



Naval Safety Center

LESSONS LEARNED



LL 19-13

THE HALF-LIFE OF "SCARED": HOW LONG DOES IT TAKE BEFORE WE REPEAT OUR MISTAKES?

While too much fear is bad, a certain level of fear is healthy. It is what keeps us alive and prevents us from doing something foolish or dangerous. If you aren't afraid, then you think you are bulletproof. It is fear (and wisdom) that makes us look both ways before crossing the street. Without a healthy amount of fear, we easily can fail to see or anticipate the hazards around us.

In late 2018, Commander, Naval Surface Forces sent a message to the surface force entitled "The Half-Life of Scared is Six Months." The Naval Safety Center recently validated that premise by analyzing 15 years of mishaps. The study determined the mean time it takes for us to forget our lessons, stop being "scared" (and vigilant), and thus repeat a similar mishap is 193 days. Knowing that number, we can better target our training frequency to help ensure we all stay just "scared" (and thus, vigilant) enough to not keep causing the same mishaps.



***You know, I think you try harder when you're scared.
– Rocky Balboa***

COMNAVSURFOR stated that commanding officers are very good at making risk decisions if they recognize the risk and see that a mishap is possible, but this recognition requires a keen awareness of the most likely and most dangerous threats. While this was targeted at surface force officers, the statement is true across all our communities and paygrades. We all have a tendency to become less concerned about threats over time, and our awareness of the magnitude of the threat fades as Sailors and Marines transfer, we file away our lessons, and we focus on the next challenge.

For many mishap types, this half-life of awareness is six months. In this context half-life can be simply defined as the time it takes to decrease by 50 percent. Using simulation modeling in studying seamanship mishaps, NAVSAFECEN determined that the mean time between mishaps was 193 days. While the study focused on afloat mishaps, the results and discoveries can apply to the entire Navy and Marine Corps team. They identify an optimal frequency for recurrent primary skills training that is necessary for qualified personnel. Naval units must constantly balance the harmony between minimally qualified and operationally proficient. By integrating skill proficiency limits and actively managing them, organizations can guard against becoming operationally complacent.



THE HALF-LIFE OF "SCARED"

So, how do we know this? NAVSAFECEN's Knowledge Management (KM) team conducted a detailed analysis of available data. The multi-page summary explains all the academic details (pivotal events, Monte Carlo simulations, probabilistic models, exponential distribution, z-score, and a host of other technical jargon).

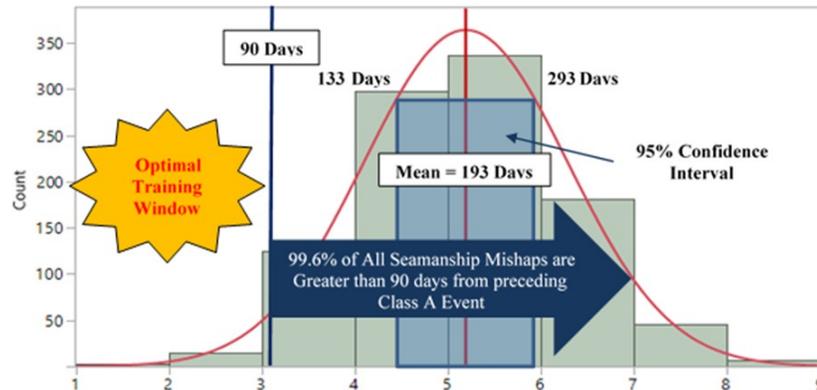


Figure 1. Monte Carlo Simulation results, normalized for presentation.

Figure 1 gives you the overall picture, but the simple summary is this:

- The model showed a mean time between failures of 193 days (about six months). 68% of the simulated mishaps occurred between 154-232 days (about six months) from the preceding mishap.
- The model showed that only 0.4% of mishaps were forecasted to occur again in the 90 days after a Class A mishap. That means that 99.6% of all mishaps occurred after the initial 90-day interval.

In plain English: **We stay "scared" (and vigilant) for the first 90 days and don't make the same mistakes. After about six months we lose the healthy fear, get complacent, and do it again.**



If we take the generally accepted definition of bravery as a quality which knows no fear, I have never seen a brave man. All men are frightened. The more intelligent they are, the more they are frightened.

— George S. Patton

Stay scared, my friends.

— The most interesting man in the [Safety] world

Lessons Learned / Recommendation

Quarterly training. Commands should conduct operational safety training (the study specified seamanship training for the surface warriors) on a quarterly basis. This training should include a review of historical examples of mishaps and the underlying causal factors. Commands should conduct an honest self-assessment to determine if they are susceptible to the causal factors that previously led to a mishap. Keeping the training interval to 90 days or less may help to maintain the appropriate level of awareness and decrease the likelihood of repeating the mistakes.

And, as always, "Let's be careful out there"