



Normalization of Deviance  
Robert Wander

The phrase 'Normalization of Deviance' became a catch phrase in American English in the aftermath of the tragic destruction of the space shuttle Challenger, with the loss of the entire crew. I recall exactly where I was, that January day in 1986, when I heard the terrible news, and how hard I took it. I bet you, too, recall where you were, and how badly you felt, when you heard the news.

Post-accident investigation revealed that a mission-critical O-ring in a solid rocket booster had failed - eroded by flames from within the rocket itself. The O-rings were not designed to erode. They were designed to seal adjacent sections of the rocket without erosion. Pressing on, investigators learned that the O-rings had partially eroded on a number of previous Shuttle launches that had NOT resulted in tragedy - and that NASA had begun to accept O-ring erosion as a normal occurrence, despite the fact that the O-rings were not designed or intended to suffer erosion. That, in a nutshell, is normalization of deviance. Investigators also learned that the O-rings were designed to be used only within a certain narrow ambient temperature range, and that the temperature when Challenger launched had pressed the edge of that temperature envelope.

Normalization of deviance is, simply put, a process of erosion. Erosion of high standards, to lower standards. Erosion of adequate margins of safety to inadequate margins. Erosion of high standards of professional behavior to lower standards of behavior. And so on.

And so what's the trouble with this erosion of standards? The problem is, we are all susceptible to it. It's human nature. How so? Because it takes continuous discipline to maintain high standards, and when high standards protect us from danger or disaster time after time, it becomes seductively easy to conclude that, "Well, I have done this operation safely so many times that I can let this standard or that standard slip - after all, I have always done this task safely ... I'll just ease off this 'safety' stuff ..." See the problem? Erosion of standards is seductive. It's easy. It's the line of least resistance. Sooner or later, when standards erode, accidents become more and more likely to occur.

When Standards Erode:

- I'll save time and skip the pre-flight inspection and positive control check because thermals are really starting to pop. After all, I've gotten away with it before...
- I am thermaling at very low altitude, lower than I have ever done before, but I'll keep trying to save this flight (rather than setting up the approach to land). After all, I've gotten away with some low saves before...
- I feel dehydrated, irritable, and have a dull headache but my water bottle is back in the glider trailer, on the other end of the airport, too far away, and so I will just launch without a water supply and get on with this five-hour Silver Duration attempt. After all, I've gotten away with it before...
- I will fly loops, aileron rolls, and Cuban Eights in this non-aerobatic glider. After all, I've gotten away with it before...
- I will try to sneak, to s-q-u-e-a-k, through this mountain pass even though I know that if I fail to find lift on the other side, there is no safe place to land. After all, I've gotten away with it before...

And perhaps you have gotten away with some or all of the above. This is the great seductive siren call of the erosion of safety standards: You deliberately speculated badly by accepting great risk for a possible small gain, which is not very intelligent, but you got away with it. You weren't right. You were just lucky. And that luck may not - in fact probably will not - protect you on subsequent trials. The fact that you got away with it before does not protect you the next time! And the more you know about probability, the better you understand that if you persist in these behaviors it is only a matter of time until one of these behaviors will bite you.

I think you get the idea. So, let's all of us - you, me, him, and her - take a look in the mirror this month and see if our safety standards have been eroding.





Normalization of deviance - erosion of safety standards - is a safety concern for all of us. Next month, Soaring Safety Foundation Trustee Ron Ridenour will provide his take on the topic. Ron has owned and operated a glider flight school, is an FAA Designated Pilot Examiner, flew for United Airlines for decades, is an airframe and power plant mechanic and an Authorized Inspector for aircraft, and is a consistent high-place finisher in soaring contests - in short he has remarkably broad experience in aviation. I look forward to giving his take on this topic a very close read. I hope you will do the same.

