Chapter 2

Lamenting the Death of Prof. Kaoru Ishikawa: Articles of Condolence in Magazines, Convention Memorandums, and Newspapers, etc.

Hinshitsu Kanri (Statistical Quality Control) Memorial Edition for Prof. Kaoru Ishikawa

Tatsuo Sugimoto

I would now like to give a farewell address for Professor Kaoru Ishikawa.

You were an extraordinary person. A pioneer, leader and promoter of quality control in both academia and the industrial world, not only in Japan but also overseas. Your achievements were outstanding and indisputable, and this has been recognized and validated with the numerous awards you have received. These include the Grant Medal given by the American Society for Quality Control in May 1972, and the Second Class Order of the Sacred Treasure in November 1988, which is the highest honor given to quality control specialists.

You used to tell us that we needed to improve the quality of companies and promote the development of new products through the implementation of TQC, CWQC and GWQC in order to survive through difficult times. You explained that Japanese companies had to commit to transformation, as there were a number of negative factors to contend with. These include international trade conflicts, appreciation of the yen, and the rapid pace of catch-up by newly industrializing economies (NIES), due to some Japanese products being too strong.

Also, as you stated, we have promoted our Japanese concept and practice of quality control in Western developed countries and offered support for revitalization of their economies. In addition to this, we have offered support to developing countries to become stronger. Through the implementation of the QC, each country will be able to compete internationally in product quality through the implementation of QC. This will

lead to the realization of an international division of labor, and, furthermore, promote world peace. You believed that we have been active in the advancement of QC and TQC with the hope that all people in the world will find happiness, and your philosophy in quality control was based on such noble and caring ideals.

I always thought we were a perfect match, as we really got along and understood each other very well, and were very similar in our way of thinking.

Perhaps, it may have been because I was a big fan of yours and was inspired by your thoughts and acts that we thought so alike. In most meetings, I think I often agreed with your opinions and you often did the same.

When I received a request from the business magazine, *President* to select somebody to appear with me in "*Ningenkaiko*" (an article featuring two business people), I suggested you without a second thought. Despite your busy schedule, you found time especially for me and came to the photo shoot for the article at the Sunshine Building in Ikebukuro. The page featuring the photo of us together, wearing big smiles, along with the short article I wrote about us is now a family treasure.

Now I am not able to see your face or hear your voice. You have always been a crucial guiding light in my life, so your passing has left me with a huge emptiness in my heart.

You told me to become a person who does not have to be present in the company, but a person who is indispensable to the company. This became my credo, and I have always tried to follow this, because I have often had to be away from work because of duties related to quality control. I am still working for the same company and proactively engaged in the area of quality control, because of your words, and I will always be eternally grateful to you for this.

We were both very involved in the *Hinshitsu Kanri* (Statistical Quality Control), you as the editor-in-chief, and me as the deputy editor-in-chief, and I remember I had to research and study a lot, in order to write up a planned series of articles on how to conduct quality control in preparation for business expansion overseas. Our company has gone on to advance its business internationally, and I think what I learned from you then has been very helpful in this. I especially try to follow your advice that we should do business according to the national traits and local characteristics of the people in each place, without forcing them to follow the Japanese style.

You actually spoke in a rough-sounding Tokyo dialect so people thought you could be a scary person, but I have never seen you angry even once. You were a person with a broad mind, and I was always amazed by this.

When you acted as a moderator of a meeting, I noticed you paid close attention to

everyone's opinion. However, you were very tactful in the way you could manage to lead the discussion around to your own ideas. I think this worked because you had an excellent theoretical approach and people respected you a great deal.

Though your handwriting was not exactly neat or beautiful, the content you delivered was totally coherent and logical, so it was always very easy for me to proofread your work.

We used to get together for drinks and have heart-to-heart discussions around the table on quality control all night. In this way, you and your protégés, including me, forged a strong bond with each other. We used to make up new expressions for this, such as "*nomunication*" ("*nomu* (drink)" + communication), and "*tsuginashi, okiari*."

You often called us "*Kisama*[†]" when we got to the exciting parts of a *nomunication* session, maybe because you used to be a naval officer. I was surprised at first, but soon I understood that you recognized us as comrades, just like the lyrics in some old songs.

Through such experiences, I must admit that I learned from you different ways to think and act, and this has been very helpful for me in my career.

After suffering a sudden and devastating stroke, you passed away at 7: 56 a.m. on the 16th of April 1989, despite your family's devoted care and the excellent treatment by the medical staff. This was really heartbreaking news to us all.

We are all shocked and in grief, but swear we will continue making efforts to realize your will and continue your legacy.

May your soul rest in peace.

(Former Editor in Chief of *Hinshitsu Kanri* (Statistical Quality Control);
Board Member and Executive Advisor, Former President, Daiwa Seiko)

Note: *Hinshitsu Kanri* (Statistical Quality Control), Vol. 40, No. 8, 1989.

† *Kisama* ("貴様" in Japanese Kanji, the pronoun "kisama") means "you" in English. *Kisama* is a formal expression used by officers of the Imperial Japanese Navy addressing each other. Outside the Navy it was considered a very rough but friendly expression, therefore seldom used. Prof. Ishikawa favored the use of this word among friends even outside the Navy.

Reports of Statistical Application Research, JUSE
"Lamenting the Death of Prof. Ishikawa"

Tadakazu Okuno

The Chief Editor of the Reports of Statistical Application Research, Professor Kaoru Ishikawa, passed away on 16 April, 1989. This is a great loss to the societies pertaining to quality control, and I express my sincere condolence to the bereaved.

In 1949, he and several colleagues begun cooperative activities of the research on quality control, and first established publication of this English reports in 1953. In 1959 he became the Chief Editor succeeding Prof. T. Kawata. He since assumed the charge of the editorial board for 30 years.

After World War II, the introduction of statistical quality control into Japanese industries had great incentive to publication of the Reports. The branch of statistics attracted Japanese statisticians in their early careers with intense motivation.

Ishikawa's most important contribution as the Chief Editor was to help Japanese researchers publish papers in English, so that international scientific societies have come to be fairly informed of Japanese QC activities. His intension has taken shape as increased numbers of papers published in overseas journals by Japanese statisticians. The Reports has also become established as an international publication, which is witnessed with a fair share of overseas contributions.

This Reports was originally intended for publication in Section A of research papers dealing with statistical theories and methods and in Section B of reports on industrial QC activities embracing the original applications of statistical methods, which was promoted especially by Ishikawa. Since the 1970s, Japanese QC activities have entered an enhanced stage, total quality control (TQC) that involves all members of an enterprise from top managers to workers. The TQC activity has had an appreciable impact upon QC overseas. Ishikawa set accordingly up Section C for the reports related to the total quality control activity, the QC Circle activity and the industry-wide application of statistical methods.

His contributions as Chief Editor were all immense. However, they are dwarfed by his pioneering activities in quality control. He engaged personally in the extension of the Japanese quality control overseas. During the 1980s his international activities extended more than 30 countries. He was thus the international figure of the Japanese-style QC activity.

He expressed and believed in:

High quality and economic products are always good for the world.
All men are born good and aspire to improve by study.
QC starts and ends with education.
TQC shall extend all over the world. There will be less trade clashes.

Ishikawa's important deeds may be summarized as follows:

1. The first proposal of the QC Circle activity in 1962.
2. The origination of "Quality Month" in 1960.
3. The organization of various symposia and conferences on QC.

He undertook three times on the chairmanship of the program committees for implementing the International Conferences on Quality Control (ICQC) and the International Convention on QC Circle (ICQCC) held in Japan.

The following commendations were conferred on him.

Deming prize, 1952: Deming Prize Committee, JUSE
Grant Award, 1972: American Society for Quality Control
Shewhart Medal, 1983: American Society for Quality Control
The Second Class Order of the Sacred Treasure, 1988: Japan

(Director& Professor, Science University of Tokyo)

Note: The board of associate editors elected August 1989 Tadakazu Okuno to take over the chief editor. The succeeding chief editor expressed the continued endorsement of the late Editor's policy for the promotion of the international status of the Reports.

QC Circle-Monthly Magazine
"Continuing the Aspirations of the Late Dr. Kaoru Ishikawa, Our Editor"

Tatsuo Sugimoto

Professor Ishikawa had been deeply involved in the area of quality control from its infancy in Japan, exerting himself to promote education, research, development, training, and familiarization of the area. His achievements are prominent and universally recognized.

Among all his achievements, the introduction and promotion of QC Circle

activities is especially laudable as it is an unprecedented and extremely effective quality control method that originated in Japan. This is a company-wide quality control method that is systematically implemented based on corporate management policy. It involves all ranks from all sections in the company, from top management, with the highest level of authority and responsibilities, down to the staff, such as laborers, sales staff, and office workers.

In other words, for the purpose of improving another quality control method, the Taylor System, which he learned in the U.S., Professor Ishikawa established the QC Circle activities to focus on human qualities, rather than just that of a labor force of workers, with excellent knowledge and motivation. According to "The Basic Principles of QC Circle Activities" in " *QC Circle Koryo,* General Principles of the QC Circle " compiled by the QC Circle Headquarters in 1970, the basic philosophy is to:

Utilize human ability and its infinite potential to the utmost

Humanize the workplace by establishing a challenging yet cheerful atmosphere

Contribute to the development and improvement of the organizational system

This is completely based on Professor Ishikawa's ideals, as he used to tell us that focusing on personal qualities means that each individual should do his/her work voluntarily, with self-initiative, at his/her own behest, and with motivation, as well as using his/her brain. Since the establishment of the QC Circle, they have spread remarkably and prospered not only in Japan, but also overseas.

This great pioneer has suddenly and sadly left us and we cannot help but have feelings of devastation and loss.

We must carry on his ideals and further strive to advance QC Circle activities and build up our *QC Circle-monthly magazine*. To realize this, it is crucial to mobilize all of us who promote and implement QC Circle activities, so I would implore you all to work together to make this happen. I sincerely expect that QC Circle activities will become increasingly more important for the future along with other changes, such as automation, systemization, growth in service industries and the international division of labor.

Editor in Chief of *QC Circle*;
Director and Consultant, Daiwa Seiko

Note: *QC Circle-monthly magazine*, No. 327, 1989.

American Society for Quality Control Annual Meeting Toronto, 1989 "Eulogy for the Late Prof. Kaoru Ishikawa" †

William A. J. Golomski

About a month ago, a friend in Japan informed me that Professor Ishikawa had passed away. This was followed by detailed notification from the Union of Japanese Scientists and Engineers. On April 16, 1989, Professor Ishikawa had died of brain hemorrhage. His funeral service was conducted on April 24 at Zojoji Temple in Tokyo. J. Douglas Ekings, Chair of the American Society for Quality Control, represented the Society at the funeral.

Professor Ishikawa was awarded his doctorate in engineering from the University of Tokyo in 1958 in the field of applied chemistry.

What made Professor Ishikawa famous? Is it because he established the concept of customer-vendor relationship within a company? Is it because of his achievements in the sampling of bulk materials? Or, is it because of his creation of the cause and effect diagram which is also known as the Ishikawa Diagram? Professor Ishikawa was one of the very few honorary members of the American Society for Quality Control. He served as the President of the International Academy for Quality and Executive Member of ISO, Japan. Is it because of these posts he held? Of course, these are some of the reasons but in my view, I think more importantly it is because of his great contribution to the improvement of quality, which reduced waste in effort and materials. Thanks to him, we ourselves were able to make improvements year on year. Indeed, it is because Professor Ishikawa knew what was useful to mankind.

After retiring from his professorship at the University of Tokyo in 1976, it might have been better for him to have spent his days in leisurely retirement. However, he went on to teach at the Science University of Tokyo for another two years, during which he also engaged in a wide variety of activities overseas. He used to say that the Japanese people want to express their deep gratitude towards the assistance they received from America after World War II.

Thanks to these activities of Professor Ishikawa, there is less poverty. People are able to recognize problems in their work. Workers have come to take interest in their work. People came to be more dedicated to their work and became more hard-working,

† This article has been translated from the Japanese version back into English, since the original one written in English is missing.

thanks to what Professor Ishikawa said and the methods he taught and employed.

In 1978, Professor Ishikawa left Science University of Tokyo and went onto become the President of Musashi Institute of Technology, the post he served until his death.

Professor Ishikawa was always fully dedicated to his work. For example, when he visited North America, he spared no effort in helping many people. He had a deep knowledge of human behavior and interpersonal relations. His skills and creativity are still imprinted in my memory. We truly appreciate the hospitality he showed us in his home. He was not the kind of person who would say things such as "You don't have to work really hard; you should look good when working." He always tackled hard work head on, as hard work was something that was needed in making Japan achieve the best quality in the world.

Professor Ishikawa would be always remembered for such a great contribution to the practice of Quality Control. I deliberately use the expression Quality Control here. This is the Japanese-style Total Quality Control that he had always spoken about.

Professor Ishikawa travelled around the world, attending conferences on quality. Many of us looked forward to meeting the guru every year.

Together with his family, his university colleagues, and his friends at the Union of Japanese Scientists and Engineers and the Japanese Society for Quality Control, I would like to mourn the death of Professor Ishikawa and at the same time also celebrate the time we were privileged to spend with him.

Because of Professor Ishikawa, we were able to develop. We will have to continue on the path he showed and carry this flag of our development. We will definitely make a success of it.

Let us stand and pray in silence.

Thank you very much.

(President, W.A. Golomski & Associates;
Former President, ASQC; Member, IAQ)

Note: This eulogy was delivered on May 8, 1989 at the start of the opening ceremony of the annual meeting of the American Society for Quality Control held in Toronto. Close to 3,000 participants all stood and paid their respects in silence, a very moving occasion. Mr. Golomski, a prominent figure in the field of quality control in America, was a part-time lecturer at the Chicago Institute of Technology and the Illinois Institute of Technology, and was a close friend of Professor Ishikawa for over three decades.

Hinshitsu (Journal of the Japanese Society for Quality Control) "Lamenting the Death of Prof. Ishikawa"

The Board of Directors
Japanese Society for Quality Control

Professor Kaoru Ishikawa had been convalescing from a bowel operation that he had undergone in January 1988. He had been making gradual recovery but he suddenly suffered a brain hemorrhage and sadly passed away.

Professor Ishikawa had been ill before, just prior to his retirement from the University of Tokyo. On that occasion, he had risen again like a phoenix. For more than a decade after that, he served as President of Musashi Institute of Technology, a demanding post, while also serving the cause of the advancement of quality control and giving guidance in as active a manner as a much younger man. We had hoped that he would again make a similar recovery as before. It is of great regret and grief to us therefore that this did not happen, even with the realization that mortality is our common destiny.

Professor Ishikawa dedicated himself totally to the development of quality control in Japan. With his broad-minded and tolerant approach, he built up the system of quality control in Japan. No one can deny his greatness as a leader and as a professor. "A great star has fallen," as is the saying.

At a time when we are faced with the challenge of implementing even more reforms in quality control, his death is a huge loss to the Japanese industry. We can but lament the fact that death has parted us, no longer allowing us to enjoy his company.

Professor Ishikawa did not care much for verbal discussions. He did not engage in such debates as to what TQC was or what quality assurance was. He sought and found on the actual work place what the company needed, what Japan needed and what the world needed. He put all his findings into practice. He demonstrated as living proof that in quality control, practice should take precedence over theory. Quality control activities, which traditionally had only been technical methods of production control such as control diagrams and sampling inspection, have now become an extremely important part of business activities. Today, from product planning through design, manufacture to after-sales service, all corporate members from top management to ground-level workers all participate in quality related activities. The advancement in quality control brought innovation to conventional business management skills. When we look back at

the tremendous achievements of Professor Ishikawa, those who have to follow in his footsteps feel the immense weight of the duty and responsibility to sustain and develop the work he had undertaken.

Professor Ishikawa was one of the great leaders who fully shouldered the economic reconstruction of Japan after World War II. He had worked tirelessly until his death. We sincerely pray that his soul finds solace in the other world. Professor Ishikawa, please rest in peace. You have worked hard enough.

Note: Hitoshi Kume, *Hinshitsu*, Vol. 19, No. 2, 1989.

Quality Progress (Journal of the American Society for Quality Control) In Memoriam: Dr. Kaoru Ishikawa: Quality Organizer

Ms. Nancy A. Karabatsos

"As I look back on my life with QC, the following becomes my hope and prayer: That QC and QC Circle activities be spread everywhere in the world, that quality all over the world be improved, that cost be lowered, that productivity be increased, that raw materials and energy be saved, that peoples all over the world be happy, and that the world prosper and be peaceful." It was with these words that Kaoru Ishikawa began his landmark book, *What is Total Quality Control? The Japanese Way*, and it is with those words that his students and colleagues will often remember him.

If you have ever used a cause-and-effect diagram (also called a fishbone or Ishikawa diagram), or if you have ever been a part of a Quality Control Circle, then you have had your part in the legacy that Dr. Ishikawa left to people around the world. It was his wish that people at all levels and in all industries could use simple methods to work together on solving problems and removing barriers to improvement, cooperation, and education.

His efforts toward his vision earned him the highest honors: the Deming Prize and the Second Class Order of the Sacred Treasure in Japan, and the Grant Award, Shewhart Medal, and Honorary Member designation from the American Society for Quality Control.

Upon his graduation from the University of Tokyo in 1939, Ishikawa worked

briefly for Nissan Liquid Fuels Co., Ltd. before entering the Japanese Navy as a Special Engineering Officer. He joined the quality control research group of the Union of Japanese Scientists and Engineers (JUSE) in 1949, while simultaneously working as an assistant professor at the University of Tokyo. In *What is Total Quality Control? The Japanese Way*, Ishikawa explained that he had heard of JUSE and wanted to use some of their research materials for his work at the university. "There a Mr. Kenichi Koyanagi, senior managing director of JUSE, insisted that unless I joined the QC research group and became one of its instructors he could not agree to my using their materials. My response was simple: 'How could a beginner become an instructor?' But Mr. Koyanagi was very persuasive: 'We are just beginning, so don't worry.' In this way I was forced to join the QC activities. Once I began studying statistical methods and QC, however, I became fascinated by them. They would definitely contribute to Japan's economic recovery."

Thus, Ishikawa became one of a handful of pioneers in QC activities in Japan. He was involved with most of the quality-related courses offered by JUSE, and also saw to it that quality-related courses were offered for purchasing and sales departments. He quickly received recognition for his work when he won, with the quality control research group, the Deming Prize in 1952.

It was in 1943 that Dr. Ishikawa developed the first cause-and-effect diagram. In his book *Guide to Quality Control*, he explains that he used the diagram to help workers at Kawasaki Steel Works analyze and understand problems. The diagram, which is often called the fishbone diagram because it resembles a fish skeleton, tracks sources of problems caused by materials, methods, machines (equipment), and measurements. It has since spread throughout the world and is routinely used by workers in both manufacturing and service industries.

"QC begins with the interaction of people," he believed, and the most far-reaching result of that particular philosophy is the worldwide use of Quality Control Circle (or Quality Circle). He and his coworkers at JUSE began using the teamwork-oriented concept in the early 1950s. In April 1962, the Japanese journal *Genba To QC-magazine* officially named the concept "*QC Circle*". From then on, Ishikawa was largely responsible, through his publications and personal guidance, for the spread of the circles concept throughout the world.

The spread of circles was as much a surprise to him as it was a boon to those who used the concept. In the book *Quality Control Circles at Work*, Ishikawa said this in an introductory passage: "…the QC movement has also been aided by such distinctive features as the Japanese sense of professionalism, company-based labor unions,

seniority-based wage systems, lifetime employment, Japanese religious traditions, and other factors. Yet these are not essentials. At first, I assumed that any non-Oriental country which did not have a Buddhist/Confucian tradition would be inhospitable to QC Circle activities. Recently, however, I have seen successful QC Circle activity development in over 40 countries worldwide, including a number of Western countries. This has changed my outlook, and forced me to conclude that QC Circle activities can be successfully implemented anywhere in the world with just a little modification to adapt to local conditions. Human nature is the same everywhere in the world, and QC Circle activities are thus applicable anywhere so long as they respect humanity."

Dr. Ishikawa's students and colleagues remember him as a great coordinator and leader who encouraged workers to use simple methods to solve problems. He advocated the use of the so-called seven tools: the cause-and-effect diagram, histogram, check sheet, Pareto chart, control chart, scatter diagram, and graphs. He said these tools could help solve most problems. "It took me 20 years to understand him," says Noriaki Kano of the Science University of Tokyo. "From a student's viewpoint, it wasn't interesting—the seven tools were too easy. But he said you could solve 95% of the problems with them."

Ishikawa is also remembered as a key member of a generation of revolutionaries in Japan's economic history. Yoshio Kondo, a professor emeritus of Kyoto University, says Ishikawa played a crucial role in studying American methods and helping the Japanese adapt them for their own environment. His knowledge inspired his students. Kondo met Dr. Ishikawa at an SQC seminar in 1951. "I was excited—he knew everything," Kondo says.

Finally, Ishikawa will also be remembered as a great coordinator of QC specialists in Japan. He believed that for Japan to receive the most benefit, it was important for specialists to coordinate their efforts rather than stand alone. Noriaki Kano uses the phrase "He drinks both clean and muddy water" to characterize Ishikawa's skills in getting people to cooperate. Clean, he explains, refers to a method or situation that is good or easy. "Other times, things involve political matters or dislike between people." Dr. Ishikawa was a master in both cases.

Ishikawa's colleagues also fondly recall his less serious side. When asked how he remembers Ishikawa, Yoshio Kondo replied, "He liked *Sake*, usually until midnight." Noriaki Kano said, "He's not a sacred man. He's a human among humans."

(Editor of *Quality Progress*, ASQC)

Note: *Quality Progress*, June, 1989.

The Asahi Shimbun (Japanese newspaper): "Father of Japanese QC, the Late Prof. Ishikawa Aimed at Managerial Innovation"

Kaoru Ishikawa, President of Musashi Institute of Technology (Professor Emeritus, the University of Tokyo, and older brother of Rokuro Ishikawa, Chairman of the Japan Chamber of Commerce and Industry), has died. He was the world authority and creator of the concept of Total Quality Control (TQC) in Japan, what turned "Made in Japan" to mean the best quality in the world. Professor Ishikawa contributed to the development of the manufacturing industry by always expounding that the improvement of quality is what leads to cost reduction and that the top management should take lead in QC activities.

The techniques of quality control were introduced into Japan from America straight after World War II. At the time, they constituted only management technology applied to the production floor and methods of control based on the thinking that workers make errors and take short-cuts. Professor Ishikawa, however, had been looking for a system that would suit Japanese culture and ethos. He created the Total Quality Management system which involved the formation of small workplace-based groups or "circles" in which members make proposals on quality control. All members of the company participate in the system.

In 1960, when Nissan Motor Corporation won the Deming Prize, an award for quality control, Professor Ishikawa toured its factory. He became angry when he found that the briefing was left to the staff. He summoned the President, the late Katsuji Kawamata, and the rest of the directors and reprimanded them. This incident illustrates how Professor Ishikawa's TQC was not only a quality control exercise but was aimed at managerial innovation led by the top leadership.

Professor Ishikawa did not mince his words, just like his father, the late Ichiro Ishikawa, who was the first chairman of Keidanren (Japan Business Federation). In 1956 (editor's note: 1958 is the correct year), he said in Washington that QC in America was no good. Professor Hajime Karatsu of Tokai University who was accompanying him recalls that the Americans were truly taken aback, having been poised to teach them some lessons in QC. Professor Ishikawa was the only non-American honorary member of the American Society for Quality Control. Professor Hitoshi Kume of the University of Tokyo, who was his junior at the alma mater said: "He is even more highly rated in America than he is in Japan." (Tuesday, April 18, 1989)

The Yomiuri Shimbun (Japanese newspaper): "World Famous Authority on Quality Control"

Kaoru Ishikawa (President, Musashi Institute of Technology; Professor Emeritus, the University of Tokyo, Industrial Engineering) died from brain hemorrhage, aged 73 on April 16th at 7:56 a.m. at the Chofu Higashiyama Hospital in Chofu City, Tokyo. The funeral service, jointly organized by Musashi Institute of Technology and the Union of Japanese Scientists and Engineers, took place at 2 p.m. on the 24th in the Great Hall of Zojoji Temple (4-7-35, Shiba-koen, Minato-ku, Tokyo). His home address is 2-11-1, Tobitakyu, Chofu City. The representatives of the funeral committee are Shoichi Furuhama, Vice President of Musashi Institute of Technology, and Kohei Suzue, Chairman of the Union of Japanese Scientists and Engineers. The chief mourner is Tadashi Ishikawa, oldest son of the deceased.

Ishikawa was the world authority on the quality control (QC) of industrial products. Shortly after the end of the war, Ishikawa joined the quality control research group of the Union of Japanese Scientists and Engineers (JUSE). While dedicating his effort to the establishment of industrial standards, he advocated TQC (company-wide total quality control). He created the QC Circle head office in JUSE for the purpose of education and diffusion. He visited factories to teach how to run the circles and raised the quality of Japanese manufactured products to the world's top-class level. His QC activities were "exported" to other countries and he was honored for his achievements with such prizes as the Deming Prize and the Eugene L. Grant Award from the American Society for Quality Control. He has many publications to his credit, including *What is Total Quality Control? The Japanese Way* (Originally titled: *TQC towa Nanika*, *Nipponteki Hinshitsu Kanri*).

Kaoru Ishikawa was the oldest son of the late Ichiro Ishikawa, former Chairman of Keidanren (Japan Business Federation). Kiyoshi Ishikawa, President of Mitsubishi Oil Corporation and Rokuro Ishikawa, Chairman of the Japan Chamber of Commerce and Industry are his brothers. Kaoru Ishikawa was awarded the Second Class Order of the Sacred Treasure in November last year. (Monday, April 17, 1989)

Copy of a sutra handwritten by Hiroshi Iijima and his wife Chizuko Iijima, in memory of Professor Ishikawa