

Center for Quality and Productivity Improvement
University of Wisconsin--Madison
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Madison, WI 53705

Report No. 5

MY FIRST TRIP TO JAPAN

Peter R. Scholtes*

February 1986

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PRACTICAL SIGNIFICANCE

Leading Japanese corporations have been extremely successful in developing a new management philosophy, one of whose central tenets is the continuous, never-ending improvement of quality and productivity. In November 1985 the Philadelphia Area Council for Excellence organized a trip to Japan to permit representatives from American industrial, business, and educational organizations to learn about the ways in which leading companies have focused on quality and productivity improvement to meet and exceed customers' needs and expectations. Hoshin management, for example, was being used by these organizations. This report on this most educational trip offers some personal reflections by Peter Scholtes on Japanese society as well as an account of the industries and other places that were visited.

Key Words: Japan, Japanese management, quality improvement, total quality control, Deming Prize, Japanese culture, Hoshin management, study tour, employee participation.

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by
Peter R. Scholtes

On the night of November 20th I celebrated my 47th birthday at a "Bunny Club" in Osaka Japan. With me were about a dozen American businessmen and women and our hosts, two Japanese managers. And, of course, there were a few "bunnies." We didn't meet at the Esquire Club to celebrate my birthday, though celebrate it we did. Nor did we meet to celebrate what was for most of us the last night of a fifteen-day, four-city tour of Japan. That, too, was toasted with sayonaras and Suntori beer. And we didn't go to the "bunny club" for the reason most people go to bunny clubs. We met at the Esquire Club in Osaka, Japan to find out about their Total Quality Control (TQC) program.....honest!

The thirty-eight Americans on the tour represented fourteen different American companies (including Proctor and Gamble, Boeing, General Motors, Kodak, Campbell Soup, and Hewlett Packard) and four colleges or universities (including MIT and University of Wisconsin). The Madison contingent included Brian Joiner, Laurel Joiner, Peter Scholtes, and William Braswell, all of Joiner Associates, Inc., and William Hunter, professor of statistics at the University of Wisconsin.

Our pilgrimage to Japan had two primary purposes: we wanted to visit companies which were practicing TQC and see first hand what they were doing to attain their famed success. Our second purpose was to attend the award ceremony for the annual Deming prize. More about these later. The trip was brilliantly organized and delightfully managed by the Philadelphia Area Council for Excellence (PACE). PACE is a subsidiary of the Greater Philadelphia Area Chamber of Commerce and acts as the promoter of TQC in the Delaware Valley. About half of the tour group consisted of PACE participants.

The tour of Japan exposed us to far more than Japanese business. We also gained a new understanding of, and deep appreciation for, Japanese people and Japanese culture. We learned that it was important to understand who the Japanese are in order to appreciate how they are so successful in the world marketplace. I don't pretend to be an expert on the Japanese after 15 days. But I would like, nevertheless, to share some of the experiences and conclusions which are important to my new understanding of this tiny nation which is profoundly influencing not only the world market, but the very nature of management and organizational science.

Three facets of Japanese culture impressed us as visiting Americans: conservancy, politeness, and meticulous attention to detail.

Conservancy

The Japanese are conservative in the literal, non-political, sense of the word. For instance, there is almost no wasted space. In Chicago, the area under elevated tracks or highways is usually vacant and ugly. In Tokyo that space would be filled with two or three story buildings bustling with restaurants, shops, or offices. The Japanese have ingenious ways of

conserving space and making attractive the space they have. Small plots of vacant land in Japan are used for tiny vegetable gardens, parks or shrines. Unused space in shops or restaurants is decorated or used for storage. Materials are used with care and conservation. While almost anything you buy is wrapped by the storekeeper, the remnants of unusable wrapping paper are saved for note paper. The Japanese are conservative with time as well. Everything from trains to meetings start and end on timeso promptly that if your watch indicates something is late, it is usually your watch which is wrong (and therefore probably not Japanese-made).

Politeness

A second characteristic which struck the American tourists is the extraordinary graciousness and politeness of the Japanese. Everywhere we went we met people whose most important purpose seemed to be pleasing and honoring others. When you stop a Japanese pedestrian to ask directions, they will usually walk with you to your destination, even though they may have been originally heading in the opposite direction. Japanese civilities center around paying honor to others. One does not simply say "good morning" (ohayo gozaimasu), "good-day" (kon-nichiwa), or "thank you" (arigato) in Japan. (These are about the only phrases I learned to say.) Each of these is accompanied by a bow of respect by the speaker which is responded to by a bow from the listener. The greater the joy and respect, the more frequent and deeper are the bows. I have never bowed, nor been bowed to, so much in my life. Whenever one emerged from a hotel elevator, a uniformed attendant was there with a bow and a greeting. Whenever we left a hotel or plant, there would be a lineup of officials and employees bowing and waving to us as we boarded the bus continuing until we disappeared from view. Perhaps the greatest testimony to the Japanese respect for people is the safety one experiences when walking the streets. With a group of thirty-eight tourists, articles such as cameras and bags inevitably were left behind in restaurants or shops. None, however, were ever stolen. Either the lost article remained where it was left, or more often the shopkeeper would run after the owner to return it. We were told that one could walk alone on any street, even in Tokyo, and feel safe. And we did. In the Ginza area of Tokyo I walked in little alleyways that seemed built as a set for a Peter Lorre movie and all I met were friendly people. During the entire 15 days the only instance of ungracious behavior I witnessed was from an American.

Meticulous attention to detail

Everywhere in Japan, there was evidence of thoughtful planning, careful operation and conscientious attention to the presentation and appearance of everyday objects. In Japan things worked well and looked good at the same time. An example: in the subway systems, a traveller pays in proportion to the distance he or she will travel. The color-coded maps in each station are clear enough for a foreigner to determine where they are, where they must go, how much they must pay into an automatic ticket vending machine and where they must stand to catch their train. The stations and trains are litter- and graffiti-free and immaculate (I've been in dirtier hospitals). The traveller stands at a spot marked on the platform and the train always stops so that a door is directly in front of that spot. More examples of orderliness or attention to appearance: fresh flowers everywhere, even in the elevators. Doffing one's shoes and donning slippers. This is not just a quaint Japanese custom. It serves the utilitarian purpose of keeping dirt outside. There were several times in our tours of factories when we were

asked to leave our shoes behind and wear slippers (usually a size or two too small for large American feet). All over the cities and countryside we saw shrubbery carefully placed to prevent soil erosion and carefully sculpted to look attractive. While Japan's cities have among the most traffic-congested streets I've ever seen, there was precious little evidence of automobile accidents. One could survey hundreds of cars before finding even a modest dent, even on taxis. Taxis, by the way, usually have lace doilies on the headrests and the drivers frequently wear white gloves. While the drivers of chartered buses waited for their groups to return they could be seen polishing the outside of their vehicles. This meticulous attention to detail and appearance is so pervasive in Japan, its architecture, its landscapes, its neon signs, its meal and table arrangements... everything, that it can only be explained as a value carefully nurtured in their culture.

Some final observations on Japanese culture and environment.

I came to wonder if the conservancy, politeness, orderliness, and attractiveness of Japan may be somehow related to the density of Japan's population. Japan is about the size of California and even then only a small percent of the land contains the population. (70% of the country consists of mountains and only 10% is arable.) Yet Japan's population is half that of the entire United States! With so many people occupying such a small area, any nation could easily turn mean, chaotic and ugly if its relationships, structures, and procedures were not carefully planned and maintained. I don't know if Japan's culture was formed in response to its congestion. But its culture certainly does help Japan flourish in spite of its congestion.

There are some aspects of Japanese environment and culture in which they cannot take pride. Environmentally, Japan suffers from terrible pollution. Motor vehicle fumes dominate the daytime air. (Covered at night by the smell of food cooking in the thousands of streetside restaurants and in the early morning, giving way to the occasional smell of garbage waiting for pickup.) It is not unusual to see people wearing protective masks when walking outside. We were told that they either had respiratory systems that needed protection from the environment or had colds and were shielding others from their germs. The Japanese educational and career ladder system is terribly competitive. We were told that there are patterns of suicide which can be traced to students not being able to cope with the school's expectations or not being accepted into one of the prestigious universities. There are patterns of suicide among workers who can't live up to the standards of productivity expected of them or who miss out on a promotion within the company in which they will spend their entire life as an employee.

And there is the position of women in Japanese society. In the businesses we visited there were virtually no women in positions of responsibility. (Our tour group, by the way, included six women who had management responsibilities including one who was president of her company.) Women in Japanese companies were very present as service oriented personnel. These were mostly very young women (late teens to mid 20's). We were told that Japanese women seldom continue working after marriage. It just isn't done. And women in Japanese industry provide the cushion against bad times. The companies we visited had lifetime employment for their male workers, but not for women workers. While other measures may be taken to withstand a slump

(for example, cutting salaries and wages across the board, frequently beginning with the top management of the company), the women employees are vulnerable to layoff.

Finally, another aspect of Japanese culture which seems curious in the eyes of a Western visitor is the place of home and family. While their wives stay home, the Japanese businessmen work what are by Western standards inordinately long hours. One of our party trying to arrange an appointment with a Japanese businessman-acquaintance was told, "I'll be in my office Monday through Saturday, 7:30 am to 7:30 pm." This, we were told, was not unusual. After work hours, the downtown areas are filled with groups of businessmen in suits and ties, carrying their briefcases. They sit for hours in bars or restaurants or Pachinko parlors. (Pachinko is a sort of vertical pin-ball machine which appears to be something of a national pastime. Every city we visited had many multi-floor parlors filled with row after row of Pachinko games, almost all of them in use.) When the downtown areas close, usually about 10 or 11 pm, the businessmen, briefcases in hand, make for the subway and, presumably, home. I am hesitant to judge because I don't want to impose Western standards on Japanese customs, and also I don't know what lifestyle is characteristic of the mass of Japanese businessmen. But I am left with a question about when the men whom I observed spend time with their families.

I have dwelt on some characteristics of Japanese society because they appear also to be deeply ingrained in their system of business values. Conservancy, graciousness, attention to detail, and the extraordinary commitment to the job are values which are not commonly found in America. But these societal characteristics appear to be important factors behind the quality of Japanese products and the excellence of Japanese business.

Too much, however, can be made of the role of Japanese culture in their success. As we learned, the successful Japanese companies use very specific approaches to managing their quality improvement efforts. These techniques, skills and processes can be used - and are being used successfully, in other countries with other cultures. And not all Japanese companies are as successful as those we visited. Even with its culture and the widespread use of TQC, Japan's productivity is still somewhat lower than that of the United States, where TQC is not well established and the culture is dramatically different.

Friday 11/08

We arrived at the Imperial Hotel in Tokyo about 6:30 pm (4:30 am Central Standard Time). I had left my home in Madison, WI at 7am on 11/07/ Door-to-door service, therefore, in 21 1/2 hours. The Imperial Hotel is located near the Ginza area which has been described as the Times Square of Tokyo. The center of the Ginza is filled with tall buildings with spectacular neon displays. But there the similarity ends. The Ginza is surrounded with alley-like streets packed with little shops and restaurants. Like Times Square the Ginza is teeming with cars and pedestrians. But the Ginza is clean and absolutely safe.

Saturday and Sunday, 11/09 & 11/10

For our first two full days in Japan we were like regular tourists. We shopped and saw the sights. We visited a Shinto shrine and a Buddhist temple and were told by our guide that most Japanese are both Shinto and Buddhist

because Buddhism focuses on this life while Shinto focuses on the hereafter. The Japanese visit the Shinto shrines on special occasions, many of them associated with rites of passage. Infants are brought to the shrine when they are 100 days old, young girls go to the shrine at age 3, young boys at age 5. One example of Shinto insight: men visit the shrine when they reach age 42. It is considered an age of crisis. The Shinto shrine had a huge board covered with little 3 x 5 inch prayer plaques on which people had written prayers before hanging them on the board. On New Year's Day the plaques are burned in a ceremony. At the Buddhist temple the entrance area was covered with little slips of paper tied to tree branches or the grillwork on the doors. Pilgrims buy a fortune at a booth inside the temple. If the fortune is good, the pilgrim keeps it. If it is bad, he or she gives it back to the gods by tying it somewhere near the temple.

Many of our group took excursions by bus or train to areas outside of Tokyo during this first weekend. Some went to Mount Fuji. Fugi-san, not as gracious as the Japanese people, obscured itself with a cover of clouds until the tour bus was pulling away. The clouds broke and the tourists got to see the spectacular peak from out the rear window of the bus. I went with a small group to Nikko, a beautiful city filled with ancient shrines and temples. Wild monkeys scampered in the hills. It was about a 3 hour train ride from Tokyo. During the ride, I played "making faces" with several Japanese children whose shyness was challenged by their curiosity about a Westerner with a beard. From Nikko we took a bus to Lake Chuzenji and the Kegon Waterfall, Japan's largest. To get to this extraordinarily beautiful area we had to take a white-knuckle ride up a narrow winding mountain road with a kamikaze bus driver who liked to see how close to the edge he could drive without falling off. We took a cab back down.

On Saturday morning (11/9) some of us Wisconsinites had breakfast with Governor Earl who was in Japan trying to woo Japanese industry to the snow belt. We were to find out five days later, at a dinner with some managers from Aisen Seiki, a Toyota supplier, that one of Wisconsin's perceived liabilities is its vulnerability to tornados. The Japanese, it seems, know snow. Tornados, however, are a more mysterious peril.

Dinner Saturday evening, for our entire tour group, was held at Chinza So, a beautiful restaurant surrounded by gardens. Dr. Deming and his daughter, Diana Cahill, joined us. Deming, age 85, was very lively and seemed to have a wonderful time. Also joining us at dinner was Kohei Suzue, the president of the Japanese Union of Science and Engineering (JUSE). For over 35 years JUSE has provided the leadership for Japan's quality movement through its seminars, publications, consulting and award ceremonies such as the Deming Award. JUSE was our host while we were in Japan, arranging for our attendance at the Deming Award Ceremony and helping to arrange our tours of Japanese companies. The people from JUSE treated us very well, with graciousness and great generosity.

Monday, 11/11

We began the work agenda on our first Monday in Japan. This was the day of the 35th Annual Deming Award Ceremony. The ceremony was preceded by a Top Management Quality Control Conference and followed by a banquet. All these events were in the Imperial Hotel.

The theme of the Management Conference was "Internationalism." Internationalism in Japan seemed to be a word used to describe the problem of how to deal with the growing protectionism against Japanese goods, especially in the United States. The conference itself was wide-ranging and the speakers did not all focus on the topic on Internationalism. Some highlights:

- Todahiro Sekimoto, the president of NEC corporation spoke of Internationalism, in his keynote address, under three topics:
 - 1) High Tech Competition. Tracing high tech from the development of the microchip, new fibers, and gene technology in the 1970's, Sekimoto projected the developments he anticipated by the year 2000, such as artificial intelligence. He stressed that these developments must involve the consideration of not only a regional and national economy, but a world economy as well.
 - 2) Quality. Sekimoto traced the quality movement back to the 50's when it involved mostly inspection and manufacturing, to the present emphasis on Total Quality Control. In the future, Sekimoto saw the widening influence of the quality movement to include such areas as the quality of local society.
 - 3) People. Finally Sekimoto emphasized the importance of people and the development of people's talents and creativity in the quality movement. In his conclusion Sekimoto urged the importance of taking action to constantly improve while being sensitive to what's happening in the world around you. "Whether we can summon our heart is the key to success. We must dream and hope. When our dreams and hopes are greater than our anxiety over the future, then we will take action and be successful."

A panel of workers and supervisors involved in Quality Control Circle activities spoke of their efforts at improvements in their various companies. Quality Control Circles (QCC's) are one of the key methods for improvement in Japanese companies. A QCC consists of all the workers in a particular area who meet regularly to study and improve the quality of their work. A recurring theme among these panelists: without the active support and involvement of the top manager and middle managers, the QCC efforts will not be successful. Surveys indicate that managers perceive themselves as much more active than do those who are closer to the QCC's themselves. The QCC panelists said that managers must provide the teams with focus, advice and almost daily encouragement, regular meetings and a good flow of information. Managers, the panelists urged, must learn the same scientific methods used by the QCC members.

Dr. W. Edwards Deming himself gave what was billed as a "special lecture" on the "Foundations for Success of Japanese Industry." In fact, it was a scolding. He told the Japanese managers that they had an obligation to the world to uphold the finest of management techniques. He warned them that they were mistakenly allowing into Japanese companies the use of certain Western Management practices - such as management by objectives (MBO) and performance standards. These practices, Deming warned, are largely

responsible for the failure of Western industry to remain competitive. "Just as a healthy body can be brought down by an infection contracted from outside itself," Deming admonished, "so too can Japanese management - the finest in the world - be infected by poor management practices imported from the West!" Using a blackboard, Deming then applied a statistically-based analysis to demonstrate how performance evaluation was fallacious. Deming's performance was a tour-de-force; vintage Deming: wide-ranging inflections with his deep, booming voice, abrupt changes of pitch and pace, histrionic and profoundly true.

Deming's talk was taped by a Tokyo-based Cable News Network crew. Bits of Deming's talk along with interviews of some of our tour members were telecast the next day on CNN.

We later were given two insights by professor Myron Tribus of MIT, a quality-movement scholar. Tribus helped Rick Ross and Joan Welsch of PACE to plan the Japan tour and Tribus acted as our guide for that part of our tour which focused on Japan's quality movement. Tribus' first point: among this year's winners of the Deming prize was Texas Instruments Japan Limited, an American-owned company which employed the management techniques which Dr. Deming deplored. Thus the scolding. Tribus' second point was on the relationship of Deming with regard to Japanese managers. Deming's role with these managers was analogous to that of the mother in the traditional Japanese family ... the admonisher, the warner, the protector, sometimes the nag. This was the role into which Deming had evolved in his 35-year relationship with Japanese businessmen.

The final speaker at the Top Management Conference was Saburo Ohkita, the former foreign minister of Japan. With surprising candor, he described Japan after it had "lost the war," referring to the time when "the earth of Japan was scorched." Ohkita then described Japan's economic recovery and how it now seems to be paying for its success with the trade restrictions. "Japan didn't destroy the American motorcycle industry, nor the German camera industry, nor anything else," Ohkita said in closing. "They destroyed themselves."

The Deming Award Ceremony itself was pretty tedious, at least for us American visitors, very formal with lots of bowing. During the conference preceding the award ceremony, we had simultaneous translation of the talks and discussion. For the award ceremony, however, there was only Japanese.

After the ceremony we were the guests of JUSE at the award banquet, a lavish affair held in a huge ballroom. It was a stand-up banquet with at least ten different food islands, buffet tables each serving a different variety of Japanese food: Kobe beef, tempura, sushi, sushima, shellfish, barbeque and on and on. Each was delicious. The several bars were free and waitresses in traditional Japanese garb circulated with glasses of wine or anything else they were asked to bring. The heretofore reserved Japanese businessmen relaxed and several who spoke English mingled freely with us. I talked for a long time with 83 year old Dr. Etesan Nishobori who first visited the United States in 1938, the year of my birth. This delightful man was one of the founders of JUSE during the MacArthur occupation and he spoke at length about the early days after the war and how they came to invite Dr. Deming to Japan. He described how one of the keys to Japanese current prosperity, worker participation, was imposed on the Japanese, along with political

democracy. Later we were told the MacArthur administration took as its model for worker participation, the Scanlon Plan, then in vogue in the United States. Dr. Nishobori described how a handful of people worked to get the top industrialists to attend Deming's first lecture in 1950. Myron Tribus described later how no one in that original group of Japanese industrialists believed what Deming was telling them. But because none of them had raised an objection to what Deming was saying during his seminar, they felt honor-bound to go back and put his teaching into practice. Then one or another would report their success in improving quality and productivity and suddenly the quality movement had begun.

During the banquet I mentioned to Dr. Deming that it was refreshing to hear him reprimand Japanese businessmen in the same way that I had heard him reprimand American businessmen. "You liked that, eh?" he said and laughed boisterously.

The Japanese, we learned, are fond of giving and receiving little gifts. For our participation in the Management Conference and the Award Ceremony we each received three gifts: a tie clip with the letters P.D.C.A. on it. The letters stand for Plan, Do, Check, Act, an improvement cycle taught to the Japanese by Deming. We also received a beautiful gold dish and a wallet on which was embossed a replica of the Deming prize medal.

The Company Tours

Beginning on Tuesday, November 12, we toured seven companies in nine days. Before each company visit, Dr. Myron Tribus gave us an orientation to the company and what we might expect to see. After each visit he conducted a debriefing ("information dump," as he called it). In effect Dr. Tribus conducted a bus-ride seminar on TQC and he was as important a learning resource for us as were the company visits. His leadership on our educational odyssey was masterful. Our first company visit required an airplane commute to the city of Komatsu and the company with the same name.

Komatsu

Komatsu is a manufacturer of heavy construction equipment (bulldozers, etc.). The people at Komatsu were quite frank about being in competition with Caterpillar.

In this first visit we were introduced to some factors which turned out to be common to all the companies we visited.

1. Quality is built into the process and the companies constantly strive to make the processes more reliable and more precise.
2. There is a widespread use of a variety of process flow charts to depict the processes by which events have occurred or will occur, the way plans are made and the way work gets done.
3. A substantial amount of time and energy are put into incredibly detailed planning.
4. A substantial amount of time and energy are put into improvement efforts which involve everyone.
5. A substantial amount of time and energy are put into training aimed both at the everyday work and in skills for improvements.
6. Each company spoke of its marketplace as the entire world.

7. A substantial amount of worker involvement, usually in the form of Quality Control Circles.
8. The active, involved, informed leadership of the top manager.
9. In a variety of places throughout the plants there are graphic displays of statistical measures, often in colorful formats which are easy, sometimes even entertaining, to read and understand.

Komatsu, in business since 1921, began its quality program in 1961. In 1964 it won the Deming Award. We visited a machine tool center in their Awazu plant. On the line which we observed, 40 different types of large machines are produced at a rate of 2000 per month. Prior to some improvement efforts in the past few years, it took 13 workers using 44 pieces of equipment covering 2000 square meters of floor space to produce 2000 units per month. Today, after a concentrated effort to improve, they produce the same number of units with 2 employees, 9 pieces of equipment in 800 square meters of space. No workers were laid off with these increased efficiencies. But there is a net reduction in the workforce. For every 100 workers who retire, 70 new employees are hired.

One improvement theme at Komatsu is "fool-proofization." Komatsu has devised many ingenious computerized systems which prevent errors and assure consistency and precision. For example, a unit moving through the assembly line has attached to it a plate with a mag tape inside. It looks like a credit card. At one station where the worker tightens bolts using an impact wrench, the control card is inserted into a computer. This controls the impact wrench so that the bolts are fastened neither too tightly nor too loosely. The computer also counts the number of bolts tightened and signals the worker if any have been missed.

Wednesday, 11/13 Yokogawa Hewlett-Packard

This joint venture with the California-based company began its quality effort in 1974. It won the Deming prize in 1984.

We were greeted by Mr. Sakaota, president of YHP. He described TQC as the studying of work processes using analytical tools and the subsequent taking of corrective actions, based on that study, to control the process. "American managers understand that this is important," Saseota observed, "but they want improvement too fast. The process of studying looks slow and conservative. But without it you cannot be successful."

On our tour of the plant we saw a clean, efficient assembly operation. Workers on wheeled chairs followed the unit along within their work area. We saw evidence of a Kanban or "just-in-time" assembly system where, in each step of the process, the kit of materials needed for assembly at that step is available in sufficient but not excessive quantities. There is no massive inventory of parts waiting for use in the assembly process. This saves storage space and inventory cost. But more importantly it allows for the almost immediate correction of quality problems. In the plant there were ten different areas where the charts and plots of the various QC circles were on display. I asked our guide, a YHP manager, about how working here is different now from the way it was in 1974. "Before, the workers were conservative," he responded. "They resisted changing anything about their jobs. So were many managers. But now the workers are advocates of improvements." I asked what accounted for the transition. "The

leadership of top management," was his reply. We learned that at YHP there are 65 QC circles among its 950 employees.

What has their 10 year improvement effort achieved for YHP?

- The highest profit in all of Hewlett Packard every year since 1980.
- Product failure down by a ratio of 4 to 1, inventory down 70%, shipments up 400% without adding space, new product development time reduced by 30%.

At Yokogawa Hewlett Packard we saw several characteristically Japanese touches:

Breaks were signaled by playing "Ode to Joy" over the loud speaker. During breaks some workers stayed at their work stations and did stretching exercises and aerobics.

In his farewell comments to us, Sakaota said, "TQC is a revolution. As with any revolution you need a leader who will convince people that the change is good, involve them in the change, and support them in their efforts with money and personnel. At YHP," he added, "our managers are selected on the basis of their past contribution to TQC."

In our discussions with Dr. Tribus and the presentations by president Sakaota, our tour group received its first exposure to an element of Japanese planning called Hoshin (pronounced HOE-SHEEN). Hoshin, a word for which there is no English equivalent, represented a major learning for most of us, beginning with our introduction to it by Dr. Tribus and Mr. Sakaota and ongoing encounters with Hoshin throughout the rest of our company tours. Described below is what I understand of Hoshin and the Japanese planning process which emerged from this cumulative exposure which began at YHP.

A Japanese company develops an annual plan through an elaborate process which permits participation throughout the company. Planning begins with its long-term vision (10 years) and short-term vision (3 to 5 years). The vision tells everyone in the company what business they are in, what part of the market they are going after, how the company plans to grow and develop over the long haul...a company definition which informs the definitions of each division and section within the company. Within this context the annual plan is developed.

In constructing the annual plan the top manager reviews the previous year's activities and brings his observations and conclusions to the second tier of managers who develop the first draft of the plan. This first tier of managers discusses this draft with the next tier of managers and then construct a second draft which is widely circulated within the company. From this process emerges certain themes which company personnel agree should be emphasized during the coming year. These themes become the Hoshin.

The Hoshin, therefore, is an annual theme, a strategic plan, a category of improvement breakthrough which everyone in the company will pursue in their own way during the ensuing year. Companies sometimes have two or three Hoshin each year. When the company Hoshin are developed, each division and sub-division and section of the company develops its local version of the company Hoshin.

The Hoshin is different from the American practice of Management By Objectives in some significant ways.

- The Hoshin, as has been stated, is developed through an elaborate participative process.
- The Hoshin sometimes appears as a rather simplistic slogan "Epic-making efficiency of operation" or "Make our plant a model of cleanliness." but behind the slogan is an elaborate strategy in each area which describes how that Hoshin will be achieved.
- The Hoshin is experienced more as a challenge around which each group rallies rather than a standard against which each individual's performance will be evaluated. It is looked forward to with excitement, not dread.
- The pursuit of a Hoshin never displaces attention to produce quality and customer satisfaction.
- When the year is over and the company moves to a new Hoshin, the previous year's Hoshin will have been assimilated into the normal work process. It does not expire like a magazine subscription.

Thursday, 11/14 Aisin Seiki Company

On Thursday morning 11/14 our tour left Tokyo, taking the bullet train to Nagoya. The bullet train ride was amazing in that, though the train achieved speeds of well over 100 mph, one never had the sensation of speed. The ride was quiet and smooth enough that a cup of coffee, set on a small table attached to our chairs, never jiggled.

Our first stop in Nagoya was the Aisen Seiki Company. Aisen Seiki Company is part of the Toyota family. It is partially owned by Toyota and supplies the giant auto maker with parts. We visited the plant which made water pumps (at a rate of 515,000 per month). In 1972 Aisen Seiki won the Deming Prize.

In the morning we heard various presentations on Aisen's management system and quality assurance system. Once again we were struck by the meticulous detail of their planning and the use of widespread participation in the development of plans and the pursuit of quality.

Our afternoon tour of the water pump plant was an amazing experience. Aisen Seiki Company spent five years pursuing a goal of having their plants as clean and attractive as an Ozashiki, the equivalent of a parlor in a Japanese home ... the room always kept clean for company. In spite of its manufacturing operations (drilling, grinding, stamping, etc.), the plant was spotless, no grease, no dust, no filings. Almost every worker had decorated his or her work station with flowers, trees, pictures, clocks, and other appurtenances. Throughout the plant were islands used by the workers for eating lunch, taking breaks, and having QC meetings. These were built and are maintained by the workers themselves and some are quite spectacular with trees, tables, goldfish ponds and fountains. Throughout the plant were the charts and graphs we had come to expect in companies pursuing quality. Each work station had formfit storage for tools, warning systems telling when drills should be changed and systems to assure the reorder of parts when the supply was low. Their Kanban system applied not only to the component on which they were working, but to the drills, etc. which they used in their work.

How did they keep the place so clean? Their three minute clean-up period for each shift, with each worker cleaning up his or her own area, seems inadequate to explain a degree of cleanliness that would make even my mother envious. They appeared to have constructed some dust and filing-collecting apparatus around their machinery. The workers seem to have learned how to prevent dirt and litter in their ordinary work habits.

The effect of such cleanliness is increased quality and productivity. Myron Tribus explained how, in a preventive mode, the absence of dirt and disarray can help avoid missing parts or lost tools or distraction from a worker's concentration. A side effect of Aisen's cleanliness, pointed out by the plant manager, has been increased pride and self-confidence of the workers and supervisors. A series of signs erected Burma Shave-style by workers on the plant floor reads, "We are proud/Of our TQC corner/To the world." The English wasn't elegant, but the message was eloquent. They have every right to be proud. Photographs taken five years ago show that this was a typical grungy plant. Now it's an Ozashiki.

From one of Aisen's speakers we learned about the advanced training given to QC leaders, after they had already received the course on the basic QC tools (histograms, control charts, etc.). Each leader participates in approximately 40 days of training (277 hours) in which he or she first reviews the basic analytical tools for studying work. He or she then receives considerable technical training on the design and construction of electro-mechanical devices so that he or she is capable of redesigning equipment on the shop floor. Each QC leader, in turn, trains the QC members through a 20 hour discussion course. There are other advanced courses and refresher courses available. Each employee at Aisen, we were told, averaged 200 suggestions per year of which about 80% can be handled by a supervisor or foreman. Handling these suggestions is, in fact, one of their major responsibilities. Almost 100% of the suggestions are eventually adopted.

I was one of three tour members who stayed behind to have dinner with three young Aisen managers each of whom spoke excellent English. We learned from them how Hoshin are developed and used, how managers are trained (Toyota has its own technical college), the typical salaries and wages (the average hourly worker makes about \$25,000 per year) and much more. One of our hosts was on a committee to select a plant site in the United States. It was from him that we learned that the chairman of his committee was very concerned about Wisconsin tornados. This young manager knew nothing about tornados and wanted to find out something. So he got hold of the only available resource: his little sister's audio tape of The Wizard of Oz, which he listened to in his car on the way to work.

Friday, 11/5 Toyota

By the time we visited Toyota, the patterns of success were clearly emerging. Once again we found that the president, Mr. Toyoda himself, led the TQC effort and was very knowledgeable about TQC. Once again we saw meticulous planning and widespread worker involvement.

In 1961 Toyota began TQC. In 1965 it won the Deming Prize. At Toyota we heard about TQC applied to sales and administrative processes. The Director of Toyota, Mr. Sekiya, believes TQC can be applied to bring improvements everywhere except perhaps in research.

We learned something about Toyota management systems. In its evaluation of managers, Toyota is more concerned with the processes by which work gets done than by the actual output of work. One should not get credit, Toyota believes, for lucky results. At Toyota one gets guidance and instruction from one's immediate supervisor. The annual evaluation, however, is done by the person above the immediate supervisor and in the evaluation process the supervisor acts as an advocate and shares the evaluation with the employee.

We toured a Toyota plant in the afternoon. We were told that this plant had 5600 workers on two shifts. (An aside on plant safety: there is an average of 4 injuries per year for all of these 5600 workers.) Line workers can, and do, stop the assembly line when there is a quality problem. (A line stoppage is signaled by the playing of music - Bach, Mozart, etc. - a different composition for each part of the assembly line. No blaring horns in these plants, but music which indicates which area may need assistance.)

Saturday, 11/6 - R and R in Kyoto

Toyota was our fifth tour in as many days. We were feeling overwhelmed with a glut of learning and new ideas...over-stimulated with how much progress can be made if a company commits itself to quality. We needed a week-end respite. On Saturday morning 11/16 we took another bullet train to Kyoto, the next city on our journey. Kyoto is an ancient capital city, filled with history and tradition. If Tokyo is Japan's Big Apple, Kyoto is its Boston or Philadelphia. Weekend highlights in Kyoto: more beautiful temples and shrines, a department store where typical TQC-type charts could be seen in the cash register area, a Japanese singing bar, where a laser disk plays musical accompaniment to a song and flashes the lyrics on a video monitor. The bar patrons sing along enthusiastically, taking turns at microphones (complete with echo chamber effects). One problem: of the hundreds of titles listed in the song catalog, only a handful were in English and most of them were dreadful (Now is the Hour-type). But we sure belted out "I Did It My Way" with the other Japanese patrons who seemed delighted by our company.

Our hotel in Kyoto was the Miyako, built into the side of a small mountain. The seventh floor opened onto a beautiful little outdoor garden around a waterfall.

On Monday morning we boarded a chartered bus for our trip to Osaka, the last city on the tour. Before the bus could take off, a hotel employee came out with a few neatly wrapped bundles. These were items which members of our tour had inadvertently left in their rooms. Between the time we left our rooms and boarded the bus, the rooms had been inspected for articles left behind and what was found was wrapped and delivered - a combination of graciousness, efficiency, conservancy, and meticulous attention to detail.

If Tokyo is the Big Apple and Kyoto is Philadelphia, then Osaka is the Chicago of Japan: a busy, brawny industrial center. The first company we visited in Osaka was Suntory Ltd.

Suntory Company

Suntory has about 4700 employees involved in everything from making wine, whiskey, beer and soft drinks to operating restaurants and producing pharmaceutical products. They also manufacture pasta and publish Japan's

edition of the Encyclopedia Britannica. Their world-wide annual sales are \$3.5 billion.

Suntory has an interesting management philosophy: "You never know until you try." As a result, they have not only a wide ranging array of products and service lines, but they have developed a flexible management style which they describe as : "learning from the amoeba." "Amoeba" management involves job rotation among managers which encourages a diversification of skills. The chain of command is not sacrosanct in "Amoeba" management. Communication lines follow whatever path makes sense. They practice joint problem-solving, which involves all employees, using organizational development approaches introduced 16 years ago from the United States.

Throughout Suntory there is the same emphasis on TQC and QC circles which we found in the other companies. In 1984 the president of Suntory, Keizo Saji, introduced company-wide quality control (CWQC) in order to build Suntory as a "young, energetic, sensitive company of the times." CWQC was to stress three approaches:

- Deemphasize the one-man structure and dependence on top management.
- Restructure the organization with small flexible groupings, based on humanism.
- Everyone pursues "merchant mindedness."

Suntory also practices management by Hoshin, constantly strives for the control of routine work and has QC circles (248 in production areas and 34 in administrative areas).

In their two years of CWQC (or TQC) Suntory has undertaken some major activities:

- On-site audits by the president (24 in 1985. He sometimes uses a helicopter to travel from plant to plant.)
- The instruction of top management by Dr. Ishikawa (Japan's TQC guru) himself.
- QC circle leaders take part in the JUSE sponsored annual training cruise.
- A QC conference for the whole corporation.

In their early years of TQC, Suntory has recognized some inadequacies in their approach which they are working to correct:

- Insufficient market-oriented improvement ideas
- Too hasty action (not enough "plan," "do," and "check")
- Too much control through the use of "sense, experience and courage," not enough "through facts."
- Insufficient stratification in their data (they don't examine enough factors to see what accounts for the variation).
- Disregard for process control, in some areas.
- Confusion between the means of QC and the goal of QC. (Their offices are getting overloaded with QC data and activities.)
- Weakness in the application of successful projects to the routine of everyday work.

Suntory showed us a lot of the same breakneck enthusiasm which we have seen in some American companies beginning their quality effort. There was not

the evidence of detailed planning at Suntory that we saw at other Japanese companies. But what Suntory had that the other Japanese companies had (and regrettably few large American corporations have) is a top manager who has very deep understanding of TQC and is personally involved in its implementation.

Tuesday 11/19 Kansai Electric Company

Kansai Electric is a huge power utility which serves the Osaka region. It has 25,000 employees and operates 9 nuclear stations. Kansai won the Deming Award in 1984.

At Kansai we saw extensive planning and active management and worker involvement in TQC activities. Their results have been dramatic:

- Before TQC, Kansai customers would experience many power interruptions some lasting as long as two or three hours. Interruptions in Kansai service are now down to 84 minutes over the entire year.
- Each nuclear power plant has 16 million parts, a complexity which accounts for the difficulty power companies have in maintaining safe reliable service. Kansai's TQC program has made its nine nuclear stations the safest and most reliable in the world. They have virtually eliminated "incidents."

Kansai provides extensive training to its employees. We toured a training center where there are simulators of their various power control operations. Employees learn how to respond to emergencies on real equipment in a simulated setting.

As of October about 18,000 Kansai employees were participating in about 2300 QC circles. Their achievements are truly impressive. But more impressive is the high degree of planning and involvement by the managers. Kansai showed us perhaps the most sophisticated, well-organized TQC system of our entire tour.

Wednesday 11/20 Takenaka Komuten Company

Takenaka was founded in 1610 when it was a builder of shrines, temples and castles. It now has 10,000 employees and builds factories, hotels, and office buildings all over the world. It began its TQC efforts in 1976 and won the Deming Award in 1979.

If Kansai was not the most sophisticated, well-organized TQC system we saw in Japan, then Takenaka was. While Takenaka places great emphasis on QC circles, they emphasize the fact that QC circles are only a small part of the TQC effort. Only 15% of the solutions and improvements come from their 7800+ QC circles. The rest of the improvements result from the efforts of managers at various levels working to make the systems better. For Takenaka, (as with all the companies we visited) TQC is a company-wide management system led by the head of the corporation.

Takenaka (as do the other companies) applies extensive education and training into its TQC effort. "TQC begins with education and ends with education," we heard more than once. Takenaka also involves its over 1300 sub-contractors in its education and QC circle activities.

We toured a Takenaka construction site in the afternoon, a hotel in downtown Osaka being built for the Hilton organization. On every floor we saw detailed charts showing how close to schedule various activities are. Plans are displayed by months, weeks, and days. Checklists and schedules are displayed for each floor of the building and each room on each floor. In the construction site office across the street from the building, we heard a presentation from Mr. Monura, a construction steel-worker who wore tan knickers which is the typical street laborer's garb in Japan. His enthusiasm was contagious while he described the work of his QC circle.

Conclusion

After this last tour we regrouped at the hotel for our farewell reception where we heaped deserving praise on those who organized the trip: Joan Welsch and Rick Ross of PACE, and our guide and teacher Myron Tribus who added immeasurably to our understanding of Japanese business practices. We also thanked and bid good-bye to those who helped along the way as translators or hosts.

After the reception we went looking for a bunny club, part of a chain, the president of which, we were told, was "QC crazy." There we could find bunnies who had charts, graphs, plots, and diagrams ... all the symptoms of TQC.

We found the bunny club. In what had to be the most unconventional presentation of our entire trip, we were shown fishbone diagrams and other plots and charts by waitresses who were members of QC circles. On uniforms that had little room for decoration, they wore a button with the "Q" logo of the TQC movement in Japan. They said they liked TQC; it made them proud of their work. The unanimous conclusion of our group, as we left the Esquire Club: TQC is appropriate for any organization anywhere and it can work successfully especially if top management is "QC crazy."