

1991 Deming Prize Winner's Word

INTRODUCING AND IMPLEMENTING JAPANESE TQC

Mr. Y.C.Lo, President of Philips Taiwan

(Interview with Dr. Ikuro Kusaba, Prof. Emeritus, Nagoya Institute of Technology)



Q: Congratulations on your winning the Deming Application Prize 1991.

The people at Philips head office in the Netherlands were said to have different views about TQC from yours. In this interview, we'd

like to know mainly what did you do to prevail over them and obtain their support to your introduction and promotion of Japanese TQC in your company in Taiwan, which has led to the winning of the laurels this year, and what are your future aspirations.

To begin with, we understand that in starting TQC, you wanted to do it in a manner consistent with the national situations and traits in Taiwan and with your specific environments. What was that which gave you most trouble in the course of that effort?

The Background and Development of Introducing CWQI

Lo: When we started discussing Company Wide Quality Improvement (CWQI) at our headquarters in the Netherlands, nobody could deny that the Japanese were doing an excellent job in it. So the headquarters invited specialists in this field to give speeches at our company-wide seminar.

First we held a company-wide conference on CWQI activities at the headquarters. As a result of that, a group of ranking executives from all parts of the world and the top management visited Japan. They were very much impressed with what they saw in Japan. They saw a lot of QCC activities, small improvement activities, teamwork and so forth. How-

ever, they could not see the mechanism behind the scene which was making all these activities happen.

Basically European management still believe more or less in Taylor principle: the staff and manager plan the operators just follow.

I was nominated in 1985 to be in charge of the whole CWQI activities in Philips Taiwan, with the intention to make me the vice president for manufacture and technology in the next year.

At that time, I paid a 10-day visit to Japan. During that time, I visited 10 Deming Prize companies, heard the speeches by Dr. Ishikawa, Mr. Ohba and Prof. Akao about TQC, Just in Time and Quality Functional Deployment. I and my colleagues were much impressed and decided that this was to be the direction we would go.

Impressive Japanese TQC and Determination to Introduce It

Q: Could you elaborate on your good impressions about the Japanese TQC and your determination to introduce it?

Lo: Yes. About the basic difference just mentioned, I regard the old (Taylor) approaches as "inorganic organizational approaches." They are "inorganic" because it is like a computer without intelligence. It can be very powerful. It can do things well once it is programmed well. But once programmed, it stays that way. It has no intelligence to improve or to learn by itself.

On the other hand, the Japanese TQC approach, I believe, is to try to turn the "inorganic" into "organic" approaches because it allows everybody to use his or her brain. Everyone knows his field better than others. In that approach, the top

people know best where the company should go and they show the direction by their top-down policy. The people below know their shop floor best and are able to proceed toward that direction through their bottom-up effort by means of action plans.

These two approaches close the distance between the top and bottom in the organization through catch-ball. The catch-ball process really helps the communications between the different levels. Otherwise, the top and bottom often become polarized, making it impossible for the top thinking to go down and for the ideas and wishes at the bottom to go up.

In addition, TQC also provides for horizontal approach which links up the chain of functions from marketing, development, production to sales and service and orient them to the customers. This helps cross-functional coordination and facilitates anticipating problems systematically for early solution. This not only makes the organization more effective, but it also orients the whole organization to its customers.

An organization that is oriented to its boss may become good or bad depending on whether the boss has provided the right course for it. An organization that is oriented to its customers cannot go wrong as it will devote itself to satisfying its customers' needs, which after all is what an enterprise is for.

So I had a big argument with Western management. The Western management held the view that the Japanese were characteristically obedient, easier to manage and so were good in teamwork.

But I argued that Western management was in fact more autocratic. For, in the West, the top makes a decision or policy and then the bottom begin to argue about how to implement it. This does seem quite democratic. But the fact is that the top decides on a policy first, then the argument about it comes later.

In Japan, however, before they decide on a matter they put it through a catch-ball process for consolidating the different opinions in the organization. After the varied opinions have been consolidated and consensus built up will the matter be made into a policy. Consequently the policy is followed without objection.

But Western people often lose sight of the first half of the whole process. They see only the second half of it and conclude that "Japanese are obedient, easier to manage and so are good in teamwork." Therefore, I think the Japanese process is in effect more democratic in policy making.

After our Japan visit we made a special appointment with Prof. Akao to discuss about policy management and other TQC approaches. I told Prof. Akao that we had decided to go through with this Deming processes. We would try to change our organization and turn around in, I estimated, five years' time. For this we needed help and asked the professor for his

guidance. The difficulties started after we made this decision.

Persuading Philips Head Office for TQC

Q: What were those difficulties?

Lo: First, the Board of Management in the headquarters did not consider our decision in Taiwan to be proper. Philips as a whole already had company-wide quality improvement activities and the Board did not consider it proper for us in Taiwan to follow a different direction. Over a long-distance call they expressed their view and told us to stop and get in line with the company course.

I tried to explain our decision. But it was difficult to do so over the phone. So I went to the headquarters in the Netherlands to explain to them face to face. Still I could not change their minds. The Board had made the decision and it was not to be reversed. While I was convinced that Japanese TQC was the right thing for us and I did not intend to yield.

In the end I proposed a compromise: we would experiment Japanese TQC in Taiwan for a couple of years evaluation, and if it was found to be undesirable at the end of that period we would stop. It would take at least five years for us to challenge the Deming Prize, and so they didn't have to worry about our going too far in the process in a couple of years. They finally consented to this compromise.

Internal Resistance in Taiwan and Its Solution

Q: So with the consent of the headquarters, you started to introduce Japanese TQC in your company?

Lo: Then we faced the second difficulty in our own organization. As an international organization, we have expatriates from different countries. These people at the operation levels did not believe it was the direction we should go. Even the local employees were also reluctant to go along because they felt uneasy about change from their familiar ways. We faced a strong internal resistance.

Since we believed in this intelligent approach, we intended to go on with it. In view of the resistance, I decided not to set up a big TQC promotion office. Traditionally we often leave quality issues to professional people. They do quality control and auditing and control the operation lines. So I decided not to let the TQC Office do these jobs. We set up a TQC Office with only three people.

As to the actual promotion of TQC, I charged our high-level managers with it. I considered quality improvement is the job of the manager. As to the TQC Office, they have to communicate with those managers about CWQI, determine what outside help they need to implement it effectively, and help push for vigorous implementation.

I think an organization is like a sponge. When pressure is applied, it compresses. When released, it springs back absorbing the liquid around it. In our case, the pressure comes from

the top. Under the pressure, the organization becomes desperate and seeks help. The TQC Office provides the help. When the pressure is released, the sponge inflates, absorbing the help provided for it. This is the idea. I want to make our organization feel the necessity to do TQC and seek help when they need it. I want our TQC office to provide such help effectively when it is needed, instead of going around promoting it.

At that time, we had more than 9,000 people in our whole organization. There was not enough time for us to push all these people to go where we want them to go. So I used a method I called "shepherd," which has now become popular in our organization. When you have a big flock of sheep to move to some destination, you cannot do it effectively by pushing them toward it.

You can do it by selecting a few that can and are willing to lead the way, and let them move ahead. For the time being, you don't have to worry about the rest. Because peer pressure will build up in the remaining group. The managers begin to compare. They don't want to be left behind. And they, too, begin to move along the way. During all this, the TQC Office is always there ready to help whenever needed. And gradually this has formed into a mass movement.

Then our local people began to argue: Indeed we have to implement CWQI, but why should we use the Japanese way?

Well, we did not argue about it. We don't ask you to go in any specific way, we said. You have to find out yourselves the way you want to go. TQC is introduced merely to help you determine the way to go. If you have a better way, by all means use it. And we'll look at it at the presidential diagnosis.

At the presidential diagnosis, they liked to brag about the good results they had achieved in their own way. But I refused to hear them. Results were to be discussed at business meeting. I insisted on discussing only about the process during the diagnosis. Why they did it in that way? How they did it? I wanted to know the whole logics behind what they did. If they had better processes than TQC, I had no objection. But they had to prove to me in a logical manner that theirs were superior. For nearly two years we challenged each other in this manner.

In this way we changed the thinking and behavior of our employees. By the third year, we had mastered enough of the policy deployment to check the progress of the action plans against the policy, and the results against the total expectations. So we started to link the results with TQC.

Once the results were linked, they began to see the benefits of the processes. And this has made things easier to do.

Education and Training on SQC Application

Q: Were those the only difficulties you have encountered?

Lo: No. The third difficulty is the lack of local environmental support on TQC methodology, especially in SQC. Yes, we

could rely on the consultants from Japan. But during the intervals of their visits, our people also needed advice on detailed aspects in their learning process.

Fortunately we found some young local professors, U.S.-trained with Ph.D., willing to work on improvement at the shop floor. They come over to help our engineers go through some technical processes and listened to the lectures by our Japanese consultants.

When we organized internal SQC courses they also helped us with the training program. In the beginning we took participants on a voluntary basis. When the trainees finished the courses and passed the strict tests they were given a certificate and a color badge. Now we have made this a required qualification for engineers and it has become a good motivation. New young engineers are very anxious to get this SQC qualification and are proud to have the color badge.

Another difficulty is how to make sure that the TQC activities are thoroughly implemented. The assessment of improvement cases, for example, we rated on the QC stories as they were presented by QC circles and quality teams in the beginning. But soon we found that this was not the right way to ensure creative application of TQC approaches.

So, in addition to good presentation of the improvements, we also began to see how they had done it on the shop floor. So we changed the scores for our QCC conventions, which we hold twice a year in our company. We assigned 20% for the presentation. For the other 80%, the assessment committee go to the shop floor to check every detail of the circle's improvement activities. As a result, the people have become interested, not only in making good presentation, but also in good improvement process as well.

About SQC, we still have to strengthen it. The starting point was difficult. That's why we used qualifying examination and color badge to push engineers to get in to it. We realized that application of SQC is more important and after that we shifted emphasis to practical application. So they began to study the variances and improvement of their process capabilities.

Now we are emphasizing on what we call "expected quality." That is, during the design, they have to specify what kind of quality level they want when the product goes into manufacturing. This has forced them to apply statistical methods and to go into more depth in this field.

Right now we are still in this stage. We want our people to study the variances in the process, to be sure recurrences of problems are prevented and expected quality and cost are achieved.

Do we need to organize a more specialized training course to give our people a higher grade in SQC attainment? We are still thinking about it. We sent some engineers to university to

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1991 WINNERS OF THE DEMING APPLICATION PRIZE — REASONS FOR SELECTION —

Deming Application Prize

NEC KANSAI CO., LTD.

This company was established through the separation of a parts department from New Nippon Electric Co., Ltd., in 1983. Currently, it is capitalized at ¥800 million and has 4,050 employees. Forming the electronic parts sector of the NEC Group, it now produces VLSIs, compound semiconductors, a variety of other semiconductors, and general electronic parts.

Since it introduced TQC in 1984, it has pursued technological upgrading based on the merger of inherent technology and control technology in line with its managerial philosophy of meeting customers' demands, respect for human beings, and emphasis on technology. It strengthened its development and design analysis potential based on the buildup of an advanced analysis system through networking with NEC Corp. and improved design quality through the betterment of its new product development system. Based on such increased capability, the company has developed many new products that lead the industry and has recorded considerable attainments in personnel training and business performance advancement.

NACHI-FUJIKOSHI CORPORATION

This company is a machinery maker capitalized at ¥13.3 billion, and it employs 4,866 workers. It is active in the manufacture and sales of tools, bearings, machine tools, hydraulic machinery and equipment, and industrial robots.

After it introduced TQC, it has been stepping up its efforts to collect information and pushing for the development of new products through positive inter-departmental consultations. It has also been striving to create the workshop setup ensuring top-level product quality (FQ—Fujikoshi Quality—Setup), to reinforce the system for improvement of quality at sources through the use of control technology, and to train its employees. It has attained considerable progress in these fields. As a consequence, great improvement has been achieved in product quality, development potential, productivity, growth potential, and earnings power of the company.

HOKUSHIN INDUSTRIES, INC.

Hokushin is a manufacturer of precise-function rubber products for information equipment, etc. It has a capital of ¥278.3 million and 641 employees. It introduced TQC in 1978 to enhance its corporate strength. In order to achieve its corporate goal of providing inexpensive-but-world-level-quality products under the motto of "Creation and Vitality", it has been promoting TQC throughout the company under the strong leadership of its president. As a result, it has been highly successful in expanding sales and acceptance of orders for new products and reducing the number of customer claims.

Deming Application Prize for Oversea Companies

PHILIPS TAIWAN LTD.

This company is an all-round electronic product manufacturer headquartered in Taipei and capitalized at NT\$22.6 billion. Employing 8,200 workers, it is now the biggest foreign-capital enterprise in Taiwan. Under the adamant determination and strong leadership of its executives, Philips Taiwan introduced Total Quality Control (TQC) from Japan in 1985. Based on the eagerly striving to strengthen functions of quality assurance, new product development, cost control, and delivery time control; to promote policy control and improve its system; and to train its workers. These efforts have born fruit in the form of increased customer satisfaction, cost curtailment, quicker product delivery.

Deming Application Prize for Small Enterprise

SIN'EI INDUSTRIES CO., LTD.

This enterprise is a manufacturer of decorative and functional parts (high-class coating products, highly rust-preventive products, etc.) for automobile bodies. Capitalized at ¥180 million, it employs 512 workers.

Under the guidance of its top leader, the entire company staff has been united in evolving sales, production, and quality

assurance activities with emphasis placed on priority products. As a result, it succeeded in attaining substantial structural reinforcement and upgrading in a short period. As a consequence, it has become possible to improve quality at the design stage. This brought about a continued zero delivery deficiency rate and achievement of both sales and recurring profit goals one year ahead of schedule.

NIIGATA TOPPAN PRINTING CO., LTD.

This company is an industrial printed circuit board manufacturer established by Toppan Printing Co., Ltd. in 1984. Since its establishment, the company has been developing steadily while engaging in the production of printed circuit boards. Capitalized at ¥50 million, it now employs 382 workers.

It introduced TQC in 1986 to establish a quality assurance setup and strengthen corporate composition. After 1987, it adopted through policy control, reinforced its quality assurance system, and strengthened its ability to deal with new technology. As a consequence, the claim ratio gradually declined, and the degree of customer satisfaction was enhanced, causing greater customer reliance on the company and its products. ★

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learn what more we can get for further advancement. For now, however, we have only one grade concentrating on our expected quality and cost.

Future Aspirations: to Share Experience

Q: Thank you very much. You have given us very detailed account of your difficulties. We earnestly hope that there will be more companies like Philips Taiwan in the Southeast Asian countries, as well as in Taiwan. As the same kind of difficulties may occur to such companies in introducing Japanese TQC, we are much interested in your experience so that we may give such companies more pertinent assistance.

Lo: Yes, this is also what we intend to do. Actually we already started doing it. At the invitation of our headquarters in the Netherlands, people of the Rotterdam University have come over to study the whole TQC process in Philips Taiwan to make a case study on it. The case study will be used in the university, and also used by Philips as a management training course at our headquarters for ranking managers of Philips organizations around the world.

Also, I was invited to give a lecture on our TQC experience before the top management conference at our headquarters in the Netherlands last year. I have also received an invitation from American Philips organization to give a speech on TQC at their national conference next May (1992).

JAPAN QUALITY CONTROL MEDAL

AISIN AW CO., LTD.

This company, established in 1969, is a specialized maker of automatic transmissions. Currently, it has a capital of ¥6,480 million and 4,000 employees.

In accordance with its fundamental philosophy of "Quality First", it introduced TQC in 1973. It received the Deming Application Prize in 1977 and the Japan Quality Control Medal in 1982. Subsequently, it has exerted efforts to steadily improve its TQC activities. In particular, it recorded remarkable achievements in improving an integrated quality assurance setup with emphasis placed on new product development as well as research and development. Accordingly, it succeeded in the realization of commercially-attractive automatic transmissions of the highest level in the world, establishment of a production setup matching the globalization of its operation, the raising of a staff rich in creativity and vitality, formation of interdepartment collaboration based on collection of wisdom, and betterment of its research and development network. The basis for its corporate development has been thus solidified.

Externally, Prof. Robert H. Hayes of Harvard University visited us last year and wrote a case study on Quality Functional Deployment of our Monitor Factory. He started to use the case in his MBA course recently and invited our vice president Mr. L.P. Hsu to his course for a discussion with his MBA students last week. They are very much interested in our company because they regard us as a Western-oriented company with Oriental management concept that has adopted Japanese TQC.

And also next month, together with the China Productivity Center and the local Economic Daily News, we are going to hold a one-day seminar to share our TQC experience with local industries in Taiwan.

So, in this way, our TQC experience is being propagated not only within Philips, but also outside our organization.

Q: The talk of your TQC experience was very impressive. I believe your audience will appreciate it very much.

However, in practice, technical transfer is very difficult and cannot go as smoothly as expected. After listening to the TQC experience as you have given, a listener may be deeply impressed but still he has to undergo the same experience himself in order to really understand it.

Nevertheless I hope in concluding this interview that Philips Taiwan will serve as a bellwether in propagating Japanese TQC to the world. ★

PARTICIPANTS ALLOCATION OF JUSE COURSES ON QUALITY CONTROL AND THE RELATED

— from JUSE Statistics of Participants 1990 —

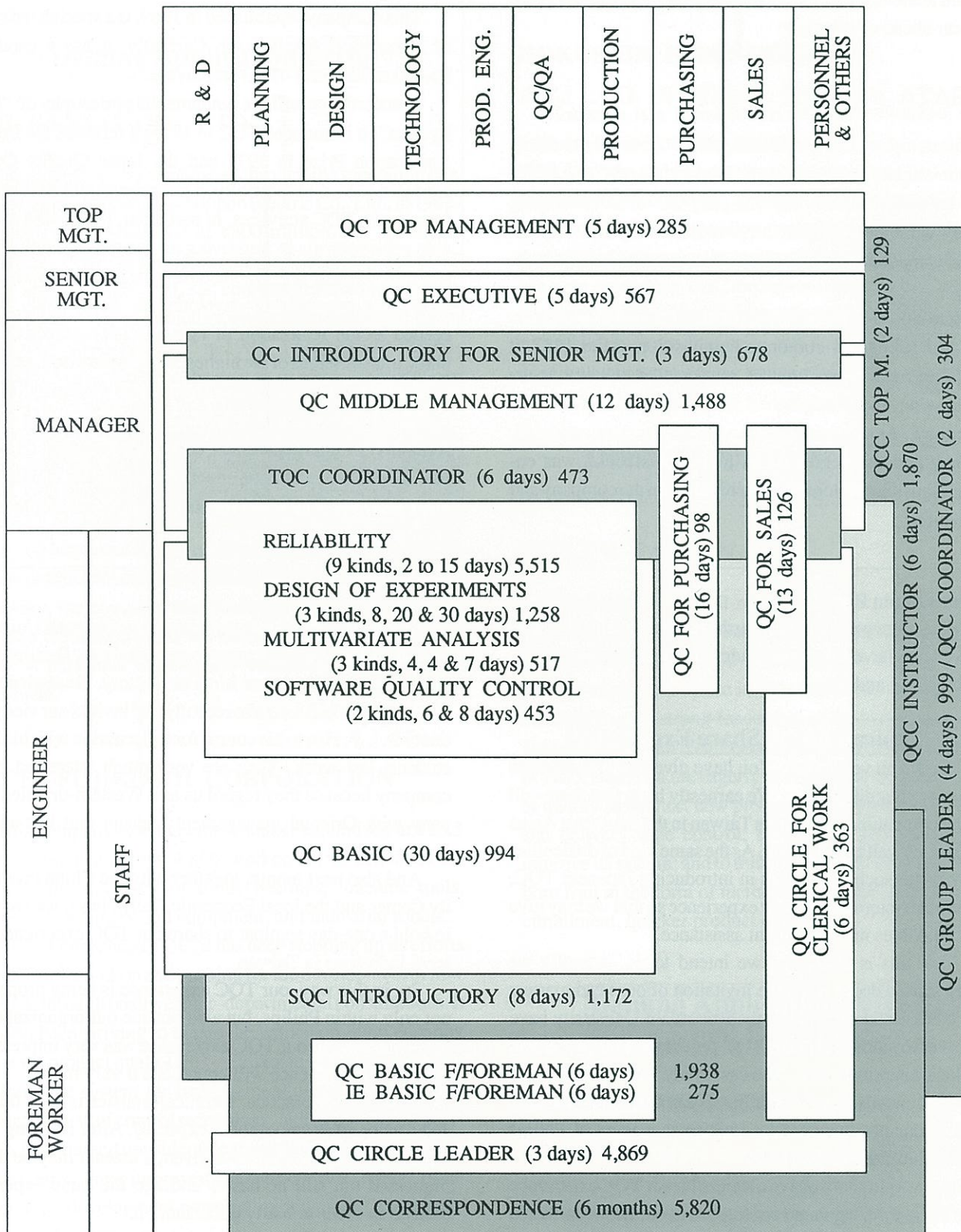
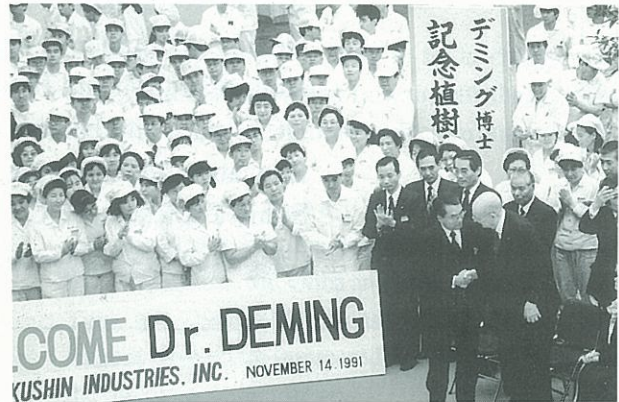


Figure at the end of each course shows total number of participants in 1990 fiscal year respectively.

DR. DEMING IN JAPAN

At the Deming Prize Awarding Ceremony for 1991, Dr. W.E. Deming attended, delivering warm congratulations to the winners of the prize. Dr. Deming's visit was originally scheduled for the previous year, which marked the 40th anniversary of the institution of the Deming Prize, but it was postponed to 1991 for personal reasons. He also delivered an address on the entitled theme at the 29th Top Management Quality Control Conference held prior to the ceremony, giving great impressions on the minds of participants. Thus, despite his age, he delivered a significant lecture that belied his 90 chronological years.



Visit Record of Dr. W.E. Deming

Nov. 8 (Friday):

Arrived at Narita Airport from Washington D.C. by JAL, and lodged at the Palace Hotel in Ohtemachi, Tokyo. He was accompanied by Mrs. Diana Cahill, his second daughter, and Dr. Barbara Lawton, his secretary.

Nov. 10 (Sunday):

Viewed "Noh" performance at the Hosho Noh Theater.

Nov. 11 (Monday):

In the afternoon, gave a lecture at the 29th Top Management Quality Control Conference. Later attended the 1991 Deming Prize Awarding Ceremony and a reception.

Nov. 12 (Tuesday):

Attended a tea party with the winners of the Deming Prize, held at the Palace Hotel.

Nov. 13 (Wednesday):

Attended a dinner party held by the President of the Union of Japanese Scientists and Engineers.

Nov. 14 (Thursday):

Visited Hokushin Industries, Inc. in the afternoon.

Nov. 15 (Friday):

Visited Shizuoka NEC Co., Ltd. in the afternoon.

Nov. 16 (Saturday):

Departed Narita Airport for Washington D.C. by JAL.

JUSE INTERNATIONAL SEMINAR ON TQC FOR SENIOR MANAGEMENT

(A) SPANISH / PORTUGUESE COURSE

Date: April 13 to 18, 1992

Venue: Sendai Chamber of Commerce
and Industry

(B) ENGLISH COURSE

Date: September 28

to October 2, 1992
Venue: Hotel Kowaki-en, Hakone

COURSE CONTENTS

- Concepts and Features of TQC
- Role of Top Management
- Techniques for Quality Management and Control
- Quality Assurance of New Product Development
- Quality Assurance at Production (incl. Pre-production)
- Quality Assurance at Sales and Services
- Administration and Promotion Scheme
- QC Circles and Human Resources Development
- Education and Training
- Some Topics on TQC
- Case Study (Visit Deming Prize Winner Company)

More detailed information can be obtained by writing to:

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