



What a year 2020 is turning out to be! First, I wondered what would happen to the airline industry, with the problems Boeing was having with the 737 Max grounding that resulted in hundreds of acres of land covered with unsold new planes — not to mention all the existing grounded planes around the world. Then, the COVID-19 “problem” changed almost instantly from “another problem in China” to a global pandemic. As I write this column, 2020 has seen widespread global demonstrations around the Black Lives Matter movement and police policies. Undoubtedly, the second half of the year will bring new and unexpected problems and “adventures” throughout the world.

On March 11, I represented the International System Safety Society (ISSS) at a safety workshop in Tempe, Arizona, which was hosted by Arizona State University (ASU) and the National Institute for Occupational Safety and Health (NIOSH). The meeting’s topic was how to bring “safety through design” practices and principles into the world of construction. I was there to share my insight into bringing system safety practices to that industry sector, a subject near and dear to my heart after my first career as a general contractor specializing in building and remodeling residential buildings. I am well versed in the safety issues involved in that industry, and in the challenges of doing these fast-moving, highly hazardous activities safely.

On the flight home, the airport had an unusually crowded and hectic feeling. It turns out that our meeting at ASU was the last one held to date; the dinner we attended afterward was the last night that restaurant was open, and it was the last time the campus was open to students or faculty. I guess everyone was concentrating on getting home before everything shut down. It was also the last time I have stepped into a building other than my house and barn! (I had to break that rule once to purchase a 50-pound sack of flour to

make sourdough French bread to ease the pain of almost complete isolation.)

I bring this up to make the point that *it is dangerous out there!* I have found the experience of a country — and the world — during a pandemic to be quite interesting from a system safety point of view. As system safety professionals, we are in the business of performing risk assessments, recommending mitigating solutions and assisting with the difficult process of determining *acceptable risk*. That process has played out before us in a rather dramatic way. The risks are quite high, the outcomes potentially dire and the threat is silent and invisible — until it isn’t.

There are still a lot of unknown details, such as how long an asymptomatic person remains contagious and how likely it is for the virus to spread through aerosols, among other questions. There are no reasons to expect that COVID-19 will die out on its own, or that we will find an effective cure anytime soon. It will probably be with us for the foreseeable future. It is not even known if surviving the infection leads to effective immunity, especially in the long term (more than a week or two).

Given this, what do we as system safety professionals have to say about this situation? It seems this virus is going to continue spreading until there are no more targets to which it can spread. If that is true, and we don’t find effective ways to interrupt a geometric progression of infections, we can expect something like 300 million cases in the United States and 7 billion cases globally, with something like 60 million getting seriously ill in the U.S. and 15 million dying from the disease. Now *that* is a problem.

As this occurs, what happens next will depend in large measure on the speed with which it occurs. Clearly, the virus spreads quickly if given the chance. It went from one or two people in the U.S. sometime in Febru-



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ary — depending on the report you read — to being in almost every corner of the country, with more than 150,000 deaths, in a little over four months. Our only tool to combat the virus at this time is to slow the rate of infection. If it spreads too fast, the entire medical and economic systems of a country can become overwhelmed and dysfunctional — leading to a much larger and deadly series of “collateral casualties” resulting from secondary events.

While it is imperative to slow the spread, that leads to all the disruptions we are seeing because of closed businesses. These disruptions are not only direct financial disruptions because of a lack of customers, lack of production of important goods and services, and problems with critical supply chains. There are also the disruptions to people’s lives, creating so much stress that people are now willing to risk their lives to do the activities that bring meaning to their lives (going to restaurants, bars, shopping for clothes, going to sporting events, gathering in large protests and political rallies, etc.). While many of these might appear to be rather silly reasons to risk your life, they are an important part of the risk *acceptance* equation that we don’t normally get to observe so clearly.

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realization that the one who is willing to take the risk may not be the person who will actually be harmed. Wearing a mask isn’t so much to protect the mask wearer; instead, it protects those who are *exposed* to the mask wearer. There is a larger societal risk involved.

This is a common problem we face in the system safety profession. The person *accepting* the risk is often not the same person who is actually *exposed* to the risk. Because of this disconnect, many safety decisions are fundamentally flawed. Just as the shop owner is mainly worried about their risk of going out of business and therefore pushes to re-open, their personal risk of financial ruin has to be weighed against the risk to others — not necessarily even those who frequent the establishment — of being infected and possibly dying. How to balance these competing needs is the fundamental conundrum of system safety.

Our own Society has been impacted in some existential ways by the “collateral damage” of this pandemic. As you all know by now, we were unable to hold our annual International System Safety Conference (ISSC) in person. The Conference is the main source of operational funding for the ISSS. Without this income, the ISSS could go out of business or be forced to turn into something quite different from what it is today. It is critical that we, the ISSS, find a way to hold a similar fundraising event in the face of the pandemic or find alternative sources of income.

Those involved in the management and direction of the Society are attempting to do both. Alternative sources of income might come from increased dona-

tions (individual or corporate) or through sales of new products and services. We are working toward both of these approaches, but don't anticipate a quick return from either. That means we will once again be dependent on hosting a financially successful Conference.

Holding the ISSC this year means we need to find a way to host a vital, interesting and financially successful virtual conference. This is all new to us. There are many organizations struggling with this problem, so there are many models to investigate — so many, in fact, that there isn't nearly enough time to investigate them all to see which might best meet our needs. So, we are feeling around in the dark, creating something entirely new, while embracing ideas and practices that others are doing with the hope of leveraging their experiences and expertise while avoiding the pitfalls they are discovering.

Our current thrust is to create something similar to our usual in-person event — which includes technical papers, tutorials, workshops and abundant networking opportunities — all at a cost that reflects the different price constraints of implementing a virtual event that doesn't require travel and

lodging, but does require enhanced technical support. I don't want to divulge too much of our current planning right now because we are still researching the difference between what we *can* offer versus what

we would *like* to offer. However, we are confident that many of the most important aspects of a conference experience will be maintained — and potentially enhanced — as we create this new experiment in staying together at a distance.

We will keep you informed as early as we can. The virtual event is scheduled for October and November (see below), and we are working on the exact schedule of events for the Conference.

I hope you can all find a way to attend and experience this new creation. I am certain you will find it worthwhile, interesting and hopefully even fun. We are aiming to keep the costs down to open the event up to more people,

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