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Regarding: Foreword for *Training Within Industry*, by Don Dinero

You are about to read an important book, a book that tells the story of TWI, the most underrated achievement of 20<sup>th</sup> century American industry.

My own "discovery" of the four Training Within Industry programs came about in a most curious way, in Toyota City, Japan in 1984. My job at that time was to assist the Training and Education Department of Toyota Motor Corporation to develop training programs to transfer the company's vaunted production system to its new joint venture with General Motors in Fremont California, later to become famous as NUMMI, New United Motors Manufacturing Inc. One of our initiatives at that time was to "adapt" various Toyota training materials to make them appropriate for NUMMI. Part of my job was to ensure that all training met two objectives that sometimes seemed to be at odds: the training had to be true to the Toyota Production System yet at the same time it had to be compatible with American "culture," or palatable to American workers. As it turned out we experienced few problems in this regard, for the most part. But, I found myself struggling with some aspects of a certain training program, a standardized training process intended to assist plant floor front line supervisors to teach new operations to workers quickly and effectively. In my view, the program Toyota was using was too standardized, too rigid, too rote in nature; in short, simply too "Japanese." So, I protested to my Japanese colleague, declaring that the program as configured just wouldn't do and required radical revision before unleashing on the NUMMI workforce.

My Japanese colleague Isao Kato, Toyota's Master Trainer of the TWI programs, had been quite patient with me up to that point, knowing that his job was to mentor me as well as to get the job done. Finally, exasperated with my protestations, he fetched from a back room file a yellowed, dog-eared, coffee-stained copy of the English-language original training manual, just as they had received it [minus the coffee stains I trust] some 30 years before. To my absolute amazement, the program that Toyota was going to great expense (including re-translating from Japanese to English) to "transfer" to NUMMI was exactly that which the Americans had taught the Japanese decades earlier. Of course, it was JI, the Job Instruction module of TWI. Toyota still used it in 1984 and still uses it to this day, yet rarely do I find a U.S. manufacturer who has even heard of it, much less still uses it here in the country of its origin.

Through NUMMI, Toyota repatriated this expatriated technology. The re-importation of this important technology has long struck me as a fact of such significance that when in 1997 I established my consulting group I chose the name "the TWI Network, Inc." as its name (even though the focus of the group's consulting work is TPS and Lean Enterprise transformation rather than strictly TWI training per se).

J1 is in fact still used in its original form by Toyota to this day. While, that is not exactly true for the other "J" course, the training that Toyota has replaced them with still follow the same principles and to some extent even the same format. Job Methods was drastically changed in the 1950s to reflect the results of the radical production system experiments that Toyota was initiating. Toyota's Standardized Work & Kaizen process and tools have progressed far beyond the original TWI program, but the essence of the "J" courses can still be found. Similarly, Toyota substantially altered the Job Relations course shortly before I arrived in Toyota City in the early 1980s.

Your guide into the world of TWI, Don Dinero, approaches the topic of TWI from a couple of perspectives. As expected, he describes the programs in depth, but he also provides rich detail about the development of the TWI programs as Don takes us through the various iterations of its founders. Layered meaning can be found in these pages, as the astute reader can see that the *development* of TWI actually *embodies its fundamental character*. TWI wasn't developed on paper, in a laboratory and then rolled out to the masses. Rather, it was developed through actual practice, through implementation, with learning captured through each iteration and those learnings put to proper use through continuous improvements of the programs over time. Were the programs standardized? Yes, certainly. Were they static. Absolutely not.

This dynamic also captures one of the most important and often overlooked aspects of the Toyota Production System, the central role of and the nature of standardization, or Standardized Work. TPS and TWI take us away from the command and control of the typical application of "Scientific Management" to fundamental Management by Science. Standards are set - as bases of comparison - which are then put to use as base lines for improvement.

We have come to call this process "continuous improvement". Deming called it PDCA. You can learn about it through TWI.

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