

2.5. Consumer education and qualification system

As described in Clause 1.11., consumer education is extremely important. The method to strengthen consumer education is described in Clause 2.5.1.

There are many fires caused by poor interior wiring, and it is necessary to review and enforce qualification system of interior wiring, as described in Clause 1.2.2. 4). The recommendation for the qualification system of interior wiring worker is described in Clause 2.5.2.

Also, the Team found that the repairing skill of electric and electronic household appliances in small repair shops is rather poor in Saudi Arabia, then the Team also proposed how to improve it in Clause 2.5.2.

2.5.1. Consumer education

Consumer education should be intensified for the Saudi Arabian people through schools and adult programs. Consumers have to perform their duties of wise selection, careful use and proper maintenance of consumer products as described in Clause 2.2.1. Then, consumer education should be conducted by the government or Consumer Support Organization, so that the consumer may recognize and conduct their duties regarding consumer life.

Consumer education should be conducted considering following two aspects.

- ① What consumer life should be in the present economical society : A philosophical aspect
- ② Basic knowledge, discernment and rational planning ability necessary for consumer life : A practical aspect

It is desirable to promote consumer education from the following viewpoints.

Important viewpoints of the philosophical aspect

- Fundamental duties of the consumers such as careful use and proper maintenance of consumer products, because there exist dangers beside convenience: in elementary schools
- Laws/regulations related to consumer protection, consumers' rights, how to plan healthy consumer life using consumers' rights and how to handle consumer injuries, damage, and complaints : in intermediate schools
- Related laws/regulations and standards : in industrial & commercial schools

Important viewpoints of the practical aspect

- Consumer education for the basic and important items for people's safety such as prevention against fires, electric shocks and traffic accidents

- Consumer education for the basic knowledge of consumer life such as how to purchase consumer products with correct understanding of the products through proper indication
- Traffic safety , especially for the male students, proper use of tires because car driving is a indispensable skill for daily life in Saudi Arabia.

Also, the following methods and media should be used effectively.

1) Education through actual examples of consumer injuries and damage (traffic, fire, and electrical shock accidents, garment shrinkage or color fastness after washing etc.) including their causal analysis and prevention measures using news papers, TV and magazines against their recurrence.

2) Educational articles in magazines on check points for proper selection of the necessary products in the market.

3) Cooperative movements or campaigns with related organizations (MOC, MOInt., MOIE, MOMRA, MOE,SASO)

An example of cooperative campaign for tires :

- a) Inspection on roads for proper maintenance of automobile including tires (Groove depth, air pressure, speed rating, one-side wear etc.) (MOInt.)
- b) Driver's education (MOInt.)
- c) Information for tire storage and maintenance (SASO)
- d) Surveillance of and instructions to tire retailers and automobile repair shops.(MOC, SASO)
- e) Seminar on traffic safety:
 - Traffic rules (MOInt.)
 - Proper use of tires (SASO)

4) Consumer education by Consumer Support Organization

- a) Consumer consultation
- b) Product test and publication of the test results by consumer magazines, etc.
- c) Collection and publication of information about damage, injuries and accidents
- d) Enlightenment of consumers' rights and duties through the mass media

2.5.2. Qualification system

In order to secure good quality interior wiring, it is necessary to complete qualification system of interior wiring work. As mentioned in Clause 1.2.2.4), qualification system of interior wiring is not implemented effectively, since "Qualification Regulation for Electrical and Mechanical Work" have been established in 1976. Now the wiring depends only on the contract between an owner and a contractor in Saudi Arabia. An electric consultant system is expected to check the wiring just after the construction.

The good quality of interior wiring work can be obtained only by the careful work of electricians with good skills in wiring work. This is the basic theory of quality control.

The interior wiring qualification system should be intensified with the following procedures.

- 1) The qualification system of interior wiring work should be stipulated in the Interior Wiring Law.
- 2) The qualified worker should have the duty to conduct his work in accordance with the Interior Wiring Law.
- 3) Interior wiring should be conducted only by qualified workers.
- 4) The qualification should be given to the workers who passed the examination of qualification.
- 5) The examination of qualification consists of the following subjects.
 - Knowledge of interior wiring and maintenance
 - Actual skills in interior wiring and maintenanceMore details, the knowledge of:
 - Basic theory concerning electricity
 - Wiring theory and wiring design
 - Electric machine, electrical fittings and wiring accessories
 - Electric wiring materials and electric wiring tools
 - The method of electric wiring and its inspection
- 6) The detailed knowledge can be obtained at the vocational training center.
- 7) The examination should be implemented in rural municipalities in cooperation with MOIE, SASO and technical institutions.
- 8) The certificate should be given to only the successful applicants by MOIE.
- 9) The qualification should be renewed periodically so as to catch up with the current technology.

In order to level up the repairing skills of electric and electronic household appliances, the vocational training center should have the special courses. The lecturers should be invited from big enterprises or repair centers of electric and electronic household appliances.

2.6. Solutions to major problems in each product group

This clause shows how consumer protection in the product groups for in-depth study can be improved by the proposed measures for consumer protection described in chapter 2 and 3.

2.6.1. Electric and electronic products

For this clause, all the descriptions in the Clause 1.10.4. is to be referred to.

1) False and misleading indication

- a) Labeling is very important because customers largely rely on descriptions of the label such as country of origin for choosing products. As shown in Clause 1.10.4., the victims by false and cheap, inferior-quality products are not only the consumer but also conscientious local manufacturers.
- b) Solutions to protect the consumer and conscientious local manufacturers from false labeling and cheap, inferior-quality products are described below, citing the ballast of fluorescent lamp fixtures in Clause 1.10.4.
- c) When receiving such complaints, MOC takes the sample of ballast to SASO Lab. for test and traces the route of the ballast and sticker. MOC warns importers and manufacturers traced not to import them and not to use them and if the situation is not improved suspends the business of importers and manufacturers concerned.
- d) Therefore, the team recommends the establishment of Indication Law which is issued in Japan and prohibits false and misleading descriptions.
- e) It will be necessary for SASO and MOC jointly to conduct a market surveillance for checking if there are false or misleading descriptions of labeling.
- f) Importers should be obliged to attach the label marked with their names or abbreviation to the products or to their packages so as to clarify the responsibility for the products, to prevent false and misleading descriptions on the label and so that the route of imported products can be traced to the exporters if necessary.

The problems and solutions related to labeling are summarized in *Table 2.6.1-1*.

Table 2.6.1.-1. Problems and solutions (false and misleading indication)

Problems	Solutions
False and misleading indication of country of origin, trademarks and ratings	a) Taking the sample to SASO Lab. for check and test b) Establishment of Indication Law c) Market surveillance by MOC and SASO d) Importers shall be obliged to attach their names on their products.

2) Instruction manual

As described in the Clause 1.10.4., many instruction manuals are written in English. SSA states they shall be written in Arabic and attached to products. Through market surveillance it is necessary to instruct importers or distributors to check that products they import are attached with instruction manuals written in Arabic. If the situation is not improved, penalty must be imposed on them. The problems and causes related to instruction manuals are summarized in *Table 2.6.1.-2.*

Table 2.6.1.-2. Problems and solutions (instruction manuals)

Problems	Solutions
Many instruction manuals are written in English.	a) Through market surveillance, instruction manuals should be checked if they are written in Arabic. b) Importers or distributors should be obliged to check if instruction manuals written in Arabia are attached to products.

3) Wrong use of voltage between 127 and 220V

a) To avoid the wrong use of voltage, the consumer should make sure if their products are made for 127V or 220V in purchasing or using them. "The consumer" repeatedly carry the article to ask the consumer to do so. It means the necessity of consumer education on electricity in general and household appliances and apparatus.

b) As described in Clause 1.10.4. 4) wrong use of voltage is not exceptional but common practice. Consumer education alone cannot prevent the wrong use of voltage. In fact, wrong application of voltage has close relationship with the dual voltage system and its related connecting apparatus described below and drastic countermeasures are necessary.

4) Dual voltage system and its connecting apparatus

a) Dual voltage system

- Although the wrong use of voltage is caused by consumers' carelessness, by bad interior wiring and by various types of configuration adapters which do not comply with SSA, the basic cause is the existence of dual voltage, 127V and 220V. If a single voltage system does exist, the wrong use of voltage never occurs.
- Nothing can be better than unifying voltage. Reportedly, the discussion of

unifying voltages to 220V has just begun. Unifying voltages will surely be a great, tough task but it is worthwhile doing it from the viewpoint of consumer protection.

- In the transition period to the unified voltage 220V, it is desirable that adapters and/or transformers converting voltage from 220V to 127V should be lent to consumers free of charge so that they can use home appliances for 127V use by 220V.
- b) Connecting apparatus(outlets, plugs and configuration adapters)
- In the existing dual voltage system, the point to correct wrong use of voltage is to use only the outlets for 127V and 220V specified in SSA in 127V and 220V lines respectively. At least new houses to be built from now on should be provided with the outlets for 127V or 220V specified in SSA.
 - Another point of avoiding wrong use of voltage is to divide electric and electronic products into two groups: products to be connected to 127V and products to be connected to 220V, for example storage-water heaters and air-conditioners for 220V and others for 127V. If they are divided into two voltage groups by their capacity, and/or input power, products to be connected to 127V must have 127V-use plugs specified in SSA and products to be connected to 220V 220V-use plugs specified in SSA. Only the rice cooker purchased and tested in the second field study have an extension code with a plug complying with SSA.
 - SSA 444/1985 "Plugs and Socket-outlets for Household and Similar Use" specifies exclusive plugs, socket-outlets and socket-outlet adapters for 127V and 220V. The Standard is not actually observed. It may also be necessary to review the said standard to include two-round-pin-type outlets and plugs now widely used for 220V.
 - Configuration adapters
There are various types of configuration adapters on the market, which are not always of good quality. The "Questionnaire" shows they are widely used in housing to connect products, which cannot be connected to the power line without adapters. These apparatus should also be exclusive for 127V or 220V. Standardization of configuration adapters will be necessary in the transition period to the modification of present outlets and the unification of voltage.
 - The problem related to dual voltage system and its related connecting apparatus is not easy to solve because of long years of their use. Solving the problem will take long time and requires a patient approach. The situation, however, cannot be left as it is from consumer protection.

The problems and solutions related to wrong use of voltage are summarized in *Table 2.6.1-3*.

Table 2.6.1.-3. Problems and solutions (wrong use of voltage)

Problems	Solutions
Wrong use of voltage between 127 and 220V	a) Consumer education through mass media b) Strict use of only the outlets and plugs specified in for 127 and 220V lines c) Division of products into two voltage groups (127 and 220V) d) Review of the standard for 220V-use outlets and plugs e) Unification of voltage (220V only) f) Standardization of configuration adapters

5) Bad interior wiring

- a) As described in the Clause 1.10.4. 6), the quarterly magazine "The Consumer" warns consumer about bad wiring such as use of wires of improper cross-sectional area, fuses of improper capacity for large-capacity electric appliances, improper circuit breakers and improper grounding connection.
- b) Whether exclusive outlets for 127V and 220V are used in a newly built house or not is determined by interior wiring. Proper wiring can prevent fires, troubles related to household appliances and wrong use of voltage. In spite of its importance, interior wiring have not been and is not sufficiently controlled.
- c) "Saudi Application Guides" under consideration, which specifies apparatus, wires and methods used in the interior wiring will help in this aspect. When the Guides is enforced, a new inspection system will, reportedly, be introduced for inspecting interior wiring and SASO plays an important role in inspection and certification. But to make the Guides effective, Interior Wiring Law should be established. Refer to Clause 2.2.4. 1) Interior Wiring Law.
- d) To secure the quality and safety of wiring, interior wiring work should be carried out only by qualified electricians. The qualified worker should have the duty to conduct his work in accordance with Saudi Arabian Guides. As described in Clause 2.2.4. 1), although there exists "Qualification Regulation for Electrical and Mechanical Work" in Saudi Arabia, its enforcement is very weak, and should be strengthened.

The problems and solutions related to bad interior wiring are summarized in *Table 2.6.1.-4.*

Table 2.6.1.-4. Problems and solutions (bad interior wiring)

Problems	Solutions
There are many bad interior wiring.	a) Establishment of Saudi Application Guides b) Establishment of Interior Wiring Law c) Strict enforcement of "Qualification Regulation for Electrical and mechanical Work" d) Strengthening of inspection of interior wiring

6) Troubles resulting from wrong use

- a) As for troubles resulting from consumers' wrong use of voltage or products, education of consumers and information about troubles through school education and mass media are decisively important.
- b) The point is to give the necessary information about troubles accurately through mass media for the prevention of recurrence.

7) Others

- a) As for rusting due to salty air, it will be necessary to include countermeasures in SSA.
- b) Finally, if the Electrical Code, standardization of configuration adapters and unification of voltage are enforced, the number of troubles related to electric and electronic products will remarkably decrease. Such projects, in which SASO plays a central role, require an earnest and patient approach but should be expedited from the viewpoint of permanent national policy and consumer protection.

Figure 2.6.1.-1 in the next page shows overall activities based on the cooperation among relevant ministries and organizations to solve the problems related to electric and electronic products and to ensure their quality.

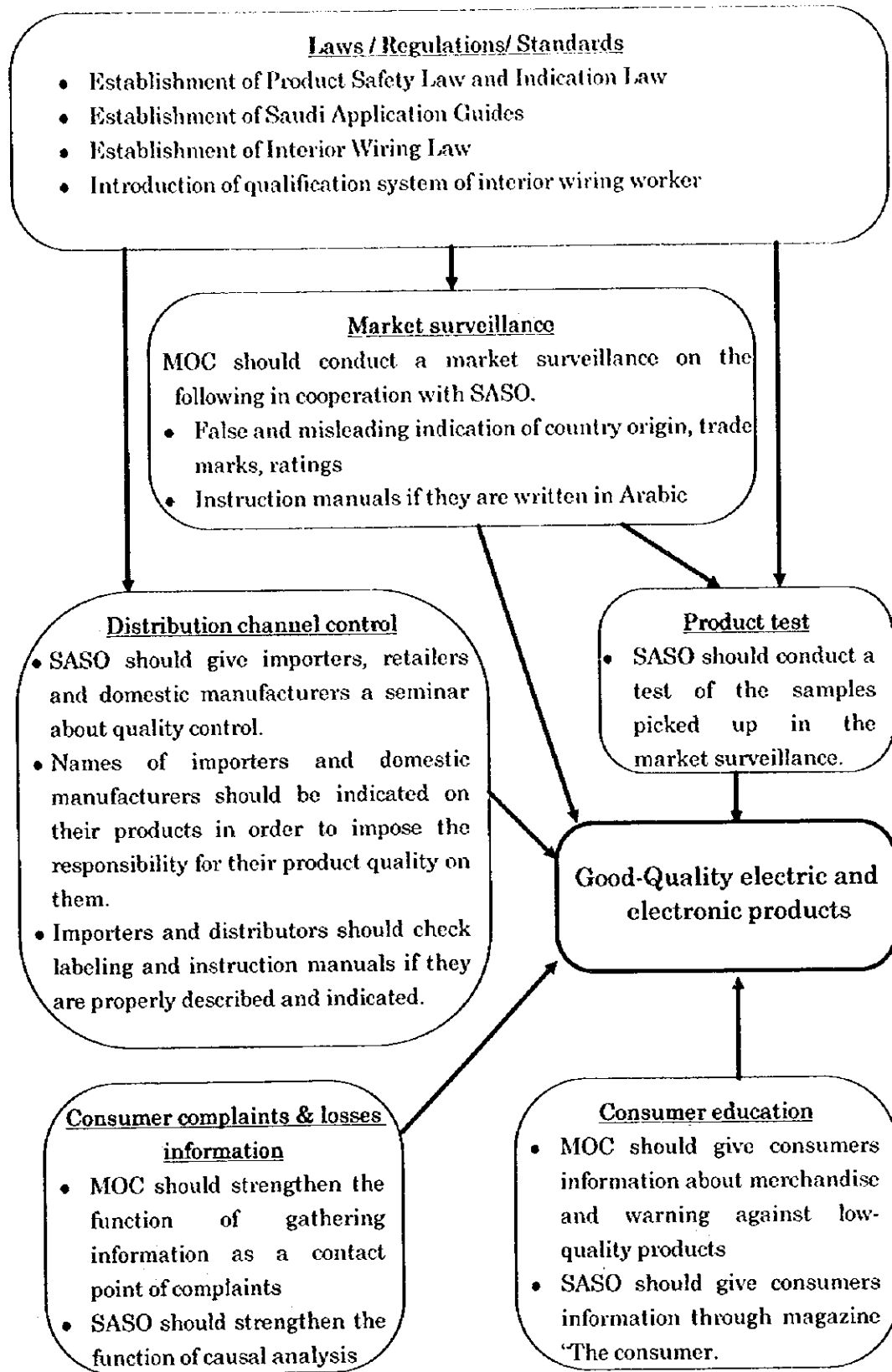


Figure 2.6.1.-1. Overall cooperative activities related to electric and electronic products

2.6.2. Tires

The countermeasures to reduce traffic accidents caused by tires and to improve the problems listed up in *Table 1.12.2.-2*, are patient and continuous consumer education, establishment and revision of necessary SSA as well as their enforcement and reinforcement of capability of SASO laboratory as described in 1) through 5) below.

1) Distribution channel control

- a) Retailers should give necessary information to their customers and ensure that instruction manuals(cards) written in Arabic are attached to tires.
An example of instruction cards which gives customers explanation on specification of the tire printed on the sidewall is shown in *Figure 2.6.2.-1*.
- b) Sales of used tires should be strictly prohibited.
MOC should prepare necessary regulations against sales of used tires.

2) Market surveillance

- a) Market surveillance
The retail market should be periodically checked for proper tire storage, illegal sale of used tires, salesclerks' information to customers, attachment of instruction manuals.
- b) Roadside inspection
The Traffic Police should conduct roadside inspection for proper usage of tires as described in **Clause 2.4.4**. CCI is expected to support the inspection. This inspection proved to be effective in Japan.

3) Consumer education

- a) High school boys should be educated on traffic safety and proper usage of tires. As described in **Clause 2.5.1.**, car driving is indispensable for men in Saudi Arabia and proper usage of tires is of special importance in Saudi Arabia.
- b) Retailers should be educated to give enough information to their customers.
- c) SASO, in cooperation with the Traffic Police, CCI, and big tire importers, should hold a seminar on traffic safety and educate consumers using the magazine "The Consumer" and other media.

4) Standards

- a) SASO should study to delete the specifications of retread tires for passenger cars and buses from SSA(No.1275/1997). As sample tests in SASO laboratory showed inferior characteristics of retread tires, retread tires are not recommended to be used on passenger cars and buses in Saudi Arabia.
- b) SASO should establish a SSA to specify proper usage and maintenance of tires. Giving users of cars obligation and guidance of proper tire usage and maintenance is very effective to reduce tire troubles.

- c) SSA for tire storage should be revised to add limitation on the number of tires to be piled up as piling-up may damage the tire at the bottom of the pile.

5) Strengthening of SASO laboratory

- a) Test items for tires in SASO laboratory are insufficient for the evaluation, because of a lack of equipment and skills. The measures for reinforcement described in clause 3.7.4 should be conducted.
- b) The causal analysis of troubled tires from traffic accidents and the roadside inspection should be increased in the Traffic Police and SASO laboratory.

Figure 2.6.2-2 shows overall measures to reduce traffic accidents caused by tires. These comprehensive measures conducted lastingly with closer cooperation among relevant ministries and organizations surely lead to a better solution. Laws/Regulation should clarify the obligation of retailers and users. Standards should clarify the specification of good tires and the procedure of proper use/maintenance of tires. Based on well prepared laws/regulation/standards, the distribution channel control, the roadside inspection and the retail market surveillance should be enforced periodically. Analysis of consumer accidents and losses information will give how to improve the system and how to educate consumers and what subjects are important for education.

The major problems and solutions to them are listed in *Table 2.6.2-1*.

Table 2.6.2-1. Problems and solutions regarding tires

Problems	Solutions
Poor consumers' knowledge about how to select proper tires and use tires properly	<ul style="list-style-type: none"> a) Retailers are to be obligated to give enough explanation to customers b) Attachment of instruction manuals to each tire c) Comprehensive education regarding proper use and maintenance of tires
Improper use of tires causes many traffic accidents	<ul style="list-style-type: none"> a) Carrying out of roadside inspections b) Enhancement of consumers' consciousness through consumer education
Use of retread and used tires is liable to car troubles especially in Saudi Arabia	<ul style="list-style-type: none"> a) Revision of the relevant standard b) Banning of the sale of used tires is to be stipulated and enforced through the market surveillance

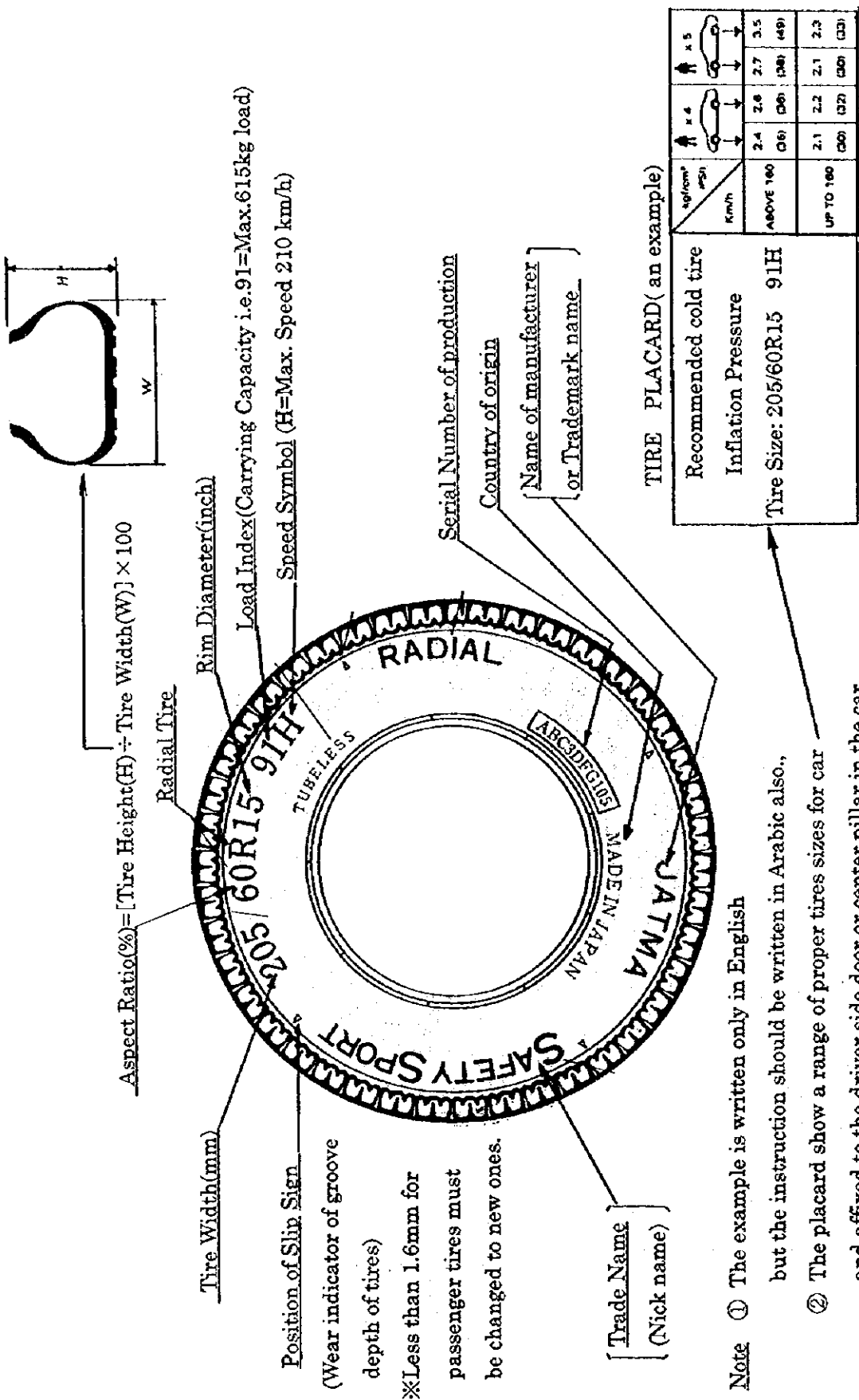


Figure 2.6.2-1 An example of instruction card for passenger radial tires

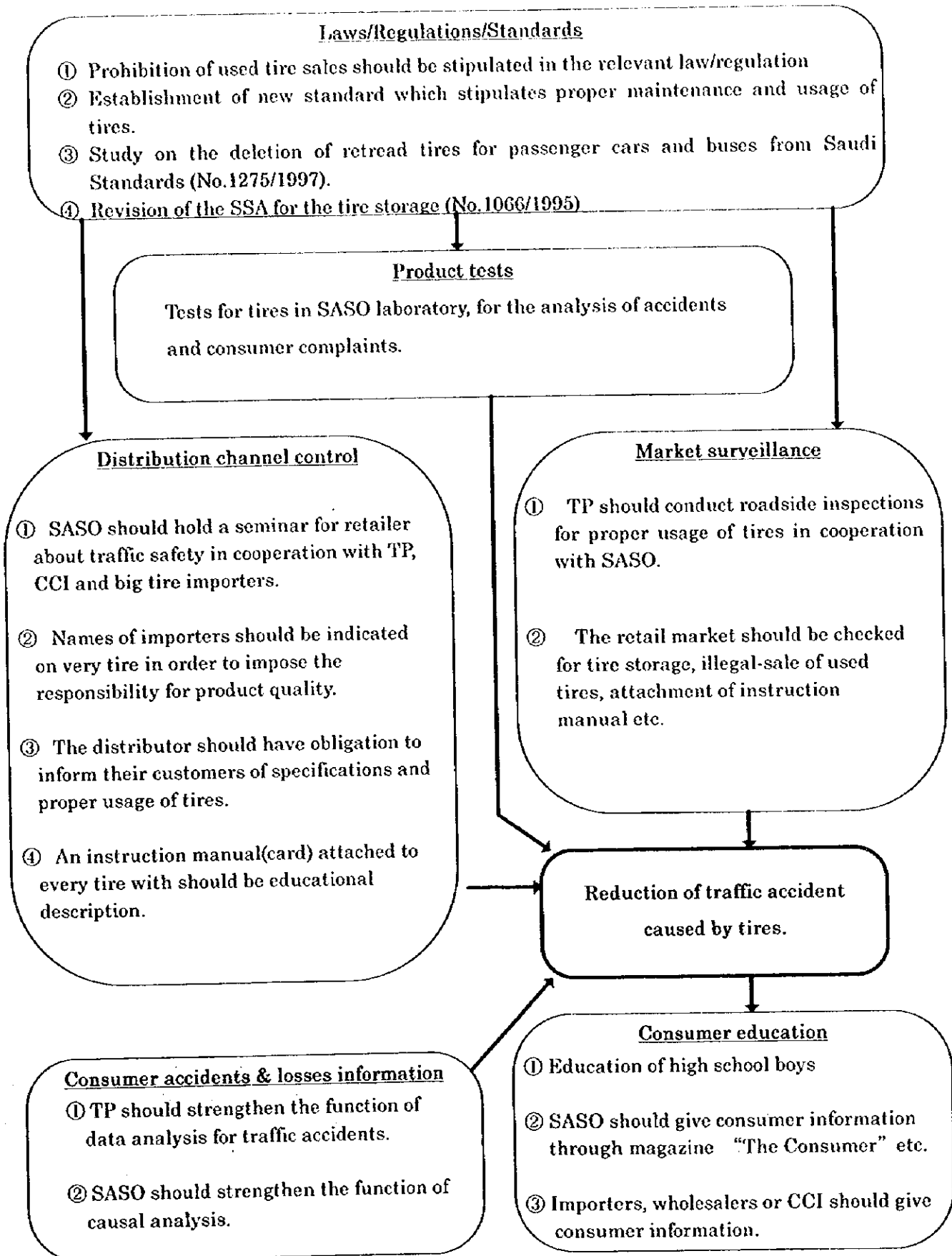


Figure 2.6.2.-2. Overall cooperative activities related to tires

2.6.3. Textile products

For every item explained below, it is necessary to establish regulations, and more standards, and construct an inspection system. As for the collection of complaints from consumers, it is required to provide the system to reflect the collected opinions and complaints from consumers in the laws and standards, because there is no consumer organization in Saudi Arabia and the opinions of the consumers can not be submitted easily to the governmental institutes. As described in Clause 2.1. 1) C), "Consumer Support Organization" being proposed by the team will play a central role and/or in this aspect. Importers, distributors and manufactures handling textile rolls products should give complaints from consumers to the organization. The collected complaints should be reflected in the establishment of regulations and the preparation of standards.

Especially in Saudi Arabia, good-quality products should meet the following three requirements;

1. **Proper indication**
2. **Durability**
3. **Safety**

Figure 2.6.3.-1 shows the relationship between the above requirements and good quality products.

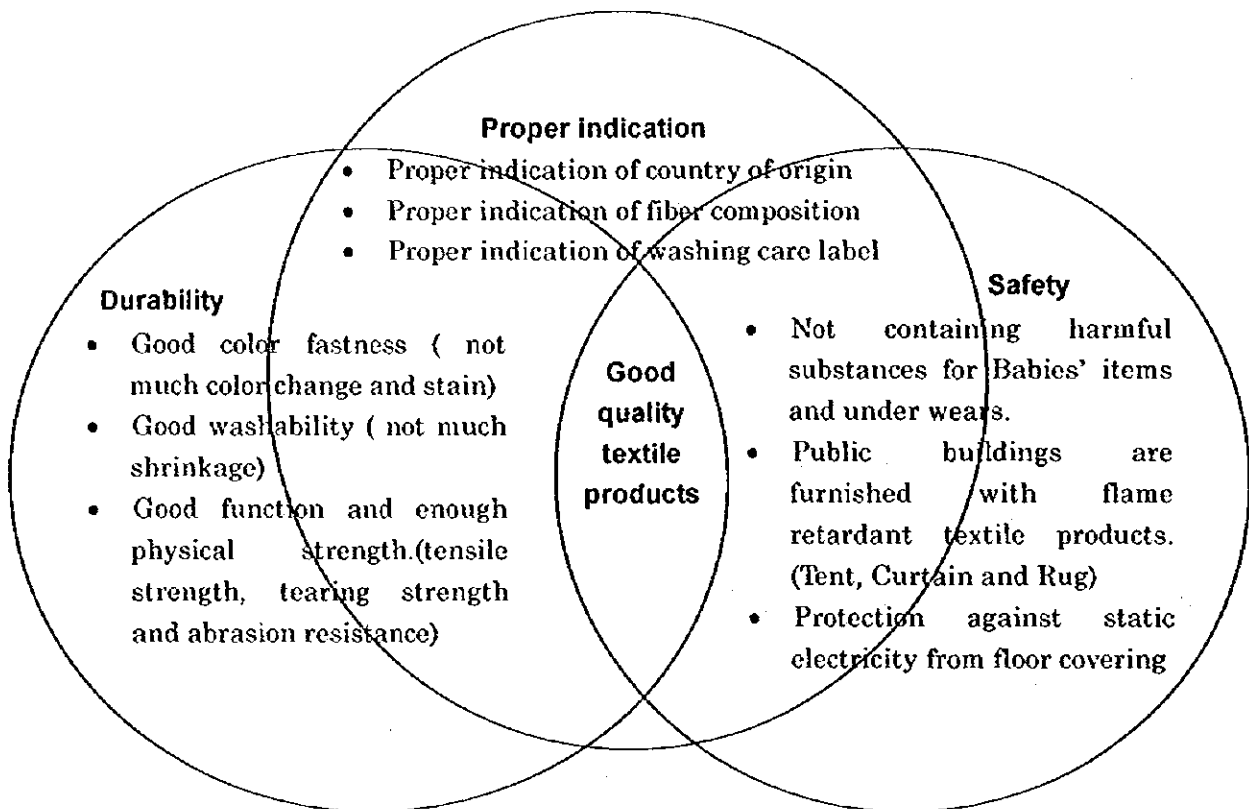


Figure 2.6.3.-1. Requirements for good quality textile products

1) Unfair indication and improper labeling

The labeling is very important for the interests of consumers and it is required to establish the necessary standards to define the requirements related to the fiber composition, care method, country of origin, and eliminate the unfair indication and improper labeling. Accordingly, the market surveillance system of the MOC in cooperation with SASO should be provided and the market inspection regarding the indications should be carried out.

In customs clearance of products, labeling inspection is taken by the customs at present. But, the labeling inspection should be more strengthened. Because, as for textile products, the indications of the country of origin and/or the fiber composition written in the import declaration documents are different from the indications attached to the products. As the matter of fact, a sampling test is not carried on at the import procedure. It seems that there are importers with lower morality who instruct the suppliers to provide a false indication intentionally. Such improper indications of the country of origin and fiber composition must be eliminated, because they are the means for consumers to judge the product quality and pay the amount of money when consumers buy the products.

Many textile products without care labeling are sold in the market. The care labeling is important for consumers to understand the information about proper handling of products like washing method, use of bleach, ironing temperature, dry cleaning method and drying procedure and to prevent improper handling. Therefore, the products provided with improper care labeling must be eliminated from the market.

The problems and solutions are described in *Table 2.6.3.-1*, and the labeling positions and contents of garment for inspection are shown in *Figure 2.6.3.-2*.

Table 2.6.3.-1. The problems and solutions (Indication and inspection)

Problems	Solution
<p>Many products with improper indication or no indication are distributed in the market, especially silk fabric roll, bolt and garment.</p>	<p>a) SASO conducts a market surveillance of labeling in cooperation with MOC. (Refer to Clause 2.4.4.)</p> <p>b) Country of origin and fiber composition shall be indicated on silk fabric's roll and bolt. (SSA 784/1994 should be improved---Refer to Clause 3.3.5.)</p> <p>c) SASO holds a seminar about quality control to importers, retailers and domestic manufactures.</p> <p>d) Importers shall have the obligation of submitting a fiber composition certificate to Customs in Customs clearance. (Refer to Clause 2.4.1.)</p> <p>e) Names of importers and domestic manufactures shall be indicated on their products in order to impose the responsibly for their products quality on them. (Refer to Clause 2.4.1.and Clause 2.4.2.)</p>

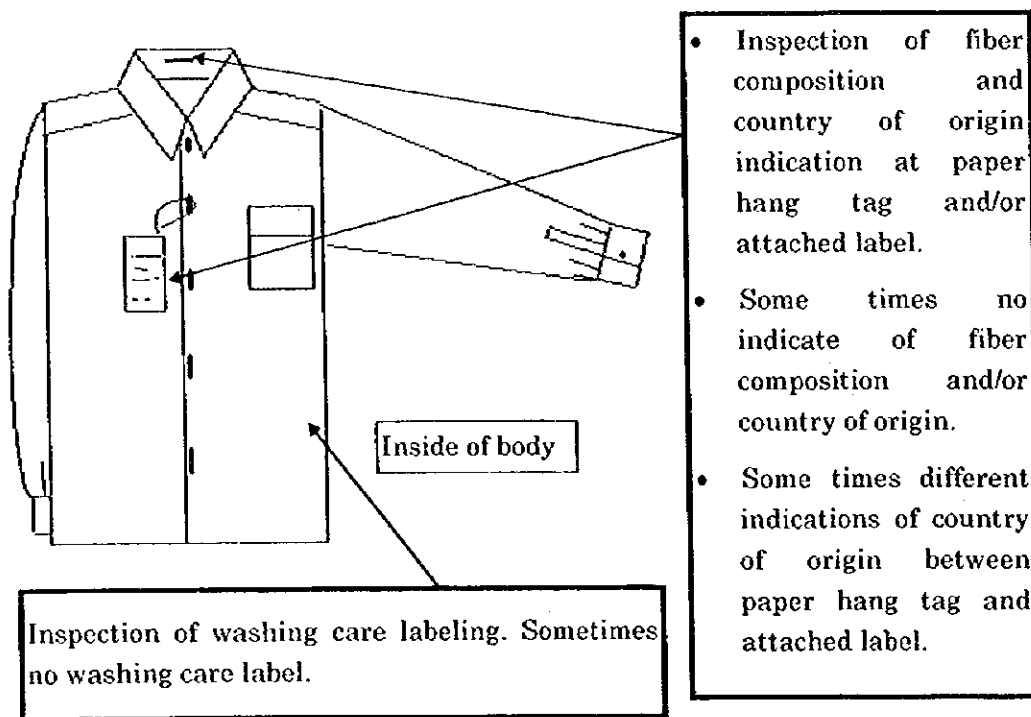


Figure 2.6.3.-2. The labeling positions of garment for inspection

2) Quality control

The quality control of garments and rolls is performed voluntarily by importers, manufacturers and distributors in many countries, but it is not popular in Saudi Arabia yet. A uniform factory the Team visited, however, had the specific voluntary standard, implemented the receiving inspection and requested always importers and suppliers to perform the color fastness test, analysis and inspection of the physical properties of the material and accessories and realized the quality control. Few complaints about the quality is given to the factory. It is necessary to encourage others companies to perform voluntary quality control, using the said factory as a good example.

If the companies performing the voluntary quality control increase, the awareness including morality and the technology of the textile industry in Saudi Arabia will be improved and the defective products or the products with unfair indication and improper labeling will be decreased. Thus, the consumer protection will be realized. The problems and solutions are described in the *Table 2.6.3.2*.

Table 2.6.3.2. The problems and solutions (Quality control)

Problem	Solution
<p>1) Some consumers complain about color change and shrinkage.</p>	<p>a) SASO conducts market surveillance and testing by SASO lab in cooperation with MOC.</p> <p>b) SASO holds a seminar about quality control to make importers, retailers and domestic manufactures perform quality control.</p> <p>c) Names of importers and domestic manufactures shall be indicated on their products in order to impose the responsibility for their product quality on them.</p> <p>d) MOC should strengthen the function of gathering information as a contact point for complaints. SASO should strengthen the function of causal analysis. If necessary, MOC gives the results of causal analysis to importers, retailers and domestic manufactures.</p>
<p>2) Domestic manufactures who perform quality control are not price competitive.</p>	<p>MOC gives consumer information about merchandise and warning that cheap products are often inferior in quality, through holding a seminar, and SASO gives consumer information through holding a seminar and magazine "The Consumer."</p>

3) Safety

In the sense of the consumer protection, it is more important to maintain the safety of consumers as well as to keep the interests of consumers. Regarding the textile products, there are two issues, skin trouble and flame resistant ability.

a) Skin trouble

During the field study, no information about body injury of the consumer is obtained. Therefore, it is recommended to establish the law to control the use of harmful substances to cause skin trouble and maintain the safety of consumers. For reference, there are the 'Law for the Control of Household Products Containing Harmful Substances', mainly against formaldehyde, of Japan and the 'New Regulation for Use of Pigment Contained in the Household Insecticides and Textile Products' of Germany. Accordingly, it is necessary to specify the objective items in the law such as the baby's suite to protect the weak skin against harmful substances and the under wear to touch directly the skin and prepare SSA for each specified item.

MOH should establish regulations and penalties by law, and SASO should prepare the SSA and perform an inspection to protect the safety of the consumers thoroughly.

b) Flame retardant ability

At first, the objective buildings for the fire prevention and the objective items for the flame retardant ability should be defined in the Civil Defense Law, and then, SASO should prepare the standards. In this sense, it is recommended to define in the Civil Defense Law the objective buildings for fire prevention (for example hospital, hotel) and the objective items (tent, curtain) for flame retardant ability where "The flame retardant products (such as drape curtains, curtains plywood for display, and the similar products.) intending for use in high-rise buildings, underground centers, theaters, hotels, and other fire prevention premises shall comply with the requirements of the flame retardant.", as the Fire Law of Japan states.

There is a standard for flame retardant ability of tent (SSA645/1994), but implementation of the standards is incomplete. To maintain the safety against fire, the fiber material having flame resistant ability shall be used in the hospitals and hotels where a lot of people come together. It is necessary to prepare SSA not only for tents, but also for curtains and carpets.

As a procedure for thoroughgoing implementation of the inspection by SASO, it is recommended to introduce the type test system where the quality assurance mark will be given to the goods which passed the type test.

The problems and solutions are described in the *Table 2.6.3.-3*.

Table 2.6.3.-3. The problems and solutions (Safety)

Problems	Solution
<p>1) No regulation and SSA to control harmful substances.</p> <p>2) Flame retardant ability.</p> <p>a) No description of flame resistant ability of objective buildings and objective items in Civil Defense Law.</p> <p>b) SSA are not enough about flame retardant ability of objective items.</p> <p>c) Fraud fire retardant tent fabric is distributed in the market.</p>	<p>MOH should establish the regulation for harmful substances. SASO should establish the standard for harmful substances for babies' items and underwear.</p> <p>a) Completion of Civil Defense Law for flame retardant ability.</p> <p>b) SASO should establish the standards for fire retardant of objective items such as curtains, carpets and rugs other than tents.</p> <p>c) A type certificate system should be introduced to drive out products which may be dangerous.</p>

Figure 2.6.3.-3 in next page shows activities based on the cooperation among relevant ministries and organizations to solve the problems related to textile products and to ensure their quality.

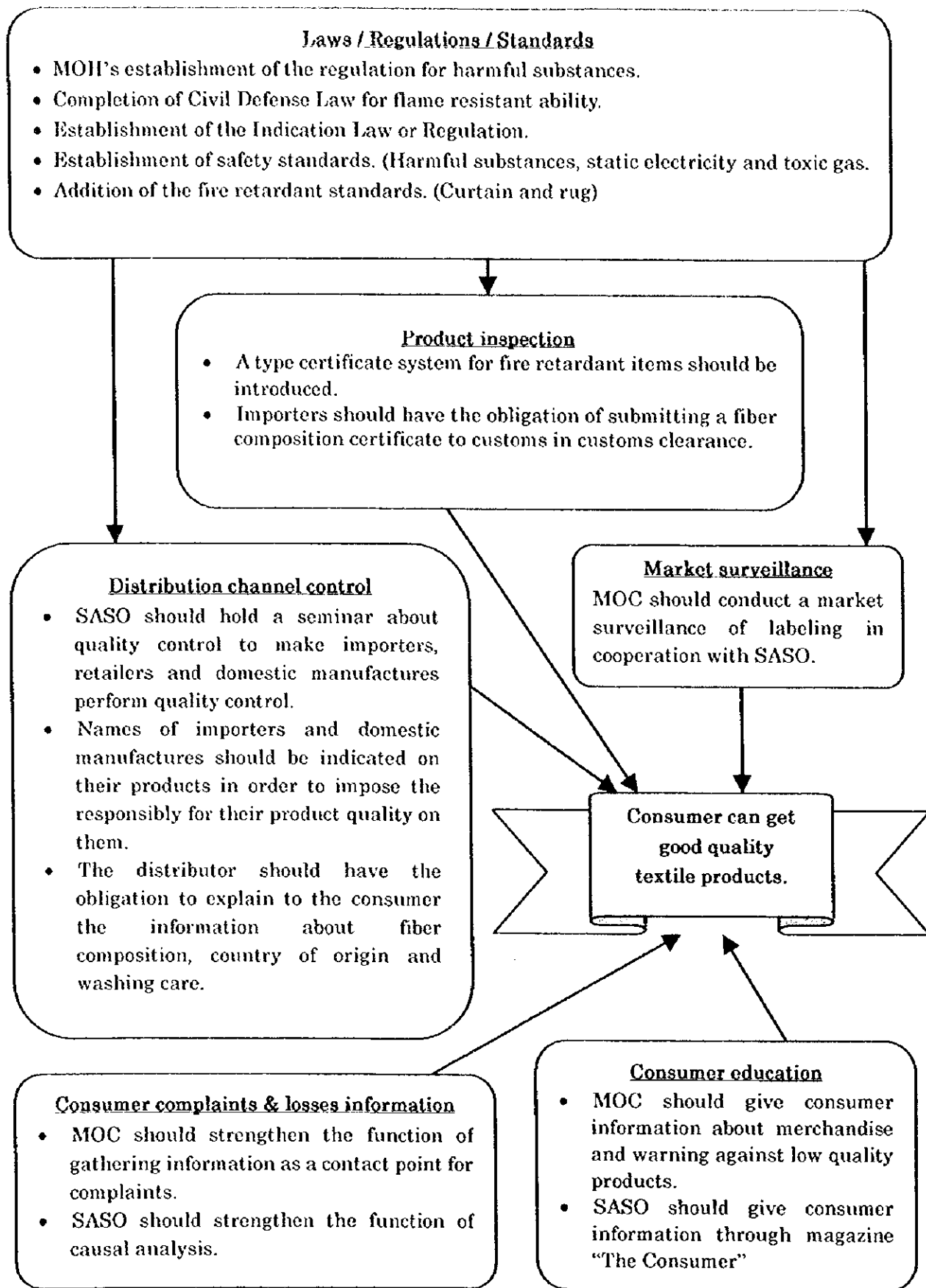
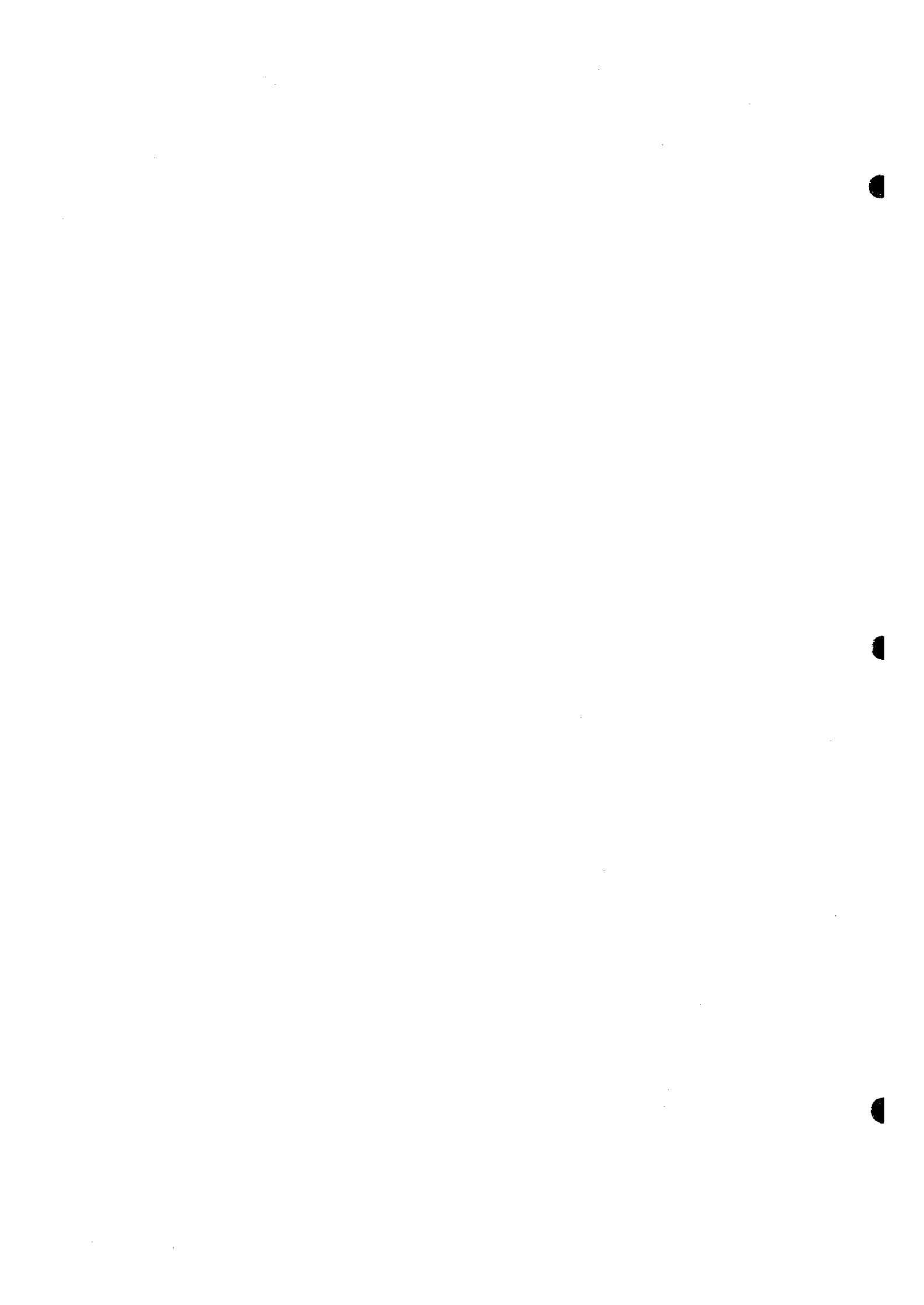


Figure 2.6.3-3. Overall cooperative activities related to textile products

Chapter 3.

The master plan for SASO activities for consumer protection



CHAPTER 3. The Master Plan for SASO activities for consumer protection

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Chapter 3. The Master Plan for SASO activities for consumer protection

In this chapter, an overall description about SASO's role for consumer protection is summarized in Clause 3.1. Each item in the Master Plan is described in Clause 3.2 through 3.8., respectively. The five year schedule for the development of the Master Plan is listed up in Clause 3.9.

3.1. The target role for SASO regarding the consumer protection scheme

SASO's target role (objectives)

The SASO's target role is to strengthen its technical support capability to the related organizations and cooperate with them more actively and closely for better consumer protection. Fundamental functions set for SASO, standardization, certification, registration, accreditation, inspection/testing and consumer education will be its major functions for consumer protection still in future. A new task for SASO is establishing and fostering the Consumer Support Organization as the solely consumer-oriented semi-governmental organization neutral from any governmental or manufacturing/trading organization.

SASO's position regarding consumer protection

SASO is standing in a good position and in a good environment to promote strong and comprehensive technical support for consumer protection in Saudi Arabia and GCC. SASO has been supporting the technical side of the Saudi Arabian consumer protection scheme in cooperation with many governmental organizations which implement consumer protection or enforce laws/regulations relating to consumer protection. As SASO is the sole body to formulate national standards, SASO has been keeping in close contact with related governmental organizations, industries and consumers. In addition, SASO is very much influential to GCC through CSMO.

The target role (objectives) of SASO is schematically shown in *Figure 3.1-1* and *3.1-2*. *Figure 3.1-1* shows enhancement of SASO's power through capability/organizational development and expansion of SASO's activities through full use of its technical expertise. *Figure 3.1-2* shows SASO's role at present and in future. The quality control of the domestic and imported products, the causal analysis of consumer accidents and complaints and support for the Consumer Support Organization are major SASO's role in future.

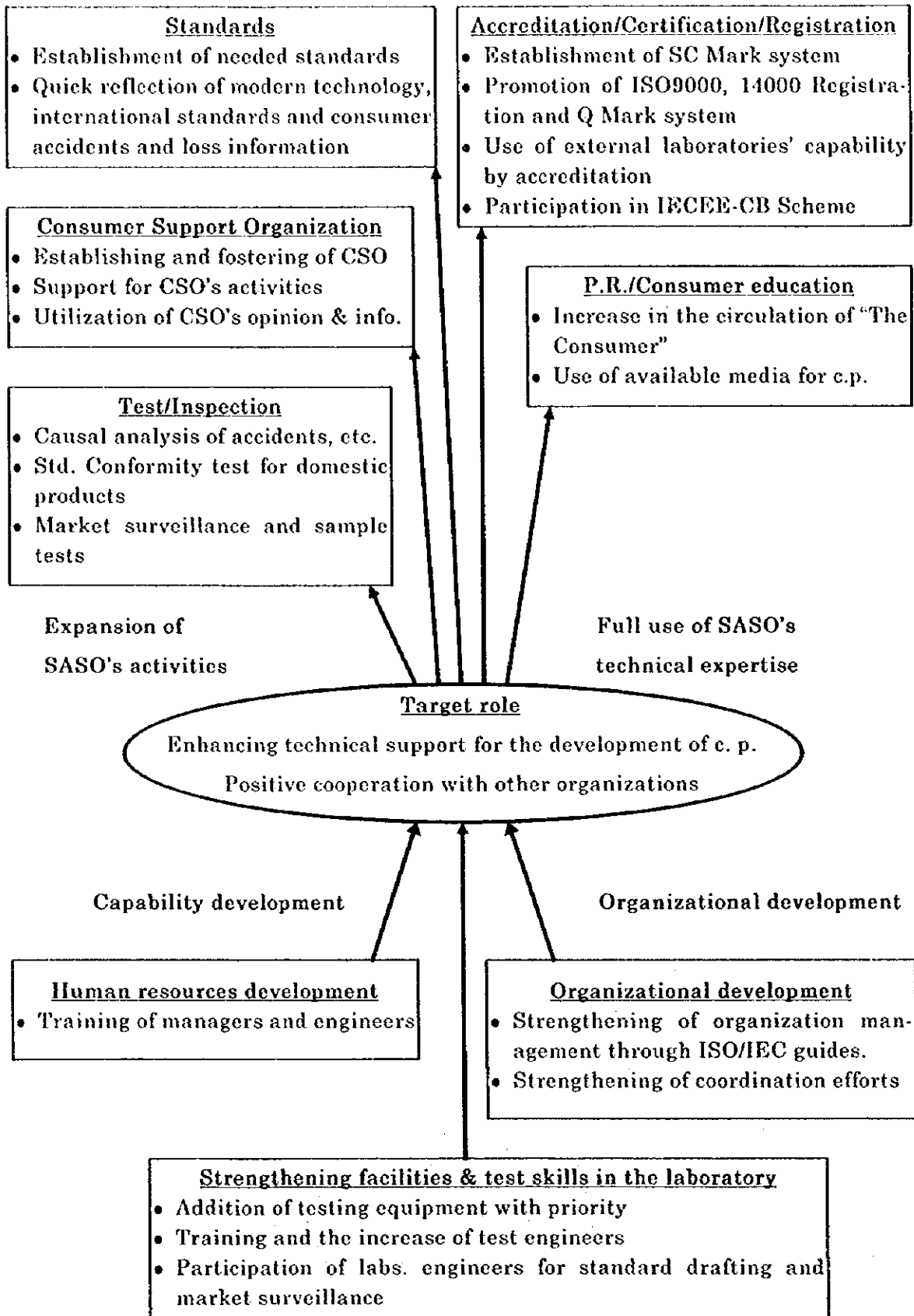


Figure 3.1.-1. General view of SASO's target role

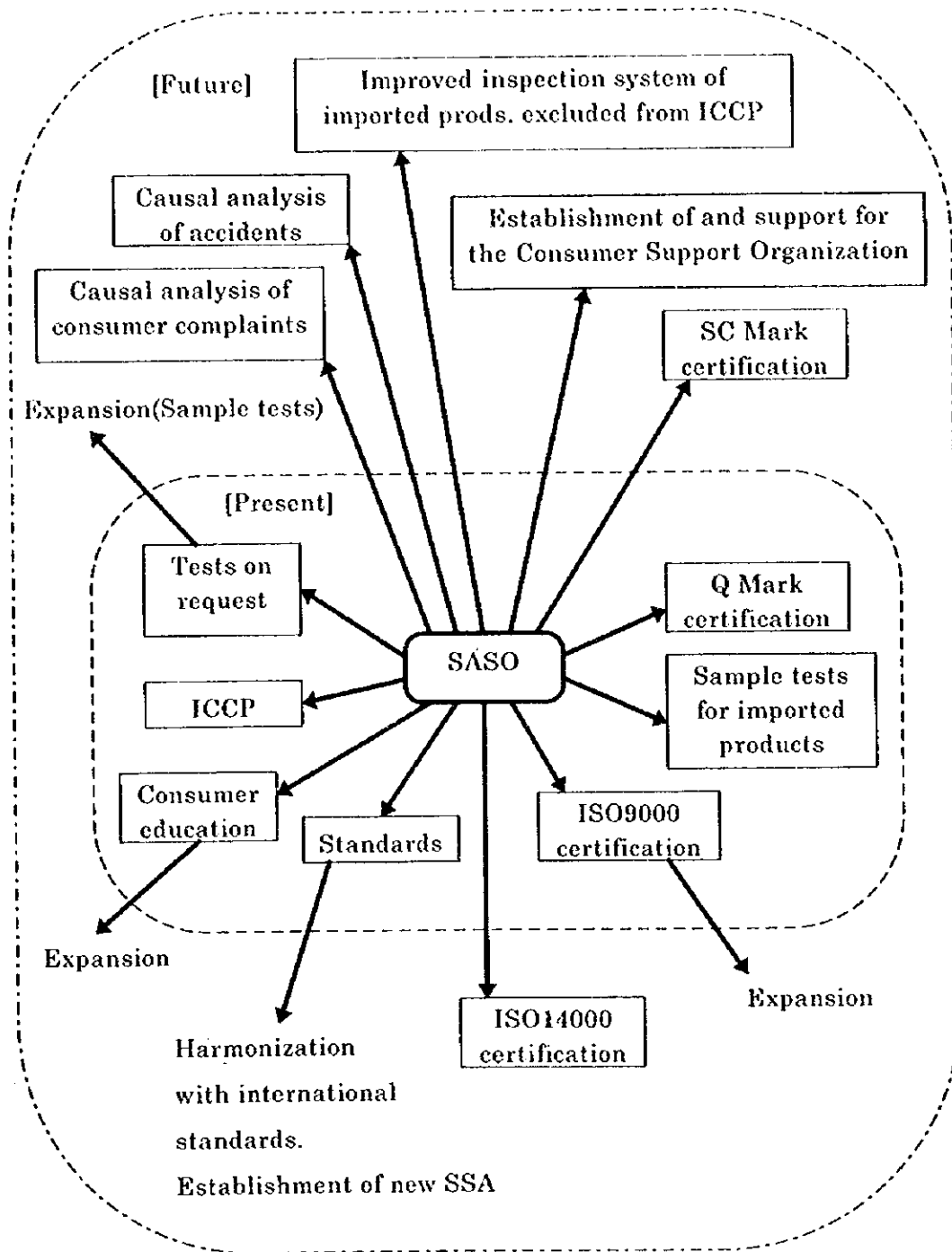


Figure 3.1.-2. SASO's role, present and future

Each objective in the target role of SASO is summarized as follows. The objectives are classified into two groups, the short-term objectives and the middle-term ones in which the "short-term objectives" are intended to be realized in one to three years and "middle-term objectives" in three to five years. *Figure 3.1.-3, 4, 5, 6 and 7* shows a rough layout of the schedule.

1) Standards

Short-term objectives

- a) Establishment and revision of standards with priority for product safety
- b) Harmonization with the international standards

Lack of necessary standards should be supplemented rapidly by utilizing the existing international standards (ISO, IEC, etc.) and existing standards shall be revised up-to-date to keep pace with modern technology. Both of these should give priority to product safety.

Middle-term objectives

- a) Supplement of standards keeping pace with the increase in consumer needs
- b) Timely reflection of consumer accidents, damage, injuries and complaints in the standards

Actual data of consumers injuries, damage and complaints should be reflected in the standards rapidly and with sensibility under the umbrella of the Product Safety Law.

- c) Being influential to international standardization through GSMO

Active participation to regional and international standardization will strengthen the overall capability for standardization.

2) Certification/Registration/Accreditation

Short-term objectives

- a) Enhancing the quality control of domestic products

Establishment and promotion of the SC Mark system in cooperation with MOC will give domestic manufacturers a good incentive for better quality control.

- b) Further strengthening of Q Mark and ISO 9000 registration

A further strengthening of the Q Mark system and ISO 9000 are necessary in Saudi Arabia so that the Q Mark and ISO 9000 will become popular indices of good quality. In particular, the Q Mark system should be applied to specific electric products which have a higher possibility to cause fires.

Middle-term objectives

- a) Establishment of internationally recognized ISO 9000 and ISO 14000 accreditation activities
- b) Accreditation of and cooperation with other domestic and foreign testing bodies and laboratories

In order to get better international recognition, organizational development according to the ISO/IEC guides, participation in the IECEE-CB scheme and formation of national accreditation body will be very effective measures and these measures will raise SASO's capability and international credibility in this field.

Accreditation of laboratories should be expanded to the domestic manufacturers'

testing laboratories and those in foreign countries so as to supplement facility limitation of the SASO laboratory

3) Inspection/testing

Test and inspection conducted mainly at the SASO laboratory should be intensified and expanded in the following four categories.

- Test to assure the standards
- Test and inspection to check products' conformity to the standards
- Test to investigate causes of consumer injuries, damage and complaints
- Test to investigate causes of fire, traffic and other accidents

Short-term objectives

- a) Strengthening of testing equipment and skills with priority given to product safety
Addition of necessary equipment and test skills should be conducted as regards their priority
- b) Full use of data for other consumer protection activities
A well analyzed test database in the laboratory will provide useful information to other departments.

Middle-term objectives

- a) Full use of testing expertise for market surveillance, causal analysis of consumer accidents, damage, injuries and complaints
- b) Full use of testing expertise for the establishment/revision of standards
Strengthening of causal analysis activities in close cooperation with MOInt. and other organizations will be very useful in preventing consumer accidents and losses which are now increasing in Saudi Arabia. To develop causal analysis capability, the training of personnel should be started in advance.

4) Public relations and consumer education

Short-term objectives

- a) Monthly publishing of "The Consumer" magazine
- b) Comprehensive consumer education using all available media
- c) Getting more popular recognition of SASO's role and that of SSA
SASO should strengthen its educational effort using various media and increase the circulation of the magazine, "The Consumer" which is the sole magazine for consumer protection in the gulf area. Various media should be used according to their special features and SASO should combine them for better consumer education of the people. SASO is a technical institution capable of utilizing its assets of technical expertise for consumer education.

Middle-term objectives

- a) Increase in the circulation of "The Consumer" to 100,000
- b) Widening source of information and distribution channels of the magazine through closer cooperation with the relevant organizations.
- 5) **Establishing and fostering the Consumer Support Organization (CSO)**

Short-term objectives

- a) Establishing CSO as a solely consumer-oriented semi-governmental organization
- b) Developing CSO's activities in the consumer complaint information system, product tests, etc.

SASO should support CSO especially regarding causal analysis of consumer complaints and product tests using fully its technical expertise.

Middle-term objectives

- a) Full use of CSO's opinions and information for SASO's activities and for consumer protection in Saudi Arabia
- b) Supporting CSO for its expansion and enhancement of its consumer protection activities
- c) Supporting CSO to be a center of consumer education and consumer complaints information

Figure 3.1-3. SASO's target role for standards

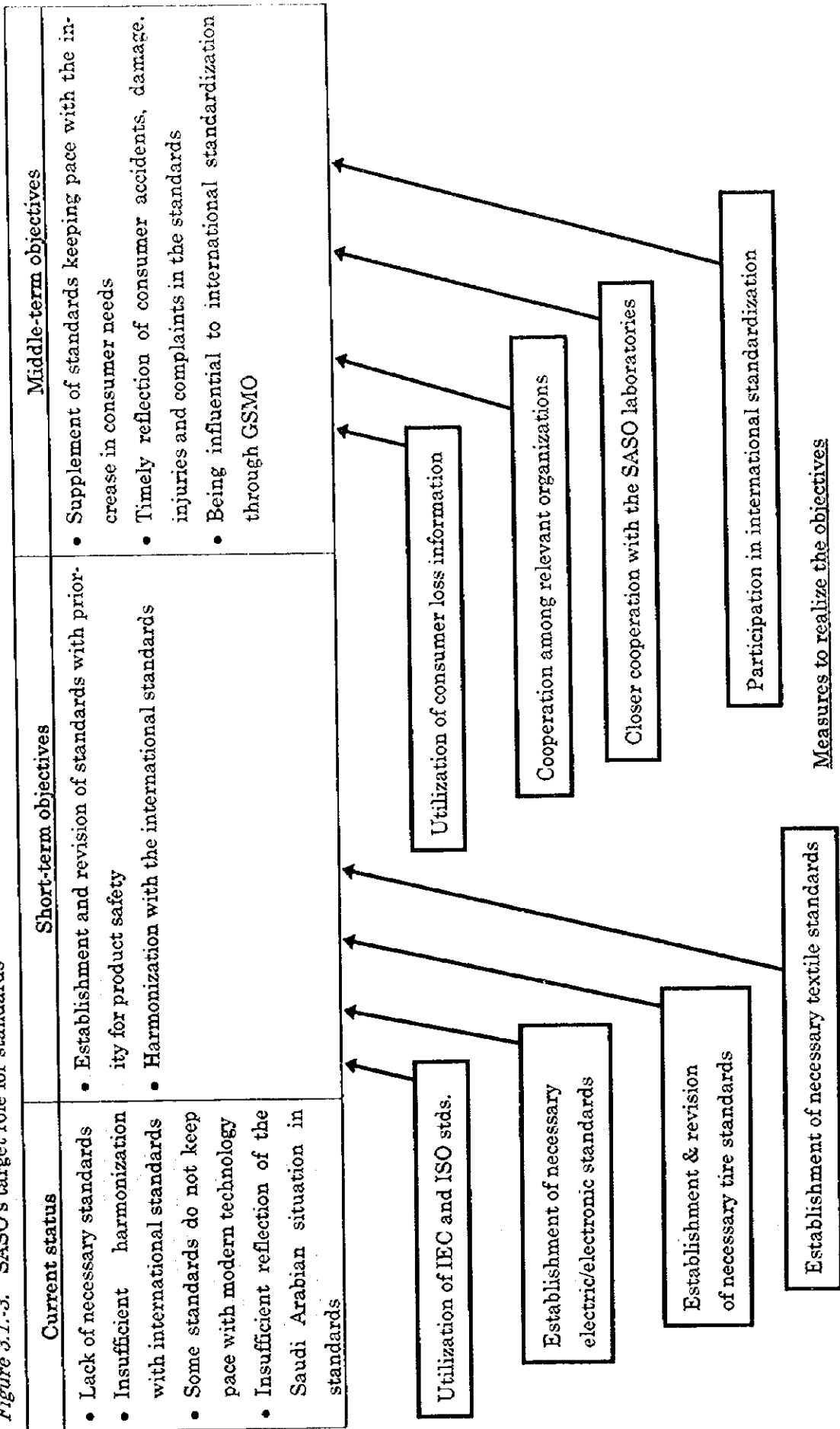


Figure 3.1.-4. SASO's target role for certification/registration/accreditation

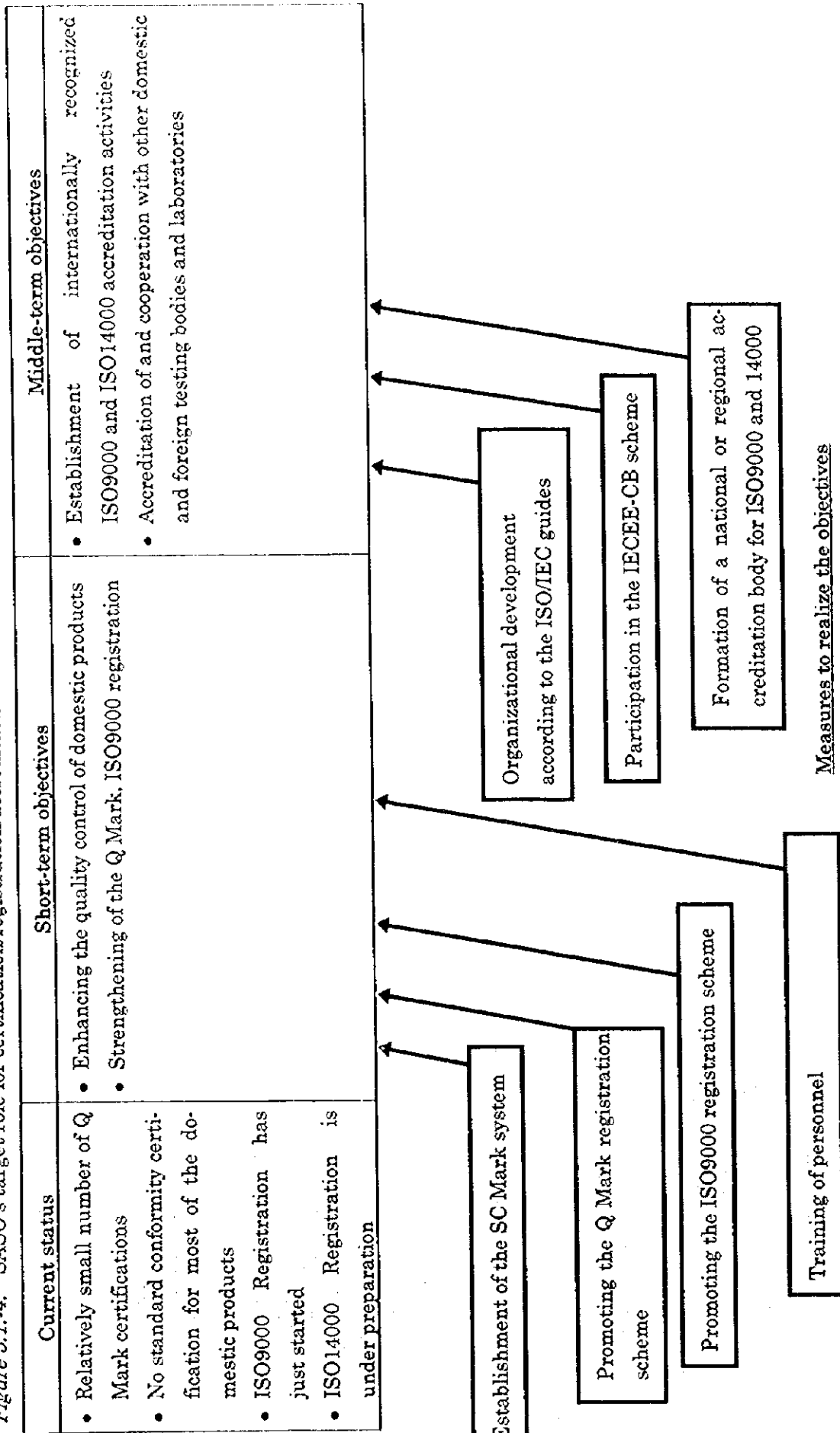


Figure 3.1.-5. SASO's target role for test/inspection in the laboratory

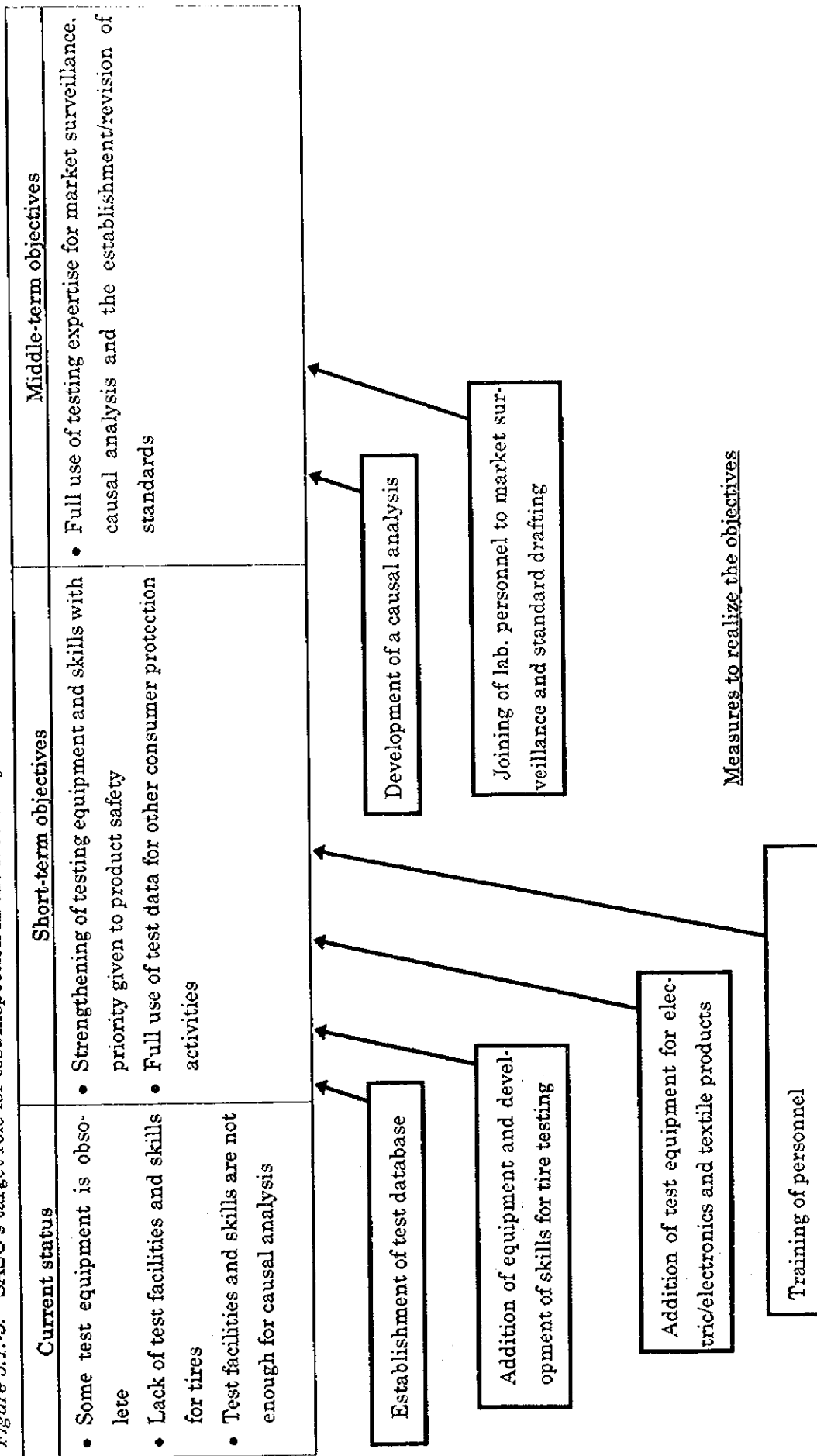
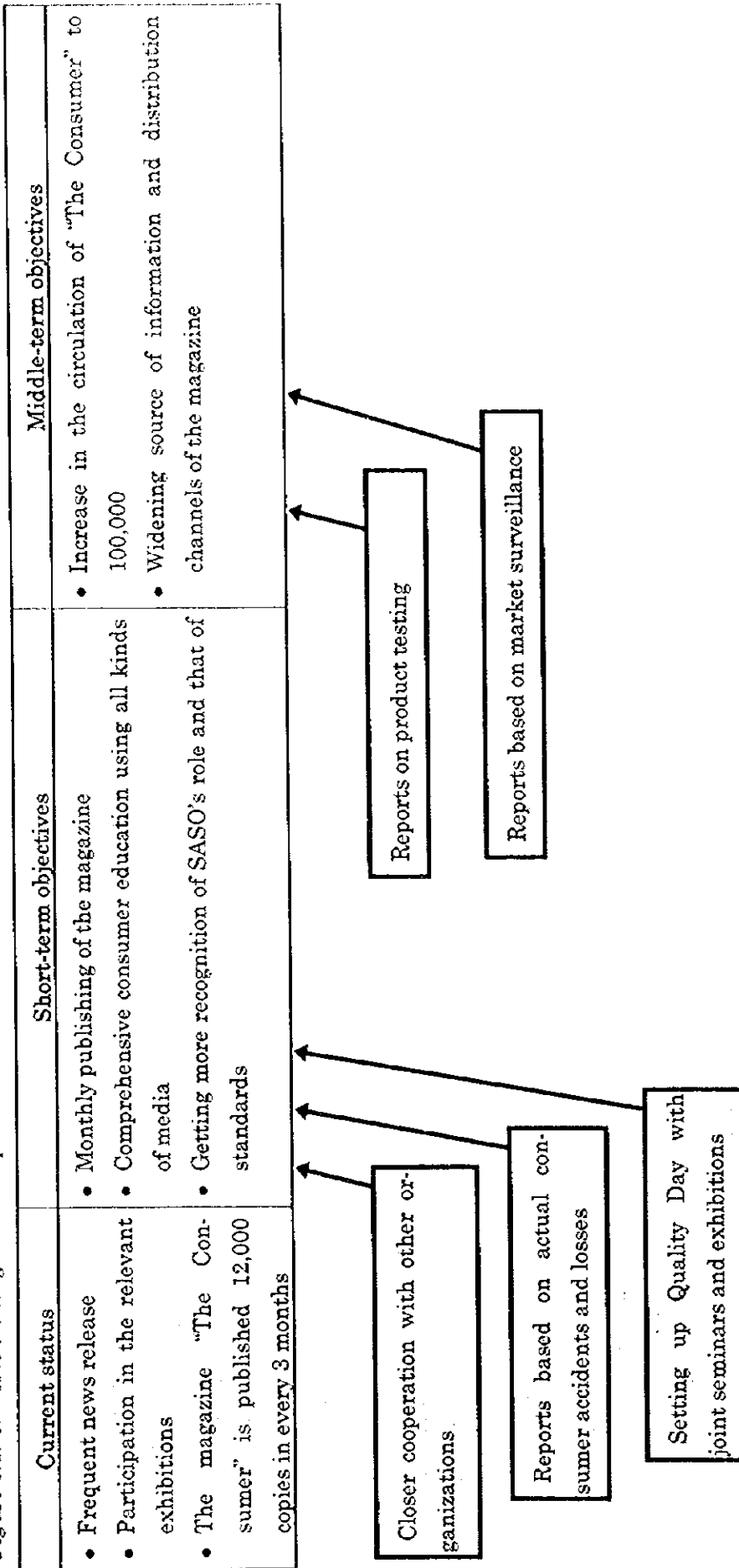


Figure 3.1.-6. SASO's target role for public relations and consumer education



Measures to realize the objectives

Figure 3.1.7. SASO's target role for the Consumer Support Organization

Current status	Short-term objectives	Middle-term objectives
<ul style="list-style-type: none"> • No consumer support organization representing consumers 	<ul style="list-style-type: none"> • Establishing CSO as a semi-governmental organization representing the consumers • Developing CSO's activities in consumer complaint information system, product tests, etc. 	<ul style="list-style-type: none"> • Full use of CSO's opinions and information for SASO's activities • Expansion and enhancement of CSO • A center of consumer education and consumer complaint information

Study of consumer support organizations in other countries

Full use of SASO's technical expertise for CSO's activities

Intensive coordination between CSO and other organizations as well as SASO

Expansion of CSO's activities to cover all area of Saudi Arabia

Measures to realize the objectives

3.2. Information gathering and processing function

The information system in SASO and its utilization closely, which is related to consumer protection, is divided into the following two fields.

- a) A database in the headquarter with access to the outside databases in the Civil Defense, the Traffic Police, MOC, etc.
- b) A local database for testing at the SASO laboratory

A simplified schematic of the information system is shown in *Figure 3.2-1*. SASO should collect outside data and analyze them how they are related to SASO activities.

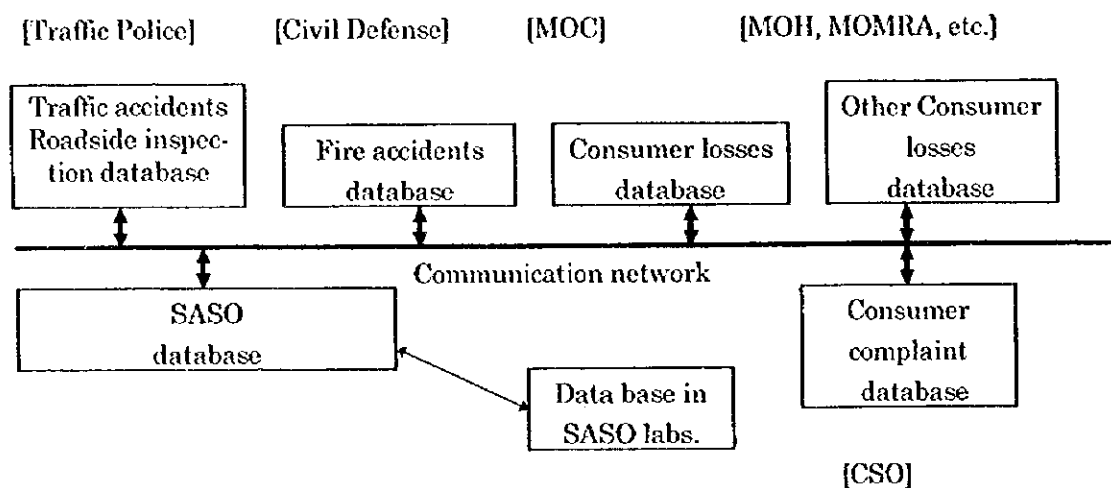


Figure 3.2-1. Information network

How to make use of the SASO database

The data available from the databases should be analyzed and used for the following SASO tasks. The SASO database should have access to the outside and inside databases. It collects information about accidents, consumer injuries, damage and complaints as well as product test results and causal analysis of accidents. The information based on the facts will be effective to reach solutions to the point and improve greatly this country's consumer protection.

1) Standards

Standards should be established and revised quickly based on the obtained data. Statistically and scientifically analyzed data are effective to reflect Saudi Arabian natural and social environment in the standards.

2) Quality control

Data should be used to improve procedures for the quality control of products and factories.

3) Laboratory tests

Data should be used to improve the test procedures and test facilities.

4) Consumer education

In general, Saudi Arabian consumers are not conscious about product safety and their proper use. Consumer education based on the actual accidents, injuries and damage will give consumers a good incentive.

SASO should analyze the outside data for effective use at SASO. Proposed items for analysis are listed in *Table 3.2.-1.*

Table 3.2.-1. Items for analysis in SASO for consumer accidents and loss information

Contents of accidents, injuries or damage : Original information	
Product categories and related standards	
Causal analysis by SASO	Action to prevent a recurrence
1) Lack of laws/regulations/standards	Necessity and urgency of establishment
2) Insufficiency in laws/regulations/stds.	Necessity and urgency for revision
3) Insufficiency in their enforcement	Necessity and urgency for enforcement
4) Insufficient test/inspection	Improvement of present system
• System defects	Improvement of procedures
• Improper procedures	Addition of facility, estimated expenditure
• Lack of testing facilities	Training programs
• Lack of test skills	Recall, ban of import or manufacture
5) Defective products	Distribution channel control
6) Improper handling during market distribution	Consumer guidance or education
7) Improper installation	Consumer guidance or education
8) Improper use	Consumer guidance or education
9) Improper maintenance	Consumer guidance or education

Especially, SASO should analyze the consumer complaint information obtained from CSO carefully and use it intensively to improve and advance SASO's activities as well as give CSO necessary support for causal analysis.

As for the database in SASO laboratory, descriptions in Clause 3.7.1. 1) and 2) in this chapter is to be referred to.

3.3. Standards

3.3.1. General

As mentioned in Clause 1.5, the number of SSA is relatively small in consideration of the sort of products actually being circulated in the market. SASO is set up as the sole organization for the standardization and its duty is very complex. To carry out its duties, SASO should implement an action program for establishing SSA. SSA is very important to design the products for manufacturers and ensure the safety and quality of the products for consumers. Therefore, the establishment of a new SSA is a short-term objective. The revision of SSA also is very important. However, the revision work may be in a middle-term objective in consideration of the capability of SASO if there is not any urgent reason.

Short-term objectives

1) Drawing up and implementation of a one-year and five-year plan

Each technical committee/general committee should review the plans as being practicable and set them up. To promote the establishment of SSA timely, the priority of the establishment of SSA should be clarified in consideration of the demand from the relevant ministries, manufacturers as well as the consumers.

2) Harmonization of SSA with the ISO and IEC standards

In establishing and revising SSA, the harmonization with the ISO and IEC standards is able to resolve the lack of technical experts. Regarding it from the standpoint of the consumers, they can purchase the products having safety and quality comparable to the international level. The manufacturers can attempt the expansion of the market sharing of their products so that the design of the products for the Saudi Arabian market and for other countries can make identical to each other.

3) Setting up of a system to reflect the information of accidents and complaints in the standards

The relevant ministry is responsible for the collection and the solving of complaints and accidents. SASO also should serve as an expert from the technical aspect such as casual analysis. Therefore, it is very important to maintain the cooperation between them for solving the complaints and accidents and preventing their recurrence. SASO should establish a "coordination function" for communicating with the ministries and provide the information of the complaints and accidents to the technical committees in order to develop or revise SSA.

SSA for flammability of public tents is an example that it was established based on information of the accidents.

- 4) **Closer communication between the Standards General Department and the Laboratory General Department regarding the application of the standards**
Engineers in the SASO laboratories should participate in the technical committees.
The reasons are as follows:

- Understanding the reason why the requirements are specified for proper testing
- Reflecting the experience and technical knowledge such as the interpretation of the requirements, testing methods, etc. in the establishment of SSA
- Taking the opportunity to study the overall knowledge of these products

Middle-term objectives

1) Education of technical personnel

The SASO staff drafting SSA should be educated so as to obtain the knowledge of the technical aspects using the following methods.

- Training for the testing practice in the SASO laboratories for about two weeks a year in order to maintain the proper knowledge of the products
- Studying the advanced technology and its manufacturing process including the testing practices at the manufacturing premises
- Studying the testing practice based on the ISO and IEC standards at international meetings to reflect them in SSA

2) Cooperation with Gulf countries

SASO should cooperate with other Gulf countries to unify the standards in each country as Gulf standards so as to promote their further internationalization.

3.3.2. Policy of establishment of standards

Where SSA will be established, the following items should be taken into account.

- 1) Standardization of requirement levels
- 2) Harmonization with international standards, if any
- 3) Industrial development, trend and needs
- 4) Consumer complaints and accidents
- 5) Periodical review of SSA (every three years, in principle) after their publication to follow the modern technology
- 6) Participation of a representative consumer support organization in the technical committees of SASO who draft SSA

3.3.3. Electrical/Electronic Products

The number of SSA is small in comparison with kinds of products in the market. Therefore, SSA should be published with its short-term objectives and middle-term objectives in the following way:

Short-term objectives

1) SSA for mains configuration adaptors and extension cord set (many problems in the market)

For the mains configuration adaptors, our proposal is mentioned in item 2) below. For the extension cord set, SSA 444/1985 "plugs and socket-outlets for household and similar general use" and relevant SSA for flexible cords and cables can apply to them because the extension cord set are a unit combining the part of the plug and socket-outlet, and a power supply cord until SSA for the extension cord set is published.

2) SSA to be applied to 17 product categories covered by ICCP

SSA for the following 17 product categories should be published in consideration of the harmonization with the IEC standards, if applicable, because none of these SSA are now in existence. The IEC standards applies to 17 product categories to be published are shown in *Table 3.3.3.-1*.

Table 3.3.3.-1. IEC standards corresponding to the 17 product categories

IEC Standard	product category
IEC335 series	<ul style="list-style-type: none"> • Household cooking appliances except electric range • Clothes drying machines to 10kg • Food processors (Non industrial) • Meat choppers and grinders (Non industrial) • Household microwave ovens • Electric ovens up to 10kw • Household electric heaters • Tea and coffee brewing appliances and appliances for heating liquids • Water pumps up to 12kw except for centrifugal type • General use mains voltage converters and power supplies
IEC598 series	<ul style="list-style-type: none"> • Incandescent, fluorescent and discharge luminaires • Immersed swimming pool lights
IEC950	<ul style="list-style-type: none"> • Fax and telex machines • Copy machines • Computers (Desktop and portable) and monitors
None	<ul style="list-style-type: none"> • Mains configuration adaptors • Domestic pressure cookers

Concerning the mains configuration adaptors, SSA 444/1985 "plugs and socket-outlets for household and similar general use" can apply to them until SSA for the adaptors is published because the adaptors are a unit combined with the part of plug and socket-outlet.

Concerning domestic pressure cookers, there is no relevant IEC standards in existence. Therefore, the foreign national standards like the Japanese safety requirements can be used for these cookers.

Middle-term objectives

1) **Establishment of SSA**

- SSA for components used for products covered by ICCP (Appliance couplers (IEC320), Automatic electrical controls for household and similar use (IEC730), Switches for appliances (IEC1058), Cord set (IEC799), etc.)
- Other products not covered by ICCP and popular in the country (Electric tools (IEC745), etc.)
- Other components

2) **The revision of SSA including the harmonization with IEC standards**

The harmonization of SSA with the IEC standards is very effective on the following points:

- compensating for the shortage of technical experts
- responding to current advanced technology
- adopting standards agreed on internationally
- shortening time and minimizing the burden of the cost for establishing SSA

If no IEC standards are available, the standards used in Japan, Europe and USA can be used as the base.

3.3.4. Tires

Eight SSA and one SSA for passenger cars, trucks and buses have been already published and drafted, respectively. However, the following SSA should be considered to establish and revise in the light of the fact that the number of accidents caused by the tires burst happened.

Short-term objectives

1) **SSA1275/1997"Standards for characteristics of retread tyres and testing method"**

SASO should study the revision of the deletion of the retread tires for passenger cars and buses and the confinement for buses and trucks. For instance, the retread tires are unfavorable for passenger cars and buses. Also, the retread tires only on the rear wheels of trucks may be allowed provided that one of two tires on the each side is new. This prohibition and limitation has been adopted in Belgium, Japan, etc. in spite of their less severe weather conditions and less speeding in the towns.

2) **SSA1066/1995 "Requirements for tire storage"**

The SSA should include the methods of the tire storage to prevent any deformation in the tires during storing because the problem of the deformation of tires is now becoming a serious problem.

3) New SSA for drivers

The user maintenance SSA should be published to reduce the accidents resulting from tire burst. The SSA should include requirements and check methods of the residual groove depth, internal air pressure and cracks and cuts in the tires, which are major causes of tire burst.

3.3.5. Textiles products

Short-term objectives

1) SSA to be published for safety

- a) Babies' items containing harmful substances such as formaldehyde, azo dyestuff, etc. (Safety standards for preventing babies (weak skin) from the skin injuries likely to be incurred due to harmful substances)
- b) Underwear for both of women and men containing harmful substances such as formaldehyde, azo dyestuff, etc. (Safety standards for underwear touching skin and containing harmful substances such as formaldehyde, azo dyestuff, etc.)
- c) Flame resistant items such as curtains, carpets and rugs (Expansion of items to be regulated)
- d) Toxic gas generated from flame retardant items (Prevention of toxic gas)
- e) Prevention of static electricity of the floor covers (Prevention of electric shock to persons from static electricity from floor covers, especially, high risk in Saudi Arabia because of low humidity)

2) SSA for test methods

In case of the test for color fastness, textiles are normally tested for the items of light, washing, perspiration, rubbing and dry cleaning. SASO also tests textiles for these items. However, SSA specifies only 3 items for light, washing and perspiration. The remaining 2 items are referred to as the GSMO standards. SSA for the remaining items should be published.

3) SSA to be improved

SSA 784/1994 specifies that the fabric composition and country of origin shall be indicated in a place which can be easily seen. There are two methods for indicating these markings on the silk fabric bolts or rolls being sold in the market. These markings are indicated on either the side edge of the bolts or rolls, or at the end. The information on the fabric composition and country of origin is given by the sales clerk orally only if the end of the bolt or roll is sold out. Approximately 70% of them indicate the marking on the end. To prevent non-markings for sale, the location of the indication should be specified in SSA like on "edge of side at a distance of every 1m" as shown in *Figure 3.3.5.-1*.

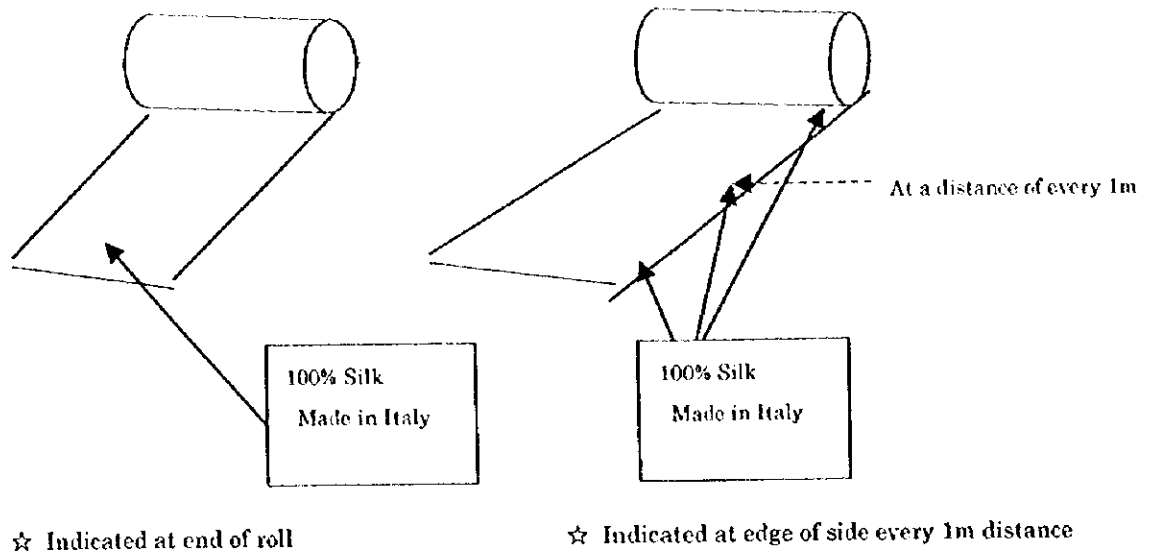


Figure 3.3.5.-1. Markings of fabric composition and the country of origin.

Middle-term objective

1) **SSA should be published for general garments such as women's and men's jackets**

2) **SSA is greatly needed in the future**

It is necessary to establish SSA for sewing specification. There are the sewing specifications regarding European, American and Japanese standards. Consumers satisfying their needs of the marking, safety and quality of raw materials will require to show the sewing formation, furthermore, the skill in sewing. In Japan, many dealers ask the suppliers for the certificate of the sewing inspection before receiving because there are many complaints about defective sewing on the part of the consumers.

3.4. Certification/Registration/Accreditation

The problems summing up in Clause 1.12 should be resolved according to the short-term and middle term objectives below. The distinction between short-term and the middle-term objectives is based on the degree of the problems in the country.

Short-term objectives

- Standard Conformity Mark (SCM) (Clause 3.4.1.)
- Participation in the scheme of the IECBE for Recognition of Results of Testing to Standards for Safety of Electrical Equipment (Clause 3.4.5.)

Middle-term objectives

- Quality Mark System (Clause 3.4.2.)
- ISO Registration System (Clause 3.4.3.)
- Laboratory Accreditation System (Clause 3.4.4.)

3.4.1. Standard Conformity Mark (SCM)

SASO should establish the operational procedure of SCM as a mandatory certification system applied to domestic products as mentioned in Clause 2.4.2. The procedure of SCM is shown in *Figure 3.4.1.-1*.

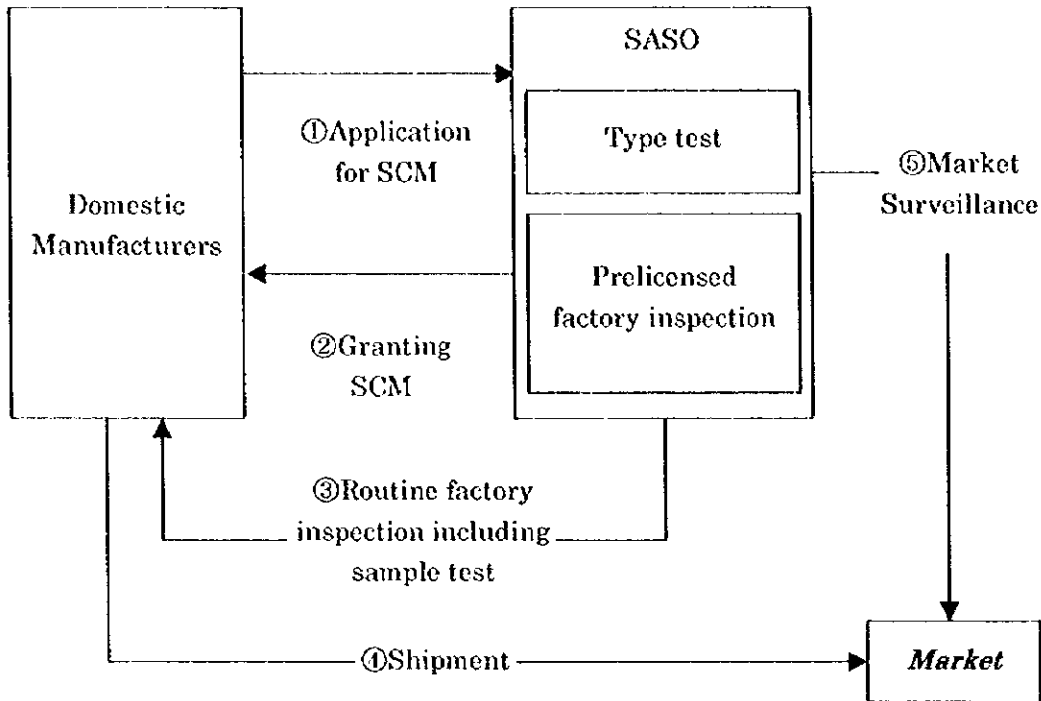


Figure 3.4.1.-1. Procedures for the new Standard Conformity Mark.

SCM should include the type tests and the prelicensed factory inspections before licensing and routine factory inspections twice a year after licensing for verifying the continuity of conformity of the products licensed with SSA. SASO should carry out the type test of the domestic products based on SSA. In addition, market surveillance for licensed products should be fulfilled at due intervals in consideration of the degree of the problems. In carrying out the type test, the testing at manufacturing premises and the test data developed by manufacturers should be utilized, if the manufacturers have the proper testing equipment, test personnel and others for carrying out competent testing.

3.4.2. Quality Mark System

SASO should promote the Quality Mark and increase the number of products certified under the Quality Mark System. Therefore, SASO should offer the incentive to manufacturers and make the rationalization of the Quality Mark System by using the following methods so that the manufacturers can more easily obtain the Quality Mark.

1) Promotion methods

- ① Implementation of testing at manufacturing premises
(Large products difficult to send to the SASO lab. for testing, shortage of SASO testing facilities, etc.)
- ② Utilization of test results developed by the manufacturers
(Avoiding of the duplicated testing in the SASO lab., promotion of competency of testing of the manufacturers, etc.)
- ③ Utilization of CB Test Certificate under the IECEE-CB Scheme
(Avoiding of duplicated testing in SASO lab., etc.)
- ④ Recognition of test results developed by testing organizations in foreign countries
(Avoiding of the duplicated testing in the SASO lab., etc.)
- ⑤ Simplification of factory inspections (Utilization of the results of the ISO9000 Registration)
(Avoiding of duplicated inspections for part regarding the quality system)
- ⑥ Recognition of the results of factory inspections performed by inspection organizations in foreign countries
(Avoiding of inspections by SASO itself (reductions in costs and expenses imposed on foreign manufacturers))
- ⑦ Establishment of a Quality Day and annual awards
(Offering the opportunity to give the test knowledge to the manufacturers, etc.)

2) Requirements and procedures of testing at manufacturing premises(TMP)

Where SASO carries out testing at manufacturing premises, SASO should follow the procedures below.

- ① SASO should make an agreement regarding the respective legal liability with the manufacturers concerned.
- ② SASO should check the laboratory in accordance with the applicable requirements of clauses 7 to 11 of ISO/IEC Guide 25 and if necessary, visit the laboratory to check its compliance.
- ③ SASO should perform testing and a "witness testing" situation is not allowed.
- ④ SASO should clearly indicate to the effect of the testing at the manufacturing premises in the test reports.

3) Supervised manufacturer's testing (SMT)

Where SASO carries out the utilization of the test results developed by the manufacturers, SASO should follow the procedures below.

- ① SASO should make an agreement regarding the respective legal liability with the manufacturers concerned.
- ② SASO should check the manufacturers in accordance with the appropriate provisions of the ISO/IEC Guides 25 and 58.
- ③ SASO should observe all testing by the manufacturers during the initial stage. SASO should observe testing by the manufacturers randomly even during the on-going stage.

- ④ SASO should clearly indicate the effect of the utilization of test results developed by the manufacturers in the test reports.

3.4.3. ISO Registration System

SASO should take the initiative of establishing National Accreditation Body for designating Certification Bodies and Auditors and Training Bodies of auditors on a national level. SASO has already carried out the system and acquired good knowledge of the system. By establishing these bodies on the national level, SASO can acquire the confidence of SASO's quality system registration in the world including the Gulf countries. As a result, the increase in the number of registers will be expected, and the products possessing quality are being sold throughout the country.

It can be said that this scheme is becoming a means for consumer protection, and to promote ISO9000 registration, it needs to give registers some incentive for registration. The registration should be utilized for factory inspections of the Quality Mark and Standard Conformity Mark system to simplify the procedure and reduce the burden to the manufacturers.

In addition to ISO9000 Registration System, SASO should launch the ISO14000 Registration System (Environment) after receiving the preparations of the organization structure, auditors, etc. because the environmental issue is a common problem all over the world.

3.4.4. Laboratory Accreditation System

SASO has granted accreditation to ten laboratories including telephone sets within the scope of this study, but not for textiles and tires. It would be natural for textile and tire laboratories to be excluded in consideration of the present situation in this country. The Laboratory Accreditation Department should cooperate with the Quality Mark and Certification Department in establishing the procedures for utilization of test results developed by the manufacturers.

3.4.5. Participation in the scheme of the IECEE for recognition of results of testing to standards for safety of electrical equipment

1) Introduction of the scheme

In recognition of the need to facilitate international trade in electrical equipment, normally used in homes, offices, workshops and similar locations, for the benefit of the consumer, industries, authorities and so on, and to provide convenience for manufacturers and other users of the services provided by the various National Certification Bodies (NCBs), an international scheme is operated by the IECEE (the IEC System for Conformity Testing to Standards for Safety of Electrical Equipment), known as the CB scheme. The scheme is based on the principle of mutual recognition (reciprocal acceptance) by its members of test results for obtaining certification or approval at national level.

The scheme is intended to reduce obstacles to international trade which arise from to meet different national certification or approval criteria. Participation of the various NCBs within the scheme is intended to facilitate certification or approval according to IEC standards. Where national standards are not yet completely based on IEC standards, declared national differences will be taken into account; however, successful operation of the scheme presupposes that national standards are reasonably harmonized with the corresponding IEC standards. Use of the Scheme to its fullest extent will promote the exchange of information necessary in assisting manufacturers around the world to obtain certification or approval at national level. At present, 38 countries in Europe, North America and Asia are participating in this scheme.

The procedures for obtaining the national certification or approval by using the CB Test Certificate (CBTC) and CB Test Report (CBTR) are shown in *Figure 3.4.5.-1*.

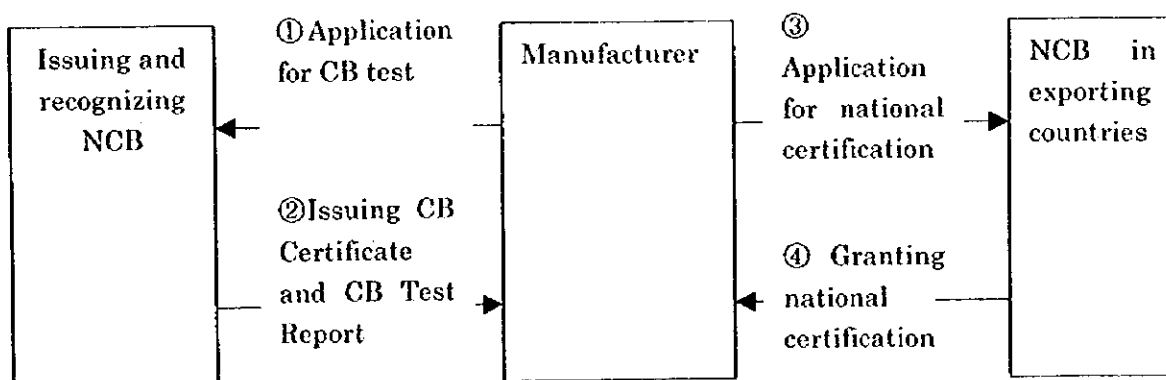


Figure 3.4.5.-1. Procedures for obtaining the CB Test Certificate

2) Participation of SASO in the scheme

SASO should participate in the scheme because SASO utilizes CBTC and CBTR for acceptance of imported products under ICCP. And also the scheme is valuable, for future sampling inspections for imported products not covered by ICCP at the ports which is proposed by the Team, and for Quality Mark system. All certification bodies in the world have to join the scheme, if CBTC and CBTR generated by the scheme are utilized for their national approval/certification. In participating in the Scheme, SASO has to comply with IECCEE01 "Basic Rules and Rules of Procedure of the scheme" and the IECCEE02 "Rules and Procedures of the scheme of the IECCEE for Recognition of Results of Testing to Standards for Safety of Electrical Equipment (CB Scheme)." The IECCEE02 specifies the condition of the acceptance of the candidate NCB and CBTL(CB Testing Laboratory). In this way, SASO can officially utilize the CBTC and CBTR in ICCP, Quality Mark System and inspections at the ports.

3) Steps for participating in the scheme

a) At the first step (1998)

SASO should start negotiations about the organization to be charged as a member body of IECCEE with IEC National Committee in the country. SASO should be appointed as a member because only SASO can observe the responsibility of IECCEE as a member having a long experience regarding standardization in the country. In addition, SASO should apply for membership in IECCEE through the IEC National Committee. At the same time, SASO should apply for acceptance of the "Recognizing NCB" according to sub-clause 5.1 (Acceptance of "Recognizing NCBs") of IECCEE02 by SASO itself as a member of IECCEE. In applying, SASO should declare products for which SASO accepts CBTC and CBTR. The "Recognizing NCB" can only accept the CBTC and CBTR issued by other NCBs and not issue them.

b) At the second step (2001)

SASO should apply for the acceptance of the "Issuing and Recognizing NCB" according to sub-clauses 5.2 (Acceptance of "Issuing and Recognizing NCBs") and 5.3 (Acceptance of "CB Testing Laboratories") of IECCEE02 in the same way. SASO should declare for which types of products CBTC and CBTR should be issued. The application should be limited to a small number of types of products. For example, the products should be air-conditioners, refrigerators, washing machine, spin extractors, storage water heaters and room heaters provided that SSA which are harmonized with the corresponding IEC standards, as there are manufacturers in the country and there were cases that some of these types of products caused accidents in the past. Therefore, SASO should provide the capability to perform testing based on relevant the IEC standards on a 100% basis.

c) After the second step

SASO should expand the scope of products to be participated in the scheme step by step according to the need from the manufacturers in the country in consideration of the testing capability of SASO. SASO should consider the consumer products first in the scheme. Especially, products covered by IEC335 should be participated, and the participation of electronic products should be made after manufacturers have been established in this country.

The requirements and conditions for a candidate of NCB for participating in the IECEE-CB scheme are as follows:

Recognizing NCB

- ① Observing the rules of IECEE
- ② Operating the certification in that country
- ③ Applicable national standards harmonizing with the IEC standards
- ④ Providing and carrying out the quality system based on the ISO/IEC guide 65
- ⑤ Be assessed by IECEE
- ⑥ Having the experience regarding certification for at least 10 cases for every individual IEC standards declared on the national level over the past of two years

Issuing and recognizing NCB

In addition to the requirements and conditions for "Recognizing NCB,"

- ① Having testing laboratory(ies) (any outside laboratory is permitted)
- ② Having the laboratory operating based on ISO/IEC guide 25
- ③ Having the experience of testing for at least 10 cases every individual IEC standards declared on the national level over the past of two years

SASO should review its organization structure as in Clause 3.8.1. of this report to comply with the ISO/IEC 65 and 25 levels.

3.5. Public relations and consumer education

SASO's activity for public relations and consumer education related to consumer protection should be strengthened regarding the following points.

Short-term objectives

- Taking part in the education and public relations activities in close cooperation with related organizations, and making free use of databases described in clause 3.2. Educational effort from the viewpoint of technology and standards will be the role of SASO.
- Editing committee of "The Consumer" should be supported by the concerned ministries.
- Support for school education related to consumer protection such as dispatching lecturers and preparing teaching materials.
- Complementary use of two kinds of media, one is for attracting consumer's attention such as newspapers and TV/radio, and the other is for giving consumers necessary knowledge, such as magazines and seminars.

Middle-term objectives

- SASO should designate a Quality Day a year in cooperation with the relevant ministries to obtain the attention of safety and quality of the products and systems from manufacturers, distributors, retailers and consumers. On that day, SASO should carry out the seminars for giving consciousness of safety and quality including the SSA, and demonstrate test methods using SASO's testing equipment .
- The magazine "The Consumer" should be published monthly and the target number of circulation should be over 100,000, which will be influential enough to the public. In order to increase the circulation number, it is necessary to widen circulation channels using the concerned ministries, CCI and Consumer Support Organization. To make the contents more attractive and interesting, the Team would like to advise on a few points based on analysis of the magazine contents. *Table 3.5-1* shows contents of recent four issues.

Improvement of "The Consumer" magazine

The topics and contents in the magazine are very comprehensive and the description is technically exact.

The followings are ideas to make the magazine more attractive.

- a) It is better to separate the standard information and consumer life information into separate volumes, since the consumer does not pay much attention to the standards.

The publication of the separated volume on consumer life information can be entrusted to CSO in future. This issue should be studied as the middle-term objectives.

- b) In addition to the consumer protection related articles, articles on better home life such as examples of delicious meals using microwave ovens should be added to make the magazine more attractive.

- c) Taking subjects from actual accidents while fresh memories of accidents still remain in the consumer's mind.
- d) Using an easier context for general readers even if it sacrifices technical accuracy.
- e) Reports on the comparison of test results of products on the market.
- f) Featuring the magazine with top articles focused on traffic accidents, fire accidents, food poisoning, etc., asking the concerning ministries to join the editing committee.
- g) Reprinting popular articles from consumer magazines of other countries

Table 3.5.-1. The contents in the recent four issues of "The Consumer"

Article	Issue No.5 '96	Issue No.6 '96	Issue No.8 '96	Issue No.9 '97
Educational	Mad cow disease The consumer & important needs	The genes & anti-biotech	The stouts in the trap of commercial advertisement Scientific manufacturing of cosmetics	Spare parts
What's new in science & technology	Food contamination	Food poisoning	A theory on consumer behavior & attitudes	Contamination of agricultural lands Air cleaners
Investigation	The safety of children games	Ideal food cooling & freezing	The consumer & the perfumes from the health effect side	Why do our houses have a shortage of safety facilities
How to buy	Fresh fish	Micro-wave ovens	Houses electric supplies & connectors	Electric heaters
Consumer's information	Consumer's opinion Letters from the consumer	Ditto as left	Ditto as left	Ditto as left
Standards & specifications	Information on GSMO Information on Gulf standards. Soft drinks & their specifications.	Ditto as left Oil & fats & their specifications.	Ditto as left Using colored materials & their specifications.	Ditto as left Paper sizes & their specifications.

3.6. Human resources development

Planning & Development Department should make a long range plan to develop human resources for SASO on its own initiative in cooperation with other departments. Also the plan should be submitted to the training committee for discussion and approval. Because the department is responsible as a center of human resources development that plans and executes the task throughout the whole organization of SASO. SASO has the training committee and Planning & Development Department plays a role as a secretariat.

For this purpose "Career Development Program" (hereafter referred as CDP) should be introduced in the plan. The human resources development needs a systematic training plan suitable for individual conditions. CDP is a method to train younger staff systematically, using the CDP sheet like in *Figure 3.6-1*.

The sheet should be filled out considering following items.

- a) On the job training
- b) Training at domestic manufactures or SASO Labs.
- c) Training at foreign manufactures or testing and certification bodies

The Planning & Development Department gathers the sheets from other departments, makes a total plan and submits it to the training committee for approval and coordinating the number of trainees and the period of training through discussion.

SASO also needs to keep the personnel with the minimum turnover rate because its task demands a long period of time to accomplish. The past and present employment status shows the following characteristics.

- Managerial positions are held by Saudis with a very low turnover rate
- Technicians are mostly non-Saudis with a few exceptions coming in and going out with a comparatively high turnover rate compared with that of the managerial people.

On the premises of the above-mentioned characteristics, the human resources development of SASO is discussed. The training plan for each department should be made considering Clause 3.6.1. to 3.6.6.

CDP sheet

The name of trainee

Date of filling out Year /Month	Training item												Target at the age of 33		
	age	→	22	23	24	25	26	27	28	29	30	31		32	33
1997/4															
1998/4															
1999/4															

- Remark : 1) Fill in main training items each year, considering the target at the age of 33.
- 2) Fill in three-year training plan starting at each year, using one column for a year.

Figure 3.6.-1. CDP sheet

3.6.1. Training of personnel for establishing standards

The personnel in charge of preparing standards should keep knowledge abreast with rapidly-progressing technology and its products. The fundamental function assigned to SASO is to prepare and determine the standards as the sole organization in Saudi Arabia. The first requisite to reinforce the function is to educate and train personnel for this task. Preparing the standards on the product safety, quality and test methods requires advanced technical knowledge.

In order to meet such requirements, it is necessary to educate and train the personnel considering the career path in the following steps:

Basic training

1) Training in SASO labs.

- Acquisition of the ability to carry out tests and inspection according to the current standards.
- Training through drafting revised standards and finding out any problems in the existing standards referring to ISO/IEC standards.
- Test of a certain product according to the draft of the revised standard to prove it justified

2) Training at an appropriate manufacturer

- It is desirable even for a short period of time that the personnel be trained at an appropriate manufacturer for the design, production and quality control of an advanced technology product to see how the production is carried out.

The training mentioned above should be carried out on recruited newly graduated Saudi Arabians, according to a three-year training plan, through the actual revising work to enable them to work as specialists in the future in their respective category. During the training period the trainees themselves should have an opportunity to carry out a test of products to acquire experiences.

Advanced training

After the basic training has been completed, it is essential for the trainees to work in close cooperation with the relevant laboratories. The personnel, who have attained a certain level of capability, are required to keep and develop their potential. Then, they should participate as the members of TC (Technical Committee) of ISO/IEC .

Recommendable main TCs are as follows:

TC 23 : Electrical accessories (Plugs, socket-outlet, switches, etc.)

TC 34 : Lamps and related equipment

TC 61 : Safety of household and similar electrical appliances

TC 74 : Safety and energy efficiency of information technology equipment

TC 92 : Safety of audio, video and similar electronic appliances

When it is impossible to do so, the second best would be that they study the ISO/IEC draft standards under deliberation and follow the results of the international convention.

3.6.2. Training of personnel for a causal analysis

. In order to train personnel for causal analysis Saudi Arabians should be selected and trained for a long period of time. The personnel in charge of causal analysis should have a long experience, advanced technical knowledge and deep insight regarding their specialized subjects.

In order to acquire wide technical knowledge, the engineers who work for causal analysis should be trained in the following steps:

- ① to work in a causal analysis team consisting of engineers regarding other subjects
- ② to be sent to overseas causal analysis institutions even for a short period of time.

3.6.3. Training of testing personnel

For the first step, the curriculum to train testing personnel should be compiled and test manuals be prepared depending on the ability of the respective persons. The training of testing personnel should be conducted using the curriculum and test manuals.

For the second step, in order to attain the higher level of testing capability, the effective way is that a specialist of a particular field should be invited to train the testing personnel at SASO laboratories or the testing personnel be sent to overseas testing institutions.

3.6.4. Training of accreditation personnel

The training of accreditation personnel should be carried out in the following steps:

- 1) Training of the personnel using relevant ISO/IEC Guides for Accreditation as textbooks
- 2) Training of the personnel at leading accreditation organizations overseas
- 3) Raising the technical level of the personnel through participation in actual tasks for accreditation
- 4) Analyzing the requests and complaints relating to the accreditation process, making an actual improvement plan and carrying out the plan

3.6.5. Training of Consumer Protection Coordination Department (New Department) personnel

SASO should train SASO staff to become specialists as a member of Consumer Protection Coordination Department, who can closely cooperate with the staff of a new Consumer Support Organization and other governmental organizations. The personnel

of Consumer Protection Coordination Department should have a wide knowledge in their fields as specialists. Those personnel should have experience of making standards and tests according to the standards. During the training period, they should belong to the standard making or laboratories and they should be shifted each other at appropriate intervals to accumulate the experience.

3.6.6. Training of managerial personnel

The managerial personnel should be trained so as to perform the basic acts of "plan, do, check and action" and to repeat the cycle. In order to train managerial personnel, "On the Job Training" is important not only for the technicians but also for the managers. A managerial personnel in charge of a particular field should be trained to find out problems in his field by himself, to prepare plans to solve the problems having the ideal status of his field in mind, to carry out the plan, to evaluate the results and to specify the points for improvement in the next stage.

It would be helpful for the training of the managerial personnel to introduce "Management by Objectives" as practiced in Japan. *Table 3.6.6-1* shows an example of the control sheet for "Management by Objectives"

The procedures of "Management by Objectives" are as follows:

- ① The managerial personnel (trainee) should fill out "Control Sheet for Manager Training" at the beginning of the term considering his objectives of the position.
- ② The trainee and his boss should discuss how to achieve the target with the help of his boss and in cooperation with other sections.
- ③ At the end of the term the trainee should fill out the columns evaluating his results in consideration of degree of importance and difficulty, etc.
- ④ The trainee and his boss should discuss the evaluation results and how to improve the results for another term.

The meaning of words used in this sheet are as follows:

- Important objectives:
Three important objectives of the term in his position
- Degree of importance:
5 steps (5 to 1) according to degree of importance ("5" for most important item)
- Degree of difficulty:
5 steps (5 to 1) according to degree of difficulty ("5" for most difficult item)
- Achievement criteria:
Target to be reached at the end of the term
- Measures for achievement & time schedule:
Detailed measures to achieve the target and its schedule
- Records of practice:
Results of the work during the term

- Review and evaluation:
Evaluation of the result considering target, importance and difficulty by the mark, A, B, and C

The information on the whole plan should be conveyed to all the managerial personnel as far as possible.

At present only a limited number of top management understand the whole scheme of the five-year plan of SASO and most of the managerial people only know the plan of their own field. For the whole organization of SASO to function systematically, it is desirable that managers in various departments not only have thorough knowledge of the plan regarding their own departments but also understand the plan regarding the other departments and join forces to promote the plan. This will produce a synergistic effect among the departments concerned.

For the systematic and total management of SASO, the "Management by Objectives" is sure to be quite useful.

Table 3.6.6-1. Control Sheet for Manager Training

Degree of importance / Degree of difficulty	Important objectives	Measures for achievement & time schedule	Records of practice (fill out by yourself and checked by your boss)	Review and evaluation (fill out by yourself and checked by your boss)		
	Achievement criteria			A	B	C
	(Ordinary Business Objectives)					
Total Evaluation (fill out by yourself and checked by your boss)						

Remarks: A excellent, B ordinary, C inferior

3.7. Improvement of test functions in laboratory (General, E/E, Tires, Textile)

3.7.1. General

SASO is responsible for preparing and implementing the SSA for products, material, testing methods, etc. None of institutes other than SASO exists there to demonstrate the test and inspection defined in SSA for consumer products, excluding food and medicines, etc.

The safety test for products, parts and material and the minimum equipment for performance test are absolutely essential for the consumer protection, handling of complaints, prevention of risks and investigation of accident causes.

To drive off defective products from the market, it is necessary to provide a system to check and follow the responsibility of manufacturers, importers and distributors for the products in cooperation with MOC and MOIE, and that of the persons concerned with fires and traffic accidents in cooperation with the Civil Defense and Traffic Police. For this purpose, SASO must have the testing ability to provide the necessary data promptly.

The role of SASO laboratories is classified and should be improved as follows:

1) Test and inspection of products and materials according to SSA

- a) Test and inspection should be proceeded according to the manual, and test data should be written in the test format at each step of the procedure.
- b) The test format should be filed together with description of the product, drawing, circuit diagram and instructions, if available.
- c) Test records should be kept for adequate years.

When problems or complaints have occurred on the product concerned, the data is useful for analyzing or investigating the causes of problems. Especially, for the certification system, the file of test records is important as a basic record of the product.

2) Improvement of data processing in the laboratories

The data is not everything but basic to the analysis and improvement of present conditions. For the purpose of efficient tests, increase and renewal of testing equipment and reinforcement of testing personnel and investigation of causes of accidents, the following data should be available whenever necessary.

- Reception of products: Names of ministries, agencies, manufacturers or importers who made a request for tests, type number and products name
- Total number of test cases and their classification by product groups, imported products, local products, Q Mark system, requests from outside, market surveillance and complaints
- Number of products tested which do not comply with standards and their test items and test contents

- Accumulation of the above data for their analysis and reflection in the standards when establishing and revising them
- Statistical data of country of origin
- Time schedule control: Dates of receipt, test start and delivery of a test sample

3) Market surveillance

SASO experts should go to the market in cooperation with MOC personnel to drive off defective products from the market. Particularly products with unfair indication and improper labeling should be inspected.

At the next stage, the product which may not comply with SSA should be tested in laboratories.

4) Trial test of requirements

When a standard is drafted or revised, a trial test should be carried out at SASO Lab. before issue to confirm whether the new draft is reasonable or not. Meanwhile, the Lab. should be equipped with the testing equipment for the trial test if necessary.

5) Investigation of causes of accidents and troubles

- a) If an accident has occurred due to consumer products, a working group, which consist of experts of SASO, other related agencies and academic field, should be set up for investigating the phenomenon. SASO experts should play a central role in the investigation in cooperation with other members of the working group.
- b) Usually products are inspected and tested according to the file (test records) which is kept in SASO, if any, and the accident or trouble is simulated. The characteristics of materials and components, and their usage are important items to be investigated.
- c) During and after the investigation of the cause of an accident, the process of the accident should be made public to prevent the recurrence of the accident or the trouble.

6) Factory inspection

In case of the Q Mark system and the Standard Conformity Mark System described in Clause 2.4.2. and others, SASO Lab. experts should participate in the factory inspection of a quality control (QC) system and an inspection system of materials and components, etc. When defective products are found in the market, SASO Lab. experts visit their factories concerned to check the QC system of the products.

7) Tests requested from outside

SASO Lab. is requested to carry out tests from other agencies, industries and importers. In some cases, there may be a new model product or new-technology equipment which is not covered by SSA. SASO Lab. should positively carry out tests of new model products.

Even if there is no applicable standard for a product, SASO Lab. should carry out the test, from the view point of safety. If available, a similar international standard can be applied partially or fully, referring to the intention of a manufacturer.

3.7.2. Amount of tests, personnel and equipment

SASO does not have sufficient test capability to meet the present demand of Saudi Arabia. The capability should be reinforced step by step taking into account the following.

1) Amount of tests to be done in future by SASO Lab.

The amount of tests is estimated as shown in *Table 3.7.2.-1.*

Table 3.7.2.-1. Estimated amount of tests to be done in future in SASO

Tests	Change	Reason
Sample test		
• for ICCP	No change	
• for customs clearance	No change	
• for Q Mark	Increase	Expansion of Q Mark system
• for SC Mark	Increase	Introduction of SC Mark
• for accidents	Increase	For investigation and analysis
• for market	Increase	More frequent market surveillance
Tests requested from outside	Increase	Market surveillance and introduction of SC Mark

The total amount of tests will be on the increase. The rate of increase depends on the number of accidents and complaints and causal analysis of accidents. In particular, tests resulting from market surveillance, troubles of and complaints on electrical and electronic products which need testing are estimated to increase by three times as that of present situation.

2) Testing personnel

The testing personnel are specialists and need education and training on the job in each technical field. Usually it takes two to three years. The appointment of experts should be taken into account for the training period. Technicians should be increased gradually to meet the demand of the estimated amount of tests. In particular, Electric Lab. should be arranged as early as possible, because fires caused by electric connectors and appliances are reportedly large in number.

3) Testing equipment

SASO Lab. should, in principle, be provided with all the equipment necessary for carrying out the tests specified in SSA. Therefore Testing equipment should be

installed corresponding to the demand. However, outside test stations including foreign test stations can be utilized for some test items requiring big and expensive test facilities; for example, high current short circuit test of fuse and circuit breakers, cooling capacity test of air-conditioners (caloric meter), electromagnetic interference test, etc. Those special tests could be covered by test certificates issued by test stations.

If certificates of other test stations are utilized, plural pieces of testing equipment to meet the demand may not be necessary, but at least one set of equipment should be provided in SASO as standard testing equipment in Saudi Arabia. In laboratories, some of old-fashioned equipment should be replaced by new equipment.

Testing equipment is usually expensive, and especially physical or scientific equipment is not ready-made. Thus, special yearly budget plan for the testing equipment is necessary.

- a) The testing equipment to be installed in SASO
- Testing equipment according to SSA (full test if any) for type tests
 - Testing equipment for investigating the causes of fires by electric devices and appliances
 - Testing equipment for investigating the causes of traffic accidents due to tire troubles
 - Testing equipment for investigating the causes of injuries by electric appliances and flammable and harmful clothes
 - Testing equipment for special safety devices for preventing over pressure, over temperature, over electric current, etc.

The equipment to be installed and the priority are shown in Clause 3.7.3. to Clause 3.7.5.

- b) Reliability and easy maintenance

Testing equipment should be reliable even if it is a little expensive. Testing equipment should be designed so that climatic conditions and other circumstances are fully considered, it may be simply operated, its spare parts and expendable supplies can be easily obtained and its agent exists in Saudi Arabia or in neighboring countries.

- c) Testing equipment management

Testing equipment should be managed and maintained based on the following data.

- Equipment number and management number
- Equipment name
- Specification (Type, manufacturer's serial number, weight, dimensions)
- Manufacturer's name, Agent from which equipment was purchased
- Date of Acquisition
- Acquisition cost
- Place of installation

- Applicable standards and test items
- Person in charge of equipment management
- Records of mending (date, point of trouble or improvement, cost, etc.)

3.7.3. Electric and electronic products

In future, all requirements specified in SSA should be conducted. At present only fundamental tests are carried out but not for heating test, abnormal operation test, mechanical strength test and others. Therefore testing equipment and technicians should be increased taking into account the utilization of outside test stations or their certificate. This improvement will cover ability of investigation and analysis of accidents, injuries and troubles. The increase of testing equipment and testing personnel should be planned step by step and yearly. At the final stage, testing personnel in Electrical Lab. will be increased to 12 from present five.

1) Tests at laboratories

a) Strengthening of testing ability

- Testing manuals should be prepared.
- Judgments of test results should be accumulated.
- Test data format encompassing test items should be prepared corresponding to product category to eliminate the difference from person to person.

b) Increase of tests requested

- SASO Lab. should try to increase the tests requested in order to assist local manufacturers who do not have sufficient testing equipment and to enhance local industries. Especially in case of introduction of the Standard Conformity Mark System, small domestic industries need SASO's support for the testing technique and equipment.

2) Strengthening of testing equipment

Increase and renewal of testing equipment will be necessary based on the Existing list of testing equipment of Electrical Lab. prepared in 1995. It seems that there is little difference between the present testing equipment and that of the list. The Electric and Electronic laboratories have testing equipment enough for conducting fundamental tests, that is, general safety-related tests. However, it has been about ten years since most of the testing equipment was installed.

- Increase and renewal of testing equipment requires the consideration of test items required in future standards (including IEC), the number of test samples and progress of technology.
- Newly purchased equipment should be designed so that they may be easily maintained and should be provided with detailed instruction manuals.
- And also some members of the laboratory must be trained so that they can repair simple troubles.

- Operation and maintenance manuals of testing equipment should be prepared including routine check list.

The extension cord set requires urgent improvement because a lot of defective cord set are in great amount on the market. Testing equipment listed in *Table 3.7.3-2* aims at realizing a test of extension cord set and configuration adapters as early as possible. The testing equipment should allow the tests to be conducted in accordance with IEC standards. *Table 3.7.3-3* shows approximate values of prices of testing equipment to be introduced.

Since it is currently the policy of SASO to adopt IEC standards with suitable modifications for Saudi climatic conditions, any IEC document will normally remain applicable, although care should be taken with temperature- and voltage-related clauses.

- a) Testing equipment to be urgently increased in Electrical Laboratory
- For the test of configuration adapters and extension cord set in accordance with SSA and IEC standards
 - For common safety test of motor-operated appliances and electric heating appliances in accordance with IEC 335
 - For the test of important components such as temperature controller, overheat prevention device and switches

- b) Testing equipment to be increased step by step in Electrical Laboratory
- For supporting local industries
 - For testing motor-operated appliances and electric heating appliances in accordance with their individual standards

Note) Test items comprise common and individual items. First the testing equipment necessary for common test items and then for individual particular test items should be increased.

- c) Testing equipment to be urgently increased in Electronic Laboratory
- For safety common test of electronic products
 - For safety test of televisions using high voltage
 - For the test of safety components
- d) Testing equipment to be increased step by step in Electronic Laboratory
- For the test of electronic products in general
 - For the test of electronic products according to the progress of standard preparation

Note) If common safety test and safety test of televisions in which high voltage is used and power is applied for long hours are carried out, safety of electronic products can be secured.

3) Increase of testing personnel

Major test items to be added are temperature rise test, abnormal temperature rise test, construction test, component tests, etc. In the Electrical Lab., it is estimated that it requires testing personnel of 12 (5 for existing persons, 6 for increased tests and 1 for data processing) to conduct the present 1200 cases of tests completely in accordance with the requirements of standards.

Since most electronic products are imported, they have little to do with consumer safety, there are few local manufacturers, and additional tests considered in the following can be handled by existing members, increase of testing personnel in the Electronic Lab. is excluded from this personnel plan.

- a) Testing personnel should be increased gradually by the following reasons.
 - It takes certain period of time to educate and train new testing personnel
 - Increase of testing personnel should match with the introduction of testing equipment.

- b) Conditions for a gradual increase of testing personnel
 - Gradual increase of test items in accordance with the standards
 - Restriction of product group to be tested completely in accordance with the standards
 - Adoption of effective testing methods for troubled or complained products or picked-up products by market surveillance
 - Maintenance of present conditions in Electronic Lab. (few local products)

- c) Plan of testing personnel increase in Electrical Lab.

Plan of testing personnel increase in Electrical Lab. is shown in the *Table 3.7.3.- 1*.
The total number of personnel increase in Electrical Lab. is seven (7) in five years.

Table 3.7.3.-1. Plan of testing personnel increase in Electrical Lab.

Year	Personnel increase	Role of increased personnel
1998	Three persons (Two persons) (One person)	For the test of connecting apparatus For statistical processing of data
1999	No person	• Education and training of new staff • Preparation of manuals for education and training
2000	Two persons	• For increased test of connection apparatus and materials • For the test of motor-operated appliances and electric heating apparatus • For the test of increased samples picked up by market surveillance
2001	Two persons	• For the temperature rise test of motor-operated appliances and electric heating apparatus • For the test of increased samples picked up at market surveillance

d) Grouping of testing personnel in Electrical Lab.

- The members of Electrical Lab. should be divided into two or three groups, according to the main construction of the products, such as heating appliances, motor-operated appliances, lighting, components and wiring devices. Each group should be managed to conduct the work evenly and to cooperate each other.

4) Training of testing personnel

Reinforcement of testing personnel will be necessary to strengthen SASO laboratories' activities to some extent, but the ability of SASO laboratory fundamentally depends on the ability of individuals. The development of the ability of members of Laboratories is essential for raising the efficiency of tests, meeting the requirements of new standards as technology advances. Systematic training will be necessary depending on individual ability.

Table 3.7.3.-2. Testing equipment to be increased for the test of electric and electronic products

The increase of testing equipment is planned supposing that tests are carried out in accordance with IEC standards in consideration of future adoption of IEC standards. The increase of testing equipment aims at the early realization of the test of extension cord set and configuration adapters.

○ The testing equipment to be increased by the standards concerned

Note) P: Priority or the order of year of plan

△ The testing equipment which can be applied to other standards

St.: Applicable standard for extension cord set (IEC554)

Testing equipment	P	St.	IEC 335-1	IEC 65	Reason for priority
<ul style="list-style-type: none"> • Test finger • Test probe • Test pin • Test hook • Test chain • Pin gauge • Test gauge • Tension gauge • Fingernail tension gauge • Creepage distance gauge • Torque driver • Withdraw force apparatus (plug) • Cord retention apparatus (Flexible cables and their connection) • Cord flexing apparatus (Flexible cables and their connection) • Conductors twisting apparatus 	1	○	○	△	<ul style="list-style-type: none"> • Placing the priority on the test of extension cord set • Contact prevention to live parts • These standard apparatus (test finger, probe, tension gauge) can be commonly used. • For the test of loose connection, one of the causes of fires • Tensile and torsional strength test for cords and wires • These apparatus can be applied to the tests (tensile and bending) for power plugs attached to electric and electronic products.
	1	-	○	△	
	1	△	○	△	
	1	○	-	△	
	1	-	○	△	
	1	○	△	△	
	1	○	△	△	
	1	○	△	△	
	1	-	○	△	
	1	○	△	△	
	1	○	△	△	
	1	○	△	△	
	1	○	△	△	
<ul style="list-style-type: none"> • Ball pressure apparatus • Glow wire apparatus (IEC695-2) • Tracking test apparatus • Thermal cut-outs test apparatus (Operating test apparatus) (Endurance test apparatus) 	2	○	△	△	<ul style="list-style-type: none"> • Inspecting molding resin for deformation and deterioration caused by overheating when a current flows • Performing only the tests of connecting apparatus made of resin • Checking ignition resistance and spread of fire resistance • Thermal cut-outs are important components to prevent overheating • Their reliability is also important.
	2	○	△	△	
	2	○	△	△	
	2	-	○	-	

Testing equipment	P	St.	IEC 335-1	IEC 65	Reason for priority
<ul style="list-style-type: none"> • Mechanical strength tester (Pins of plugs and portable socket-outlets) • Mechanical strength tester (drop) apparatus (Pins of plugs and portable socket-outlets) • Tumbling barrel • Lateral strain apparatus (Fixed socket-outlets) • Mounting block (for mounting test samples) • Test wall • Compression test device (Thermal stability of plugs) • Abrasion test apparatus (Insulating sleeves of plug pins) • Abnormal heat test apparatus for insulating sleeves (plug pins) • Heat cycle apparatus 	3 3 3 3 3 3 3 3 3 3	○ ○ ○ ○ ○ ○ ○ ○ ○ ○	— — — — — — — — — —	— — — — — — — — — —	<ul style="list-style-type: none"> • Mechanical strength test and endurance test of power plugs including extension cord set • One of the causes of product failure is deformation and deterioration due to the use for a long period of time. • The objective is a complete test of IEC 884.
<ul style="list-style-type: none"> • Needle flame apparatus • Withstand burning test (Bunsen burner) 	4 4	— —	○ ○	△ △	<ul style="list-style-type: none"> • Ignition resistance and spread of fire resistance of resin materials used in appliances are required for the prevention of fire.
<ul style="list-style-type: none"> • Splash-proof (IEC 529) • Jet-proof (IEC 529) • Vertical rain apparatus • Spray type rain test apparatus • Arch type rain test apparatus • Aging test apparatus (for rubber) • Test corner (temperature rise test) • Starting current test device • Scratch tester and test pin • Surge tester (impulse tester) • Vibration tester 	5 5 5 5 5 5 5 5 5 5	— — — — — — — — — —	○ ○ ○ ○ ○ ○ — — — —	— — — — — — ○ ○	<ul style="list-style-type: none"> • These are important apparatus used for the test of appliances using water. • These apparatus are planned in the last stage because of the following reasons: <ul style="list-style-type: none"> 1) less frequency of use, 2) for individual appliances, 3) for expensive 4) not urgently needed • Data of other testing stations and accredited laboratories can be used.

Testing equipment	P	St.	IEC 835-1	IEC 65	Reason for priority
• Bump tester	5	-	-	○	
• Load apparatus for switches	5	△	△	○	
• X-ray radiation meter	5	-	-	○	
• Impact tester	5	-	-	△	
• (mechanical strength for CRT)	5	-	○	○	
• LCR tester	5	-	△		
• Horizontal burning tester		-	△		
• Spark tester (flammable gases)		-			

Note) Testing equipment concerning individual standards other than listed above should be introduced one after another.

Table 3.7.3.-3. Approximate values of prices of testing equipment to be increased for
the test of electric and electronic products

Note) P: Priority or the order of year of plan

Testing equipment	P	Million Yen	Thousand Dollars
• Test finger	1		
• Test probe	1		
• Test pin	1		
• Test hook	1		
• Test chain	1	1.0	8.3
• Pin gauge	1		
• Test gauge	1		
• Tension gauge	1		
• Fingernail tension gauge	1		
• Creepage distance gauge	1		
• Torque driver	1	0.2	1.7
• Withdraw force apparatus (plug)	1	1.4	11.7
• Cord retention apparatus (Flexible cables and their connection)	1	1.5	12.5
• Cord flexing apparatus (Flexible cables and their connection)	1	2.5	20.8
• Conductors twisting apparatus	1	2.0	16.7
Total	1	9.0	75
• Ball pressure apparatus	2	0.3	2.5
• Glow wire apparatus (IEC695-2)	2	3.0	25.0
• Tracking test apparatus	2	3.5	26.2
• Thermal cut-outs test apparatus (Operating test apparatus) (Endurance test apparatus)	2	6.2	51.7
Total	2	13.0	108
• Mechanical strength tester (Pins of plugs and portable socket-outlets)	3	1.0	8.3
• Mechanical strength tester (drop) apparatus (Pins of plugs and portable socket-outlets)	3	0.3	2.5
• Tumbling barrel	3	2.0	16.7
• Later strain apparatus (Fixed socket-outlets)	3	0.3	2.5
• Mounting block (for mounting test samples)	3	0.2	1.7
• Test wall	3	0.3	2.5
• Compression test device (Thermal stability of plugs)	3	1.0	8.3
• Abrasion test apparatus (Insulating sleeves of plug pins)	3	2.0	16.7
• Abnormal heat test apparatus for insulating sleeves (plug pins)	3	1.9	15.8
• Heat cycle apparatus	3	6.0	50.0
Total	3	15.0	125

Testing equipment	P	Million Yen	Thousand Dollars
• Needle flame apparatus	4	1.0	8.3
• Withstand burning test (Bunsen burner)	4	1.0	8.3
Total	4	2	16.7
• Splash-proof (IEC 529)	5	0.5	4.2
• Jet-proof (IEC 529)	5	1.0	8.3
• Vertical rain apparatus	5	1.0	8.3
• Spray type rain test apparatus	5	0.5	4.2
• Arch type rain test apparatus	5	7.0	58.3
• Aging test apparatus (for rubber)	5	2.5	20.8
• Test corner (temperature rise test)	5	1.0	8.3
• Starting current test device	5	0.3	2.5
• Scratch tester and test pin	5	0.5	4.2
• Surge tester (impulse tester)	5	2.5	20.8
• Vibration tester	5	7.0	58.3
• Bump tester	5	3.5	29.1
• Load apparatus for switches	5	3.0	25.0
• X-ray radiation meter	5	3.0	25.0
• Impact tester	5	2.0	16.7
(mechanical strength for CRT)	5		
• LCR tester		2.7	22.5
• Horizontal burning tester	5	1.0	8.3
• Spark tester (flammable gases)	5	1.0	8.3
Total	5	40.0	333.3
Total	1 to 5	79.0	658.3

3.7.4. Tires

All new tires are imported and registered in the ICCP system. The tests for tires will be conducted mainly for establishing and revising SSA, for the analysis of accidents and consumer complaints. Test personnel should be increased from present two to five and additionally to eight when an indoor drum test is introduced. In average 350 samples are tested yearly at present. The analysis of troubled tires from traffic accidents and roadside inspection will increase in future, but it will be covered by 5 personnel.

The material Lab. should be improved and strengthened as follows.

1) Improvement of test method

The process of making specimen should be improved.

SASO's specimens are made from scrapes of carcass portion after sample cut.

In Japan and other countries, sample cut is performed on specimen after peeling between carcass and side tread. Therefore, rubber properties of SASO's specimens, deteriorate due to grinder's heat and also variation between specimens is too large.

2) Additional test equipment and test items

From the viewpoint of the safety, the following test items shown in *Table 3.7.4-1* should be added.

With the increase of testing equipment listed in the table, almost all the tests related to the safety specified in SSA can be performed. Since all the new tires are imported at the moment, the test data using a indoor drum tester can be obtained from foreign manufacturers. In future, it is desirable that SASO should have its own facilities to investigate the quality of new and retread tires.

a) Replacement of chuck

The chuck, clamping the sample, of the autograph for measurement of tensile strength and elongation of the side tread rubber, is the hand clamp having nicks on the surface of two rolls. The sample may slip during the test at the chucking position and the accurate data of elongation can not be expected. It is recommendable to exchange the chuck to the air chuck which is easily attached to the autograph(FINIUS OLSEN) used in the SASO lab.

b) Section cutter for steel tire

The section cutter for steel tire is used to cut the tread and bead wire of steel radial tires. Recently, the rate of the radial tires increases and the steel cord is used in the tread of tires for automobiles and in the whole surface of tires for trucks and buses. The cutter is a necessary tool.

c) Plunger/Bead unseating tester

The mechanical strength of tires is important characteristics, especially for the evaluation of new passenger car tires and.

d) Dynamic balancing tester

A dynamic balancing tester is useful for the quality confirmation to ensure safe and comfortable driving. Uniformity measurement is conducted by the machine, but it is expensive and should be planned in a middle-term schedule.

e) Indoor drum tester

An indoor drum tester is an endurance tester for almost all situations of tires and necessary for causal analysis of tire accidents

Table 3.7.4-1 shows the testing equipment to be increased, its related test items and necessary personnel increase.

Table 3.7.4-1. Testing equipment and test items

	Strengthening of testing equipment	Test items to be added	Increase of testing personnel
1	Air chuck for autograph	Test items such as peeling test between carcass layers, tensile strength and elongation tests of single cord in cord layers for burst protection. For raising measuring accuracy of tensile strength, elongation for side tread rubber.	---
2	Section cutter for steel tire	Measurement of tire cross section for checking the symmetry and uniformity of tires.	One person
3	Plunger/ Bead unseating tester	Measurement of breaking strength of passenger car tires for rejecting weak-strength tires.	One person
4	Dynamic balancing tester	Measurement of uniformity level of tires	One person
5	Indoor drum Tester	High-speed performance test and endurance test.	Three persons for crew work

Table 3.7.4.-2. shows the schedule of introduction and estimated prices of test equipment.

Table 3.7.4.-2. Schedule of introduction and estimated prices of testing equipment

Test equipment	1998	1999	2000	2001	2002	Million Yen	Thousand Dollars
① Air Chuck						0.5	4.2
② Section cutter for steel tire						35	291.7
③ Plunger/Bead unseating tester						27	225.0
④ Dynamic balance tester						40	333.3
⑤ Indoor Drum tester						35	291.7

3) Statistical processing of the test data

Presently, the test of tensile strength and elongation of the side tread rubber is carried out. The data is recorded in a notebook, but the statistical processing is not performed. At least, the mean values and variations must be processed statistically, so that they may be used for the evaluation of tire materials and for the preparation and review of the standards.

4) Acquisition of test skills

It is recommended that the acquisition of technical ability such as how to operate testing machines, how to maintain of their accuracy and how to test specimens be based on the following.

a) Air chuck for autograph and tire cutter for steel cords

It should be specified in the purchase contract that the installation and trial test of a testing machine are conducted by its manufacturer. During the installation and trial test, SASO staff should be explained and trained by the manufacturer's engineers about how to operate and maintain the testing machine, which can be performed in SASO Lab. and requires no special training. For that purpose, SASO staff should read carefully and understand the instruction manual attached to the testing machine.

b) Plunger, bead unseating tester, dynamic balancing tester and indoor drum tester

Installation and trial test of these machine and explanation of how to operate and maintain should be performed in the same way as the above. SASO staff should read carefully and understand the instruction manuals attached to the testing machines. However, since these testing machines are sophisticated and can be applied for the tests in various conditions, such as low pressure-heavy load, high

pressure-heavy load, high speed-high pressure and high speed-low pressure, SASO staff should be trained overseas in official testing institutes or in big tire manufacturers to acquire technologies including setting of the criteria corresponding to the conditions in Saudi Arabia.

Number of persons to be trained and period for training are as follows:

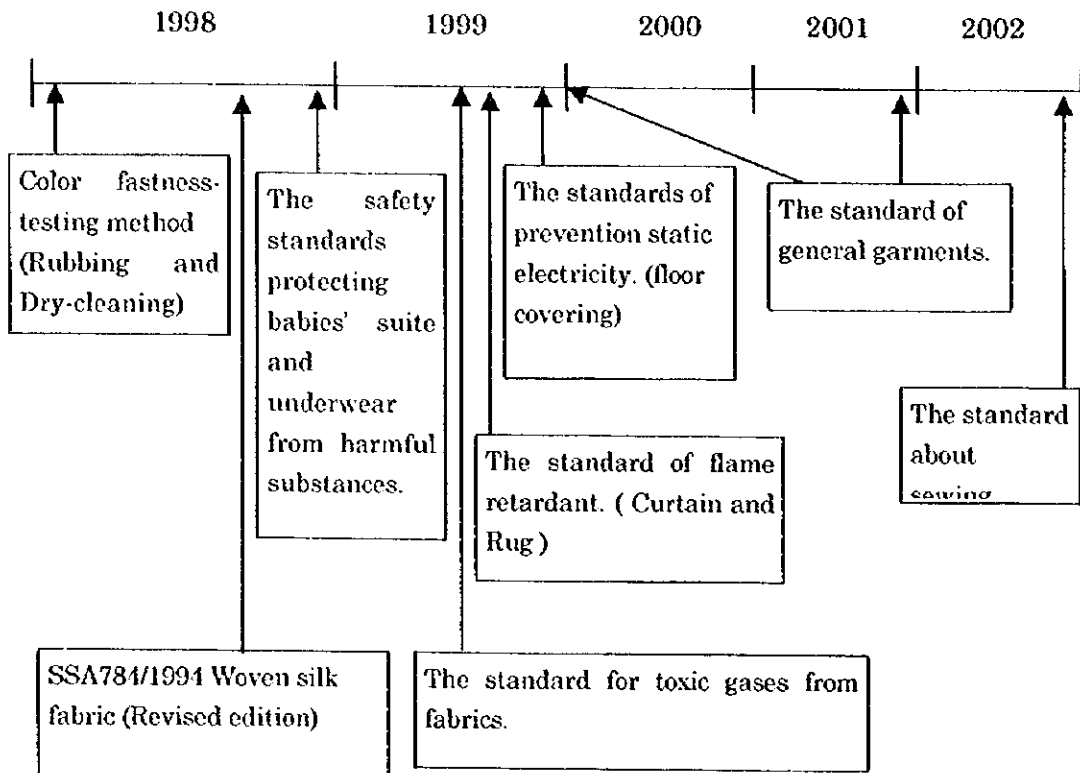
- Plunger and bead unseating tester : one person, one month
- Dynamic balancing tester : one person, one month
- Indoor drum tester : one or two persons, three months

3.7.5. Textile products

The plan of establishment of SSA, test items and testing equipment to be strengthened, and increase of testing personnel is described in the following.

1) Establishment and revision of SSA

Figure 3.7.5.-1 shows five-year plan for SSA. The description in Clause 3.3.5. is to be referred to. Reinforcement of the laboratory should be in accordance with development of standard.



Policy of five-year plan

Completion of fundamental test methods. First, revision of "SSA784/1994 Woven silk fabric" for unfair indication of silk, then safety standards against skin injuries, flame retardant, physical shock by static electricity and toxic gas within two years. Standard for general garments should be established within three to four years, and the standard about sewing in the fifth year.

Figure 3.7.5.-1. Five-year plan for standards

2) Reinforcement of test and inspection items.

a) Extension of the safety test:

Although the flame retardant ability test is conducted only for tents, the test should be extended to other textile products such as curtain and floor covering. In addition, it is necessary to introduce the test of harmful substances causing skin trouble and floor covering material causing electric shock.

b) Investigation of causes of the consumer's complaint:

SASO should reinforce the task on the investigation of causes of the consumer's complaint to reflect the investigation results in the standards. The results of investigation should be utilized for the education and training of the consumers and companies to prevent the recurrence of the complaint.

c) Trial test of requirements:

In drafting SSA a trial test should be carried out at textile lab. for confirming whether the new draft is reasonable or not. Trial tests in the textile lab should be carried out in close cooperation with standards dept.

d) Market surveillance:

As part of the consumer protection, the market surveillance should be performed in cooperation with the MOC concentrating on the prevention of the unfair indication. The inspectors, that is, lab staff, should have enough knowledge of the textile products. If necessary, the inspectors give an advice of method of quality control to importers, retailers and domestic manufactures.

3) Testing equipment

The establishment of SSA concerning harmful substance, toxic gas and static electricity were proposed for in **Clause 3.7.5. 1)**. As the standards are established, some pieces of testing equipment should be renewed and added. *Table 3.7.5.-1* shows the reason and year of introduction.

Table 3.7.5.-1. Five-year plan for testing equipment

Name of testing equipment.	Testing item	Reason for introducing testing equipment.	The year of introduction.	Price (Yen/\$)
Xenon tester	Color fastness to light.	<ul style="list-style-type: none"> It is more than ten years since the existing test equipment was installed and it is becoming old. The existing equipment is insufficient in capacity for sample processing. 	1998	About 1.5 Million Yen/ \$ 12500
Washing machine specified in IEC	Dimensional change.	<ul style="list-style-type: none"> The existing washing machine is household use and insufficient in accuracy. The washing machine specified in IEC is to be introduced. 	1998	About 2 Million/ \$ 16700
The spectro photometer	Analyze the content of the formaldehyde	<ul style="list-style-type: none"> For analyzing contents of harmful substances such as formaldehyde in textile products. For the confirmation test necessary for establishing standards. 	1998	About 1.2 Million/ \$ 10000
Smoke analyzer of toxic gas	Analyze for toxic gas and smoke from fabric.	<ul style="list-style-type: none"> For analyzing toxic gas and smoke from textile products, especially fire retardant fabric. For the confirmation test necessary for establishing standards. 	1999	About 20 Million/ \$ 166700
Electric static machine "walk method"	Measure the static electric from the floor covering.	<ul style="list-style-type: none"> For the measurement of static electricity generated from floor covering. For the confirmation test necessary for establishing standards. 	1999	About 2 Million/ \$ 16700

4) Increase of testing personnel

The textile lab. consists of two groups; the physical property group and the analysis group, and six persons in total, except the manager who engages in the work of both textile lab. and material lab.

The 824 samples were tested last year. The number of existing testing personnel is sufficient for present amount of samples. But, there should be a full-time manager in the textile lab. because many tests are conducted there. The full time manager

can control, instruct about testing and educate lab. staff, and can analyze statistics on the testing. Therefore the function of the textile lab. will be improved.

In 1999, one person should be added to the analysis group, because test equipment are introduced and the safety standards are established.

An inspector should be selected among the textile lab. staff and trained for market surveillance because the inspector must have professional knowledge of fiber composition to detect unfair indication of fabric rolls and garments.

Table 3.7.5.-2. Five-year plan for personnel

	Manager	Analysis testing person	Total
The year of introduction	One person in 1998	One person in 1999	Two persons

3.8. Organizational development

To strengthen consumer protection in Saudi Arabia, closer cooperation among governmental organizations, public bodies and private enterprises is inevitable and also better harmonization with international rules and procedures is essential. SASO's organization and activities should be studied and strengthened taking the above-mentioned into consideration.

3.8.1. Establishment of a Quality System

The Team recommends that SASO should conform their related organizations' structure, management and activities with the relevant ISO/IEC guides. SASO enforces the Quality Mark System, Certification of Conformity, ICCP and ISO9000 Registration System and Laboratory Accreditation System based on the relevant ISO/IEC Guides. Furthermore SASO should expand its activities of conformity assessment for domestic products and for ISO14000, market surveillance regulated by the ministries and causal analysis of accidents etc. To execute these activities properly, effectively and with international acceptance, conformity with the relevant ISO/IEC guides is very important. As proposed in Clause 3.4.5. in this chapter, participation in the IECEE-CB Scheme requires the conformity with these guides. The effort to adapt SASO's organization and organizational activities to the guides will surely strengthen SASO's capability and enhance confidence in SASO. Preparation work should be started in 1998 and establishment of the system should be in 1999 or 2000.

Outline of the ISO/IEC guides

SASO should satisfy the requirements in the following guides :

1) ISO/IEC Guide 65 : General requirements for bodies operating product certification system

The guide relates to product certification activities in SASO such as Q Mark, SC Mark and Certification of Conformity. Passing the assessment according to the guide is an essential condition to participate in IECEE-CB Scheme (refer to Clause 3.4.5.).

The guide requires the organization in charge impartiality, management with overall responsibility, formulation of policy and supervision of its implementation, independence from other activities including commercial ones and establishing its own quality system, internal audit system, information system, etc.

2) ISO/IEC Guide 25 : General requirements for the competence of calibration and testing laboratories

The guide relates to the QC Laboratory in the Laboratory General Department in SASO. Passing the assessment according to the guide is an essential condition to participate in IECEE-CB Scheme as a CB testing laboratory (refer to Clause 3.4.5.).

The guide requires laboratory management independent from any commercial, financial and other pressures, establishing quality and technical management and participation in interlaboratory comparisons and proficiency testing programs etc.

3) ISO/IEC Guide 39 : General requirements for the acceptance of inspection bodies

The guide relates to the factory inspection activities of SASO. Passing the assessment according to the guide is going to be an essential condition to participate in the IECCEP-CB Scheme as an inspection body (refer to Clause 3.4.5.).

The guide requires the organization in charge to be independent from any commercial interest and consultancy service, establishing qualified and experienced technical management and information system and ensuring fair and strict inspection, etc.

4) ISO/IEC Guide 62 : General requirement for bodies operating assessment and certification/registration of quality systems

The guide relates to the ISO9000 and 14000 registration/certification activities of SASO. The guide specifies requirements which intend to ensure international acceptance of ISO9000 or ISO14000 certification/registration granted by the organization.

The guide requires the organization in charge of formulating and implementing its own policies, impartiality free from any commercial and financial pressures, establishing and implementing an effective quality system, etc.

**5) ISO/IEC Guide 58 : Calibration and testing laboratory accreditation systems
General requirements for operation and recognition**

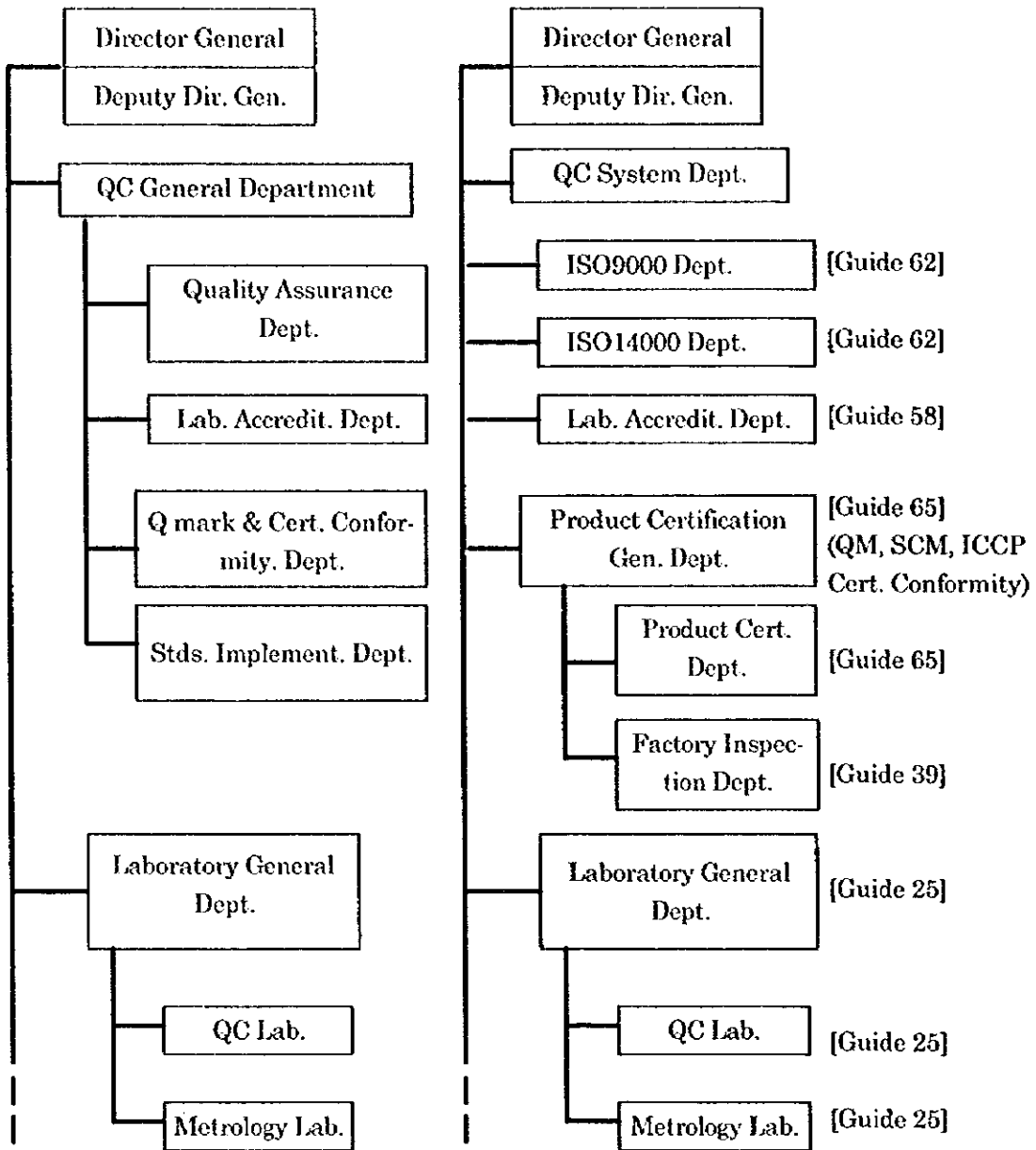
The guide relates to the laboratory accreditation activities of SASO. The guide requires an organization in charge establishing a quality system including an organizational structure, establishing a management free from any commercial and financial pressures, prohibiting consultancy services, etc.

Reconstruction of organization

As all the guides mentioned above require establishing total and independent management for each activity, the Team recommends a reconstruction of the relevant organizations. For reconstruction and restarting the organizations, setting up a new department the "Quality System Department" which conducts organizational development and organization auditing with the help of experienced foreign consultants will be necessary.

Figure 3.8-1 shows a comparison between the present organization and the proposed one by the Team. The new departments, ISO9000, ISO14000, Laboratory Accreditation, Product Certification, Factory Certification and Laboratory General Department should have a governing committee and expert committee of their own respectively to adapt the management of each department to the relevant guide, and also segregation between assessment and certification functions is required for each of ISO9000, ISO14000 and Laboratory Accreditation departments.

(The present organization) → (The proposed organization)



[] : Relevant ISO/IEC Guide

Figure 3.8.-1. Comparison between the present and proposed organization

3.8.2. Consumer Protection Coordination Department

Necessity of cooperation

SASO should strengthen its active cooperation with related organizations and bodies as well as a closer linkage among the departments inside SASO. Major cooperative tasks for SASO will be as follows :

- a) Closer cooperation with the Civil Defense and Traffic Police to participate in causal analysis of fire/traffic accidents and to improve their investigating procedures

The test results in the laboratory should be useful for developing countermeasures to prevent the recurrence of the accidents.

- b) Closer cooperation with MOC to investigate consumer injuries, damage and complaints from a technical standpoint and make a joint market survey and product purchasing tests on important items several times a year
- c) Utilization of results and findings obtained from a) & b) in to the Standards General Dept. for rapid reflection in the standards
- d) Utilization of results and findings obtained from a) & b) in to the Public Relations Dept. and GSMO for timely consumer education

SASO should propose a cooperative consumer education campaign for the related organizations.

- e) Analysis of consumer accidents and loss data and maintaining of the SASO database
- f) Intensive support for the Consumer Support Organization to develop its capability and good cooperation with the relevant ministries including SASO

Establishment of the Consumer Protection Coordination Department

For the above-mentioned tasks, a new department "Consumer Protection Coordination Department" should be established. This department should carry out comprehensive consumer protection activities and coordinate other organizations and SASO to conduct the above-mentioned cooperative tasks for SASO. The department should be positioned under the direct control of the Director General of SASO and one manager and two staff will be sufficient at the start. The department should start in 1998.

Figure 3.8-2 shows the proposed new organization the "Consumer Protection Coordination Dept." and its relationship with other relevant organizations. Inside SASO, as the new department should have a closer cooperation with the Standards General Department and the Laboratory General Department, the staff of the department should have experience in both the making of standards and testing practices in the laboratories. The department should entrust routine tasks to other departments and develop new tasks as Saudi Arabia has many consumer protection issues to deal with.

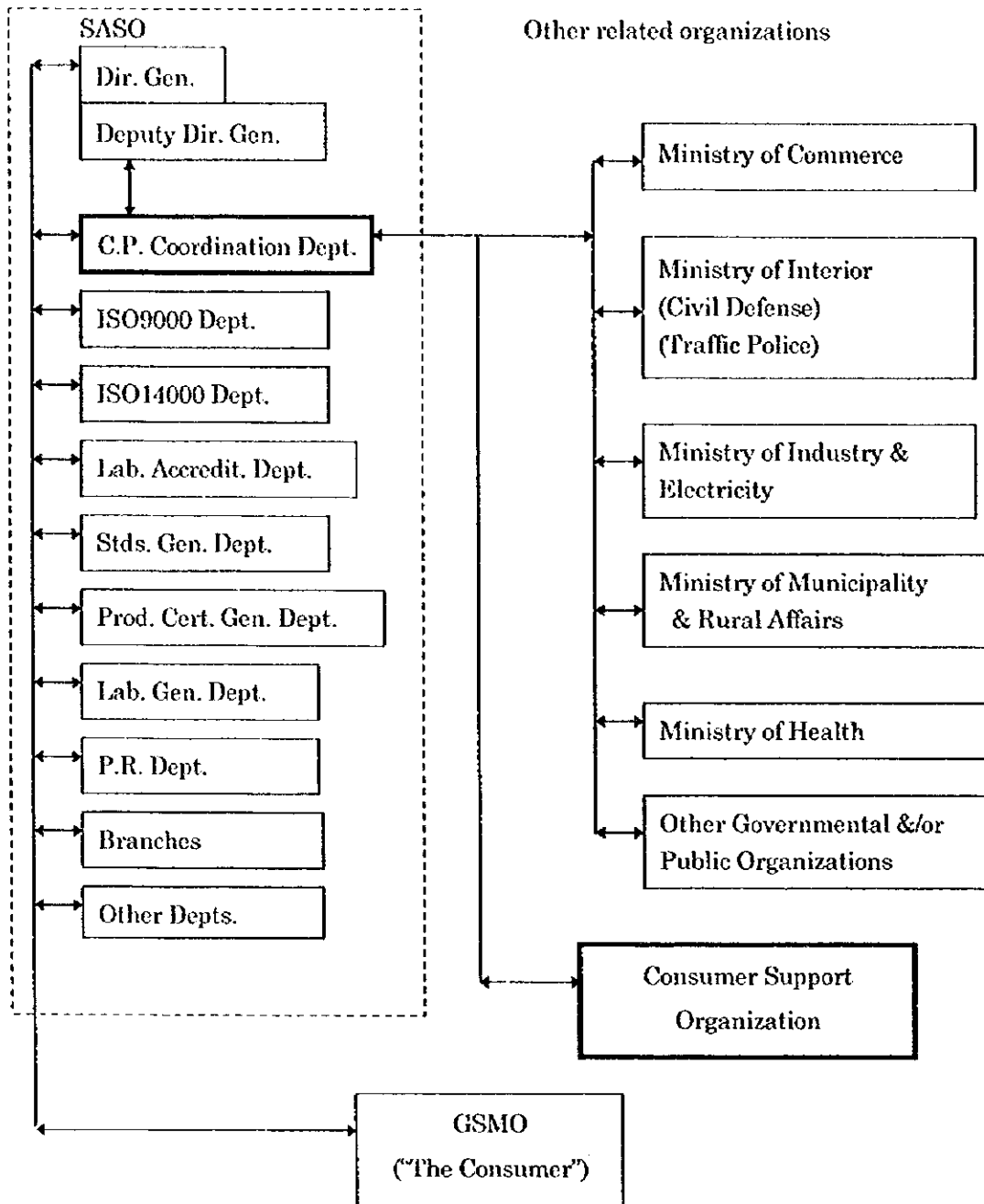


Figure 3.8.-2. Organizational structure of C. P. Coordination Department

3.9. The five year plan for activities and expenditure

The time schedule of the master plan for the development of SASO should include the planned activities of SASO together with closely related activities conducted by other organizations and the annual expenditure especially for reinforcement of SASO laboratory.

The five year plan listed in *Table 3.9-1* in this clause gives a basic idea how to develop activities and capability of SASO as well as related ones. The testing equipment is planned to be installed according to development of total consumer protection activities (i.e. demand for test) in Saudi Arabia.

Table 3.9.-1. The five year plan for the development of SASO

Subject	1998	1999	2000	2001	2002
Legal system					
Legislation and enforcement of Consumer Protection Fundamental Act	Legislation		Enforcement		
Legislation and enforcement of Products Safety Law	Legislation		Enforcement		
Legislation and enforcement of Interior Wiring Law	Legislation		Enforcement		
Reinforcing the Civil Defense Law for usage of fire resistant fabrics	Legislation	Enforcement			
Legislation and enforcement of Indication Law	Legislation		Enforcement		
Legislation and enforcement of Traffic Safety regulation	Legislation	Enforcement			
Legislation and enforcement of harmful substance regulation for textile	Legislation	Enforcement			
Consumer Support Organization		Establishment	Starting activities	Strengthening and	expansion of activities

Subject	1998	1999	2000	2001	2002
Standards					
Electric/electronic products	Config. adapters std. Prod. stds. Covered by IEC 335, 598 & 950 under ICCP	Components for appliances stds.	Other prod. Covered by IEC 335, 598 & 950 stds.	Electric tools stds. Components for bldg. installation stds.	Follow up
Interior wiring	Saudi Application Guide		(Qualification system for wiring electrician)		
Tires	Rev. retread std.	Maintenance std.			
Textile products	Rev. color fastness std. Rev. silk fabric std. Harmful substance std.	Static elec. std. Fire retardant std. Toxic gas std.	General garments std.		Sewing std.
Accreditation/Certification/Inspection	Use of manufacturer's data and facilities				
Q mark system					
Std. Conformity Mark	Preparation work		Implementation	(Grace period of 3 yrs.)	
Confirmation of test certificates by importers	Preparation work		Implementation		
Participation to IECEE-CB Scheme	Preparation work for participating as member & Recognizing NCB	Application to IECEE		Preparation work for participating as Issuing & Recognizing NCB & CBTL	Application to IECEE
Accreditation of interior wiring inspection bodies	Establishing system	Accreditation of inspection bodies			

Subject	1998	1999	2000	2001	2002
Market surveillance					
<u>General</u> Visual inspection of "Country of origin" "Name of importers/ manufacturers"					
<u>E/E products</u> Visual inspection of marking of rating and plug configuration		Periodical survey			
Sample test of connecting apparatus					
Sample test of other household appliances					
Interior wiring inspection					
<u>Tires</u> Visiting inspection at retailers					
Roadside inspection					
<u>Textile products</u> Visual inspection for labeling & quality	(Labeling)	(Labeling & quality)			
Sample test of quality	(Composition)	(Composition & other quality)			

Subject	1998	1999	2000	2001	2002
Information gathering and processing function Reinforcing causal and statistical analysis for consumer complaints and accidents in MOC, CD and TP The data base and Information network SASO data base in the head quarter and in the laboratory	Improvement of existing system	System development	Utilization	Improvement	
		System development	Utilization		
	System development		Utilization		
Improvement and Reinforcement of test function in electronic labs.	Connector testers	Connector mat. testers Parts safety testers	Connection strength & Durability testers	Material testers (IEC335-1, 65)	Testers less frequently used
Equipment					
Manpower	Add. 3		Add. 2	Add. 2	
Estimated expenditure for equipment	¥ 9 million (\$ 75 thousand)	¥ 13 million (\$ 108 thousand)	¥ 15 million (\$ 125 thousand)	¥ 2 million (\$ 16.7 thousand)	¥ 40 million (\$ 333.3 thousand)

Subject	1998	1999	2000	2001	2002
<p>Improvement and Reinforcement laboratory test function in material (tires) labs.</p> <p>Equipment</p> <p>Manpower</p> <p>Estimated expenditure</p> <p>Improvement and Reinforcement laboratory test function in textile labs.</p> <p>Equipment</p> <p>Manpower</p> <p>Estimated expenditure for equipment</p>	<p>Air chuck Tire cutter</p> <p>Add. 1</p> <p>¥ 0.5 million ¥ 35 million (\$4.2 thousand) (\$291.7 thousand)</p>	<p>Plunger/Bead unseating tester</p> <p>Add. 1</p> <p>¥ 27 million (\$225 thousand)</p> <p>Static electric "walk method" machine Smoke analysis tester</p> <p>Add. 1</p> <p>¥ 22 million (\$183.3 thousand)</p>	<p>Dynamic balance tester</p> <p>Add. 1</p> <p>¥ 40 million (\$333.3 thousand)</p>		<p>Drum tester</p> <p>Add. 3</p> <p>¥ 35 million (\$291.7 thousand)</p>

	1998	1999	2000	2001	2002
Subject					
Human resources development	Setting up carrier development plan	Implementation			
Consumer education	Monthly publication	Articles based on actual accidents	Articles on comparison of appliances		
"The Consumer"	Cooperation with other organizations	Cooperative consumer education with various media			
General education					
Organizational development in SASO	Starting organization	Starting new organization structure for certification, registration & accreditation work	Improving organization structure		
Consumer Protection Coordination Dept.					
Organizational development	Starting Quality System Dept. & auditing relevant organizations				