

Societas Quālitātis

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Union of Japanese Scientists and Engineers

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TACKLING THE JOB RESTRUCTURING



Tai MICHUURA
President
Amada Wasino Co., Ltd.

Following the collapse of Japan's "bubble" economy, the machinery industry's workload dropped to a mere 40% of where it stood at its peak. When work diminishes that much, it becomes extremely difficult to cope with the situation only through such orthodox methods as cost-cutting, quality improvement, and reducing customer complaints.

For this reason, first priority in rectifying the matter must go to securing more business by developing new products – this regardless of whether R & D takes place at our own firm or at one of our affiliates.

Our second consideration is to cut expenses. There are two ways of doing this: by shortening lead time, and by reducing total costs and achieving a higher turnover to enable increased output in a limited space. A high turnover will greatly contribute to overall cost-cutting in Japan, where the prices of land and buildings are unreasonably high. Expenses for materials should be cut down, too. In our business, materials occupy such a high percentage of the total cost factor that cutting our outlay for them is essential. To achieve this, the only way is to conduct value engineering (VE) activities thoroughly and actively procure materials from abroad. Doing so is no easy task, however. Purchasing from foreign manufactureres will be futile unless instructors are sent to their factories to ensure that materials of good quality are produced at low cost.

As a third measure, it is imperative to boost the efficiency of direct work. This demands a reduction of work that produces no added value (or waste), such as preparations, transport of parts, and distribution processes.

Fourth, it is necessary to raise efficiency among

indirect departments. In 1992 we set a three-year goal to make indirect operations more efficient so that their work could be handled by two-thirds of their former personnel. When this goal is accomplished, Amada Wasino will have attained the same performance level enjoyed when business was at its peak in terms of sales per indirect division employee.

Some nine years ago, in 1985, Amada Wasino introduced TQC. In 1990 we were awarded the Deming Prize. One of the differences between the period before we introduced TQC and the time thereafter was that when plans to make indirect operations efficient were announced, our employees had the attitude that such methods might well prove useless and although easy enough to propose, they in fact would be difficult to achieve. Today, however, our workforce think differently. "Let's do it!" they say. All it takes is their understanding the need. Not only that, they show a positive attitude; by exercising ingenuity they're confident of devising measures which will accomplish the job.

Formerly, excuses for not being able to fulfill the proposed plans were commonly expressed first. That's all changed. Now, our workers come to grips with whatever the situation and seek solutions on the assumption that the plans definitely can be accomplished. The awareness of our personnel has progressed to where they believe it their duty to find ways to make the impossible possible. I regard this as the direct benefit of TQC. So long as our workers retain such a high degree of understanding and awareness, I stand convinced that our company's goal of restructuring will be attained. ★

Discussion with Deming Prize Winning Company - How Important the Deming Prize is to Survive Global Market Competitiveness

Interviewer: Yoshio Kondo, Professor Emeritus, Kyoto University

Interviewees: - Andrew M. Guarriello, Vice President & Chief Operating Officer, AT & T Power Systems
- Satya P. Sharma, Quality Director, AT & T Power Systems



Prof. Kondo

Why did you apply for TQC?

Prof. Kondo: I'm asking you, first question. Why — instead of Malcolm Baldrige.

Mr. Guarriello: I think the Baldrige Award focuses mainly on customer satisfaction, while the Deming focuses on systems and process and control of process. And I think to be truly competitive in a global environment, you have to do both, and you have to really focus on having your process and your systems really the best you can make.

The Deming Prize is recognized around the world as a true mark of having accomplished a great deal in TQC, and that is why we chose to apply for the Deming Prize.

Prof. Kondo: One thing that is mentioned regarding the Deming Prize. There is a three-year period of follow-up, or again third year there will be a follow-up evaluation, and five years later you are in a situation where you can apply for the Japan Quality Control Medal. In this way, the Deming Prize has such esteem whereby any prize-winner can try to, can be always motivated to continue their efforts, which perhaps differentiates the Deming Prize from other prizes.

Mr. Sharma: The Deming Prize has been in existence for a longer period of time, so it has matured, as they incorporated the best offices from around the world. The Baldrige Award is somewhat new, — I think the Deming Prize, in addition to that, — where we can innovate and come up with different ideas. That's another reason we decided to challenge for the Deming Prize.

We do use the Baldrige criteria also, in addition,

in our internal language.

Kondo: Well, from the perspective, given the fact that the Deming Prize doesn't have very clearly defined criteria, maybe it cannot be used for your internal purposes.

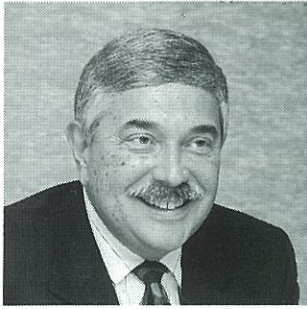
Sharma: We use the overall structure of that prize.

Guarriello: We would never have come as far as we have come if we had not challenged for the Deming Prize. The Baldrige does not require as much effort, clearing your process, clearing your systems, and as I told you in Dallas, we are going to continue, and our plan is really to challenge for the Japan Quality Control Medal if we have the opportunity to do so.

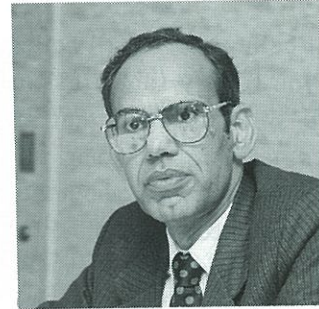
Kondo: Certainly you are encouraged to continue further efforts, and even repeat being awarded the Japan Quality Control Medal. You have listened to several Aisin Group companies being awarded the Japan Quality Control Medal. And, the parent company, Aisin Seiki has got twice this award, so please try. It is possible. Phillips Taiwan was awarded the Deming Prize in 1991. Before long, three years will have passed, and instead of being subject of follow-up examination, Phillips Taiwan would like to have themselves diagnosed in terms of quality control. And at a later stage, this company would like to challenge for the Japan Quality Control Medal. And this kind of attitude is what we encourage.

Difficulties in implementing TQC

Another subject, regarding possible difficulties and obstacles that you may have encountered once



A. M. Guarriello



S. P. Sharma

you decided to introduce total quality control. Your company being an American company, you may have encountered some complete obstacles or difficulties. If that's the case, what were those difficulties?

Guarriello: I think the major obstacle that we had to face was the challenge with our employees of focusing on a long-term program, a long-term goal. American companies focus, I think, on yearly programs. Reengineering, cycle time reduction, all pieces I believe of TQC, but they focus on little pieces rather than the whole. So the major focus on a program that would last five years is something that has to be really instilled in the employees, and they have to see that you really mean and believe that you have the plan and the idea and the determination to run this program forever.

I think one other item, I don't think the American culture is one where they like to fill out so many papers, go through so many routines. And so I think we had to take the TQC program and modify it to fit the way we do business in the United States. And so we had many fits and starts on how to do that.

Kondo: What about your difficulty or situation vis-a-vis the unionized labor? You did recruit, the fact that you could enjoy a cooperative attitude on part of the union members and they did a good job, what was the situation?

Guarriello: When we started this effort, we spent a great deal of time working with the union to discuss why we were doing it, and the issues of how important it was to do this. We made some commitments to the union about continuing employment rather than layoffs, which is very common in the United States, and we have lived up to those comments. Go ahead.

So that the real issue was to build up trust between the labor union and the management. And this took time. We did not do this in the first year, we did not do this in the first week. So it took time to do this. In the United States it's called "walk the walk," "walk the walk," do what you say you're going to

do. So it took us a time to prove that we really were serious, that we really wanted the union involvement, we wanted people to use their heads and not just their hands.

Sharma: Initially it was skepticism on the part of the members of the union. For example, when we started our suggestion program, their was reluctance. But after about three or fourth months, after they saw the benefits, they became the biggest supporter of the program. And similarly, in other areas, they — us now for — teams, — criticism.

Guarriello: I think, most importantly, we've unleashed a very powerful force here, that people feel very empowered, and we can never go back without major, major destruction of things that we have built.

Kondo: You concluded in your speech by saying that this Japanese title, method, does work wherever on this globe. I was very impressed when I heard that, not necessarily Japanese style, but this approach, as such, I do believe sincerely, trust human, is something which works wherever you go on this globe. Would you agree to that, or what is your impression?

Guarriello: Yes, I would certainly agree. People are people, and they all want the same thing, which is respect. They want to be able to be treated as individuals who can contribute, and their contributions recognized by the people they work for. And I don't know if it's Japanese style TQC, but you certainly have perfected it. The counselors working with the companies here in Japan have really perfected TQC to a greater extent than anyone else.

I think we've both added some improvements, which hopefully can be incorporated here in Japan.

Kodno: Come to think of that, it was Dr. Deming who introduced this concept to Japan. And I didn't necessarily use the Japanese style, the wording Japanese style. However, in turn, whatever we have learned and we have perfected may have been introduced to other countries, and this flow of knowledge can, if I may say so, bring about peace in the world to mankind.

Guarriello: I believe so. Yes, I believe so.

Kondo: As you rightly said, trust in people in very important. With the trust that union people and employees have, for instance in you, is of great importance. When we talk about total quality control, all efforts are centered around improvement, enhancement of quality. Of course, efforts can be made to reduce costs or productivity increase in another area for efforts, however, quality improvements is the core in total quality control. Perhaps this is something which is the most easily accepted, this idea of the necessity to enhance quality is the most easily accepted by the customers and by people in general. That's why total quality control, on the basis of quality improvement, has been beneficial to so many companies and people. That's how I look at this. How do you react to that?

Guarriello: I would totally, totally, agree with that. I wish I could say it as well.

Sharma: The key elements, I think, which are the critical elements of the TQC program which we have tried to emulate from the Japanese companies, the discipline process of prioritizing the customer needs, and the quality cost service, and then showing that there is little variation on a day to day basis, so the control part, and then the continuous improvement.

Some of the sponsors, the continuous improvement in PDCA cycle obviously started in AT&T, the PDCA cycle is the short cycle as Deming used to write. So we are writing to go back to the basic understanding of this —. We have found that very, very useful in making such a large progress in such a short time.

Kondo: Yes, certainly, PDCA cycle has helped further the process, the overall improvement process as such in the long run, can be adopted without.

Activities and Future Aspect of Skilled Empowered Team

We have yet another question regarding people. In Dallas you have skilled empowered team. I have the impression that that team is not necessarily the same as QC circle, and perhaps I have the impression that that team hits the direction toward the future management goals. I would appreciate it very much if you could further elaborate on the activities of such skilled empowered team, as well as the composition of that team.

Guarriello: The team is composed of production workers, and production workers only. And I think it's a step

beyond quality circle, because they certainly discuss issues that would be discussed in quality circles, but it's a step, I believe, beyond quality circles, because this team of people really decides how they will split up the work in a work cell. The work that they will do, they decide when they need overtime, when they don't need overtime. They decide who's going to work on which jobs. And so they have really taken over the job that managers would do, first level managers.

There is a great deal of training involved here for people to understand the roles and responsibilities that they must perform. They are very willing to do this, but they must be trained. They know that their work must be done. I mean, they can all decide to take the week off, but their work must be done. They all understand what has to be done, and they must live within the basic overall union guidelines. But really they are empowered to run their jobs. They are empowered to work with the engineers to put in improvements that they think about, and can conceive in their work flow and routines.

So they are truly empowered to do their jobs.

Kondo: That makes us feel very anxious to see what the future development will be further. It's a great task on the part of the management team to try to continue empowering the empowered team. It's not that once you create an empowered team, the management doesn't have anything to do anymore. So the management, the major of work, the approach vis-a-vis this team on the part of the management may change.

Guarriello: It does. I think the manager now is more, what used to be a manager is now more coach, and can focus on other things to improve the business, and the team can work on actually running the job.

Sharma: The basic concept is that the people who are closest to work can make good decisions provided they are properly trained and educated in the concept, so they are trying to reduce the bureaucracy, empowering the people at the lowest level.

Guarriello: I think that there is another thing. And that is that years ago, we employed supervisors to watch the employees, to make sure they work, and to be really competitive, you need the employees to want to work, you want employees to really want to work, and this is how you become really competitive, because you don't need somebody to watch people to work. They want to work, to do their jobs.

Kondo: I don't think 100% of your employees are skilled and empowered team members. What is the

percentage?

Guarriello: Roughly, now we are up to almost 40%. And increasing, and by the end of, well let me say, by June of 1995 we expect to have 85% to 90% of people on skilled empowered teams. It is really, really moving fast now.

Sharma: Yes, this concept fits with American culture. If they want to take leadership, they want to contribute and make decisions about their jobs. And so once they see the benefit of this, they want us to go faster.

Guarriello: And the thing that is really slowing us down is that we can't train people fast enough.

Kondo: Getting rid of supervisor is one result of such new approach. Certainly that change in your company will change the whole structure of the company, and less number of ranks in the hierarchy.

Guarriello: Fewer levels between the people who work on the floor and the top manager of the factory. So many less levels. Actually, we have reduced many levels already, and we continue to reduce them. I see, in the future, depending on the size of the work group, one person between the factory manager and the people who work on the production line. One person. I must say, though, we're not going to get rid of the supervisors. We're going to use them in other areas of the business, and in terms of what they focus on rather than supervision.

Kondo: Another aspect of the same phenomenon perhaps, I have a question regarding what we see very often in Japan, there is a tendency for employees and workers to acquire different techniques and different skills, and efforts are being made by many companies to train such workers who can do different types of works, and the job rotation system is such as to encourage one worker to be better in several different skill areas. This in turn will give the worker concerned more, better morale, and even better morale not only to work but to live. You have in your country the skilled and empowered team. But in general I still believe that in the United States many companies focus on professionals, there is more professionalism. So do you see any tendency, or not, of companies welcoming employing such workers who have multiple skills? So put it differently, you said that in the vertical direction, you have a smaller number of levels between the top management and the lowest level of workers. What about horizontally? Do you see any tendency toward expanding skill areas of one single worker so that teamwork type of working, of work-sharing, can be made possible to a larger

extent?

Guarriello: We have spent a considerable amount of time talking about this, because obviously, as you reduce levels, you reduce opportunities for people to advance in the organization. And I think, the same as in Japan, we have in these workgroups, we have people who are qualified to do certain jobs, and we keep the record of this, and we put it on boards, but they like to be qualified for more than one job. And we're working to see that people get an opportunity to qualify for whatever jobs they would like to work on. So we're providing training for that, so you can qualify for this job, and then you can qualify for another job. And one of the things that we're working with the national union is a plan that is different from the one we have today. In order to recognize people who can do many different things within the factory, as compared to just a few.

We are, I think, at the forefront of that activity in the United States, and we're working with the national CWA union, the Communication Workers of America, to see and explore what areas we can either reward or compensate people for having the breadth of experience. As a matter of fact, they view this as very important. They view the work that we have done with the skilled empowered teams as very important. And the number man in the CWA, from Washington, came here to Japan with us for the Deming Prize awarding ceremony.

He is in charge of all of the union people in AT&T, so all of the 115,000 union people in AT&T. They view this as very important to their future.

Sharma: From the training point of view, we have two kinds of training. One is called cross-training, which is the training in different job areas, and that is a structure training program, in various systems built up over the past 40 years. Another is a kind of job-enhancement-training. We have this — the job, intense training, to rehearse, doing some work that they would like devoted to the next level, and that's another training program for the benefit of —. So a production worker can be trained in software, if that is the interest. So we're calling this horizontal —.

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JUSE EDUCATION & TRAINING COURSES 1995

★ How to see this table:

name of course/seminar (total days of course/seminar)
location - month to be held (number of classes)

QUALITY CONTROL <QC>

- QC Top Management Course (5 days)
Karuizawa: July (1), Sep. (1), Oct. (1)
- QC Executive Course (5 days)
Hakone: May (1), June (1), Sep. (1) Oct. (1), Mar. (1)
- QC Introductory Course for Executive & Management (3 days)
Osaka: July (1), Feb. (1)
Tokyo: Apr. (1), July (1), Jan. (1)
- QC Middle Management Course (12 days)
Tokyo: Apr.-July (1), Aug.-Nov. (1), Dec.-Mar. (1)
Osaka: Apr.-July (1), Aug.-Nov. (1), Dec.-Mar. (1)
Nagoya: Apr.-July (1)
- QC Basic Course for Assistant to Section Chief (6 days)
Osaka: July-Aug. (1)
Tokyo: June-July (1), Sep.-Oct. (1), Jan.-Feb. (1)
- QC Basic Course (30 days)
Tokyo: Apr.-Sep. (2), Oct.-Mar. (2)
Osaka: Apr.-Sep. (1), Oct.-Mar. (1)
- QC Introductory Course (8 days)
Tokyo: May-June (1), June-July (1), Sep.-Oct. (1), Nov.-Dec. (1), Jan.-Feb. (1)
Osaka: May-June (1), July-Aug. (1), Sep.-Oct. (1)
- QC Introductory Course for Quality Function Deployment (4 days)
Tokyo: Apr.-May (1), June-July (1), Sep.-Oct. (1), Feb.-Mar. (1)
Osaka: Oc.-Nov. (1)
- QC Basic Course for Foreman (6 days)
Tokyo: Apr.-May (1), May-June (1), July-Aug. (1), Aug.-Sep. (1), Sep.-Oct. (1), Oct.-Nov. (1), Nov.-Dec. (1), Jan.-Feb. (1), Feb.-Mar. (1)
Osaka: May-June (1), Oct.-Nov. (1), Nov.-Dec. (1), Feb.-Mar. (1)
Nagoya: May-June (1), Oct.-Nov. (1)
Fukuoka: July-Aug. (1)
- QC Basic Course for Group Leaders (4 days)
Tokyo: Apr.-May (1), May-June (1), July-Aug. (1), Aug.-Sep. (1), Oct.-Nov. (1), Jan.-Feb. (1), Feb.-Mar. (1)
Osaka: Apr. (1), Sep.-Oct. (1), Feb. (1)
Nagoya: June (1)
Fukuoka: Aug.-Sep. (1)
- TQC Instructor Course (6 days)
Tokyo: May-June (1), Sep.-Oct. (1), Nov.-Dec. (1)
- QC Course for Purchasing Department (10 days)
Tokyo: Oct.-Jan. (1)
- QC Introductory Course for Purchasing Department (4 days)
Tokyo: Nov.-Dec. (1)
- QC Course for Sales Department (10 days)
Tokyo: June-Sep. (1)
- QC Introductory Course for Sales Department (4 days)
Tokyo: Oct.-Nov. (1), Feb.-Mar. (1)
Osaka: Apr.-May (1), Sep.-Oct. (1)
- QC Middle Management Course for Seven Management Tools (4 days)
Tokyo: June-July (1)
Osaka: Sep.-Oct. (1)
- Introductory Course for Seven Management Tools for QC (3 days)
Tokyo: Apr. (1), May (1), June (1), July (1), Aug. (1), Sep. (1), Oct. (1), Nov. (1), Jan. (1)
Nagoya: July (1), Oct. (1)
Osaka: Apr. (1), May (1), July (1), Nov. (1)
- Introductory Course for Seven Management Tools for QC for Sales Department (4days)
Tokyo: Apr.-May (1)

- Osaka:* June-July (1)
- QC Course for GMP (Pharmaceutical) (2 or 3 days)
Tokyo: Apr. (1) (Introductory), May (1) (Advanced)
- Policy Management Seminar for TQC (1 days)
Tokyo: May (1), Aug. (1), Nov. (1)
Osaka: Oct. (1)
- Product Planning Seven Tools Seminar (4 days)
Tokyo: Nov.-Dec. (1)

QC CIRCLE <QCC>

- QC Circle Executive Course (1day)
Nagoya: Apr. (1)
- QC Circle Middle Management Course (2 days)
Nagoya: July (1)
Sendai: May (1)
Hiroshima: Sep. (1)
Toyama: Sep. (1)
Osaka: June (1), Dec. (1)
Tokyo: May (1), June (1), Sep. (1), Dec. (1)
Fukuoka: Oct. (1)
- QC Circle Instructor Course (6 days)
Tokyo: Apr.-May (1), June-July (1), Aug.-Sep. (1), Oct. (1), Oct.-Nov. (1), Nov.-Dec. (1), Jan.-Feb. (1)
Osaka: Apr.-May (1), July-Aug. (1), Oct.-Nov. (1), Nov.-Dec. (1)
Nagoya: May-June (1)
Fukuoka: Aug.-Sep. (1)
- QC Circle Leader Course (3 days)
Osaka: Apr. (1), May (2), June (1), July (1), Sep. (1), Oct. (1), Dec. (1), Feb. (1), Mar. (1)
Tokyo: Apr. (3), May (2), June (2), July (3), Aug. (1), Sep. (2), Oct. (2), Nov. (2), Dec. (1), Jan. (1), Feb. (1), Mar. (3)
Nagoya: Apr. (1), July (1), Sep. (1), Dec. (1), Feb. (1)
Sendai: July (1)
Toyama: June (1)
Sapporo: Sep. (1)
Hiroshima: June (1)
Kokura: Oct. (1)
Fukuoka: Apr. (1), Feb. (1)
Okinawa: Jan. (1)
- QC Circle Leader Course for Service · Sales Industries (3days)
Tokyo: June (1)
Osaka: Sep. (1)

RELIABILITY <RE>

- RE Management Course (4 days)
Tokyo: Apr. (1)
- RE Course (15 days)
Tokyo: Sep.-Nov. (1)
- RE Basic Course (4 days)
Tokyo: Apr. (1), May (1), June (1), Oct. (1), Dec. (1)
- RE Six Day Course (6 days)
Osaka: June-July (1)
- RE Seminar on Electronics and Machinery Systems (3 days)
Osaka: Oct. (1)
- RE Course on FMEA-FTA (2 days)
Tokyo: Apr. (1), May (1), July (1), Aug. (1), Oct. (1), Nov. (1), Dec. (1)
Osaka: May (1), July (1), Dec. (1)
Nagoya: June (1)

Hiroshima: Oct. (1)
Fukuoka: May (1)
 RE Course on Design Review (2 or 3 days)
Tokyo: May (2), July (1), Sep. (1), Nov. (1), Dec. (1)
Osaka: May (1), June (1), Oct. (1)
Fukuoka: May (1)
Nagoya: June (1)
Hiroshima: Oct. (1)
 RE Course on Checklists (3 days)
Tokyo: Aug. (1)
 RE Course on Test (3 days)
Tokyo: July (1), Oct. (1)
 RE Course on Failure Analysis (3 days)
Tokyo: June (1), Sep. (1)
 RE Course on Computer Aided Reliability Engineering (3 days)
Tokyo: Apr. (1)

DESIGN OF EXPERIMENT <DE>

DE Tokyo Course (12 days)
Tokyo: Sep.-Nov. (1)
 DE Osaka Course (20 days)
Osaka: May-Aug. (1)
 DE Introductory Course (8 days)
Tokyo: Apr.-May (1), June-July (1), Aug.-Sep.(1), Oct.-Nov. (1)
Osaka: Sep.-Oct. (1), Jan.-Feb. (1)

MULTIVARIATE ANALYSIS <MA>

MA Seminar (7 days)
Osaka: Oct.-Nov. (1)
 MA Advanced Course (4 days)
Tokyo: Oct. (1)
 MA Basic Course (4 days)
Tokyo: June (1), July (1), Aug. (1), Mar. (1)

OPERATIONS RESEARCH <OR>

Corporate Strategy Managers Course (6 days)
Tokyo: June-July (1)
 OR Introductory Course (5 days)
Tokyo: May (1)

INDUSTRIAL ENGINEERING <IE>

IE Seminar (16 days)
Tokyo: June-Oct. (1)
 IE Basic Course for Foreman (6 days)
Tokyo: June-July (1), Oct.-Nov. (1)
Osaka: Aug.-Sep. (1)

MARKETING RESEARCH <MR>

MR Seminar (16 days)
Tokyo: Sep.-Dec. (1)

SOFTWARE PRODUCTION CONTROL <SPC>

SPC Course for Managers (6 days)
Tokyo: June-July (1)
 SPC Course for Engineers (8 days)
Tokyo: May-June (1), Oct.-Nov. (1)
 SPC Basic Course for Managers
Tokyo: Aug. (1), Mar. (1)

SENSORY INSPECTION <SI>

Sensory Inspection Seminar (11 days)
Tokyo: Jan.-Mar. (1)
 Introductory Course for Sensory Inspection Seminar (3 days)
Tokyo: Oct. (1)

PRODUCT LIABILITY <PL>

PL Prevention Introductory Course (3 days)
Tokyo: Apr. (2), Dec. (1)
Osaka: Sep. (1)
 Product Safety Advanced Course for Engineers (2 days)
Tokyo: July (1), Feb. (1)
Osaka: June (1)
 Product Safety Advanced Course for Promoters (2 days)
Tokyo: May (1), Nov. (1)

OTHER MANAGEMENT TECHNIQUES

Statistical Application Seminar for Clinical Test (CT) (7 days)
Tokyo: Oct.-Nov. (1)
 New Finite Element Method Introductory Seminar (NFEM)(3 days)
Tokyo: Sep. (1)
 Finite Element Method Seminar for Fluid Mechanics (FEM) (3 days)
Tokyo: Apr. (1)
 Cost Reduction Seminar (CD) (6 days)
Tokyo: June-July (1), Oct.-Nov. (1)
 VE Basic Course for Foreman (FVE) (5 days)
Tokyo: May-June (1)
 Analytic Hierarchy Process Seminar (2 days)
Tokyo: June (1)
 Logistics System Design Seminar (3 days)
Tokyo: July (1)
 Data Envelopment Analysis Seminar (2 days)
Tokyo: Nov. (1)
 Biostatistical Application Seminar for Pharmaceutical Data (24 days)
*Tokyo:*Apr.-Mar. (1)

1995 Annual Conferences & Symposia

May 25-26:
 Quality Control Spring Conference in Sapporo (for Managers and Staff)
July 6-7:
 The 25th Symposium on Reliability and Maintainability in Tokyo
Sep. 19:
 The 2nd Symposium on Quality Information System in Tokyo
September 19-20:
 The 15th Quality Control Symposium of Software Production in Tokyo
September 11-12:
 The 25th Sensory Inspection Symposium in Tokyo
October 14:
 The Symposium on TQC Research Group in Tokyo
November 4-5:
 The 7th Symposium on Computational Mathematics in Tokyo
November 7:
 The 25th All Japan QC Circle Convention in Tokyo
November 8-10:
 The 34th Foreman Quality Control Conference in Tokyo
November 14:
 The 33rd Top Management Quality Control Conference in Tokyo
November 15-17:
 The 45th Manager & Staff Quality Control Conference in Tokyo
February 27-28:
 The 19th Symposium on Multivariate Analysis in Tokyo
March 12:
 The Symposium on Seven Management Tools for QC in Tokyo
March 14:
 The Symposium on Quality Function Deployment in Tokyo

1995 QC Circle Convention organized by Headquarters

Kyoto: Apr. 13-14
Sapporo: June 8-9
Takayama: Aug. 24-25
Okinawa: Dec. 14-15
Beppu: Feb. 15-16 (1996)

1995 International Convention on QC Circles

Yokohama: Oct. 18-20



**International Convention on
QC Circles 1995 Yokohama
October 18 - 20**

“QC Circles
toward the 21st Century”

at Pacifico Yokohama Conference Center

Oct.17 (Tue)	Pre-Convention Seminar on QC Circle (Option, Yen 30,000)
18 (Wed)	Opening Plenary Session Technical Parallel Session (4 streams)
19 (Thu)	Technical Parallel Session (4 streams) Closing Plenary Session Farawell Dinner (Yen 10,000)
20 (Fri)	Industrial Visits in Tokyo Area (Yen 8,000)
21(Sat) to 26 (Thu)	Post-Convention Industrial Tour (Opetion, Yen 240,000)

Papers will be Presented	Outside of JAPAN	JAPAN
Case Reports of Problem Solving	32	13
Reports of QC Circle Promotion	24	10
FEE for Technical Session		
Yen 35,000/persom (Application before June 30 including Proceedings)		
Yen 40,000/person (Application after July 1 including Proceedings)		
Yen 18,000/person for Speaker (including Proceedings)		

**JUSE
INTERNATIONAL SEMINAR ON TQM
FOR TOP MANAGEMENT**

— ENGLISH COURSE —

Date: June 12 to 22, 1995
Venue: (Seminar) JUSE Higashi-Koengi Annex - 5 days
(Technical Visit) Osaka, Nagoya areas - 4 days

FEE: Yen 800,000/person (Single room)
Above fees include the following:
Lecture text and transportation fees for plant visits, accommodation fees for 12 nights from June 11 to 22, lunches except free time day & refreshments.
These fees do not include dinner for each day.

For both, Contact to : **Union of Japanese Scientists and Engineers (JUSE)**
5-10-11 Sendagaya , Shibuya-ku, Tokyo 151, Japan
Tel: 03-5379-1227 Fax: 03-3225-1813

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