

A Single Source of Aviation Safety Knowledge —

The SKYbrary Project

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Accessible and Comprehensive Aviation Safety Knowledge

How often do we hear people say in the aftermath of an accident, “This is a known problem”?

If a pilot, a controller or a safety manager in an airline or air navigation service provider wants to find out information about a specific problem or issue that he is encountering, where can he go to find knowledge, examples of incident and accident reports, advice on best practice, solutions to his needs, training material and links to other sources of information?

Most organizations in the flight safety world publish their own journals and documents on their websites but don’t link very well to other sources. There are numerous amateur websites devoted to aspects of flight safety, some of which are an excellent source of best practice, but how can the visitor be sure that the advice is correct?

How can we ensure that our collective knowledge and experience is shared and accessible to all in the business? Furthermore, how can we ensure that the knowledge provided helps to shape behavior, and promote best practice?

The SKYbrary Project – Creating a “One Stop Shop” for Aviation Safety Knowledge

Eurocontrol’s Safety Improvement Sub-Group (SISG), which comprises safety representatives from Europe’s air navigation service providers, is a consultation group that acts as a forum for safety lesson dissemination, particularly in relation to ATC significant events and safety monitoring in general in order to advise on safety improvement in the ECAC¹ area.

The SISG was interested in creating a wiki-like knowledge base, combining the power of Wikipedia whilst ensuring quality of information to serve the needs of aviation professionals worldwide, with the aim of providing safety managers with solutions to the problems they were encountering in their day-to-day work. Eurocontrol’s *HindSight* magazine was launched at this time, and it was also the intention that this would evolve to become some form of on-line knowledgebase to meet the needs identified by the SISG. Work began in 2005–2006 on the development of the concept, design and subsequently the population of an aviation safety knowledgebase, which acquired the name of SKYbrary. This initiative soon gained the support of both Flight Safety Foundation and ICAO, support considered crucial for the project to have credibility and access to existing knowledge.

Collecting and then organizing and delivering aviation safety knowledge in such a way that it does not remain static is an enormous challenge.

It quickly became obvious that any knowledgebase would need to extend beyond the needs of the air traffic control community and must also address the needs of the operators. The focus of the project is therefore, for now, on commercial air transport operators since the potential safety benefit of addressing the needs of that community will also improve the overall safety of the whole aviation system for the benefit of all.

¹ ECAC: European Civil Aviation Conference, consisting of 42 member states.

What Is SKYbrary?

The SKYbrary knowledgebase is built on a mediawiki platform and is a network of hyperlinked articles, similar to Wikipedia, but with more restrictive control over the authorship rights, and is available free of charge to the aviation community via the Internet. Substantial bespoke work has been done to the look-and-feel as well as content management logic, to meet the requirements of Eurocontrol and its partners.



The Article is the prime content item in SKYbrary and it can contain links to related articles, Bookshelf documents, or external documents and sources. Articles follow the semantics and style of classic encyclopedia entries — precise, concise and concept-related.

It is important to note that SKYbrary's aim is not to reproduce the entire domain of aviation safety, but to provide an umbrella for easy search, reference and links to the credible resources.

Visitors can browse selected categories of information, look at recent Safety Alerts issued by Eurocontrol, or access a growing Bookshelf of reference documents, including Accident and Serious Incident Reports. Skybrary also gives to the user a unique opportunity to search in ICAO documents. Skybrary provides a coherent link from knowledge articles to direct behavior-influencing applications like e-learning modules, videos, posters and presentations.

Accessibility

Although in the pre-launch stage the author and editor role have been merged, it is envisaged that the author population of Skybrary will eventually be built up from the SKYbrary user population.

Each of the authors can draft articles in a special area of SKYbrary (the “work in progress” area).

The editorial team discusses to which categories the drafted articles belong. Per category, an editor oversees the quality of contributions and can edit contributions. The editor not only looks at the content of the articles, but to the references provided as well. SKYbrary is not only a compendium of aviation safety articles, but a portal to the wider network of aviation safety knowledge. It is the task of the editor to ensure that outward links from SKYbrary equally represent high quality content.

If a (registered) user does not want to draft an article, they have the option to voice ideas for articles to be written, using the “Request an Article” facility. If an article meets the editorial standards of SKYbrary, the SKYbrary content manager can move the article onto the main SKYbrary space. As indicated earlier, the content manager also manages user rights in SKYbrary.

It is important to emphasize that the SKYbrary partners (ICAO and Flight Safety Foundation) provide their content to the SKYbrary platform as well, thereby greatly enhancing the breadth and depth of the subject matter provided to the user population.

Defining the Scope

Initially, the project concentrated on operational issues of concern to the SISG and which were the subject of Eurocontrol safety improvement initiatives. This has since been extended to cover 14 principal categories: CFIT, Runway Incursions, Runway Excursions, Loss of Control, Level Bust, Fire, Ground Operations, Human Factors, Airspace Infringement, Bird Strike, Air-Ground Communications, Loss of Separation, Wake Vortex Turbulence and Weather.

In addition to Operational Issues, two further portals were created: the Enhancing Safety portal, which includes the categories Airworthiness, Flight Technical, Safety Management, Safety Nets and Theory of Flight, and the Safety Regulations portal, which includes the categories Certification, ESARRs, Licensing and Regulation. The concept envisaged that every category should be kind of “tool kit,” providing users with easy access to background knowledge and solutions, and contain no more than 30 articles. Secondary articles, and articles of a more encyclopedic nature, or articles which do not fit neatly into any particular category are stored under a General heading.

Articles are linked together, as in Wikipedia, and a separate database, a Bookshelf, of documents is slowly being built to provide further reading. This includes accident and serious incident reports which are covered by a basic article within SKYbrary, linked to appropriate categories and articles, and a copy of the associated official report is included on the Bookshelf.

The organization and structure of SKYbrary is subject to constant review as the volume of knowledge grows and feedback is received from users.

Who Is the Target Audience?

Skybrary is aimed at anyone interested in aviation safety. The production process is, however, targeted at explicitly bringing value to three groups of stakeholders:

- Safety — Safety Managers, Incident Investigators, Flight Safety Officers, Safety Experts, Safety Regulators.
- Operations — Air Traffic Controllers, Pilots, ATC Operations line managers, Chief pilots, Operations experts.
- Training — Training Experts, Instructors.

Priorities

While the framework of the SKYbrary knowledgebase is becoming mature, the subject coverage is in places quite thin. The priority for content development is targeted at the major killers in the aviation industry:

- Loss of Control (LOC)
- Controlled Flight Into Terrain (CFIT)
- Runway Excursion (RE)
- Runway Incursion (RI)
- Loss of Separation (LOS)

Within these specific categories, the target is to achieve 100 percent of subject coverage by June 2009. Achievement of that target is of course a subjective assessment, and the knowledgebase will and must continue to grow. Over the same time frame, it is hoped that

coverage of all other categories within SKYbrary will be at least 60 percent of subject coverage.

Measuring Success?

SKYbrary currently has over 1,200 articles and 500 documents stored, including nearly 100 official accident/serious incident reports linked to operational safety issues.

Visitor numbers passed 10,000 per month in August 2008 and analysis shows that while the majority of visitors are based in Europe, SKYbrary is attracting visitors from all over the world.



9,232 visits came from 1,762 cities

Help Wanted ...

It has taken two years of considerable effort to get SKYbrary ready for launch. A great deal has been achieved in this time but for the project to go forward, we need greater engagement from the community in order to build the depth and breadth of knowledge that we aspire to.