

## EXPECTATION FOR QUALITY CONTROL LEADERS IN JAPAN

**Dr. Shigeru Mizuno**

*Dr. Shigeru Mizuno, one of the pioneers in the quality control world in Japan, passed away on May 21. He was 79 years old and was suffering from cancer of the pancreas. This contribution is his last paper which was printed in the "Quality," Vol. 19, No. 2, Apr., 1989, the journal of the Japanese Society for Quality Control. It is his posthumous works to the successors. Chapter 3 and 4 are introduced here.*

### Features and Defects of TQC in Japan

#### 1. Retrospection into Articled TQC

In the 44th JUSE Quality Control Symposium held in June 1987, features of TQC in Japan were summarized in 10 items including 4 new items added with the participants' agreement. Because it would not be necessary to mention these items in this paper, I am not repeating them, but I quite agree with the contents.

However, these items were just enumerated article-by-article, and no reasonable explanations for general people in Japan, not to mention foreigners, were given how these items were interconnected each other, or how these activities have been developed till now. Quality control leaders, including the author, are to blame for such loss of explanation.

The reason may be that TQC in Japan is an accumulation of a variety of isolated activities that have been taken up, energetically but individually, as one might think of from time to time on the reason that they might be of some help. The author must admit that TQC in Japan is the

enumeration-oriented activity or an activity written article-wise. Everything is thus put into QC, and some business firms have formally rejected the idea. The author believes that whatever is effective should be tried, and one should not bind one's activity field, yet he also believes it is important to "know one's power."

The most serious problem is, as mentioned before, "Is there philosophy in TQC in Japan?" To put it differently, "systematization of TQC" is necessary. One may say all of the above 10 items have at least one thing in common that "QC is a management tool," yet it is necessary to give a reasonable explanation to the top management and those who are not directly involved in the QC activities how these items contribute to the business management. It is quite correct to say "TQC is not there to be understood by reasoning but it should be understood through practice," yet this does not preclude the necessity of systematization of TQC.

It is necessary to clarify the academic field of QC. What field is covered by QC, a branch of management science? How is it related to other branches of management science such as IE and OR? Reportedly, similar problems are often raised when QC researchers apply for the organ research fee allocation and others from the Ministry of Education.

#### 2. Company-Wide Quality Control

The term company-wide quality control is used to distinguish between TQC in the U.S., or Feigenbaum-style QC in which only QC experts from individual departments participate in the comprehensive activities on the one hand, and QC activities in Japan where all departments and layers

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participate on the other. We have agreed to use the term in that meaning in ICQC '69, the first international QC conference.

The language is difficult to control. Actually, there are not a few TQC activities in which, although all departments are participants and the name of TQC is given, they are individually trying to solve problems and improve business activities (including QC circle activities) within their own encirclement or from their own standpoint, and they do not notice the necessity of establishing the common objective for the entire company and exploiting the overall capability of the organization. In this sense, the term "total" should not be dropped, so the author believes that the TQC which the Japanese enterprises are trying to achieve should be called "company-wide total quality control."

In this paper, the author is using TQC for CWQC for brevity, but the term should be understood to mean the Japanese-style TQC, or "company-wide total quality control."

The author's work "Company-Wide Total Quality Control" (1984, JUSE Publication) is the first literature giving the entire picture of TQC and was awarded the Nikkei Quality Control Literature Prize and the Management Science Literature Prize ( ). The work has been, or scheduled to be, translated into 6 languages except German. If an old person like the author does not take the initiative, the younger people may not be induced to write a book on this theme. There are many points in the book which the author would like to correct, yet the author earnestly wishes that the younger

people will also discuss and write a book on philosophy and systematization of TQC.

### 3. Utilization of QC Methods

One of the 10 items describing the features of TQC in Japan is "Development and Utilization of QC Methods." It is true, as mentioned above, that there are many methods which have been developed in Japan and highly evaluated overseas. However, it is doubtful if these methods have

been correctly and effectively used in proper occasions in Japan where they have been developed. Many cause and effect diagrams turn out to be a cause and defect diagram. There are also many misuse between premises and factors. Even with the quality function deployment (QFD), plotters are merely interested in depicting a complex diagram, and do not provide careful development into quality warranty steps. Weighting of individual quality characteristics is conducted by perception without a trace of quality analysis efforts. Mr. Sullivan introduced an idea to utilize QFD in policy control and emphasized that it was a new method not found in Japan. However, to save the honor of Japan, the author would like to mention that the quality table used as the

base of QFD was originally developed by Kobe Shipbuilding Works, Mitsubishi Heavy Industries, in 1972 for the purpose of deploying the quality policy, and Mr. Sullivan's assertion is not correct. The misunderstanding was caused by the fact that QFD was first introduced in the U.S. by them when they visited car manufacturing plants in Japan, and in their visits, only the applications of QFD were



**Date of Birth:** March 17, 1910      **Dr. Shigeru Mizuno**

#### Professional Experience

1952 Professor of Tokyo Institute of Technology  
1970 Professor emeritus of Tokyo Institute of Technology  
1970 Professor of Science University of Tokyo  
1980 Chairman of Quality Management Institute

#### Background

1934 Graduated from Dept. of Electric Chemistry of Tokyo Institute of Technology

#### Qualification

Director of Japan Society for Quality Control; JSQC (1970–1985)  
Chairman of J.S.Q.C. (1972–1973)  
Academitian of International Academy for Quality (1969–1983)

#### Additional Professional Information

1952 Awarded the Deming Prize for Persons  
1974 Awarded the Medal with Purple Ribbon  
1982 Awarded The 3rd Class of the Order of the Rising Sun  
1978 Awarded Nikkei Quality Control Literature Prize [Quality Function Deployment] (J.U.S.E. Press Inc.)  
1985 Nikkei Quality Control Literature Prize [Company-wide Total Quality Control] (J.U.S.E. Press Inc.)



introduced to them without reference to the origin of QFD and its basic concept (the author is also to blame in this respect).

In the U.S., Professor Clausing, MIT, and others have contributed to the development of an effective quality assurance system combining the Taguchi Method, QFD, and other methods developed in Japan. The weak point of QC activities in Japan is thus precisely hit.

QC was first introduced in Japan by Mr. Deming, and TQC was first suggested by Dr. Juran. The QC Middle Management course established by Committee M (of JUSE) with the author as the central person is based on Dr. Juran's seminar, and the contents have changed only slightly since its first lecture.

In the course of the affectionate praising of the achievements of Drs. Deming and Juran, the efforts of the Japanese researchers and leaders seem to have been underrated. Does Dr. Deming know how hard the Japanese people have tried since then? In the TQC activities in Japan, multivariate analysis and other high-level statistical methods, have been used to realize substantial effects, and the success would be beyond the imagination of Dr. Deming as a statistician.

What we should learn from Drs. Deming and Juran now is the philosophical way of thinking, which the Japanese people lack as I mention repeatedly.

At any rate, the development of TQC in Japan is heavily supported by Drs. Deming and Juran, but it is also true that the Japanese leaders and business firms have made more contribution than them. This fact should be recognized by not only the Japanese Government but also foreign countries.

#### 4. Total Control by Functions of Q, C and D

Many reports of "Quality Control Execution Status" submitted by the Deming Prize-awarded companies describe quality assurance, cost control and production control as individual functional controls of so-called Q (quality), C (cost) and D (delivery) respectively. Even in the field of cost control, the cost control used in TQC is clearly different from that used in ordinary companies. So far as one insists on TQC, Q should be the central point in the activity, while C and D are controlled in relation to Q. The author calls this control "total control by functions." Incidentally, the author also emphasizes that policy control should be conducted with "control of quality policy" as the pivotal point.

TQC to do this and then that, or "whatever QC," is a QC without critical points, or an "out-of-focus QC," and it is not a true QC.

### Introduction and Promotion of TQC

#### 1. Merits and Demerits of the Deming Prize

Everybody knows that the Deming Prize has contributed to the development of TQC in Japan beyond our imagination. However, there exist some problems, as mentioned before, such as the fact that the prize awarding enterprises

## EULOGY FOR DR. SHIGERU MIZUNO

**Masao GOTO, Minister of Justice**

I met Mr. Shigeru Mizuno in 1940 for the first time in a meeting of young engineers which was held for the purpose of promoting science and technology. We met again in 1946 when we attended a meeting of scientists and engineers who were going to establish a new scientific and technological association to



assist in the reconstruction of Japan which was devastated in the World War II. This new association is the current Union of Japanese Scientists and Engineers. Within this association, we started to study quality control by establishing QC Research Group with Mr. Shigeru Mizuno as the leader and Messrs. T. Asaka, K. Ishikawa, M. Kogure, H. Higashi, S. Miura and E. Watanabe participating. This group was awarded the 2nd Deming Prize (for persons) in 1952, and I was among the members who were awarded the Prize. The role played by Dr. Mizuno as the group leader in obtaining the Prize was great indeed. Even after the prize winning, he continued to exert the pioneering leadership for the group which always played a pivotal role in the dissemination and development of quality control in the Japanese industry in general. The development of techniques and trial for systematization as methodology in the transition and development from statistical quality control to company-wide total quality control have been introduced in not only the Japanese businesses but also foreign enterprises, and are currently studied very hard. His name will be remembered forever in the history of development of quality control in Japan. I am proud of having participated in the study and dissemination activities for quality control with him. I wish to continue his achievements and efforts, and do my best to contribute to the development of industry and society through quality control activities.

It is to be greatly regretted that another pioneer in quality control in Japan passed away in succession after Dr. Kaoru Ishikawa.

have been limited to some group of companies. Reportedly, foreign businesses are currently applying for the examination, and this trend is welcome in the sense that the efforts of the Japanese enterprises might be properly evaluated in this age of internationalization, eventually contributing to the alleviation of trade imbalance.

The Deming Prize is a prize beyond one's reach for most people and companies. A QC staff of a company told a QC leader that the company would like to be awarded the Deming Prize. Asked "How much money is ready?" the staff was astonished to know that the indicated amount was



quite high beyond imagination for that company. One of the reasons why much money is needed may be that, to win the Deming Prize, standardization and activities as a system, which must have been conducted in the ordinary production activities for years as well as learning and training of TQC, must be done in a very limited time frame (after decision to apply for the examination), and to do this, a large amount of expenses must be paid collectively. However, the author is doubtful about the current way of doing things that learning of TQC and the associated activities are all conducted for the sole purpose of possible winning of the Deming Prize, and the leaders also cooperate with the company in that line.

Education for the purpose of winning the Deming Prize is but an elite education. The elite education may be good for generating stamped talents, but it would not assist in the bringing up of creative human resources suitable for the diversified society. Care should be taken so that the Deming Prize is free from such demerits. The author recommends participation in the competition. It would not be so difficult to pass an examination, but it does not make sense just to undergo and pass an examination. Once a company should decide to apply, I always stress, the company should plan to be successful in improving and strengthening the corporate structure that is suitable for not only the present but also the future business activities, and establish a unique control system which is suitable for the business type of that company and is not a mere duplicate of other companies. My pride does not permit me to become a tutor helping students to pass an examination.

## 2. Unplanned Instructions

Companies receiving lectures from more than one lecturer say that their teachers say differently, so they do not know which teacher's instructions to follow. I do not believe instructors have a different way of thinking about the basics of TQC, but it might be possible that different expressions are used and different emphasis is given depending on the instructors. If the TQC promotion is not effective and there is waste because of the above condition, some improvements must be made. The TQC promotion should be done in a TQC-like way, and the control cycle of CAPD is important also for the promotion.

It is rather easy to teach a company who has decided to apply for the Deming Prize examination because the instructors can force their opinion on them. It is doubtful, however, if such instructions would help the company acquire the self-sustaining ability which is the basic objective of TQC. TQC must be promoted by the company itself. When university professors and others were invited, they refrained from stepping into the company's private problems too deeply. This is one of the reasons why TQC is successful in Japan.

There are not so many firms trying to win the Deming Prize. Some firms are destined to compete in the winning of the Prize because of their affiliated companies or business competition. There are, finally, a number of firms who wish to merit from the application for, not necessarily winning,

the Deming Prize. We as the leaders must endeavor to level up not the elite but rather common people. It is most important for medium to small enterprises, who lack money and human resources, to introduce and promote TQC eventually to contribute to the development of this country as a whole, although few merits exist so far as QC leaders are concerned.

## 3. Efficient Promotion of TQC

To be ready with a handsome amount of money and win the Deming Prize in a short time frame by recklessly promoting TQC activities would be one way of doing things, but the author does not agree with this idea. To carefully plan TQC activities, carry them out steadily with expected results achieved, and reinvest the resulting profit to further promote the activities should be considered the better way.

Our group makes it a rule to conduct audit before introduction, clarify problems to be solved, prepare a promotion plan after fully studying the company needs, set up an instruction program for instructors, and do our best in realizing the efficient promotion. In addition to the plan for the current fiscal year, we also submit a long-term overall TQC plan to the customer. We clarify the level of actual achievements by referring to the execution conditions of the Deming Prize and the Japan Quality Control Medal-awarded enterprises and on the basis of the Deming Prize check list (only items are shown), and use the list as the check list for auditing the condition of promotion. This overall system is called "collective leadership system." We are trying to disseminate this method, but unfortunately, the efforts are not necessarily successful at the moment. We are, however, confident that the performance of ours will be recognized by the general public in the future.

At any rate, it goes without saying that systematization is important also for the efficient promotion of TQC.




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# WHAT IS QUALITY ASSURANCE IN SERVICE INDUSTRY?

Tatsuo IKEZAWA  
Professor Waseda University

*In this article, the author stresses the importance of clarifying to customers what the quality assurance items and assurance standards are, and of having control items for achieving these standards.*



## 1. What Items Are To Be Assured and How They Are To Be Assured.

(Quality Assurance Items and Quality Assurance Standards)

With fresh produce goods close at hand in our everyday life, with milk, for example, date of manufacture is printed on it. When the consumer sees this, he or she thinks of the date by which he or she needs to finish drinking it. More recently, long-life milk is being sold more and more, and these products assure life of two months. Then, too, on products such as film, effective date for use is printed clearly such as "July 1990." And when we look at automobile catalogues, they indicate clearly not only the maximum speed, but also, the given automobile's acceleration capability and hill climbing capability and a large number of other specifications.

In this way, as far as manufactured products are concerned, "what items (quality assurance items) are assured and in what manner they are assured (the assurance standards) are stated very clearly. In manufacturing industry, the usual practice is to decide these things even before the product in question is produced, at the stage of product development, or at the stage of development, for example. Also, put another way, inspection items and inspection standards are decided on, and these are assured vis-a-vis the customers.

However, in service industry, quality assurance items and assurance level in this sense are quite ambiguous.

To take an example, when a customer is made to wait excessively long at a restaurant, he or she begins to wonder whether the order was reliably communicated to the cooks, and whether they have adequate materials and supply to prepare the dish that he ordered (or perhaps that they sent for supplies just now!), and begin to get irritated after a while. Now in a case like this, if a restaurant declares that "The waiting time will be less than six minutes normally, and less than 10 minutes even in busy hours (between 12 noon and 1PM, for example), and if we make you wait longer, then, we will give you a discount of 10%," then, this is a valid way of providing quality assurance.

Similarly, if the power company says to the customer, "If there is a black out, we commit ourselves to restore it within thirty minutes. If we go over that time limit, then, we will pay a penalty," then, this, too, is one valid way of providing assurance.

However, compared to manufacturing industry, service industries do not have quality assurance items and quality assurance standards in many cases, and even when there are these things, they are not communicated explicitly to customers, generally speaking.

## 2. Relationship With Control Items

As we noted above, in manufacturing industry, what are to be assured is decided beforehand, and control and management activities are carried out in order to produce products which incorporates these items, and in order to achieve and sustain such qualities. This, in short, is what constitutes quality assurance activity.

Now, the next problem for service industry is that even while decision has not been made on quality assurance items and quality levels, control items are decided beforehand.

First and foremost, what to assure to customers is decided, and then, "control activity" is carried out in order to achieve such quality assurance activity and to maintain such activity.

At Joban Hawaiian Center which received the 1988 Deming Prize, the development of quality assurance, assurance items, and quality levels, are shown in accordance with the steps in customers' activity. As one example of this, "Seeing the Hawaiian Hula Dance" is shown in Table 1. Now, let us look at item 3) "It is gorgeous." and its relation to the control items.

While it depends on the size on the stage to some extent, generally speaking, unless more than ten performers appear in one show session, the stage does not appear gorgeous. For this reason, there is a quality assurance item and assurance level that there be ten or more performers for each show session. Moreover, in order to achieve this assurance standard, the attendance rate of performers must be maintained at a high level. And for this, it becomes necessary to institute health management so as to cut down absences due to illness and to improve the work motivation of the performers. And to this end, effort is made to reduce the performers shortage rate to below 3% for any given month. When control items and control levels are added on to Table 1, we have Table 2.

For example, since the show is given twice a day (once in the afternoon and once at night, there are sixty shows in a month. If there are a large number of absentees and if there are three shows with less than 10 performers in the



**Table 1. Quality Deployment and Assurance Items**

Primary	Secondary	Tertiary	QA items	Assurance level
To see Hawaiian dance performance	To enjoy seeing it.	Polished	Technical evaluation points	More than 75 points
		Bright & wholesome	Smile evaluation point	More than 80 points
		It is lively.	Performers	More than 10 performers/session

**Table 2.**

	What is assured.	How it is assured.	With what method.	How it is controlled.
Tertiary	Assurance items	Assurance level	Control item	Control level
It is gorgeous	Performers	More than 10 performers/session	Performers shortage	Less than 3%

given month, then the performance shortage rate will be 3 shows/60 shows or 5%. Now, this exceeds the control level of “3%” set for performance shortage rate, and therefore, the situation is evaluated as “an abnormal one,” and an “examination as to the causes” for this situation is undertaken. Thus, we must not forget that in order to achieve the control items and control levels, it becomes necessary to establish appropriate control items.

### 3. (Speedy) Delivery, Too, Is Part of Quality Assurance (D).

As we know, in the world of QC, key terms of Quality, Cost, Delivery (both quantity and delivery date), and Safety, that is, Q, C, D, and S. Now, it is the big characteristic of service industry that the “speediness (delivery)” is one of the key requirements on which customers place a great deal of emphasis.

Therefore, in service industry, we should really consider speediness of delivery to be an integral part of quality assurance (Q). In the case of waiting time for food at the restaurant, and the time that customers at a bank spend in waiting at the counter, are key quality assurance items on which customers place a high level of importance. -

Similarly, with regard to the question of safety (S), it is generally taken to be safety at the plant in the manufacturing industry, and safety at construction sites in the construction industry. That is, safety activity is mainly geared toward the safety of employees. Therefore, generally, it is taken as a separate question from the question of quality (Q).

However, in the case of the service industry, for example in the case of hotels and inns, safety in relation to accidents has to do mainly with the safety of customers. Thus, the question of safety (S) enters into the question of quality (Q) also.

That is to say, in the case of service industry, it is valid to regard all the qualities required by customers such as D and S and whatever, to be part of quality assurance. Needless to say, the question of “hygiene (health)” is also a most important quality assurance item in providing quality assurance vis-a-vis customers, as may be inferred from the fact that it is referred to as “health and safety.”

### 4. Check Through Survey on the Extent of Satisfaction

Now, even after the quality assurance items and assurance levels are established in the way indicated in the foregoing, there needs to be a survey of the extent of satisfaction in order to check on that.

Generally speaking, in the manufacturing industry, it takes a considerable amount of effort to check on the degree of satisfaction of customers with the product in question. Therefore, usually, only one or two regularly scheduled survey on the degree of customer satisfaction on product and service can be made.

However, in the case of service industry, staff fare in direct contact with a large number of users each day. For example, many inns and hotels ask customers to fill out questionnaires to study the extent of their satisfaction. While there is a problem of low recovery rate of such questionnaire forms, if interviews are carried out at the time of customer checking out and the forms are recovered, then a large number of customers can be surveyed.

However, in service industry, the fact that this kind of survey of the extent of customer satisfaction is carried out to an insufficient degree is a problem, and the fact that it is not used adequately at all even when such a survey is carried out is also a problem.

### 5. System for Quality Assurance Activity

Now, when the extent of satisfaction is surveyed in this way, and when it is found that there is only a low level of satisfaction or when dissatisfactions or claims occur, then, it is necessary to pursue the causes and take action; that is, what is called feedback becomes necessary.

In manufacturing industry, there is a system for carrying out quality assurance activity, and this system is generally put into practice and made use of, generally, but in service industry, findings of such a satisfaction survey are not used to good effect, or when claims occur they are handled on the level of individual cases (rather than more systematically) or claims may even get lost, in many cases. Consequently, there is a need for a thoroughgoing education and training so that there will be a consistent outlook of “customer first,” and an understanding that uncovering latent claims and preventing their recurrence as much as possible will create an asset for the company. And in order to do this, there needs to be a system for implementing quality assurance activity as there is in manufacturing industry, and to abide fully by such a system.

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## The Sayings of CEO in Japan

– from the column “Top Interview” printed in  
*Total Quality Control* magazine, JUSE –

☆ **Kazuo HIYAMA, President, Isuzu Motor Co. Ltd.**

We are considering TQC as the base for innovation and transformation of consciousness. As soon as I assumed the post of president in 1984, I declared the introduction of TQC, but in the case of our company, this was the second time that we were to do so. Therefore, given the experience of the previous failure, we sought to make sure that it will not be a formalistic type of QC separated off of reality; so we try to be fully aware of the present condition and to accept the reality of shortcomings with a sense of humility, in order to make a start with a straightforward critical review.

While the result is, of course, important, but what is equally important is the process which leads to it, for unless the process is improved, we will not be able to obtain good results in a sustained way.

At any rate, the fundamental factor is consciousness revolution; based upon the changes in the environment, we must clarify what we aim at, to understand and concretize it, and ultimately, we would like to build a corporate structure and fiber for achieving the maximum effect with the minimum cost.

☆ **Shigekuni KAWAMURA, President, Dainippon Ink & Chemicals, Inc.**

Four years ago, I participated in the Top Management Course on Quality Control, which was held in Karuizawa under the sponsorship by JUSE. All of the top executives of our company have attended either that special course or the special course for the business management staff.

Now, it just so happens that yesterday I went to a plant for president's diagnosis. I try to make it my practice to try to praise the efforts being made as positively as possible in my evaluation commentary in the president's diagnosis. Of course, wherever there are areas that need substantial improvement, I make sure that I point them out in a straightforward manner.

The best thing which happened in implementing TQC is that what we could not grasp very clearly in the actual situation of various areas became identified as facts in a clear manner through this process.

Also, in order to prevent the recurrence of a given problem, I request that each time, the people involved with it make it a point of rotating the PDPC cycle without failure and completing it each time. As for myself, I would like to see some highly innovative developments. For example, the kind of TQC where what takes forty hours now to respond can be completed within two hours.

☆ **Noboru HAYASHI, President, Tokai Pulp Co., Ltd.**

During the late 1970's and early 1980's, we formulated and set a number of intermediate-range corporate management plans for the reconstruction of this company, but none of them were really implemented, so we just ended up with plan-plan. In June 1984, I assumed the post of presidency, and I acutely felt the need for “activity that encompasses and involves all of the company's employees” in order to rebuild the company, and in October of that year, I took part in that Karuizawa seminar, and I felt that “This is probably it.” Thereupon, I immediately began to make

preparations, and in April 1985, I declared the introduction of TQC in coordination with the start of the first intermediate-range business management plan (3-year plan).

Since then, we have carried out activity on the basis of two pillars: (1) Complete implementation of the intermediate-range plan. (2) Improvement of the company's corporate fiber and constitution through TQC.

It is not enough to say that I feel good that we have done TQC; for I feel that we should have started it earlier.

☆ **Takashi YAMANAKA, President, Yokogawa Electric Corporation**

At this time, the company is developing production in overseas bases such as North Europe and Southeast Asia, and I for one have a view that “there is no national boundary in production and quality.” From this, it follows that good employees make good products.

Therefore, if we make the same product in Japan and overseas and make a comparison, I think that it is not right if the product made in Japan were better than that made in overseas. Therefore, in order to activate and vitalize the QC activity at overseas plants, we invite QC circle teams from those plants and their affiliated companies to take part in the Yokokawa Denki QC Circle Conference which we hold each year, and have them make presentations to the conference. With regard to the proper mode of production setup and QC circle activity at overseas plants, we use the method and system of building in quality upstream in the flow of production, rather than rejecting the defective products downstream.

☆ **Moriji TODA, President, TODA Construction Co., Ltd.**

To begin with, building structures have a very long service life, so securing their quality is the biggest task. Therefore, we have adopted and implemented QC type thinking from fairly early on, and our thinking is that it is a very important thing for creating a basic corporate structure for expanding the company's business.

What we place much emphasis on promoting QC are items such as review of planning and design stages in relation to the required quality specifications, and checks on the qualities achieved at the stage of execution and so on.

☆ **Hirotao HIGUCHI, President, ASAHI Breweries, Ltd.**

Several years ago, there was a period when the business of the company was undergoing difficulty, and the sense of crisis at that time led to stronger motivation on the part of employees for improvement. However, one thing that I keep in mind is to challenge at our goals in a positive, even cheerful manner. And if there are obstacles that are making this difficult, then as the top management, I seek to remove them.

For example, suppose that a certain product is not accepted well in the market, and its inventory piles up. In a situation like this, we should judge the situation carefully and accurately, and render a resolute decision to stop handling it. And after that arrange things so that those involved can work in a full way with ease of mind. I believe that this is the responsibility of the top management.



# INTERNATIONAL SYMPOSIUM ON RELIABILITY & MAINTAINABILITY 1990 TOKYO

**Date: June 5th to 8th**

**Venue: Keidanren Kaikan  
Ohtemachi, Tokyo**

About 100 papers will be presented at the Oral and Poster Session divided into 4 rooms in parallel. One third of the papers presented are from outside of Japan and two third are from Japan.

At the Opening Plenary Session, distinguished experts of the feild will give a keynote address, a special lecture respectively.

The Proceedings of the Symposium printed all the papers in English will be provided at the Symposium.

Simultaneous translation of English and Japanese are available at the Oral presentation Session.

One-day plant visits in Tokyo area will be programmed at the last day June 8th.

One-week Industrial Tour will also be provided after the Symposium as an optional program.

Participants can see both traditional and modern Japan with some plant visits.

Please contact Secretariat of the ISR&M 1990 Tokyo, JUSE.

## ICQCC INTERNATIONAL CONVENTION ON QC CIRCLE

The International Convention on QC Circle which started from Seoul, Korea in 1976 is now taking place every year in each city of East Asian countries including India in rotation. In these years, number of participants and participating countries are increasing rapidly. Followings are the place where ICQCC take place from 1989 to 1992.

(year)	(city)	(sponsor organization)
1989	New Delhi	Quality Circle Forum of India
1990	Tokyo	JUSE (Union of Japanese Scientists & Engineers)
1991	Jakarta	IQMA (Indonesian Quality Management Association)
1992	Manila	PDC (Productivity Development Center, Philippines)

ICQCC 1989  
Dec. 6th – 9th  
at  
TAJ PALACE INTERNATIONAL  
New Delhi

ICQCC 1990  
Oct' 17th – 19th  
at  
CENTURY HYATT HOTEL  
Tokyo