C-FOQA Advances

BY J.A. DONOGHUE | FROM PHOENIX

"I don't think we can continue to say we are better than the air carrier world if we do not embrace FOQA." This challenge to corporate aviation was made by Ted Mendenhall, vice chairman of Flight Safety Foundation's Corporate Advisory Committee (CAC) and program coordinator of the FSF Corporate-Flight Operational Quality Assurance (C-FOQA) team leading the drive to get corporate operators the safety benefits airlines are reaping from FOQA programs.

Speaking to the CAC at the 51st annual Corporate Aviation Safety Seminar (CASS), Mendenhall said that the program has endured a number of delays but now has produced an operational system that recently delivered the first three-month package of data to the C-FOQA operator. The operator, he reported, was "pleased" with the results.

He said that the program to develop C-FOQA technology and procedures had "a painfully slow start" that was especially disappointing after the program — first envisioned as a one-year demonstration — was launched two years ago with a bang, 22 operators signing on to participate. However, cost increases drove some away, and a few more were put off by legal questions about protecting operators' employees from disciplinary actions for violations the FOQA data might reveal — and even resistance from pilots after they had received signed protection guarantees. The number of operators dropped to 10, with no more than 13 airplanes involved.

But now there are quick access recorders (QARs) installed in participating aircraft, collecting data similar to those on an airline-standard flight data recorder (FDR). The collected data are forwarded for processing to Austin Digital (ADI), a leader in such processing for airlines such as

AirTran, Lufthansa, United, Etihad, Continental, Southwest and Northwest.

ADI had a problem, Mendenhall said, getting digital FDR proprietary data from the original equipment manufacturers (OEMs) that would allow it to make sense of what was recorded. Earlier, there had been trouble matching software with the QARs and issues with the operators' information technology departments. Most of these problem areas were solved once "the right guy to talk to" was found, he added.

The QARs' output can be taken either through a removable data storage card or through a cable download, the download process taking five minutes for three to four months worth of data, Mendenhall said. That data file is transmitted encrypted to ADI via the Internet, processed through ADI's system and posted encrypted by a different process than the transmission and protected with double-password protection on ADI's eFOQA Web site, the final password changed each time by a key-fob sized piece of hardware ADI provides to each customer.

"The primary focus [of initial C-FOQA efforts] is the unstabilized approach; we're also looking at tailwind landings," Mendenhall said.

Illustration: Susan Reed (FSF)

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The cost to equip aircraft that already have digital FDRs is about $20,000 each for the small and light QARs, although less was reported. A subscription for ADI's services is about $10,000 annually. Mendenhall cautioned that operators getting into C-FOQA will need their OEM's help for a while.

Jim Burin, Flight Safety Foundation director of technical programs, summed up: "Most of the lessons have been learned about how to install and operate the system. And the OEMs are going to benefit; there are a lot of problems [C-FOQA] can solve."

Noting that the C-FOQA campaign is in its early days, Mendenhall said that it is too early to predict eventual pilot acceptance of C-FOQA. However, it was noted that airline pilots had the same reluctance to expose their flight records to management inspection, even though the data are stripped of identifying elements, but most now enthusiastically endorse the program.

Another C-FOQA system was displayed at the seminar by Flight Data Services (FDS), a U.K. firm that recently opened a Phoenix office. Unlike the layered FSF C-FOQA program, FDS handles the entire process from hardware to data transfer to analysis and reporting. FDS cited CityJet and Hong Kong Express as airline customers.

A new safety initiative, threat and error management (TEM), was proposed to the CAC by Peter Stein, base manager/chief pilot for Johnson Controls, who explained that TEM developed out of some U.S. airlines' line operations safety audit programs.

"The 'threat' is external to the crew, such as weather, runway hazards or air traffic control issues," while the "error" is "within the crew," he said. "TEM would examine what contributed to that error and how it was managed."

The proposed program would train 5,000 business aviation professionals in TEM techniques in a four-to-six hour classroom course, using a case-study approach with a business aviation focus. It

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was suggested during discussion that TEM appears to have the potential to "give maintenance [workers] something focused on what they do."

Key to success of the effort, Stein said, is building strategic relationships among groups such as the National Business Aviation Association, the Professional Aviation Maintenance Association, insurers and OEMs, plus enlisting expert advisers in this field.

Michael L. Barr, interim director of the University of Southern California's aviation safety programs, volunteered that the school would provide training for TEM instructors, adding that USC already has a syllabus and instructors for such a program. Further, Barr said that USC would welcome a role in developing metrics to measure the before/after consequences of initial TEM training.

The CAC accepted the proposal; Stein is to report on the TEM project at the CAC meeting prior to the next CASS. Subsequent to the CASS meeting a workshop has been scheduled for later this year to discuss TEM development and its introduction into corporate aviation.

On other topics at CASS, Robert Matthews, analysis team leader of the U.S. Federal Aviation Administration's Office of Accident Investigation, agreed with industry sentiment when he said that the upcoming onslaught of very light jets (VLJs) presents "at least a temporary new risk."

But then he looked at VLJs from another angle and decided, "I think VLJ capabilities will help improve safety in the long term. About one-half of [Federal Aviation Regulations] Part 135 fatal accidents could have been cut if the aircraft had VLJ characteristics." Noting the technology being designed into the aircraft, in part to allow single-pilot operations, he said that VLJs will have enhanced automation capabilities needed for today's busy airspace.

"I expect relatively high accident rates early," he said. "But the number should stabilize, and stabilize at relatively low levels." ●