

HOW JAPAN ABSORBED AMERICAN MANAGEMENT METHODS

About the author

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Preface

The first developing nation in modern times may be said to be Japan. Although others are said to have followed, the meaning of Japan's production for today's developing nations, there are many lessons which may be learned either directly or by comparison, from Japan's modernization. There are many lessons which may be learned from Japan's modernization in the field of management, and it is the purpose of this book to bring the management aspects of Japan's modernization to the attention of the management community in the United States.

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Preface

The first developing nation of modern times may be said to be Japan. Although scholars are not in full agreement over the meaning of Japan's modernization for today's developing nations, there are nevertheless many lessons which may be learned, either directly or by comparison, from Japan's modernization. This, we may believe, contributes to the steady increase in Japanese interest in aiding the developing nations, an interest which has become steadily stronger with the postwar growth and development of the Japanese economy. Although an island nation, Japan can no longer survive in isolation from other countries in Asia and elsewhere in the world, as was attempted in pre-modern times. Japan must continue to share its knowledge and experience, particularly with the other nations of Asia.

In management as in technology, Japan has much to share. This publication is meant to share the experiences accumulated by Japan over the span of a century, with particular reference to the modernization of management and the profound American influence in that process. It probes the cultural influences which still are present, and traces the sequence of modernization. As prepared by the author, a man who has himself made a great contribution to the modernization of management, this publication is valuable in spite of its length because it explains many essential aspects of different topics as they pertain to management in Japan. It will be useful to those whose interests in Japan involve economic growth, industrial growth and modernization, and also more specific subjects which require information as given here as basic or background information. For those particularly interested in learning about Japan, it should be considered as an analytic narrative, not a manual to be imitated; indeed, some of the reforms were directly brought about by defeat in war. It records an important part of Japan's development and is an important contribution in that regard.

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The Opening of Japan's Modern Age

Japan is a nation of a homogeneous people, speaking one language, which has existed and developed for two millenia on several Pacific islands without ever having suffered invasion by a foreign nation. For about two centuries, from 1639 to 1854, this insular country abstained from foreign intercourse. Previously, Japan had enjoyed an absorption of culture from India, China, Korea, and even Holland, but during those two centuries, such ties were all but completely eradicated, and Japan, entirely by her own efforts, developed a *sui generis* culture, a number of aspects of which, such as noh, zen, woodblock prints and gardens, have become well known in the West.

However, since the Japanese people received no information from abroad during those generations of self-imposed isolation, their vision became limited, their sense of adventure atrophied, and they shut themselves up within the comforting confines of their stable islands. Japan was almost wholly excluded from the main stream of the world, the development of Europe.

As philosopher Tetsuro Watsuji has noted:

"Japan's seventeenth century shows creative activity in every aspect of culture. That activity was by no means weak, but if contemporary European culture had been included within the range of vision of the Japanese as they worked, they would have produced a culture which would exert influence upon us all this very day. . . The great capacity of the Japanese to overthrow tradition is such as to be the equal of the liberal thinkers of the West. Therefore (assuming Japan not to be isolated from the rest of the world) if there had appeared a situation wherein the majority of the Japanese wished to convert to Christianity, there would probably be more people eager to take up the ideas of Bruno, which the Church had outlawed, or the theories of Galileo, which were attacked during the Inquisition, than there were in Europe."

But, during the interval of isolation, British Puritans crossed the Atlantic to the shores of the New World, penetrated further and further westward, opened up the country for settlement, until they finally reached the Pacific waters which separate the United States from Japan. Later, when the two centuries of Japan's

isolation ended, and intercourse with foreign nations was resumed, the first treaty of friendship signed with a foreign nation was that between the Tokugawa Bakufu government and the United States, represented by Commodore Matthew Perry, in 1854. But in historical perspective I do not think that it was a sudden occurrence.

Since the restoration of the Emperor Meiji and the termination of Tokugawa Bakufu rule in 1868, Japan has absorbed Western culture, at times even showing covetousness in doing so. Her first reaction was first to recover from the two centuries' lag which had accumulated and later to catch up as soon as possible to the levels attained by Western countries. Postwar efforts to recover from the technological retardation caused by the Second World War may be said to be nothing other than a Second Restoration, a reoccurrence of the efforts at Europeanization which had been made by the Meiji Government. But the adoption of Western culture during the Meiji Period had taken quite some time. There is no comparison between the blank slate of two centuries and the few years lost during wartime.

After the opening of Japan to the West, some thirty to forty years were required for Western culture to be absorbed. Leading countries were selected to be the source of learning for every field, either for the military or for civilian technology. At times, another country was substituted for the country first chosen. Most of the initial choice fell to the English, and among the foreigners hired by the Meiji Government to come to Japan to teach and work were many Englishmen. In banking, for example, the name of Allan Shand shines brightly; he was the man who laid the foundation for commercial banking in Japan. A fellow Briton, Josiah Conder, was responsible for many of the outstanding buildings of the period, being the first teacher of Western architecture in Japan. Cotton spinning, so important to the economic development of Meiji Japan, was learned from an Englishman. And it was a Scotchman who built the first modern shipyards in Japan, at Nagasaki, and introduced not only shipbuilding techniques but also Western bookkeeping methods to Japan. At the same time, the shipyards at Yokosuka were built under the direction of a group of Frenchmen, who also supervised shipbuilding operations. The Tomioka Spinning Company, well-known in Japan as the first mechanized silk thread factory,

similarly profited from the instruction of a French engineer.¹ Further, modern porcelain manufacturing, and chemical industries, were first developed for Japan by a German technical expert and excellent teacher, Dr. Gottfried Wagner.

Samuel Smiles, of Great Britain, was the man who was most intellectually instructive, his "Self Help" having appeared in translation early in the Meiji Period, to be read widely by a highly literate populace bent on building a modern nation. In addition, the first civil code in Japan owes its origin to an outstanding French jurist, Gustave Emile Boissonade de Fontarabie. Public law felt the influence of the German, Hermann Roesler, early in the Meiji Period, and the Meiji Constitution owes much to a draft constitution he prepared. He also provided drafts which were made into the commercial code. Looking back, all of these people were outstanding in their respective fields in Europe, and we must acclaim the good fortune newly-born Japan enjoyed through their endeavors.

Confucian Morality

Throughout Japan's isolation, the spiritual traditions which became established among the people, under the aegis of Tokugawa feudalism, were those of Buddhism and Confucianism, the latter, in Japan, referred to as Neo-Confucianism by historians. In particular, the code of conduct during that period for the ruling class, the warriors or samurai, was Confucian morality, while Buddhist beliefs continued to be popular among the general populace. Ability to read and write became extremely widespread, largely due to the influence of religion. This stood Japan in good stead when, after the country was opened to the West, European and American ways of doing things as well as the many Western things themselves, were eagerly sought after by Japan. The class stratification of society of the past was shucked off, and freedom of choice of occupation was guaranteed, while the ethos, and as

¹ The Tomioka reeling mill was established in 1870 with the assistance of the French engineer Bruner, who had been introduced to Eiichi Shibusawa, then a Finance Ministry official. The mill was meant to be more of a model factory than a profit-making enterprise. After it was opened in 1872, it functioned well as an educational institution, attracting interest from all quarters and stimulating construction of mechanized mills. Tomioka, Gumma Prefecture, had been selected because of the area's prominence in sericulture, and although the mill had produced fine quality silk, in 1880 it was liquidated and its assets sold to a private enterprise. The mill was staffed by daughters of samurai families which had, in large numbers, turned to business after the disestablishment of the class, and privileges, of the samurai.

mentioned above, the spiritual traditions, of the populace were transmitted intact from the feudal age.

Confucianism, being a moral system transmitted to Japan from China, and further developed in Japan, comprises stoic rules for conduct which have filial piety—which found sympathetic reception in Japan—at their core. Buddhism, while being a popular religion valuing compassion and promising a future paradise, also includes the Zen Sect, which received considerable development in Japan, and which stresses a rigid self-enlightenment idealism. Together, Confucianism and Zen Buddhism provided the spiritual structure of the samurai, who vilified the use of money as being beneath them, and who revered the aesthetic principle of *yugen*.²

Because all of the new bureaucrats who guided the new post-restoration government came from the ranks of middle-or lower-level samurai, it was inevitable that the men at the core of the Meiji Government held to the standards of this spiritual structure. Of course, these same men then journeyed to Europe and the United States, and after absorbing all they could of Western civilization, they returned home, to feverishly seek to transform Japan into a land of “civilization and enlightenment,” and the actual accomplishments of their efforts remain most remarkable. Those new bureaucrats, who had been brought up on a regimen of Confucian morality, even having secured the locus of power, did not stoop to the level of corruption which has spread and is now entrenched in many parts of the Orient. If such an act had been exposed, no matter how high the person in question might be, he would have suffered from strong censure of public opinion, and would not have been able to retain his post.

Fukuzawa and Shibusawa

Concerning the advancement of the Meiji Restoration, there was a problem in the confrontation with this Confucian spiritual structure, or of reinterpreting it to bring it within the scope of the activities of a new age.

Two men of the Meiji Period in particular stand out in the foreground of what became of this problem: Yukichi Fukuzawa and Eiichi Shibusawa.

² *Yugen* is an important aesthetic principle which has achieved greatest expression in literature — especially poetry — and the *noh* drama.

Fukuzawa resolutely strode forward to confront Confucianism. Free competition, he held, was the principle behind Occidental civilization and society. This free competition, as in a feudal society, was not a matter of a scramble after wealth, but of one in which each man creates wealth through his own enterprise; thus promoting the well-being of the entire society. Therefore, the profit motive did not contradict fidelity but rather conformed to it. He fiercely attacked Confucianism's valuing fidelity over wealth as being a morality which did not match the times.

Shibusawa contended that in Confucius' “*Analects*” there were some matters which did not match the times, but also some matters which did. That which did not match the conditions and requirements of Meiji Japan, he argued, should be re-interpreted so that it would. For example, in the “*Analects*,” riches are presented as being contradictory to the Way, and Shibusawa advocated that “riches,” which people wish to have, should be interpreted as “things of value” and that if the ability of the populace to seek and to obtain such riches were to be developed, it would result in the enrichment of the nation.³ “As a means of enriching the nation,” Fukuzawa wrote, “there are no special methods other than each person's seeking gain; it is nothing other than each person's and each family's becoming richer,” and thus he was in sympathy with Shibusawa.

Such is the thinking concerning the relationship between the individual and the state which we may find in the contributions of Fukuzawa and Shibusawa. Private citizens such as these men, with the Meiji bureaucrats, placed economics at the core of the problem of how to “enrich the country,” and while the manner of thinking on this at first developed with a Confucian background, one cannot overlook the argumentative power of these men's beliefs, which met no resistance in being accepted by the entire nation. This, then, became a characteristic of Japan's nationalism. And, further, it gave buoyancy to Japan's efforts, as a homogeneous “developing nation,” in bridging the gap caused by isolation from the rest of the world.

³ In his capacities as an official of the Finance Ministry and also as a private citizen, Shibusawa was involved in many enterprises, including the Tomioka mill.

Emergence of Enterprises

Confucian ideologies gave way to monarchism (a contribution of the Mito clan which was very important in Tokugawa times), the very foundations of the Bakufu system were shaken, and in the seas surrounding Japan, European warships made their appearance in the wake of Perry's ships — and conditions became more and more to be in favor of opening the country. The Bakufu yielded to external and internal pressure and headed toward opening of the country, but aristocrats and lower-level samurai of the Satsuma and Choshu clans sought to topple the Bakufu, rallying under the common banner of "expelling the foreigners and revering the emperor" and rising in armed might against the Bakufu. However, at last, even they fell under the influence of the farsightedness of Ryuma Sakamoto, from Tosa, who realized the impossibility of opposing the foreign gunships. The Bakufu, and the clan system, yielded to espousal of reversion to imperial authority, and the nation succeeded in a revolution which transformed Japan from an assortment of clans to a modern nation under the authority of Emperor Meiji.

Previously, the nation had been divided into dozens of clans, with the chief of each clan exercising authority within its territory. Samurai, who had been loyal to their clans, after being emancipated, joined forces in creating a new modern state and advancing the nationalism which had as its byword "enrich the country and strengthen its arms" and as its goal the attainment of parity with advanced nations. However, whereas the family system inherited from feudalism had been adapted to meet the new age, for the most part, it continued just as before. And, at a point somewhere between the state and family, the enterprise presented itself as a new institution of the Meiji era.

State — Enterprise — Household

If this vertical alignment of the state, the enterprise, and the household is not understood, then it is difficult to fully understand the particular Japanese thought behind the individual enterprise, the enterprise union, and the seniority system. Samurai, farmers, craftsmen, and merchants — the social stratification of the Tokugawa Period was technically discontinued after the Restoration, but the concept of social distinctions reappeared in the guise of "government official or clerk" (including military

men), "middle class" (employers, merchants), and workmen (including coolies). The divergence between the "government official or clerk" and the employees in private business became less distinct from the middle of Meiji Period onward, and the discrimination of workers from the "middle class" was made less distinct only after World War II, although the distinction has not completely disappeared.

Essentially, in the Japanese environment, workers are weak unless they join forces, and unless they join a labor union on a company-by-company basis.⁴ Thus it came about that a company is perforced to look after the lives of its employees, in line with the concept of the Japanese feudal familialism in private enterprise. Further, with the background of insufficiency of social amenities, it was only natural that, by way of compensation, welfare facilities for employees were developed in industries.

To understand this, it may be helpful if we cite a few lines from Bennett and Ishino, "Paternalism in the Japanese Economy," 1963.

The development of feudalism in Japan, from the twelfth century to the very eve of her modern era, is bound up with familism more so than is the case for European feudalism. Kawashima points out that the Japanese family was a "rights-and-duties" type of family, in which hierarchical relationships were cast in a mold of reciprocal obligations and not in the Chinese authoritarian-patriarchal pattern. (p.34)

Employment Relations

The samurais, who served the clan chiefs, farmers, craftsmen, and merchants, were one source of government officials, as well as employees of private companies during and following the Meiji era.

Among the craftsmen and merchants, the craftsmen's apprentices, and the merchant's manager, clerks, and errand boys provided another source of employees.

⁴ Early in the Meiji Period, however, there were a few instances of the formation of labor unions which were more or less industry-wide, such as the Iron Workers Union, formed in 1897, and the Printers Union. However, due to the weakness of the labor movement, these could not persist and the formation of similar unions was not favored. The attempt to organize workers on an industry-wide basis was an example of early American influence. See "Characteristic(s) of Labor Management in Japan," by Teruo Goto, in *Management Japan*, May 15, 1967, p.25.

However, the common point of these two sources of labor supply were: advancement according to seniority, and employment was fixed; no worker could change to another employer or boss. There were two points in which the two sources differed: (a) the samurai was employed by the clan chief for his entire life, commuted to his place of work, and received payment in the form of an annual stipend, and (b) employees of craftsmen and merchants were apprenticed for periods of one year at a time (but practically always the contract was renewed, unless there were serious reasons against it), were given lodging at their employers' homes or work sites, and as remuneration for their services provided, were paid on a piecework basis or paid a daily wage. (However, among those working on a yearly apprenticeship basis, the best were picked for lifelong employment.)

The question, then, is how these patterns of employment could be accepted when the social stratification system was discarded and freedom in the choice of employment was assured in the new nation of Meiji Japan — and how these patterns could accept the changes embodied in the new age. What happened was as follows:

(1) New positions, specifically those of the government employees and the employees of private enterprise, were for the most part a continuation of (a) above.

(2) Factory workers in the new enterprises having Western-style organization were primarily a continuation of (b) above with dormitory accommodations for working girls and youngsters.

(3) In the case of commercial establishments and crafts which continued operations and techniques as in the past, (b) was continued just as during the feudal age.

Putting aside (3), characteristics of employment patterns which have persisted from Meiji times to the present day are as follows:

(A) Salaried employees for either government or private enterprises, as in the first-mentioned (1) above, all start employment immediately after graduation from school, and receive a monthly wage on the understanding that employment would last until the retirement of the employee.⁵

⁵ In governmental ministries today, as in many private enterprises, considerable importance is attached to the year of graduation of employees (and thus year of entering the company) in promoting personnel, with attempts common at keeping men of the same year advancing at the same rate and to the same levels. Furthermore, it is the practice in the evaluation of workers for comparison to be made among fellow employees of the same "year."

(B) Factory workers are recruited at all times, and until the 1910 decade, fixed-period contracts were widely used in this daily-wage pattern of employment. The monthly wage under (A) and the daily wage under (B) both were increased in keeping with employee seniority, and this pattern continues to be strongly adhered to today.

Further, after World War II, labor legislation was enacted in a comprehensive manner and the organization of labor unions was permitted. Throughout Japan, labor unions were organized at a rapid rate, in almost every instance on the basis of a single enterprise, and factory workers now are rarely discharged or transferred against their will. Therefore, factory workers too were brought under the lifelong employment system, and their status was greatly stabilized. (The organization of labor union on a company-by-company basis contributes a lot to increasing the stability of workers' status and serves to increase the workers' feeling of unity and sense of belonging with the enterprise.)

Thus, if one overlooks the continuous transmission of basic principles and patterns of employment, as seen from the human side and presented in the above paragraphs, from the Tokugawa Period and even through the technological innovations and great changes following Japan's defeat in World War II, it is difficult to grasp the actual situation of the modernization of Japanese industrial management.

Advantages of the Forms of Employment

This employment practice has become firmly embedded in Japanese soil, to better provide stability in the labor supply situation.

The question is, what are its advantages?

(1) In the case of such forms of employment, since both employer and employee alike may expect stability of the arrangements, a number of advantages may be gained over that offered by a fluid, open labor market. That is, although there is a loss in ability to adapt in emergencies to changes in the external environment, or adapt to individual competition within the enterprise, a feeling of unity with the fortunes of the enterprise naturally develops on the part of the employees. In particular, prior to World War II, although Japan had many unemployed workers, it is quite clear that the unity with the enterprise which had been in

existence for so long yielded results in the maintenance of a diligent and skilled labor force.

(2) Introduction of American management methods into Japanese enterprises started following the Russo-Japanese War (1904-1905), and one must pay attention to the fact that modern methods of management were superimposed on the traditional forms and patterns of employment. For example, piece rates, and base rates for the premium bonus systems, were assessed on the basis of the seniority-based daily wage scales paid to factory workers.

(3) There were no great hindrances in the introduction of new techniques into the enterprises. For example, even if some work was mechanized, a company-wide union rarely opposes the introduction of any innovations that would increase the plant's output.

In the field of personnel management, while making good use of traditional methods unique to Japan, the techniques and cultures of other countries were absorbed willingly and with assurance.

In Japan, other than the two patterns of employment — of the samurai and of the townsmen — mentioned above, I would like to touch upon one more method of employment which has persisted since feudal days; and because it concerns just certain spheres of industry, it should not be considered as redundant.

That is the oyakata system, or the hamba system, in mining and civil engineering industries. Oyakata means boss or gaffer; hamba means temporary work-site living quarters. We may consider these systems as having descended from rigid controls used over laborers who worked underground or on dangerous construction projects during the Tokugawa Period, when such workers tended to be drifters and criminals. Hamba — now often of prefabricated construction — are even today often seen at construction sites and mines. In the case of urban construction work, for example, the workers are for the most part farmers, who have left their land and consigned matters concerning their employment to an oyakata, as members of a group called heya (literally, room or rooms), which he supervises, and which is housed in the temporary quarters.⁶

⁶ A graphic description of the hamba is in the article, "The Shacks of the Laborers", by Hideto Mori, published in *Orient/West*, vol. 7, No. 5 (May, 1962), pp. 53-60. The article had originally been published in the monthly *Chuo Koron*, in November 1961.

Scientific Management

Against the background as described above, let's examine the general situation with regard to the introduction to Japan of the American way of management.

As has been indicated, transplantation to Japan of the American way of management is an unexpectedly recent event; previously, the British influence had been especially strong.

For example, in one of the fields which showed most outstanding growth in Japan-silk thread spinning — at the outset machinery was imported from England, which was the leading nation in the world in this field. In addition to importing the machinery from England, Japan learned English management methods. However, what was behind the growth which enabled Japan to outdistance England in the textile field was, by and large, American management methods.⁷

Yamaharu Muto, who nurtured Kanebo (Kanegafuchi Spinning Co., Ltd.) until it became Japan's biggest spinning company, and Toyoharu Wada, who revived the Fuji Spinning Co. after it had failed and made it into one of Japan's finest spinning companies, were friends during their youth when both worked for five years in a San Francisco store. In 1890 they returned to Japan and entered Mitsui Bussan Kaisha (the present Mitsui and Company), prior to their later involvement in the textile industry.

Muto introduced W. Taylor's "scientific management" into Kanebo's operations, only five years after Taylor had first advocated it in 1912. In 1914 Muto started efficiency studies, and in 1917 initiated the standardization of work performance.

However, although scientific management elevated efficiency to new heights, shortcomings became evident in respect to human relations, and supervisors, who spiritually sympathized with their staff, called for improvement of the "refined spirit" of the company. In 1921, bureaucratization was cast aside. The

⁷ British technology was the mainstay of the Japanese textile industry as a whole until World War I, which made importation of British machines difficult and encouraged Japanese enterprises to turn to the United States. In 1917, for example, 250,000 spindles were purchased from the United States, and reliance on American looms also became common, stimulated by the need to offset increasing wages by advancing mechanization. At the same time, domestic production of spindles and looms was begun, and after the war Japan became self-sufficient in the production of looms.

company adopted the "household system," and placed emphasis on the holding of conferences and closer contact between supervisors and those supervised. Taylor's scientific management technique was introduced to Japan surprisingly early, through the publication of management journals and popular-oriented pamphlets; the first translations, abridged, were published in 1913. However, there was quite a time lag until the ideas were actually introduced and adopted in plant management. Because the spinning industry at that time was the most modern industry in Japan, the ideas of scientific management were introduced there first.

At the outset, the man who first produced results through zealous introduction to Japanese plants of scientific management methods was psychologist Yoichi Uyeno, who as a consultant, did work and time projects for Lion Toothpaste Company in 1920. His suggestions succeeded in raising the efficiency of the process in filling containers by 17 per cent through changing the position of workers at their benches and having them work as groups. In the following year, he provided the same sort of consultancy service to Nakayama Taiyodo Company, a cosmetics maker, and also provided advice to the Fukusuke footwear company. At Fukusuke, a maker of tabi, lightweight bifurcated stockings, he introduced the floor work system, and reduced the time required for cutting the component pieces to completion of tabi by 20 per cent.⁸ These achievements taught many lessons to old-fashioned managers, who believed that higher wages necessarily raised production costs. Nakayama Taiyodo enlarged the size of the container of the cosmetics without raising the price, thus passing on the profits gained by the managerial innovation to its customers. Such achievements were publicized in advertisements of consumer product makers, serving to increase the awareness and understanding of the average person of the value of scientific management.

⁸ Fukusuke tabi are still produced and marketed in Japan, although other forms of footwear have largely supplanted tabi. Established in Sakai, near Osaka, in 1882, the company was owned by a man who decided to mechanize, in the face of the persistence of custom. Tabi traditionally were sewn by hand, but through mechanization (implemented circa 1911) and the introduction of other improvements, production, which used to be three pairs per worker per day, rose to 300-500 pairs a day, and it was made possible for women to perform all stages of the work. After the company was reorganized into a corporation in 1919, aptitude tests were introduced. Uyeno provided advice to the company for three years, from 1921. The principal results of his efforts were the introduction of conveyor-belt production, which increased production capacity, reduction of costs and requisite work space. The company is Japan's foremost tabi maker.

In the machinery industries, in 1917 a technical agreement was concluded between Mitsubishi Electric and Westinghouse, and in 1926 Takeo Kato and the present writer brought Westinghouse's "Time Study Procedure and the Uses of Time Study Data," as well as the same company's practices into Japan, the Mitsubishi's Kobe plant, implemented both time study and rate setting programs, and at the same time a Japanese technician named Inagaki introduced a standard cost system. For a long time thereafter the Westinghouse method was the basis for time study activities in Japan. In 1929 work study programs were started by Okiie Yamashita in the rolling stock repair division of the Ministry of Railways (predecessor of today's Japan National Railways - JNR). He was the same person who perfected the famous Japanese National Railways system for overhauling locomotives, and succeeded in the immense project of having automatic coupling devices attached to tens of thousands of railroad cars simultaneously (July, 1925).⁹

However, although scientific management methods produced good results in the rationalization of work processes, since they were weak in respect to their spiritual effects as well as both physical and psychological effects, many efforts were made to learn from German, British and French experience. Magosaburo Ohara, president of the Kurashiki Spinning Co. established the Labor Science Institute in Kurashiki, a research institute which would have been unusual even if it had been founded in a Western country at that time. This institute achieved success in measuring physical strength, using the relative metabolic rate of the Japanese, and measuring fatigue by use of flicker measurement. At this time

⁹ During his trip to America in 1912, Yamashita was amazed to find that locomotive overhauls in the United States required only about twelve days, and after he returned to Japan he set to studying how Japan could shorten overhaul times. Circa 1914, about thirty days were required, but by 1926-1927 this had been reduced to five days, making the Japanese more efficient than the Americans in this work. The Japanese earned worldwide recognition for their accomplishments, and were asked by Russia to provide expert services in the overhauling of locomotives, in 1930-1931. Among the achievements during this period was the innovation of grinding pins and bushings at the same time, using the limit gauge system, cutting in half the time needed to overhaul them. Kenji Okuda, chief researcher of Nihon Kokan Co. is of the opinion that there is a factor more important than the shortening of overhaul times through the use of time and work studies. Okuda writes that the aim of standardizing parts, according to Taylor, was to enable migrants, unskilled laborers to handle difficult tasks, and therefore the standards were determined unilaterally, by management. In the Japanese railway case, however, the standards were determined after free discussion in each work gang. This was a precursor in Japan of the current zero defects movement and quality control circles' activities, and Okuda considers this cooperative type of effort to be characteristic of Japanese management. (See "The History of (the) Productivity Improvement Movement in Japan II - The Introduction of 'Scientific Management' at the end of the Meiji era and during the Taisho era," (in Japanese), *IE Review*, Vol. 9, no. 6 (November-December, 1968) pp. 393-398.

the work of the American industrial psychologist Munsterberg was widely introduced in Japan.

In 1921 Uyeno became the head of the Industrial Efficiency Institute, and made a trip to Europe and America, where he met Franck B. Gilbreth. During the two months he spent in Chicago, Gilbreth arrived in the city for a meeting (at which Uyeno was present) of the Society of Industrial Engineering where he spoke on cost reduction through standardization. In March the following year, he attended the winter meeting of the Taylor Society, in Philadelphia, where he made a speech. After that, he reported his observations about America as follows.

"I came to the United States with great expectations. I have learned a great deal, but have had two disappointments. The first concerns the purpose of time study activities. At each plant which I visited, there were several time study men, all of whom were working in order to determine the wage rate, while there were hardly any plants where they were linking their efforts with motion study activities in order to reduce waste and cut fatigue. The second is that because of the nature of my own specialty, I came into contact with many psychologists, but those whom I have met thus far are concentrating only on the use of mental tests for selecting workers while hardly giving any attention to study of the production processes themselves. This is a problem well deserving of the attention of psychologists.

"The endeavors of Mr. and Mrs. Gilbreth for standardization of production processes, through the use of precise methods, has greatly encouraged me. When I asked production level technicians, 'What do you think of Gilbreth's method?' they always answered, 'It's too advanced,' suggesting that it is actually a matter of the technicians being too retarded."

At this meeting, Uyeno met Mr. Taylor, and was invited to the Taylor residence. After calling upon William Leffingwell, who had been the first person to apply the principles of scientific management to office management, and Harrington Emerson, the famous efficiency consultant, Uyeno sailed for Europe. He returned to Japan in August, and the newly-established Industrial Efficiency Institute of which he was director was made to have the following functions:

- (1) Lectures and lecture-demonstrations
- (2) Publishing, or reports of research, and forms for use in

giving intelligence test and making time studies.

- (3) Consultation, including the display of materials.
- (4) Implementation, through the dispatching of technicians.
- (5) Technicians' training, in time study and motion study methods according to plant management methods, for production-level technicians.
- (6) Aptitude tests, for small-and medium-scale businesses.
- (7) Production of aptitude test materials.
- (8) Experimental research, on efficiency through biological and psychological experiments.

This institute in time trained a great number of trainers and consultants for small-and medium-scale business.

Also at this time, Takuo Godo produced fine results in implementing scientific management methods at the Kure Naval Arsenal where he introduced for the first time the Johanson block gauge system into Japan.¹⁰

Industrial Rationalization Board

After the panic which followed the First World War, the Japanese economy, plagued by chronic economic recession, deteriorated further as a result of the worldwide depression which came in the wake of the panic in America in the autumn of 1929. The Japanese economy sagged because of this depression. To resuscitate Japanese economy, the Government's Ministry of Commerce established in 1930 the Industrial Rationalization Board.

The board's duties were divided into the modernization of management, and unification of the standards of industrial

¹⁰ Godo made several inspection trips to the United States during the World War I, and visited Europe after the war, when he particularly paid attention to industry in Germany. His trip convinced him that there was a great gap between Japan and the West in management methods, and upon his return to Japan he applied himself to closing the gap. In 1919, a bill for construction of the 88th Fleet was passed by the Diet, and most of the armaments were to be made at the Kure Navy Arsenal. To improve production efficiency for this undertaking, Godo introduced the "limit gauge system." Two years were required for preparations; in addition to those at the arsenal, private companies which received contracts for parts of the work also had to be instructed. The system reduced construction costs 30 per cent, work time 48 per cent, and permissible tolerances were lowered from 2'59" to 45". Godo, following Taylor's scientific management methods, by introducing the limit gauge system, broke away from the past practice of permitting the skilled workmen to determine how to do their work, and instead called for advance analysis by technical experts of what was to be done, and the establishment of standards before plans are drawn.

products through promotion of the formation of cartels. Germany's Reichskuratorium für Wirtschaftlichkeit, and the German cartel policies, were chosen as models for action, but the contents of of the board's recommendations in connection with management of enterprises were primarily derived from the scientific management methods of the United States and the practices of American industry.

For example, the board's Production Management Committee concentrated on the following points on behalf of industry:

1. Fuel economy
2. Employee training
3. Experience exchange between enterprises
4. Aptitude tests
5. Work and time study
6. Apprentice training
7. Wage payment systems
8. Factory illumination
9. Power transmission systems
10. Production control
11. Plant layout
12. Factory statistics
13. Profit sharing for employees
14. Cooperative education for engineers

Further, the board's Financial Management Committee made recommendations in the following exceedingly important subjects, which became the foundation for the accounting practices later widely adopted by Japanese enterprises.

1. Standard financial statements
2. Principle of depreciation

With respect to tax laws, the Economic Federation petitioned that the years of useful life of assets-- for tax levying purposes--be shortened, and pointed out that Japan also must recognize obsolescence, as America had done by revising her Revenue Act in 1928. The committee included the gist of these recommendations in its own proposals.

With regard to accounting in Japan, Yukichi Fukuzawa's "Methods of Bookkeeping," published in the first year of the Meiji Period, has been considered as a translation of Bryant and Stratten. After Allan Shand had provided accounting instructions for banks, almost all that Japan learned had come from the United States and Great Britain. During those years, with the advance of big business,

American accounting developed and acquired a character independent of that of England, and to a certain extent also absorbed something of German accounting practice. In the case of Japan, however, most of the external influence on accounting practices were of German origin.

Professor Tetsuzo Ohta who has recently reviewed the developments of those times, has this comment to offer:

"Foolish Japanese scholars! Is it always necessary to rely upon the power of others? German accounting theories prior to World War I were nothing to get excited about. After importing American knowledge, German accounting flourished in an instant. We have learned from America even before Germany. Not looking at actuality but instead looking only at external form, the Japanese who were overtaken by the one running second in the race are to this very day knocking themselves out importing facsimiles."

Extending our attention to the theory of business administration, in Japan, as in Germany, most of the professors in this field originally were scholars in accountancy. Thus those, who taught business administration in Japanese colleges, had been influenced by Germany and therefore imported Betriebswirtschaftlehre, or German theories of management.

With respect to the actual business management German influence was almost nil; it was a case of an across-the-board importation of American methods. Although it may be said that there was some learning from German sources, it was from the REFA Committee (Reichsausschuss für Arbeitszeitermittlung) not from Betriebswirtschaftslehre.

Just at that time, Shibaura Seisakusho (forerunner of the present Tokyo Shibaura Co. or Toshiba), an electric equipment manufacturer, had Alfred K. Warren, (the company's managing director in 1927-1931) and who was originally sent by General Electric to Tokyo in connection with technical cooperation matters, introduced new management techniques into the organization. The results obtained from what Warren did, particularly in the setting up of a system capable of handling individual orders, can hardly be overlooked.

In addition, the Financial Management Committee gave attention to the adoption of the uniform cost accounting system, but it was not until after World War II that this was perfected, on an industry-by-industry basis. The committee took a hint from the various American trade associations, which were individually

adopting such systems. The corporate accounting principles used in a number of Japanese corporations today started during the postwar American occupation of Japan. The outlines of the system were released as a provisional manuscript by the committee, which then watched the reaction of Japanese industry, and finally published them in 1932 as Standards of Financial Statements. They were prepared on the basis of study of the revised commercial code of Germany and the recommendations of the American Federal Reserve Board.

Various problems became manifest at this time. Through them, we can see a part of the attitudes of financiers at that time.

One member of the committee, during a meeting, said that he could not approve enforcement of a proposed form for profit-and-loss statements. He said that the form required statement of gross sales was not necessary, as dealers do not even inform their own employees of the amount of gross sales, business firms not even think of giving that information to outsiders. Since it was not intended to enforce the issuance of profit and loss statements he gave his approval, but the episode, viewed from the present day, seems like one from another world.

The chairman of the Production Management Committee at that time was Okiie Yamashita, and the drafting of the committee's proposal was largely the responsibility of the present writer himself. The chairman of the Financial Management Committee was Nobuo Nagahara, chief of the financial department of Mitsubishi Goshi Kaisha, and the drafting of the committee's proposal was entrusted to Prof. Tetsuzo Ohta of Hitotsubashi University, Tokyo. Although the recommendations of these committees were never enforced or made into law, for a long time thereafter the recommendations nevertheless provided guidelines for Japanese industry's managers.

In order to disseminate the recommendations of the Production Management Committee among private enterprise, the Japan Industries Association, a private nation-wide organization, was established, to publish each recommendation as a pamphlet. Yamashita, and each committee member, toured the nation, handing out pamphlets and giving talks on their contents. This organization merged in 1942 with the Japan Federation of Efficiency Associations, which was headed by Yoichi Uyeno, to create Japan's largest management consulting firm, the Japan Management Association (JMA).

Uyeno, in addition to acting as director of the Japan Federation of Efficiency Associations, was concurrently head of the Japanese chapter of the Taylor Society, and represented Japan at the fourth meeting in France in 1929 of the Conseil Internationale de l'Organisation Scientifique (CIOS), at which meeting he was selected as vice-chairman of the organization's industrial division. The next year, 1930, he made his second trip to the United States, as leader of a group of fifteen persons he gathered to form an efficiency study mission. They visited one hundred places in two months.

Uyeno translated a number of works after that trip, including, in 1932, Taylor's "The Principles of Scientific Management" and "Shop Management." In 1942 he founded the Japan Efficiency School and became its first president. The school's curriculum was:

1. Theory of efficiency
2. Office management
3. Cost accounting
4. Work study
5. Personnel management
6. Production control

Each topic was taken up in turn, for one month's time, five days a week, from 6:00 to 8:45 p.m. The courses were offered in this way because the objective was to give instruction to people already employed. This school became the Institute of Business Administration and Management in 1950.

Efforts of the Financial Management Committee toward the popularization of its recommendations made use of the magazine Accounting and availed itself of cooperation offered by the Chamber of Commerce. However, as these vehicles proved to be insufficient in the summer of 1941, as the outbreak of war drew near, a private nationwide organization, the Japan Cost Accounting Association was established. The two men who were instrumental in getting this new organization underway were Prof. Ohta and the present writer. Through the good offices of the military, a number of makers of military materiel pledged cooperation, and the organization was successful in publicizing the codes for cost accounting which had already prepared for each industry. The director was Admiral Takuo Godo, former director

of the Kure Naval Arsenal, and the executive manager was the president of Nakayama Taiyodo, Taichi Nakayama. Among the men responsible for publicity work were the present president of the Jujo Paper Co., Saichiro Kaneko and present president of the Shibaura Machinery Works, Kiichiro Nishino. This organization has become the present Industrial Accounting Association with Tetsuzo Ohta as the president.

Thoughts in Defeat

After Japan was defeated in World War II, in 1945, the country was occupied by American forces, whereupon many changes were made in politics, education, economics and others with unmistakable American coloration.

All of Japan's industries had to be regenerated somehow out of the ashes of defeat. But this regeneration had to be implemented at a time when it was not clear whether there would even be enough for individual employees to subsist on, and whether these minimum requirements in terms of housing could similarly be provided for the workers' families. Yet the Japanese were not cowed. With patience, they set about to rebuilding their lives, their factories, and their economy out of the shambles of war.

Defeat in the war furnished two important benefits to Japan:

- (1) The military, which had high-handedly usurped power, was vanquished, and
- (2) The old facilities of almost all industries had been destroyed.

These were the two most beneficial results of the defeat itself. They were results which, other than defeat, no authority could have achieved. In other words, it amounted to a clearing of the ground for the rebirth of the Japanese people, a rebirth which could only have been bought at the expense of sacrifice of many lives and loss of the war. If Japan had emerged victorious, we would not have been able to bring about the prosperity that Japan enjoys today.

The reason for that is simple. The tyrants of the Army and Navy, which had aggrandized their authority since the Meiji

Period, ultimately to bring about their self-destruction, were executed. This made it possible for freedom and democracy to flourish, as desired by the entire world, to be established in Japan. If the tyrants had lived, they would have exercised their influence again, once the American occupation had ended.

In addition, there was no person with sufficient authority who could moderate the rivalry between the Army and the Navy. And whether it was aircraft or any other military materiel, the makers thereof supported the Army and the Navy. When something was made for both branches of the military in the same factory, a fence would be erected between those work places producing for the Army and those producing for the Navy, to better protect worker's secrets in one section from being passed on to workers of the other section. The Army and Navy couldn't even agree on the names of diseases, and called the same weapon by different names. It is clear that there could be no development of economic activities with men such as those in command holding such vast power.

Next, with the facilities and records of the old enterprises having been reduced to ashes, the replacement of old production facilities with new ones became imperative. This is a tremendous undertaking. Had not the old facilities been destroyed, such a change-over would be unthinkable. Of course, time was needed by the Japanese industry to adjust itself to the new conditions so that they might catch up on the cumulative lag in technology which had built up during the war. New patents and know-how were voraciously sought from abroad, and especially from the United States. For the new facilities to be set up into operation and for the gap to be breached requires time. But the Japanese, somehow, managed to overcome this difficulty. The results accomplished by Japan during the 10-year period are near miraculous as attested by the new equipment which had been acquired and placed into operation.

SCAP's Leadership

During the period of Japan's occupation by American forces, there were many instances of reform in industrial management wrought by the occupation army. Two of the more important examples of what was achieved are given below.

In late 1947, SCAP (Supreme Command of Allied Powers) initiated "efforts to establish in Japan a sound, democratic in-

dustrial economy," and in order to help the Japanese industrialists prepare "intelligible financial reports", a guide, "Instructions for the Preparation of Financial Statements" was published. Previously, financial statements submitted to SCAP had "disclosed deplorable shortcomings in accounting practices and procedures," and six forms of statements were introduced. The inability of the Japanese, who had prepared their companies' financial statements was, however, largely ascribable to their inability to express themselves in English, and, also, to the differences in American and Japanese practices that contributed to cause "shortcomings" to arise.

On the basis of the standard financial statement forms, SCAP formed a committee of Japanese accounting experts led by Prof. Ohta. It turned its attention to the unification of corporate accounting practices under the jurisdiction of the Finance Ministry. Michisuke Ueno, a professor at the former Imperial Tokyo University (now Tokyo University), headed the committee. The committee formulated in addition the then current "Corporate Accounting Standards," the "Auditing Standards" and "Cost Accounting Standards."

Another change made by the occupation worth noting is the management training under SCAP direction. First, this was the establishment of the CCS training program. The move started when the SCAP Civil Communications Section noted that there were many deficiencies in the management of Japanese communications equipment makers. Every year, from 1949 since, it gave a series of lectures to more than ten top men from participating firms. Lecture sessions took four hours a day for a total of 128 hours. The latest thoughts in American companies were introduced in the lectures. These dealt with the purpose of the companies, policy formulation for enterprise management, organization principles, management systems, operating problems, and the like. Although the men who attended these lectures were from a limited part of industry, the content of the lectures was so invigorating that they attracted the interest of many managers and the contents of the lectures were subsequently put into printed form for industry-wide distribution.

At about the same time as the CCS program, the Management Training Program (MTP) for middle management, and Training Within Industry (TWI) for key supervisors were initiated for enterprises in general. MTP started as a training program for

the Japanese supervisors who were then working at Far East Air Force installations. The course dealt with a comparatively broad range of management subjects, providing instruction in management techniques required for them. TWI originated in the United States during the war, when it was necessary to train unskilled workers rapidly by means of standardized technical instruction procedures. It was a new pattern of "how to teach." Because Japan had lost much of its skilled labor force during the war, it was just what was needed and soon spread throughout the country until TWI-instructed trainers could be seen in almost every factory. The problem however, is "what to teach." TWI was popularized by the Labor Ministry, while both the MTP and TWI training systems were implemented by the Industrial Training Association.

These American training methods, by consistent adherence to the management cycle of planning-doing-seeing, succeeded in implanting the principles of modern management far and wide among Japanese industry. However, the content of each course was fixed, and in time it became necessary for Japanese industry to move toward adoption of more sophisticated in-plant training methods. At present, every leading company and bank, without exception, maintains its own training institute.

Case studies and group discussions, introduced from the United States, have been the two methods most widely used in Japanese industrial training since the end of the war. Further, in connection with top management, external expertise is utilized for business conferences, in which in most instances the managers are taken away from their offices for a stay of one day or longer at a hotel or at their own training institute.

The training center which has attracted and continues to attract the most attention is that maintained by the Hitachi Co. since June, 1962. The building housing the center is quite spacious, and its facilities were designed under the stimulus of General Electric's Crotonville training center in America. Hitachi uses this solely for off-the-job training of top management. The contents of the programs are indigenously so Japanese that there were even time devoted to the composition of poetry.

Further, as shown in the diagram, Toyota Motor has a dual-pattern training program for administrative and technical staff, which was designed by Toyota to meet the company's specific needs.

Educational activities at Toshiba are shown in Table 1, and although a number of American techniques are utilized, the overall design of the program is purely a creation of Toshiba.

Drucker and Deming

Aside from the stimulus provided by the American occupation forces, Japanese industry owes its growth to many private individuals who have contributed much to the modernization of its management. I regret having little space to mention the deeds of the two men who helped much: they are Professors Peter F. Drucker and W.E. Deming.

Drucker's "The Practice of Management" was first published in 1955, and a Japanese translation appeared the next year. Since then the book has become a bible to Japanese businessmen, who read it zealously. It may also be said that it opened new frontiers to Japanese management on matters such as the nature of the corporation, as well as the purposes and significance of management. Needless to say, this book is still read by Japanese businessmen.

Prof. Deming came to Japan in 1950, but even prior to that his work had been the object of interest on the part of Japanese statisticians and industrial engineers. So that after he came to Japan, the idea of quality control spread throughout the land. He went on a lecture tour, and fascinated his audience each time he talked. To honor him, the Union of Japanese Scientists and Engineers, with the support of the Nihon Keizai Shimbun Sha, a publishing company which is best known for its daily newspaper, which is a Japanese counterpart of the Wall Street Journal, established the Deming Prize for achievements in the field of statistical quality control. The first prize was awarded in 1951, and every year since the prize has been given to that company adjudged to have attained the most outstanding results with respect to quality control. Showa Denko, Yawata Steel, and Tanabe Pharmaceuticals received first prizes. Two other publications on enterprise organizations also imparted much influence in Japan. They are the two translations of "Top Management and Control" by Holden, Fish and Smith, and "Standard Oil Co., California: Management Guide."

Industrial Engineering After the War

Among the postwar developments in the field of industrial engineering, which needs mentioning is the rapid spread in the introduction of work factors (WF). Much of the accomplishments in the popularization of this concept since 1951 is due to the endeavors of Bujin Ueda. The underlying reasons behind work factors were welcomed in Japan even since prewar days when time study activities had been carried out in many factories. The foundation for the utilization of work factors, and the standardization of work processes which had been implemented after the war, were adopted with open arms. Of course, management took extreme care in adopting the concept. At one automobile plant, in order to determine the applicability of time values to Japanese workers, tests were made combining walking, heavy lifting, hammer work, crank motions and the like, as a result of which not only was the applicability verified, but confidence in the study took root. As a result during a two-year period, a master time table was made for each of the following: welding, painting, forging, heat treating, and casting, and in line with the expected degree of precision for each task, the three levels, "precise, simplified and estimating."

Further, timed in coordination with the CIOS meeting to held in Tokyo on October 31 and November 1, 1969, the Work Factor International Conference is slated to be held in Tokyo at those two given dates.

It should be mentioned that the PERT is widely used in the scheduling of work processes, and its applicability to construction work is particularly well recognized and accepted. An exemplary case is that of the use of PERT for work processes in the Nagasaki dockyard of Mitsubishi Heavy Industries.

Operations research, an American development, and its application in conjunction with computer utilization in Japan, is a subject of deep interest and importance; and recent survey findings by the Ministry of International Trade and Industry on this matter are presented in Table 2.

Productivity Movement

The European productivity movement, a part of the Marshall Plan, starting in 1948 spanned five years, and at the outset

primarily consisted of British observation teams, composed of representatives of labor, management, and third or neutral parties, visiting the United States to observe the high productivity there. In time, the movement faded, but in December, 1953, the American Embassy, in Tokyo, indicated to the Japan Committee for Economic Development that if Japan were to establish a productivity organization the United States would be prepared to provide substantial support. Kohei Goshi, then Secretary General of the Japan Committee for Economic Development, contacted the Federation of Economic Organizations, the Japan Chamber of Commerce and Industry, and through the efforts of these four organizations, the present Japan Productivity Center was established in March, 1955. At the joint meeting held that May by these organizations, the following three principles of the Japan Productivity Center were established:

"On behalf of the independence of the Japanese economy, and the elevation of the standards of living of the people, it is very urgent that the productivity of industry be improved. The productivity movement, planned on the basis of this viewpoint, must be expanded and developed as a national movement which is supported by the deep understanding of the entire nation.

"The three fundamental thoughts behind this movement are, therefore, as follows:

1. The promotion of productivity leads ultimately to augmentation of employment, but to deal with surplus personnel, should they appear in transition, appropriate measures will be taken from the point of view of the national economy and with the cooperation of the Government and the people.
2. Concrete methods of productivity promotion should be studied, and adopted through the consultation of labor and management to suit the real situation of each enterprise.
3. Gains of productivity should be equitably shared by managers, workers and consumers in consideration of the actualities of the national economy."

In keeping with these principles, a board was established consisting of representatives of labor (from the Japan Federation of Labor and the All-Japan Seamen's Union and third parties Dr. Ichiro Nakayama, the writer, and others), as well as manage-

ment. Taizo Ishizaka was the first chairman. The present chairman is Tadashi Adachi, chairman of the Japan Chamber of Commerce and Industry, and executive director is Kohei Goshi.

The first productivity study team to go in September 1955 to America was a top management team. The fourteen-man team was led by Taizo Ishizaka, and assistant leaders were Ichiro Nakayama and Kiichiro Sato, then president of Mitsui Bank, Ichiro Oshikawa of the Asian Productivity Organization was team secretary. Immediately upon returning from their five-week tour, the participants reported their experiences and observations at meetings held in twelve cities. The final report of the team was published that October, as "Management for a Prosperous Economy." These activities gave a great stimulus to the then-sluggish productivity movement, and enlightened many industrialists with regard to management philosophy, consumer-oriented marketing and other aspects of contemporary management. After that, one top-level team after another then went to America, and in addition to teams concentrating on specialized subjects such as organization, long-range planning, research administration, industrial education and the like, teams from different industries also travelled to America. So many went that the Japan Productivity Center was able to hold a party to celebrate reaching the 2,000 mark for the number of participants despatched overseas, in October, 1958. As Japan Productivity Center managing director Goshi has said, it was just like centuries ago, when so many envoys were sent to China so that Japan could absorb its continental culture.

In addition, mention must be made of the Asian Productivity Organization (APO), created in order to extend the productivity movement throughout Asia, when several Asian countries joined together in 1961 to establish the organization.

The Japan Productivity Center, in 1956, established its Productivity Research Institute which is now furnished with a library of 15,000 volumes in Japanese and 14,000 volumes in Western languages, among both of which there are many publications dealing with American management. The library receives as many as 500 periodicals regularly. Further, since 1965, the center's Management Academy, using classrooms in the center's building, has offered the most complete and highest level management education courses available in Japan. The center, in publishing its American Management Series, (principally textbooks) has

translated and published ten volumes in the first series and twelve volumes in the second series.

The Japan Productivity Center now has a nationwide organization, with seven regional branches which cover the nation and lead the productivity movement in their regions, while maintaining contacts with the center's headquarters in Tokyo.

Concerning productivity in the agricultural and fishery sectors, the center has established an independent organ which has undertaken translation activities and sent more than 700 Japanese—thus far,—overseas on study and observation missions.

Representing Japanese management in international circles is the Japan CIOS Association, which is Japan's constituent member of the Conseil International pour l'Organisation Scientifique (CIOS), and which has as its chairman (through 1971) Kiichiro Sato, former president of Mitsui Bank and as of this writing also chairman of CIOS itself (for a three-year term through 1969). The annual CIOS meeting, held in Tokyo in 1969 afforded leaders from all over the world in the field of management an excellent chance to meet and talk with their Japanese counterparts.

MITI's Industrial Structure Deliberation Council

Mention must be made of the Management Committee of MITI's Industrial Structure Deliberation Council, which has served as a special organ for the postwar modernization of top management. This committee, first established in 1949, actually started functioning later, after having been made a committee of the Industrial Rationalization Council of MITI which was established in 1951. Composed of university professors specializing in management, and men from industry, the committee has continued its activities, with the writer as its chairman, to the present day.

The Industrial Rationalization Council may be considered a postwar version of the above-mentioned Industrial Rationalization Board, and the Management Committee corresponds in its organization to the Production Management Committee of the board, in that it was charged with providing key policies for modernization of Japan's industrial management. In 1964 it was joined to the Industrial Structure Deliberation Council. The Production Management Committee has, to date, issued the following documents:

1. Internal Control of Modern Enterprises—American Controllershship, 1951

2. Work and Time Study, 1953
3. Material Handling, 1953
4. Control of Lubrication, 1953
5. Production Control, 1953
6. Job Rate System Through Job Evaluation, 1954
7. Factory Illumination, 1955
8. Cooperative Industrial Education System—American Cases, 1956
9. Profit Planning for Attainment of Corporate Policies, 1956
10. Cost Accounting for Engineers, 1956
11. Heat Control, 1956
12. Supervising Organization of the Shop Management, I, 1957; II, 1960
13. Developing Machine Designers, 1959
14. Profit Management Through Divisionalization, 1960
15. The Cases of Quality Control in Small Enterprises, 1960
16. Modern Production Techniques and Management, 1962
17. The Job Rate System and Application Problems (in relation to the seniority system), 1965
18. Cost Management, 1966
19. Office Management for the Modern Business, 1966
20. Employee Welfare and Its Problems, 1968
21. Subcontracting Systems, 1968
22. Total Management Systems for Japanese Firms (in connection with MIS), 1969

What may be discerned at a glance at these titles is how the attempt was made to absorb American management methods. These were published and, through bookstores, sold to the general public. In all cases, meetings were held in Tokyo, Osaka and Nagoya, to which many managers came to hear about these subjects. If one were to attempt to numerically express the extent that these documents, containing recommendations on each respective subject, the result might be much like Table 3, made from the results of the most recent questionnaire distributed and collected by the Ministry of International Trade and Industry.

By comparing the year when the committee's recommendations were made, and years of adoption of related practices by the enterprises surveyed, one may see how the recommendations provided an incentive for action.

Computers

Management in Japan is now facing another revolutionary period, due to computers. In Japan, as in America, efforts are now being made to make the corporate enterprise into a complete total system by means of computer utilization. Table 4 shows a cross-section of the means whereby computers have come to be used by Japanese enterprises. It would be good for readers to compare this with similar information on computerization in America, for as the table indicates, Japan's corporations are actively applying computers to planning and systematization of the various corporate divisions.

In essence, ever since the arrival in Japanese waters of Commodore Perry and the "Black Ships," America has been an important trading partner of Japan, while at the same time it has been a leader with respect to business management. Japan, while preserving those of her own traditions which should be preserved, has unhesitatingly adopted the good features of the United States. There have been some instances of indigestion due to too-rapid intake of these features, and there have been many features which Japan proved unable to swallow. But, for the most part, Japan is thankful for having been able to assimilate and utilize much which has been of value. This has been a major force in propelling the economic growth of Japan.

Thus, as Drucker has written in his recent "The Age of Discontinuity," the systematization of information must be the great problem which America and Japan are expected to face.

TABLES & DIAGRAM

		ADMINISTRATIVE				TECHNICAL			
		On-the-job training		Off-the-job Instructional training		Off-the-job training		Training Program	
Training Program		All employees group training	Plant or division group training	Division & section group training	On the job training	Division & section group training	Plant or division group training		All-employees group training
SPECIALIZED VOCATIONAL TRAINING PROGRAMS Managerial training Program	Division chiefs training program		Lectures; discussions; section chief round table discussions	Study group in each division	Organization for on-the-job training on the basis of management-for-results		Foremen training lectures; MTP short course; creative thinking course; foremen's study group	All-foremen's group training	Foremen's training program
	Section chiefs training program	Section chiefs training lectures (labor divisions)							
	Managers training program		MTP* follow-up (case studies); managers training lectures; responsibility-wise lectures; managers round-table discussion	Managers study group; responsibility-wise training	Division (delegation of responsibility; goal determination & transfer of authority; training re-goal determination time; control pertinent to achievement of goals; evaluation of training results	Squad study groups; technical instruction	Supervisory fundamentals training lectures; squad chief training lectures; TWI (JR); squad chief technical lectures; squad chief round-table discussions		Squad chief training program
	Management essentials training program		MTP: management essentials lectures; responsibility-wise lectures; TWI* short course	Work-site study group (rotation of discussion leaders; discussions)			TWI (J, JM); basic management lectures; basic technical lectures; WSTC		Middle-level technicians training program
					Work-site study groups; technical instruction				
	Responsibility-wise special training program	Attendant at vocational school (labor divisions); responsibility-wise specialized lectures (head office, staff level)	Responsibility-wise specialized lectures	Study groups in each division & section (rotation of discussion leaders; discussion)	Meetings; rotation of assignments; temporary substitution assignments; determination of study topics; complementing application of group training		Technical lectures; basic education lectures		General technicians training program
	Newly-hired college graduates training program		Division-wise group training lectures	Work-site instruction meetings		work-site fundamentals practical application			
GENERAL ADMINISTRATIVE AND TECHNICAL TRAINING PROGRAMS		Commercial & plant practice; introductory lectures (by personnel dept.)			Skills evaluation; preparation for testing		High school graduates technical training curriculum; Junior-high-school-graduate technicians (trained) training curriculum		Technicians training program
	Newly-hired high school graduates training program		Introductory lectures (by personnel dept.); basic practices training; observation and instruction	On-the-job training		working on the job	Introductory lectures; basic practices training; observation & instruction		Newly-hired high & junior high school graduates training program

NOTES: 1) MTP = Manpower Training Program
TWI = Training Within Industry
JR = Job Relation
JM = Job Method
WSTC = Work Simplification Training Course

2) Training outside the company is not included in this table.

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Table 2. Relation Between O.R. methods and their applications, as reported by enterprises
evaluation and conditions regarding computer utilization
(Survey of 467 enterprises; 99 respondents)

Field of application	1		2		3		4		5		6		7		8		9		Totals	
	Storage method		Queueing theory		Replacement theory		Simulation (including use of the Monte Carlo method)		Linear programming (L.P., D.P., etc.)		CPM, PERT		Information theory		Statistical methods		Others			
	O.R. use	Computer	O.R. use	Computer	O.R. use	Computer	O.R. use	Computer	O.R. use	Computer	O.R. use	Computer	O.R. use	Computer	O.R. use	Computer	O.R. use	Computer	O.R. use	Computer
A Long-range management planning							32	2	30	4	16	2	13	4	1	1	1	1	110	7
B Financial control	1	1					8	2	9	1	1	1	1	1	1	1	1	1	19	4
C Purchasing control	19	2	14	7			2	5	4	1	3	1	4	3	1	2	1	1	99	12
D Production planning	11	1	9	3	3	1	2	23	21	2	41	9	43	7	6	1	5	1	87	4
E Manufacturing technology			2	1	1	2	2	1	14	2	16	1	17	4	3	1			56	1
F Quality control							2	2	2	2	2								97	6
G Stock control	50	4	38	16	1	1	1	24	1	20	5	2	1	1	2				92	5
H Process control	5	2	5	2	7	2	3	6	24	1	22	3	8	6	2	35	20	15	23	1
I Cost control					1	1	2	1	4	4	2	2	1	1					87	5
J Equipment investment planning			3	1	2	23	1	6	18	30	1	26	5	14	1	14	1	3	66	1
K Plant design	2	1	1	6	4	2	2	2	20	1	16	5	6	5	1	18	7	11	22	3
L Equipment maintenance planning	2	1	1	2	4	2	2	12	10	8	6	2	2	2	14	1	9	6	22	3
M Sales management	10	8	2						4	1	5	5	5	1	1	1	1	1	22	3
N Transportation planning	4	3	1	5	2	3	1		11	3	11	2	18	2	17	3	3	3	21	1
O R & D control	1	1							4	4	3	2	1	17	2	3	16	1	13	6
P Personnel planning	1	1	7	1	1	7			18	2	14	6	4	1	5	3	1	1	11	6
Q Training planning	1	1														2	1	3	2	1
R Building construction planning					1	1													1	1
S Testing planning									1	1									1	1
T Nuisance control											1	1							3	3
U General economic calculations									1	1									1	1
V Information management													1	1					1	1
W Systems planning									1	1									1	1
X Price forecasting											1	1							1	1
Y Technological control																1	1		1	1
Z Consumer activity analysis																			1	1
Z Profit planning									1	1									1	1
Totals	107	10	83	34	40	4	17	27	45	1	11	35	237	13	213	37	144	18	141	21

Note: 1. O.R. application evaluation column ("O.R. use" above)
Computer column ("Computer" above)
Left - "Of use"
Right - "Note of much use"
Left - "Nearly always used"
Right - "Nearly never used"

2. "Additional fields" added by responding enterprises

Table 3: Recommendations and Applications of Recommendations of the Production Management Committee

Item	Committee's recommendation in advocacy of the item			Number of enterprises which have begun to implement the recommendations					
	List no.	Title	Year	Total	Since 1954	1955 - 1959	1960 - 1964	1965 - date	N.A.
Long-range planning	9	Profit planning	1956						
Entirely adopted				280	15	36	133	89	7
Partially adopted				101	7	9	35	42	8
Divisionalization	14	Profit Management	1960	191	18	16	93	38	26

Table 4: Survey Results, Corporate Purpose in Utilizing Computers																				
Level of usage year	Where has the computer been used to date?												Where will the computer be used in the company three years?				be used in the			
	Calculation, tabulation, data file, etc.						Analysis, planning Forecasting, etc.						Calculation, tabulation, data file, etc.				Analysis, planning, Forecasting, etc.			
	'64	'65	'66	'67	'68	Total	'64	'65	'66	'67	'68	Total	'69	'70	'71	Total	'69	'70	'71	Total
Operation																				
Production	43	20	18	20	24	125	15	7	12	15	21	70	30	13	5	48	28	32	18	78
Stock control	65	27	32	32	39	195	10	4	7	11	15	47	38	16	3	57	42	37	26	105
Marketing	101	38	37	38	45	259	20	7	16	24	24	91	16	4	2	22	40	48	23	114
Accounting & Financing	95	24	38	36	52	245	14	0	9	9	9	41	37	20	7	64	38	53	27	118
Personnel	105	46	46	38	47	282	11	2	12	16	12	63	24	6	6	36	40	37	22	99
Technology & Designing	45	16	15	7	17	100	29	6	9	22	9	75	12	12	3	27	14	19	12	45
Planning & Research	23	9	11	16	12	71	16	9	9	16	15	65	20	20	9	49	26	27	30	83
Advertising	5	2	1	3	3	14	0	1	2	1	3	7	5	3	3	11	2	12	4	18

Source: Japan Management Information

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Development Association

