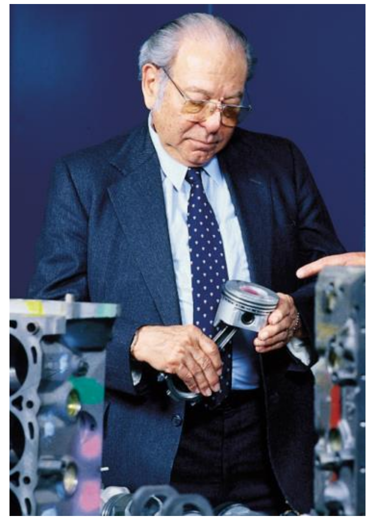
Shainin Medal



ASQ approved the Shainin Medal as an ASQ overall Society Award in 2004. The Shainin Medal recognizes significant innovation in the development of a unique and/or creative method for improving the quality and/or reliability of products, processes or services.

The award was named for Dorian Shainin, a leading authority on product quality and reliability. During a professional career that spanned nearly six decades, Shainin developed more than 20 statistical techniques for solving problems, controlling processes, and developing highly reliable products.

After earning a degree in aeronautical engineering at MIT, Shainin began his career as a design engineer for the Hamilton Standard division of United Aircraft. In 1939, he was assigned to work with suppliers to help solve technical problems. These problems were limiting Hamilton Standard's ability to provide critical propeller systems for the war effort. Shainin quickly discovered that he could solve problems faster and more effectively by "talking to the parts" rather than talking to the engineers. While the engineers would speculate and develop lists of potential causes, the parts always revealed the real root cause, if you knew how to speak their language. This insight drove Shainin's approach to problem solving for the remainder of his career.

In 1946, he developed his first statistical technique, the Hamilton Standard Lot Plot. This was a graphical method for evaluating the quality of an incoming lot based on measuring a random sample of 50 units. Developing new techniques requires perseverance and Lot Plot was no exception. Shainin had to demonstrate to the Navy Bureau of Aeronautics that Lot Plot was more effective than 100 percent inspection—a conclusion that was counter-intuitive. In 1951, Shainin's article on Lot Plot was recognized with the Brumbaugh Award for the most influential article of the year.

Shainin's most significant contribution was his discovery of the Red X®[1] model of systems variation. The prevailing wisdom held that variation causes could be discovered and controlled until the system reached a state of statistical equilibrium. At that point, the remaining causes were believed to be random and undiscoverable. Any further improvement would require a redesign of the system. However, Shainin found that by talking to the parts, he could find variation causes within stable systems. He concluded

[1] Shainin and Red X are registered trademarks of Red X Holdings, LLC.

that Juran’s Pareto principle must apply to the causes of system variation. No matter how many causes had already been identified and controlled, among the remaining causes there must be one that contributed more to the overall variation than any other. He called this cause-effect relationship the Big Red X.

Because of the way sources of variation combine to create overall system variation, it is not possible to make a significant improvement unless you find and control the Red X. For the rest of his professional career, Shainin focused on promoting and developing statistical tools that aided in the search for the Red X. Shainin followed three principles for solving variation problems:

1. There is always a Red X.
2. The fastest route to identifying the Red X is a progressive search using a process of elimination.
3. Talk to the parts with tools that are both statistically simple and rigorous.

From 1950 through 1983, Shainin was on the faculty of the University of Connecticut, where he originated and conducted the continuing education program for people in industry. At one of his seminars, the medical directors of two Connecticut hospitals convinced him to work on some of their critical management problems. As a result, The Newington Children's Hospital (now part of the Connecticut Children's Medical Center) appointed him statistical consultant to the medical staff from 1957 to 1994. Thus, he had the opportunity to adapt several of his techniques to the problems of the etiology of infirmities, particularly disabled children.

In the early 1960s, Shainin served Grumman Aerospace as a reliability consultant for the lunar module of NASA's Apollo project. The lunar module prototype components and systems had been empirically tested using the Shainin multiple environment overstress probe testing system to be statistically sure that even the weakest failure mode had a statistical margin of safety. NASA initially awarded that contract to Grumman because no other aerospace competitive proposal demonstrated that safety ability.

For more on Dorian Shainin, you may wish to visit:

https://asq.org/about-asq/honorary-members/shainin or

en.wikipedia.org/wiki/Dorian_Shainin

The Shainin Medal is presented to an individual for the development of a unique and/or creative method for improving the quality and/or reliability of products, processes or services.

The recipients of the Shainin Medal have been recognized for the development of a specific technique. The committee evaluates nominations with an emphasis on creativity, uniqueness, and usefulness.

The nomination form and information about the Shainin Medal can be found at:
https://asq.org/about-asq/asq-awards/shainin

Nominations must be received by October 1. The medal is presented at the annual ASQ World Conference on Quality and Improvement.

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