

Safety education and awareness in Australian aviation

Education and awareness has a vital role in maintaining and improving aviation safety across all operation types.

In Australia, a number of government agencies are responsible for promoting safety to operators and the general public. Primarily, these agencies include the Civil Aviation Safety Authority (as the regulator) and the Australian Transport Safety Bureau (as the independent investigator). Airservices Australia also plays an important safety education role in regards to air traffic control.

The ATSB's responsibility for safety education and awareness

As the independent national transport safety investigator, the Australian Transport Safety Bureau (ATSB) is responsible for improving safety across the aviation, marine and rail industries in Australia.

The main objective of the *Transport Safety Investigation Act 2003* (TSI Act) at the time of its introduction was to improve transport safety by providing for reporting of transport safety matters, investigation of transport safety matters and other incidents that might affect safety, and publishing the results of those investigations. The Explanatory Memorandum noted the public reporting of investigation findings may include studies of trends in accidents and other occurrences that have been reported [to the ATSB].

Amendments to the TSI Act at the time of the establishment of the ATSB as an independent Commonwealth Government statutory agency in 2009 included greater clarity with respect to the functions of the ATSB. In particular, the means identified to improve transport safety included assessment of reports of transport safety matters and other safety information prescribed by the regulations, identification of factors that contribute to transport safety or which affect or could affect transport, communication of those factors to relevant sectors of the transport industry and the public and, of particular note, the conduct of public educational programs about matters relating to transport safety.

The inclusion of this broader range of functions was not linked to any change in funding for the ATSB. In addition to meeting its legislative requirements, however, the ATSB recognised the importance of these more detailed and prescriptive functions in improving transport safety. Indeed, the communication of important safety-related information arising from investigations, research and data analysis is a key element in achieving the overall objective of improving transport safety. As a result, in the absence of specific funding for these functions, the ATSB has met these legislative provisions by using resources that would otherwise be directed to investigative activity.

The ATSB's current safety education program

Current resourcing therefore only allows the ATSB to conduct a limited range of safety education and awareness activities to help achieve its legislative responsibilities. This activity includes attendance at a constrained number of industry events, release of investigation and research reports in accordance with tailored communication strategies, proactive media management and use of social media. In the present financial year, the ATSB has also initiated a series of seminars with flying schools and aero clubs.

The need for greater focus on safety education and awareness

Investigation of accidents and incidents remains the central role of the ATSB, but always with the over-arching objective of improving transport safety. The findings of investigations can serve to identify safety issues on which action can be taken to reduce the likelihood of recurrence. A challenging aspect of the investigation process is to broadly communicate key safety messages to the transport industry and to raise awareness of important safety issues and lessons learned. A major initiative has been the inclusion of a 'Safety summary' in each investigation (and research) report, which in a single page describes what happened, what the ATSB found, what has been done as a result, and a broader safety message. This has been a very successful way of communicating concise, consistent and clear messages both to the media and industry. The ATSB has only limited capacity to further that process by actively engaging physically with the relevant part of industry. That said, the repetition of serious incidents and accidents with consistent major contributing factors suggests that detailed investigation alone is not enough and in some circumstances adds little safety value in terms of identifying new issues. It is clear to the ATSB that a shift of emphasis to greater safety education and awareness is necessary.

The mandatory reporting requirements of the TSI Act result in around 15,000 notifications of aviation accidents and incidents each year being provided to the ATSB. These represent around 8,000 separate occurrences. The ATSB enters these occurrences into its Safety Investigation Information Management System (SIIMS), including through coding by occurrence type and contributing factors. Consequently, as the holder of the national aviation occurrence database the ATSB is well positioned to make use of that data to identify emerging trends and safety issues, and to support investigations and other safety research and analysis. However, the full value of that work can only be achieved through comprehensive and effective communications activities.

One of the primary uses of the data collected from industry through mandatory occurrence reporting is the ATSB's formal aviation occurrence trend monitoring process, which is undertaken each quarter. The results of this analysis are shared with other safety agencies (CASA, Airservices and the Department of Defence) and with airlines, industry associations, operators and any organisation identified as relevant to a particular trend. This process aims to identify trends on which either the ATSB or others may be able to take action to address emerging issues before they lead to an accident. For the ATSB, commonly the action required is to generate greater safety awareness across the relevant sector of the transport industry and/or for some educational campaign or program to target the issue.

The ATSB undertakes a program of research and releases a number of research reports each year designed to help inform and educate industry on trends, topical transport safety matters and emerging safety issues. Research reports can identify safety issues and lead to industry actions to improve safety, sometimes through the issue of ATSB recommendations. The findings from this research have the capacity to direct safety awareness and education campaigns that can make a real improvement to aviation safety.

The allocation of resources to and the prioritisation of efforts associated with safety awareness activities is a critical element of the objective to prevent future accidents and incidents.

The ATSB's key communication strategy - SafetyWatch

As a result of its analysis of occurrence data and investigation findings, the ATSB Commission launched the SafetyWatch initiative in 2012. SafetyWatch identifies the safety priority areas in which industry needs to give heightened attention. While these safety priorities will be updated in early 2014, for aviation they currently include:

1. Avoidable accidents in general aviation
2. Safety around non-controlled aerodromes
3. Data input errors in aviation
4. Handling approach to land
5. Under-reporting of safety occurrences
6. R44 helicopter fuel tanks.

SafetyWatch forms the basis of the ATSB's proactive awareness activities. With effective communication and education, the ATSB believes SafetyWatch has the potential to significantly raise awareness of the more significant and ongoing safety concerns identified by the ATSB and as such has the potential to significantly improve safety in Australian transport.

As an example, from its analysis of occurrence data and investigation findings, the ATSB has identified that general aviation pilots tragically continue to die in accidents that are largely avoidable. These accident types involve such things as wire strikes, flying into bad weather, poor fuel management, inappropriate management of full and partial engine failures, low-level flying, over-relying on experience and flying visually at night.

The ATSB currently raises awareness of these 'avoidable accidents' via a series of publications, seminars and videos. While these activities are helping to raise awareness of the safety concerns facing general aviation pilots, it is evident through the recurrence of these accidents that behavioural change requires considerably more direct educational engagement with industry than is currently possible.

With adequate resourcing, the ATSB would be in a much stronger position to develop and deliver an evidence-based program or campaign to tackle the ongoing fatalities occurring in general aviation.

Industry has also flagged support for the ATSB to engage more in safety education and awareness. In its recent *Call for action on regional aviation policy*, the Regional Aviation Association of Australia suggested that the ATSB play a much greater role in fostering and promoting aviation safety.

Leveraging CASA's network to promote safety

With limited resources for safety education and awareness, the ATSB relies heavily on CASA's wider communication channels and contacts to reach the aviation industry. Through CASA's online magazine *Flight Safety Australia* and network of Air Safety Advisors, the ATSB communicates important aviation safety messages identified from investigations and research.

While this serves the purpose of informing industry, it also carries serious risks and limitations. One such risk is the perception that the ATSB's independence as a no-blame investigator is compromised by over-relying on CASA's network to reach industry.

The ATSB relies on industry to report accidents and incidents and for its close cooperation during the conduct of investigation. While it is clearly important for the ATSB and CASA to work cooperatively in the mutual interests of aviation safety, it is also important that the ATSB's independence and role as the no-blame safety investigator remains distinct from the role of the regulator. Notwithstanding the legitimate need for the ATSB and CASA to share safety information in pursuit of those mutual interests (which needs to be entirely transparent to industry, including with a clear understanding as to how such information will be used and what limitations and protections will apply), any perceived merging of the ATSB and CASA roles creates potential to undermine the confidence industry has to both report openly to the ATSB and to cooperate in the conduct of investigations.

Outlook for ATSB safety awareness and education

Feedback from industry and the findings from stakeholder research reveal that the ATSB's investigation, research and education activities have had a positive impact in promoting aviation safety, particularly in the past two years. However, the ATSB has found that it is unable to support the full range of requests from industry stakeholders to support and assist with safety education and awareness activities. In addition, the ATSB believes that with sufficient resources, there is significant potential to undertake more comprehensive safety education and awareness activities and scope to further enhance the ATSB's ability to proactively and positively influence transport safety.

Of the \$23.9m funded to the ATSB in 2013–14, around \$1.6m (7 per cent) has been allocated towards safety awareness, education and research activity. On current forward estimates, it will be very difficult to maintain this level of funding unless further funds are diverted from investigation resources or provided from an external source.