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System Failure

During my 42-year career as a physics professor and university administrator, I read for pleasure on a range of subjects outside of my discipline that caught my attention including: strategic planning, continuous improvement as the only path to excellence, and the origins and prevention of 'failure.'

The Origins of Failure

One of the most fascinating lessons I learned from my reading was that something like 90% of all failures can be traced to the system in which people work, rather than to the people themselves. A corollary to that finding is that, if you put good people into a bad system, the likelihood of failure is still very high.

Dr. W. Edwards Deming, the father of the U.S. quality movement suggested that, in the quest for the continuous improvements needed to achieve excellence, the following very telling question must be repeatedly asked and answered: "What about the work system is causing the employee to fail?"

"Design-Induced Pilot Error"

Back when I was a graduate student many years ago, one of my professors, who also happened to be a pilot, began ranting in the lunch room one day about a plane crash that had been attributed on the local news—as with many crashes—to "pilot error." And on that day, through the sheer serendipity of having brown-bagged it instead of going out to one of the pizza trucks for lunch, a physics professor introduced me to the fascinating concept of "design-induced pilot error."

Here's how he explained it. The plane gets designed by groups of people who know about flying, as well as about mechanical, electrical, manufacturing and aeronautical engineering. In the course of designing even a small personal aircraft—which is still a complicated system of technologies that must be integrated not only to work, but to fit into limited spaces involving as little excess weight as possible— certain imperatives related to the integration of the various technologies must be honored. At some point, in order to take off, fly and land the plane safely, while simultaneously managing the separate demands of those various technologies, the pilot is required to perform a certain series of tasks in a certain window of time. And if the required number of tasks is sufficiently large, and/or the window of time sufficiently small, the plane may crash, and the cause is likely to be attributed to "pilot error."

"One a Day in Tampa Bay"

After college, and prior to my time in graduate school, I had seriously considered becoming a Marine Corps naval aviator and, for that reason, had happened to read the fascinating history of the Martin B-26 Marauder medium bomber of World War II fame. Although it ultimately became a hugely successful plane, ending up with the lowest combat loss ratio of any plane in Europe, and with more than 5,000 having been built and deployed before the end of hostilities in 1945, its early history belied its eventual promise when, during a 30 day period in 1940, fifteen (15) of the Marauders crashed into Tampa Bay close by the airfield from which they took off, resulting in the unfortunate hyperbole: "One a Day in Tampa Bay." Now that was clearly an exaggeration that 'doubled the actual trouble' since, technically, it would have required 30 planes in the Bay in 30 days to make the taunt precisely true.

NASA Fatalities

Of all the fatalities recorded since NASA launched the era of human spaceflight, not one has been attributed to "astronaut" error. The failures that led to those fatalities were all traced back to design flaws, ranging from: 1) a pure oxygen atmosphere for Apollo 1; 2) rubber O-rings not designed for cold weather; and 3) failing to remember the power generated by high-speed collisions with foam insulation.

PASSHE's Egregious Failure to Deliver on its Statutory Purpose

The preceding statements, and examples, regarding the systemic origins of failure were presented to provide proper context for both my past and future assertions that:

"The reason for PASSHE's failure to deliver on its statutory purpose is directly traceable to its current "system" of governance, that is, its current total (100%) political control of PASSHE."

While I will always stand behind that assertion, because evidence for its truth is incontrovertible, my criticisms regarding the origins of that failure are directed not at the people, but at the system of governance itself; a system which is not only failing, but petty, outdated and tyrannical. It is a system that is wholly unworthy of the elected officials and the people of the Commonwealth of Pennsylvania.

Posted by Angelo Armenti, Jr. at 8:40 AM