

The Wiki Way to Aviation Safety Knowledge

Skybrary, a new initiative of Eurocontrol and ICAO, tracks the cumulative knowledge of the industry.

WEB SITES

Skybrary, <www.skybrary.aero>

Information accessibility and use often lag behind information accumulation. It isn't enough just for information to be "out there somewhere"; to be put into practice, there must be a relatively easy, fast and economical way to obtain it.

With that goal in mind, Eurocontrol, the European organization for air navigation safety, has launched a Web site called Skybrary, a repository of aviation safety knowledge accessible via the Internet.

The Web site describes Skybrary as "the single point of reference in the network of aviation safety knowledge" and says, "Skybrary is an initiative of Eurocontrol and ICAO [International Civil Aviation Organization] with the sole purpose of safety knowledge exchange." Flight Safety Foundation has partnered with Eurocontrol and ICAO in sharing information and providing content for the Skybrary knowledge base.

The initiative's goal is to capture authoritative aviation industry information and create cumulative knowledge — to populate, organize, refine and deliver a knowledge base with static and changing information that will influence and shape behaviors of aviation professionals, especially with regard to critical safety issues.

The Web site opens at the Operational Issues portal, where the user can select from 15 issue

categories: air-ground communications, airspace infringement, bird strikes, controlled flight into terrain, fire, ground operations, human factors, level busts, loss of control, loss of separation, runway excursions, runway incursions, wake turbulence, weather, and general.

There are two additional portals. The Enhancing Safety portal contains six categories: airworthiness, flight technical, safety management, safety nets, theory of flight and general. The third portal is Safety Regulations: certification, ESARRS (Eurocontrol Safety Regulatory Requirements), licensing, regulation, and general.

Clicking on a category such as controlled flight into terrain reveals a description of the term and an index of related topics. Topic and subtopic articles tend to follow a pattern of descriptions, effects, defenses, scenarios, contributing factors, and solutions. Most articles contain embedded links to additional information and lists of related readings, including Eurocontrol's *Hindsight* magazine.

Knowledge elements in articles link to dynamic interactive modules such as media tool



kits, safety alerts, ICAO and Eurocontrol documents, manuals, accident and incident reports, and other materials. Readers may view material from the Skybrary site online or print it at no cost. Documents appearing on linked Web sites may have other limitations or options.

Skybrary invites readers to register and participate in discussions about articles.

Skybrary uses the “wiki” format instead of the traditional Web site format. A wiki — whose most famous example is Wikipedia — can be added to or edited by users, so that the information theoretically represents the collective wisdom of the user group rather than an individual or team. In the case of Skybrary, contributors and editors must be invited to participate in article development. Readers can follow the development of current and draft articles, such as authorship and subsequent changes in text. Skybrary invites readers to register and participate in discussions about articles.

The menu page for each category includes a “tool box.” One item under the tool box is “special pages,” with an extensive list of subcategories. The subcategories include items such as “articles with the most revisions,” “articles with the fewest revisions,” “most linked-to categories,” “most linked-to images,” “new pages” and “my watchlist.”

There are three ways to search: browse by category, use the search engine — similar to the familiar Google search engine — and check the graphic wiki “mind map.” The mind map illustrates topical relationships within major categories. For example, entering “TAWS” — terrain awareness and warning system — indicates that TAWS is related to topics such as “aircraft equipment,” “controlled flight into terrain,” “warning provided by TAWS” and “response to a TAWS alert.” Some of these related subjects can be clicked to provide their own mind maps.

With permission from ICAO, the site includes a dedicated search engine for ICAO documents. At press time, key-searchable documents include ICAO Annexes 2, 10 and 11, and Documents 4444, *Procedures for Air Navigation Services, Air Traffic Management*, and 8168, *Procedures for Air Navigation Services, Aircraft Operations*.

Virtual Flight Surgeons,
www.aviationmedicine.com

The Web site for Virtual Flight Surgeons (VFS) says it “is designed as a free Internet resource for pilots, controllers and AMEs [aviation medical examiners] to bookmark as a single comprehensive reference for aeromedical certification information and links to widely recognized authorities in medicine, aerospace medicine and the FAA [U.S. Federal Aviation Administration].”

The information resources section contains VFS medical articles on numerous aspects of aerospace physiology, nutrition, crew duty issues, fitness and health, and medical conditions. Articles in a searchable database can be read online or printed, and follow a standard format. For example, the article on skin cancer and melanoma informs pilots and controllers on identification, treatment, risk factors, FAA policy and related topics.

The Web site says it provides “an updated list of medications the FAA commonly authorizes for use during flight and aviation duties, plus restrictions on medication use and those medications the FAA does not normally approve for use.” Readers can quickly determine FAA usage policy by searching on medication names.



There are extensive lists of Internet links under headings such as government aviation agencies; accident investigation and safety; aeromedical standards and regulations; air traffic control and security; and aeromedical libraries, programs and societies.

The VFS news section contains four years of the *Quarterly Aeromedical Newsletter* and a short bibliography of aviation safety medical

articles. Newsletters and select articles are free to read online, print or download.

REPORTS

2008 May Report of the Auditor General of Canada: Chapter 3 — Oversight of Air Transportation Safety — Transport Canada

May 6, 2008. 17 pp. Available via the Internet at <www.oag-bvg.gc.ca/internet/English/aud_ch_oag_200805_03_e_30699.html>.

The report focuses on Transport Canada’s transition to oversight based on safety management systems (SMSs), which will require operators to have in place a system for managing safety risks, rather than one based solely on conducting inspections. The auditor general found:

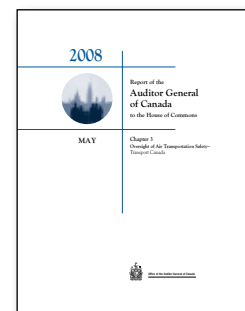
- “As the first civil aviation authority to put in place regulations requiring aviation companies to introduce SMS, Transport Canada developed its own approach. For example, it conducted pilot projects with airlines and small operators and used the results to establish milestones. It also monitored activities and made adjustments to ensure that all regions applied procedures consistently. However, in planning for the transition, the department did not document risks, such as the impact of the transition process on oversight of air transportation safety, and identify actions to mitigate these risks. Nor did it forecast the overall costs of managing the change;
- “Resources have been shifted from traditional oversight activities to SMS activities. However, the Department has not measured the impact of this on the frequency of traditional oversight activities;
- “Transport Canada has not yet identified how many inspectors and engineers it needs, with what competencies, during and after the transition. The impact of SMS is being addressed in the reorganization of the department’s civil aviation program, now under way. Given that this is not expected to be completed before the end of 2009, Transport Canada could find

itself unable to recruit the right mix of skills when it needs them; [and,]

- “The department has not developed short- and medium-term performance indicators — those that could signal a need for closer attention or action in a particular area — to measure the impact of its civil aviation activities.”

The auditor general’s recommendations included the following:

- “Transport Canada should establish a standard that defines an acceptable level of activity for oversight of the aviation industry, and it should specify how this will be measured during the transition to SMS and when the transition is complete. The department should analyze the data to assess the extent to which the standard is achieved;
- “Transport Canada should establish a national mechanism to provide the desired level of assurance that policies, procedures and processes for civil aviation oversight activities, including the assessment of risks, are followed consistently across all regions;
- “Transport Canada should put in place a national human resources plan for civil aviation as soon as possible. This plan should be aligned with the strategic plan, specify the required number of inspectors and engineers and their competencies, and include a recruitment strategy to meet these needs;
- “Transport Canada should develop a training strategy that is aligned with the human resources plan to be developed for civil aviation. The strategy should address required competencies, training needs, courses to meet those needs and a schedule for recurrent training; [and,]
- “Transport Canada should put in place a means to capture all information relevant to oversight of civil aviation safety in an integrated manner. This would allow the department to develop and track safety profiles



for aviation companies and industry sectors and to assess the relative level of risk.”

Transport Canada responded that it agreed with all the recommendations, and described how it was planning to achieve their goals.

Synthesis of AVAL Phase 1 Findings: ACAS on VLJs and LJs — Assessment of Safety Level AVAL Project

Eurocontrol. ACAS/08-037. March 31, 2008. Edition 1.3. 50 pp. Available via the Internet at <www.eurocontrol.int/msa/public/standard_page/ACAS_Safety_Studies.html>.

The airborne collision avoidance system (ACAS) is a “last resort” safety net against midair and near midair collisions between aircraft. In Europe, ACAS has been mandated since Jan. 1, 2005, for all civil turbine-engine aircraft over 5,700 kg/12,500 lb or seating more than 19 passengers. ACAS has been demonstrated to reduce the risk of midair collision by a factor of 5, the report says.

The anticipated introduction of very light jets (VLJs) and other light jets (LJs) weighing less than 5,700 kg, which are currently not required to be equipped with ACAS, is raising questions about their integration into the current air traffic management system.

The first phase of the AVAL (ACAS on VLJs and LJs — Assessment of Safety Level) Project sought to establish whether equipping these aircraft with ACAS would have an effect on the overall performance of the ACAS safety net.

If VLJs and LJs are not equipped with ACAS, they will not benefit from the additional safety margins provided by this system and will rely on air traffic control, where available, and the “see and avoid” principle for collision avoidance. However, this benefit needs to be quantified, the report says.

“This phase of the AVAL study has concluded that the decision about ACAS equipage mandate for VLJs and LJs can only be quantified through an in-depth investigation based on the encounter model approach used in previous ACAS safety studies,” the report says. “The question of extending the current ACAS mandate to VLJs and LJs also carries technical and financial aspects that need to be examined.”

REFERENCE MATERIALS

2008 Emergency Response Guidebook

U.S. Department of Transportation (DOT), Transport Canada and the Secretariat of Communications and Transportation of Mexico, with the collaboration of Centro de Información Química para Emergencias of Argentina. 376 pp. Tables, figures, glossary. Available in English and Spanish via the Internet at <<http://hazmat.dot.gov/pubs/erg/guidebook.htm>> or from Labelmaster.*

The guidebook, designed to aid first responders in hazardous-materials accidents, has been updated in its first new edition since 2004. Published in a format intended to maximize efficiency and ease of use, with five color-coded sections, it is available in several formats: as a book, compact disc and USB flash drive.

The foundation of many emergency response plans and incident management systems, the guidebook is intended by the DOT to be carried by all public emergency responders.

The latest edition’s sections containing new or expanded information include:

- More than 50 amendments to correct shipping names and United Nations identification numbers of hazardous materials;
- Lists of whom to call for assistance;
- Updated lists of hazardous materials;
- Criminal and terrorist use of chemical, biological and radiological agents;
- An entry on lithium-ion batteries (see “Thermal Runaway,” ASW, 3/08, p. 42); and,
- Ethanol entries and identification numbers.

The “initial isolation and protective action distance” table has been split into two tables to facilitate initial response actions for emergencies involving toxic inhalation hazards. Dangerous goods are listed both in alphabetical and identification number order. ➤

Source

* Labelmaster <www.labelmaster.com/ERG> and other commercial suppliers.

— Rick Darby and Patricia Setze

