Opinion

Offbeat Oregon History: Lessons from plane crash

By Finn JD John
For The Sentinel

It was well after dark — 6:15 p.m. on a Thursday night, three days after Christmas in 1978, in a quiet suburban neighborhood of southeast Portland. Theresa Salisbury was having supper with her two-year-old daughter in their home, located on Burnside Street near 157th Avenue, when the ground shook.

"My windows shaked and rattled," Salisbury told the Portland Oregonian's reporter. "The door flew open. So I grabbed my kid and ran to the back of the house. When I didn't hear anything else I walked out to the front. I couldn't see the house across the street because of all this blue smoke. It was choking me. When I walked outside, the house next door was completely flattened."

The third-worst commercial airplane crash in Oregon history had just happened — right outside Salisbury's dining-room window.

Soon Salisbury's quiet neighborhood was alive with emergency responders, curious locals, and dazed-looking crash survivors. The nearby Community Free Will Baptist Church was quickly set up to treat survivors, and the Red Cross put the call out for blood donations; two hours later, several hundred people had put their dinner forks down and hurried in to give a pint.

And nearly everyone on the scene echoed the same thought: A fully-loaded airliner, with 189 people on board, had crashed in the midst of Oregon's largest city. Yet although there were some people badly hurt, and 10 deaths, the vast majority of passengers and crew, along with everyone on the ground, was uninjured. All in all, were it not for the deaths of those unlucky 10, the crash would have been something of a Christmas miracle.

United Flight 173 was a McDonnell-Douglas DC-8-61, a stretched version of the four-engine jet airliner that was McDonnell-Douglas' answer to the Boeing 707. The flight had started out in New York City earlier that night, and following a stopover at Denver, it was scheduled to land at PDX, its journey's end, at 5:13 p.m.

And all was going completely according to plan until just before the scheduled landing, when the landing gear was lowered.

When that was done, something went wrong with the right main landing gear, and instead of lowering into place in a controlled fashion, it dropped into place with a boom that shook the airplane. The impact destroyed the sender that lit the "landing gear locked in place" light on the dashboard. The crew, flying around the landing strip, had no way of knowing if the gear was locked in place or not, and was faced with the possibility that it would collapse when they tried to land the plane on it.

The pilot in command of the plane, Capt. Melburn McBroom, got permission to spend a little time circling the airport to try to diagnose the problem and give the stewardesses time to prepare the passengers for a possible rough landing. And for the next hour or so, the big bird flew a pattern around the airport while the crew tried to figure it out.

Meanwhile, unnoticed by McBroom, the fuel was burning at an accelerated rate, because the plane was trimmed for landing and the gear was down.

The first sign of trouble came at 6:06 p.m., just after McBroom announced they would be landing in about five minutes.

"I think you just lost number four," said First Officer Rod Beebe. And, a few seconds later, "We're losing an engine."

"Why?" McBroom said.

"Fuel."

The crew scrambled to open cross-feeds from the other fuel tanks, to get the dead engine started again. This worked, and, realizing now how perilously low fuel stocks were, McBroom started preparing for an emergency landing at the Troutdale airport.

But seven minutes later, flight engineer Forrest Mendenhall said, "We just lost two engines, guys."

A few seconds later, Capt. McBroom said, "They're all going. We can't make Troutdale."

"We can't make anywhere," replied Beebe.

"OK. Declare a mayday," said McBroom.

Beebe got on the radio: "Portland tower, United 173 heavy, mayday. We're — the engines are flaming out. We're going down. We're not going to be able to make the airport."

That was the last radio transmission from Flight 173. Captain and crew had other things to worry about. The big airliner was left ghosting through the air over Portland, a high-speed glider, its pilots desperately scanning the light-strewn cityscape below for a safe place to land ... or crash. And, because it was dark, the best they could do was aim for a dark spot below, and hope any trees weren't too big.

As it turned out, they probably couldn't have picked a better spot.

The final death toll in the ensuing crash-landing was 10: eight passengers and two crew members — flight engineer Mendenhall and senior flight attendant Joan Wheeler. Another 23 passengers and crew members were seriously injured, including Capt. McBroom and 156 passengers and crew members were unharmed or suffered injuries too minor to require treatment.

The crashing airplane snapped off trees, tore out power lines and flattened two houses on the ground. Both houses were vacant and dark. It's interesting to contemplate that if one of the vacant houses had had its porchlight left on, McBroom would probably have picked a different place to land, and the death toll might have been different — probably higher, possibly much higher.

Investigators determined that the initial problem was a maintenance one — the one that caused the loud landing gear. Ironically, the landing gear was just fine, locked in place and ready for service; but, by flying around for an hour troubleshooting it, the crew had lost track of time and fuel, and had come up about five minutes short on both.

The other lesson that investigators took from the crash was a big one, and it has unquestionably saved lives in the years since this crash — probably hundreds of them: The lesson was that commercial jetliners are too complicated to be flown according to a strict chain-of-command hierarchy, in which the pilot barks orders and information only flows back to him if he asks for it. Instead, a more collaborative team approach was needed, so that one person's momentary weakness or distraction would not be deferred to by members of the team who happened to be in a position to know better.

The result was an initiative called Crew Resource Management, or CRM, developed several months after the crash by NASA psychologist John Lauber, who had extensively studied cockpit communication under even more complicated flight conditions. The most important element of CRM is a recognized way for authority to be respectfully questioned.

CRM was adopted by United in 1981, and other airlines quickly followed suit. By the mid-1990s its benefits were so obvious — especially in contrast with certain other countries that at that time were still following the old model — that the FAA made it mandatory.

So the family members of the 10 victims of the Flight 173 crash have that much consolation for their loss: their loved ones' deaths on that winter night continue to save uncountable others from a similar fate.

Dr. Fuhrman: Low-glycemic sweeteners and your health

Added sugars come in several forms other than sugar, evaporated cane juice and high fructose corn syrup. Calorie-containing sweeteners such as maple syrup, honey, agave and coconut sugar are marketed as "natural" and often touted as healthier alternatives to regular sugar. Is there any truth to these claims?

Similar to sugar, these are low-nutrient concentrated sweeteners; they add substantial calories to the diet while contributing very little nutritional value. Maple syrup and honey elevate blood glucose similarly to sugar (sucrose), leading to disease-causing effects in the body. Agave and coconut sugar rank lower on the glycemic index but are still empty calories and may have other negative effects. Repeated exposure to these excessively sweet tastes dulls the taste buds to the naturally sweet tastes of berries and other fresh fruits, which perpetuates cravings for sweets and can undermine weight loss. Since some natural sweeteners undergo fewer processing steps than sugar, they may retain some phytochemicals from the plants they originate from, but their nutrient-to-calorie ratio is still very low, and they contain minimal or no fiber to slow the absorption of their sugars. The negative health effects of added sugar and high-fructose corn syrup (HFCS) are well documented, including increased risk of weight gain, diabetes, cardiovascular disease and cancers.

Agave nectar is marketed as a low-glycemic sweetener due to its high fructose content (agave is approximately 90 percent fructose). Sucrose is half fructose and half glucose, made up of one fructose molecule linked to one glucose molecule. HFCS contains 55 percent fructose and 42 percent glucose. All sweeteners (and fruits) contain some combination of glucose, fructose, and the two bound together as sucrose. Maple syrup contains about 90 percent sucrose, so it is very similar to regular white sugar. Coconut sugar contains 70-80 percent sucrose, and honey contains 49 percent fructose and 43 percent glucose.

Fructose and glucose are broken down differently by the body. When fructose is absorbed, it is transported directly to the liver, where it is broken down to produce energy. Fructose itself does not stimulate insulin secretion by the pancreas. However, much of the fructose is actually metabolized and converted into glucose in the liver, so it does raise blood glucose somewhat (although not as much as sucrose or glucose). Despite its low glycemic index, added fructose in the form of sweeteners still poses health risks. Fructose stimulates fat production by the liver, which causes elevated blood triglycerides, a predictor of heart disease. Elevated triglycerides have been reported in human studies after consuming fructose-sweetened drinks, and this effect was heightened in the participants who were insulin-resistant. Fructose, when used as a sweetener, also seems to have effects on hunger and satiety hormones that may lead to increased calorie intake in subsequent meals.

When you ingest any caloric sweetener, you get a mix of disease-promoting effects: the glucose-elevating effects of added glucose and the triglyceride-raising effects of added fructose. Sweeteners, unlike whole fruits, are concentrated sugars without the necessary fiber to regulate the entry of glucose into the bloodstream and fructose to the liver. All caloric sweeteners have effects that promote weight gain, diabetes and heart disease, regardless of their ratio of glucose to fructose, or what type of plant they originate from.

Dr. Fuhrman is an author and board certified family physician specializing in lifestyle and nutritional medicine. Visit his informative website at DrFuhrman.com. Submit your questions and comments about this column directly to newsquestions@drfuhrman.com. The full reference list for this article can be found at DrFuhrman.com.

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IN BRIEF JAN. 3-JAN.10

The Primary Stroke Center team at PeaceHealth Sacred Heart Medical Center at RiverBend offers a free support group for stroke survivors and caregivers that meets the first Wednesday of each month. The next meeting is Wednesday, Jan. 3, from 2 p.m. to 3:30 p.m. in Room 200A at RiverBend, at 3333 RiverBend Dr. in Springfield. This month's topic is "Living with Chronic Conditions, presented by Leslie Gilbert, MPH, Living Well program coordinator for Lane Council of Governments Senior Disability Services. All are welcome; no registration is required. For information, call 541-222-5144.

Auditions for Cottage Theatre's next show, Legally Blonde will be held on Jan. 6 and 7 at 4 p.m. Anyone interested can audition at 700 Village Dr. in Cottage Grove.

The Kiwanis Club Christmas Tree collection will run through Jan. 10. A suggested $7 donation applies. Call 541-942-2350 to set up an appointment.

2018 Cottage Theatre season tickets are on sale now. Visit cottagethreat.org for more information.

Do you have an event, show or announcement? Submit all information to cmay@cgsentinel.com by Monday at 12 p.m. to be featured in the Wednesday edition.

Letters to the Editor policy

In order to ensure that your letter will be printed, letters must be under 300 words and submitted by Friday at 5 p.m. Letters must be signed and must include an address, city and phone number or e-mail address for verification purposes. No anonymous letters will be printed. Letters must be of interest to local readers. Personal attacks and name calling in response to letters are uncalled for and unnecessary. To avoid transcription errors, the Sentinel would prefer editorial and news content be sent electronically via email or electronic media. Hand written submissions will be accepted, but we may need to call to verify spelling, which could delay the publishing of the submission.
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