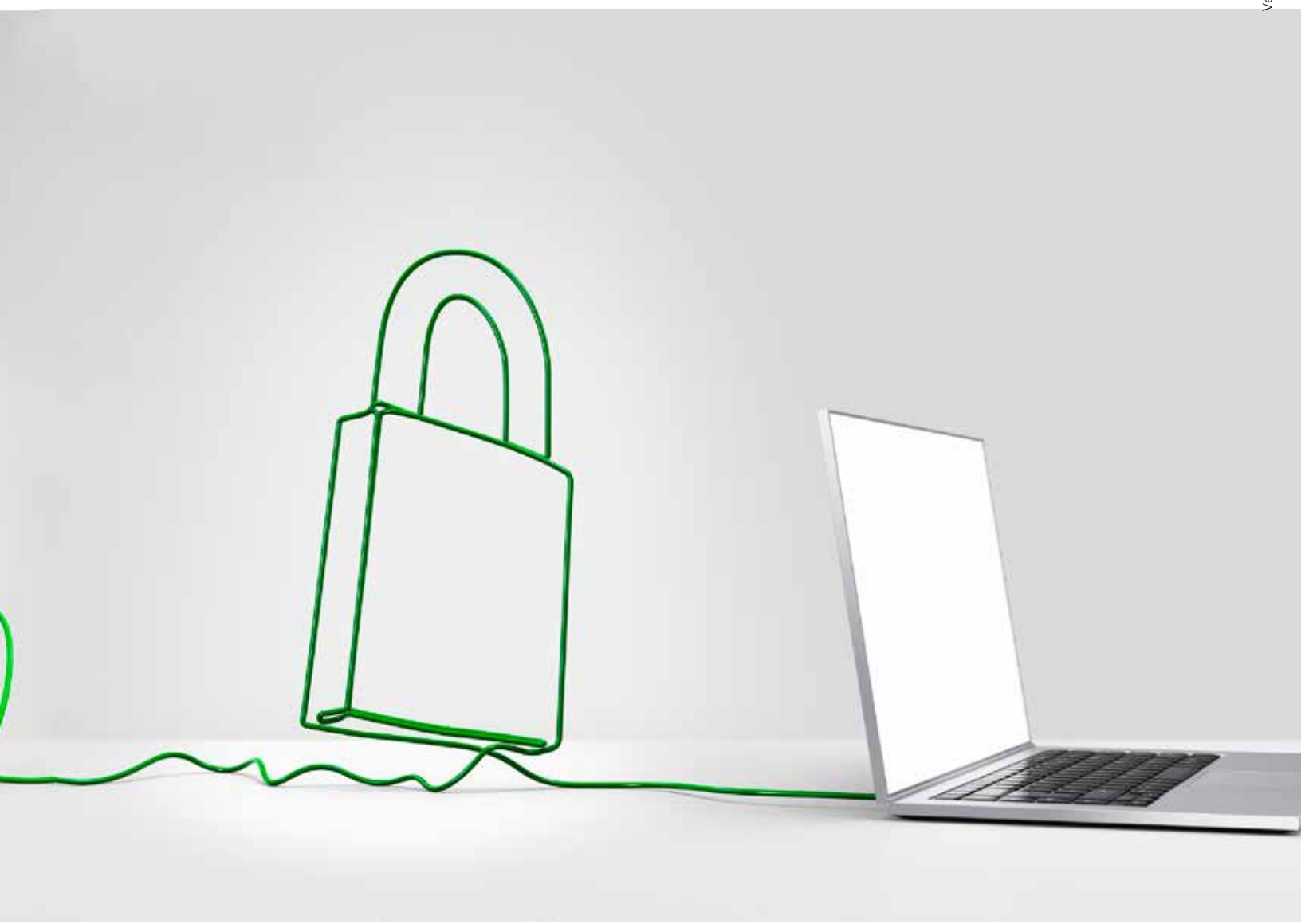
data SHARING

KEY TO SAFER OPERATIONS

Information sharing, which has helped the airlines slash their accident rate, has the potential to benefit business aviation, too.

Identifying safety improvement opportunities by collecting and analyzing operations data, a proven concept among airlines, is gaining momentum in business aviation. But while operators increasingly are adopting voluntary data-monitoring programs, safety experts are urging them to take the next step by plugging into Aviation Safety Information Analysis and Sharing (ASIAS), the data aggregation initiative that drives improvements across all operations.

In the decade since Corporate Flight Operational Quality Assurance (C-FOQA) was launched, approximately 250 operators have adopted it or some other form of data monitoring, usually as part of a safety management system (SMS), says Steve Charbonneau, chair of NBAA's Safety Committee and senior manager of aviation training and standards at Altria Client Services, Inc. While



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the figure is impressive, Charbonneau says the real value is in aggregating and making sense of that data.

"ASIAS represents the next logical evolution of the various flight-data monitoring and SMS programs in that it allows aggregation of that data at a very high level and fusion with other publicly available data," he explains. "Operators have a good sense of what's going on within their operations because of their FOQA programs. However, introducing data into ASIAS will allow them to see what's going on in all of the National Airspace System."

ASIAS uses protected (confidential) data from more than 185 industry and government sources to proactively find safety issues, identify safety enhancements and measure their effectiveness. As of late 2014, the program's

members included 46 airlines that accounted for 96 percent of all U.S. commercial operations.

General aviation (GA) sector participation is just starting to grow. As of Dec. 1, 2014, there were 11 business aircraft operators feeding their data into ASIAS. Charbonneau's enthusiasm to boost GA participation stems in part from the airlines' success.

Airline Success With ASIAS

ASIAS was a key component of the Commercial Aviation Safety Team (CAST) effort that sought to cut the commercial accident rate 80 percent by 2008. Meeting the goal meant looking beyond historical accident data and focusing on forward-looking trends not yet linked in a series of related accidents. ASIAS – and data monitoring in general – excels at identifying such trends.

CAST exceeded its original goal, cutting the commercial accident rate 83 percent by 2008, and the project has set a new target to cut the 2010 accident rate 50 percent by 2025. The program relies on more than 75 safety enhancements to mitigate risk, including seven derived directly from ASIAS data.

ASIAS's success is tied directly to participation. The more data the program collects on specific aircraft types, airports and situations, the easier it is to spot trends and take action. For instance, the FAA recently issued a safety alert for Part 121 operators to raise awareness of misconfigured flaps during takeoffs. The alert, based on a analysis of ASIAS data from flap-misconfiguration events, noted that while such events are rare, their consequences are significant: About half of all flap-misconfiguration events during takeoff rolls resulted in rejected takeoffs. The alert urged operators to emphasize correct flap position during training.

Data Not Used to Punish Pilots

Getting to that level of granularity in business aviation safety analysis will require more ASIAS participants, which means increased adoption of voluntary data-monitoring programs among operators. Key to this growth is doing away with the perception that the programs are used to punish pilots for mistakes.

"The biggest misconception about a flight data monitoring or FOQA program is that it is meant to be used in a punitive way to identify individual transgressions," says Charbonneau. "The reality is, a FOQA program is best used as a way to manage team performance or department performance, and for developing strategies, standards and procedures that are used to mitigate trends."

In FOQA and flight data monitoring (FDM) programs, a gatekeeper is appointed to ensure that the data remains secure. The gatekeeper is the only person who can link data to a specific flight or crewmember, and he also serves as the go-between when more information about a specific situation is needed.

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—STEVE CHARBONNEAU
Chairman, NBAA Safety Committee

"By having the gatekeeper, you can set up a process by which trends are identified and analysis is done, and if any individual [pilot] is concerned, they can approach that gatekeeper and discuss

Six Benefits That ASIAS Provides to Individual Operators

1. Seeing trends from the aggregated data
2. Gaining access to the participants-only ASIAS web portal
3. Attending the FAA's twice yearly InfoShare meeting, where ASIAS trends and topics are discussed openly
4. Opportunities to work with teams that analyze ASIAS data
5. Early access to studies derived from ASIAS data
6. The opportunity to be early adopters of enhancements based on ASIAS data

it with them in confidence," Charbonneau says. "We've modified the same program that has proven successful among airlines, and it works very well within business aviation."

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While identifying attributes, such as flight crew information, are removed from data at the operator level, some express concern about data security within ASIAS. Airlines had the same fears, but the program's structure and flawless execution soon eliminated them.

The FAA launched ASIAS in 2007 and selected Mitre to develop and maintain the system, including collecting and keeping all data. Mitre's most important function is serving as the independent link between the FAA and the industry – a de facto organizational gatekeeper. While ASIAS is the FAA's program, participants send their data directly to Mitre, not to the agency. An executive board of FAA and industry representatives oversees ASIAS and has the final word on all data usage, such as what issues will be studied. No ASIAS participant has left the program over concerns of data misuse, the FAA notes.

Benefits for Individual Operators, Too

ASIAS's success, as demonstrated via CAST, speaks for itself, and business aviation stands to reap similar benefits as it ramps up participation. But Charbonneau emphasizes that while ASIAS is designed to serve the industry as a whole, individual operators benefit directly by participating (see sidebar).

For operators with FDM or FOQA programs, joining ASIAS requires little more than signing an agreement with Mitre and determining the easiest way to have data submitted. The FAA is in the process of developing a web portal with more detailed information on how operators can join ASIAS.

While features on modern aircraft like quick-access recorders make data monitoring simpler, operators of legacy aircraft can take advantage of voluntary monitoring programs as well. A year ago, the FAA and the General Aviation Joint Steering Committee (GAJSC) kicked off a trial to demonstrate ASIAS benefits to the GA community. The FAA and GASJC picked Phoenix, AZ as the trial's host city because of the variety of GA aircraft in the region.

Part of the trial's focus was using new tools, such as iPad apps, that can collect flight data on older aircraft that lack onboard recording capabilities. The trial was expected to highlight benefits primarily for private, single-pilot operators who wanted to glean more information from their own data and participate in ASIAS. But the FAA quickly found that techniques like linking a tablet to an attitude and heading reference system (AHRS) and recording flight parameters via an app has broader applications. Steam gauge-equipped aircraft can feed practically the same data, less engine parameters, as newer aircraft with recording capabilities.

"The NBAA Safety Committee has adopted a strategy to support single-pilot operators," Charbonneau says. "We believe single pilots should take advantage of available apps and the ability to collect data through [onboard avionics systems] and AHRS systems." ✣

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Visit the ASIAS website at www.asias.faa.gov.