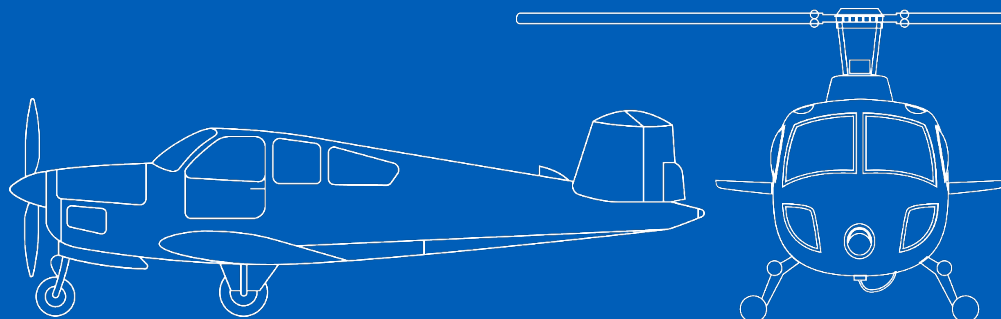


“Making Safe Aviation Even Safer”

Civil Aviation Authority Sector Risk Profile of Part 135 Helicopter and Small Aeroplane Operations

Final Report

Updated May 2019



SECTOR RISK PROFILE

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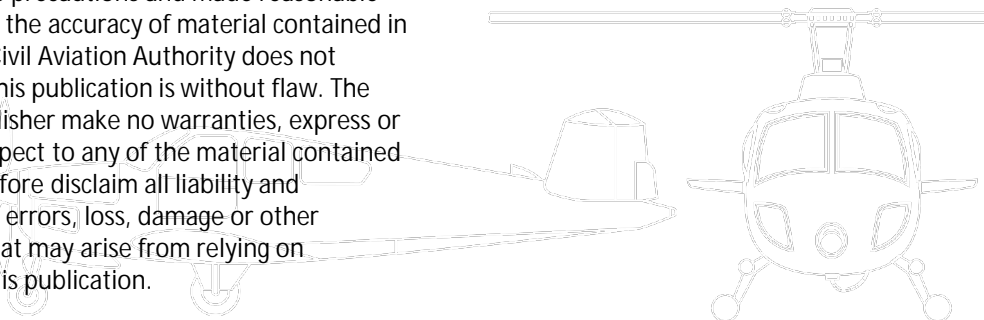
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HOW TO READ AND USE THIS SECTOR RISK PROFILE

Thank you to all who have been involved in developing this Sector Risk Profile.

The Part 135 Sector Risk Profile was originally developed in 2015. The 2018 profile builds on this work, and focuses on identifying and implementing actions to improve safety. These actions are outlined in Part 5 of this report. The 2019 update focuses on the Sector's progress in implementing actions to improve safety. This update on progress is detailed in Appendix III.

To get the most out of this report, we suggest that you:

1. Start by reading Parts 1 - 3 to understand the context of this profile, and how it was developed.
2. Compare the risks identified in Part 4 to your organisational risk profile. You may wish to run this as a group discussion exercise and identify which risks are applicable to your organisation.
3. Review the controls and actions summarised in Part 5 that correspond to the risks you have deemed relevant to your organisation. Decide how best to incorporate these in to your safety management system and/or risk management processes
4. Review the key next actions detailed in Appendix IV and consider how you and your organisation could support in achieving these actions.

Some points to note as you read:

In some instances, the actions identified to mitigate key risks address multiple risks and causes, and therefore have been repeated. This is purposeful, and is designed to support sector participants and the CAA in managing risks relevant to their operations.

This profile is not intended to identify all risks, controls and actions. It is a snapshot of what the sector thinks is most important at this time. You may / will have other risks and actions that are just as important to your organisation at the moment. Please ensure you still focus on these.

What happens now?

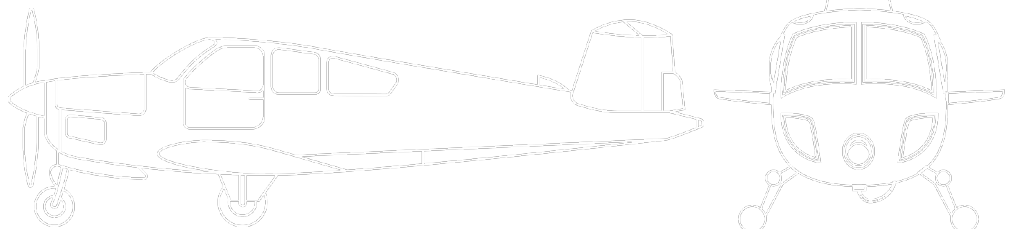
- **Get the message out** that your operation or organisation can now use the SRP and associated documents to improve your organisation's safety performance. Use it to inform your identification and management of safety risk.
- **Share information** with your colleagues, local operators, and the CAA to ensure all in the sector learn from others' experiences in terms of emerging and changing risks.
- **Share controls** – although we operate in a competitive environment, no one has a monopoly on safety within the sector. Share controls with your colleagues, local operators, industry organisations, and the CAA. Consider establishing a safety page on your own website where others in the sector may benefit, and share with the CAA to enable promulgation on the CAA website where participants can share controls.
- **Share your progress** in terms of the status of 'actions' implementation, and the enablers and barriers to improving safety within your own organisation. Your local user groups, industry organisations, and CAA is interested in your progress and developments in your safety journey.
- **CAA will use the SRP to target its resources to aviation system safety risks.** We have collaboratively worked on this SRP together as a sector, and we all have an interest in ensuring we are using our resources appropriately. CAA has made a commitment to ensure we use our resources to make a positive contribution to safety, especially in the areas where we have collaboratively agreed that specific actions will benefit all stakeholders.

Steve Moore
Deputy Director General Aviation

Mark Hughes
Deputy Director Air Transport and Airworthiness

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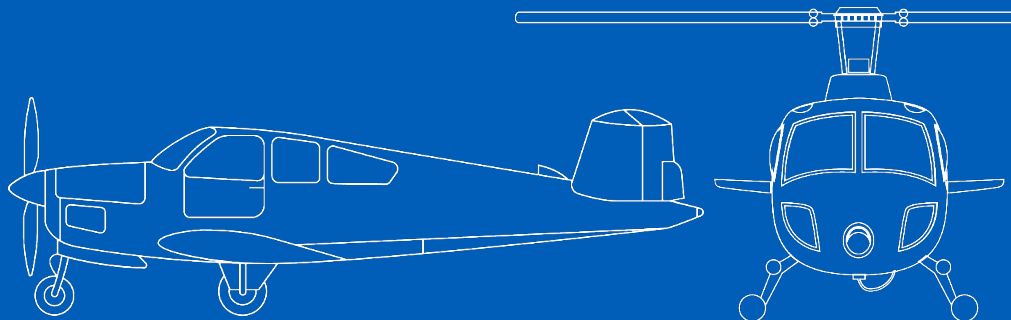
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Part 1

Sector Risk Profile

Overview



PART 1: SECTOR RISK PROFILE OVERVIEW

1.1 Performance Based Regulation

National Aviation Authorities (NAAs) are introducing a new approach to overseeing and improving aviation safety known as Performance Based Regulation (PBR). PBR is changing the way a NAA carries out its oversight, and how it collects, analyses and uses safety risk information. The idea that regulators should gather more and better information about safety risks and use it to prioritise activity is well established.

The five objectives of the PBR approach are to:

- I. Gather and analyse safety risk information about all parts of an organisation's operation in a joined up way.
- II. Agree on actions needed to ensure safety and uphold standards with each participant to achieve desired safety performance / outcomes.
- III. Create a better understanding of the top risks facing major aviation sectors and the performance of Industry to manage them.
- IV. Make informed decisions about which safety outcomes the regulator and industry should focus on and steps to achieve them.
- V. Allocate regulatory resources proportionately to the areas of highest risk and implement strategies and actions with greatest potential to enhance aviation safety.

1.2 What is a Sector Risk Profile?

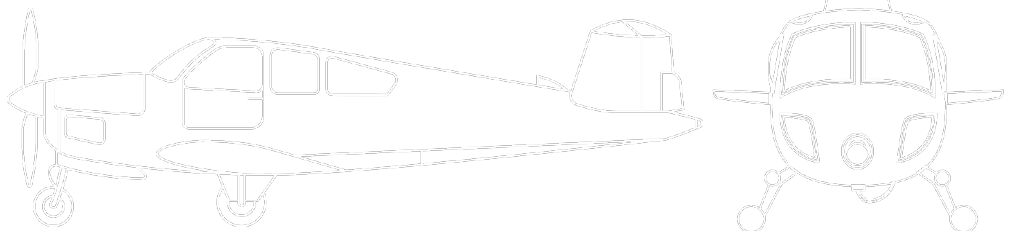
Aviation contains elements of risk by the very nature of the activity and operating environment. Safety in aviation requires an understanding of the risks and deliberate actions to reduce their probability of occurrence.

The CAA monitors safety performance in line with international standards and practices by recording the number of accidents, and expressing those as a rate of accidents per flying hour. To account for inherent differences, the aviation industry is divided into 13 sectors. Even so, the accidents within a sector have many different causes, which are not always apparent when expressed as an aggregated accident rate.

A Sector Risk Profile (SRP) is a way of examining the various underlying influences on safety within a given sector. By breaking the overall risk into specific risk statements, attention can be focused on specific problems. For example, 'reducing landing accidents' is more easily addressed than, simply 'reducing accidents'.

An important aspect of sector risk profiling is understanding that the participants within a sector are well placed to evaluate the risks they face. Accordingly the sector risk profiling method is based around capturing the knowledge, experience, and perceptions from as many participants as possible from within the sector. The resulting mix of fact and opinion is combined with evidential data, such as industry studies and demographics, and expressed as a set of risk statements that describe the risk.

The resulting set of risk statements can be expressed as a profile that will vary from one industry sector to the next. A hazard may create a significant risk in one sector, but not another. For example, wires are a risk to agricultural operations but less so to airline operations. The identification of risks as they occur in the particular sector is what makes it a sector risk profile.



1.3 How are Sector Risk Profiles used

The purpose of sector risk profiling is to support aviation participants to manage their risks, thereby reducing overall accident and incident rates and costs to the aviation sector. This will also help to provide public assurance around the safety of the aviation system and impact positively on the overall trust in New Zealand's aviation safety. An effective SRP will also inform the CAA about where it should focus its regulatory activity and inform operators about where they should focus their risk management and/or Safety Management System (SMS) response and resources.

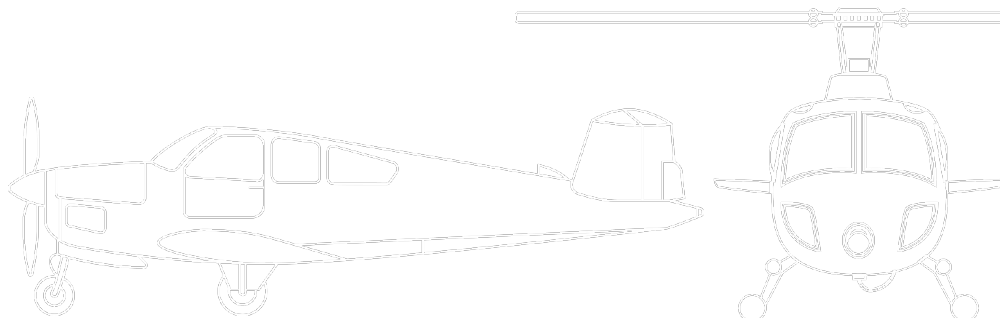
A SRP also highlights that some areas of risk are beyond the effective influence of CAA. Some operational practices may carry risks that are highly dependent upon the actions of individual participants, organisations, or industry groups. Therefore, the greatest value of a SRP is derived when participants read the statements, decide which ones apply to their organisation and then determine what they can do to minimise that risk.

Additionally, SRPs add to the collective wisdom of the Sector, enabling that best proactive risk controls to be shared and applied more widely.

1.4 What should Sector Risk Profiling achieve?

The sector risk profile aims to:

- Identify emerging safety risks that are likely to affect the sectors, recognising that risks are managed by the sector participants and with oversight and contribution from the CAA
- Enable continuous improvement of safety benefits within sectors
- Reduce uncertainty associated with safety and business performance and give the CAA and the sector greater freedom to plan and use resources for innovation and expanded operations underpinned by robust risk management.



1.5 How does the SRP relate to Safety Management Systems?

The SRP looks at high level risks that may affect multiple stakeholders, including emerging risks. The risk statements and treatments for the sector can be used by operational stakeholders to inform their operation-specific SMS plans and ongoing risk management. By addressing individual elements of risk within a sector, the overall accident rate and costs to the sector can be reduced. CAA can then target their interventions based on the effective implementation of risk responses within an organisation's safety processes.

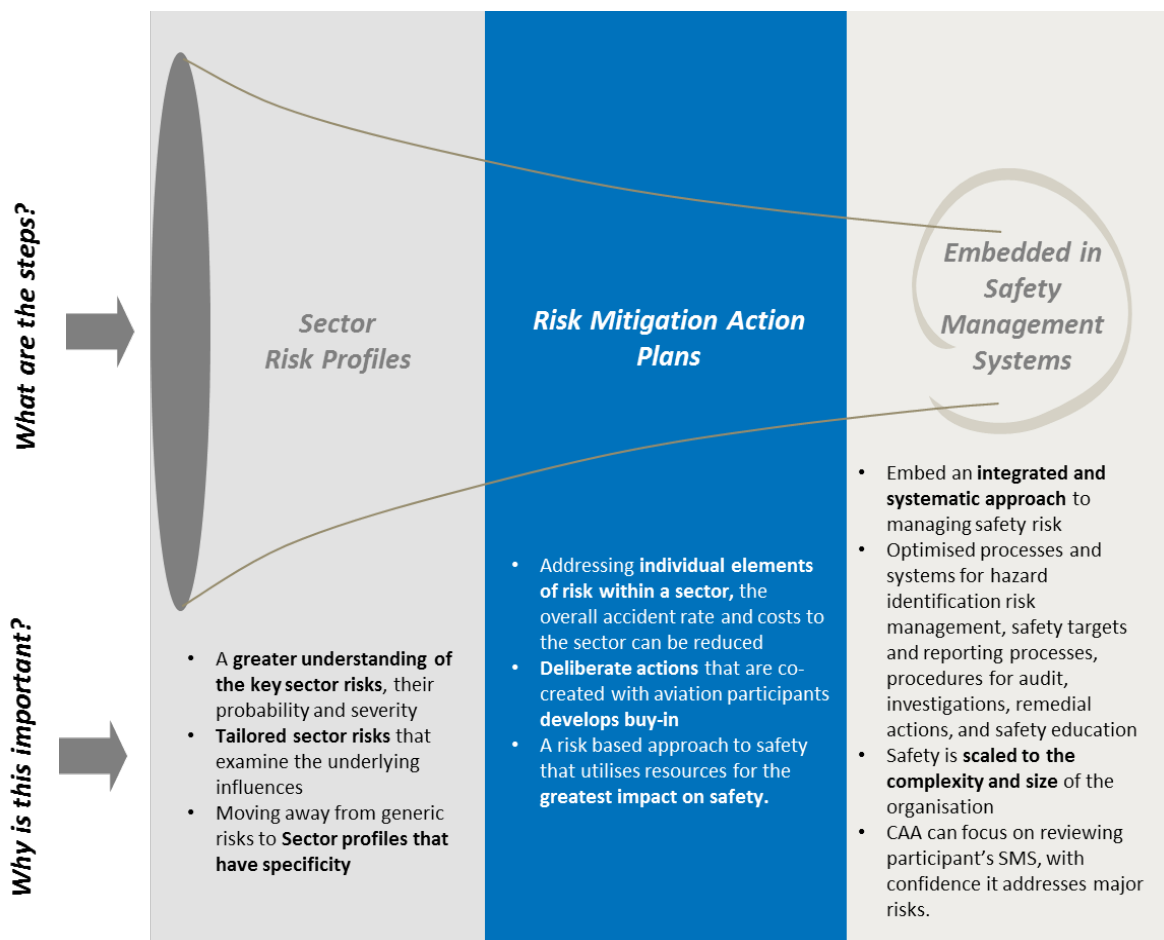
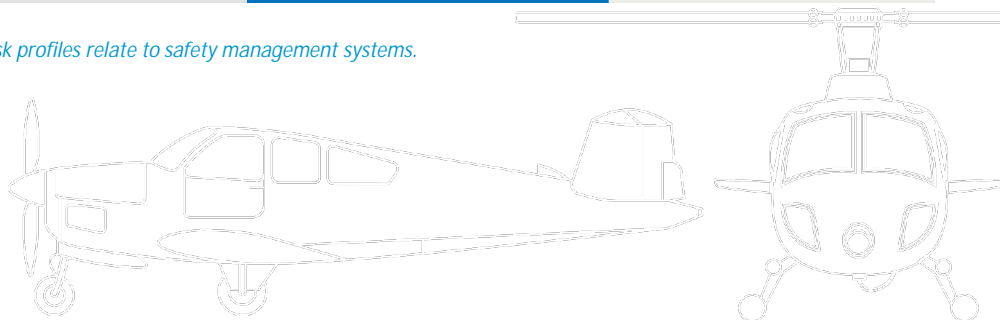
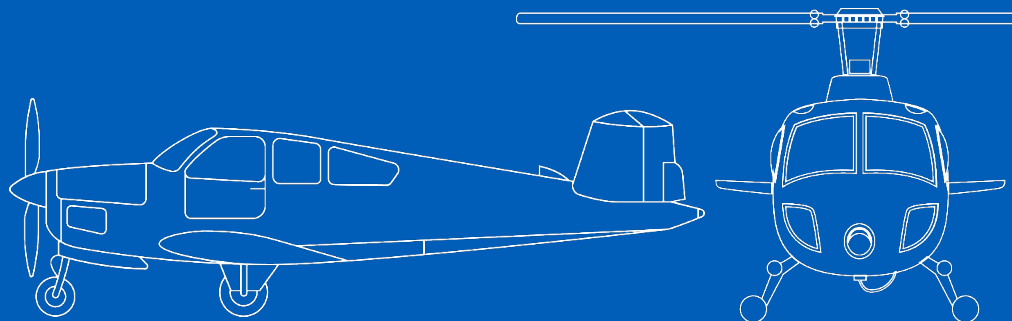


Diagram 1: How sector risk profiles relate to safety management systems.



Part 2

Focus of this Sector Risk Profile



PART 2: FOCUS OF THIS SECTOR RISK PROFILE

2.1 What we aimed to achieve with this SRP

Previous SRP work in New Zealand and abroad, has focused predominantly on identifying the key risks, causes, and controls that are in place within a sector. While this is an important part of developing a SRP, more important is identifying key actions that the aviation sector can take to reduce, or better manage, key risks. For this reason, we consciously decided to focus on delivering positive action from this SRP process. While this may mean that this document does not provide a comprehensive analysis of each risk and related controls, we intend that it will lead to the sector responding with detailed actions to mitigate the identified risks. We also understand that responsibility for some actions will lie outside of the Part 135 Helicopter and Small Aeroplane sector, and this will be addressed through future SRP work.

2.2 Overview of the Part 135 Helicopter and Small Aeroplane Sector

The focus of this SRP is the Part 135 Helicopter and Small Aeroplane sector participants. The sector is diverse, with each operator having identified a market niche and operating in different environments across New Zealand.

2.2.1 NUMBER OF ORGANISATIONS

As at 30 April 2019 there are a total of 160 operators in the Part 135 sector, broken down as follows:

- 102 helicopter operators
- 49 small aeroplane operators
- 9 combined helicopter and small aeroplane operators.

Diagram 2 outlines the geographic distribution of the operators based on their mailing address region.

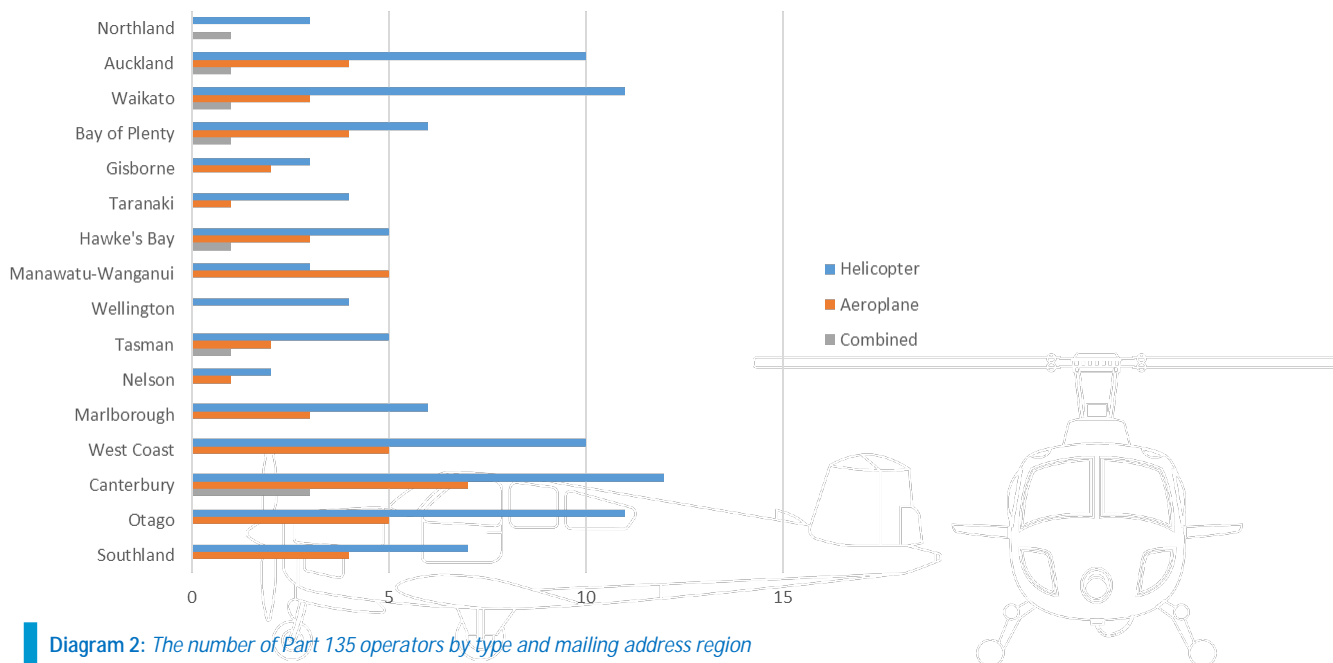


Diagram 2: The number of Part 135 operators by type and mailing address region

2.2.2 SECTOR ACTIVITY

Operating hours are required to be submitted to the CAA quarterly for each aircraft. Diagram 3 and 4 show the number of hours and the number of Part 135 sector aircraft operating by quarter over the period 2009 – 2018.

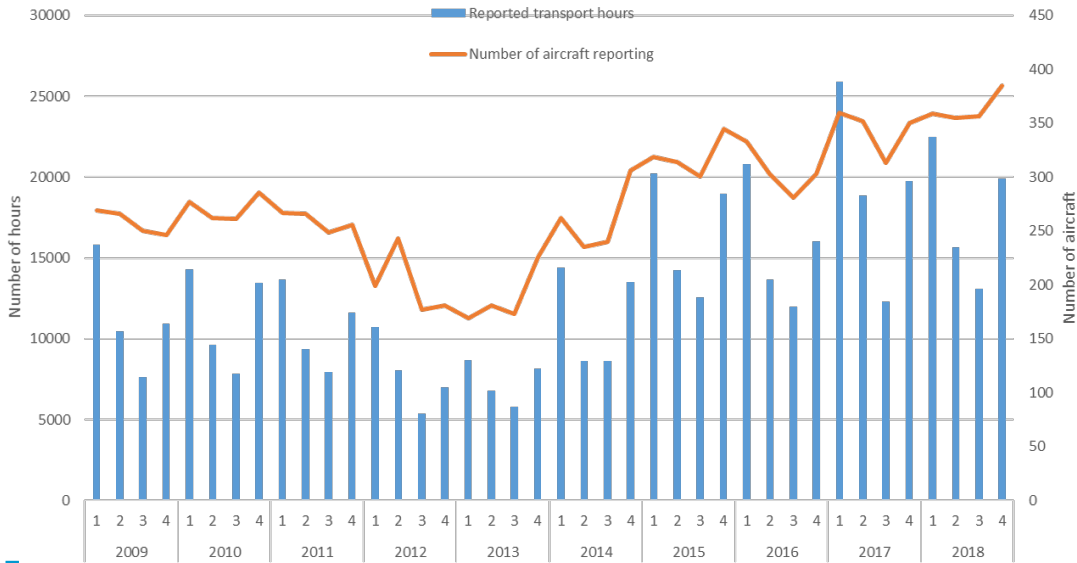


Diagram 3: Part 135 helicopter operators activity and number of aircraft reported to the CAA

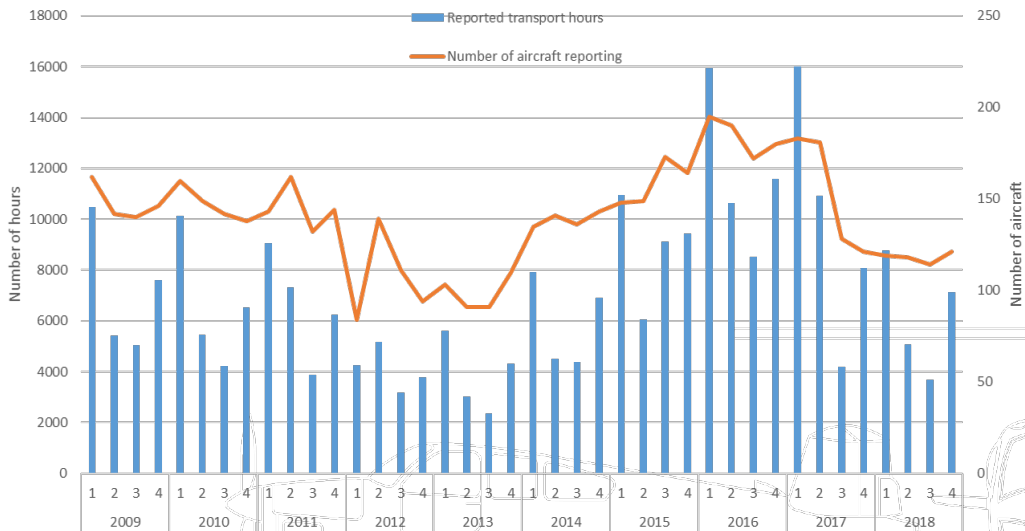


Diagram 4: Part 135 small aeroplane operators activity and number of aircraft reported to the CAA

2.2.3 AIRCRAFT ACCIDENTS

Occurrences are required to be reported to the CAA under Part 12 of the Civil Aviation Rules.

Diagram 5 shows the number of accidents involving small aeroplanes and helicopters in air transport and other commercial operators reported to the CAA from 2009 - 2018.

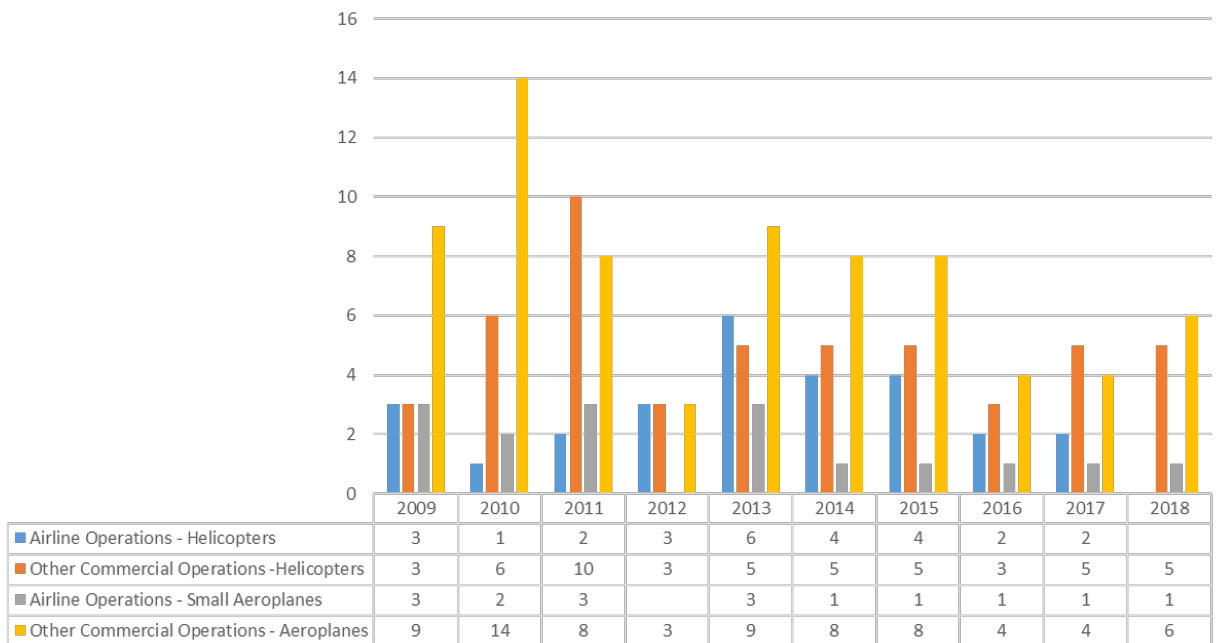
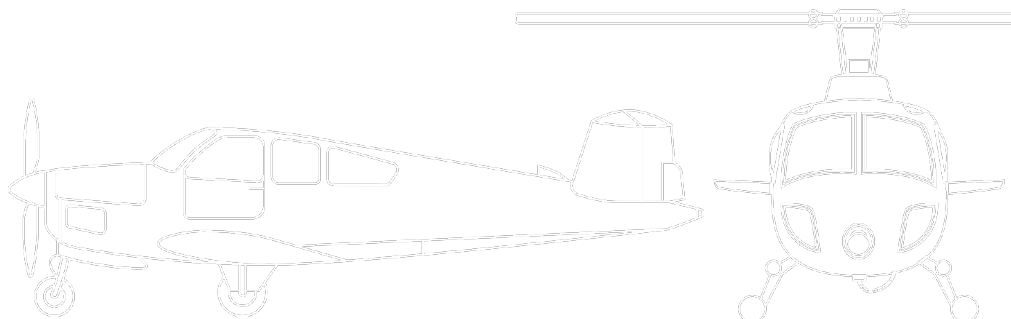
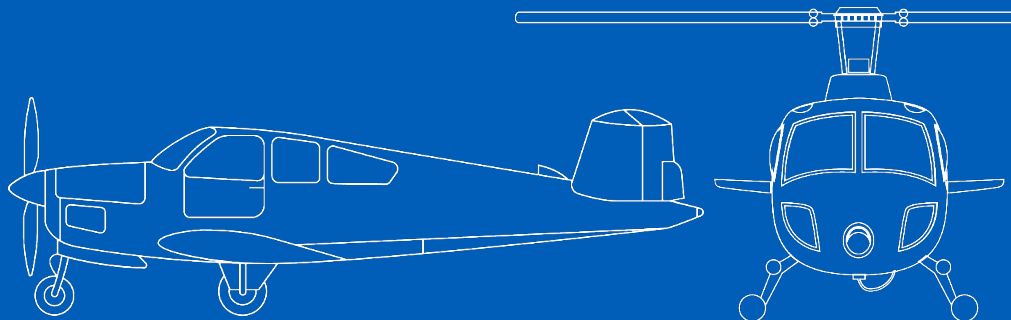


Diagram 5: *The number of accidents reported to the CAA during 2009 – 2018 involving small aeroplanes and helicopters in air transport and other commercial operations.*



Part 3

Sector Risk Profile Methodology



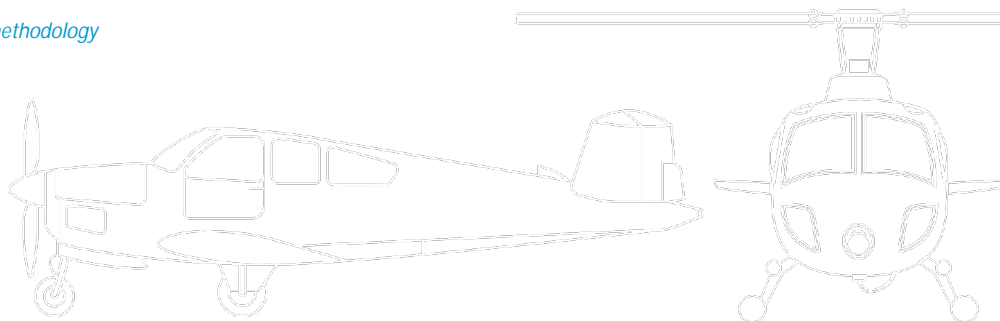
PART 3: SECTOR RISK PROFILE METHODOLOGY

Developing an SRP requires a mixture of art and science. The focus of this SRP was to identify the aviation sector's view of significant risks and the areas they want to focus on to drive positive action. With this in mind we followed a methodology that sought to incorporate objective data with participant experience and specialist knowledge. In summary, the SRP methodology utilised the risk management process defined in *AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines*.

This risk management standard provides organisations with guiding principles, a generic framework, and a process for managing risk. This report outlines the process that has been followed to date, and how these link to the high level elements of AS/NZS ISO 31000:2009. It should be noted that the process followed in developing this SRP sought to rely on participant experience and expertise, and New Zealand data, rather than attempting to align to a specific philosophy such as Reason's Accident Causation Model.



Diagram 6: SRP methodology



Progress to date – May 2018



3.1 Establish the context

The scope of this SRP was limited to the Part 135 Helicopter and Small Aeroplane sector participants. The ultimate purpose of this SRP was to:

- I. Seek agreement with participants on the key risk areas relevant to this sector; and
- II. Identify a manageable number of actions that the sector can commit to addressing to minimise or mitigate the identified risks.



3.2 Identify the risk areas

To identify an initial list of key risk areas we performed the following steps:

a. *Surveyed participants*

A survey of the Part 135 Helicopter and Small Aeroplane sector participants was sent out in September 2017. The survey was voluntary and anonymous. The purpose of the survey was to understand why risks exist and to identify any further risks that were not included in the 2015 Part 135 SRP. In total, 37 responses were received from 177 invitations, a response rate of 21 percent. The content from this survey contributed to the development of the sector workshops held in November 2017.

b. *Reviewed key risks from the 2015 Part 135 SRP*

To provide a starting point for discussion of risks relevant to the Part 135 sector, we utilised the list of 17 risk themes identified in the 2015 Part 135 SRP.

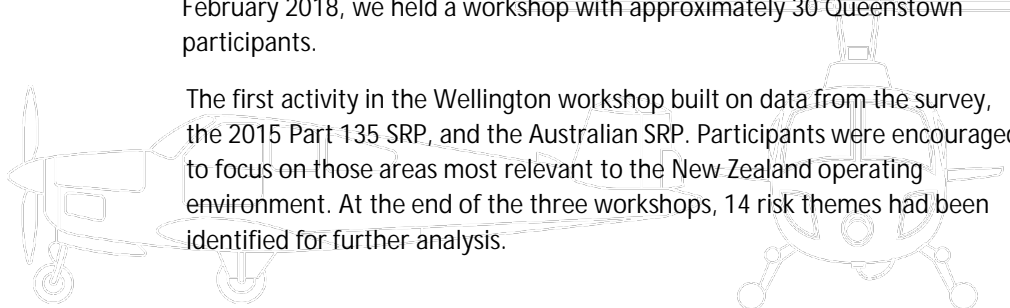
c. *International scan*

The SRP project team considered the risks identified in the Australian SRP as an input into the sector workshops.

d. *Workshops - Risk identification*

In November 2017 we ran three open invitation workshops with approximately 100 participants from across the sector. Additionally, in February 2018, we held a workshop with approximately 30 Queenstown participants.

The first activity in the Wellington workshop built on data from the survey, the 2015 Part 135 SRP, and the Australian SRP. Participants were encouraged to focus on those areas most relevant to the New Zealand operating environment. At the end of the three workshops, 14 risk themes had been identified for further analysis.



Workshop 1 – Wellington – November 2017



Progress to date – May 2018



3.3 Analyse and evaluate the risks

The Wellington, Christchurch and Auckland workshops identified an initial list of 14 risk themes. The second and third workshops built on the work that had been completed by the previous workshop participants.

We also used the workshops to further analyse the risks by identifying the corresponding key causes and controls. A high level summary of the process followed is provided below:

a. *Peer review of risks from previous workshops*

The first activity in the Christchurch and Auckland workshops was to identify any new risk themes that had not previously been identified by previous workshops or within the 2015 SRP (i.e. specific to the region where the workshop was being delivered, or the workshop attendees). These risks were developed into risk statements, which were refined in an iterative manner by each subsequent workshop to arrive at the final risk definition.

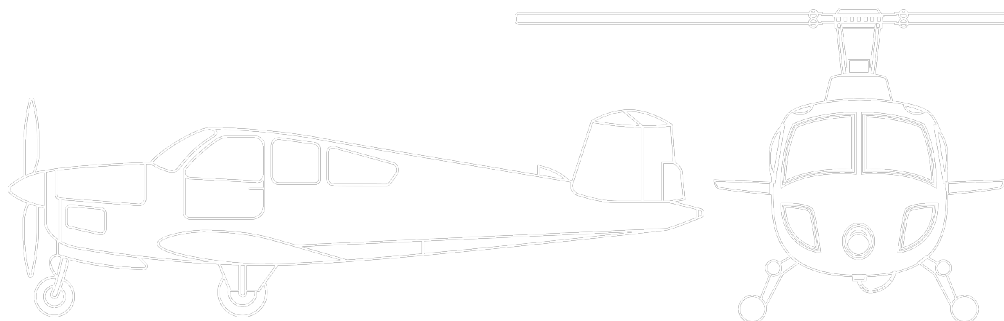
b. *Identification of key causes*

For each key risk identified, workshop participants were asked to identify the three principal causes they considered should be targeted in order to most effectively address the risk to safe operations. Participants were also asked to note any other causes that had not been identified to date from the previous workshops.

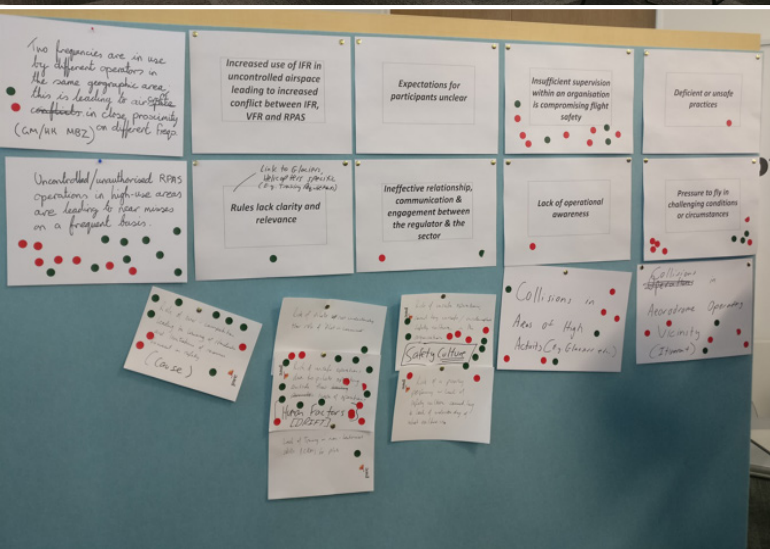
A high level derivative of the *Bowtie Risk Methodology* was utilised to guide these discussions. The identification of key causes was conducted in an interactive manner, with each workshop reviewing and building upon the key causes identified from previous participants.

c. *Identification of controls*

Once the risks and key causes had been identified, workshop participants then identified what they thought were the three most important controls for each cause that were either missing (and require development) or exist but require strengthening.



Workshop 2 – Christchurch – November 2017



Workshop 3 – Auckland – November 2017



Over reliance on Automation

Deficient or unsafe practices

Expectations for participants unclear

Ineffective relationship, communication and engagement between the regulator and the sector

Pressure to fly in challenging conditions or circumstances

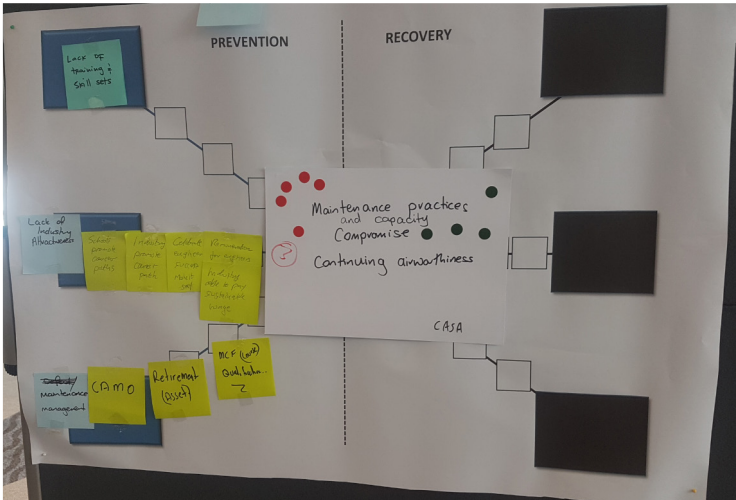
Inadequate flight crew member competency

Lack of operational awareness

Increased use of IFR in uncontrolled airspace leading to increased conflict between IFR, VFRs and RPAs

Rules lack clarity and relevance (consider specific operations such as glaciers, helicopters and training requirements)

Exaggerated confidence can enter the industry as pilots slow to the point of student's own and setting



Progress to date – May 2018



3.4 Define the actions / mitigations

a. *Action identification*

Once each workshop had identified at least three key controls for each cause, they were then asked to identify key actions for the sector to take. These actions were focussed on identifying steps that could be taken to strengthen existing controls, or implement new controls.

The identification of key actions was conducted in an interactive manner, with each workshop reviewing and building upon the key actions identified from previous participants.

b. *Expert internal panel analysed the actions*

The controls and actions identified in the three workshops will be useful for individual participants to consider in their operations. However, the SRP project team also wanted to produce a more refined action list that would provide the sector with a manageable starting point from which meaningful action could occur in the short to medium term.

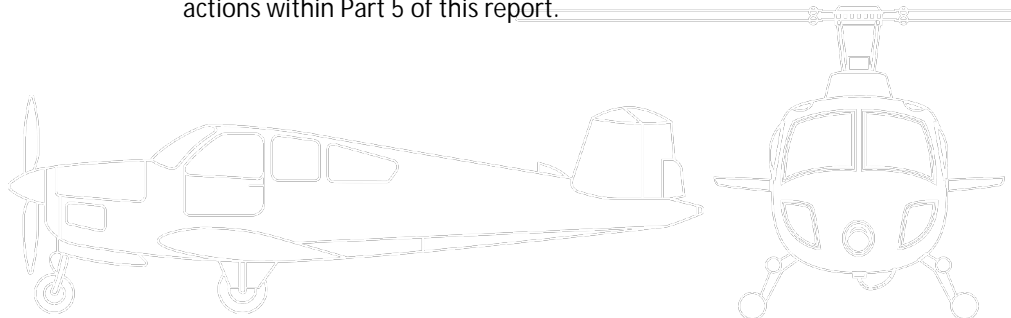
To produce the refined action list, CAA formed an internal panel with subject matter experts to review and refine the risks, causes, controls, and proposed actions. This process resulted in the 14 risk themes being condensed into 9 key risk themes, with a total of 47 associated potential actions.

c. *Queenstown workshop*

In February 2018, we held a workshop with approximately 30 Queenstown participants. Participants were asked to review and refine the list of key risks identified in the previous workshops and to identify any new risks that they believed should be included. Although no new risks were identified, the feedback provided validation and refinement of key risks.

Wording changes were provided from the Queenstown participants, as well as new actions, or recommended refinements of the actions identified by the previous three workshops.

The refinements identified by participants, are reflected in the list of key actions within Part 5 of this report.



Progress to date – May 2018



3.4 Define the actions / mitigations (Cont.)

d. *Final refined list of risks and actions produced*

Post the Queenstown workshop, the SRP project team performed a final review of the feedback. This resulted in merging two risks into one, and incorporating Queenstown participant feedback into the final draft list of risks, causes, controls and actions.

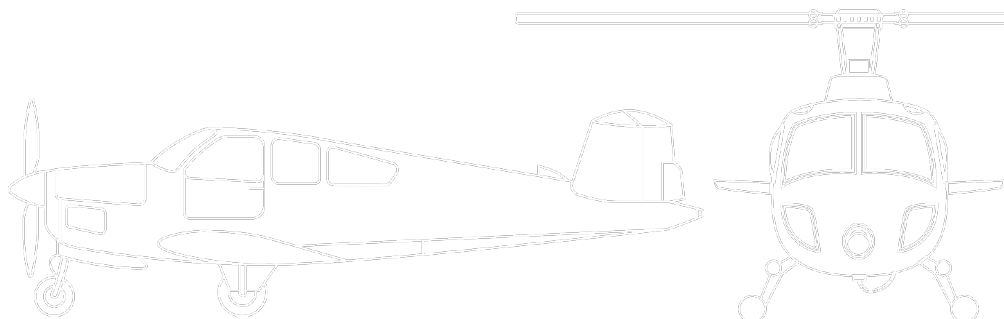
The output of this final refinement is provided in this report.

e. *Development of implementation plans*

The 47 actions were not designed to be overly detailed, but to provide sufficient guidance for participants to understand how they may apply these to their organisation. It is expected that greater detail will be developed as accountable parties begin to implement the actions.

CAA will develop some initial implementation plans to address the 47 actions. While still at a high level, they can be used by participants as they consider how to incorporate the relevant key risk themes within their SMS.

CAA will continue to work with the sector to develop further implementation plans over the coming 12 months.



SRP progress update – May 2019



3.5 Monitor and review progress

A key step in the sector risk profile process is to monitor and review progress against the 47 actions identified in 2018. To facilitate this process we ran a workshop in March 2019, attended by approximately 50 sector participants. The workshop provided an opportunity to check in on progress across the sector, share common learnings, and identify the next actions required to address the key sector risks.

The workshop was structured as follows:

a. *Considered the relevant data*

In preparation for the workshop, CAA analysed its occurrence data relevant to the 9 SRP risks. The data highlighted that the 9 SRP risks are still relevant to the NZ context. This data was displayed as case examples against each of the risks and participants were encouraged to review each risk and the relevant data case studies.

b. *Assessed progress of actions*

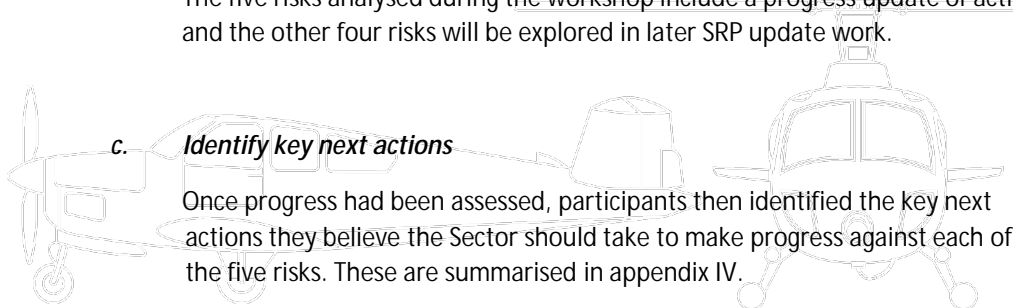
With the time constraints of one day to run this workshop, we asked participants to identify the top risks that they wanted to explore in detail during the workshop. This resulted in the following five key risks:

- i. Inadequate flight crew competency
- ii. Deficient practices
- iii. Regulator expectations for participants are unclear
- iv. Airborne conflict in controlled and uncontrolled airspace
- v. Flying when unfit to fly

Participants selected the risk they wanted to explore, and in groups discussed and agreed the progress made in implementing each of the relevant actions. Each of the 9 risks, with the associated controls and actions were summarised on “half bowties.” These are reproduced in Appendix III for participants to use. The five risks analysed during the workshop include a progress update of actions and the other four risks will be explored in later SRP update work.

c. *Identify key next actions*

Once progress had been assessed, participants then identified the key next actions they believe the Sector should take to make progress against each of the five risks. These are summarised in appendix IV.



SRP progress update – May 2019

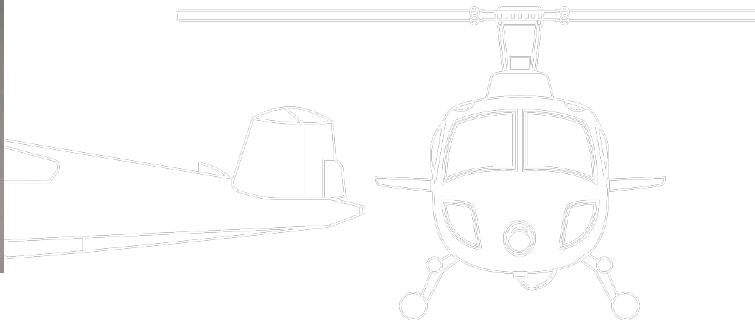
Next Steps

At the conclusion of the workshop, participants had identified 12 key actions to further progress the five risks identified. We asked participants how they would like to keep the conversation alive and ensure that future progress is made. In general it was agreed that wherever possible, the Sector needs to utilise existing forums and groups to explore next steps on some of the key actions that were developed. Discussion also focussed on other potential formats for collaboration – such as digital video conferencing to attract the widest possible audience.

CAA will consider the best option of connecting further with the Sector and will engage with participants to gauge interest on potential collaborative opportunities.

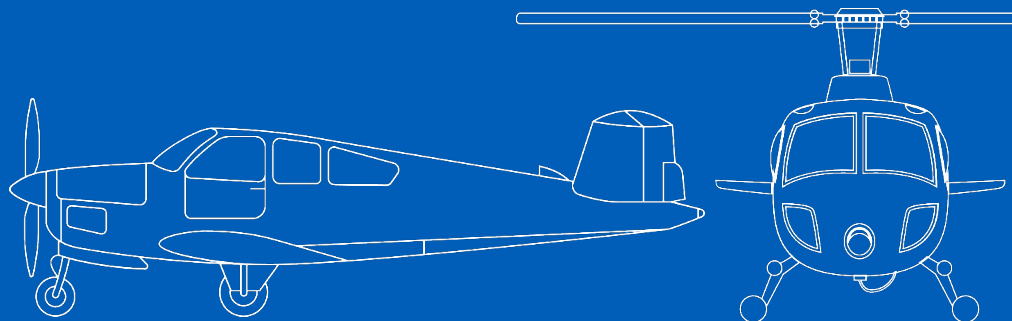
While this update focussed on what the Sector has achieved, participants are still expected to be considering and addressing the relevant risks within their own SMS, and/or per their HSWA obligations. Going forward, CAA inspectors will be placing specific focus on how participants have addressed the relevant SRP risks within their SMS or HSWA risk management.

Given the dynamic nature of aviation, participants are also encouraged to conduct regular risk reviews to identify potential new risks and to assess/enhance the effectiveness of existing risk controls.



Part 4

Risk Themes



PART 4: RISK THEMES

The 2015 Part 135 SRP identified 17 risk themes, and related impacts. The SRP project team took this initial list and reduced the list of risk themes to 9, taking into consideration the following factors:

- The level of risk granularity where meaningful action could be taken, and as a result those risk themes that were more appropriately categorised as causes
- Risks identified that were similar in nature and could be amalgamated
- The risks identified by Australia in their related SRP
- Analysis of occurrence data within New Zealand
- The New Zealand operating environment and what was viewed as important areas for consideration by sector participants during the workshops.

To see the final correlation between these 2015 Part 135 SRP risk themes, and the final risk themes identified from this SRP, refer to Appendix I.

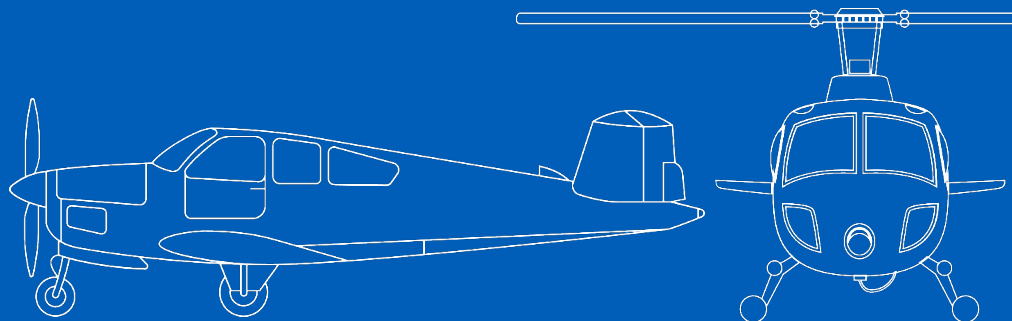
4.1 Risk themes

The risk themes identified below have not been intentionally ordered in terms of importance or severity.

Ref	Risk theme	Description
1	Inadequate flight crew competency	Ineffective training and development, and poor operator safety culture is impacting flight crew competency, leading to higher likelihood of incidents / accidents and lower safety performance.
2	Deficient practices	Operators may exhibit complacency towards changing safety management expectations, and do not invest in sufficient safety management due to continued commercial pressure, leading to a chance of a major accident or degraded safety performance.
3	Insufficient supervision within an organisation	Insufficient transfer of knowledge, and shortage of competent and experienced supervisors, impacting flight safety.
4	Lack of operational awareness	Some operators have structures and cultures that distance management from operational staff, and there is an absence of effective information sharing across the sector, which may result in less effective communication and insufficient management focus on operational issues.
5	Regulator expectations for participants are unclear	Some rules and guidance are unclear and not fit-for-purpose for all operations, leading to a lack of consistent standards and procedures, and increasing the risk of rule non-compliance.
6	Ineffective relationship, including communication and engagement, between the regulator and the sector	Operators have a fear of reprisal from reporting incidents or concerns, and a perceived absence of just culture and effective communication by the CAA, leading to under-reporting of issues and non-compliances; and impaired knowledge and insight by the regulator into sector performance.
7	Airborne conflict in controlled and uncontrolled airspace	Airborne conflict is the dangerous proximity to airborne objects or aircraft while in flight.
8	Flying when unfit to fly	Poor physical or mental state (e.g. fatigue, alcohol, drugs, or stress) and/or commercial pressures, influences flight decision-making and the safety of operations.
9	Flying non-airworthy aircraft	Inability to attract, retain and adequately train Licenced Aircraft Maintenance Engineers (LAME), and the absence of standardised aircraft maintenance management, leads to impaired maintenance capacity and capability, along with reduced aircraft safety.

Part 5

Key actions



PART 5: KEY ACTIONS

The first three SRP workshops identified 14 risk themes through review of the existing 2015 SRP risk themes, and consideration of new and emerging sector risks. The workshops focussed on the controls and actions to address the identified 14 risk themes.

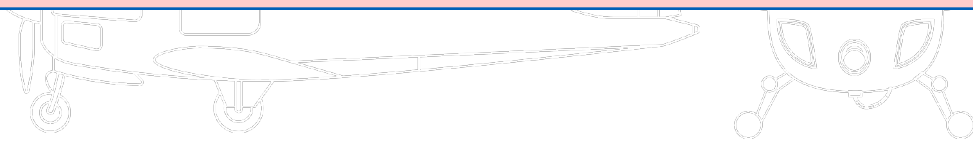
As noted in Part 3, CAA utilised an expert panel to review all of the raw actions that had been identified in the Wellington, Christchurch, Auckland and Queenstown workshops. The purpose of this panel was to identify a shorter list of actions that could begin to be addressed immediately. To develop the short list, the panel assessed each of the proposed actions against the following criteria:

- i. Will it have a positive impact on the sector?
- ii. Is it achievable in approximately 24 months?
- iii. Is it actually feasible?
- iv. Does it have general alignment with other/international activity (CASA, CAA UK etc.)?
- v. Will it address NZ unique factors?
- vi. Is it supported by known data?

Following workshop four, this process resulted in a refined list of 9 risk themes with an associated 47 actions that will be revisited and updated regularly to ensure actions are being progressed, and to decide whether additional actions should be added. The actions are not designed to be detailed, and we understand that specific actions may differ across operators and other participants in the sector.

5.1 How to read the action statements

Risk	
Risk	This is the risk definition.
Cause	The causes identified in the workshops. Each risks will have multiple causes.
Control	The controls identified in the workshops. Each cause will have multiple controls.
Action	The proposed action(s)
Owner	The proposed action owner(s)
Status	Active or Scoping
	Active: means the action has already been implemented or action is currently being undertaken. Action owners will be able to show evidence of this action.
	Scoping: means the action is in the early stages of design and implementation. Action owners will be able to show evidence of activity to begin implementation.

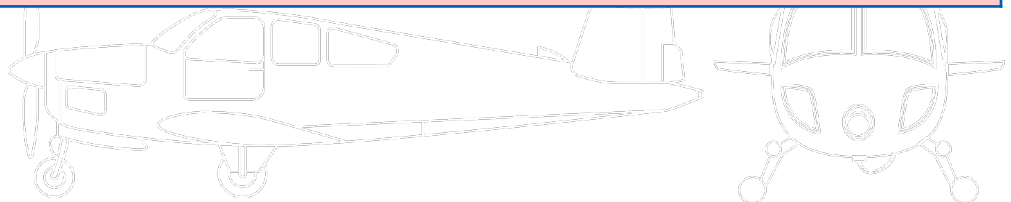


KEY ACTIONS (Cont.)

1. Inadequate flight crew competency	
Risk	Ineffective training and development, and poor operator safety culture is impacting flight crew competency, leading to higher likelihood of incidents / accidents and lower safety performance.
Cause	1.1a - Inadequate training and development.
Control	Flight supervisor training course.
Action	<ul style="list-style-type: none"> CAA will work with the sector to determine the need for, and context of, a flight supervisor course and/or produce relevant and appropriate material for the sector. Operators to refine and tailor CAA course for their own unique circumstances, and ensure all supervisors attend training.
Owner	CAA and Operators.
Status	Scoping

1. Inadequate flight crew competency	
Risk	Ineffective training and development, and poor operator safety culture is impacting flight crew competency, leading to higher likelihood of incidents / accidents and lower safety performance.
Cause	1.1b - Inadequate training and development.
Control	Operator competency checks.
Action	CAA, Industry Groups and Operators to define what 'good practice' looks like with regards to competency checks.
Owner	CAA, Industry Groups and Operators.
Status	Scoping

1. Inadequate flight crew competency	
Risk	Ineffective training and development, and poor operator safety culture is impacting flight crew competency, leading to higher likelihood of incidents / accidents and lower safety performance.
Cause	1.1c - Inadequate training and development.
Control	Flight debriefs to identify issues and further training needs.
Action	<ul style="list-style-type: none"> CAA to consult with industry group(s) to develop a sector best practice guide for flights as appropriate e.g. training, ICUS and FCCC debriefs (including the format of the debrief and why these are important). Operators to implement flight debriefs for every flight and monitor associated benefits.
Owner	CAA, Industry Group and Operators.
Status	Scoping

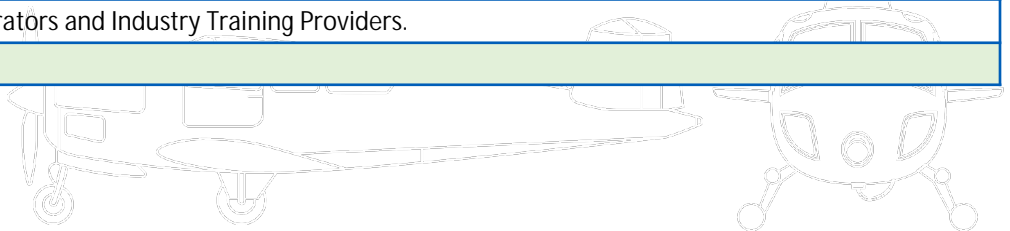


KEY ACTIONS (Cont.)

1. Inadequate flight crew competency	
Risk	Ineffective training and development, and poor operator safety culture is impacting flight crew competency, leading to higher likelihood of incidents / accidents and lower safety performance.
Cause	1.2a - Poor operating culture within the sector and operator.
Control	Adherence to Standard Operating Procedures (SOPs).
Action	<ul style="list-style-type: none"> Industry group to develop a mechanism for sharing 'best practice' SOPs between Operators. CAA to provide guidelines on the process for developing SOPs, and the associated benefits of the use of SOPs. Operators to develop, continually review and update SOPs tailored to their unique operations.
Owner	Industry Group, CAA and Operators.
Status	Scoping

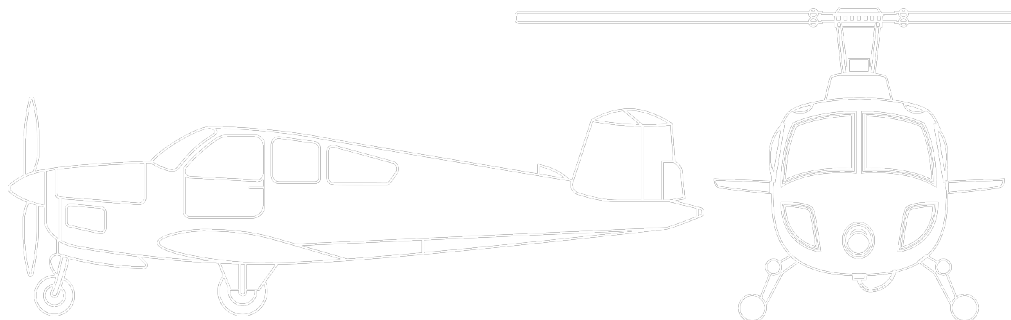
1. Inadequate flight crew competency	
Risk	Ineffective training and development, and poor operator safety culture is impacting flight crew competency, leading to higher likelihood of incidents / accidents and lower safety performance.
Cause	1.2b - Poor operating culture within the sector and operator.
Control	Flight risk assessments.
Action	<ul style="list-style-type: none"> CAA to consult with industry group(s) to develop a sector best practice guide for flight risk assessments e.g. Flight Risk Assessment Tool (which details key areas to be considered, linkage to SMS, and why these risk assessments are important). Operators to implement risk assessment and monitor associated benefits.
Owner	CAA, Industry Group and Operators.
Status	Scoping

1. Inadequate flight crew competency	
Risk	Ineffective training and development, and poor operator safety culture is impacting flight crew competency, leading to higher likelihood of incidents / accidents and lower safety performance.
Cause	1.2c - Poor operating culture within the sector and operator.
Control	Implementation of SMS.
Action	<ul style="list-style-type: none"> Operators to submit implementation plan by 30 July 2018 for assessment by CAA. Operators to implement 'present and suitable' SMS prior to their approved SMS certification date. CAA to provide support and guidance for participants, including outreach and communications.
Owner	CAA, Operators and Industry Training Providers.
Status	Active



KEY ACTIONS (Cont.)

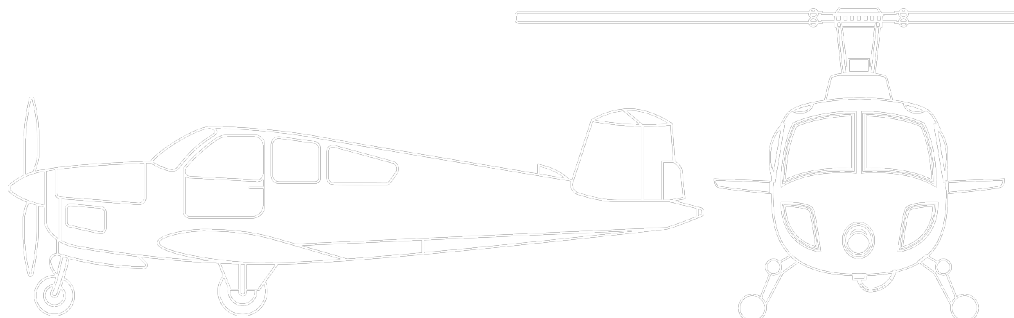
1. Inadequate flight crew competency	
Risk	Ineffective training and development, and poor operator safety culture is impacting flight crew competency, leading to higher likelihood of incidents / accidents and lower safety performance.
Cause	1.2d - Poor operating culture within the sector and operator.
Control	CAA surveillance activity under a performance based environment (SMS) focussed on operator culture.
Action	CAA to develop post SMS surveillance procedures that focus on operator culture.
Owner	CAA.
Status	Scoping



KEY ACTIONS (Cont.)

2. Deficient practices	
Risk	Operators may exhibit complacency towards changing safety management expectations, and do not invest in sufficient safety management due to continued commercial pressure, leading to a chance of a major accident or degraded safety performance.
Cause	2.1a – Poor safety culture.
Control	Implementation of SMS.
Action	<ul style="list-style-type: none"> Operators to submit implementation plan by 30 July 2018 for assessment by CAA. Operators to implement 'present and suitable' SMS prior to their approved SMS certification date. CAA to provide support and guidance for participants, including outreach and communications.
Owner	CAA, Operators and Industry Training Providers.
Status	Active

2. Deficient practices	
Risk	Operators may exhibit complacency towards changing safety management expectations, and do not invest in sufficient safety management due to continued commercial pressure, leading to a chance of a major accident or degraded safety performance.
Cause	2.1b – Poor safety culture.
Control	Operator senior leadership adopt and promote ongoing safety risk awareness.
Action	<ul style="list-style-type: none"> CAA to review existing education courses, such as the CAA Aviation Safety Officer course, to ensure these are fit-for-purpose and performance based. Education courses provided to Operators. Sector meetings (such as NZHA and NZAAA) to continue to be used by industry to engage with CAA. CAA to consider establishing a Part 135 sector reference group to enhance involvement and engagement with sector participants. CAA to take regulatory action as necessary to manage aviation safety risk. Industry to promote importance of safety e.g. through established industry groups.
Owner	CAA and Operators.
Status	Active (NZHA and AAA sector meetings) Scoping (all other actions)

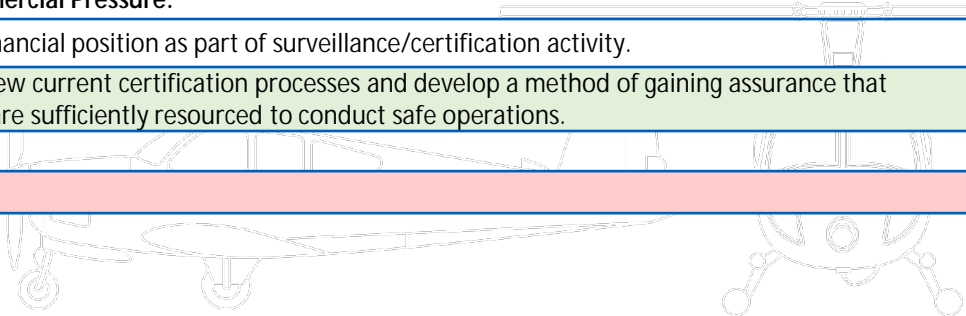


KEY ACTIONS (Cont.)

2. Deficient practices	
Risk	Operators may exhibit complacency towards changing safety management expectations, and do not invest in sufficient safety management due to continued commercial pressure, leading to a chance of a major accident or degraded safety performance.
Cause	2.1c – Poor safety culture.
Control	Collaborative engagement between sector and CAA.
Action	<ul style="list-style-type: none"> • Sector meetings (such as NZHA and AAA) will continue to be used by the CAA to engage with the sector. • CAA to consider establishing a Part 135 sector reference group to enhance involvement and engagement with sector participants. • Sector secondments into CAA to be explored. • CAA and Operators to consider greater use of Local User Groups.
Owner	CAA and Operators.
Status	Active (NZHA and AAA sector meetings) Scoping (all other actions)

2. Deficient practices	
Risk	Operators may exhibit complacency towards changing safety management expectations, and do not invest in sufficient safety management due to continued commercial pressure, leading to a chance of a major accident or degraded safety performance.
Cause	2.2 – Poor staff retention.
Control	Job satisfaction by Sector participants.
Action	Operators to investigate opportunities to increase staff retention across the sector, and agree feasible actions.
Owner	Operators.
Status	Scoping

2. Deficient practices	
Risk	Operators may exhibit complacency towards changing safety management expectations, and do not invest in sufficient safety management due to continued commercial pressure, leading to a chance of a major accident or degraded safety performance.
Cause	2.3 – Commercial Pressure.
Control	Consider financial position as part of surveillance/certification activity.
Action	CAA to review current certification processes and develop a method of gaining assurance that applicants are sufficiently resourced to conduct safe operations.
Owner	CAA.
Status	Scoping

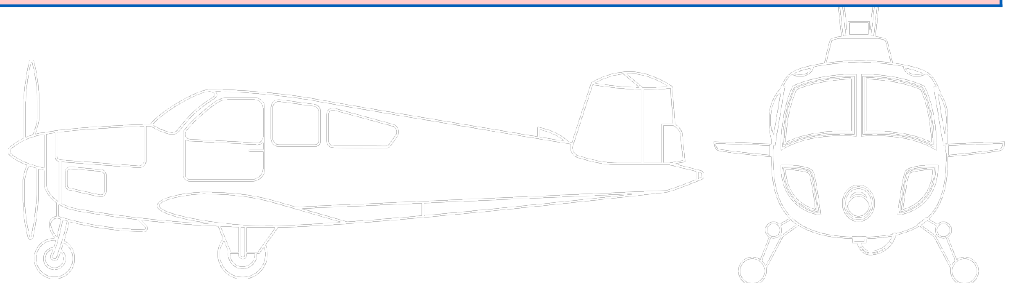


KEY ACTIONS (Cont.)

3. Insufficient supervision within an organisation	
Risk	Insufficient transfer of knowledge, and shortage of competent and experienced supervisors, impacting flight safety.
Cause	3.1a – Ineffective transfer of experience.
Control	Transparent career pathway by Sector participants.
Action	Operators to create a structured career pathway.
Owner	Operators.
Status	Scoping

3. Insufficient supervision within an organisation	
Risk	Insufficient transfer of knowledge, and shortage of competent and experienced supervisors, impacting flight safety.
Cause	3.1b – Ineffective transfer of experience.
Control	Effective communication between and within regulator and sector.
Action	<ul style="list-style-type: none"> CAA to review current communications strategy with the sector. CAA to implement stakeholder engagement plan.
Owner	CAA.
Status	Scoping (communications strategy review) Active (stakeholder engagement plan)

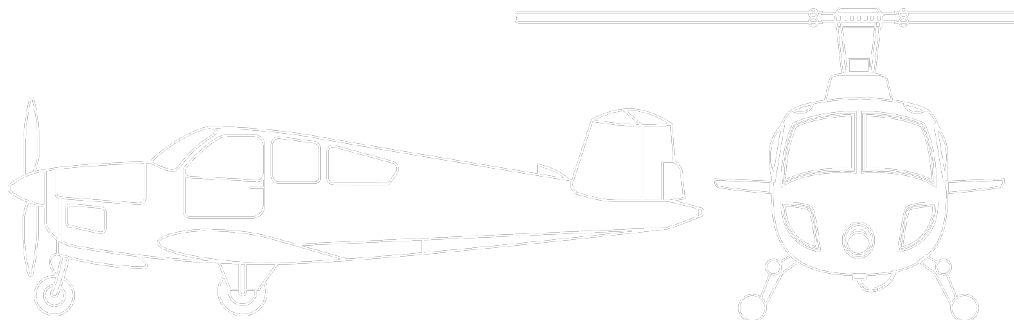
3. Insufficient supervision within an organisation	
Risk	Insufficient transfer of knowledge, and shortage of competent and experienced supervisors, impacting flight safety.
Cause	3.2a – Inability to attract and retain competent supervisors.
Control	Flight supervisor training course.
Action	<ul style="list-style-type: none"> CAA will work with the sector to determine the need for, and context of, a flight supervisor course and/or produce relevant and appropriate material for the sector. Operators to refine and tailor CAA course for their own unique circumstances, and ensure all supervisors attend training.
Owner	CAA and Operators.
Status	Scoping



KEY ACTIONS (Cont.)

3. Insufficient supervision within an organisation	
Risk	Insufficient transfer of knowledge, and shortage of competent and experienced supervisors, impacting flight safety.
Cause	3.2b – Inability to attract and retain competent supervisors.
Control	Job satisfaction by sector participants.
Action	Operators to investigate opportunities to increase staff retention across the sector, and agree a plan to introduce and retain new high quality staff.
Owner	Operators.
Status	Scoping

3. Insufficient supervision within an organisation	
Risk	Insufficient transfer of knowledge, and shortage of competent and experienced supervisors, impacting flight safety.
Cause	3.3 – Lack of integrity and professionalism.
Control	Implementation of SMS.
Action	<ul style="list-style-type: none"> Operators to submit implementation plan by 30 July 2018 for assessment by CAA. Operators to implement 'present and suitable' SMS prior to their approved SMS certification date. CAA to provide support and guidance for participants, including outreach and communications.
Owner	CAA, Operators and Industry Training Providers.
Status	Active

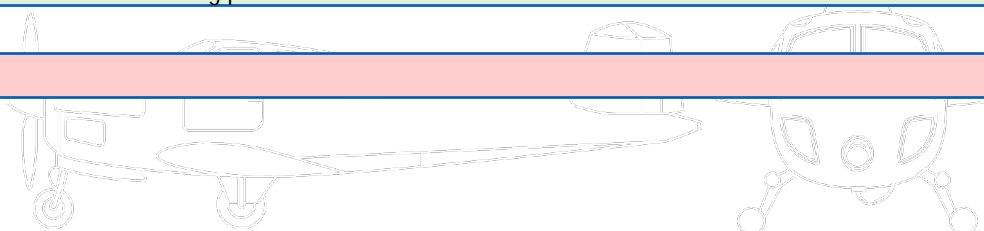


KEY ACTIONS (Cont.)

4. Lack of operational awareness	
Risk	Some operators have structures and cultures that distance management from operational staff, and there is an absence of effective information sharing across the sector, which may result in less effective communication and insufficient management focus on operational issues.
Cause	4.1a – Lack of information sharing across the sector.
Control	Sector working groups promote effective collaboration and sharing.
Action	<ul style="list-style-type: none"> Operators and the CAA to advertise existing user groups to encourage wider Sector attendance and participation. Operators to establish regional meetings.
Owner	CAA and Operators.
Status	Scoping

4. Lack of operational awareness	
Risk	Some operators have structures and cultures that distance management from operational staff, and there is an absence of effective information sharing across the sector, which may result in less effective communication and insufficient management focus on operational issues.
Cause	4.1b – Lack of information sharing across the sector.
Control	Effective communication between and within regulator and sector.
Action	<ul style="list-style-type: none"> CAA to review current communications strategy with the sector. CAA to consider establishing a Part 135 sector reference group to enhance involvement and engagement with sector participants.
Owner	CAA.
Status	Scoping

4. Lack of operational awareness	
Risk	Some operators have structures and cultures that distance management from operational staff, and there is an absence of effective information sharing across the sector, which may result in less effective communication and insufficient management focus on operational issues.
Cause	4.1c – Lack of information sharing across the sector.
Control	Communication of safety issues.
Action	<ul style="list-style-type: none"> CAA to continue existing publications, including Vector, AIP, NOTAMS, AICS, GAP booklets. CAA to investigate more effective and timely communication of current and relevant safety issues. CAA to review how existing publications are communicated.
Owner	CAA.
Status	Scoping

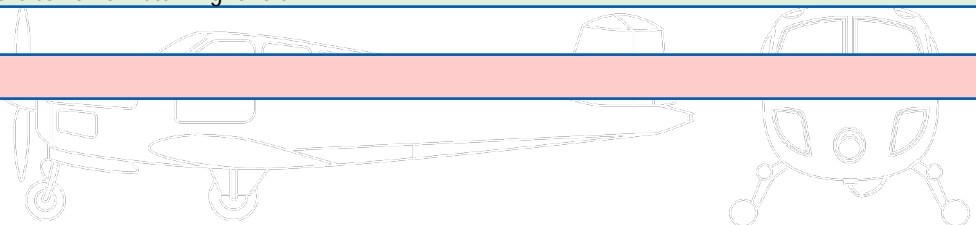


KEY ACTIONS (Cont.)

4. Lack of operational awareness	
Risk	Some operators have structures and cultures that distance management from operational staff, and there is an absence of effective information sharing across the sector, which may result in less effective communication and insufficient management focus on operational issues.
Cause	4.2 – Ineffective relationship between operations and management teams.
Control	Implementation of SMS.
Action	<ul style="list-style-type: none"> Operators to submit implementation plan by 30 July 2018 for assessment by CAA. Operators to implement 'present and suitable' SMS prior to their approved SMS certification date. CAA to provide support and guidance for participants, including outreach and communications.
Owner	CAA, Operators and Industry Training Providers.
Status	Active

4. Lack of operational awareness	
Risk	Some operators have structures and cultures that distance management from operational staff, and there is an absence of effective information sharing across the sector, which may result in less effective communication and insufficient management focus on operational issues.
Cause	4.3a – Insufficient time dedicated to operational management.
Control	Effective delegation and time/workload management skills.
Action	<ul style="list-style-type: none"> Operators to develop an appropriate resourcing model and delegation framework. Operators to ensure staff have appropriate skillsets and experience as part of the broader move into the SMS environment, including non technical skills.
Owner	Operators.
Status	Scoping

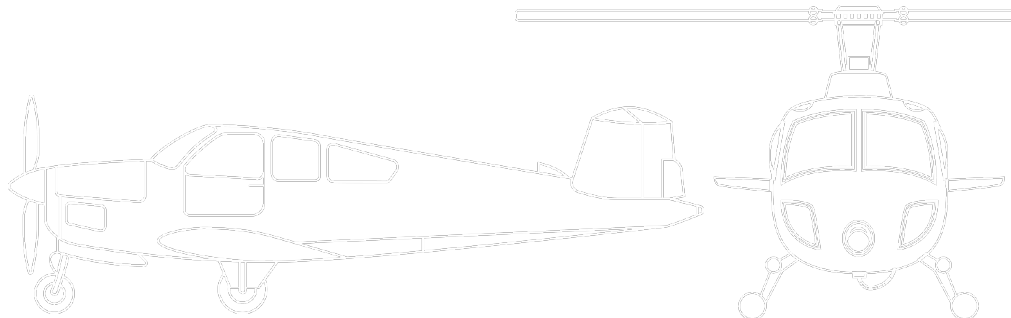
4. Lack of operational awareness	
Risk	Some operators have structures and cultures that distance management from operational staff, and there is an absence of effective information sharing across the sector, which may result in less effective communication and insufficient management focus on operational issues.
Cause	4.3b – Insufficient time dedicated to operational management.
Control	Adequate resourcing to support delivery of operational management activities.
Action	<ul style="list-style-type: none"> Operators to leverage technology to monitor actual operations against safety performance indicators. Operators to review staffing levels.
Owner	Operators.
Status	Scoping



KEY ACTIONS (Cont.)

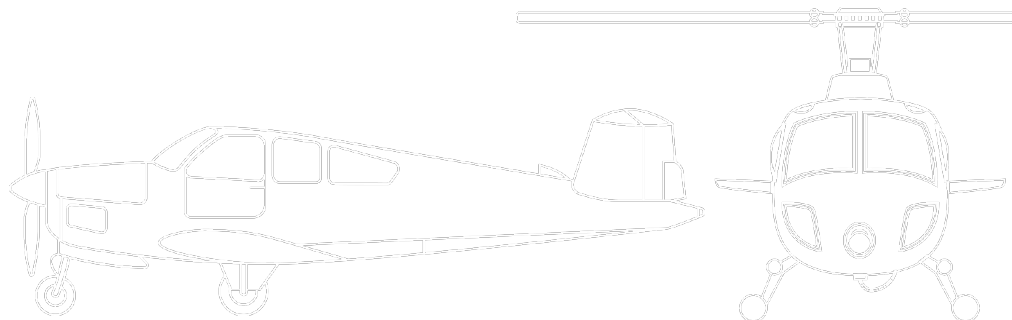
5. Regulator expectations for participants are unclear	
Risk	Some rules and guidance are unclear and not fit-for-purpose for all operations, leading to a lack of consistent standards and procedures, and increasing the risk of rule non-compliance.
Cause	5.1 – CAA’s inconsistent application and messaging of requirements.
Control	<ul style="list-style-type: none"> CAA core skills training programme. Regular CAA internal auditing. Regular feedback received by the CAA from the sector.
Action	<ul style="list-style-type: none"> CAA is implementing the Regulatory Craft Programme which will be reviewing the CAA training programme to ensure this is fit-for-purpose. CAA will communicate to the sector the current CAA core skills training programme. CAA will continue internal audits and improvement tools e.g. use of the PDCA quality tool. CAA will continue to consult via the established mechanisms on rules. CAA will continue with ACAG Rule prioritisation, IAP (Issues Assessment Panel), and AC (Advisory Circular) prioritisation.
Owner	CAA.
Status	Active (PDCAs). Scoping (all other actions)

5. Regulator expectations for participants are unclear	
Risk	Some rules and guidance are unclear and not fit-for-purpose for all operations, leading to a lack of consistent standards and procedures, and increasing the risk of rule non-compliance.
Cause	5.2 - Lack of guidance.
Control	<ul style="list-style-type: none"> Clear guidance available to the sector which align with rules. Communication strategy between CAA and sector.
Action	<ul style="list-style-type: none"> CAA to develop a framework to communicate available standards and obtain regular feedback on these. CAA will continue with ACAG Rule prioritisation, IAP (Issues Assessment Panel), and AC (Advisory Circular) prioritisation. CAA to develop new advisory circulars and notices for areas where clear guidance doesn’t currently exist.
Owner	CAA.
Status	Scoping



KEY ACTIONS (Cont.)

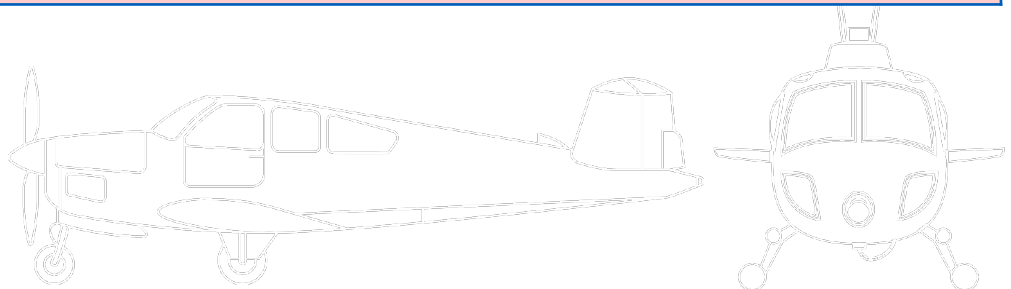
5. Regulator expectations for participants are unclear	
Risk	Some rules and guidance are unclear and not fit-for-purpose for all operations, leading to a lack of consistent standards and procedures, and increasing the risk of rule non-compliance.
Cause	5.3 - Rules not fit-for-purpose.
Control	<ul style="list-style-type: none"> Rules communicated to the sector for their awareness. Rules regularly reviewed and updated to ensure these are fit-for-purpose.
Action	<ul style="list-style-type: none"> CAA to develop a framework to communicate available standards and obtain regular feedback on these. CAA will continue with ACAG Rule prioritisation, IAP (Issues Assessment Panel), and AC (Advisory Circular) prioritisation. CAA to develop new advisory circulars and notices for areas where clear guidance doesn't currently exist.
Owner	CAA and Industry Group.
Status	Scoping



KEY ACTIONS (Cont.)

6. Ineffective relationship, including communication and engagement, between the regulator and the sector	
Risk	Operators have a fear of reprisal from reporting incidents or concerns, and a perceived absence of just culture and effective communication by the CAA, leading to under-reporting of issues and non-compliances; and impaired knowledge and insight by the regulator into sector performance.
Cause	6.1a – Fear of reprisals.
Control	Independent industry body.
Action	<ul style="list-style-type: none"> CAA to communicate to sector the avenues available for providing feedback, including the Ombudsman. CAA to enhance communication around the nature of actions taken (fines, court prosecutions etc.) and the reasons why these were taken, subject to privacy considerations and avoiding prejudicing existing legal processes.
Owner	CAA.
Status	Active

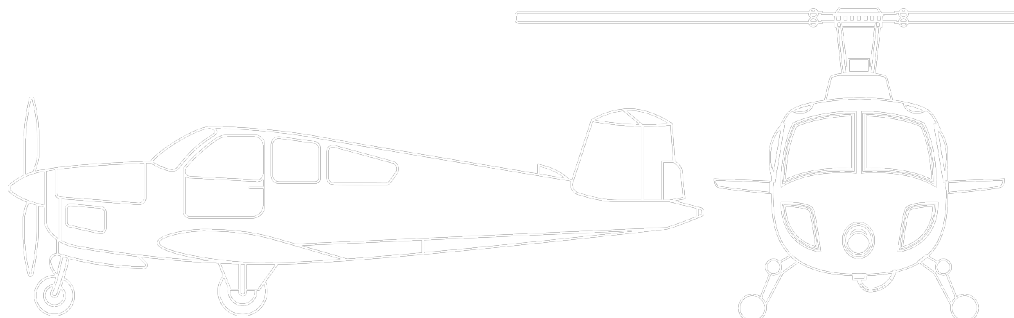
6. Ineffective relationship, including communication and engagement, between the regulator and the sector	
Risk	Operators have a fear of reprisal from reporting incidents or concerns, and a perceived absence of just culture and effective communication by the CAA, leading to under-reporting of issues and non-compliances; and impaired knowledge and insight by the regulator into sector performance.
Cause	6.1b – Fear of reprisals.
Control	Effective communication between and within regulator and sector.
Action	<ul style="list-style-type: none"> CAA to review current communications strategy with the sector. CAA to consider establishing a Part 135 sector reference group to enhance involvement and engagement with sector participants. CAA to enhance communication around the nature of actions taken (fines, court prosecutions etc.) and the reasons why these were taken, subject to privacy considerations and avoiding prejudicing existing legal processes. CAA to confirm that no prosecution action or infringement notice issued as a result of self-reporting. CAA to share incident data with industry.
Owner	CAA and Operators.
Status	Scoping



KEY ACTIONS (Cont.)

6. Ineffective relationship, including communication and engagement, between the regulator and the sector	
Risk	Operators have a fear of reprisal from reporting incidents or concerns, and a perceived absence of just culture and effective communication by the CAA, leading to under-reporting of issues and non-compliances; and impaired knowledge and insight by the regulator into sector performance.
Cause	6.1c – Fear of reprisals.
Control	Just culture.
Action	CAA to promote and educate the sector on Just Culture, including a rewrite of the Regulatory Operating Model (ROM) and the ROM being made available to industry to promote transparency.
Owner	CAA.
Status	Scoping

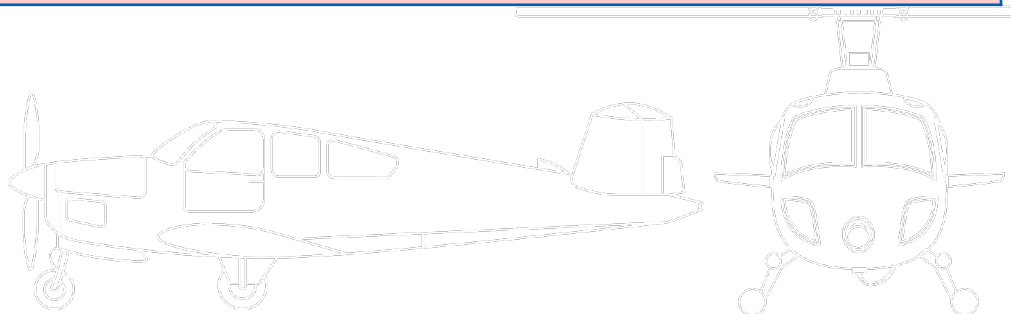
6. Ineffective relationship, including communication and engagement, between the regulator and the sector	
Risk	Operators have a fear of reprisal from reporting incidents or concerns, and a perceived absence of just culture and effective communication by the CAA, leading to under-reporting of issues and non-compliances; and impaired knowledge and insight by the regulator into sector performance.
Cause	6.2a – Perceived lack of just culture in CAA.
Control	Effective communication between and within regulator and sector.
Action	<ul style="list-style-type: none"> • CAA to review current communications strategy with the sector. • CAA to consider establishing a Part 135 sector reference group to enhance involvement and engagement with sector participants. • CAA to enhance communication around the nature of actions taken (fines, court prosecutions etc.) and the reasons why these were taken, subject to privacy consideration and avoiding prejudicing existing legal processes. • CAA to confirm that no prosecution action or infringement notice issued as a result of self-reporting. • CAA to promote and educate the sector on Just Culture, including a rewrite of the Regulatory Operating Model (ROM) and the ROM being made available to industry to promote transparency.
Owner	CAA and Operators.
Status	Scoping



KEY ACTIONS (Cont.)

6. Ineffective relationship, including communication and engagement, between the regulator and the sector	
Risk	Operators have a fear of reprisal from reporting incidents or concerns, and a perceived absence of just culture and effective communication by the CAA, leading to under-reporting of issues and non-compliances; and impaired knowledge and insight by the regulator into sector performance.
Cause	6.2b – Perceived lack of just culture in CAA.
Control	Relationship managers.
Action	CAA to review relationship management as part of the wider communications and stakeholder engagement strategy.
Owner	CAA.
Status	Scoping

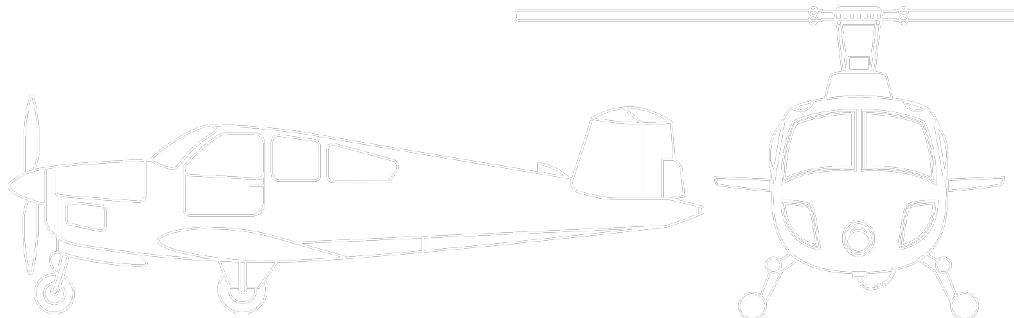
6. Ineffective relationship, including communication and engagement, between the regulator and the sector	
Risk	Operators have a fear of reprisal from reporting incidents or concerns, and a perceived absence of just culture and effective communication by the CAA, leading to under-reporting of issues and non-compliances; and impaired knowledge and insight by the regulator into sector performance.
Cause	6.3 – Ineffective communications approach.
Control	Effective communication between and within regulator and sector.
Action	<ul style="list-style-type: none"> • CAA to review current communications strategy with the sector. • CAA to consider establishing a Part 135 sector reference group to enhance involvement and engagement with sector participants. • CAA and Operators to consider greater use of Local User Groups • CAA to enhance communication around the nature of actions taken (fines, court prosecutions etc.) and the reasons why these were taken, subject to privacy considerations and avoiding prejudicing existing legal processes. • CAA to confirm that no prosecution action or infringement notice issued as a result of self-reporting. • CAA to share incident data with industry.
Owner	CAA and Operators.
Status	Scoping



KEY ACTIONS (Cont.)

7. Airborne conflict in controlled and uncontrolled airspace	
Risk	Airborne conflict is the dangerous proximity to airborne objects or aircraft while in flight.
Cause	7.1 – Density of aircraft within confined airspace, and visiting or itinerant pilots not following correct procedures.
Control	Awareness of Local Procedures.
Action	<ul style="list-style-type: none"> • Increase understanding of local procedures especially amongst itinerant pilots through the promulgation of procedures in the AIP, aerodrome websites, pilot briefings, etc. • Create MBZs, assign common radio frequencies in the areas of greatest need, and rationalise frequencies to ease radio congestion as part of the regular Airspace Review process. • Greater use of aerodrome / airspace local user groups to facilitate change and implementation. • Improve RTF discipline e.g. reduce RTF chatter, use of both radios appropriately through education utilising local user groups.
Owner	Operators, CAA, and Local User Groups
Status	Scoping

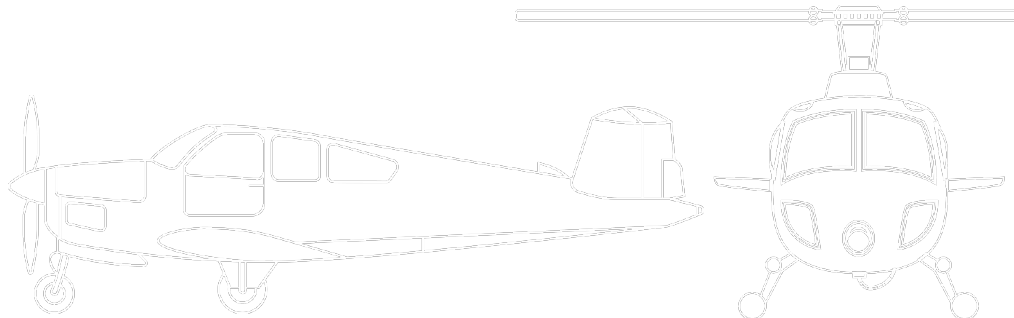
7. Airborne conflict in controlled and uncontrolled airspace	
Risk	Airborne conflict is the dangerous proximity to airborne objects or aircraft while in flight.
Cause	7.2 – Lack of knowledge and/or understanding by some Unmanned Aircraft Systems (UAS) operators of hazards and rules.
Control	Awareness of rules.
Action	<ul style="list-style-type: none"> • CAA to review current communications strategy with UAS operators, to raise awareness of rules e.g. pamphlets to overseas visitors. • CAA to conduct further data analysis to identify UAS use, incidents and near misses.
Owner	CAA.
Status	Active



KEY ACTIONS (Cont.)

7. Airborne conflict in controlled and uncontrolled airspace	
Risk	Airborne conflict is the dangerous proximity to airborne objects or aircraft while in flight.
Cause	7.3 – UAS difficult to see, both visibly and electronically.
Control	Continual review and refinement of UAS rules.
Action	CAA to continually consider and implement development of regulation to reflect changing UAS design and functionality, and align with best international practice.
Owner	CAA.
Status	Scoping

7. Airborne conflict in controlled and uncontrolled airspace	
Risk	Airborne conflict is the dangerous proximity to airborne objects or aircraft while in flight.
Cause	7.4 - The increasing use of Unmanned Aircraft Systems (UAS) and Visual Flight Rules (VFR) flights in uncontrolled airspace, along with the absence of a standardised traffic collision avoidance system (TCAS) and a common frequency for communication of Visual Flight Rules (VFR)/IFR traffic, and ineffective pilot education is leading to a higher likelihood of incidents / accidents and near misses with IFR flights and VFR flights.
Control	Ongoing analysis to assess IFR and VFR related risk.
Action	CAA to conduct further ongoing analysis to assess the size of this risk, and develop associated action plan (as required).
Owner	CAA.
Status	Scoping



KEY ACTIONS (Cont.)

8. Flying when unfit to fly	
Risk	Poor physical or mental state (e.g. fatigue, alcohol, drugs, or stress) and/or commercial pressures, influences flight decision-making and the safety of operations.
Cause	8.1a – Commercial pressure to fly.
Control	Consider financial position as part of surveillance/certification activity.
Action	CAA to review current certification processes and develop a method of gaining assurance that applicants are sufficiently resourced to conduct safe operations.
Owner	CAA.
Status	Scoping

8. Flying when unfit to fly	
Risk	Poor physical or mental state (e.g. fatigue, alcohol, drugs, or stress) and/or commercial pressures, influences flight decision-making and the safety of operations.
Cause	8.1b – Commercial pressure to fly.
Control	Implementation of SMS, and CAA certification and surveillance of flight and duty limitations and flight crew rostering.
Action	<ul style="list-style-type: none"> • Operators to submit implementation plan by 30 July 2018 for assessment by CAA. • Operators to implement 'present and suitable' SMS prior to their approved SMS certification date. • CAA to provide support and guidance for participants, including outreach and communications. • CAA project to review fatigue management. • CAA interim policy on assessment of flight and duty schemes. • CAA to develop expertise and tools to effectively and consistently certify flight and duty schemes and audit for compliance. • CAA to promote flight crew fatigue management training as part of flight crew training programmes. • Operators to adhere to AC119-2 or develop equivalent (and engage a fatigue expert).
Owner	CAA, Operators and Industry Training Providers.
Status	Active

8. Flying when unfit to fly	
Risk	Poor physical or mental state (e.g. fatigue, alcohol, drugs, or stress) and/or commercial pressures, influences flight decision-making and the safety of operations.
Cause	8.1c – Commercial pressure to fly.
Control	Just culture.
Action	<ul style="list-style-type: none"> • CAA to promote and educate the sector on Just Culture, including a rewrite of the Regulatory Operating Model (ROM) and the ROM being made available to industry to promote transparency. • Operators to adopt Just Culture approach.
Owner	CAA and Operators.
Status	Scoping

KEY ACTIONS (Cont.)

8. Flying when unfit to fly	
Risk	Poor physical or mental state (e.g. fatigue, alcohol, drugs, or stress) and/or commercial pressures, influences flight decision-making and the safety of operations.
Cause	8.2a – Operational demands exceed capability / competence.
Control	Implementation of SMS.
Action	<ul style="list-style-type: none"> Operators to submit implementation plan by 30 July 2018 for assessment by CAA. Operators to implement 'present and suitable' SMS prior to their approved SMS certification date. CAA to provide support and guidance for participants, including outreach and communications.
Owner	CAA, Operators and Industry Training Providers.
Status	Active

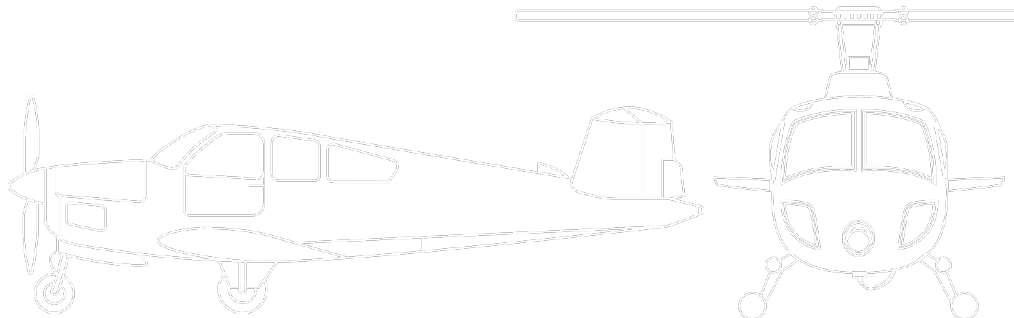
8. Flying when unfit to fly	
Risk	Poor physical or mental state (e.g. fatigue, alcohol, drugs, or stress) and/or commercial pressures, influences flight decision-making and the safety of operations.
Cause	8.2b – Operational demands exceed capability / competence.
Control	Adherence to Standard Operating Procedures (SOPs).
Action	<ul style="list-style-type: none"> Operators to develop, and continually review and update, SOPs which are tailored to their unique operations and organisation. This should include operator internal reporting, operator monitoring, and associated management action to address procedural shift. Industry group to develop a mechanism for sharing 'best practice' SOPs between Operators. CAA to provide guidelines on the process for developing SOPs, and the associated benefits of the use of SOPs.
Owner	Operators, Industry Group and CAA.
Status	Scoping

8. Flying when unfit to fly	
Risk	Poor physical or mental state (e.g. fatigue, alcohol, drugs, or stress) and/or commercial pressures, influences flight decision-making and the safety of operations.
Cause	8.3 – Poor physiological and/or psychological health.
Control	Comprehensive health management framework across the sector.
Action	<ul style="list-style-type: none"> CAA to educate sector that all medical records can be obtained by the CAA for monitoring purposes. Operators develop peer support and mentoring programme. Operators perform health checks, and day-to-day monitoring. CAA to investigate 'good practice' fatigue management and develop guidelines for sector. Operators to inform their flight crew members about assistance available to them such as Association support, Peer Assistance network and insurance cover. MoT 'Clear Heads' initiative.
Owner	CAA and Operators.
Status	Scoping

KEY ACTIONS (Cont.)

8. Flying when unfit to fly	
Risk	Poor physical or mental state (e.g. fatigue, alcohol, drugs, or stress) and/or commercial pressures, influences flight decision-making and the safety of operations.
Cause	8.4a – Procedural shift.
Control	Adherence to Standard Operating Procedures (SOPs).
Action	<ul style="list-style-type: none"> Operators to develop, and continually review and update, SOPs which are tailored to their unique operations and organisation. This should include operator internal reporting, operator monitoring, and associated management action to address procedural drift. Industry group to develop a mechanism for sharing 'best practice' SOPs between Operators. CAA to work with examiners to provide external touchpoint.
Owner	Operators, Industry Group and CAA.
Status	Scoping

8. Flying when unfit to fly	
Risk	Poor physical or mental state (e.g. fatigue, alcohol, drugs, or stress) and/or commercial pressures, influences flight decision-making and the safety of operations.
Cause	8.4b – Procedural shift.
Control	Implementation of SMS.
Action	<ul style="list-style-type: none"> Operators to submit implementation plan by 30 July 2018 for assessment by CAA. Operators to implement 'present and suitable' SMS prior to their approved SMS certification date. CAA to provide support and guidance for participants, including outreach and communications.
Owner	CAA, Operators and Industry Training Providers.
Status	Active

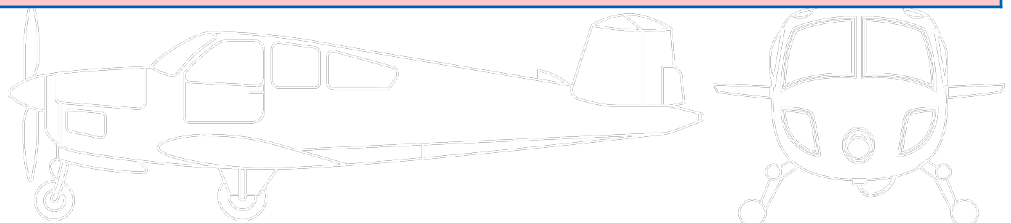


KEY ACTIONS (Cont.)

9. Flying un-airworthy aircraft	
Risk	Inability to attract, retain and adequately train Licenced Aircraft Maintenance Engineers (LAME), and the absence of standardised aircraft maintenance management, leads to impaired maintenance capacity and capability, along with reduced aircraft safety.
Cause	9.1 – Ineffective maintenance management.
Control	Maintenance course and guidance.
Action	<ul style="list-style-type: none"> CAA to develop a 'How to become an engineer' booklet, and develop a communication strategy to publish this, subject to prioritisation. Maintenance courses are currently available for inspectors.
Owner	CAA.
Status	Scoping

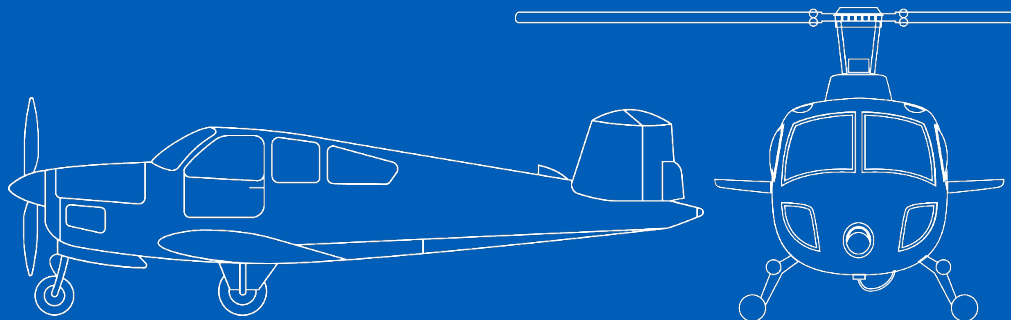
9. Flying un-airworthy aircraft	
Risk	Inability to attract, retain and adequately train Licenced Aircraft Maintenance Engineers (LAME), and the absence of standardised aircraft maintenance management, leads to impaired maintenance capacity and capability, along with reduced aircraft safety.
Cause	9.2 – Lack of industry attractiveness.
Control	Workforce management strategy in place.
Action	<ul style="list-style-type: none"> Maintenance organisations to work with Operators to gradually increase fees for engineers. CAA increases promotion of maintenance engineering as a career path. Sector to develop 'Engineer of the Year' awards.
Owner	Maintenance organisations, CAA and Operators.
Status	Scoping

9. Flying un-airworthy aircraft	
Risk	Inability to attract, retain and adequately train Licenced Aircraft Maintenance Engineers (LAME), and the absence of standardised aircraft maintenance management, leads to impaired maintenance capacity and capability, along with reduced aircraft safety.
Cause	9.3 – Lack of training and appropriate skillsets.
Control	Licensed Aircraft Maintenance Engineer training and apprenticeship programmes.
Action	<ul style="list-style-type: none"> Training providers to incorporate Licensed Aircraft Maintenance Engineer into syllabus. Industry to investigate reinstating maintenance apprenticeships.
Owner	Training providers and Operators.
Status	Scoping



Appendix I

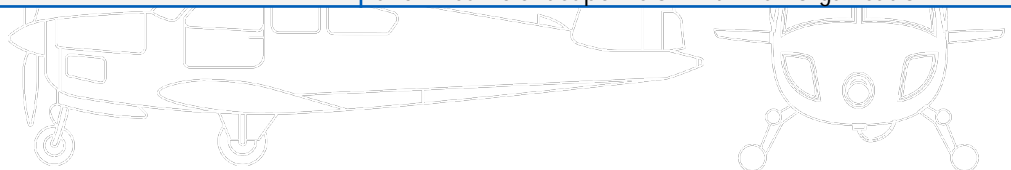
Full list of risk themes



APPENDIX I – FULL LIST OF RISK THEMES

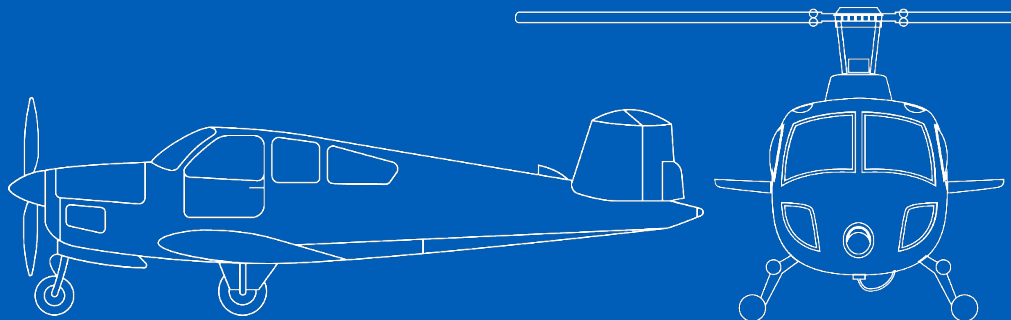
The 2015 Part 135 SRP identified 17 key risk themes, and related impacts. We have summarised this original list below, along with some brief commentary on how / if these were included in the final 9 risk themes outlined in Part 5 of this report.

Ref	Original risk theme identified under 2015 Sector Risk Profile	Commentary
1	Pressure to fly in challenging conditions or circumstances	Retained as a key risk theme – “Flying when unfit to fly”
2	Fatigue tolerance	Incorporated within “Flying when unfit to fly”
3	Raising concerns and/or issues is not supported by operators	Incorporated within “Ineffective relationship, including communication and engagement, between the regulator and the sector”
4	Complacency among some management and senior pilots	Incorporated within “Inadequate flight crew competency”
5	Cost-driven operational decisions	Incorporated within “Flying when unfit to fly”
6	Commercial contract requirements do not support safe flying practices	Incorporated within “Flying when unfit to fly”
7	Poor communication and operational awareness	Retained as a key risk theme - “Lack of operational awareness”
8	Insufficient resources to support development of pilots	Incorporated within “Insufficient supervision within an organisation”
9	Pilot experience gap within operators	Incorporated within “Inadequate flight crew competency” and “Insufficient supervision within an organisation”
10	Lack of Audit consistency and appropriate focus	Retained as a key risk theme - “Regulator expectations for participants are unclear”
11	Compliance focus of audits	Incorporated within “Regulator expectations for participants are unclear”
12	Occasional cases of poor passenger behaviour	Incorporated within “Flying when unfit to fly”
13	Lack of standards in some subsectors	Incorporated within “Regulator expectations for participants are unclear”
14	Relationship, communication and engagement with the sector poor	Retained as a key risk theme - “Ineffective relationship, including communication and engagement, between the regulator and the sector”
15	Rules lack clarity and relevance	Incorporated within “Regulator expectations for participants are unclear”
16	User groups are not set up or not used	Incorporated within “Deficient practices”, “Lack of operational awareness” and “Ineffective relationship, including communication and engagement, between the regulator and the sector”
17	Chief pilot role not defined and regulated	Incorporated within “Inadequate flight crew competency” and “Insufficient supervision within an organisation”



Appendix II

Key reference points

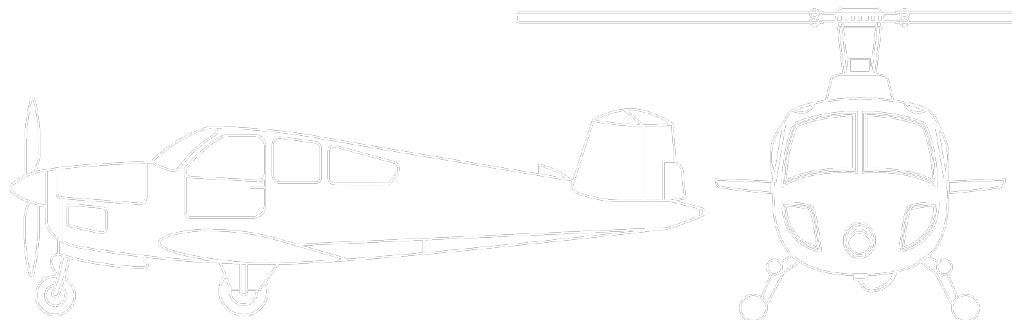


APPENDIX II – KEY REFERENCE POINTS

Readers may find the following reference points useful when reviewing this report:

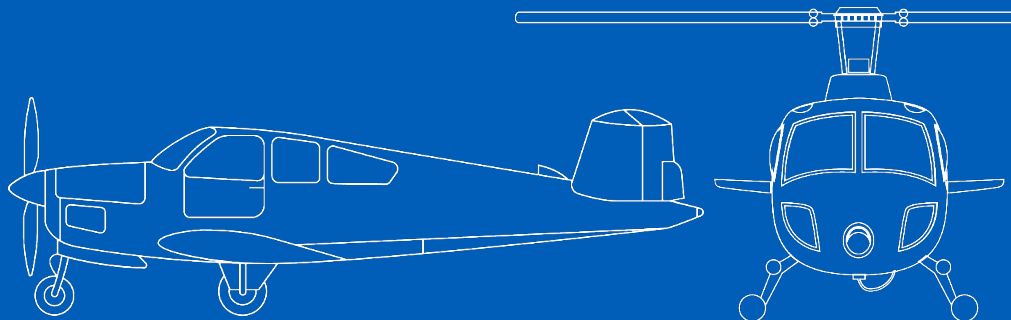
GENERAL INFORMATION ON SECTOR RISK PROFILING

Document title	Document link
<i>Civil Aviation Authority Sector Risk Profiles</i>	http://www.caa.govt.nz/safety-info/safety-reports/sector-risk-profiles/
<i>Civil Aviation Safety Authority Risk Profiling</i>	https://www.casa.gov.au/standard-page/risk-profiling-aviation-sectors-better-safety-outcomes
<i>UK CAA guidance on Bowtie approach within the context of SMS and SRP</i>	https://www.caa.co.uk/Safety-Initiatives-and-Resources/Working-with-industry/Bowtie/



Appendix III




Summary of Progress against key actions

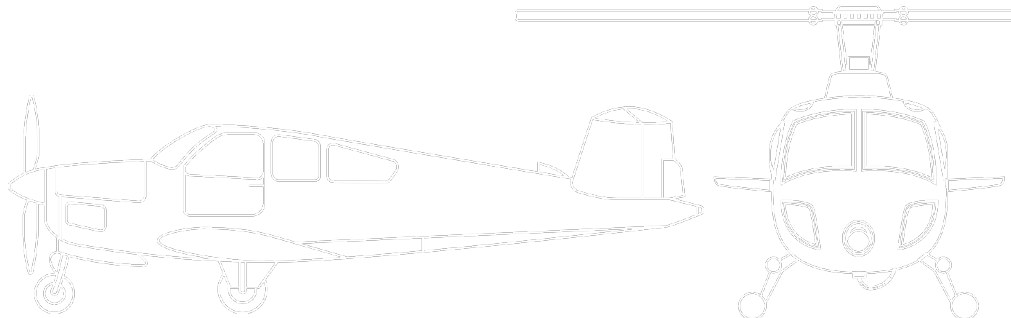


APPENDIX III – SUMMARY OF PROGRESS AGAINST KEY ACTIONS

On the following pages we have reproduced a “half-bowtie” for each of the 9 SRP risk themes. Those that were reviewed during the update workshop in March 2019 are indicated along with a progress update rating as concluded by the workshop participants.

The progress update ratings are defined as follows:

-  On-track or complete
-  Commenced but further work required
-  Not started or not on track or no longer considered a priority action



Risk 1 – Inadequate flight crew competency



Causes

Controls

Actions

Risk Theme

Inadequate training and development

Flight supervisor training

Operator competency checks

Flight debriefs to identify issues & further training needs

Poor operating culture within the sector and operator

Adherence to Standard Operating Procedures

Flight risk assessments

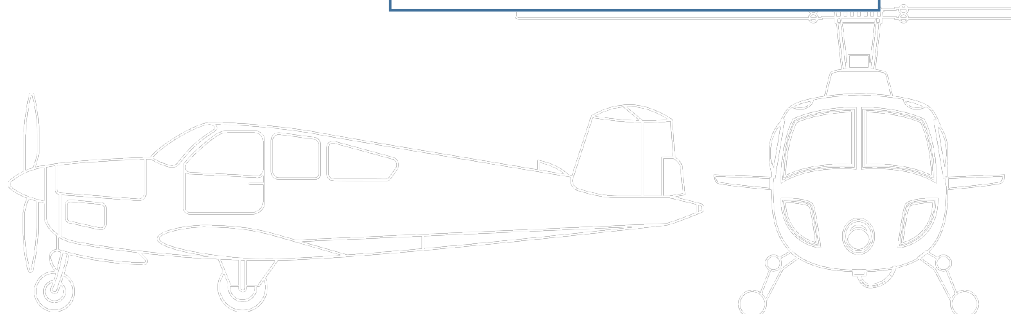
Implementation of SMS

CAA surveillance activity under SMS environment focussed on operator culture

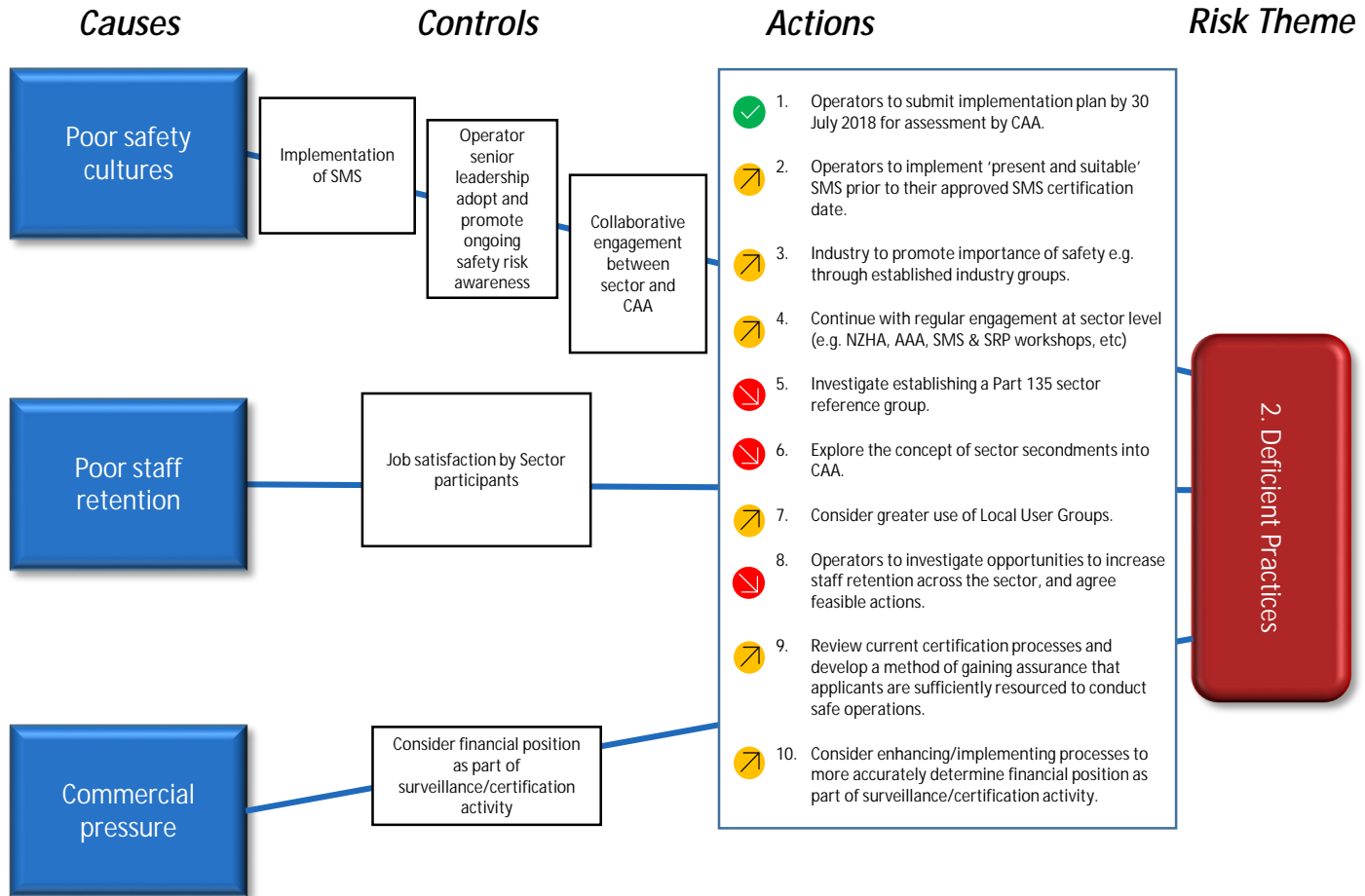
1. CAA ATU, CAA HAU, and Safety Promotion teams to work with the sector to provide a Flight Supervision outreach (likely in the form of a seminar/course).
2. Non-technical skills (NTS) training to be considered by operators. NTS are mental, social and personal management skills contributing to safer and efficient operations. NTS should include: situational awareness; decision-making; communication; teamwork; leadership; managing stress; coping with fatigue.
3. Outreach with regard to on-going development of the flight test standards guides to incorporate what good practice looks like.
4. Outreach with industry groups to define what 'good practice' looks like with regards to Part 135 operational competency assessments (OCAs).
5. Operators to implement flight debriefs for every flight and monitor associated benefits, including for example models for assessing pilot performance.
6. CAA to provide guidelines on the process for developing SOPs, and the associated benefits of the use of SOPs, and liaise with industry groups.
7. Industry group to develop a mechanism for sharing 'best practice' SOPs and flight risk assessments between Operators.
8. Operators to implement, continually review and update SOPs and flight risk assessment tailored to their unique operations.
9. Operators to submit implementation plan by 30 July 2018 for assessment by CAA.
10. Operators to implement 'present and suitable' SMS prior to their approved SMS certification date.

1. Inadequate flight crew competency

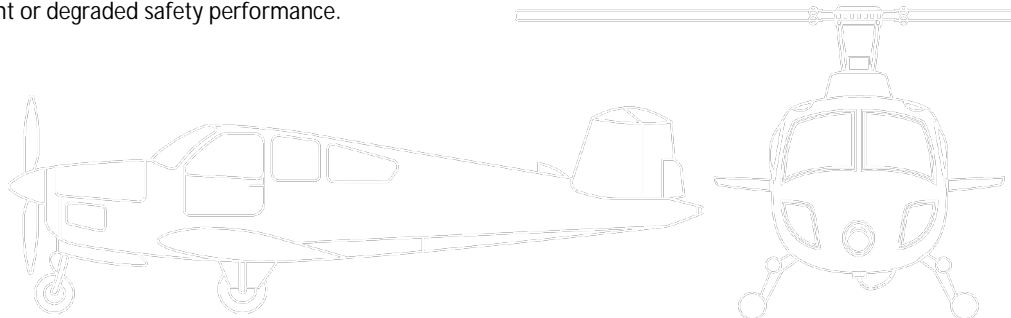
Definition: Ineffective training and development, and poor operator safety culture is impacting flight crew competency, leading to higher likelihood of incidents / accidents and lower safety performance.



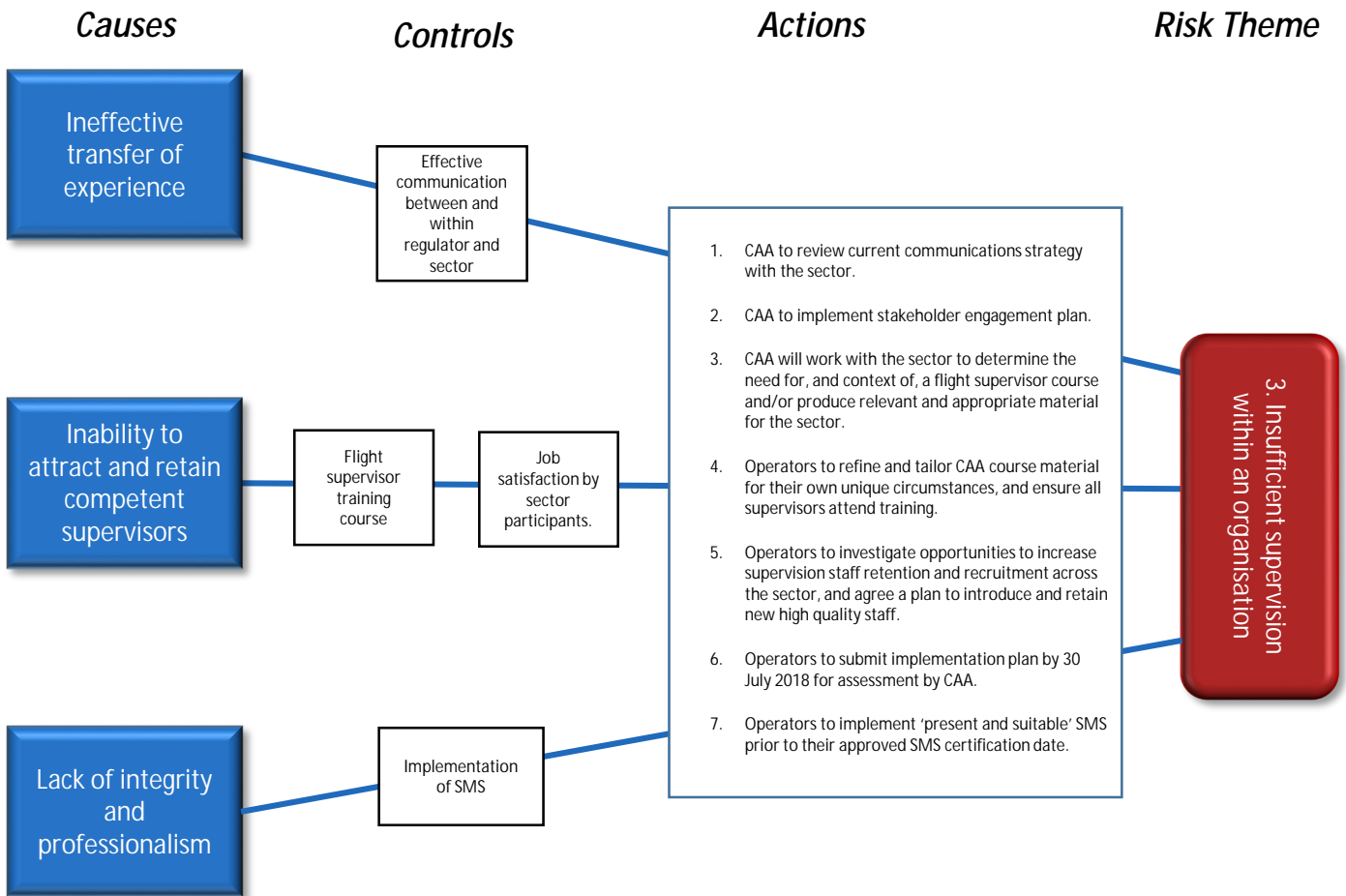
Risk 2 – Deficient practices



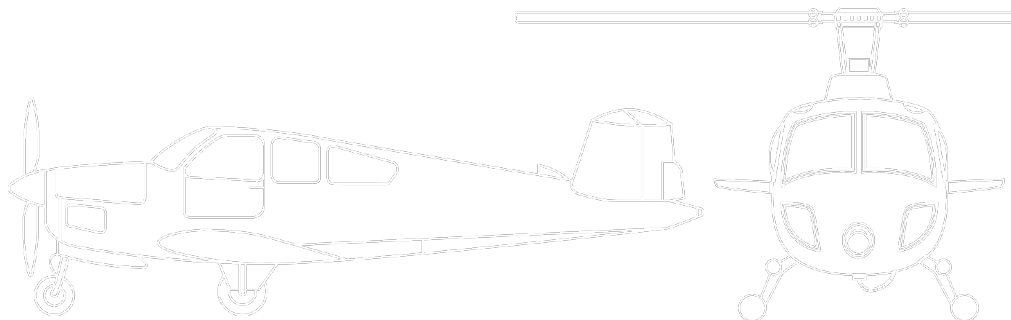
Definition: Operators may exhibit complacency towards changing safety management expectations, and do not invest in sufficient safety management due to continued commercial pressure, leading to a chance of a major accident or degraded safety performance.



Risk 3 – Insufficient supervision within an organisation



Definition: Insufficient transfer of knowledge, and shortage of competent and experienced supervisors, impacting flight safety.



Risk 4 – Lack of operational awareness

Causes

Lack of information sharing across the sector

Sector working groups promote effective collaboration and sharing

Controls

Effective communication between and within regulator and sector

Communication of safety issues

Ineffective relationship between operations and management teams

Implementation of SMS

Effective delegation and time/workload management skills

Insufficient time dedicated to operational management

Adequate resourcing to support delivery of operational management activities

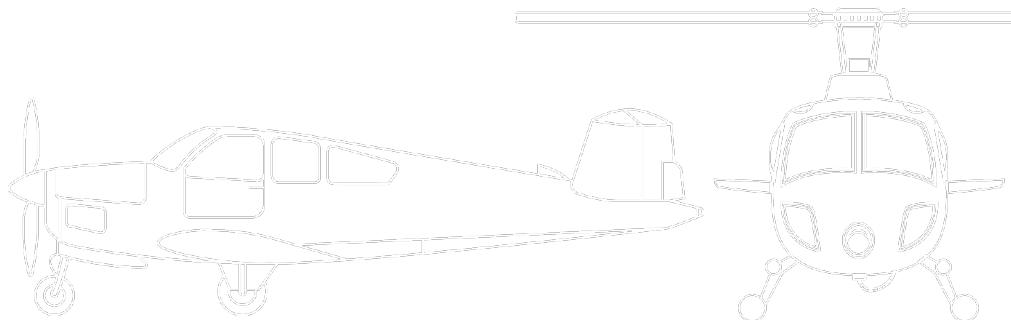
Actions

1. Operators and the CAA to advertise existing user groups to encourage wider Sector attendance and participation.
2. Operators to establish regional meetings. Consider establishing websites for sharing information.
3. CAA to review current communications strategy with the sector.
4. CAA to consider establishing a Part 135 sector reference group to enhance involvement and engagement with sector participants.
5. CAA to continue existing publications, including Vector, AIP, NOTAMS, AICS, GAP booklets.
6. CAA to investigate more effective and timely communication of current and relevant safety issues.
7. CAA to review how existing publications are communicated.
8. Operators to submit implementation plan by 30 July 2018 for assessment by CAA.
9. Operators to implement 'present and suitable' SMS prior to their approved SMS certification date.
10. Operators to develop an appropriate resourcing model and delegation framework.
11. Operators to ensure staff have appropriate skillsets and experience as part of the broader move into the SMS environment, including non-technical skills (NTS). NTS training to be considered by operators. NTS are mental, social and personal management skills contributing to safer and efficient operations. NTS include: situational awareness; decision-making; communication; teamwork; leadership; managing stress; coping with fatigue.
12. Operators to leverage technology to monitor actual operations against safety performance indicators.
13. Operators to review staffing levels.

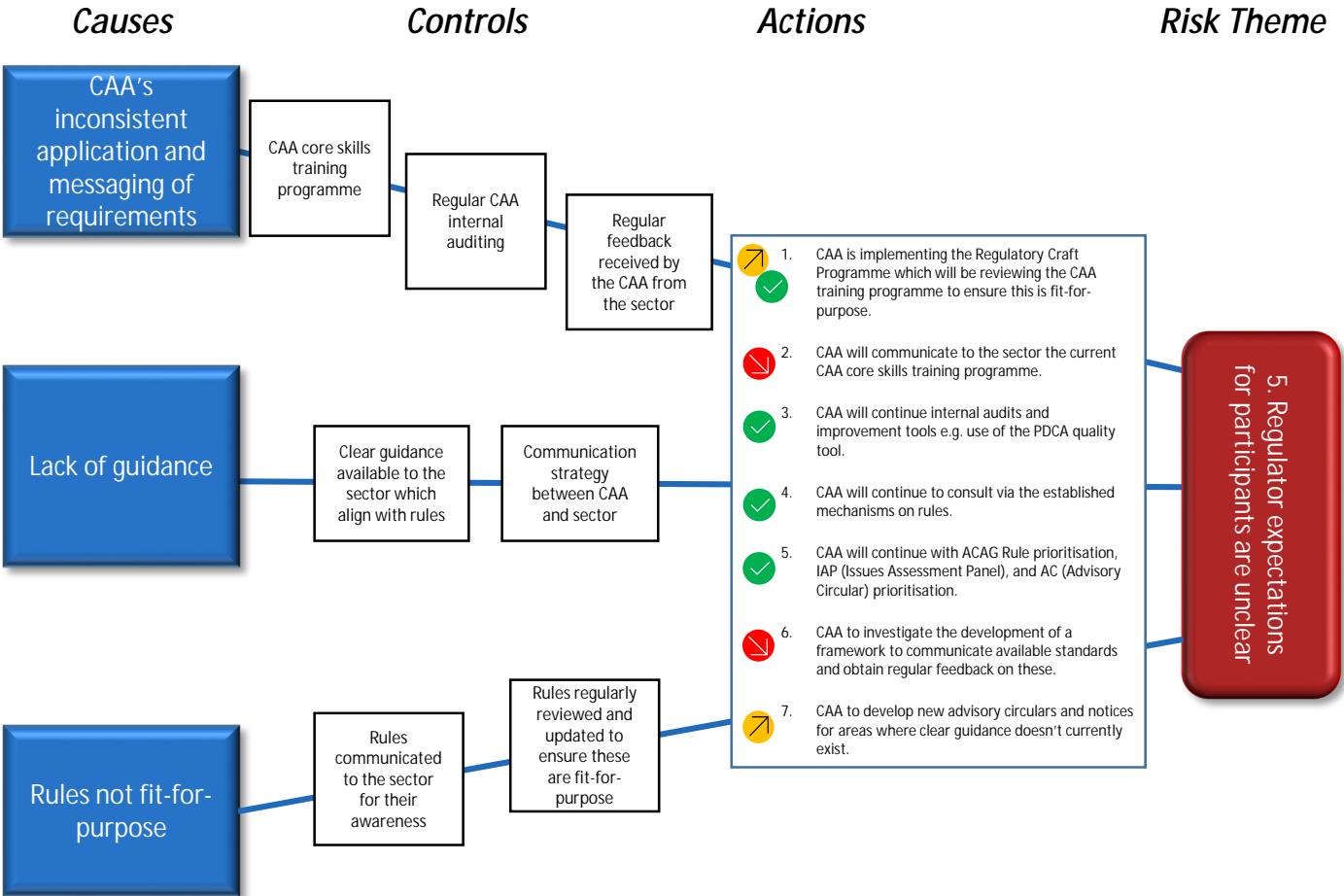
Risk Theme

4. Lack of operational awareness

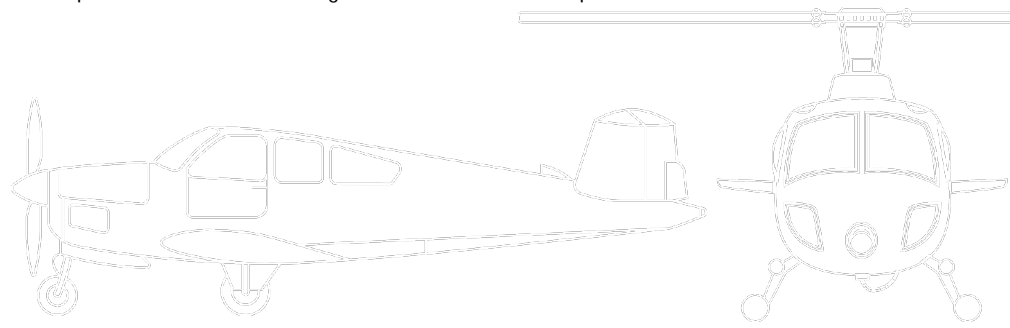
Definition: Some operators have structures and cultures that distance management from operational staff, and there is an absence of effective information sharing across the sector, which may result in less effective communication and insufficient management focus on operational issues.



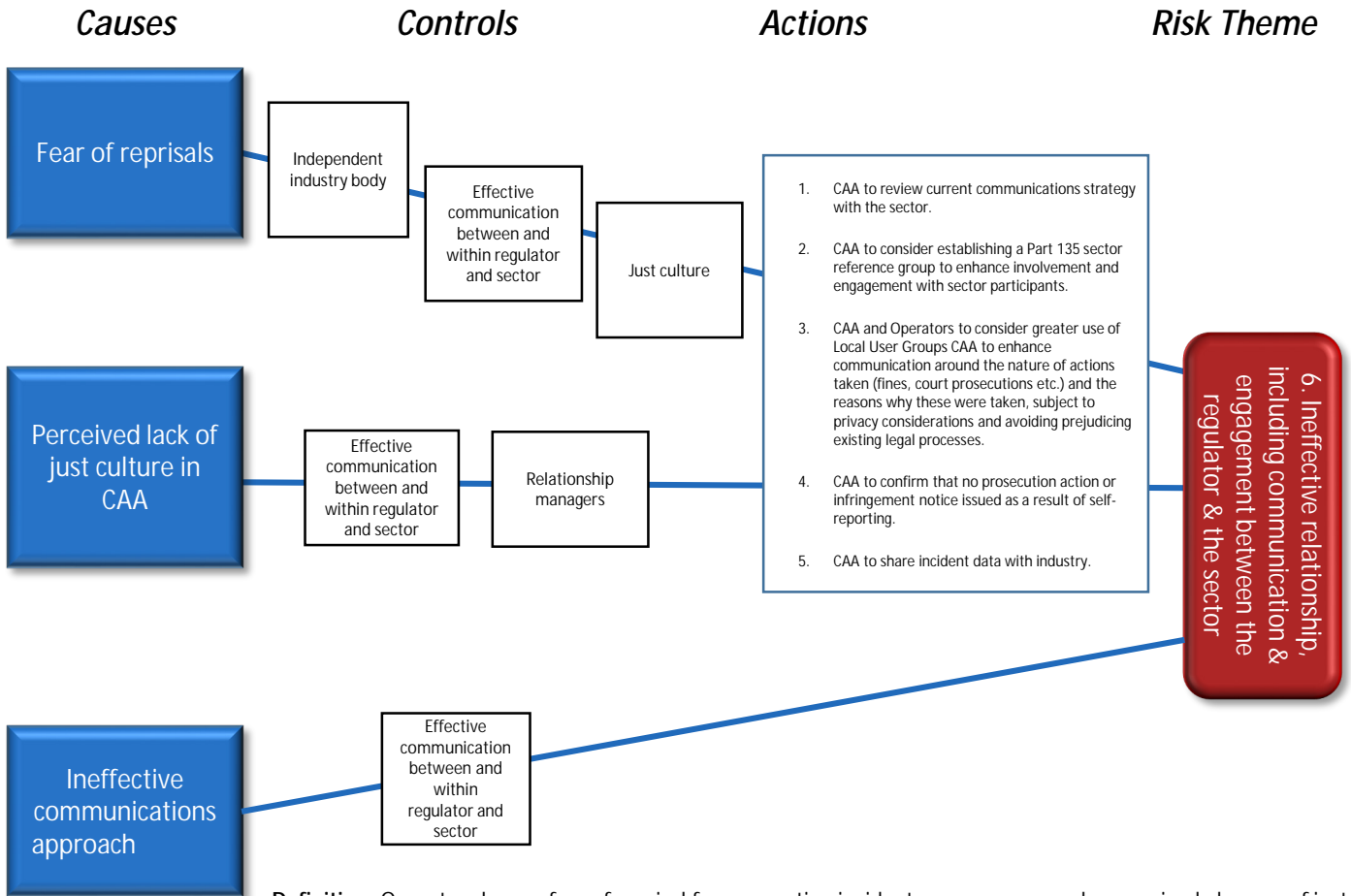
Risk 5 – Regulator expectations for participants are unclear



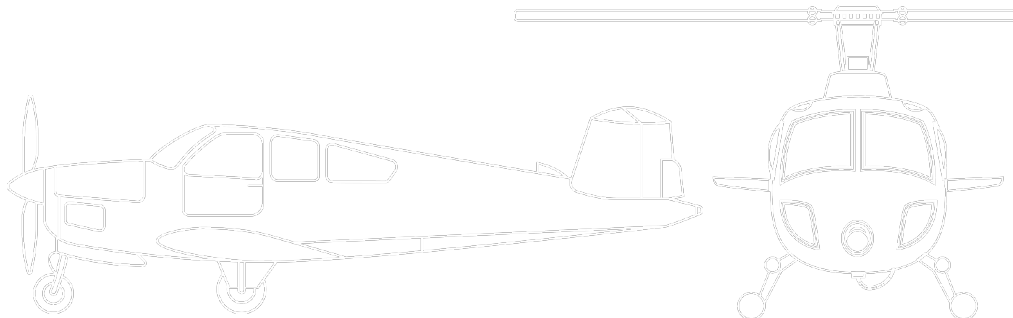
Definition: Some rules and guidance are unclear and not fit-for-purpose for all operations, leading to a lack of consistent standards and procedures, and increasing the risk of rule non-compliance.



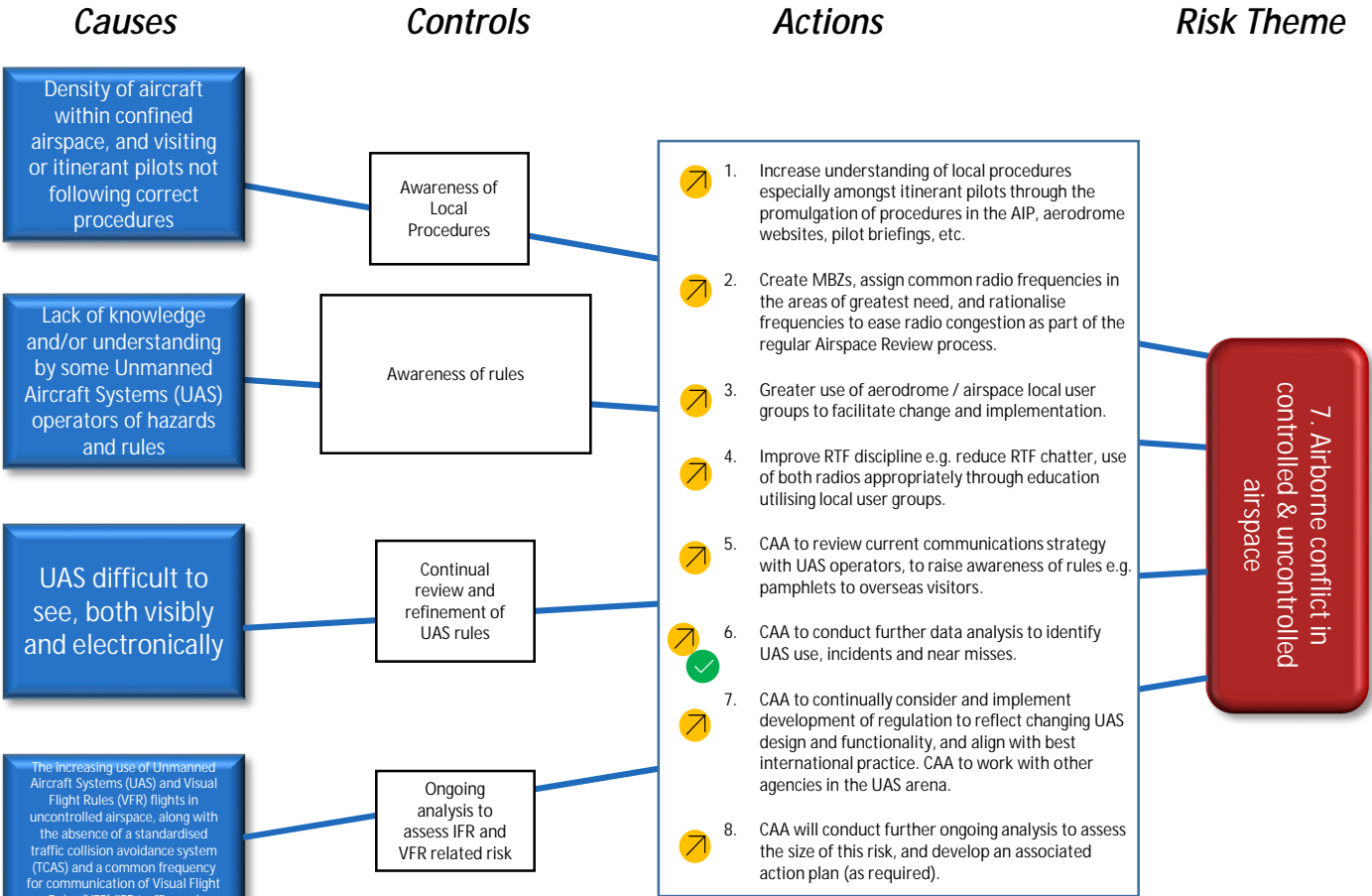
Risk 6 – Ineffective relationship, including communication & engagement between the regulator & the sector



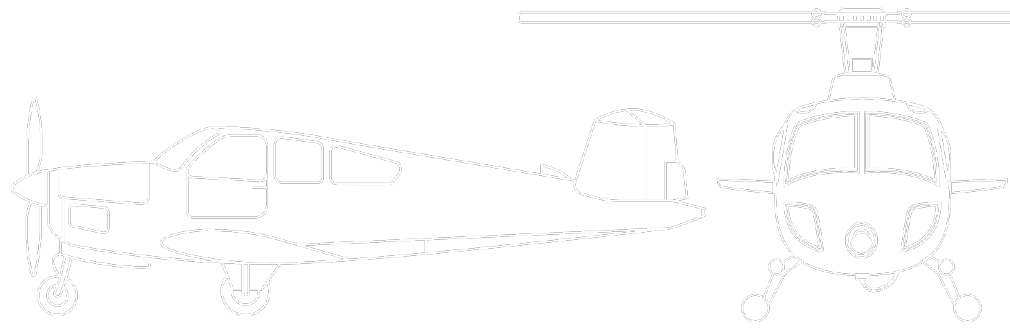
Definition: Operators have a fear of reprisal from reporting incidents or concerns, and a perceived absence of just culture and effective communication by the CAA, leading to under-reporting of issues and non-compliances; and impaired knowledge and insight by the regulator into sector performance.



Risk 7 – Airborne conflict in controlled and uncontrolled airspace



Definition: Airborne Conflict is the dangerous proximity to airborne objects or aircraft while in flight.



Risk 8 – Flying when unfit to fly

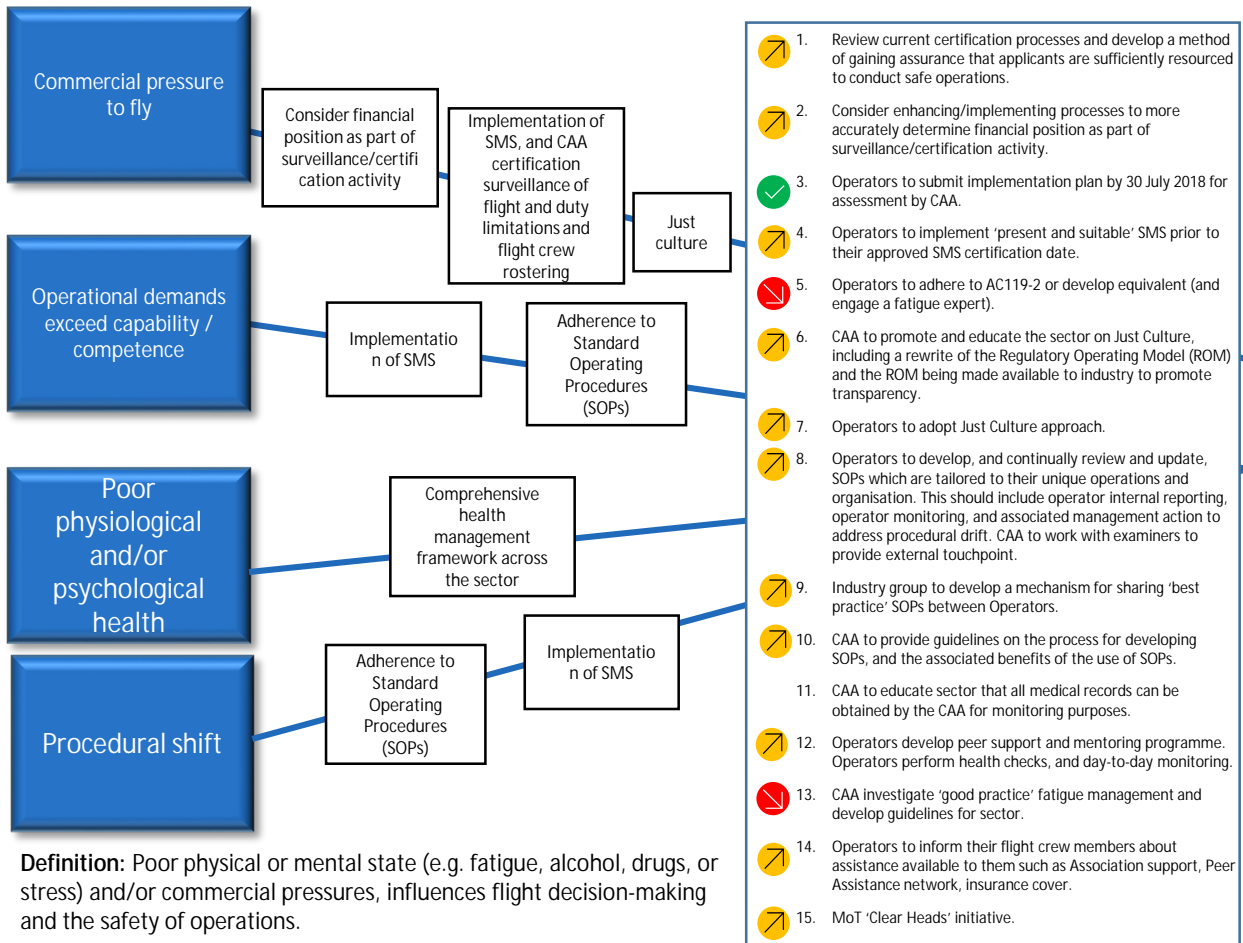


Causes

Controls

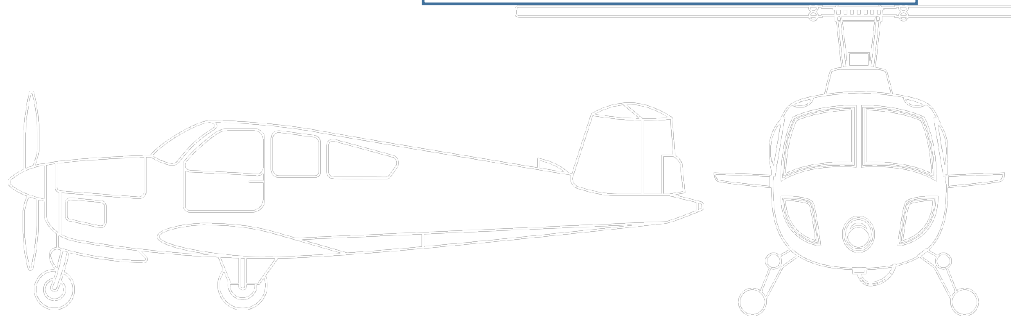
Actions

Risk Theme

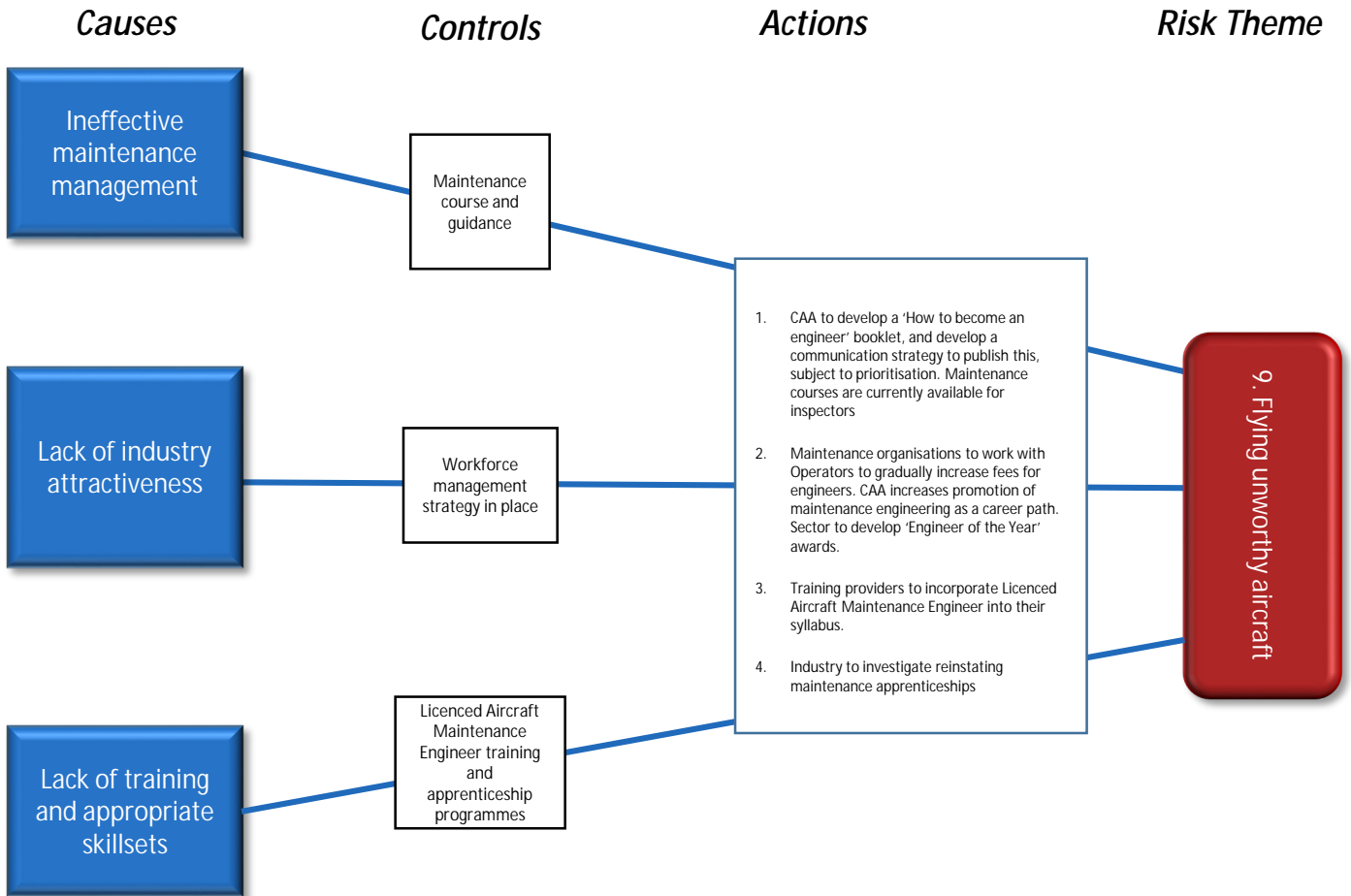


8. Flying when unfit to fly

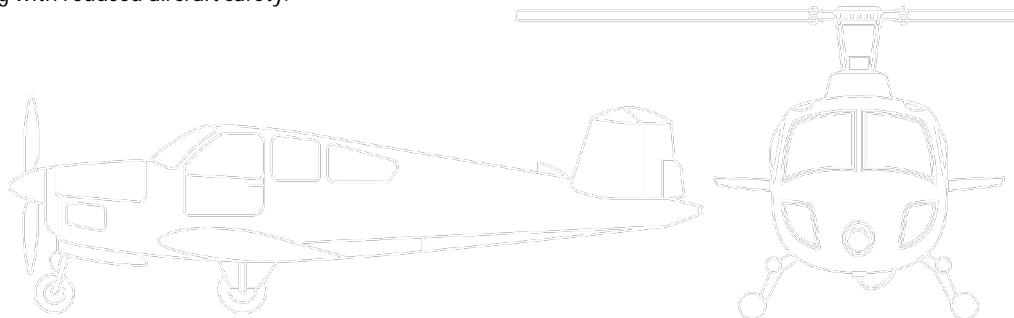
Definition: Poor physical or mental state (e.g. fatigue, alcohol, drugs, or stress) and/or commercial pressures, influences flight decision-making and the safety of operations.



Risk 9 – Flying unworthy aircraft

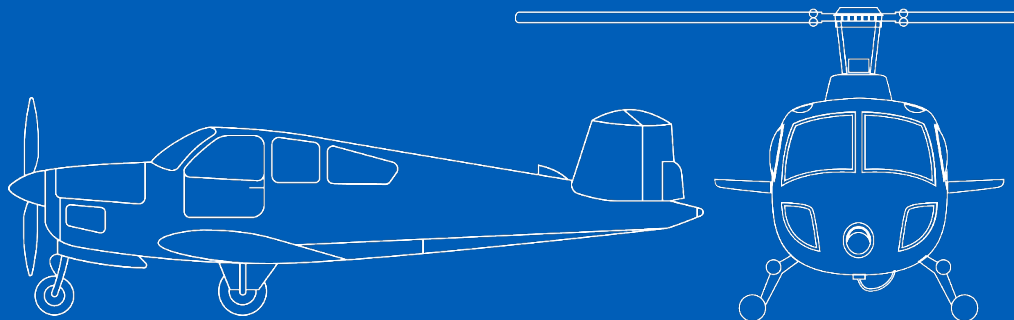


Definition: Inability to attract, retain and adequately train Licenced Aircraft Maintenance Engineers (LAME), and the absence of standardised aircraft maintenance management, leads to impaired maintenance capacity and capability, along with reduced aircraft safety.



Appendix IV

Key next actions



APPENDIX IV – KEY NEXT ACTIONS

At the workshop held on 18 March 2019, participants identified a number of key actions that they believe need to be progressed against each of the five risks that they examined. These are summarised below.

Ref	Risk theme	Key actions identified
1	Inadequate flight crew competency	1.1 Review the appropriateness of CAR 135.505 (Command Under Supervision) 1.2 Develop guidance material for operational competency assessments (OCAs) 1.3 Enhance awareness of the available SMS guidance material
2	Deficient practices	2.1 Implement SMS 2.2 Encourage participants to seek guidance from CAA regarding SMS implementation
5	Regulator expectations for participants are unclear	5.1 Develop and enhance guidance material (advisory circulars) 5.2 Ensure the Regulatory Craft Programme supports the delivery of a consistent approach and expectations
7	Airborne conflict in controlled & uncontrolled airspace	7.1 Consider Part 135 needs and risks in the development of initiatives under New Southern Sky 7.2 Develop strategies to educate itinerant operators regarding local procedures
8	Flying when unfit to fly	8.1 Provide fatigue education and guidance to those working with industry 8.2 Promote 'Just Culture' to encourage reporting and peer support 8.3 Enhance regulatory oversight of operator financial resourcing

Participants are encouraged to adopt the above actions which are relevant to their operation. Specific initiatives related to each action will be determined during ongoing engagement between CAA and the Sector.

