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Business Day

Japan Industry's U.S. Teacher

By STEVE LOHR

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TOKYO, Dec. 4 — When Japanese industrial leaders gathered recently to honor three of the country's biggest companies, the prize that was bestowed was named for a 79-year-old American engineer whose teachings have been a cornerstone of Japan's vaunted cost-effectiveness.

The three corporations — Hitachi Ltd., the Matsushita Electric Industrial Company and the Fujita Corporation, a large construction concern — were given the country's first Miles Awards for their work in the field of value analysis, a system devised by Lawrence D. Miles in the 1940's as a means of cutting manufacturing costs.

The system, which Mr. Miles devised while working for the General Electric Company, involves analysis of the precise function performed by each part of a product. Then, the minimum cost needed to perform the task, without sacrificing quality or safety, is calculated.

'They Perceived the Need'

The Japanese, in particular, have learned the lessons of value analysis well, Mr. Miles recalled in a recent interview here. For example, Hitachi, the giant computer and electrical company, employs 250 value analysis engineers. Their efforts, Hitachi estimates, save the company more than $400 million a year.

"Here in Japan," Mr. Miles observed, "they perceived the need. We in America did not perceive the need until recently."

Necessity, not prescience, explains Japan's early interest in such fundamentals. After the war, its companies were far behind Western rivals in technology and product quality and had to specialize in less sophisticated goods, products for which cost is the principal basis of competition.

Other Purposes Served

Now that Japan has caught up technologically and its wages are higher, the cost-cutting techniques serve other purposes. It is the low-cost producer in an industry that, with higher profits and more funds for research, faces less pressure to innovate.

Mr. Miles, who was in Tokyo with his wife Eleanor for the awards, which are sponsored by the Value Engineering Society of Japan, recalled that his interest in his chosen field came naturally. "I grew up on a farm where we pinched our pennies," he said. "At G.E., it bothered me that everything seemed to cost so darn much."

To illustrate his system, Mr. Miles fished a black plastic box from a cellophane bag. It was a temperature control device for a refrigerator, vintage 1947 — the first target for Mr. Miles's value analysis techniques.

He started with a wire clip used to hold the plastic top of the control box in place, it cost seven-tenths of a cent each, or a total of $7,000 over the entire yearly production run.

Upon examination, Mr. Miles noted that the clip could flex millions of times without breaking, whereas the cover was only taken off an average of six times during a refrigerator's lifetime. The bronze wire was replaced by one made of brass that cost just $4,000 a year.

The same type of analysis was applied to each component in the control box. As a result, $1.25 million a year was saved on the box alone.

In Japan, several hundred companies have used value analysis for years. "The first to adopt it were the electronics and auto industries," said Akira [illegible], secretary general of the Society of Japanese Value Engineers. "They are the industries that became Japan's major exporters."

In America, companies with sizable value-analysis operations include G.E., Westinghouse, Boeing, Hughes, Minnesota Mining and Manufacturing and TRW. Others have followed recently.

James Mayger

Lawrence D. Miles, a U.S. engineer who has influenced Japanese industry.