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FORUM

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A fair question, is it not? When it comes to aviation safety, just how safe *is* safe enough? And, by the way, who gets to make this decision? Most of the time those of us in the aviation professions are involved in daily operational decisions that impact safety, but our view tends to be narrow and focused on a particular problem or situation, thus we lose sight of the "big picture." So let's step back for a moment and take a broad look at how and why policies, rules, and laws are made that affect aviation safety.

First of all, as is readily evident, there is no one person, agency or company that is responsible for setting "the" standard for safety, at least not in this country. Even organizations such as the FAA and airline safety departments that are directly charged with establishing and enforcing safety regulations and procedures are only part of the answer to the question of who decides how safe is safe enough. In a system as large and complex as ours, which accounts for about half of all of the aviation activity in the world, safety policies are determined by a multitude of individuals and organizations, some of them not even directly involved with aviation on a frequent basis. Secondly, the standard of "safe enough" is a constantly moving target, usually evolving, but one that can be reset in a single day. Let's examine this second concept before going on to the question of who decides.

The answer to the "safe enough" question lies in a milieu of separate but related standards that benchmark safety levels. The government, among other institutions, is in the business of establishing and enforcing regulations and operating practices that affect safety, and all aviation institutions and agencies do some form of benchmarking when deciding at what level to set standards. For example, if we say that commercial aviation today is reasonably safe, we must say, "Compared to what?" The most ready reference is the commercial aircraft accident rate per 100,000 flight hours. For mishaps resulting in major damage, up to and including hull loss the rate for scheduled FAR Part 121 U.S. carriers in 2001 was 0.2. In 1959 the same rate was more than 30.0. By this comparison flying today is phenomenally safer than in years past. Does this mean that aviation in previous eras was not "safe enough?"

Not necessarily, because that concept is a constantly moving target, and the benchmarks available in the 1950's would have been compared to a still earlier era. In the 1930's the commercial aviation accident rate was a staggering 280 per 100,000 flight hours, so aviators and regulators in the fifties must have seen themselves as operating very safely indeed.

Another benchmark is comparative statistics among various organizations, such as airline's accident records compared to similar air carriers, which is very useful for regulators and safety departments when deciding that things are going well, or that improvements are in order. The same applies to comparisons between categories of operations, for example Part 135 versus Part 121 operators, or military accident rates contrasted with civil aviation rates. The aforementioned are some of the most powerful indicators, because the lowest accident rates indicate what is actually achievable in comparable circumstances. And, of course, you have heard of a common expression reflecting benchmarking when people say, "Flying is a lot safer than driving," true for commercial aviation but not necessarily for General Aviation operations.

Other benchmarks include comparisons among different countries or world regions. This is perhaps more useful for other countries than for the U.S., since America generally leads the world in lowest aircraft accident rates. We most often compare ourselves to the combined European accident rates, since they are usually quite close to, or better than, U.S. rates. Venturing beyond Europe and North America, we see that some region's airlines are operating at risk levels 10 or even 20 times greater than

U.S. carriers.

Perception also plays an important role in the assessment of how safe is safe enough. Although a particular airline may have a very solid overall safety record, a rash of accidents over a short time, or even a single accident that reveals important safety deficiencies, can overcome any reservoir of public trust that may have existed. The poster child for this concept is the crash of the Valujet DC-9 in the Florida Everglades in 1996. That was the *only* accident Valujet ever had, but its name became synonymous with shoddy safety practices, so much so that the company was forced to change the name in order to stay in business.

Of course, September 11th was the greatest change of all time regarding the concept of safe enough, and we will see changes for years to come as the nation struggles to satisfy safety concerns that are still ricocheting about.

A final note on "safe enough." Even if there is consensus that flight operations are reasonably safe it does not mean that industry or the government sit on their laurels and do not pursue improvements. To our collective credit, there is widespread determination that although current safety records may be acceptable, there is always room for improvement, and that a zero accident rate is always the final goal.

In a democracy such as ours, decision making and policy setting at the national level (and below as well) is a highly participatory process, involving quite a diverse cast of characters. For the purpose of this discussion I will call the groups "safety organizations," though in the true sense of the word some are not actually organizations. All, however, exert significant influence in the aviation safety arena, and provide the answer to the question of who decides how safe is safe enough. They utilize the aforementioned markers, plus add some of their own.

Pilot Unions are, of course, highly concerned with commercial aircraft safety, given that their members are affected by the lack of it in a highly personal way. Moreover, a well-organized union is in a position to make demands of management, force concessions from (or at least embarrass) management regarding safety issues, whether they are operational, training or equipment concerns. Another role filled by pilot unions is to bring to attention issues outside the direct purview of the air carriers that affect safety, such as publication of the "Black Star" list of unsafe airports. In this category also fell pilot union public campaigning against the French-made ATR series of turboprop aircraft that were seen as manifestly unsafe in icing conditions, even when properly flown.

Aviation Insurance Companies can play a large role in determining acceptable safety levels. Particularly for smaller operators, insurance companies can dictate minimum hiring standards for pilots, set their recurrent training requirements, and establish ground safety procedures that exceed FAA requirements, but that must be complied with in order to obtain insurance. For insurance companies, safe enough is readily quantifiable into a number that represents monetary profit or loss. Any insurance company that is driven into the red by its client's high accident rate will most assuredly determine that "safe enough" has not been achieved.

Effective and Accessible Legal System, as used here, refers to the ability of individual members of the society to achieve redress for the negligence or malfeasance of those who have caused them harm. Perhaps the United States, more so than any other country, exemplifies this trait. Indeed, it may not even be necessary to prove negligence or malfeasance, since just the threat of a lawsuit could yield large settlements against air carriers and manufacturers. The economic pain that comes with large judgments, or a series of them, is a huge economic incentive for companies to err on the side of safety, since the civil penalties following an adverse trial could spell the death knell for all but the strongest aviation businesses.

Free and Open Media. A society that has an unrestrained and inquisitive media, assuming a degree of integrity is present, is better informed than one that does not. Though hard to quantify, the level of media reporting of unsafe commercial aviation activities is in itself a benchmark. First, the extensive coverage of an airliner crash alone can result in dramatic drops in passenger volumes, with the attendant plunge in revenues. Although the airlines don't typically publicize passenger declines following the crash of one of their airliners, the events and aftermath of September 11 provide ample evidence of this correlation. On top of the loss of revenue due to empty seats is the tendency of the accompanying volumes of adverse publicity to result in legislation that may further regulate or restrict a carrier's operations, causing additional economic penalties, at least in the short run. The requirement that all air carriers in the U.S. install TCAS in short order was the direct result of the collision of a Aeromexico DC-9 and a Piper Archer in the vicinity of the largest media market in America, Los Angeles, in 1986.

Lastly, in a democracy, public opinion itself is a barometer expressing confidence, or the lack of it, in the adequacy of safety measures in the nation's commercial aviation system. This occurs two ways: One, by avoidance behavior directed at a particular airline, or in the case of September 11th, at all airlines; and two, by expressing their concerns to their elected representatives. The public, as well as industry organizations and trade groups, also provide input on how much safety they are willing or able to pay for, since in large part safety is determined by the amount of money available to fund it.   It is the aforementioned players in the safety arena acting on their individual concerns that set and prioritize much of the safety agenda in this country. Ultimately these concerns are reflected back to the aviation industry via the actions of the FAA and other government agencies. This is not to say that the FAA or NTSB or other agencies concerned with flight safety don't independently make "safe enough" judgments, but the reality is that decision making is far more complex than it may seem at first blush. In the final analysis, there are no simple answers to the simple "who" and "safe enough" questions. ✈

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