2·00
148.	IS : 2123-1962 Vial (Goldie) Seals ...	1·00
149.	IS : 2134-1962 Round Tins for General Purposes ...	1·50
	Paper	
150.	IS : 2188-1962 Methods of Test for Paper for Electrical Purposes ...	4·50
	Perfumery Materials, Natural and Synthetic	
151.	IS : 2284-1963 Method for Olfactory Assessment of Natural and Synthetic Perfumery Materials ...	2·00
	Petroleum, Petroleum Products and Lubricants	
152.	IS : 1448 (Part II)-1962 Methods of Test for Petroleum and Its Products, Part II ...	10·00
153.	IS : 2164-1961 Method for Calculation of Bulk Quantities of Petroleum and Liquid Petroleum Products ...	6·00
154.	IS : 2297-1963 Gear Lubricants, Compounded ...	2·00
	Plastics	
155.	IS : 2036-1962 Paper Base Thermosetting Synthetic Resin Bonded Laminated Sheets ...	2·50

Sl No.		Rs
156.	IS : 2038-1962 Fabric Base Thermosetting Synthetic Resin Bonded Laminated Sheets	2·50
157.	IS : 2046-1962 Decorative Thermosetting Synthetic Resin Bonded Laminated Sheets	2·50
158.	IS : 2076-1962 Unsupported Flexible Vinyl Film and Sheeting ...	4·50
159.	IS : 2213-1962 Methods of Sampling of Thermosetting Moulding Materials	1·50
160.	IS : 2221-1962 Methods of Test for Aminoplastic Moulding Materials	5·00
161.	IS : 2267-1962 Polystyrene Moulding Materials	4·50
Printing Inks		
162.	IS : 2105-1962 Letterpress Ink, Black, General Purposes ...	1·50
Ready Mixed Paints		
163.	IS : 102-1962 Ready Mixed Paint, Brushing, Red Lead, Nonsetting Priming (*Revised*)	1·00
164.	IS : 103-1962 Ready Mixed Paint, Brushing, White Lead, for Priming and General Purposes (*Revised*)	1·50
165.	IS : 104-1962 Ready Mixed Paint, Brushing, Zinc Chrome, Priming for Use on Aluminium and Light Alloys (*Revised*)	2·00
166.	IS : 106-1962 Ready Mixed Paint, Brushing, Priming, for Enamels, for Use on Wood (*Revised*)	1·50
167.	IS : 118-1962 Ready Mixed Paint, Brushing, Finishing, Semi-Gloss, for General Purposes, to Indian Standard Colours No. 355 Lemon, No. 356 Golden Yellow, No. 368 Traffic Yellow, No. 357 Light Orange, No. 591 Deep Orange (*Revised*)	1·50
168.	IS : 119-1962 Ready Mixed Paint, Brushing, Finishing, Semi-Gloss, for General Purposes, to Indian Standard Colours; Class A No. 218 Grass Green, No. 220 Olive Grass, No. 222 Light Bronze Green, No. 223 Middle Bronze Green, No. 224 Deep Bronze Green, No. 267 Traffic Green, No. 284 India Green; Class B No. 221 Brilliant Green, No. 225 Light Brunswick Green, No. 226 Middle Brunswick Green, No. 227 Deep Brunswick Green (*Revised*) ...	2·00
169.	IS : 120-1962 Ready Mixed Paint, Brushing, Finishing, Semi-Gloss, for General Purposes, to Indian Standard Colours No. 537 Signal Red, No. 538 Post Office Red, No. 540 Crimson, No. 541 Maroon, No. 570 Traffic Red, No. 574 India Saffron (*Revised*) ...	1·50
170.	IS : 121-1962 Ready Mixed Paint, Brushing, Finishing, Semi-Gloss, for General Purposes, to Indian Standard Colour No. 414, Golden Brown (*Revised*)	1·50
171.	IS : 122-1962 Ready Mixed Paint, Brushing, Finishing, Semi-Gloss, for General Purposes, to Indian Standard Colours No. 411 Middle Brown, No. 412 Dark Brown, No. 413 Nut Brown (*Revised*) ...	1·50
172.	IS : 123-1962 Ready Mixed Paint, Brushing, Finishing, Semi-Gloss, for General Purposes, to Indian Standard Colours No. 445 Venetian Red, No. 446 Red Oxide, No. 448 Deep Indian Red, No. 449 Light Purple Brown, No. 451 Chocolate, No. 475 Gulf Red and Red Oxide (Colour Unspecified) (*Revised*)	1·50
173.	IS : 124-1962 Ready Mixed Paint, Brushing, Finishing, Semi-Gloss, for General Purposes, to Indian Standard Colour No. 105 Oxford Blue (*Revised*)	1·50
174.	IS : 125-1962 Ready Mixed Paint, Brushing, Finishing, Semi-Gloss, for General Purposes, to Indian Standard Colour No. 106 Navy Blue (*Revised*)	1·50

Sl No.		Rs
175.	IS : 126-1962 Ready Mixed Paint, Brushing, Finishing, Exterior, Semi-Gloss, for General Purposes, to Indian Standard Colour No. 671 Middle Graphite and Dark Graphite (*Revised*) ...	1·50
176.	IS : 127-1962 Ready Mixed Paint, Brushing, Finishing, Exterior, Semi-Gloss, for General Purposes, White (*Revised*)	1·50
177.	IS : 128-1962 Ready Mixed Paint, Brushing, Finishing, Semi-Gloss, for General Purposes, Black (*Revised*)	1·50
178.	IS : 870-1962 Ready Mixed Paint, Brushing, Finishing, Egg Shell Gloss, for Interior Use, to Indian Standard Colours No. 101 Sky Blue, No. 216 Eau-De-Nil, No. 217 Sea Green, No. 219 Sage Green, No. 275 Opaline Green, No. 281 Apple Green, No. 358 Light Buff (*Revised*)	1·50
179.	IS : 1874-1962 Ready Mixed Paint, Universal Zinc Chrome, Priming (Synthetic) for Light Alloys for Aircraft	2·00
180.	IS : 2074-1962 Ready Mixed Paint, Red Oxide-Zinc Chrome, Priming	2·00
181.	IS : 2075-1962 Ready Mixed Paint, Stoving, Red Oxide-Zinc Chrome, Priming	2·00
Rubber Products		
182.	IS : 636-1962 Fire Fighting Hose (Rubber Lined Woven-Jacketed) (*Revised*)	2·50
Treated Fabrics		
183.	IS : 1259-1962 Vinyl Coated Fabrics (Leathercloth) (*Revised*) ...	4·50
184.	IS : 2037-1962 Tracing Cloth	2·00
185.	IS : 2089-1962 Common Proofed Paulins (Tarpaulins)	3·50
Water and Water Treatment		
186.	IS : 1621-1963 Methods of Sampling of Industrial Water for Physical and Chemical Tests	2·00
187.	IS : 2296-1963 Tolerance Limits for Inland Surface Waters Subject to Pollution	1·50
ELECTROTECHNICAL		
Acoustics		
188.	IS : 2264-1963 Preferred Frequencies for Acoustical Measurements ...	1·00
Appliances		
189.	IS : 2082-1962 Storage Type Automatic Electric Water Heaters ...	4·50
190.	IS : 2083-1962 Flashlights	2·00
191.	*IS : 2120-1962 Requirements for Electrical Appliances and Accessories	3·00
192.	IS : 2268-1963 Call Bells and Buzzers for Indoor Use	1·50
Automobile Electrical Equipment		
193.	IS : 1062-1963 Methods of Test for Sparking Plugs (*Revised*) ...	2·00
194.	IS : 1063-1963 14-mm Sparking Plugs (*Revised*)	2·00
195.	IS : 1884 (Part II)-1963 Automobile Electric Horns: Part II Wind Tone Type	2·00
196.	IS : 2077-1962 Automobile Electric Horn Relays	1·50

*This is B.S. 816 : 1952 recognized as Indian Standard for certification marking purposes.

Sl No.		Rs
	Basic Electrotechnical Standards	
197.	IS : 585-1962 Voltages and Frequency for AC Transmission and Distribution Systems (*Revised*)	1·50
198.	IS : 2032 (Part II)-1962 Graphical Symbols Used in Electrotechnology: Part II Kind of Current Distribution Systems and Methods of Connection	2·50
199.	IS : 2032 (Part III)-1962 Graphical Symbols Used in Electrotechnology: Part III Circuit Elements and Variability	1·50
	Batteries	
200.	IS : 203-1963 Dry Batteries for Flashlights (*Second Revision*) ...	2·50
201.	IS : 267-1963 Inert Cells (*Second Revision*)	2·00
202.	IS : 395-1962 Lead-Acid Storage Batteries (Light Duty) for Motor Vehicles (*Second Revision*)	4·00
203.	IS : 2081-1962 Taper Terminal Cable Connectors for Automobile Batteries	1·00
	Cables and Conductors	
204.	IS : 449-1962 Enamelled High-Conductivity Annealed Round Copper Wire (Oleo-Resinous Enamel) (*Revised*)	5·50
205.	IS : 482-1962 Reels for Covered, Solid, Round Electrical Winding Wire (*Revised*)	2·50
206.	IS : 1596-1962 Polythene Insulated and PVC-Sheathed Cables ...	7·00
207.	IS : 2068-1962 Cotton Covered Rectangular Copper Conductors ...	3·00
208.	IS : 2069-1962 Drums for Covered Winding Wires and Strips for Electrical Purposes	1·50
209.	IS : 2121-1962 Fittings for Aluminium and Steel Cored Aluminium Conductors for Overhead Power Lines	2·50
	Electronic Components	
210.	IS : 2001-1962 Fixed Silvered Mica Capacitors	5·00
	Electronic Equipment	
211.	IS : 2106 (Part I)-1962 Environmental Tests for Electronic Equipment: Part I General	1·50
212.	IS : 2106 (Part II)-1962 Environmental Tests for Electronic Equipment: Part II Damp Heat (Cycling) Test	1·00
213.	IS : 2106 (Part III)-1963 Environmental Tests for Electronic Equipment: Part III Cold Test	1·00
214.	IS : 2106 (Part IV)-1963 Environmental Tests for Electronic Equipment: Part IV Dry Heat Test	1·00
	Fans	
215.	IS : 2312-1963 Propeller Type AC Ventilating Fans	4·00
	High Voltage Techniques	
216.	IS : 2070-1962 Method of Impulse Voltage Testing	3·00
217.	IS : 2071-1962 Methods of High Voltage Testing	7·00
218.	IS : 2165-1962 Guide for Insulation Co-ordination	2·00
	Instruments and Meters	
219.	IS : 722 (Part I)-1962 AC Electricity Meters: Part I General Requirements (*Revised*)	4·00

Sl No.		Rs
220.	IS : 722 (Part II)-1962 AC Electricity Meters: Part II Single-Phase 2-Wire Whole-Current Watt-Hour Meters (*Revised*) ...	2·50
221.	IS : 2053-1962 Thermocouple Pyrometers	2·50
222.	IS : 2054-1962 Reference Tables for Nickel/Aluminium — Nickel/Chromium Thermocouples	3·50
223.	IS : 2055-1962 Reference Tables for Platinum — Platinum/Rhodium Thermocouples	7·00
224.	IS : 2056-1962 Reference Tables for Copper — Constantan Thermocouples	1·00
225.	IS : 2057-1962 Reference Tables for Iron — Constantan Thermocouples	2·00
	Insulating Materials	
226.	IS : 1569-1963 Capacitors for Electric Discharge Lamps (Fluorescent and Mercury Vapour)	3·50
227.	IS : 2260-1963 Recommendations for the Conditioning and Testing of Electrical Insulating Materials	1·50
	Insulators	
228.	IS : 2099-1962 High Voltage Porcelain Bushings	6·00
	Lamps and Luminaires	
229.	IS : 418-1963 Tungsten Filament General Service Electric Lamps (*Second Revision*)	5·00
230.	IS : 2149-1962 Luminaires for Streetlighting	3·00
231.	IS : 2183-1963 Schedule for High Pressure Mercury Vapour Lamps ...	2·00
232.	IS : 2206 (Part I)-1962 Flameproof Electric Lighting Fittings: Part I Well-Glass and Bulkhead Types	4·50
233.	*IS : 2215-1962 Starters for Fluorescent Lamps	3·40
234.	IS : 2262-1963 Transformers for High Voltage Luminous Discharge Tubes	3·00
	Motors and Generators	
235.	IS : 1231-1962 Dimensions of Three-Phase Foot-Mounted Induction Motors (*Revised*)	2·50
236.	IS : 2223-1962 Dimensions of Flange Mounted AC Induction Motors ...	3·00
	Switchgear and Controlgear	
237.	†IS : 2086-1962 Semi-Enclosed Electric Fuses	6·40
238.	IS : 2208-1962 HRC Cartridge Fuse-Links Up to 650 V	7·00
239.	IS : 2148-1962 Flameproof Enclosures of Electrical Apparatus ...	6·00
	Wiring Accessories	
240.	IS : 732-1963 Code of Practice for Electrical Wiring Installations (System Voltage Not Exceeding 650 Volts) (*Revised*) ...	10·00
	Unclassified	
241.	IS : 2147-1962 Degrees of Protection Provided by Enclosures for Low Voltage Switchgear and Controlgear	3·50
242.	IS : 2309-1963 Code of Practice for the Protection of Buildings and Allied Structures Against Lightning	6·00

*This is B.S. 2818 : Part 3 : 1957 recognized as Indian Standard for certification marking purposes.

†This is B.S. 3036 : 1958 recognized as Indian Standard for certification marking purposes.

Sl No.		Rs
	Ferro Alloys	
307.	IS : 2301-1963 Metallic Silicon	1·00
	Lead, Zinc, Tin, Antimony and Their Alloys	
308.	IS : 2258-1962 Rolled Zinc Plate, Sheet and Strip	3·00
	Light Metals and Their Alloys	
309.	IS : 2047-1962 Aluminium Alloy Hardeners (Master Alloys) ...	1·00
310.	IS : 2067-1962 Wrought Aluminium for Electrical Purposes, Wire (Other than that Used for Overhead Conductors)	2·00
311.	IS : 2304-1962 Procedure for Inspection and Testing of Light Metals (Aluminium and Magnesium) and Their Alloy Ingots and Castings for Aircraft Purposes	4·50
	Metal Standards	
312.	IS : 2066-1962 Coding and Classification for Non-Ferrous Scrap Metals and Residues	4·50
313.	IS : 2084-1962 Code for Designation of Pig Iron	1·00
314.	IS : 2085-1962 Code for Designation of Ferro Alloys	1·00
	Methods of Chemical Analysis	
315.	IS : 1472 (Part II)-1962 Methods of Sampling Ferro-Alloys, Part II ...	2·00
316.	IS : 1760-1962 Methods of Chemical Analysis of Limestone, Dolomite and Allied Materials	4·00
317.	IS : 1917-1962 Methods of Chemical Analysis of Quartzite and High Silica Sand	4·50
318.	IS : 1953-1962 Methods of Chemical Analysis of Silver Anodes ...	1·00
319.	IS : 1999-1962 Methods of Sampling Bauxite	3·50
320.	IS : 2109-1962 Methods of Sampling Dolomite, Limestone and Other Allied Materials	3·50
321.	IS : 2305-1962 Methods for Mercurous Nitrate Test for Copper and Copper Alloys	1·00
	Methods of Physical Tests	
322.	IS : 1663 (Part II)-1962 Method for Tensile Testing of Steel Sheet and Strip: (Part II) Steel Sheet and Strip of Thickness Above 3 mm	2·00
323.	IS : 1894-1962 Method for Tensile Testing of Steel Tubes	2·00
324.	IS : 2078-1962 Methods for Tensile Testing of Grey Cast Iron ...	1·50
325.	IS : 2281-1962 Method for Calibration of Brinell Hardness Testing Machines	1·00
	Methods of Sampling	
326.	IS : 2245-1962 Methods of Sampling Quartzite	3·50
	Precious Metals	
327.	IS : 1418-1962 Method for Assaying of Gold and Gold Alloys ...	1·00
328.	IS : 2112-1962 Grades of Silver and Silver Alloys	1·00
329.	IS : 2113-1962 Methods for Assaying of Silver and Silver Alloys ...	1·50
330.	IS : 2275-1963 Grades of Platinum	1·00
331.	IS : 2278-1963 Fine Gold Bar, Sheet, Wire, Granules and Token (*Lagdi* or *Mohur*)	1·00
332.	IS : 2279-1963 Fine Silver Bar, Sheet, Wire, Granules and Token (*Lagdi* or *Mohur*)	1·00

Sl No.		Rs
	Refractories	
333.	IS : 2044-1962 Sillimanite Refractories for Glass Melting Tank Furnaces	1·50
334.	IS : 2045-1962 Natural Sillimanite Blocks for Glass Melting Tank Furnaces	1·00
	Structural Engineering	
335.	IS : 800-1962 Code of Practice for Use of Structural Steel in General Building Construction (*Revised*)	10·00
336.	IS : 803-1962 Code of Practice for Design, Fabrication and Erection of Vertical Mild Steel Cylindrical Welded Oil Storage Tanks ...	10·00
	Structural Steel	
337.	IS : 2314-1963 Steel Sheet Piling Sections	2·00
	Wrought Steel	
338.	IS : 226-1962 Structural Steel (Standard Quality) (*Third Revision*) ...	2·50
339.	IS : 277-1962 Galvanized Steel Sheets (Plain and Corrugated) (*Revised*)	2·00
340.	IS : 280-1962 Mild Steel Wire for General Engineering Purposes (*Revised*)	2·00
341.	IS : 597-1962 Black Plate for Tinning and Tinplate (Pack Rolled) (*Revised*)	2·00
342.	IS : 648-1962 Steel Sheets for Magnetic Circuits of Power Electrical Apparatus (Non-Oriented Steel) (*Revised*)	3·00
343.	IS : 961-1962 Structural Steel (High Tensile) (*Revised*)	3·00
344.	IS : 1977-1962 Structural Steel (Ordinary Quality)	2·50
345.	IS : 1990-1962 Steel Rivet and Stay Bars for Boilers	1·50
346.	IS : 2002-1962 Steel Plates for Boilers	2·00
347.	IS : 2040-1962 Steel Bars for Stays	1·50
348.	IS : 2041-1962 Steel Plates for Pressure Vessels	2·00
349.	IS : 2062-1962 Structural Steel (Fusion Welding Quality) ...	3·00
350.	IS : 2073-1962 Carbon Steel Bars for Production of Machined Parts for General Engineering Purposes	2·50
351.	IS : 2100-1962 Steel Billets, Bars and Sections for Boilers ...	2·00
352.	IS : 2255-1962 Mild Steel Wire Rod for the Manufacture of Machine Screws (By Cold Heading Process)	1·00
	TEXTILES	
	Aircraft Materials	
353.	IS : 514-1962 Mercerized Cotton Fabric, Grade 1, for Aircraft (*Revised*)	2·00
354.	IS : 596-1962 Mercerized Cotton Fabric, for Gliders (*Revised*) ...	1·50
355.	IS : 598-1962 Mercerized Cotton Fabric, Grade 2, for Aircraft (*Revised*)	1·50
356.	IS : 714-1962 Cotton Reinforcing Tape for Aircraft (*Revised*) ...	1·50
357.	IS : 2196-1962 Linen Sewing Thread for Aeronautical Purposes ...	2·00
358.	IS : 2197-1962 Braided (Plaited) Linen Cord for Aeronautical Purposes	2·00
359.	IS : 2198-1962 Flax Webbing for Aircraft Safety Belts and Harnesses	2·50

Sl No.		Rs
	Chemical Test Methods	
360.	IS : 2176-1962 Method for Quantitative Chemical Analysis of Binary Mixtures of Secondary Cellulose Acetate and Certain Other Fibres	1·50
361.	IS : 2177-1962 Method for Quantitative Chemical Analysis of Mixtures of Cellulose Triacetate and Secondary Cellulose Acetate Fibres ...	1·50
	Cotton Mill Accessories	
362.	IS : 2058-1962 Shuttles for Pirn Changing Automatic Cotton Looms	2·00
	Cotton Spinning Machinery	
363.	IS : 836-1962 Lappets for Cotton Ring Spinning Frame	2·50
364.	IS : 837-1962 Doffer and Flat Stripping Comb Blades	1·00
365.	IS : 838-1962 Tin Rollers for Cotton Ring Spinning Frame ...	1·50
	Grading	
366.	IS : 11-1963 Grading of Wool for Export (*Revised*)	2·50
367.	IS : 2231-1962 Method of Grading Hand-Made Wool Carpets ...	4·00
	Knitted Fabrics	
368.	IS : 2187-1962 Worsted Socks	3·00
	Man-Made Fibre Fabrics	
369.	IS : 2135-1962 Rayon Shioze Khaka	2·50
370.	IS : 2136-1962 Rayon Lining Cloth	2·50
371.	IS : 2137-1962 Rayon Bush Shirt Cloth	2·50
372.	IS : 2138-1962 Rayon Satin Containing Metallic Yarn	2·50
373.	IS : 2139-1962 Rayon Striped Shirting Cloth	2·50
374.	IS : 2150-1962 Rayon Palace Crepe	2·50
375.	IS : 2224-1962 Nylon Sheer	3·00
376.	IS : 2225-1962 Nylon Dress Material	3·50
377.	IS : 2227-1962 Nylon Brosso	4·50
378.	IS : 2228-1962 Rayon Mix Lining Cloth	4·00
379.	IS : 2229-1962 Hundred Percent Cuprammonium Rayon Crinkle Georgette or Crinkle Chiffon	4·00
380.	IS : 2272-1963 Nylon Satin	4·50
381.	IS : 2273-1963 Nylon Shirting	3·50
382.	IS : 2280-1963 Nylon Doria	3·00
383.	IS : 2282-1963 Nylon Crepe	4·50
	Narrow Fabrics	
384.	IS : 986-1962 Cotton Spindle Tape (for Wool Textile Mills) ...	2·50
	Packaging	
385.	IS : 741-1962 Code for Inland Packaging of Woollen and Worsted Cloth and Yarn	2·00
386.	IS : 2156-1962 Code for Packing Raw Wool for Export	1·50
	Physical Test Methods	
387.	IS : 684-1962 Method for Determination of Nep Count in Cotton ...	1·50
388.	IS : 685-1962 Method for Determination of Breaking Load, Elongation at Break and Tenacity of Single Thread by Constant-Rate-of-Load Testing Machine	2·00

Sl No.		Rs
	Silk Fabrics, Handloom	
389.	IS : 2158-1962 Handloom Viscose Staple Fibre Lungies, Striped or Checked	1·50
390.	IS : 2159-1962 Handloom Viscose Staple Fibre Shirting, Bleached, Dyed, Striped or Checked	1·50
391.	IS : 2160-1962 Handloom Viscose Staple Fibre Coating, Bleached, Dyed, Striped or Checked	1·50
392.	IS : 2172-1962 Handloom Filament Rayon Saries	1·50
393.	IS : 2207-1962 Handloom Printed Silk Saries	1·50
	Wool Fabrics, Handloom	
394.	IS : 2157-1962 Handloom Shoddy Woollen Blankets (Double Faced)	2·00
395.	IS : 2173-1962 Handloom Melton (Shoddy) Cloth	1·50
	Wool Fabrics — Mill-Made	
396.	IS : 2319-1963 Serge	2·50

HINDI TRANSLATIONS OF INDIAN STANDARDS

1.	IS : 1497-1959 Layout for Regulated Market Yards for Agricultural Commodities	4·50
2.	IS : 1653-1960 Steel Conduits for Electrical Wiring	2·00
3.	IS : 1925-1961 *Bidis*	4·50

INDIAN STANDARDS WITHDRAWN DURING 1962-63

1. IS : 72-1950 Aluminium Powder for Paints
2. IS : 105-1950 Ready Mixed Paint, Brushing, Priming, for Enamels, for Use on Metals (*Tentative*)
3. IS : 107-1952 Ready Mixed Paint, Brushing, Red Oxide-Zinc Chrome, Priming
4. IS : 108-1952 Ready Mixed Paint, Spraying, Red Oxide-Zinc Chrome, Priming
5. IS : 132-1950 Ready Mixed Paint, Spraying, Exterior, Oil-Gloss, for General Purposes, to Indian Standard Colours:

No. 101 Sky Blue	No. 353 Deep Cream	No. 364 Portland Stone
No. 103 Peacock Blue	No. 354 Primrose	No. 631 Light Grey
No. 216 Eau-De-Nil	No. 358 Light Buff	No. 632 Dark Admiralty
No. 217 Sea Green	No. 359 Middle Buff	Grey and White
No. 352 Pale Cream	No. 361 Light Stone	

6. IS : 135-1952 Ready Mixed Paint, Spraying, Stoving, Red Oxide-Zinc Chrome, Priming
7. IS : 136-1952 Ready Mixed Paint, Brushing, Stoving, Red Oxide-Zinc Chrome, Priming
8. IS : 227-1954 Malleable Iron Castings
9. IS : 433-1953 Handloom Carpets (Mirzapur) for Export
10. IS : 485-1953 Methods for Sampling and Testing of Refractory Materials (*Tentative*)
11. IS : 491-1954 Sodium Bicarbonate, Pure and Analytical Reagent
12. IS : 492-1954 Sodium Bicarbonate, Refined (*Tentative*)
13. IS : 519-1954 T-Slots, T-Bolts and T-Nuts (*Tentative*)
14. IS : 682-1958 Method for Determination of Ends and Picks per Centimetre in Woven Wool Fabrics
15. IS : 683-1958 Methods for Determination of Weight per Square Metre and Weight per Linear Metre of Wool Fabrics
16. IS : 1279-1958 Electrically Welded Mild Steel Boiler and Superheater Tubes [for Design Steam Temperatures Not Exceeding 455°C (or 850°F)]

APPENDIX B

(*See* Page 12)

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 MARCH 1963

EXPENDITURE

Sl No.	Heads of Expenditure	Amount
		Rs
1.	Pay of Officers	790 802·11
2.	Allowances of Officers	126 064·32
3.	Provident Fund Contribution for Officers: i) Interest	31 873·00
	ii) Contribution	62 301·00
4.	TA for: i) Officers	183 107·48
	ii) Committee Members	37 545·64
5.	Pay of Establishment	893 632·94
6.	Allowances of Establishment	338 740·96
7.	Provident Fund Contribution for Staff: i) Interest	21 766·00
	ii) Contribution	67 655·00
8.	TA for Staff	20 736·70
9.	Subscription for ISO & IEC	31 265·66
10.	Printing	561 752·97
11.	Conferences i) National	25 236·22
	ii) International	—
12.	Certification Testing	59 839·12
13.	Research & Consultation	46 253·48
14.	Publicity: i) Exhibition	1 997·50
	ii) Advertising, etc	80 026·49
	iii) Museum	2 005·21
15.	Other Charges: i) Stationery	130 324·20
	ii) Postage & Telegrams	101 722·22
	iii) Library	42 108·15
	iv) Telephones	42 485·49
	v) Furniture	17 157·32
	vi) Office Equipment	21 892·18
	vii) Rent & Taxes	42 493·40
	viii) Electric & Water Charges	22 991·91
	ix) Advertisement (Recruitment of Staff)	7 114·86
	x) Audit Charges	1 500·00
	xi) Maintenance of Building, etc	29 150·70
	xii) Medical Relief	46 545·58
	xiii) Maintenance & Purchase of Staff Car	12 004·27
	xiv) Staff Welfare	7 546·36
	xv) Miscellaneous	55 282·92
	xvi) Depreciation	124 438·16
	Deficit for the Year 1961-62 Transferred from Capital Account (Adjusted)	70 952·68
	Excess of Income/Expenditure Carried Over to Balance Sheet	131 068·65
	Total	4 289 380·85

INCOME

Sl No.	Heads of Income	Amount
		Rs
1.	Income Other than Government Grants:	
	i) Subscription	717 433·44
	ii) Sale Proceeds of ISI Publications (Net)	548 555·94
	iii) Commission on Sale of Publications Other than ISI Publications	107 812·53
	iv) Certification Marks Fees, Inspection & Testing Charges	436 293·19
	v) Contribution by ISI Employees to CHSS	8 896·75
	vi) Miscellaneous Receipts	35 821·91
	vii) Advertisements in ISI Bulletin	57 567·09
		1 912 380·85
2.	Government Grant for Recurring Expenditure	2 377 000·00
	Total	4 289 380·85

APPENDIX B — *Contd*

BALANCE SHEET AS AT 31 MARCH 1963

LIABILITIES

Sl No.		Rs	Amount Rs
1.	Capital Account:		
	i) Balance as per Last Balance Sheet	364 018·67	
	ii) Add Deficit for the Year 1961-62 Adjusted in Current Year's Income & Expenditure Account	70 952·68	
	iii) Add Cost of Manak Bhavan, Capitalized Transferred from ISI Building Fund	2 081 849·54	
	iv) Add Cost of Laboratory Equipment, Capitalized	171 697·89	
	v) Add Cost of Laboratory Equipment Received Against Previous Year's Provision	9 960·33	
	vi) Add Excess of Income Over Expenditure for the Year	131 068·65	
			2 829 547·76
2.	Reserve & Surplus:		
	i) Contributory Provident Fund:		
	a) Opening Balance as at 1-4-62	1 397 381·00	
	b) Add Subscription (Less Withdrawals) During the Year	200 456·00	
	c) Add Contribution (Less Refunds) During the Year	112 567·00	
			1 710 404·00
	ii) IEC & ISO Annual Group Meetings Fund:		
	a) Balance as per Last Balance Sheet	59 337·81	
	b) Add Receipt During the Year	360·00	
		59 697·81	
	c) Less Expenditure During the Year	2 165·08	
			57 532·73
	iii) K.L. Moudgill Prize Fund:		
	a) Balance as per Last Balance Sheet	13 130·89	
	b) Add Receipt During the Year	1 194·69	
		14 325·58	
	c) Less Expenditure During the Year	1 000·00	
			13 325·58
	iv) Gratuity Fund:		
	a) Balance as per Last Balance Sheet	37 428·23	
	b) Add Receipt During the Year	15 301·03	
		52 729·26	
	c) Less Payment During the Year	24 635·00	
			28 094·26
	v) Company Standardization Training Fund:		
	a) Collection During the Year	30 000·00	
	b) Less Expenditure During the Year	4 587·72	
			25 412·28
	CARRIED OVER		4 664 316·61

ASSETS

Sl No.		Rs	Amount Rs
1.	Fixed Assets:		
	i) ISI Building (Manak Bhavan):		
	a) Balance as per Last Balance Sheet	1 866 887·50	
	b) Additions During the Year	12 146·87	
		1 879 034·37	
	c) Less Depreciation Written Off	92 758·63	
			1 786 275·74
	ii) ISI Second Building: Cost of Land, etc		56 822·60
	iii) Furniture & Office Equipment:		
	a) Balance as per Last Balance Sheet	130 802·26	
	b) Additions During the Year	58 045·76	
		188 848·02	
	c) Less Depreciation Written Off	22 526·19	
			166 321·83
	iv) Staff Cars:		
	a) Balance as per Last Balance Sheet	23 151·11	
	b) Additions (Delivery Van) During the Year	6 340·10	
		29 491·21	
	c) Less Depreciation Written Off	4 630·22	
			24 860·99
	v) Laboratory Equipment:		
	a) Balance as per Last Balance Sheet	10 690·39	
	b) Additions During the Year	57 234·22	
		67 924·61	
	c) Less Depreciation Written Off	4 523·12	
		63 401·49	
	d) Add Equipment (in Transit)	124 424·00	
			187 825·49
	vi) Library Books:		
	a) Balance as per Last Balance Sheet	12 848·46	
	b) Additions During the Year	2 014·50	14 862·96
2.	Investments (at Cost):		
	i) Deposits with Banks		36 510·63
	ii) K.L. Moudgill Prize Fund (Shares of Jay Engineering Works)		11 400·00
	iii) Contributory Provident Fund:		
	a) National Savings Certificates	1 404 000·00	
	b) Balance of Advances to Members	66 170·00	
	c) Bank Balance (State Bank of India, Delhi)	240 226·00	
	d) Cash in Hand	8·00	1 710 404·00
	CARRIED OVER		3 995 284·24

APPENDIX B — *Contd*

BALANCE SHEET AS AT 31 MARCH 1963

LIABILITIES

Sl No.		Rs	Amount Rs
	Brought Forward		4 664 316·61
vi)	ISI Building (Manak Bhavan) Fund:		
	a) Balance as per Last Balance Sheet	2 103 247·20	
	b) Less:		
	Transferred to Capital Account 2 081 849·54		
	Transferred to Second Building Fund 21 397·66	2 103 247·20	—
vii)	ISI Second Building:		
	a) Transferred from Manak Bhavan Fund	21 397·66	
	b) Government Grant	60 000·00	81 397·66
viii)	Laboratory Equipment:		
	a) Government Grant	200 000·00	
	b) Less Expenditure During the Year (Capitalized and Transferred to Capital Account)	171 697·89	28 302·11
3.	Current Liabilities:		
i)	Advance Subscription for 1963:		
	a) Collection During Previous Year (Balance Sheet Item)	25·00	
	b) Collection During the Year	569 751·10	569 776·10
ii)	Sundry Creditors:		
	a) Inland	530 998·29	
	b) Abroad	223 722·09	754 720·38
	Total		6 098 512·86

I have examined the foregoing accounts and balance sheet of *Indian Standards Institution*. I have obtained all the information and explanations that I have required, and subject to the observations in the separate Audit Report, I certify, as a result of my audit, that in my opinion these accounts and Balance Sheet are properly drawn up so as to exhibit a true and fair view of the state of affairs of the Institution according to the best of my information and explanations given to me and as shown by the books of the Institution.

Sd. P. K. Rau
Accountant General.
Commerce, Works & Miscellaneous, New Delhi

ASSETS

Sl No.		Rs	Amount Rs
	Brought Forward		3 995 284·24
3.	Current Assets:		
i)	Stock:		
	Printing Paper in Hand (at Cost)		131 347·26
ii)	Sundry Debtors:		
	a) Due Against Sale of Publications	243 279·33	
	b) Due Against Advertisement in ISI Bulletin	28 029·01	271 308·34
4. i)	Loans & Advances:		
	a) Conveyance Advances to Staff	72 180·26	
	b) Advances to Staff for Purchases, etc	6 298·92	
	c) Advances to Others	5 002·00	83 481·18
ii)	Security Deposits:		
	a) With Telephone Deptt., Bombay and Delhi	150·00	
	b) With Calcutta Electric Supply Corporation	100·00	
	c) With Madras Electricity System	60·00	
	d) With NDMC, New Delhi	3 600·00	
	e) With DESU, Delhi	2 750·00	6 660·00
iii)	Pre-paid Expenses:		
	a) With Controller of Stationery, Calcutta	22 513·08	
	b) With Surveyor General of India	1 000·00	
	c) With Ghosh Estates, Calcutta	5 028·75	
	d) With Director, Map Publications, Dehra Dun	289·56	
	e) With Estate Office, New Delhi	42 196·45	
	f) With Commercial Products, Calcutta	19 283·15	90 310·99
5.	Cash & Bank Balances:		
i)	With Bankers		1 509 312·05
ii)	In Office (Including Imprest)		4 969·59
iii)	Postage Stamps in Hand		5 839·21
	Total		6 098 512·86

Sd. Harbans Lal
Secretary (Administration)
Indian Standards Institution, New Delhi

INDIAN STANDARDS INSTITUTION

GENERAL INFORMATION

The Indian Standards Institution (ISI), which started functioning in 1947, is the national standards organization for India. Its principal object is to prepare and promote the general adoption of standards on national and international basis.

The overall control of ISI, which is run and financed jointly as a non-profit making body by the Central Government and private enterprise, is exercised by a General Council, composed of representatives of Central and State Governments; leading trade, scientific and technological organizations; and subscribing members. The Union Minister for Commerce and Industry is the *ex-officio* President of ISI.

The present technical activity of ISI is carried out through seven Division Councils, one each for Agricultural and Food Products, Building, Chemical, Electrotechnical, Engineering, Structural and Metals, and Textile. All technical work relating to the formulation and revision of standards is done by committees consisting of experts drawn from manufacturing units, technical institutions, consuming organizations and other bodies concerned appointed by and under the direction of their respective Division Councils.

To make benefits of Indian Standards available to the common man, ISI has introduced its Certification Marks Scheme under the Indian Standards Institution (Certification Marks) Act, 1952, as amended by the Amendment Act, 1961, according to which quality goods conforming to Indian Standards can carry the ISI Certification Mark. This mark is a third-party guarantee of quality of marked goods. Licences for the use of the ISI Certification Marks are granted to manufacturers adopting reliable methods of quality control and providing facilities for continuous inspection by ISI staff.

In the international field, ISI represents India on the International Organization for Standardization (ISO) which links 47 countries and functions through 104 technical committees and the International Electrotechnical Commission (IEC). At present, ISI participates in the work of 74 technical committees of ISO and all committees of IEC covering a wide range of subjects, and holds the Secretariat for four committees on Lac, Mica, Electric Fans, and Pictorial Markings for Handling of Goods, and for two subcommittees, one dealing with Liquid Flow Measurements Through Open Channels and the other for Spices and Condiments.

(*Continued from cover page 2*)

Textile Division Council (TDC)

Chairman	SHRI BHARAT RAM
Vice-Chairman	DR. T. S. SUBRAMANIAN
Secretary	SHRI T. BALAKRISHNAN (ISI)

Certification Marks Advisory Committee (CMAC)

Chairman	SHRI PRABHU V. MEHTA
Secretary	DR. D. V. KAMARKAR (ISI)

Advisory Committee on Implementation of Indian Standards (ACIIS)

Chairman	SHRI N. E. S. RAGHAVACHARI
Secretary	DR. A. E. GUPTA (ISI)

Industrial Safety Advisory Committee (ISAC)

Chairman	SHRI N. S. MANEKIKER
Secretary	DR. A. E. GUPTA (ISI)

Women's Advisory Committee (WAC)

Chairman	SHRIMATI RAKSHA SARAN
Secretary	SHRI G. L. GULATI (ISI)

Bombay Branch Office Advisory Committee

Chairman	SHRI ERACH A. NADIRSHAH
Secretary	SHRI A. B. RAO (ISI)

Calcutta Branch Office Advisory Committee

Chairman	SHRI L. P. MISRA
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Madras Branch Office Advisory Committee

Chairman	SHRI D. C. KOTHARI
Secretary	SHRI B. L. BHATIA (ISI)

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Chief Editor	SHRI JAINATH KAUL
Secretary (Administration)	SHRI HARBANS LAL
Assistant Director, Kanpur Branch Office	SHRI D. AJITHA SIMHA
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