

What's Lurking Beneath?

By Robert Baron, Ph.D

A while back I was a passenger on an MD-88 which was being pushed back from the gate at Hartsfield-Jackson Atlanta Airport. I had a window seat so I was able to see outside and observe the ramp operations. One of things I saw was pretty alarming—but not surprising. There was a clearly visible, large Styrofoam cup blowing around in the wind; not one of the ramp personnel picked it up.

This type of situation is a very good example for the well-known “Iceberg” model. Simply put, accidents are at the top of the iceberg because they are above water (clearly visible) and *reactively* we can learn a lot from them. On the other hand, the incidents and occurrences that are below the water line (well below the top of the iceberg) are harder to see because they are deeply submerged, or hidden. A Styrofoam cup will probably not cause an aircraft to crash but any type of Foreign Object Debris (FOD) can certainly cause significant engine damage. Regardless, this situation is a good diagnostic indicator of WHAT is going on below the waterline, also known as *proactive territory*. So the question then is WHY this happened (or what failed)? Here are just a few plausible WHY's and my responses to each:

- **Training issue?**
 - Doubtful. FOD training is robust at most airports, particularly at the largest airports in the world, such as Atlanta. The ramp personnel were trained to identify and pick up FOD with a very good understanding of FOD's potential damaging effects.
- **Lack of awareness?**
 - Doubtful. The cup was white in color, large, swirling around by the wind, and plainly visible. Ramp personnel had to have seen the cup.

- **Expedited ignorance?**
 - Likely contributing factor. It's natural to overlook seemingly "trivial" things for the sake of expediency to get the job done.

- **Pluralistic ignorance?**
 - Likely contributing factor. People tend to form a norm and do (or don't do) what their peers are doing (or not doing). In this case, if one ramp personnel ignored the cup then his peers may have followed suit. This is why leading by example (or role modeling) is so important at *any* level of the organization.

What's the point of all this? Well, the most seemingly trivial occurrences in isolation may not become a problem. But, when linked together (i.e., the Swiss cheese effect), these occurrences may creep above the waterline to become visible accidents. Thus, to prevent accidents, we need to start at the bottom. If ramp personnel are ignoring FOD then what *other things* may be lurking beneath the surface? Keep in mind that although this article cites a ramp issue, all of these principles can apply to any type of aviation operation.

What can you do? If you are management, be sure training not only covers the technical aspects of the job but, additionally, include some human factors training (or at least stress the importance of human limitations). If you are a line employee, remember that YOU are the "eyes of the operation." Be vigilant, be aware, don't conform to negative norms, don't think that the "little things don't matter," and perhaps most importantly— as the eyes of the operation—submit those anonymous hazard/incident reports to your safety department! It takes a concerted effort between management and line employees to keep those things lurking beneath the surface in check!

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