



GREEN AND Safe

Environmental activists around the globe have aviation in their sights and the industry must respond. In many ways, the current uproar about aviation's contribution to global climate change mirrors past outbursts about aviation safety; some were justified, others were vastly overblown.

Everything connected to aviation, the highly visible and singular activity that it is, gets an exaggerated public response. We've found that being defensive about undeserved safety criticism doesn't get a lot of traction with a disturbed public. While presenting our case as best we can, in the end we must have a positive response to the public concern.

And so it goes with emissions: Protesting that aviation's contribution to the world problem is minimal won't win the day. Even less productive is trying to argue the existence of climate change. In the end we just have to suck it up and make a good-faith effort to improve, making certain that we blow whistles, wave our hands and issue press releases with every step taken toward being carbon neutral.

Meanwhile, we also have to be tempered in our rush to greenness. We cannot let our zeal to be Earth-friendly diminish our safety focus. This is not to point a finger at any aspect of the drive

toward carbon neutrality; I've seen nothing that is an obvious risk. However, one only needs to look at the recent surprising developments with frozen ice crystals blocking the fuel flow on Rolls-Royce-powered Boeing 777s to get some idea of how complicated it will be to fully test and clear for use the alternative fuels now in development. When a jet fuel that has been in use for so many decades suddenly presents new, odious failure modes, it raises the question: How well do we need to test the new fuels?

Experts speaking at the recent Aviation and Environment Summit in Geneva predicted that sustainable biofuels could be ready for commercial aviation operations within five years. Where are these fuels coming from? Numerous sources are candidates. In addition to fuels from feed grains, there are fuels being tested made from plants including camelina, jatropha and halophytes, fuels from cellulosic material remain a possibility, and in the longer term fuel produced by algae may become available.

Efforts using feedstock to produce alcohol initially were welcomed until it was noted that these sources compete with human food, and their production requires a lot of carbon generation. Suddenly they came to be considered more

of a hazard than a solution. The viability of the other candidates depends on how readily they can be produced and turned into fuel with minimal negative effects.

It may be that these new fuels are a direct swap for Jet A, but I doubt it. There are bound to be differences. In automotive fuels, the 15 percent ethanol content added in many areas of the United States reduces emissions without harming the engine, but the energy content of the mix is several percentage points lower than pure gas of the same octane rating. In an automobile, this is not an issue. However, every point counts in calculating aircraft performance.

I am not criticizing the biofuel effort. Fossil fuels are finite resources; renewable energy sources must be developed, even more so now to answer the call to stem the rate of climate change. But concern about the biofuel effort is an example of the care that must be exercised as we travel the road to a green aviation industry.

A handwritten signature in black ink that reads "J.A. Donoghue".

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