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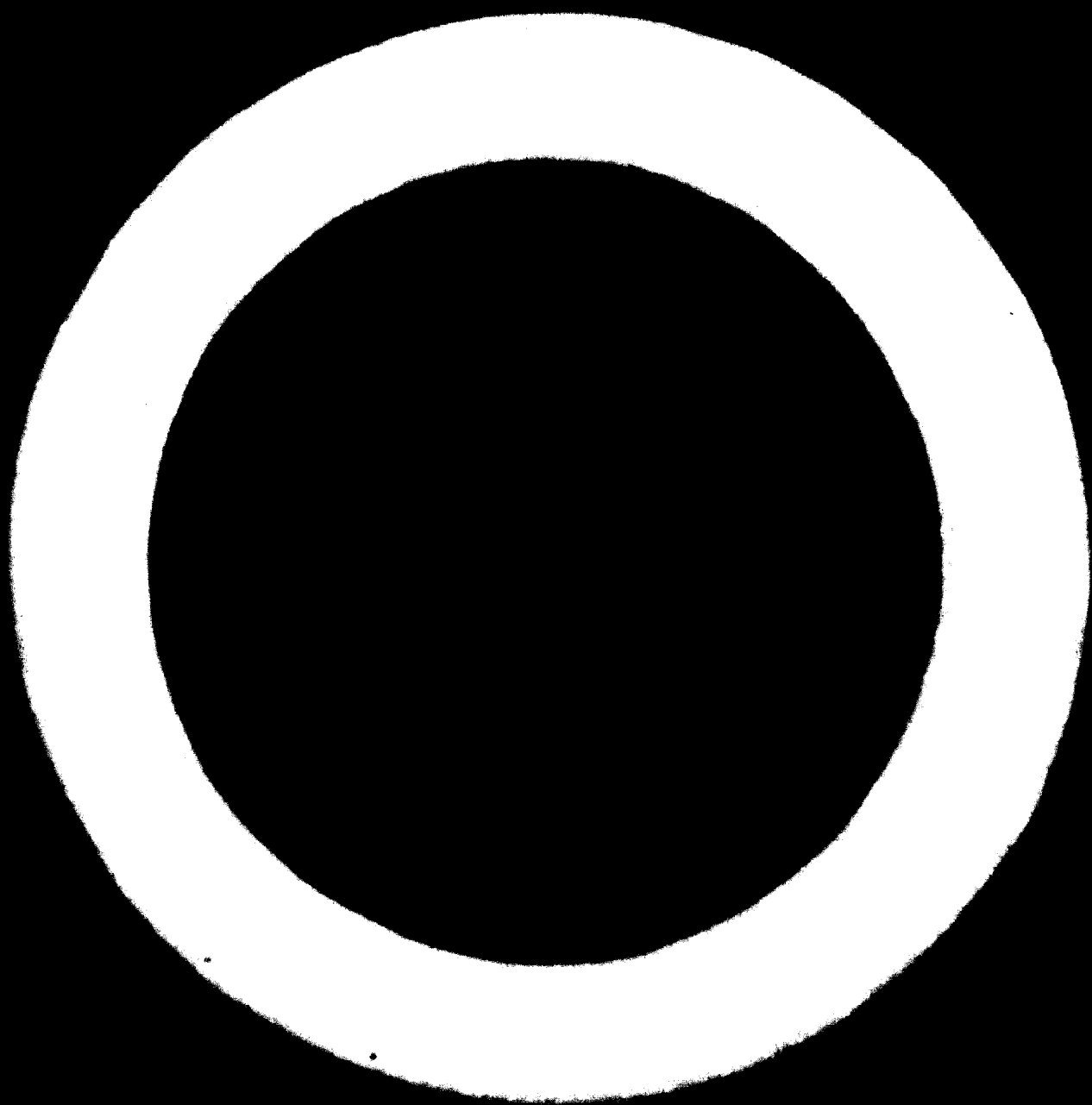
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CHAPTER I - INTERNATIONAL STANDARDIZATION

Introduction

The interpenetration of the national economies and the tremendous development of the international exchange of industrial and agricultural goods have made international standardization indispensable to world economy. Its importance is growing from day to day at an accelerating pace.

Although several UN Agencies are also involved in some international standardization activity, it can safely be stated that the bulk of the work is being done by two truly specialized and professional international organizations which have been set up for technical standardization only, i.e. the International Electro-technical Commission (IEC), which deals with electricity and electronics, and the International Organization for Standardization (ISO) which covers - at least potentially - all the other technological fields. They are in fact two sister organizations working closely together and their headquarters are located in the same building in Geneva.

The International Organization for Standardization (ISO)

In 1926 the national standards bodies of twenty countries formed the International Federation of the National Standardizing Associations (ISA). The ISA became functus officio in 1942. In 1944, the United Nations Standards Coordinating Committee (UNSCC), comprising the national standards bodies of eighteen countries, succeeded the ISA. It was primarily a war-time organization. On 14 October 1946, the UNSCC met in London, together with representatives of seven other countries not members of the UNSCC, to discuss the creation of a new international standardization body. The London Conference constituted itself as the International Organization for Standardization (ISO) and held a provisional General Assembly during which the ISO Constitution and Rules of Procedure were adopted. On 15 February 1947, with the receipt of the fifteenth ratification, the ISO began its official existence.

Aims of ISO

The object of the organization, given in Article 2 of its Constitution, is "to promote the development of standards in the world with a view to facilitating international exchange of goods and services and to developing cooperation in the sphere of intellectual, scientific technological and economic activity".

The ISO, "as a means to these ends, inter alia,may :

Take action to facilitate coordination and unification of national standards and issue necessary recommendations to Member Bodies for this purpose;

Set up International Standards provided, in each case, no Member Body dissents;

Encourage and facilitate, as occasion demands, the development of new standards having common requirements for use in the national or international sphere;

Arrange for exchange of information regarding work of its Member Bodies and of its Technical Committees;

Cooperate with other International Organizations interested in related matters particularly by undertaking at their request studies relating to standardization projects".

Structure of ISO

The structure of the ISO comprises the following organs and officers :

- (a) The General Assembly. This is constituted by a meeting of delegates nominated by Member Bodies. As a rule, it meets once every three years. Since the inception of ISO, the General Assembly has held meetings in Paris (July 1949), New York (June 1952), Stockholm (June 1955), Harrogate (June 1958), Helsinki (June 1961), New Delhi (November 1964), and Moscow (June 1967). An eighth meeting is scheduled to be held in Ankara in September 1970. The General Assembly elects the ISO President.
- (b) The Council, composed of the ISO President and fourteen elected Member Bodies. The Council meets at least once a year to administer the operations of the organization and to prepare its annual report to the Member Bodies. The Council appoints the Treasurer, the Secretary-General and an Executive Committee, and elects the ISO Vice-President.
- (c) The Executive Committee, composed of the ISO Vice-President, and between three and seven persons representing their Member Bodies. This body may meet more frequently than the Council, as occasion demands.
- (d) Technical Committees. These are composed of the representatives of such Member Bodies as wish to take part. A Member which does not actually participate in a Technical Committee can be kept informed of the proceedings by registering as an observer.
- (e) The Principal Officers of ISO are the President, the Vice-President, the Treasurer and the Secretary-General. The Secretary-General is the chief administrative officer of the Organization. He is in charge of the Central Secretariat, which consists of such staff as may be required for the accomplishment of the administrative and technical work assigned to it by the Council.

At the administrative level, the Secretary-General ensures liaison with Member Bodies, receives subscriptions, regulates expenditure, circulates information of interest to Members and, in general, represents ISO in its relations with other international organizations.

At the technical level, the Secretary-General coordinates the activities of the Technical Committees set up within the Organization.

Functioning of ISO

The standardization work of ISO is handled in its Technical Committees. The scope of each Technical Committee is approved by the Council. Each Member Body can become an active participant or an observer of any Technical Committee. One active Member of a Technical Committee is named by the Council to act as Secretariat and when it undertakes this work it does so in strict neutrality and is responsible to the Council. The Member Body entrusted with a Secretariat assumes the expenses involved in running the Secretariat.

Close liaison is established between Technical Committees with a common interest as well as with other international organizations when needed.

Work is carried out by correspondence and at meetings. The results of this work are the ISO Recommendations. An ISO Recommendation must first go through the stages of Draft Proposals at the Technical Committee level then the Draft ISO Recommendation stage at the Member Body level and is then finally approved as an ISO Recommendation by the Council.

ISO has at present some 130 Technical Committees and some 800 Sub-Committees and Working Groups, which together hold some 400 meetings per year, attended by a total of some 12 000 delegates. Since most meetings last for more than one day there are on average every working day three ISO meetings held somewhere in the world.

There are now already some 1500 ISO Recommendations. The rate of output is now some 350 Recommendations per year. The purpose of the establishment of the ISO Recommendations is their implementation through embodiment into the national standards of the Members of

ISO. Since the Member countries of ISO represent more than 9/10 of international trade, ISO constitutes the largest and most comprehensive international organization for industrial collaboration in the world.

ISO relations with other international organizations

ISO is in consultative status with the United Nations and most of its Agencies and Institutions, the work of which has a relation to the ISO work. In particular ISO has consultative status (Category II) with the Economic and Social Council, and the UN Regional Commissions, consultative status (Category A) with UNESCO, and further with UNCTAD, UNIDO, ILO, FAO, ICAO, ITU, WMO, IMCO and IAEA. An application for consultative status with WHO has been submitted in March 1970. In addition ISO has also relations with a number of inter-governmental organizations which do not have a statutory form of consultative relationship, such as UPU, GATT, BIRPI, OIML, etc.

ISO is also in official liaison with more than 200 non-governmental organizations.

Liaisons between ISO/TCs and other international organizations now number some 650.

Financial income and expenditures

ISO is mainly maintained by the financial contributions of its Members, who, by accepting membership of the Organization, agree to pay an annual contribution, the amount of which varies according to the circumstances of the country concerned. The budget for 1970 amounts to Sw.Fr. 3 870 000.-- some 16 % of which is covered by the sale of publications. This budget however gives only a very partial view of the importance of the Organization. Some 90 % of the technical work being carried out by the Member Bodies of ISO themselves, by running the Secretariats of all the ISO Technical Committees, Sub-Committees and Working Groups, the most substantial financial contribution, is part of their own budgets.

Membership

There are at present two categories of Members :

- (a) Member Bodies of ISO (full Members)
- (b) Correspondent Members.

Details on the procedures for application for Member Body status or Correspondent Membership are given in Annex 1.

Member Bodies

According to Article 3 of the ISO Constitution,

"3.1 The Members of the Organization shall be those National Standards Bodies which have agreed to abide by the Constitution and Rules of Procedure, and have been admitted into the Organization in accordance with the procedure defined in the Rules of Procedure".

"3.2 Only one Organization in each country may be admitted to membership".

The Member Bodies of ISO (Full Members) receive three copies of all ISO Recommendations - not only those to be published in future but also three copies of all past ISO Recommendations already published. They also receive necessary copies of Draft Recommendations which may be under consideration at the time of joining as well as all future Draft Recommendations. Member Bodies can also buy additional copies of published Recommendations at a discount of 33 1/3 % for their own use or for resale. The copyright of all ISO Recommendations and ISO standards belongs to the ISO Member Bodies. Each Member Body has therefore the full copyright in its own country. Member Bodies have the right to translate and reproduce ISO Recommendations or to embody the complete ISO Recommendation into their national standards.

The Member Bodies of ISO (Full Members) have also the right to participate as Active or Observer Members of any ISO Technical Committee and of taking full part in its work. In addition to benefitting from the experience of other countries, they therefore have the opportunity of influencing and having a say in the content of the international standards drawn up by the Technical

Committee in which they choose to be members. In addition to the right to vote in the Technical Committee in which a Member Body participates, all ISO Member Bodies have the right to voting on every document at the Draft Recommendation stage before it can be accepted for publication as an ISO Recommendation. As Full Members of the Organization, the Member Bodies have equal right and opportunity of influencing the policies and functioning of the ISO.

The annual subscription of the Member Bodies is determined by allocating to each one a certain number of units bearing in mind the countries economic development and foreign trade. For 1970 the value of the unit is Sw. Fr. 6 000.--.

Correspondent Members

The category of Correspondent Members has been created in ISO to cater for the needs of a country interested in standardization, but where there is yet not a formal operating organization engaged in establishing standards.

Correspondent Members receive all documentation about ISO, including both general information about meetings of Committees etc., copies of Draft Recommendations and ISO Recommendations when published. Correspondent Members thus remain fully in touch with all the activities of ISO. In addition a Correspondent Member has the right to register as an Observer Member of such Technical Committees which may be of interest to the economy of the country. The Correspondent Member receives full document of such Technical Committees and has the right to attend their meetings. With the permission of a Chairman of a meeting the Observer Member can also express its views, but has no right to vote.

In this way a Correspondent Member may possibly receive more information than can be put to immediate use in the country at the very beginning, but this means that when the national standards organization is formally created and begins to function, it stands a good chance of doing so in a way which will draw the maximum advantage of the work already done in the international fields.

The present subscription of a Correspondent Member is 400 Swiss francs per year. The status of Correspondent Member is in principle intended to be one for a limited duration. At some stage after the national standards organization has been set up and has started functioning, the Correspondent member is expected to apply for full membership of the ISO.

Value of International Standardization within ISO

International standard specifications for materials and products, standard methods of tests and standards of measurement have been characterized as the ground rules for international trade. These and international standards for nomenclature, terminology, and definitions have been identified as the international language of industry. International standards are also an important stimulus to trade and a material aid of significant potential value in improvement of the world economic situation, enlarging both world markets and world sources of supply.

The potential value of and the benefits already derived from the ISO programme can be inferred from even a cursory review of the list of ISO Technical Committees organized thus far and of the ISO Recommendations and Draft ISO Recommendations developed to date. It will be noted that the Members of ISO are engaged in the preparation of important and very useful standards on a wide variety of subjects from fundamental quantities and units of the SI system to nuclear energy, from textiles to steel, from ball and roller bearings to automobiles, shipbuilding details, and aircraft, from photography to packaging dimensions and freight containers, and from agricultural food products and packages for frozen foods to building construction. For more details about the fields covered by ISO and ISO Recommendations already published, see the ISO Nemento and the ISO Catalogue. Additional studies are continually being proposed and the programme certainly will continue to expand.

It is not intended to exaggerate the potential benefits of international standardization, but it is a fact, repeatedly voiced by many national experts engaged in such work and by others who are knowledgeable on the subject of standardization, that the collaborative process which is standardization can contribute substantially to the harmonization of international relations in general as well as those pertaining to the particular subject matter of the standardization activity.

Formulation of a standard requires concensancy of thought which can derive only from free and full exchange of information, opinion, desire and need. This sharing of knowledge and experience inevitably leads to better understanding, and the voluntary conviction or compromise naturally leads to greater goodwill.

This important feature of international standardization under the ISO system emphasized in 1962 by Mr. A.Y. Viatkins (USSR), the then President of ISO, in a statement he submitted to the 17th Session of the UN Economic Commission for Europe :

"Within our Organization we have no difficulty in finding a common point of view and we reach unanimous decisions based on mutual respect and on the incentive that every Member of ISO has to contribute to the common cause of achieving scientific, technical and economic progress with a view to improving the welfare of humanity. And this is wholly natural, because each Member of ISO understands that the work on international standardization is carried on for the benefit of all, and that international standards, once introduced, bring about the perfecting of products meant to satisfy fully the needs of mankind.

I should like, in conclusion, to underscore those basic principles and aspects of the activity of the International Organization for Standardization which make it possible to reach agreements on the most ticklish problems of international standardization in harmony with the interests of the great majority of the ISO Member States.

Being a non-governmental technical organization, ISO takes it as axiomatic that all its Members have equal rights and are contributing to ISO for the benefit of everybody, regardless of the size, the social system, the economic and industrial potential, and the scientific, technical or cultural level of development of the country they represent. This has led to an atmosphere of true democracy within ISO, one of mutual understanding and collective responsibility for the decisions adopted. In addition to the goodwill brought to bear by these participating, there is a great deal of very extensive scientific, technical and economic research carried out by the Member States, the results of which make it easier to develop and to approve international

Recommendations. We have only to realize that hundreds of outstanding specialists in the various branches of industry and commerce constantly take part in the work of ISO and its Technical Committees. It is thanks to their participation that the work of ISO takes on a concrete character and ISO becomes an efficient agency for effectuating international exchanges of scientific and technical experience, in which each contributes the benefits of his own experience and at the same time gleans from the experience of others much that can then be fruitfully employed for further progress of his own country".

International standardization is not a panacea, of course, but through its modus operandi of search for areas of agreement for mutually acceptable solutions to common problems, differences are subordinated and a strong contribution is made to world peace and prosperity. Agreements reached in the form of standards not only coordinate and therefore expand and expedite the industrial or other programmes with which they are identified but also serve as a basis, as an exemplification, and as encouragement of international co-operation in other fields and other ways.

Regional Standardization

Standardization on a regional basis finds its justification in the fact that certain products are mainly exchanged within well-defined areas to such extent that standardization in the field in question arises no interest outside the area in question. More and more however is regional standardization acquiring a new value in that it is also increasingly practiced by groups of countries with common economic problems and interests in the context of world trade as an intermediate step towards real international standardization.

A few examples of such attempts are listed below :

Commonwealth Standards Conference : With a view to closer cooperation among the national standards bodies in the Commonwealth Countries and to evolve a uniform approach to problems of mutual interest, the representatives

of the national standards bodies in the Commonwealth Countries have met in conference every five years since 1946. They have been able to offer certain policy recommendations at the end of each conference for their mutual guidance.

European Standards Co-ordinating Committee (CEN) : Early in its operations the European Economic Community (EEC) or Common Market realized that standards were essential to establish a common language on which to base its operations. As all the national standards bodies of the countries involved except one were Members of ISO, they agreed to adopt the ISO Recommendations wherever they were available. Later CEN was set up, including the countries that would form EFTA.

Parallel to CEN exists CENEL which responds to the same needs of the same countries, but which is limited to the electrical field.

International Commission for the Regulation and Control of Electrical Equipment : Although international in name, its operations are confined to European countries. Its recommendations, which are mainly safety standards in the electrical field, are used as government regulations governing the importation of electrical equipment.

Commission on Standardization of the Council for Mutual Economic Assistance (CMEA) of the Socialist Countries

To meet the needs of mutual trade among its member countries CMEA spells out the details of specifications to be followed.

Asian Standards Advisory Committee (ASAC) : ASAC was established in 1966 and held its first meeting in 1967. The aims of the Committee are to strengthen national standardization and to achieve regional harmonization of standards in fields of particular interest, including certification, labelling, pre-shipment inspection, etc.

Arab Organization for Standardization and Metrology (ASMO) : With the object of evolving a common approach to the development of standardization activities in the Middle Eastern Countries, two Conferences were held one in

1958 in Beirut and the second in 1961 in Cairo. A Standing Committee for Standards and Measures of Arab States was formed in 1961.

ASMO was founded in 1967 with the aims :

- (a) to urge the establishment of standardization and metrology in the Arab States,
- (b) to unify technical terms and methods of testing analysis and measurements in the Arab States,
- (c) to coordinate and unify the specifications used in the Arab States, whenever possible.

Maghreb Centre of Industrial Research : The Centre has been set up to promote the industrial development of the four Maghreb countries with a view to their future economic integration. Standardization is receiving a very high priority and the Centre has adopted a programme for developing Maghreb Recommendations from 1970 onwards. Unified Technical Committees have been set up and it is envisaged that the Maghreb Recommendations will be in line with ISO and IEC Recommendations.

The Centre does not envisage to create an autonomous Maghreb standardization body but supports the creation or the strengthening of NSB's of the four countries.

Pan American Standards Committee (COPANT) : COPANT was organized in 1961 and comprises most countries of the Americas. It has set up more than 170 Technical Committees and Sub-Committees and approved over 200 Recommendations.

CHAPTER II - CHARACTERISTICS OF STANDARDIZATION IN DEVELOPING COUNTRIES

Introduction

In 1963, Feivel Hadass, the then Director of the Standards Institution of Israel (S.I.I.) wrote the following lines in comment upon the creation within ISO of a special committee for the study of the problems of developing countries in the field of standardization (ISO/DEVCO) :

"It is our experience in many countries to which we are offering technical assistance that the practical approach should be preferred to the theoretical one. Young nations are more easily persuaded and taught when we handle directly their immediate activities and together with them try to solve the problems they are facing. The only instance where theories are presented to them is in educational work in Universities, research stations etc.

From this point of view, activities should be developed in the form of application of standards and specifications in importation and exportation adopted together with acceptance testing, rather than by the immediate setting of own national standards" ✓

This very broad involvement of standardization is characteristic for the developing countries. Unlike industrially advanced countries which can often rely on a series of specialized and experienced organizations active in fields closely related to standardization in the strict sense, but without the activity of which standardization cannot take roots, countries at the early stages of their development cannot benefit from such specialization, nor is it even desirable that in tackling a planned development they should carry the burden of a laborious coordination of several bodies working in a dispersed way. If standardization is to take roots, everything from basic research to actual implementation must be

*/ F. Hadass, How can Developing Countries benefit from Standardization, ISO, document ISO/DEVCO (Israeli - 1)2, Geneva 1963

caught in one single approach. Thus wrapped up in a much wider environment, standardization will have a real impact.

Such allied areas, are for example, metrology and metrology centers, research laboratories, testing and analysis facilities, education for quality among the producers, quality control at the production stage, quality certification, pre-shipment inspection, marks of conformity with standards, training for standardization in schools and companies, company standardization, etc. Of course it is clear that also in advanced countries some of the above activities are in one way or another dealt with or coordinated by the NSB. But nowhere is the need so real and pressing as in developing countries.

Blowing up the importance and the cost of introducing and developing efficient standardization in developing countries might have an adverse effect in that it frightens more than it encourages. However, the introduction and subsequent development of standardization can be done very progressively. More even, it is particularly in such early stages that some very simple standardization measures can yield incredible returns.

Although the design of standards for technological fields which have still to develop is the form of standardization in which developing countries have a comparative advantage over the advanced countries, simplification and unification may in the beginning offer unique possibilities for obtaining extremely high returns for little or no effort or cost. The proliferation of possibilities results for a great deal from the dependency on too many partners using different standards in the country's foreign trade. In addition however, existing local manufacturing may also suffer from the same symptoms due to lack of guidance from standardization. Corrugated sheets, bricks and concrete blocks, electric plugs and sockets are examples of products of which a variety reduction can mean savings for all concerned.

The principle of a modest but imaginative "pilot" start applies equally to the setting-up of the organization which is to take care of national standardization and its allied fields in the country.

The following paragraphs study the aspects of standardization that are particularly relevant to developing countries. At the same time some broad priority areas can be identified and a brief indication can be given of some methods and techniques related to the actual implementation of standards and its general rooting in the development of the country.

Standardization and foreign trade

In developing countries, the gradual development of standardization and its priorities is very closely associated with the policy and the programme of the country in respect of foreign trade. It is, of course, in this field that governments endeavour to obtain and to maintain control over one of their crucial economic problems : the balance of payments and associated with it : promoting the exports and rationalizing the imports.

Exports promotion

Standardization can right from the outset be a valuable tool for increasing the value of the exports of a country.

The attitude of a purchaser with regard to foreign products is rather complex :

- on the one hand, he is tempted by quality, originality and price...
- on the other hand, he is uneasy about the possibility of being cheated or disappointed and also about payment difficulties in case of disagreements.

The exporter usually tries to make the most of the given conditions and does not always give enough thought to dispelling the uneasiness. Reference to standards is one of the most tried and tested methods of allaying such fears, as the overseas purchaser finds this a kind of guarantee to which he is accustomed.

Hides and skins from Ethiopia are at present of a low quality. There are many cuts from the flaying and most hides are dried on the ground, which means great risks for putrefaction.

On a national standard with the number of defects specified and the method of drying laid down a classification can be built up. The prices for the producer can then be given in relation to quality class and weight of the hide. The export trade can be based on the recognized quality classes. (There is ISO work of great importance going on in this field). A standards mark together with quality figure can facilitate the trade.

As the producers are very many, often illiterate and living in distant places the training is important. Strong traditions also conserve a less quality-conscious thinking. In Ethiopia a group of peace-coops members were trained and then sent out to different districts.

In theory four million E S could be the increased value of the hides. If one tenth of this figure is obtained in reality the result could be looked upon as satisfactory */

Turkey, for instance, recently reported that standardization of lemons has the price of this citrus fruit by 1 DM per crate - or 6 to 7 percent on the Hamburg Market.

The U.A.R. has set up standards specially for the export of frozen shrimps and dehydrated onions.

Morocco reports standards for citrus fruits and tinned foods.

Where standardization for exports becomes even more practical - in the sense meant by Hadass - are the cases where the countries not only set standards but also provide means for ensuring their implementation.

One way of doing this is for example that followed by Japan, that on the basis of national standards, has undertaken a vast programme of quality certification - directly connected with its export policy.

According to the Export Inspection Law, many of the commodities exported from Japan are subject to official inspection. The inspection Law adopts Japanese

*/ This example has been quoted by Lars Waldén, from his experience during a one-year assignment as a UNIDO standardization adviser to the Ethiopian government in 1968-1969.

Industrial Standards (JIS) principally as the criteria for the inspection and its principle is that inspection organs of a neutral and impartial nature inspect specified commodities for export and prohibit the export of those commodities which fail to measure up to stated standards of quality and packing. The aim of the inspection is to preserve and enhance the reputation of Japanese export commodities on the world market, and thereby to contribute to a sound development of Japan's export trade. At present, the inspection system covers more than 40 per cent of the total Japanese exports with particular emphasis on light machinery, machine parts, sundry goods, textile goods and foodstuffs. The strict enforcement of the comprehensive export inspection system without parallel in the world has served to raise international trust in Japanese commodities. This, it may be said, is one of the major factors behind the phenomenal growth of Japan's exports trade since world War II.

Another means is provided by the setting-up of a system of marks indicating conformity with standards.

The principle of marks indicating conformity with standards consists in having an independent authority, in this case a standards institution, to certify that a given product fully answers the requirements of the standard(s) by which it is covered. The use of such marks is not only important for exports but also for industrial users and for consumers.

The public in general will never read standards and buy products with reference to these. However, if there is a standards mark he can see himself that the product meets the official requirements. Also for industries the purchasing is simplified if standard marks are applied on the products.

It is very important to create rules for the use of the standards mark and to make a lot of propaganda around this activity.

In most countries those who use the standards mark have to pay a fee to the standards institution. The total amount of fees can sometimes cover one third of the annual budget.

The double importance of this procedure for the overseas purchasers is obvious :

- on the one hand, he obtains exact information about the products which he is ordering by reading the standards (traditionally set out in a clear and strictly scientific fashion);
- on the other hand, the standards institute's certification, backed by testing, effectively guarantees the conformity commitments by the manufacturer. It also ensures the necessary aid to the purchaser, if the unfortunate case should arise where those commitments were not fulfilled.

Among the countries that have established such marks the following countries should be mentioned as having had a notable influence on exports : France, India, Japan, the United Kingdom, Iran, the U.A.R. etc.

More information on one of these systems, the Indian, is given in Annex 2 .

Finally, it should never be forgotten that a group of standards for exports which are highly regarded from the technical viewpoint serve to enhance the prestige of a country's products as a whole.

Rationalization of imports

Although the use of standards in foreign trade concentrates mainly on the promotion of exports, considerable gains can equally be obtained on the imports side. The problems created by the diversity of foreign suppliers in trade and technical aid have already been mentioned. It was reported recently that in a developing country with about 4, 5 million inhabitants aid programmes have introduced twenty different types of tractors with the result that no servicing and spare parts industry is possible. Again all that is sometimes needed is the adoption of very simple measures, for example the adoption and use of appropriate international standards where these exist. With regard to Ethiopia Wallden is of the opinion that about 150 000 E \$ per year would be saved if the government would adopt the international A-sizes for paper, printing, stationery and to that effect organize a centralized purchasing.

Another aspect is the role of standards in imports substitution, equally intended to save hard currency, at least in the long run. The importance of the imports substitution effect should however not be over emphasized in the case of Africa as long as the continent remains divided in innumerable small markets. The effect can even become negative if prestige considerations enter the field. The infamous illustration of this trend is that in 1965, the developing countries spent \$ 2.1 billion, of their domestic resources to manufacture cars and automotive products, which had an international valuation of only \$500 million. This one-year waste of \$1.3 billion, which is more than the World Bank's 23-year total of investments in industry, is a drastic reminder, if reminder there must be, of the need for a revised industrial policy based on careful choice of technology, and exploration of all available outlets.*/

Nevertheless imports substitution remains a valuable tool whenever it can be associated with valuing national resources unused before.

This point may also be illustrated by the following examples from the Indian experience :

"Before ISI came into being, industrial practices in certain well-established industries, such as cement, steel and non-ferrous metals, were largely based on British Standards. Though, by and large, the British Standards covered India's needs, it became apparent that these standards could be amended somewhat to maximize their value in meeting specific needs of the country, for example, in respect of maximum utilization of readily available indigenous raw materials. In the case of steel used for statically loaded structures, sulphur and phosphorus contents could be relaxed somewhat so that with the available resources of coking coal, the production of steel could be stepped up to meet the expanding demand. In the case of portland cement, the existing specifications had to be liberalized in respect of magnesia content so that a large number of limestone deposits in the country could be economically exploited for the manufacture of cement.

*/ J. S. Adiseshiah. The World Situation : The Seventies - Decade of Decision. Inaugural address made to the National Conference of Churches on Action for World Development in Sydney 1970, UNESCO, document DDG/70/1, Paris 1970.

The use of aluminium in place of copper in electric cables is another example. India is extremely short in copper but large deposits of aluminium ores are available. Production of aluminium is therefore being stepped up and its use as a substitute of copper as electrical conductor is being encouraged in all possible ways. Before these decisions were taken, the requisite experimental investigations and a thorough search of overseas standards was undertaken to ensure that such liberalizations would not affect the basic qualities required in the products" * /

Standardization and Quality

In developing countries, more than in the advanced, the machinery for standardization has a close relationship with quality, be it for export or not. This is particularly true since manufactures, semi-manufactures and semi-processed agricultural products often suffer from a low quality level. Much of this has already been explained in the previous paragraph when dealing with exports promotion. Quality, however, has also a role at the manufacturing or producing stage and it is there that it has important implications on education, training and also testing and analysis activities.

Ensuring and improving the quality of products in all branches of the economy is not a campaign that is to be conducted for a short time. On the contrary, it is a continuing process that requires the attention of the whole working population, regardless of their being government or trade officials, scientists, engineers, technicians or workers. The necessity to manufacture products of high quality, is, on the whole, conditioned by the following three factors. * /

* / Complete Collection of Papers presented at the United Nations interregional Seminar on Promotion of Industrial Standardization in Developing Countries:

- S. K. Sen, Experience in Standardization Efforts in a newly Industrialized Country
- Dr. Abd El Hamid Helmy Abd Alla, Standardization in Developing Countries

- (a) The large-scale development of a developing economy requires a permanent and rapid increase of labour productivity in realizing and utilizing the economic laws of development. This implies that the economic system must be developed on the basis of the highest level of science and engineering. That requires plants, machines, instruments and equipments of maximum possible economic efficiency i.e. particularly of high quality and at lowest possible cost.
- (b) In order to satisfy the growing needs of the people in a better way, it is not only necessary to improve the material bases of the production but also the quality of consumer goods. High quality consumer goods are an essential stimulus of the material interest of the working people.
- (c) Moreover, the increasing competition on the world market demands a high quality of products at lowest possible cost. The sale of products can only be ensured if the economy is adjusted to the fact that the world market is governed by the growing demands of the consumers for products that come up to the scientific and technical peak level.

In the struggle for high quality and lowest possible cost it is an important task to exercise influence already in the period of production planning and not only to cause corrections to be made after the controls. For this reason the NBS must already cooperate in the period of planning the quality improvements, thus ensuring for quality-promoting measures to be taken in the essential stages of quality improvements.

According to Reza Shayegan, standards have taught Iran an important lesson in the improvement of production methods. He goes on :

"First we write the specification for our goods. Then we go back to the production stage and try to improve the products with technical assistance to the farmers and producers. In recent years, in cooperation with other interested organizations, we have been spending some 20.5 million for the guidance of dried fruits growers annually. In the production of high quality skins, we have moved from observation activities to actually fighting disease and the control of skins

in the slaughter houses. We have gone to the roots of the problem and have undertaken a comprehensive program to produce standard commodities."/>

Quality promotion and exports promotion are intimately linked. Inspection systems and systems of marks of conformity with standards, already mentioned in the previous paragraph, have equally an importance in a quality policy. It is only a matter of emphasis.

In most fields the quality variations are due to purchasing of raw materials at random, simple processing machines etc. Standardization can fix quality levels and thereby create more consistent products. This does not mean that quality should always be increased: only keeping it at a defined level is sometimes sufficient. Often, however, a quality increase is desirable.

Quality inspection need not always be very elaborate: spot-checking only with sampling at random, followed by checking of dimensions, strengths or what the case may be, is in many cases sufficient. During his mission in Ethiopia, Walldén has found no cases where sampling according to statistical principles or tables is to be recommended, except for coffee and grain. It would appear to be too early to introduce these more sophisticated methods. Petrol products, cement and sugar represent some products produced in large quantities or continuously. For these a statistical quality inspection could be applicable. The industries concerned are, however, of that capacity that they can take care of themselves.

In developing countries any quality or certification marking scheme must, in addition to giving a quality assurance for the items certified, also embrace the role of promoting quality consciousness as well as encouraging the improvement of the quality of manufactured products.

Certification or quality marks

Certification or quality marking schemes are a useful and in some cases necessary method to help raise quality and quality consciousness.

Such schemes could be operated on a voluntary basis, and they are recommended to cover:

- (a) Prelicensing check of products.
- (b) Production checks after a license is granted.
- (c) Market sampling

This will ensure that the required quality is met.

In order to avoid confusion to consumers, a uniform marking scheme is recommended for adoption.

Promotion of quality

The promotion of quality is a vital function of the NSB and the following means are recommended for exploration as applicable:

- (a) Government support : Governments could take the lead in developing quality consciousness by specifying that all government purchases should be products bearing a certification or quality mark.
- (b) Publicity : To arouse quality consciousness, the NSB must publicize its work and its achievements by all available means.
- (c) Training : In order to assist industry to manufacture within certain limits, it will be necessary to encourage quality control and training of quality control engineers. Consideration could also be given to the formation of quality control engineers' associations, thus putting training on a professional basis.

The interrelation between standardization and other quality promoting activities has as a result that in several developing countries which have already reached some sophistication with regard to their machinery for technological development, standardization and quality control are brought in a single institution. In some cases, the grouping goes even further and also embraces testing, industrial research and development activities in the wider sense.

In advanced countries it is not generally deemed necessary for a NSB to be the owner of its own laboratories for testing and analysis (for example in connection with the granting of marks of conformity) or for research needed for the establishment of standards. In developing countries, however, one often finds that national standardization is part of a multi-purpose organization covering standardization, inspection, services, material testing and guarantee of quality.

Since developing countries are very often so small in size and have a very narrow economic basis, such centre for testing, standardization, research and development is often very appropriate and the only way to ensure an optimal utilization of personnel and equipment.

Coupled with the basic requirement for the provision, of standards of measurement is the equally important requirement for the provision of facilities for the testing of industrial raw materials and finished products.

It is essential that there be an impartial and technically qualified testing laboratory that can perform chemical analysis, make physical tests, provide quality control, and determine the conformance of materials and products to standards of quality, performance and practice. It should also be able to offer expert consultation and generally assist, encourage and stimulate industry with scientific and engineering skills and knowledge. Such a laboratory is also vital in the pursuit of governments activities of testing purchases for conformance to specifications samples for the awarding of bids, and imports for customs classification and assessment.

Company standardization

So far little has been said about standardization at this level, because from the viewpoint of officials responsible of national standardization, company standardization is at the fringe of their preoccupations. Nevertheless also the fringe has its right place in the picture and in the case of developing countries it is accepted that taking care of national standardization implies more than in the advanced countries involvement in company standardization. This fact is again a corollary of the principle that in developing countries national standardization has interferences with numerous border areas.

Whereas in industrialized countries there is a very considerable standardization activity at the level of the individual companies and within industry, which provides an extensive and effective background for the preparation of national standards, in developing countries very little base of this type is

available, apart from the subsidiaries of large foreign companies which import the standards from overseas. Company standardization is often notably absent in small scale nationally owned industries. Hence if the NSB is to erase collaboration in its work from industry it has to include the promotion of standards consciousness and in-plant standardization in the local industry.

As regards the problem how to tackle the promotion of company standardization in developing countries, one may perhaps again find very much wisdom in the pragmatic and progressive approach, which has been suggested in such areas as inspection and quality promotion. These industries which are found to qualify for an intensive drive in export promotion and hence constitute a priority field for national standardization are no doubt the industries which are to benefit from a special effort in in-plant standardization. If one wants to achieve a lasting cooperation between the NSB and the particular industry. Moreover, this subject cannot properly be dealt with, unless the aspect of training and propaganda for standardization is also brought into the picture.

In many developing countries, as well as in many advanced countries, training for standardization is very deficient, both at the academic level and in the practical training. This situation is of course part of the problems around technical education in general.

In the developing countries training can play a determinant role in the promotion of company standardization. Besides the need to train the personnel directly involved in the NSB, training can be undertaken on two levels, i.e. in the schools and in the industry. Since it is not normally available in the present educational system training in industrial standardization will at the beginning have to be provided on a special seminar basis.

At a somewhat later stage, once it is recognized that a specialized training is necessary for promoting standardization, the trainees participating in this course should also be briefed in the manner of

- (b) conducting a survey of the status of standardization
- (c) assessing the results of the survey
- (d) making recommendations for the future, based on the survey and the assessment ^{2/}

~~Industrial Standardization in Developing Countries~~
~~UNEP/WHO Document ST/CIB/2, New York, 1962~~

CHAPTER III - DEVELOPING COUNTRIES AND INTERNATIONAL STANDARDIZATION

Introduction

We are witnessing a growing tendency to shift the emphasis from national standardization to international standardization, whilst the increasing number of international documents tend to become real standards which often can readily be used in the economy without additions or selections.

If we extrapolate the present trends, we may perhaps face a situation at the end of this century in which there will no longer be major national technological issues. The world is shrinking at an accelerating speed and the civilization of tomorrow will be a world civilization or there will be no civilization.

The conclusion to draw is clear : priority of and support for international work. In both aspects developing countries have a specific contribution to make.

Participation in international work

Developing countries should seek membership in ISO either as (full) Member Bodies through their NSB, if any, or as Correspondent Members through any other authority responsible for the introducing of standardization in case no NSB is operating yet. Through cooperation in the international standardization programme they will have at their disposal the already formulated ISO Recommendations reflecting the latest international agreement on technological matters. These will be ready-made solutions of the highest order to many of their problems or, at least, invaluable guides to the more rapid solution of their own problems, technical information representing a wealth of world expert opinion, knowledge, and accepted practice available at no cost for immediate application. Through direct participation in the ISO programme, developing countries will have the opportunity to present their own standardization needs and to obtain the benefit either of national standards developed in other ISO member countries or of international attention to these needs under ISO pro-

cedure if they represent problems common to other countries. Requests can be made for standards which may be needed, and will be received sympathetically by an organization dedicated to such service. Opportunity likewise will be afforded for their participation in the development of standards of interest to them. Under the democratic procedure of standardization of ISO, each Member Body is guaranteed a voice in the work of interest to it and a vote in the approval process, thus assuring consideration of the views of each country in the formulation of a Recommendation. Also, through active collaboration in the Technical Committee work, developing countries will have opportunity to gain first-hand information on the latest developments in industrial countries' technology. In meetings and deliberations with experts from industrial countries, representatives of developing countries can rapidly expand their own technical information. The ISO system thus supports the industrialization effort. Finally, through ISO membership developing countries will have the benefit not only of technical help but also of the organizational and operational experience of all the national standards bodies comprising the ISO membership. Information on the history and on the methods of operation of the presently established standards bodies is at the disposal of countries engaged in organizing national programmes, and ISO itself is anxious to assist in any way it can (see Chapter IV) ISO thus can make a significant contribution to the industrialization progress in the developing countries, and their membership in ISO is strongly advocated for realization of the greatest possible value from its service.

As far as the receiving aspect is concerned, is it in the interest of developing countries resolutely to align their national standardization on the international documents. Already now are many international Recommendations readily usable and should be adopted and duly implemented at the national level. The ISO Development Committee (DEVCO) is at present engaged in establishing such a list of ISO Recommendations which should be adopted as a first priority. A draft of this list which is still in a very provisional stage is given in Annex 3.

Developing countries cannot only benefit from world standardization by adopting ISO and IEC Recommendations but they have already proved that they

are in a position to effectively contribute in the establishment of international standards. To take a few examples from ISO : India has for instance brought a happy solution to the thorny problem of the olfactory assessment of natural and synthetic perfumery materials.

The standard atmosphere for testing, which prescribes the temperature and humidity at which samples of materials are conditioned and tested to ensure comparable results is a matter of considerable importance to any country. The cost of installing and maintaining necessary conditioning equipment, and the comfort and health of the workers who have to expose themselves alternately to the standard atmosphere and the outside prevailing atmosphere must be taken into consideration in fixing the standards. At first the atmospheres considered for this purpose by ISO and IEC were those widely used in Europe and North America. These were unsuitable for tropical and sub-tropical regions where temperatures are much higher during most of the year. If the European standards were adopted in these regions, testing laboratories would have to maintain costly equipment for air conditioning. At the suggestion of India a different standard atmosphere for tropical countries has been accepted both by ISO and IEC.

Developing countries like Iran, Turkey, India, have already started taking up their responsibility as Secretariats of ISO and IEC work dealing with carpets, leather, tobacco, lac, mica, pictorial marking for handling of goods, measurement of liquid flow in open channels, electric fans, etc.

Problems of infrastructure^{2/}

On the other hand, in spite of the direct interest in a given subject, the active participation of developing countries in the international technical committee work for the preparation of international standards (recommendations) goes more or less by default for various reasons, some of which are :

^{2/} Dr. L.C. Verman, Regional Strategy for Co-ordination of Standards. ECAFE document AIDC/ASAC(2)/9, Bangkok 1967

- (a) Absence of a NSB in a country, early stage of development of the activities of a NSB, or non-membership of a NSB in ISO or IEC.
- (b) Paucity of technical data, related to the production, use or consumption of the item of interest; or an inadequacy of the means (whether financial and/or manpower) available to the NSB to organize the collection and collation of such data.
- (c) Insufficiency of resources to enable properly briefed delegations to be sent for presenting their case at technical committees, sub-committee or working group meetings, which are often held in Europe, sometimes in the United States, but seldom in developing countries.
- (d) Even when represented, a NSB from a developing country, being relatively in a minority position, may not be able to achieve tangible results.
- (e) For all these and other reasons, the NSBs of developing countries are not often in a position to propose for standardization, new subjects of direct interest to their own developing economies; nor can they readily offer to undertake secretariat responsibilities for pursuing such projects.
- (f) The need for evolving effective machinery for coordinating standards between regional groupings of developing countries to serve as forerunners for international coordination.

If a NSB has not yet been created in a country, there is very little that can be done. But if it is keenly interested in industrial development, it would be well advised as a first step to organize a small unit in a government department or a bureau, which could enrol itself as a correspondent member of ISO and receive all international standards (recommendations) for its use. The usefulness of this would admittedly be limited, but in the early stages of planning industrial development, the availability of international recommendations could be helpful.

It may even be possible for the unit to enrol itself as a regular member of a national standards body of a more advanced neighbouring country. To what extent such membership could assist in influencing international standards

would depend entirely on the unit's own development of activity, but it certainly would enable the unit to accelerate its progress towards becoming an effective nucleus for the formation of a full-fledged NSB in due course.

Another course of action for such countries to consider is exploration of the possibility of organizing a multi-purpose institution where one body is responsible both for standardization and for industrial testing and research, metrology, certification and other closely related activities. Such a pattern may suit the financial and manpower situation of certain smaller countries and, in some ones, it may be considered as a suitable starting point, with the possibility of the subsequent emergence of more specialized institutions, depending on the progress achieved.

If it happens that, in a group of neighbouring countries with closely allied economies, there is none with a standards body, they might be well-advised to consider the possibility of setting one up jointly on the pattern of ICAITI in Central America, which incidently is also a multi-purpose institution covering industrial research and testing, in addition to standardization.

It is clear that cooperative formulas appear to be particularly appropriate for Africa, a continent where political independence has not brought an end to the technical barriers between the African countries which they inherited from the former metropolitan powers. To the contrary it would seem as if the era of independence has opened the gates for other advanced countries to join in the competition, thus adding to the confusion which was traditionally symbolized by the existence of the inch-pound-foot system in the English speaking African countries and the metric system in the other, by difference railway gauges, etc. Unfortunately the danger that a technical balkanization of Africa will counterbalance the efforts for integration is not illusory.

Problems of participation ^{*/}

Many obstacles still complicate the participation of developing countries

^{*/} Dr. L.C. Verma, Rep. Strat. for Coord. of Stan., op. cit.

In international standardization, resulting mainly from the European origins of international standardization and from its concentration in that continent. We would only touch upon the three most important :

- (a) Participation in international meetings
- (b) Weak bargaining power of developing countries
- (c) Priority given to projects of particular interest to the developing countries

Delegations to international meetings

It is important that every country interested in a given subject being dealt with by an international committee should be represented through a nationally constituted delegation carrying a brief that represents the national view-point. This requires not only the collection of comprehensive data based on detailed investigations, but also the formulation of a national view-point on standards requirements resulting from a consensus of opinion arrived at through consultation and debate among all national interests concerned.

The chief difficulty of the developing countries in many cases is financial; this stands in the way of sending appropriately briefed delegations to ISO and IEC technical meetings of interest. It has sometimes been suggested that the United Nations may be able to render financial assistance. This may be possible wherever a NSB has under way a UNDP project in which a certain number of fellowships for training are included, which training might be conveniently programmed to facilitate attendance at meetings of interest. But this hardly offers a general solution applicable to most of the normally operating NSBs. Whether there are any other United Nations sources which could be tapped is doubtful, but the question should be explored. One aspect must, however, be borne in mind namely that meetings of ISO and IEC are announced at comparatively short notice (usually a few months) and appointing a delegation necessarily takes time. So that any mechanism devised for United Nations assistance should be such that it does not need too long a time for processing - say, not more than a month or so.

Another device to help a NSB which is not able to send an independent

delegation is, however, available : that is for it to be represented through proxy by the delegation of a sister country which may be sending one. A properly prepared brief entrusted to another delegation cannot always bring forth such good results as independent representation might achieve, yet it is considerably better than expressing NSB's views in writing only, as these, though presented through the secretariat, may not receive adequate attention or attract the critical scrutiny they may deserve.

Under the most favourable circumstances, active participation in international work is an expensive proposition. With a large majority of the technical meetings being held in advanced countries it becomes all the more expensive for the distant developing countries which are the very ones needing the greatest financial relief. To meet this situation, the NSBs of the developed countries need be persuaded to relax their attitude, but the more advanced developing countries should perhaps also gradually come forward and press their invitations for meetings to be held within the region. Besides facilitating attendance by delegations of the regional NSBs, such a movement would help accelerate the progress of the standardization movement in these countries in general, by bringing about closer contacts among technical experts from countries remote from one another on problems of common interest.

A certain number of international meetings on standardization problems have indeed been held in the past in developing countries.

Minority position of developing countries

A minority position in itself is not so serious a matter as may appear at first sight. By and large decisions on standards requirements have to be based upon technical considerations, keeping economic implications in mind. Thus, a properly prepared case would always receive close attention, but the preparation of a good case depends on the spade work initially put in for gathering the requisite data. This, as indicated above, presupposes a well developed and well organized NSB.

It does sometimes happen that economic and marketing conditions and existing practices in advanced countries may handicap those in a minority

position, in spite of their having strong technical reasons for requiring something. But here again the only general remedy appears to be fuller participation and stronger NSBs in the developing countries.

New Projects of particular interest to the developing countries

Maybe many developing countries are still a long way from the stage at which they each individually will be in a position to make valid proposals for the undertaking of new subjects for international standardization since such a step entails the conduct of surveys, the collection of technical data and often the acceptance of secretarial responsibilities at the international level.

Again DEVCO has tentatively initiated some action to correct this shortcoming. The Committee has recently circulated developing countries, Member Bodies and Correspondent Members of ISO, with an enquiry into the most urgent needs of the developing countries for international standards. The intention in this case was not to stimulate the creation of new TC's to deal with large fields which have a particular interest for developing countries. The aim was to get an idea of the concrete international standardization issues, the quick solution of which would be of considerable and immediate benefit to particular developing countries, which, in the absence of international agreement, would be obliged to seek a national or regional solution. This new activity consisting of providing for a short-cut channel for developing countries to bring their urgent requirements to the attention of ISO will further be continued. An annotated list of the proposals received so far is given in Annex 4.

APPLICATIONS FOR MEMBERSHIP IN ISO**MEMBER BODIES**

The procedure for becoming a Member Body of the ISO is outlined by Clause 1, subclause 1 to 6 of the ISO Rules of Procedure.

1.1 The Member Bodies of the Organization are those Bodies most representative of Standardization in their respective countries.

1.2 Membership in the Organization was open to those National Standards Bodies which were represented at the London Conference in October 1946.

1.3 Any other National Standards Body desiring to become a Member of the Organization shall apply in writing to the Secretary-General, who shall immediately submit the application to the Council, in order to determine in particular :

1.3.1 Whether the country is already represented on the Organization by another organization.

1.3.2 Whether the Organization making the request may be considered as the most representative body in its country in matters of standardization.

1.4 The Council shall decide whether or not the applicant shall be admitted as a new Member Body of the Organization.

1.5 Admittance of a new Member Body shall require a unanimous vote of the Council. Should this unanimous vote not be obtained, an appeal may be made to the Organization by the applicant : the matter shall then be submitted to all the ISO Member Bodies, and for admittance an affirmative vote of three quarters of the total number of Members shall be required.

1.6 Each Member Body of the Organization at the time of admission to membership shall agree to pay its annual dues for a minimum of two calendar years including the year of admission".

A national standards organization wishing to join ISO as a Full Member is urged to word its official application for admission in such terms that it specifies that it agrees to abide by the Constitution and the Rules of Procedure and that it agrees to pay its subscription. A copy of the statutes of the standards body should be forwarded along with the application as well as a report on its activity,

preferably arranged under the following headings :

- I. ORIGIN
- II. CREATION
- III. MEMBERS : NATURE AND NUMBER
- IV. FINANCES
- V. STAFF
- VI. ORGANIZATIONAL STRUCTURE
- VII. FUNCTIONING
- VIII. METHODS USED FOR DRAFTING STANDARDS
- IX. NATURE OF STANDARDS
- X. NUMBER OF STANDARDS PUBLISHED
- XI. OTHER PUBLICATIONS
- XII. OTHER FORMS OF PROPAGANDA
- XIII. MARKS INDICATING CONFORMITY WITH STANDARDS

In case it is not possible to supply all this information, a partial reply will still be helpful.

As soon as the ISO Central Secretariat is in receipt of an application, the Executive Committee of the ISO Council is requested to make a recommendation to the ISO Council regarding the number of units to be allotted to the applicant. Once such recommendation made the Council is invited to decide on both the application and the allotment of units. If done by correspondence, voting of the Council takes normally two months.

CORRESPONDENT MEMBERS

An organization interested in national standardization work but which is not a national standards body already engaged in preparing national standards may apply in writing to the Secretary-General to be accepted as a Correspondent Member of the Organization. In accordance with directives from the Council and after due enquiry and consideration, the Secretary-General shall decide whether or not the applicant shall be admitted as a Correspondent Member of the Organization. If not already supplied before, the application should be accompanied by a short report on the situation of standardization in the country and the role played by the applicant.

INDIA-MARK INDICATING CONFORMITY WITH STANDARDS

Legislation - The Indian Standards Institution (ISI) has been empowered to specify its Certification Marks in accordance with the provisions of the Indian Standards Institution (Certification Marks) Act, 1952, as amended in 1961, and the Rules and Regulations made thereunder. The standard marks are based on the monogram of ISI; the monogram, as exemplified below, is inscribed or superscribed by the number designation of the related Indian Standard and subscribed by the grade designation if any, of the article marked.



Status and Protection - The mark derives the status of a national standard mark from the Act. The Act, and the Rules and Regulations made thereunder, provide for fines for infringement and improper use of the mark, thus affording adequate protection. This protection is wider than the ordinary protection granted to registered trade-marks or certification trade-marks.

Administrative Organization - The Act itself leaves the use of ISI mark as optional to the choice of manufacturer or producer, but Central and State Governments may make its use mandatory in exceptional cases, particularly where matters of safety or health are involved or where overseas trade interests may have to be protected. Thus its use on tea chest plywood panels for exporting tea, and aluminium utensils and jute and jute products for export has been made compulsory.

The use of the ISI mark is permitted only through a licence granted by ISI. The Act empowers the Government of India in consultation with ISI to appoint authorities who may exercise certain inspecting powers of ISI as may be delegated to them. Under this provision, 13 competent authorities have been constituted, of which 5 are Central Government Departments, 7 State Government Departments and 1 independent organization.

The Regulations also provide for the setting up of advisory Committees to advise ISI on matters relating to the working of the Act, Rules and Regulations. No licence is granted for products manufactured in foreign countries.

Technical Conditions - The licensee must not only be able to produce the articles marked to conform to the relevant Indian Standards, but also be able to ensure continuous inspection and control of his production. A scheme of routine inspection and testing which forms an integral part of each licence, is worked out separately, keeping in view the conditions of production, processing, etc, and the licensee is required to set up necessary organization and facilities to implement the scheme.

The Regulations also empower ISI to set up special inspectorates for the inspection and marking of products of small-scale manufacturers, processors or producers who are not individually able to arrange for inspection and marking of their products.

Inspection - Before a licence is granted, a preliminary inspection is made to assess whether the applicant is properly equipped to comply with all the obligations of a licence. When the licence has been granted, ISI may make any number of inspections of the licensee's works, with a minimum of two in a year, to ascertain that the scheme of routine inspection and testing is being followed correctly and to ensure that the marked products comply with the relevant standards. The ISI inspectors are deemed to be public servants within the meaning of the Indian Penal Code.

In addition to inspection of the licensee's works, check samples are taken from the licensee's factories or godowns, or are bought from the open market, or obtained from large consumers. These are tested in the Institution's own laboratory or any independent testing laboratory recognized by ISI for the purpose.

Financial System - An applicant for a licence has to pay an application fee. Each licensee pays an annual licence fee and also a marking fee depending on the quantum of production marked in the year. For renewing a licence, a renewal fee is levied.

Penalties - Any improper use of the standards mark or any contravention of the provisions of the Act, Rules and Regulations is punishable with a fine. Any property in respect of which the contravention takes place might also be forfeited to the Government.

Application - The Standard mark is applicable in respect of any published Indian Standard. A recent amendment of the Act empowers ISI to recognize a standard established by any other Institution in India or abroad as an Indian Standard for the purpose of certification marking.

More than 2196 licences relating to over 431 standards have been issued 1967. The products include chemicals, food products, electrical equipment and accessories, building materials, metallurgical and other engineering items.

When a licence is granted, the particulars of the licence including the name of the licensee are notified in the Official Gazette. The Institution also maintains a register of the licensees and issues lists from time to time.

International Protection - The ISI Mark is not registered in any other country. It cannot be used for overseas products sold in India or abroad. A foreign national mark can be protected in India by registration under the Trade Marks Act. India is prepared to study any proposal covering mutual recognition of national marks. If any infringement of any foreign national mark is detected in India, such actions are taken as are legally permissible to stop the infringement.

Draft list of ISO Recommendations which each country should adopt immediately

Consumer questions

- R 189-1961 Principles of operation of standards marks
- R 526-1966 Significance to purchasers of marks indicating conformity with standards
- R 436-1965 Informative labelling

Quantities, units, symbols

- R 31/1-1965 Basic quantities and units of the International System of units (SI units)

Preferred numbers

- R 3-1953 Preferred numbers. Series of preferred numbers
- R 17-1955 and R 17/A1-1966 Guide to the use of preferred numbers and of series of preferred numbers
- R 497-1966 Guide to the choice of series of preferred numbers and of series containing more rounded values of preferred numbers

Limits and fits - Surfaces

- R 286-1962 ISO System of limits and fits. Part 1 : General, tolerances and deviations
- R 468-1966 Surface roughness

Reference temperature

- R 1-1951 Standard reference temperature for industrial length measurements

Enclosures and conditions for testing

- R 554-1966 Standard atmospheres for conditioning and/or testing.
Standard reference atmosphere. Specifications
- R 558-1967 Conditioning atmosphere. Test atmosphere. Reference atmosphere. Definitions

Safety colours

- R 408-1964 Safety colours
- R 557-1967 Symbols, dimensions and layout for safety signs

Refrigeration* - **

- R 824-1968 Household refrigerators. Part I - Performance requirements

Freight containers

- R 668-1968 Dimensions and ratings of freight containers
- R 790-1968 Marking of freight containers. Series 1 and 2
- R 830-1968 Terminology relating to freight containers

Pallets

- R 198-1961 Double-deck flat pallets for through transit of goods
- R 329-1963 Large pallets for through transit of goods
- R 445-1965 Vocabulary of terms relating to pallets
- R 509-1966 Standard dimensions of pallet trucks

Agricultural tractors *

- R 789-1968 Test code for agricultural tractors

Agricultural food products **

- R 542-1966 Oilseeds - Sampling
- R 688-1968 Oleaginous seeds. Determination of impurities

- R 659-1968 Oleaginous seeds. Determination of oil content
- R 664-1968 Oleaginous seeds. Reduction of contract samples to samples for analysis
- R 665-1968 Oleaginous seeds. Determination of moisture and volatile matter
- R 729-1968 Oleaginous seeds. Determination of acidity of oils
- R 874-1968 Fresh fruits and vegetables. Sampling

Paper, board and pulps

- R 216-1961 Trimmed sizes of writing paper and certain classes of printed matter
- R 269-1962 Sizes of correspondence envelopes and pockets
- R 478-1966 Paper. Untrimmed stock sizes for the ISO-A series. ISO primary range
- R 479-1966 Paper. Untrimmed sizes. Designation. Tolerances
- R 593-1967 Paper. Untrimmed stock sizes for the ISO-A series (Supplementary series)
Erratum of first printing. May 1967.

Textiles**

- R 220-1961 Method of sampling raw cotton for testing

Drawings

- R 128-1959 Engineering drawing. Principles of presentation
- R 129-1959 Engineering drawing. Dimensioning
- R 406-1964 Inscription of linear and angular tolerances

* This is only an example : any importation should refer to the relevant ISO/R, if any.

** This is only an example : any local production should refer to the relevant ISO/R, if any.

1	[REDACTED]	[REDACTED]	[REDACTED]	<p>India has been requested to draw up a list of the products or substances it is particularly interested in. Upon receipt of this information, the Council Secretariat could ascertain to what extent a study of such products could be undertaken by entering Technical Co-operation.</p>
2	[REDACTED]	[REDACTED]	U.A.R.	<p>The INCOG Secretariat has asked the U.A.R. to check to what extent the requirements of such or, better still, the scope of INCOG II, particularly by noted metal lead concentrates, INCOG TC 41, Sinter products for glass manufacture and chemicals, and INCOG TC 122, including, among the needs of this country and, if necessary, to send a more specific and detailed proposal.</p>
3	[REDACTED]	[REDACTED]	[REDACTED]	<p>This subject falls within the scope of INCOG TC 4, Rolling bearings, of which Romania is a P-Member.</p>
4	[REDACTED]	[REDACTED]	[REDACTED]	<p>This subject is within the scope of INCOG TC 4, Rolling bearings, of which Romania is a P-Member. It is a known fact that INCOG TC 41 has the quality of controlling the methods of manufacturing, which is up to each TC member to establish the levels referred to in a given case.</p>
5	[REDACTED]	[REDACTED]	[REDACTED]	<p>This subject would seem to come under the terms of reference of the ITC, although the work of INCOG TC 122, Steel wire ropes, and INCOG TC 122/1, Rolling transmission - Modular components, is also relevant. Priority has been advised to address this subject to the ITC.</p>
6	[REDACTED]	[REDACTED]	[REDACTED]	<p>This subject falls within the scope of the ITC and of INCOG TC 24, Steel coils, which has already prepared descriptions of difficulties and is now making further studies. Priority is an O-Member of INCOG TC 24.</p>
7	[REDACTED]	[REDACTED]	[REDACTED]	<p>This subject is covered in INCOG TC 122, Signs and symbols.</p>

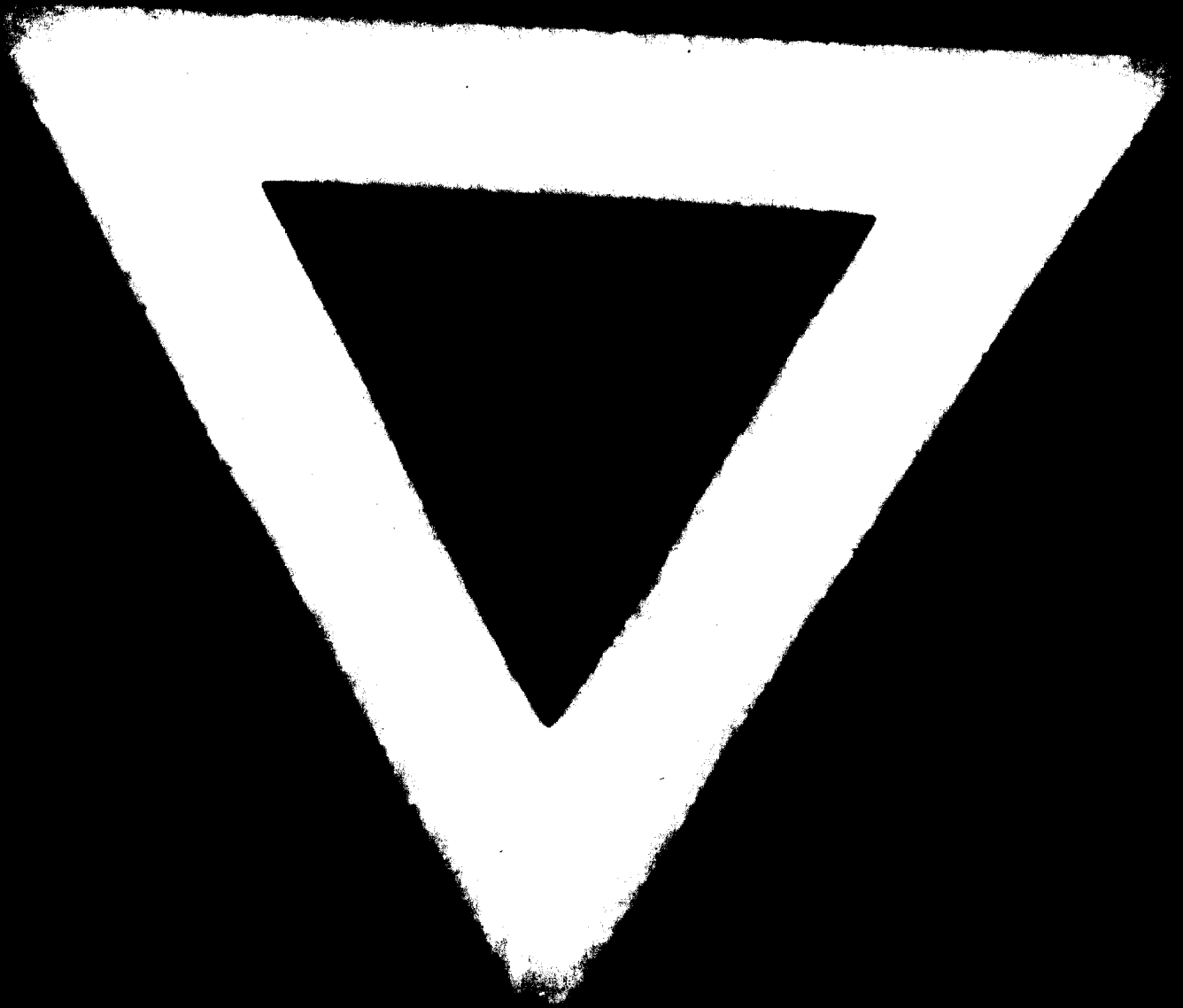
16	688-001.5	Technical Committee	Turkey	Turkey would be willing to provide the Subcommittee for a new TC or EC set up for handling other.	ISO does not now have a competent Technical Committee. Turkey has been asked to supply additional information and documentation.
17	688-010-003	Technical requirements and methods of test.	Germany	These materials, which are of particular importance to driving safety, are produced in quantity on a world-wide scale, but there are no standards organizations regarding technical requirements and methods of verification. In our opinion, the standards put out by the various large manufacturers of the materials do not outline their safety or quality requirements. We would prefer not that our country imports most of the materials it needs, and the existence of a standards organization as organized would be very useful to us in our relations with our foreign suppliers.	ISO does not now have a competent Technical Committee. Turkey has been asked to supply additional information and documentation.
18	688-001-011.73	ISO studies for committees and staff	Turkey	None	This subject falls within the scope of ISO/TC 22, Automobiles, of which Turkey is an O-Member.
19	688-002	Technical requirements and methods of test.	Turkey	None	ISO does not now have a competent Technical Committee. Turkey has been asked to supply additional information and documentation.
20	688-006	Technical requirements and methods of test.	U.A.R.	None	Created, in 1969, of ISO/TC 134, Fertilizers and soil improvers, of which the U.A.R. is an O-Member.
21	688-007	Technical requirements and methods of test.	U.A.R.	None	The ECN (Economic Commission for Europe) and its CECD (Organization for Economic Co-operation and Development) are both active in the field of vegetables and packing of fruits and vegetables. The U.A.R. has been requested to submit a more specific and detailed proposal in the event it is interested in other agricultural products, e.g. rice, wheat, etc.
22	688-009	Technical requirements and methods of test.	Turkey	None	This subject falls within the scope of ISO/TC 130, Graphic technology, of which Turkey is an O-Member.

22	64.06	<p><u>Domestic appliances</u></p> <p>6a) Refrigerators, freezers, water heaters, refrigerators, washing machines, air conditioners, any kind of energy storage (gas or electricity) with special emphasis on interchangeability (standard dimensions of the appliances and handling of connections to gas or electricity systems) and safety requirements for users and places.</p> <p>6b) Portable appliances: lawnmowers, lawnmowers, lawnmowers, electric washers, appliances, vacuuming fans, etc. with special emphasis on safety requirements.</p> <p>6c) Recreational appliances: radios, T.V. sets, picture projectors, tape recorders, etc. with special emphasis on safety.</p>	Child	NONE	<p>Have again this is a vast field rather than a limited subject. Electrical appliances are the responsibility of the IEC, whereas ISO/TC 116, Special Working Group, has already done work on gas household appliances that might be useful in meeting this request. Within the framework of ISCA, the Central Secretariat is now attempting to set up a new Technical Committee on technology in the gas industry.</p>
24	68.567.95	<p><u>Prevent-rich foods</u></p> <p>Methods of test and specifications</p>	Food	<p>Formulation of standards on methods of test for evaluating protein quality; recommendations on fortification of foods with a view to fighting mal-nutrition; and specifications for prevent-rich foods.</p>	<p>It seems that both in preliminary interest in methods of test for evaluating protein quality and for conducting prevent-rich foods, India has been asked for further details concerning the type of foods. For instance, does the request concern prevent-rich ingredients alone or food compounds as well. As soon as this information has been received, the Central Secretariat could begin by asking for the views of ISO/TC 37 and perhaps also of the Codex Alimentarius Commission Secretariat.</p>
25	68.567.95	<p><u>Prevent-rich foods</u></p> <p>Methods of test and specifications</p>	Food	<p>Information labeling on baby food indicating the stage of special requirements recommended by climate and agronomic conditions of developing countries. This is very vital from the point of view of a nation's health and food consumption substantially by formulating its own standards.</p>	<p>This question has already been interested in various countries as presented by consumers. Studies have already been made in a number of countries, and the Central Secretariat is planning to carry out preliminary enquiries to ascertain whether there is sufficient support for immediate action at the international level.</p>
26	68.72	<p><u>Prevent-rich foods</u></p> <p>Methods of test and specifications</p>	Food	NONE	<p>There is at present no competent ISO Technical Committee.</p>

2	68-27-2	<p>Technical studies</p>	U.S.	<p>See methods for commercial explosives. Includes procedures for commercial explosives such as safety fuses, dynamite, etc., vary from country to country. We have just taken up work on construction of these methods. For a developing country like ours, it will be an advantage if work is initiated on the international level so that we can benefit from the technological experience of personnel in the other countries while attempting to compare the various methods available and select the best one for adoption in the country. In fact, in this case also, it would be desirable that an International Technical Committee on commercial explosives be set up which would take up such methods to meet with, to be followed up by the implementation for issues such as safety fuses, dynamite, etc., in the course.</p>	As present there is no concrete SD Technical Committee.
3	68-27-3	<p>Explosives (chem. comp. etc.)</p>	U.A.R.	NONE	This subject would seem to come under the terms of the Outer Administrative Commission.
4	68-27-4	<p>Technology and development Testing methods for product control.</p>	USSR	NONE	This subject belongs to the scope of SD/TC 24, Fuses and varieties, of which Chile is an O-Member.
5	68-27-5-2	<p>See 68-27-5-1 and 68-27-5-3 Method of test for the determination of density.</p>	France	NONE	This subject is within the scope of SD/TC 17, Blast, of which Romania is a P-Member.
6	68-27-6	<p>Tests possible for testing of explosives</p>	U.A.R.	NONE	This subject falls within the scope of SD/TC 17, Blast, of which the U.A.R. is a P-Member. SD/TC 13/TC 2, Characteristics and description of tests, which lay down for a number of years, has been re-worked with the help of the new Secretariat (India).
7	68-27-7	<p>Testing and shipping of explosives Methods of chemical analysis and determination of composition.</p>	Turkey	NONE	This subject is included in the programme of SD/TC 79, Light metals and their alloys, of which Turkey is an O-Member. SD/TC 79/TC 1, Methods of chemical and spectrochemical analysis, mentioned a draft prepared on the subject at the meeting held in Paris from 7 to 10 April 1970.
8	68-27-8	<p>Methods for testing</p>	U.A.R.	NONE	Question, in 1969, of SD/TC 124, Ferrous of which the U.A.R. is an O-Member.

6	68	Plastics and rubber for use.	14	<p>With the increase in use of plastics for packaging of food products and for medicinal preparations in this country, need has been felt for ensuring that the food products would be compatible with the plastics material used in the packaging, so as to ensure that the food product is safe enough for the consumer. Likewise, we have the problem of compatibility of the rubber gaskets for sealing rings, used in glass jars, metal cans, etc., in which food products are packed. If work is initiated at a suitable level of RD we could benefit from the experience of developed countries in our attempts to regulate the quality of plastics and rubbers for this purpose and also to evolve suitable test procedures for ensuring their safe use.</p>	<p>These subjects fall within the scope of RD/TC 61, Plastics, and RD/TC 62, Rubber, respectively, both in a P-Member of both Technical Committees.</p>
6	69-0000.110	Rubber and plastic containers for liquids. Pre-arranged evaluation and standards. etc.	14	<p>With the rapid growth in the number of manufacturers of such components in the country and with the absence of mutually agreed methods for their evaluation, quality control of these components, which are occasionally used in automobiles, becomes difficult. We need the experience of the developed countries to be shared with us in order to assist us in evolving suitable procedures and also to place this growing industry in the country on a sound basis.</p>	<p>This subject falls within the scope of RD/TC 22, Automobiles, of which India is an O-Member.</p>
6	69.7	Plastics and rubber containers.	14	<p>RD/TC 61 and RD/TC 62. We have an Indian Standard, IS:1400-1960 on this subject. There still exists a considerable amount of lacunas in various countries, there is need for identifying the requirements of design and fittings of each of the important containers to enable us to help up our export of the material. Instead of having our experts on the requirements of individual countries for their design and fittings on an ad-hoc basis and changing them from time to time, it would be necessary to get these standardized at the international level, which would considerably facilitate our work. The work may involve inter-organizational studies for the business discussions in the concerned countries, which could be made only when this subject is taken up at the international level.</p>	<p>This subject is included in the programme of RD/TC 61, Plastics, and RD/TC 62, Rubber, and the P-Members have already reached agreement on a draft proposal. India is an O-Member of RD/TC 61.</p>
6	69.8	Plastics and rubber containers.	14	<p>The creation in 1959, of RD/TC 127, Study of sheets, of which India is an O-Member.</p>	<p>The creation in 1959, of RD/TC 127, Study of sheets, of which India is an O-Member.</p>
6	69.9	Plastics and rubber containers.	14	<p>The creation in 1959, of RD/TC 127, Study of sheets, of which India is a P-Member.</p>	<p>The creation in 1959, of RD/TC 127, Study of sheets, of which India is a P-Member.</p>

	<p>Test methods. See the methods for furnace by and large prescribe only the construction details and the requirements of the components that go into the manufacture of furnace. Of late, the need for laying down the performance requirements for furnace has been heavily felt. With this in mind, work on test methods for furnace has just been initiated. In view of the large export trade which we have, it will be necessary to get standardization done up at the international level for this subject also.</p>		
<p>ISO does not, at present, have any TC competent for S.T. methods.</p>	<p>NOTE: - In view of the importance of this work and the one listed above, as well as the possibility of constructive criticism on the subject subjects that might have to be taken up in due course, it is strongly recommended that an Independent Technical Committee on furnace covering these subjects in respect of furnace made of various metals, plastics, composites, etc., be set up.</p>	<p>NOTE</p>	<p>ISO/TC 138, being of others, which CIB is an O-Member, is competent for standardization and other</p>
		<p>NOTE</p>	<p>For setting standards, ISO/TC 28, Technical, of which CIB is an O-Member, is the competent Technical Committee.</p>
		<p>NOTE</p>	<p>The creation, in 1988, of ISO/TC 134, Petroleum and oil products, of which the U.A.E. is an O-Member.</p>
		<p>NOTE</p>	<p>This subject is within the scope of ISO/TC 91, Free tests on building materials and equipment, of which CIB is an O-Member.</p>



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