

“INTERNATIONAL MISSION OF TQC”

A lecture to report on being awarded the Deming Prize
(excerpts)

Shoichiro Kobayashi, Chairman of the Board
The Kansai Electric Power, Company, Ltd.

Ten years have passed since we introduced TQC to our company. In retrospect of the path we have followed, we now fully realize how important the international mission of total quality control in fact is.

When in 1983 I met the chairman of the Florida Power & Light Company of the United States, who had come to Japan to attend the US-Japan Summit Meeting on Electric Power, and told him that we had come to grips with TQC, he became deeply interested in it and later introduced it to his company too.

While we concluded an “Agreement for Exchanging Information on Quality Control” with his firm for the purpose of mutually enlightening each other, we gave support to it by sending to Florida some of our staff who were thoroughly vested in TQC. These efforts eventually bore fruit: Last year the Florida Power & Light Company was awarded the Deming Application Prize, marking the first time a company outside Japan ever earned this award.

We were greatly pleased that our good partner had won the prize - it was almost as if we had received this award ourselves. The profound significance that we place on the fact that the Florida Power & Light Company received the prize is that, for example, if an accident occurs in relation to nuclear power today, the problem may have its effects beyond the nation in which it happens. As shown by the Chernobyl melt-down,

such a problem can have far-reaching influence throughout the world and affect the future of nuclear power development, which, in turn, can exert grave effects on the world’s energy supply.

It is therefore vital, above all, that the nuclear power plants in each country cooperate to improve safety. In this context, although there is already an international network system of nuclear power enterprises having information in common, I strongly feel the need to have TQC, which has been painstakingly developed in Japan, shared throughout the world.

As I have explained, we have positively provided corporations based in other countries with valuable data on QC-related results which might be applicable to them horizontally.

As for myself, I have tried to publicize TQC whenever I had an opportunity to speak overseas. When I was given a chance to address a gathering of representatives from the American electric power industry and the opportunity to deliver a lecture at the Royal Swedish Academy of Science and Technology, I placed emphasis on the importance of nuclear power in Japan and the effectiveness of TQC to secure safety.

As a means to solve energy problems in the future, an important point for consideration is the extent to which the rate of energy consumption efficiency can be raised, and this question depends heavily on technological development and quality control. In the coming years it will become increasingly necessary to pursue matters of quality, cost and delivery of energy, and of its adaptability to environment and safety, namely the QCDS of energy, with the united efforts of nations. Performing our part in such efforts, we would like to refine TQC even more and establish a best-mix electric power system. While making the utmost of the results of TQC, we hope to further disseminate this most valuable intangible. ★



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DEMING MEDALIST, 1990

Winner of the Deming Prize for Individual Person

Mr. Shoichiro Kobayashi
Chairman of the Board
The Kansai Electric Power Co., Ltd.

[Reason for Selection]

As an executive who has always pursued quality management, Mr. Shoichiro Kobayashi paid special attention to the accident which occurred at America's Three Mile Island nuclear power plant in 1979. His observations made him feel the necessity of improving the rate of operation among nuclear power stations in Japan and securing their safety. Following this he promoted and developed company-wide quality control by introducing TQC in April 1981. As a result his company was awarded the Deming Application Prize in 1984.

Subsequently Mr. Kobayashi proposed a sixteen year Long-term PDCA Cycle," one calling for four years devoted to each stage of the cycle, and he set forth management policies designed to produce results steadily and effectively.

In 1986 Mr. Kobayashi lectured at the 54th Annual Meeting of the Edison Electric Institute (EEI) concerning management based on TQC and his words have had a significant influence on the world's electric industry ever since.

A survey of the Kansai Electric Power Company's Takahama nuclear power station conducted in 1988 by the Operation Surveillance and Research Team (OSART) organized by the International Atomic Energy Agency (IAEA) and consisting of experts on the operation of nuclear power plants selected from throughout the world, praised the fact that TQC-based activities at the Takahama station had reached the highest level attainable by human beings.

During the same year Mr. Kobayashi lectured at the Royal Swedish Academy of Engineering Sciences (IVA) on the energy situation in Japan under the title "The Significance of Nuclear Power Generation and Securing Safety through Thoroughgoing Quality Control in Japan." On this occasion he was presented with the Axel Axison Johnsson Memorial Medal by the King of Sweden.

As seen by the above, Mr. Shoichiro Kobayashi, who applied TQC to raise the work ratio of nuclear power stations and secure their safety, and advanced long-term management activities based on TQC, has rendered exemplary services to the world's electric industry.

JAPAN QUALITY CONTROL MEDAL

Aisin Seiki Co., Ltd.

Ever since its establishment in 1965 as an important Toyota-affiliated manufacturer of essentially automotive components, Aisin Seiki Co., Ltd., has expanded, enjoying the esteem of its clientele by not only developing many systematized products and system goods in its main field of supplying automotive-related industries, but also by diversifying into new areas of endeavor, building apparel and sewing machines, beds, flush toilets and so on, as well as energy conversion apparatuses and medical equipment. Currently the firm is capitalized at slightly more than 29.4 billion yen and retains some 10,000 employees.

At the time of its establishment, Aisin Seiki made clear its fundamental philosophy "Quality first and Foremost" and introduced TQC. In 1970, in line with a plan called "V75," the firm shifted its quality control from that focusing on the production division to CWQC throughout the organization. Accordingly, Aisin Seiki won the Deming Application Prize in 1972, and the Japan Quality Control Medal in 1977. Following that, the firm improved its TQC based on the spiral method. Now, having been awarded the Japan Quality Control Medal again, Aisin Seiki enjoys the distinction of being the only company to receive the honor twice.

Aisin Seiki has continuously advanced its high-level TQC activities, with the result that the firm has attained excellent business results. The distinct features of the company's TQC activities are:

- 1 Policy Management closely associated with management that maintains unique visions
By envisioning every five years what things should be five years hence, Aisin Seiki has formulated long-term management plans for attaining what was envisioned

and, moreover, developed annual policies based on its management plans throughout each and every corporate department, thereby accomplishing its goals with the efforts of all employees firmly united.

- 2 A system of developing new products and businesses based on comprehensive strategy
As a means to diversify its line of products, the company has introduced system for planning and evaluating goods conducting research to find new and better ways for doing things, and developing technology of a type most corporations will not see until well into the future.
- 3 A consistent quality assurance system by production groups
In order to give its clientele full satisfaction Aisin Seiki has perfected its consistent quality assurance system according to product groups, taking into consideration their salient characteristics, by, for instance introducing the flexible, automatic production system.
- 4 Promotion of Group wide Quality Control TQC throughout the corporate group
As the pivotal firm within the All-Aisin Group, Aisin Seiki has provided guidance and assistance to its nine affiliated companies as well as to a large number of cooperative organizations so that all might actively and effectively promote TQC.

The foregoing stems from a form of leadership displayed by top management who never lose sight of their basic philosophy and aim toward their company's making a valuable contribution to society and the welfare of all its employees, and from the responsive efforts of the entire corporate staff. ★

1990 WINNERS OF THE DEMING APPLICATION PRIZE AND THE QUALITY CONTROL AWARD FOR FACTORY ADJUDGED BY THE DEMING PRIZE COMMITTEE

DEMING APPLICATION PRIZE

Aisin Hoyo Co., Ltd.

Aisin Hoyo Co., Ltd., is a firm which, capitalized at 300 million yen and retaining 983 employees, manufactures automotive engine, drive gear and transmission components. Merging with three other companies, which had introduced TQC, the firm became Hoyo Seiki Co., Ltd., and it was awarded the Deming Application Prize for Small Enterprises in 1985 by promoting TQC on a full-scale basis. On that occasion the company joined the Aisin Group, and its trade name was changed to Aisin Hoyo Co., Ltd.

In an effort to realize plans envisioned for every five years under a management philosophy based on "Quality First and Foremost," the company set forth corporate strategy calling for converting itself from a process-type enterprise dependent on its customers, with concurrent transformation of corporate structure, into a "product-type" organization which could guarantee quality through its entire production process from development to sales. Accordingly the firm has advanced its TQC activities with all employees united toward a common goal of perfection under the powerful leadership of top management.

The major features of Aisin Hoyo's TQC activities are:

- 1 The company has been successful in marketing its products to non-affiliated firms at a higher profit ratio and in becoming independent by perfecting business proposals in writing through client-oriented information gathering and developing highly attractive strategic products.
- 2 The firm's quality assurance system at the upstream stage of processing has been perfected by building quality into each design through the pursuance of superior goals for quality and by conducting thorough-going reviews of design.
- 3 The "recognition line system" aimed at creating production lines capable of guaranteeing flawless merchandise, has spread throughout the company, thus helping forestall the manufacture of inferior products from the very outset.
- 4 Educational activities have been conscientiously and actively conducted for all strata of the company, including evening classes and Saturday study meetings for executives and managers. Also, meetings for presenting the results of efforts to improve have been systematically held on a company-wide basis at the prudent

direction of top corporate management.

As a result, managerial indexes, such as the proceeds of sales, recurring profit, net productivity, etc., have exceeded their targeted value; while visible returns like the number of original and ingenious ideas submitted and the increasing attainment of superior quality goals, plus a sharp reduction in the number of serious quality problems, have surpassed expectations, thus winning the high confidence of customers. This in turn has boosted the morale of all employees. All in all the company is making steady progress in its objective to shift to a "product-type" corporate structure.

Amada Washino Co., Ltd.

Established in 1937 under the name Washino Kogyo, Amada Washino Co., Ltd., concluded a business tieup with Amada in 1979. Two years later it annexed Yodogawa Press Washino. Capitalized at 9.3 billion yen and having a total of some 550 employees, the firm manufactures machine tools and industrial machines.

In 1983 Amada Washino introduced QC circle activities called 3C Drive. When in 1985 management feared that the increasing value of yen might seriously influence corporate performance, it was urged that the firm's quality assurance system be further improved, as the prevailing method was lacking with respect to identifying market needs. As a result in 1985 the company introduced TQC on a full-scale basis for the purpose of building a corporate structure tough enough to survive whatever the change in managerial environment.

Since introducing TQC Amada Washino has formulated long-term management plans with a view to the future and carried out business activities dedicated to the proposition "Quality First and Foremost," while developing corporate goals and letting them percolate all the way to the bottom by sedulously conducting presidential diagnoses under the powerful leadership of top-flight management. Complementing this, in 1989 the firm worked out its third long-term management policy, called "WIN Plan," one designed to successfully complete business activities aimed at attaining higher growth.

Through its TQC activities, Amada Washino has dramatically improved its quality assurance system by creating various devices to prevent claims and failures from recurring, and since 1989 has established a corporate structure capable of fully guaranteeing quality by staging a "Later Processes Are your Customers" campaign on a company-wide basis. As a result, such innovations have worked well to reduce costs for processing claims and the number of errors, and the campaign waged has served to make production preparedness more complete. Moreover, as seen in the firm's steadily increasing sales of new products, many notable results have been achieved in the field of product development.

The distinctive features of Amada Washino's TQC activities are:

- 1 Thoroughly carrying out policy management based on the firm's long-term plan.
- 2 Establishing a quality assurance system mainly consisting of headstream management utilizing quality tables, QA tables and design review (DR); plus strict prevention of recurring failures and claims using QC process tables, failure mode effect analysis (FMEA) of processes, etc.
- 3 Conducting exhaustive quality assurance throughout the company via the "Later Processes Are Your Customers" campaign.
- 4 Improving the development system and strengthening development capabilities.
- 5 Training and educating corporate employees, and activating QC circles.

That these activities have made a valuable contribution to better performance by the company is praiseworthy indeed .

Shizuoka NEC Co., Ltd.

Following all of fifty-five investments by Nippon Electric Co., Ltd. (NEC), and Shin Nippon Electric Co., Ltd. (now NEC Home Electronics Co., Ltd.), Shizuoka NEC Co., Ltd., was established in 1969 as a manufacturing plant producing paging receivers and monochrome TV sets. Later, based on improved production technology and management capabilities, Shizuoka NEC evolved into a corporation which, now capitalized at 400 million yen and employing some 1,350 persons, manufactures communications equipment, including key systems, facsimile machines modems, etc.; and data processing terminals including personal computers, portable terminals and the like.

During intervening years, Shizuoka NEC, in an effort to function as an NEC-advocated C&C business, worked to transform itself from an NEC production firm to an NEC corporation actually engaged in business. However, its quality control system was one that, while striving to eliminate inferior products through examination, placed more importance on results- quite apart from the sort of quality control which lays emphasis on process. With the market environment rapidly diversifying and laboring under inadequate corporate circumstances, NEC Shizuoka felt an urgent need to reduce delivery time and costs to the minimum and realize an unflinching degree of stable quality. Against this background it introduced TQC to rid itself of a corporate structure lacking in a critical, improvement-oriented attitude. That was in 1983. Since then the company has steadily advanced its TQC activities under the powerful leadership of its president, and has consistently stressed the following:

- 1 Promotion and perfection of policy management
- 2 Building quality into design with greater importance on upstream management:
 - (a) Strengthening and expanding design techniques
 - (b) Process management with importance placed on quality improvement

(c) Building and developing automatic production lines on a horizontal basis

Shizuoka NEC's TQC activities have produced the following commendable results:

- 1 The structure of policy management activities has improved remarkably, characterized by critical top management and highly motivated employees throughout the company .
- 2 Quality assurance activities have brought to near-perfection the firm's production stage, improving the quality of new merchandise which is placed on the market.
- 3 With advanced factory automation, as represented by orange lines, total quality control in production lines, has been realized.
- 4 Highly developed technology and advanced management techniques have melded into one as QC-oriented ways of thinking and statistical methods were applied to production systems.
- 5 Being determined to rear employees with talent in industry, NEC Shizuoka has begun to realize its goal to become an independent business-conducting subsidiary of NEC.

It is highly esteemed that, as a result of its efforts, NEC Shizuoka attained remarkable goals with respect to product quality, development ability, productivity, profitability, etc.

THE QUALITY CONTROL AWARD FOR FACTORY

Suntory, Ltd.

Yamanashi Winery

The Suntory Yamanashi Winery occupies the most important position within Suntory's wine division. In 1980 preparations were launched for introduction TQC, and QC circles were established during the same year, with the start of TQC declared in March 1984. Detailed records were made concerning each process of wine production-everything from grape culture to bottling and sales-and efforts were exerted to improve quality via the experimental planning method . In particular, agricultural processes underwent thorough study, and records were kept of all aspects of its environment, naturally including weather conditions. On the basis of such records, the winery strove to improve quality.

Visitors often visit the Yamanashi Winery, and as part of their plan of improvement all employees made it a point to welcome their guests with warm hospitality.

Yamanashi Winery's problem solving method based on SQC, raising the ability to improve, has brought such commendable results as superior quality, increased sales, greater satisfaction among customers, reduced costs, more and better grapes per orchard, and more talented employees.

Altogether it is regarded that Yamanashi Winery's application of TQC techniques to agriculture proved that the result attained will be highly beneficial as regards the improvement of grape-raising in Japan, a nation which unit a little over a century ago had no experience in cultivating this fruit. ★

INTERNATIONALIZATION OF MANAGEMENT

From "Quality Month Text" No.202, 1989, JUSE, pp.29~33

Masayoshi OZAWA

Ex. president, Yamagata NEC Co.



TQC - a thought revolution

We often hear that TQC is a kind of thought revolution. This being the case, companies that plan to introduce TQC should, first of all, thoroughly educate their employees in the art of applying QC methods, then educate supervisors and managers in the significance of QC circle activities, which should include telling them quality control success stories, and finally drum the merits of QC into the heads of top management. In the author's humble opinion, a QC thought revolution comprising three facets has been instilled in management:

• Respect for human dignity
• The principle of considering customers first
• The social function of companies

The basic concept of TQC is to materialize these three thoughts in management undertakings aimed at the pursuit of quality, thereby promoting corporate growth and building an affluent society.

This triplex of basic thought, put to practical use in the realm of Japanese corporate management through TQC activities, has helped improve quality and productivity and served as the driving force behind the nation's recent economic development. But the three, "respect for human dignity," "considering customers first" and "the social function of companies," are not so peculiar to Japan that they cannot be understood in other countries too. Rather they represent fundamental thoughts applicable anywhere in the world.

This triad of thought, aimed at the realization of an affluent society for mankind as a whole, is fully international in concept. The method of quality control by which we pursue materialization of these thoughts is also international, since based on the idea of dispersion management, it seeks to improve quality by reducing dispersion economically, scientifically and rationally.

TQC and management

(1) Management that respects human dignity

Generally speaking, management of yore was arrogant. In wartime and prewar Japan, when nationalism reigned supreme, workers, their feelings disregarded in the name of patriotic duty to the country, were treated as machines or expendables, and it was considered good enough that they merely followed orders. In this manner they were compelled to toil in such strict compliance with written specifications or

work instruction sheets that defects were not remedied even if they were pointed out; they were forced to adhere to specifications or instruction sheets even though fully aware of whatever the defects. As a result they did not receive an opportunity to display the abilities inherent in all human beings and were forever discontented.

With the gradual recognition that, after all, the quality of products depends on the quality of workers and their abilities and will to work, management has come to learn that there is no better way than to encourage employees to do their best and produce premium goods or services by educating them, placing importance on creating a more congenial working environment, and bringing out their latent abilities. In this context education has played a vital role by not only improving the abilities of workers and urging them to do their job to perfection, but also motivating them to challenge more difficult tasks and find their duties more rewarding.

A striking example of this is found QC circle activities. A characteristic of QC circle is that they consist mainly of workers, as opposed to supervisory personnel and they conduct their undertakings within the company independently. In other words, the primary objective of QC circles is for employees to mutually enlighten themselves and one another through their independent activities, thereby helping to bring out the latent abilities of individuals and lead them to enjoy a more satisfying life. Improved worker ability naturally results in a more refined operation and this in turn contributes to better corporate trade. These, however, are the secondary effects. Needless to say, the vast majority of personnel that go to form a company are the workers themselves. Obviously, the higher the level of workers, the more lofty corporate activities become. To that end it is essential to respect the dignity of workers above all else. The fact that management has recently transformed into a type keenly aware of the need for respecting human dignity shows that this concept serves the needs of management very well, and it figured prominently in the QC revolution which many firms have undergone.

(2) Considering the customer first

The process through which enterprises formerly tried to sell new lines of goods was characterized by engineer-oriented product development in which their research and development department devised new functions and novel designs mainly on the basis of technological data. Accordingly, new products of their ilk did not enjoy widespread acceptance. To defend themselves engineers went to great lengths in saying that the consumers were incapable of recognizing the true worth of they worked so hard to create. They all but wept. But the fact

remains that they just forced their merchandise on the market.

Common business sense dictates that products be useful as a commodity. By the same token they are of no use whatever to their manufacturer unless they sell. And to assure sales, merchandise must satisfy the needs of the market. Products which boast of even the highest performance are useless to their makers and a waste of the technology poured into them unless the demands of the market, which often change according to time and place, are firmly grasped, anatomized and met.

Consumer needs are many and varied; they include product function and shape, ease of use, portability, eye appeal and, if intended for interior application how well they suit the place for which intended. It goes on and on.

These are objective qualities. But product qualities of a subjective nature often present the decisive factor for customers when choosing what to buy.

Here, for instance, the customers' taste as regards fashion, cultural flavor, preference for something "different," their sense of values, etc. - all pose important factors contributing to what spells quality in the eyes of the beholder. In most cases reasonable prices and quick delivery figure among the potential buyer's primary concerns. As enterprises desirous of confidence in business, companies must maintain consumer confidence. To that end it becomes essential for firms to render satisfactory pre- and post-sale services to their clientele.

Customers will not be impressed by companies which demand high prices or hesitate sell when goods are in short supply then suddenly grin and offer bargains when their merchandise swells to abundance.

It cannot be stressed too greatly that customers are of the highest importance to companies, and TQC means total quality control aimed at keeping the customers happy. Quality control tells us that it is essential to always understand the needs of the market and develop and offer products in response, make efforts to improve merchandise quality, and render effective post-sale services suited to the life-cycle of whatever was purchased, all on the basis of market ratings of products following their sales. This customer-oriented approach is a new kind of thinking rarely if ever found in earlier forms of management, and it can be called revolution in thought.

(3) Management based on the social function of companies

The management philosophy of most corporations in prewar Japan, not to mention the big mercantile firms of the nation's feudalistic Edo Era (1603-1868), tended to seek prosperity for a single family or clan, and to profit in a self-centered manner. Against this background, employees were treated as so many expendables, while few managers took into account customer satisfaction or thought of contributing to the development of their society. For example, the plight of girls who toiled in mills in ages past are still talked about, and movies or pictures showing the wretched situation to laborers who slaved in coal

or copper mines are seen to this day.

It remains fresh in our memory that, in their eagerness to rake in profits companies have blithely compelled their employees to submit to deplorable working environments and low wages, and unflinchingly discharged pollutive industrial waste into local communities as a means to cut overhead. There is no end to the list of such rapacious firms unwilling to pay necessary expenses. The cases of the minamata disease, the itai-itai disease which broke out along the Jintsu River, and intense smoke pollution in the industrial complexes of Yokkaichi and other cities present lurid testimony of the avarice and heartlessness of big business. Such criminal acts on the part of private industry went uncorrected far too long. Finally, around 1965, the question of environmental destruction and atmospheric pollution was raised, first in the United States. This was followed by a sudden rise of consumer movements which attacked private corporations for their blatant wrongdoing. It took nearly two years for these movements to reach Japan, where people at last decided to do something about companies bent on environmental destruction as a means to profit. Such movements by the populace formed the origin of consumerism in Japan.

Under the circumstances, firms were enjoined to revise their business approach, which had been totally self-centered, to one which took into consideration the consumer, and change direction to a course leading to coexistence and coprosperity with society at leading. It goes without saying that enterprises are depend on the ambient society for needed resources - personnel, materials, money, to name a few - and by providing society with merchandise they net a profit by which to continue production. This being the cycle, it is neither just nor fitting that companies merely profit as a manifestation of greed, as so many of them have always been wont to do. It is about time many management realizes that private enterprise must assume a degree of responsibility as a member of society by returning part of their profits to the people.

Thus it might be said that the rise of consumer movements in the wake of intolerable environmental pollution caused by private enterprise in the pursuit of riches forced a change in thinking among corporate management. As already mentioned, there is universality in quality, not only in the quality of products and services themselves, but also in the quality of what it takes to make them, and in social quality as well. Quality control is what improves universal qualities, and TQC is a movement that not only improves the quality of merchandise through company-wide QC activities; it also improves social quality by disposing of industrial waste scientifically and rationally, thereby contributing to the realization of a more affluent society. TQC, accordingly, through the medium of universality in quality, has brought about a thought revolution which urges management to recognize the responsibility of their enterprise toward society and how they must function within it. ★

1990 DEMING PRIZE WINNERS



From left to right

Mr. K. TOJO, Manager
Yamanashi Winery, Suntory, Ltd.

Mr. K. SONO, President
Amada Washino Co., Ltd.

Mr. S. AIKI, President
Aisin Seiki Co., Ltd.

Mr. S. KOBAYASHI,
Chairman of the Board
The Kansai Electric Power
Company, Ltd.

Mr. S. FUJITA, President
Aisin Hoyo Co., Ltd.

Mr. M. IKAWA, President
Shizuoka NEC Co., Ltd.



Deming Prize Awarding Celebration



JUSE
RELIABILITY AND MAINTAINABILITY
SYMPOSIUM 1991
JUNE 13 - 15, Tokyo

CALL FOR PAPERS

To commemorate the first International Reliability and Maintainability Symposium in Tokyo (1990), the Reliability Committee of JUSE has decided to organize a new International Session within the national symposium, which has been held annually since 1971. The international session is conducted in English.

Due to the advancement of closer international co-operation in manufacturing products, there is a growing demand throughout the world for better reliability and maintainability. The committee hopes this attempt will stimulate engineers and researchers who desire world-wide information exchange on reliability and maintainability.

Your contribution of a papers is cordially invited.

APPLICATION for PAPERS

An abstract of approximately 800 words in English and a short biography should be submitted to the symposium secretariat no later than January 31, 1991. The appending of explanatory charts or figures is encouraged.

All authors will be advised by December 1 whether their paper have been accepted or not. The final papers written in English in the typing format provided by the secretariat should be submitted by March 31, 1991.

Organizer and Secretariat

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JUSE
INTERNATIONAL SEMINARS ON TQC
FOR SENIOR MANAGEMENT

- [A] SPANISH COURSE
(Simultaneous translation of JAPANESE and SPANISH)
August 19 to 24, 1991 Tokyo

- [B] ENGLISH COURSE
(Simultaneous translation of JAPANESE AND ENGLISH)
October 14 to 19, 1991 Tokyo