# Safety Manual

## In Response to an Occurrence

*Version 1.0 1st February 2023*

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# Safety Manual

## Safety Management System

A Safety Management System (SMS) is a systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures.

The CAA considers that an SMS is designed to:

- Manage risks within the organisation, with a particular focus on risks which impact safety;
- Provide for ongoing monitoring and assessment of safety performance;
- Make continuous improvements to the level of safety in operations; and,
- Develop and improve the safety culture within the organisation.

An SMS should be woven into the fabric of an organisation, so that it becomes part of the culture, the way people do their jobs. The concept of developing a “positive safety culture” is an important overall goal for any organisation.

The safety culture that Motueka Aero Club Inc. (MAC) has adopted is a “Just Culture.”

A just culture “is about applying a fair and measured approach to flight safety. It is a concept based on key tenets of a successful flight safety culture — open and honest reporting; fair and robust investigation; and accountability from all levels of the organisation.”

## Introduction to Motueka Aero Club

Motueka Aero Club provides two aircraft for hire, a small team of talented and experienced flight instructors, a moderate base of student pilots undergoing flight training, and the private hire of aircraft by appropriately licensed Club members. This manual provides a baseline standard that will facilitate the growth of the club and ensure that there are clear and workable procedures for the appropriate handling of occurrences.

We are an aero club, not an established flight school with a large team of flight instructors that progresses students through their flight training to achieve higher licences at a significant volume. It is a relatively manageable task to track the standard and consistency that students and instructors are adhering to.

There is a high degree of freedom that is afforded to us while operating on our Club operations. However, that should not allow for complacency. This may lead us to potentially deviating outside the safety margins as laid out in the Club rules and standards—resulting in a possible rise of incidents/accidents or providing subpar flight training for students and Club members.

## Motueka Aero Club Mission Statement

The Motueka Aero Club (Incorporated) is dedicated to the development, success, and promotion of flying in its broadest sense through the provision of flight training, materials, facilities and opportunities to enable members and the general public to participate in a range of flying activities and social events such as the Young Eagles program, Club days, flying competitions and flight training.

## Motueka Aero Club Objectives

- To promote, foster, encourage and develop safe and skilful flying and the practice, study and research of aviation in all its aspects; and,

- To train pilots and conduct educational and other aviation related studies and courses.

## Safety Management System Overview

### Operational Philosophy

All flight training activities at Motueka Aero Club shall be governed by the over-arching operational philosophy, which is to conduct all operations in a safe, efficient, and effective manner producing disciplined, and competent professional pilots.

Safety shall always be the paramount consideration in both the design of procedures and execution of flying operations. Every Club member, student and flight instructor are required to carry out their activities in a way that promotes operational excellence by vigilant adherence to the policies and procedures laid out by Motueka Aero Club.

### Operational Goal

It is the goal of Motueka Aero Club to create a degree of standardisation for flight training that discourages unsafe practices, carelessness and the development of personal preferences, while maintaining operational flexibility and the application of sound professional judgement and airmanship.

- The safe and effective operation of Club aircraft is the primary goal of the Club. Each and every Club member must maintain an active interest to achieve this goal;

- The Club shall utilise an internal program to collect and identify any information, experiences or occurrences which may present a hazard to Club operations.

### Objectives

The primary objective of the Club SMS is the achievement and maintenance of a high standard of safety in Club operations by:

- Identification of inadequate information, practices, procedures and safety hazards;

- Receipt and management of Confidential Hazard Reports;

- Conducting audits on all aspects of Club operations and administration;

- Reviewing and addressing any non-conformance affecting Club operations; and,

- Conducting safety meetings with Club committee members when required for the gathering and dissemination of information pertinent to safety issues.

# Definitions

## Safety Definitions

### Safety

The condition of being protected from or unlikely to cause danger, risk, or injury.
The state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level.

### Safety Culture

The set of enduring values, behaviours and attitudes regarding safety, shared by every member at every level of the organisation.

### Safety Management System (SMS)

A systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures.

### Occurrence

Umbrella term for accidents, incidents, and immediate hazards to the safety of an aircraft operation.

### Accident

Briefly, an accident is an occurrence that causes significant damage, or injuries, while the aircraft is in operation.

The definition of an accident According to NZCAA Rules Part 1: Definitions: “an occurrence that is associated with the operation of an aircraft and takes place between the time any person boards the aircraft with the intention of flight and such time as all such persons have disembarked and the engine or any propellers or rotors come to rest, being an occurrence in which—

(1) a person is fatally or seriously injured as a result of—
  (i) being in the aircraft; or
  (ii) direct contact with any part of the aircraft, including any part that has become detached from the aircraft; or
  (iii) direct exposure to jet blast—
  except when the injuries are self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to passengers and crew; or

(2) the aircraft sustains damage or structural failure that—
  (i) adversely affects the structural strength, performance, or flight characteristics of the aircraft; and
  (ii) would normally require major repair or replacement of the affected component— except engine failure or damage that is limited to the engine, its cowlings, or accessories, or damage limited to propellers, wing tips, rotors, antennas, tyres, brakes, fairings, small dents, or puncture holes in the aircraft skin; or

(3) the aircraft is missing or is completely inaccessible.

### Serious incident

An incident involving circumstances indicating that an accident nearly occurred:

### Incident

Any occurrence, other than an accident, that is associated with the operation of an aircraft and affects or could affect the safety of operation

### Hazard

A condition or an object with the potential to cause or contribute to an aircraft incident or accident.

### Risk

A situation involving exposure to danger; the effect of uncertainty on objectives.
Note: *usually expressed in terms of risk sources, potential events, their consequences, and their likelihood.*

### As Low as Reasonably Practicable (ALARP)

Is a term often used in the management of safety-critical and safety-involved systems. The ALARP principle is that the residual risk shall be reduced as far as reasonably practicable.

### Reasonably Practicable

Doing what is effective and possible to ensure the health and safety of workers and others.

### Risk Management

The skill or job of deciding what the risks are in a particular situation and taking action to prevent or reduce them.

### Risk Assessment

An evaluation based on engineering and operational judgement and/or analysis methods in order to establish whether the achieved or perceived risk is acceptable or tolerable.

### Just Culture

An atmosphere of trust in which people are encouraged for providing essential safety-related information, but in which they are also clear about where the line must be drawn between acceptable and unacceptable behaviour.

### Hazard Identification

Hazard identification focuses on conditions or objects that could cause or contribute to the unsafe operation of aircraft or aviation safety-related equipment, products and services.

### Corrective Action

A corrective action is a risk management process, tool or activity used to correct any undesirable element of Motueka Aero Club’s operational system. Most commonly, the term "corrective action" is used loosely to represent "corrective actions and preventative actions," or CPAs.

## Organisation Definitions

### MAC

Motueka Aero Club Incorporated

### Executive Committee

The Motueka Aero Club Committee who is the elected body consisting of the President, Treasurer, Secretary etc responsible for the governance of the Club that is tasked with the decision-making for the Club buildings, aircraft, and assets.

### Management

Consists of the Chief Flying Instructor (CFI) and Deputy CFI and are responsible for the management of the Club and oversee day to day operations of the Club and reporting to the executive committee.

### Safety Committee

The Club shall appoint the following persons to the Safety Committee: Club President, Safety Officer; Club Captain; Chief Flying Instructor (CFI); and Club Instructors.

The duties of the Safety Committee under the direction of the CFI and Safety Officer shall include overseeing the conduct of the Safety Management System, review, discussion, and action on internal occurrence reports and formulating reports to the appropriate responsible external organisation where an action required to prevent an identified hazard is outside the control of the Club.

### Club Instructor

A current NZCAA flight instructor hired as an independent contractor for the Club and is selected by the CFI with the advice and consent by the executive committee. The instructor is to carry out duties and follow Club policy as directed by the CFI.

### Club Member

Any person(s) applied for membership, approved by the executive committee and has paid their current annual membership in full. Members include young eagles, pilots, instructors, and social members.

### Safety Officer

The safety officer oversees the safety procedures of all flying operations, airport, and Club buildings, and hangar areas of the Motueka Aero Club. Investigates current/historical safety occurrences at the Club to prevent injuries and loss. The Safety Officer develops a plan and implements the program company-wide, training Club members on how to execute the new procedures properly and monitoring the effectiveness of the new programs.

### Staff

Any appointed, elected or delegated Club member who performs duties or provides a service in benefit of the Club i.e. committee members, Club instructors etc

# Reporting Culture

Motueka Aero Club is committed to providing good and safe working and training conditions for all Club members and flight instructors. To effectively manage risks, Motueka Aero Club has a responsibility to cultivate an environment that is both open and responsive. Being open means instructors and students feel free to notify management when they see issues of concern. Being responsive means management learn from incidents and take remedial action to prevent them from reoccurring.

## Just Culture

Just culture implies a 'duty of care' for Motueka Aero Club members to follow procedures and rules, and to avoid causing harm or unjustifiable risk.

Motueka Aero Club aims to strike the right balance between accountability and learning in response to events, in order to create an environment where people feel comfortable reporting errors, hazards, and occurrences. Just Culture supports learning from events through enhanced sharing of safety information to prevent future accidents. It is essential that issues are brought to management's attention as soon as possible. This includes any accident, incident, occurrence, breach of law or SOP or significant concern that may pose a risk to anyone.

A Just Culture is much more than just a standardised environment and reporting mechanism. It comprises both a set of beliefs and a set of duties that are expected from individuals as well as from the organisation as a whole. The beliefs and duties that underpin healthy reporting, and fair and effective investigation are based on the following principles:

- Individuals are encouraged to contribute actively to improving safety and will be commended for owning up to near misses, errors and violations that occur in an honest endeavour to do their best.

- MAC, and all involved in it, acknowledges that it is the human condition to make errors and understands the role that human factors play in safety.

- MAC is a training environment. The Club acknowledges and accepts that Members make mistakes

- Club members, regardless of status or experience, must know they will be treated in a fair, consistent, objective timely manner.

- Club members and staff, whatever their role, have a responsibility to actively participate in reporting errors and violations and to support learning and improvement in safety.

The Club will treat very seriously any attempt to victimise any crew member who has, in good faith, reported an area of concern. In such cases, disciplinary action may occur.

To minimise the likelihood of victimisation, the Club will always try to keep information confidential, although this must be balanced with any need to conduct an adequate investigation.

The sole objective of the investigation of an accident or incident shall be the prevention of accidents and incidents. It is not the purpose of this activity to apportion blame or liability.

The Club will follow the Just Culture Flow Chart to determine personal/organisation culpability *(reference appendix I)*

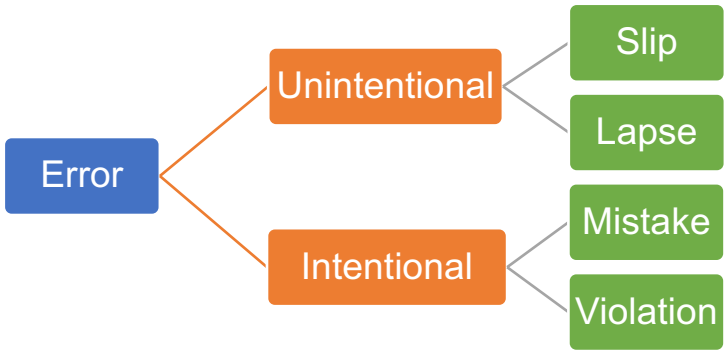
## Exceptions to Just Culture

Club Members who act irresponsibly in any of the following ways will not be protected by this policy and may be subject to disciplinary action:

- Premeditated or intentional harm to people, equipment or property
- Conscious disregard of substantial or unjustifiable risk
- Actions or decisions involving a reckless disregard toward the safety or security of other students, instructors, Club members or the public
- Failure to report incidents/accidents
- False representations or acting in bad faith
- Self-reporting in an attempt to avoid disciplinary action.

## Human Factor: Behavioural Classifications

*Figure 1: Error Analysis*




It important to note that most accidents fall into the slip, lapse and mistake category where they are delt with the under the section of corrective actions.

### Error (Slip or Lapse)

An error is an unintentional deviation from expected behaviour. Errors can either be due to an individual doing something other than what they intended to do (slip) or failing to do something because of an issue with concentration or memory (lapse). For example, misinterpreting information on a gauge, pulling an incorrect circuit breaker (slip); or forgetting to complete the last step of a task because of an interruption (lapse).

### Mistake

A mistake is an action that goes according to plan, but the plan is inadequate to achieve the desired outcome. Known as a cognitive error. A mistake occurs when an individual does what they planned to do, but where they ought to really have done something else if they wanted to achieve their goal. For example, using out of date information to perform a task.

### Routine Violation

In some situations, given the conditions at the time, the person may have considered that deliberately not following or actively violating the guidance may have been the only way to complete a task. Individuals may assert that, given the circumstances in which they found themselves, that was the only way to get the task done.

### Situational Violation

This classification covers those unusual occurrences where guidance is deliberately not followed, or violated, in unforeseen or undefined situations. Not every situation can be anticipated when individuals find themselves in unforeseen or undefined situations.

### Violation for MAC Gain

This classification covers situations in which an individual deliberately fails to follow guidance but with the aim of benefiting the organisation. An individual may believe that their actions were for the good of the organisation.

### Violation for Personal Gain

This classification covers deliberately not following guidance with the aim of benefiting the individual. Actions can be corner-cutting' to complete a flight more quickly or to circumvent seemingly laborious procedures. They can also be thrill-seeking as a means of alleviating boredom or as a demonstration of ability or skill.

### Reckless Behaviour.

A person is reckless if: knowing that there is risk that an event may result from his or her conduct or that a circumstance may exist, he or she takes that risk, and it is unreasonable for the person to take the risk having regard to the degree and nature of the risk that he or she knows to be present. Recklessness implies that an individual knowingly ignored the potential consequences of their actions.

### Malicious Intent.

Malicious Intent involves doing or omitting an act that to the person's knowledge is likely to cause loss of life or bodily injury or damage to property.

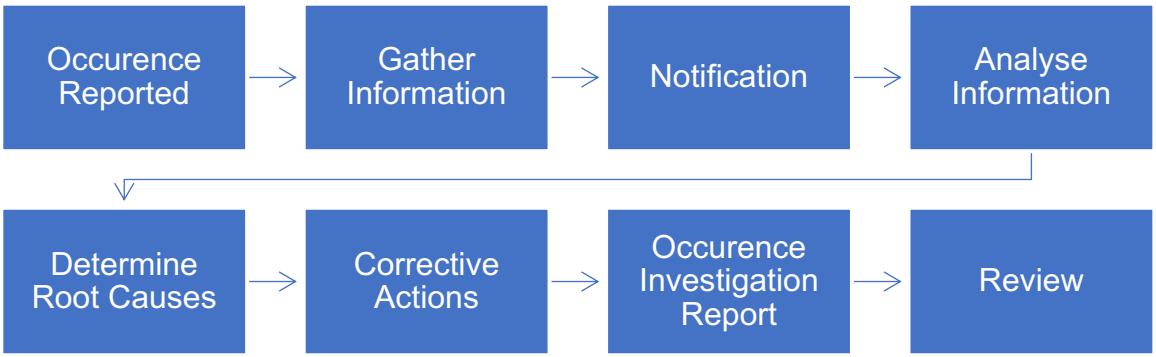
# Investigation of Occurrences

This segment of the *Safety Manual: In Response to an Occurrence,* Outlines the policies on how Motueka Aero Club is to conduct investigations of occurrences.

An investigation can be awkward for the people involved, but the Club culture is an open one and everyone understands that we investigate to learn from what went wrong and apply the appropriate corrective actions. We must separate emotions from facts, because it's all about the facts when it comes to understanding the causes–whether they are mistakes or management failures–and learning to prevent them from happening in the future.

## Investigation Flow Chart

*Figure 2: Investigation of Occurrences Flow Chart*




## Stage 1: Occurrence Reported

### Manage the Occurrence Scene

*Accidents or Serious Incidents*

**Step 1:** Respond promptly to the emergency
**Step 2:** Eliminate immediate hazards to minimize risk of further injury/damage
- i.e. turning fuel, mixture and ignition off.
Note: Only do so if there is no significant risk/hazard immediately presented that can cause harm to anyone aiding in the initial response to the occurrence

**Step 3:** Follow the appropriate emergency flowchart
**Step 4:** Provide first-aid treatment to injured
**Step 5:** Response by emergency first responders; e.g. fire fighters, paramedics
**Step 6:** Secure the incident site
**Step 7:** Restrict access and limit disturbance until all information is collected

Managing the incident scene can help the investigation procedure. It prevents the present situation from getting worse and, therefore, protects workers and general public from further danger/injury. It could further protect the equipment and material from further damage.

Securing the incident scene keeps the situation under control and prevents further disturbance until the investigation is concluded.

Injuries typically attract a crowd. Evidence can be easily disturbed by people or vehicles. If the site is not secured immediately, fact-gathering can be difficult.

Securing the incident scene could be done using ropes, barrier tape, cones or human guards if required. Nothing has to be removed from or replaced in the incident scene without permission until all necessary information is collected. The amount of information gathered, and the resources needed depend on the specific occurrence.

## How to Report Occurrences

Occurrences (which may or may not require reporting under Part 12) that may require an occurrence report, are to be reported to the CFI (or another senior person) as soon as practicable after the event. The initial report is to be verbal, then followed up by on-line occurrence report.

The electronic occurrence report is to be submitted before the PIC leaves the Club premises (if management or an instructor is present) or within 2hrs

In the event that an accident or incident occurs involving MAC personnel or aircraft, the following flow charts set out the procedures to be followed.

### Safety Report Form

The electronic occurrence report via ‘Google Forms’ is to be submitted before the PIC leaves the Club premises (if management or an instructor is present) or within 24 hrs of the occurrence.

Alternative options to submit an initial report are via the ‘Confidential Hazard Report’ form or by phone.

The ‘Safety Report Form’ must be completed within 72 hours of an occurrence. Management, Safety Officer, or a Club instructor may be present for the data entry and submission of the form for members who require assistance with the electronic form.

All safety reported occurrences shall remain ***CONFIDENTIAL,*** and the information provided shall remain between the Management, Executive Committee, Safety Officer, and Club instructors and is shared internally solely for the purpose of investigation, and safety performance improvement. With the Members permission, Information/details may be released for training and safety performance analysis, however the Club will not share personal information.

### Hazard Identification

Hazard identification focuses on conditions or objects that could cause or contribute to the unsafe operation of aircraft or aviation safety-related equipment, products and services.

The Club’s goal is to proactively identify and report hazards before they lead to accidents, incidents or other safety-related occurrences.

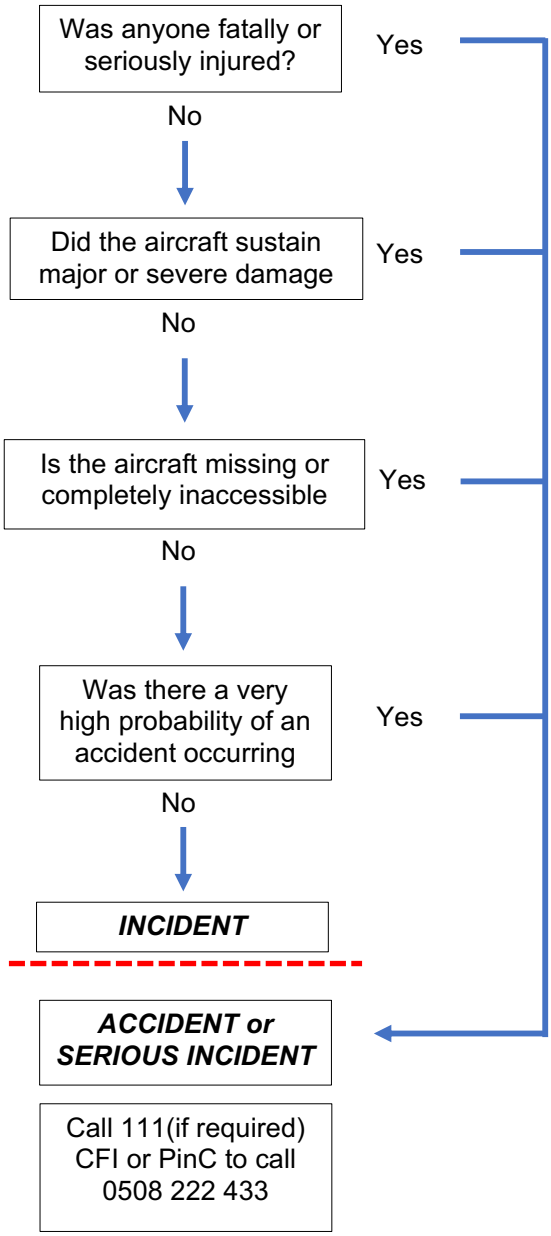
Club members have an obligation to report any hazards that have been identified at or around the Club, or whilst operating the Club aircraft.

This can be done by the electronic ‘Hazard Identification Form’

## Occurrence Identification Flow Chart

MOTUEKA AERO CLUB INCORPORATED

### *Accident or Serious Incident Flow Chart*



**On Field Accident**

## *On Field Accident (Motueka Aerodrome)*

Accident reported to MAC management

Management or Club instructor to call emergency services on **111** (Where applicable)

Any Assistance necessary to be given with regard to personal safety and prevention of further incident

Management/Club instructor to keep unauthorised persons away from the incident scene

A nominated Club member assigned to monitor base radio and relay details to emergency services

Any press enquires must be referred to the President or CFI

CFI to notify CAA in accordance with CAR Part 12

Last Updated 24/11/22

**Off-field Accident**

## *Off Field Accident (Local MK or NS)*

Accident reported to MAC management

Management or Club instructor to call
emergency services on **111**

Ground vehicle to be dispatched by management to locate the aircraft. Take handheld radio and mobile phone if able

Available Club aircraft dispatched to locate the aircraft
Maintain contact with the ground vehicle and base radio

A nominated Club member assigned to monitor
base radio and relay details to emergency services

Any press enquires must be referred to the President or CFI

CFI to notify CAA in accordance with CAR Part 12

Last Updated 24/11/22

## Flight Following

# Flight Following

Person Responsible

Flight Overdue

Contact Pilot by phone if possible

Contact Motueka Aero Club

| | | |
|---|---|---|
| President | Paul Devereux | 027 801 3681 |
| CFI | Javan Rose | 022 089 6155 |
| Deputy CFI | Rueben Swafford | 027 340 7328 |
| Instructor | Jonathan Westenra | 021 470 170 |
| Instructor | Lucian Clark | 022 077 0965 |
| Instructor | Finn Wilson-Howarth | 022 127 4375 |
| Instructor | Jared Came | 021 086 53565 |

Call Police

**111**

Last Updated 11/10/22

**Incident Notification**

## *Incident Notification*

All Incidents must be reported to MAC management within 24 hours of the incident occurring or as soon as practicable

Information to be submitted via the online 'Safety Report' form, the 'Notification of Occurrence' form or via phone

Club member to meet with management and/or Club instructor to provide further details of incident within 72 hours or as soon as practicable

Club to provide guidance, reassurance, and console member

Any follow up meetings to take place with Club member to gather further information or receive remedial training is at the discretion of the CFI

Investigation into incident will take place and the report to CAA is to be submitted within 90 days of incident occurring

Last Updated 24/11/22

## Stage 2: Gather Information

The CFI and/or Safety Officer is to conduct the process of gathering information following an occurrence at the Club.

### Physical Evidence

Examine occurrence scene and make an accurate record, including photos, measurements, sketches etc.

Notes should answer the questions of who, what, when, where, why and how. It is important not to speculate on events before the facts of the occurrence are established.

Notes should include observations of environmental conditions, reference to physical evidence and the information received from interviews with witness' or first-hand account from Club members.

It is important to do an initial review of documentation, such as:

- Weather,
- NOTAMS,
- performance charts,
- training records, etc

### Interview

It is important to capture this information when interviewing:

- Identity of people involved in the occurrence.
- Events occurred before, during, and after the incident.
- Timing and sequence of events (Use timeline to figure out where gaps in knowledge are)
- Location and direction of actions and events
- Possible causes of each action and event
- Witness's suggestions for preventing similar incidents

# Stage 3: Notification

## CAA Notification of Occurrences

Motueka Aero Club assumes the responsibility of the communication to the New Zealand Civil Aviation Authority of any occurrences that take place at the Club. This considers the notification, details and the investigation report for:

- Accidents;
- Serious incidents; and
- All other incidents

| Type of Occurrence | Notification | Details | Investigation Report |
|---|---|---|---|
| | **As soon as practicable** | **Accidents within 10 days**<br>**Incidents within 14 days** | **Within 90 days** |
| **Accident** | CFI:<br>0508 222 433 | CFI or Safety Officer:<br>CAA 005 form | CFI:<br>a report acceptable to the CAA |
| **Serious incident**<br>Immediate hazard to aircraft operations | CFI:<br>0508 222 433 | CFI or Safety Officer:<br>CAA 005 form | CFI:<br>a report acceptable to the CAA |
| **All other incidents** | | CFI or Safety Officer:<br>CAA 005 form | CFI:<br>a report acceptable to the CAA |

## Internal Notification of Occurrences

The CFI shall notify the executive committee and Club instructor team within 24 hours or as soon as practicable of an accident or serious incident occurring at the Club.

All other incidents will be reported at the monthly executive committee meetings on the second Wednesday of every month by the 'Safety Officer monthly report.'

The CFI and Safety Officer will discuss and review all occurrences at the Club bimonthly Safety Committee Meeting.

# Stage 4: Analyse Information

## Initial Review

The CFI is to conduct an initial review of all human- factor-related safety events to determine whether to deal with the matter using the Just Culture Framework or the MAC Disciplinary process. The Just Culture Flow Chart will be used to in the initial review process. If the event is dealt with under the Just Culture Framework, the CFI may consider their initial review as sufficient, and no further investigation is required. Alternatively, the CFI may direct a full safety investigation to occur.

## Decide

Not all safety events, particularly of a minor nature, require a full and comprehensive review/investigation. The CFI will make a sensible, informed decision if the event is not perceived to pose a significant risk. The CFI should advise the MAC Executive Committee if a review or safety investigation highlights any possible breaches of orders, obvious criminal or disciplinary actions, or events that have produced a notifiable injury or illness, or serious damage

# Stage 5: Determine Root Causes

## Causes of Occurrences

The New Zealand Civil Aviation Authority has refined the cause areas into four areas for small organisations:

- Human Factors
- Aircraft/equipment factors
- Environmental factors
- Organisational and sector factors

### Human Factors

- Consider the individual(s) involved in the occurrence
- Human factors are thought to underlie between 70-80% of aviation accidents physiological factors such as fatigue, vision, or hearing issues
- Experience and training of the individuals involved - aircraft type; manoeuvre or type of flying being conducted; the area/location
- Situational awareness, decision making and communication

### Aircraft/ equipment factors

- Condition or design of the aircraft/equipment and its components/systems
- Components failing or not working to specification/or out of specified limitations, catastrophic failure, etc.

### Environmental factors

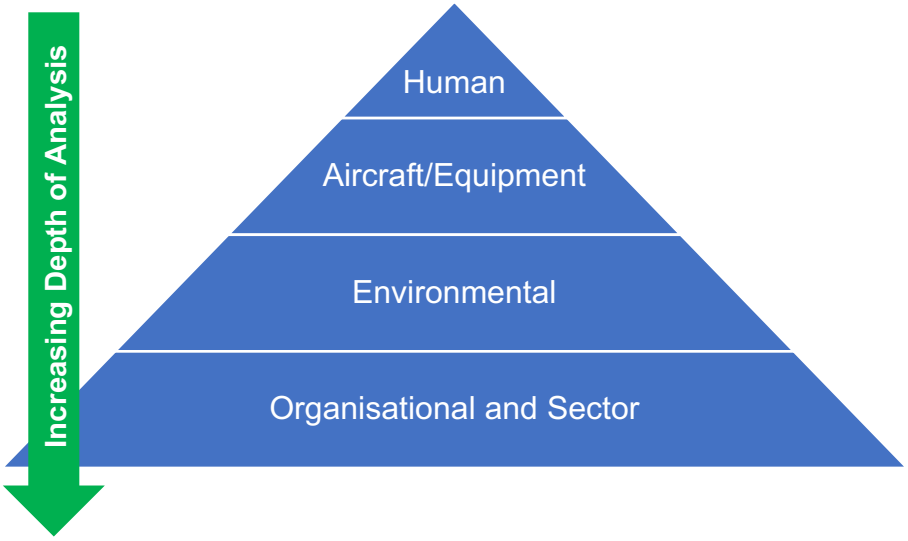
- In New Zealand aviation, this is a factor in a large number of occurrences weather (wind, snow, icing, etc.); temperature/dew point; topography/terrain; surface conditions; cloud/visibility (including sunstrike); ground-based hazards including trees, masts, and wires.
- Common for environmental factors to interact closely with human factors

**Organisational and Sector Factors**

- Likely one of the most common contributing factors
- Relates to Motueka Aero Club policy, procedures and practices that either directly or indirectly contributed to the event that occurred
- Can also include aspects of regulatory system (rules; airworthiness directives; advisory circulars)
- Is there anything that we do as an organisation - the way we do things around here?
- Is there anything routinely done in the training sector?

### Depth of Analysis

*Figure 4: Depth of Analysis*




## Stage 7: Corrective Actions

### Decide

The CFI is to determine if the facts indicate that a human error, at-risk or reckless behaviour has occurred. In reaching this decision, the CFI may make use of the Just Culture flow chart and is to assess the need for administrative or disciplinary action.

In determining responsibility the CFI is expected to exercise common sense and good judgement in reviewing an event under the Just Culture Framework. The CFI must consider that while guidance material details acceptable behaviour it does not absolve any individual from using their best judgement to ensure the safety of aircraft and personnel. Where safety imperatives demand, the acceptable behaviour may be deviated from, provided that a convincing case can be offered in retrospect.

Corrective actions are used to implement changes of the “corrective” type during reactive risk management processes. Corrective actions change the current state by making changes that bring an undesirable scenario or situation into an acceptable level of risk or reduces risk to as low as reasonably practical (ALARP).

The President/Vice President, CFI and Safety Officer will work in conjunction to determine and agree upon the appropriate corrective actions following an occurrence. First and foremost, an aviation Safety Management System needs to be able to quickly and efficiently fix problems as they arise. These mitigation strategies are your aviation SMS' corrective actions.

## Process for Creating Corrective Actions

Corrective actions typically originate in the following reactive risk management workflow:

- A safety incident is reported and management are notified;
- A preliminary investigation, risk analysis and risk assessment are performed;
- Based on the assessment and investigation, the management will determine the safety issue's root causes (Human factors, aircraft/equipment, environmental or organisational and sector factors);
- Based on these findings, The President/Vice President, CFI and Safety Officer will work in conjunction to determine and agree upon the appropriate corrective action (s) following an occurrence.

As shown above, corrective actions are almost always ***triggered by*** some kind of safety event. But as pointed out, while corrective actions are part of reactive risk management this does not mean that corrective actions are “lesser” than, say, a proactive action such as preventive or detective. Corrective actions become risk controls designed to return operations to a state of acceptable risk.

## Examples of Corrective Actions

Corrective actions can be duties focused on correcting an individual's behaviour, or correction of the Motueka Aero Club SMS in general.

Corrections of individuals are commonly things like:

- To attend remedial aviation SMS training;
- Coaching, mentoring, training/retraining
- To review company policy and procedures; or
- Disciplinary action, performance reviews, etc. (usually in more serious circumstances).

Corrections of the SMS in general would be things like:

- Review of MAC policies, standards or procedures
- Updating a safety policy or procedure that has lost relevance;
- Replacing a malfunctioning/old piece of equipment, sign, etc.; or
- Fixing an area of non-compliance in the SMS.

## Determining Appropriate Intervention

## Respond

The CFI will consult with the MAC Executive Committee before initiating any potential disciplinary action when any behavioural classification of malicious intent, recklessness, or violation for personal gain is identified.

Effective intervention strategies designed to prevent recurrence of an error, at-risk or reckless behaviour relies on thorough investigation data. This is not only true in terms of those interventions that are implemented immediately in order to prevent the recurrence of a unique event, but it is also particularly important when building a database of the less direct causal factors.

## Stage 8: Occurrence Investigation Report

### Review

The CFI is to determine appropriate interventions and lessons learned. Interventions must address the cause/s of the event.

The CFI is to ensure that the results of any investigation, along with any identified interventions and/or lessons learnt, are captured in the report.

The CFI is to ensure that decisions made as to responsibility are communicated effectively to Club members. In addition, the CFI is to ensure that human-factor- related safety event reports are available to all personnel and are routinely briefed at the club to ensure that interventions and lessons learnt are widely understood

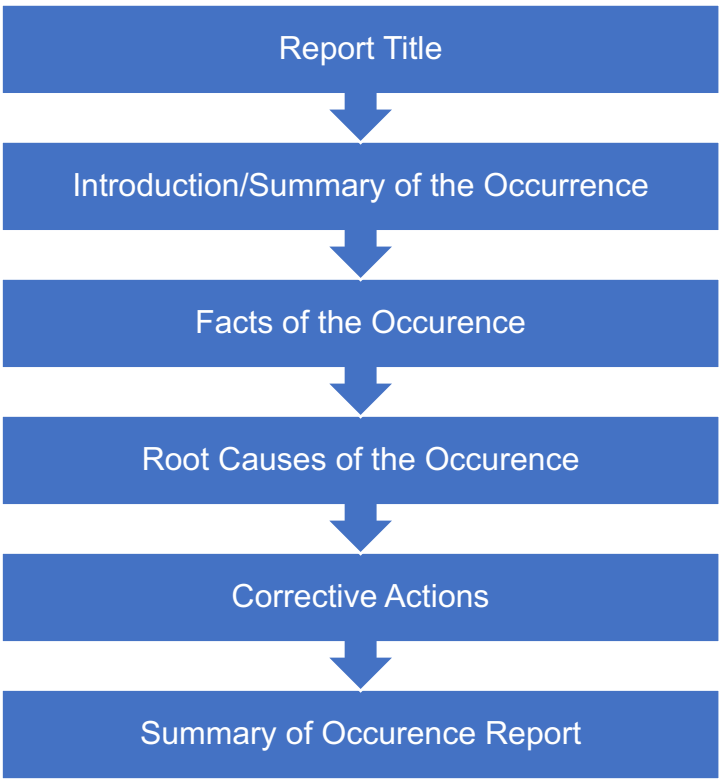
### Internal Investigation Report

The draft of the 'Investigation Report' must be completed by the CFI and Safety Officer within 70 days of the occurrence.

Analysis of the report feedback of the report be provided by the President or Vice president as soon as practicable with the relevant amendments required.

Once amendments and edits are completed the report is to be submitted to the CAA within 90 days of the occurrence.

*Figure 5: Motueka Aero Club Occurrence Investigation Report*



# Risk Assessment

Motueka Aero Club has established and applies a formal risk management process within the framework of the organisational Safety Management System. Risk management shall ensure that risks are systematically analysed (in terms of probability of occurrence and severity of hazard effects), assessed (in terms of tolerability) and controlled to an acceptable level (by implementation of mitigation measures).

Aircraft operators and aviation service providers shall also define those levels of management with authority to make decisions regarding safety risks tolerability.

Risk Assessment is the second step in the risk management process. Once hazards and their effects have been determined during the first step by means of hazard identification, an analysis is required to assess the probability of the hazard effects occurring and the severity of these effects on aircraft operation. It is important to distinguish between:

***hazards*** (the potential to cause harm) and;

***risk*** (the likelihood of that harm being realised during a specified amount of risk exposure).

Risk assessment is based on the evaluation of the following criteria:

- the severity of a hazard;
- the probability/likelihood (frequency) of its occurrence and;
- tolerability of its effects.

## Severity of Hazards

The criteria used to assess the severity of hazards is the impact on the safety of an aircraft and its occupants and other persons who may be directly affected.

The severity of hazards will be determined by the credible effects on the safety of aircraft, when the outcome of all the weaknesses, potential failures and safeguards (barriers) which may exist in the relevant operational environment have been taken into consideration.

A credible assessment of the severity of hazard effects requires detailed knowledge of the environment of operations and the services (functions) to be performed.

## Probability/Likelihood of Occurrence

The estimation of the probability of a hazard occurring is usually achieved by means of structured review using a standard classification scheme.

In some cases, data may be available that will allow the making of direct numerical estimate of the probability of occurrence. However, the estimation of the probability of occurrence of hazards (and their effects) which are associated with human error is not straightforward.

## Risk Classification

Both probability of occurrence of a hazard effect and the severity potential of that effect, need to be taken into account when deciding on the tolerability (acceptability) of a risk. It is a common practice to use a **risk classification matrix** in support of this two-dimensional judgement.

Severity is ranked as Catastrophic, Major, Moderate, Minor, or Insignificant, with a descriptor for each indicating the potential severity of consequences for people, environment, assets and reputation.

Probability/Likelihood of occurrence is ranked through five different levels of qualitative definitions, and descriptors are provided for each probability of occurrence: Almost Certain, Likely, Possible, Unlikely or Rare.

## Acceptability Assessment

The output from risk classification is used to determine the risks the organisation should act upon. Decision making will require clearly defined criteria about acceptable or tolerable risk and unacceptable risk. The assessment of tolerability (acceptability) is critical in making rational decisions to allocate the limited organisational resources against those risks posing greatest threats.

Having used a risk matrix to assign values to risks, a range of values may be assigned in order to categorise risks as acceptable, tolerable, undesirable or unacceptable. These terms are explained below:

- **Acceptable**: means that no further action needs to be taken (unless the risk can be reduced further at little cost or effort);
- **Manageable:** means that the affected persons are prepared to live with the risk in order to have certain benefits, in the understanding that the risk is being mitigated as best as possible
- **Unacceptable:** not wanted or desirable because harmful, objectionable, or troublesome. Mitigation will be required.
- **Cease Operation**: means that operations under the current conditions must cease until the risk is reduced to at least the tolerable level."

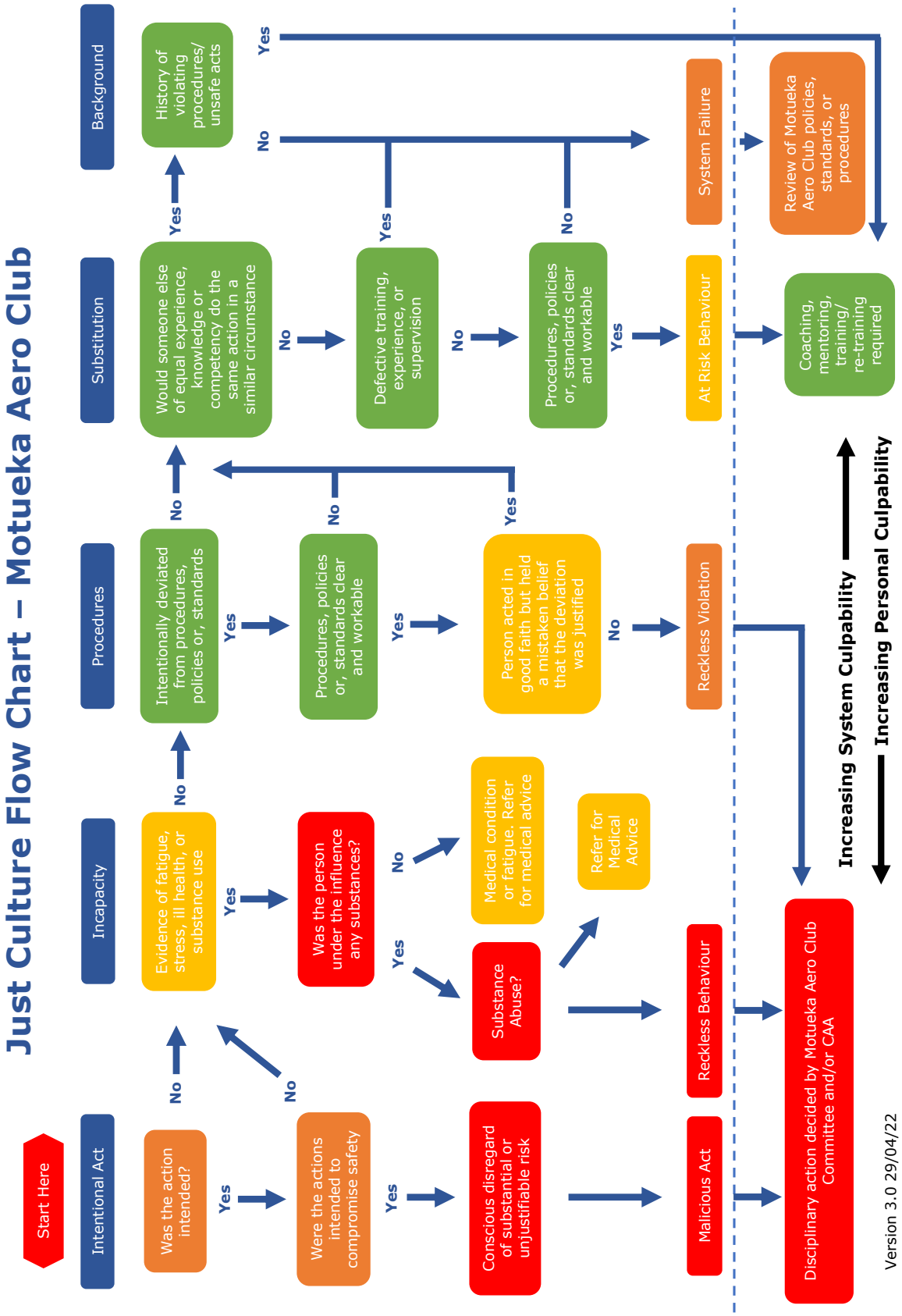
| | |
|---|---|
| **ACCEPTABLE** | **Low** |
| **MANAGEABLE** | **Medium** |
| **UNACCEPTABLE** | **High** |
| **CEASE OPERATION** | **Very High** |

## ARMS Assessment

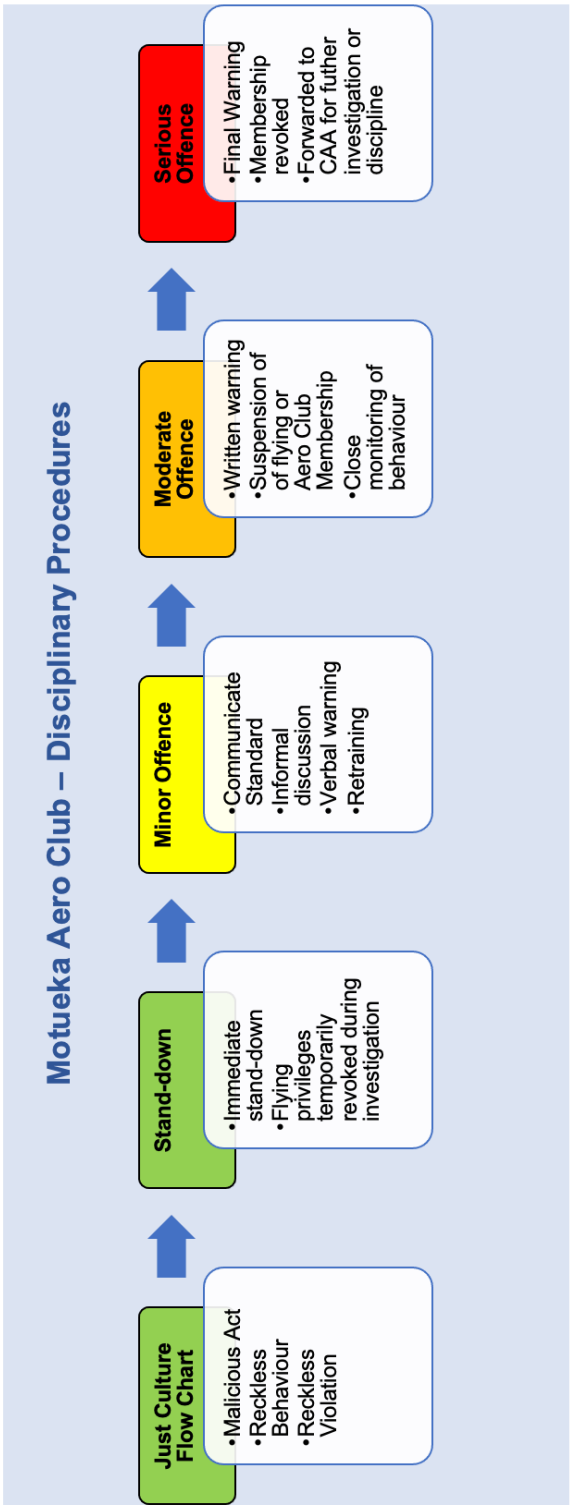
A database of the current known Risks/hazards that relate to Club operations will be reviewed every six months. If a new risk or hazard was identified as part of an occurrence investigation, this will be added to the database. This will form the Hazard Register.

# Appendixes

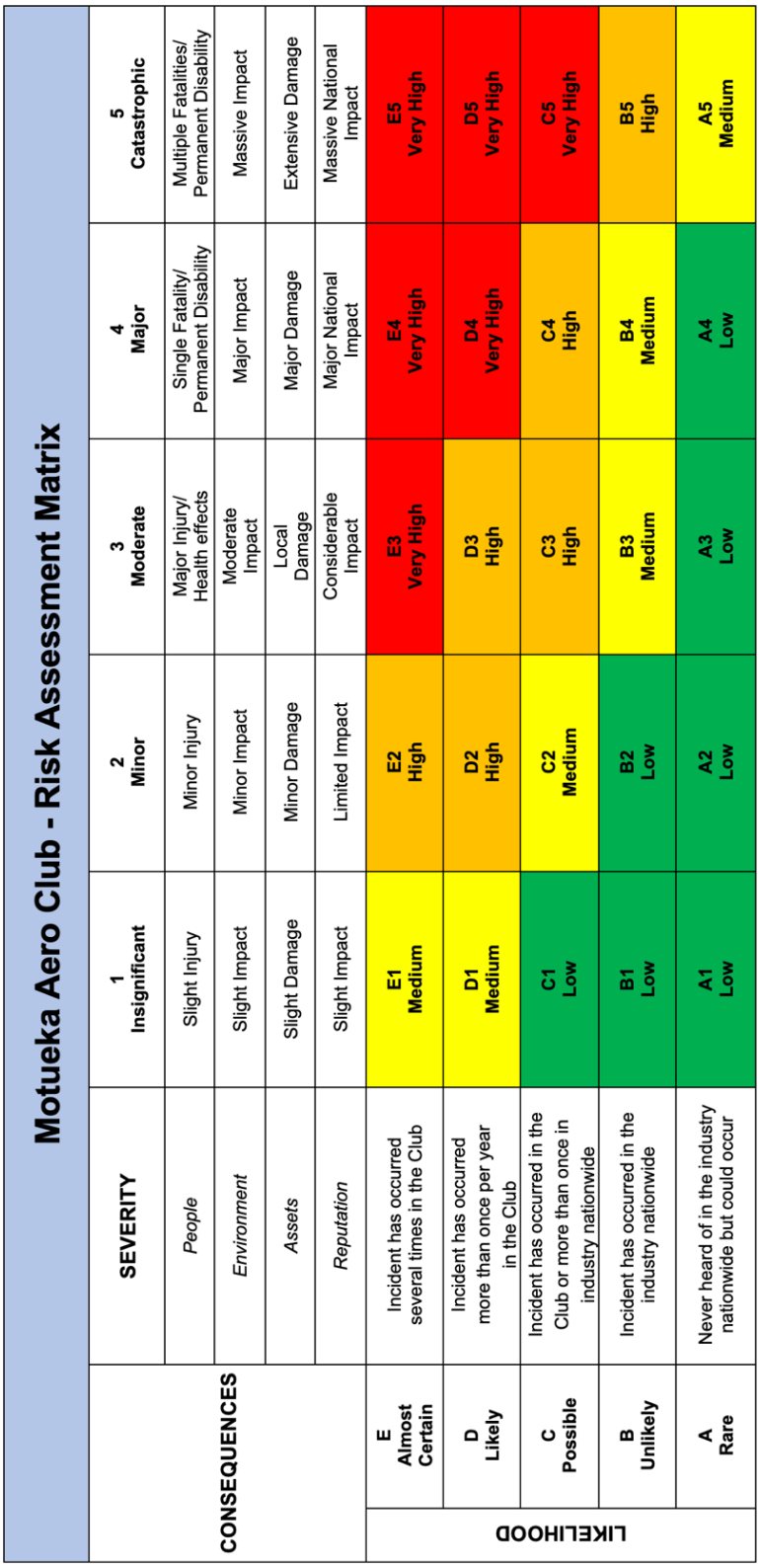
## Appendix I: Just Culture Flow Chart



## Appendix II: Disciplinary Procedures



## Appendix III: Risk Assessment Matrix



| Motueka Aero Club - Risk Assessment Matrix | | | | | | | |
|---|---|---|---|---|---|---|---|
| CONSEQUENCES | SEVERITY | 1 Insignificant | 2 Minor | 3 Moderate | 4 Major | 5 Catastrophic |
| | *People* | Slight Injury | Minor Injury | Major Injury/ Health effects | Single Fatality/ Permanent Disability | Multiple Fatalities/ Permanent Disability |
| | *Environment* | Slight Impact | Minor Impact | Moderate Impact | Major Impact | Massive Impact |
| | *Assets* | Slight Damage | Minor Damage | Local Damage | Major Damage | Extensive Damage |
| | *Reputation* | Slight Impact | Limited Impact | Considerable Impact | Major National Impact | Massive National Impact |
| LIKELIHOOD | | | | | | |
| E Almost Certain | Incident has occurred several times in the Club | E1 Medium | E2 High | E3 Very High | E4 Very High | E5 Very High |
| D Likely | Incident has occurred more than once per year in the Club | D1 Medium | D2 High | D3 High | D4 Very High | D5 Very High |
| C Possible | Incident has occurred in the Club or more than once in industry nationwide | C1 Low | C2 Medium | C3 High | C4 High | C5 Very High |
| B Unlikely | Incident has occurred in the industry nationwide | B1 Low | B2 Low | B3 Medium | B4 Medium | B5 High |
| A Rare | Never heard of in the industry nationwide but could occur | A1 Low | A2 Low | A3 Low | A4 Low | A5 Medium |