



International Civil Aviation Organization
Asia and Pacific Office

ICAO

Eleventh Meeting of the Asia Pacific Accident Investigation Group (APAC-AIG/11)

(Singapore, 16 – 17 August 2023)

Agenda Item 4: Enhancing Accident Investigation Capabilities

DETERMINING THE EFFECTIVENESS OF SAFETY ACTIONS TAKEN

[Presented by Australia/Australian Transport Safety Bureau (ATSB)]

SUMMARY

Investigations often lead to safety recommendations. However, without a process to determine how effective safety actions taken were at reducing the identified risk, it can be difficult to objectively show how investigations lead to positive safety change. This WP outlines the processes used by the ATSB

1. INTRODUCTION

1.1 As accident and incident investigators, how can we demonstrate any improvement in safety that can be attributable to our investigation. How do we show the safety issues uncovered in previous investigations do not remain as significant risks, possible of leading to the next big accident?

1.2 The ATSB has approached this challenge by changing the focus from how many safety actions have been undertaken, whether these be from ATSB safety recommendations or proactively taken by industry, to whether identified safety issues have been eliminated or reduced in risk to an acceptable level.

2. DISCUSSION

2.1 ATSB investigation reports lay out the findings that are *events or conditions that increase risk*. While many of these are a point-in-time problem (an individual made an error, the conditions were unfavourable, or an individual was fatigued etc.), some have an on-going influence. Those with ongoing risk include failed or absent risk controls to do with procedures, equipment, infrastructure, training, people management, and technical failures issues to do with design, manufacture, maintenance or operation, along with organizational or regulatory influences.

2.2 These are referred to as *Safety issues*. When listed in ATSB investigation report findings, they are displayed in bold font to draw attention to them. This is because safety issues are the systemic issues that we all aim to identify in investigations as it is only through fixing these that we can improve transport safety. As such, the ATSB expect safety action to address all safety issues.

2.3 Process

- a) All safety issues identified in occurrence investigations are risk-assessed as they were at the time of the incident or accident. When this risk is considered to be significant, the progression and resolution of the safety issue is monitored at the time the investigation report is published, and then on the ATSB website.

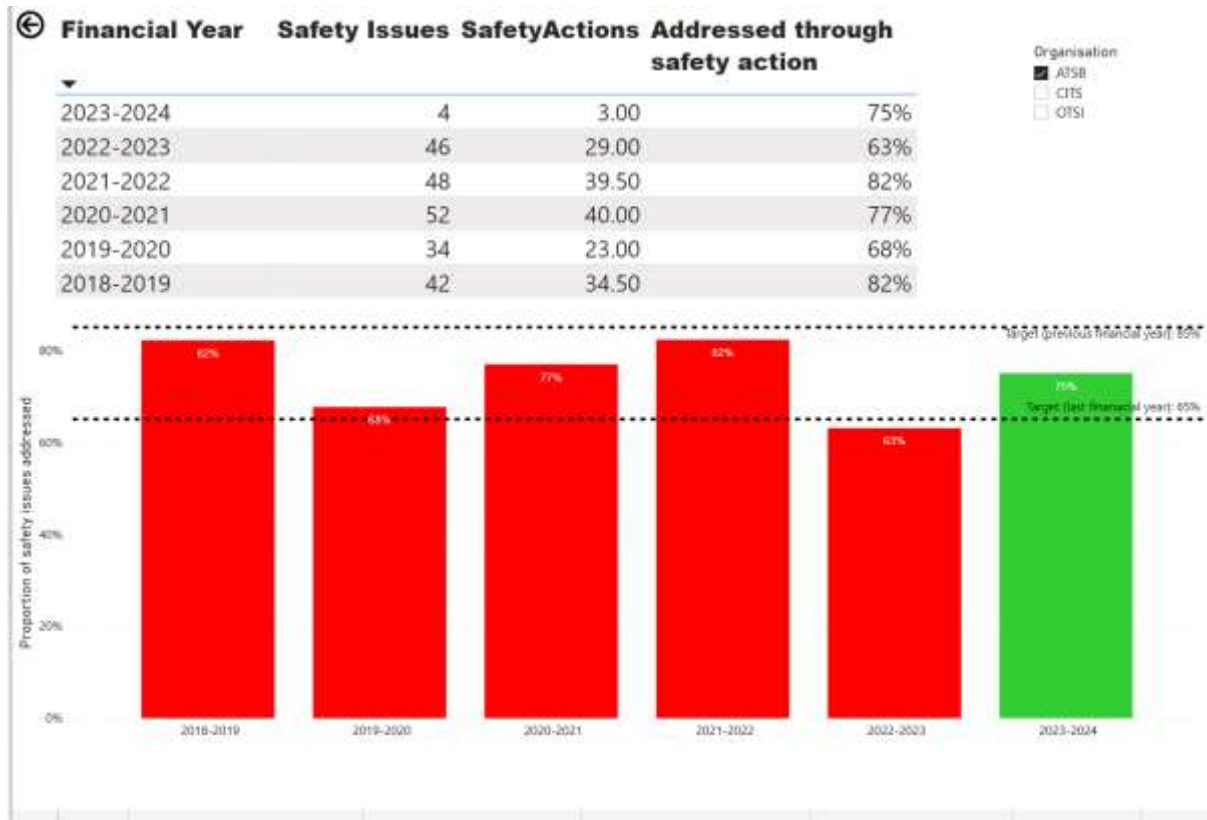
- b) Identified safety issues are communicated with the owner of the safety issue, such as manufacturers, operators, regulators etc. This is done formally through the written draft investigation report, but when possible, the safety issue will be communicated through verbal briefings prior to the draft report. This provides more time to accept there is a problem with the system they own, and to start making plans to fix that problem.
- c) Safety issue owners are encouraged to state their intended or conducted safety actions to address safety issues in response to the draft report.
- d) When the owners of safety issues report safety action undertaken, the ATSB conducts another risk assessment to determine whether the residual risk after that safety action has been reduced to an acceptable level or as low as reasonably practicable. When the safety issue risk is still significant, or no safety action has been undertaken, the ATSB will issue a formal Safety Recommendation with the Final investigation report. When the safety issue is addressed satisfactorily, the ATSB will *close* the safety issue in the final investigation report. This puts a positive spin on the investigation for those organisations as the investigation media releases can focus on the positive actions already done to fix the identified issues.
- e) After the Final investigation report is published, the ATSB continues to track the progress of on-going safety actions. Safety issue owners are contacted every 6 to 12 months for a progress update (depending on the expected time to complete safety actions). Safety issues are kept *open* during this process.
- f) Once safety action has been completed in response to a safety recommendation (or the completion of a stated proactive safety action in the absence of a safety recommendation), the ATSB conducts another risk assessment to determine whether the residual risk after that safety action has been reduced to an acceptable level or as low as reasonably practicable, to decide if the safety issue can be *closed*.
- g) All safety issues, along with their associated safety actions (safety recommendations and proactive safety action) remain visible on the ATSB website along with all updates and changes of status.
- h) Safety issues assessed to be at an acceptable risk level or as low as reasonably practicable have the status of “Closed – adequately addressed”. However, if more could have been done to address all the identified problems, they may be closed as “Closed – partially addressed”. In cases where risk is still significant and not as low as reasonably practicable, then the ATSB Commission will either publicly state it is “Closed – not addressed”, or continue to keep the safety issue open and encourage further safety action (also shown on the website).
- i) Publishing the status and updates of all safety issues on our website also increases the accountability to those organisations responsible for addressing them through safety action. Stakeholders, public and industry will review the status of certain safety issues as they understand the importance of them being resolved, rather than just receiving a safety recommendation that may never be addressed.

2.4

Analysis

- a) The ATSB records the number and proportion of safety issues that have been resolved each year. We have a target of 65% addressed in one year, and 85% in two or more years. This reflects that it takes time for some safety issues to be closed, such as the changing of regulations.

- b) This is one of the major key performance indicators the ATSB use for reporting performance to the Government. The figure below shows results for recent Financial years (July to June), (noting that the financial year 2023-24 is only 1 month old). This helps show government how the ATSB investigation work is directly improving aviation safety.



2.5 Priority watch

- a) The ATSB also has a list of priority areas to focus shorter investigation and safety education campaigns. The source of these are gathered from safety trends, but also from outstanding safety issues. When safety issues remain at significant risk due to a lack of action, they become a candidate for including in the ATSB Safety Watch list.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to note the above methodology by the ATSB to help track whether safety issues discovered during investigations are actually resolved through safety action to improve safety.