

Aero Club Zeeland
NL-DTO-003

Safety Manual

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1. Policy

1.1 Policy Statement:

Aero Club Zeeland (ACZ) strives to ensure that our aviation activities are conducted as safely as possible. This means flying with airworthy aircraft, operated by competent airmen after good flight preparation. Furthermore, we will comply with all regulations applicable to us and limit the risks inherent in flying as much as possible. Our goal is therefore:

No accidents, and that is why we encourage increasing knowledge of safe aviation among all our members and create a culture in which safety has top priority and is second nature.

The safety management system aims to continually improve the safety of ACZ by identifying, eliminating or mitigating any deficiencies in condition, policies and procedures and by requiring the members to consider at all times, the safety implications of their own actions and those of their fellow members.

An important part of a safety management system is having the right culture within our organisation. We create a culture whereby learning from incidents is key and the honest acknowledgement of mistakes is seen as a chance to learn and as an opportunity to enhance the safety of our aviation activities. When investigating incidents, it is therefore identifying the circumstances that led to the incident and what we can learn from it with the following three questions: *What* happened, *why* did it happen and *how* can we prevent it from happening again.

The question *who* did it, is not relevant unless there is clearly negligent or reckless behaviour. We will take action against the willful contravention of legislation and regulations and against our own rules. We will not tolerate unacceptable behaviour.

In order to improve our safety level, we need your input, we need to know where and what our hazards are and we have to learn from our incidents. We ask you therefor to report hazards and incidents through the registration forms or any other means. This can also be done anonymously.

We will investigate hazards and incidents and publish the results and actions taken in connection with those.

A safe environment is created by all of us together,

Thank you for your cooperation.

Signed,

H. Kruyk.
Representative.

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1.2 Safety Goals

Our safety goals are:

- No accidents
- Improve safety
- Increase the knowledge on safe operations of our members and persons involved in the organisation
- Learn from each other and from General Aviation as a whole
- Encourage a safety culture

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2. Organisation

2.1 Roles and Responsibilities

Safety is the prime responsibility of all the club members of ACZ. We expect of all members that they take note of safety notices, participate in safety promotion and report hazards and incidents. Furthermore, we expect that they comply with the applicable legislation and regulations.

The Representative is the accountable safety manager which duty can be delegated to an instructor.

In case of incident or accident the Head of Training or the instructor on duty is the prime contact.

For safety related issues all instructors can be contacted.

2.2 Notification Board

A Safety Notification Board is placed in the Briefing Room for Critical Safety Information regarding to the:

- Aircraft
- Operation
- Airport
- Seasonal Weather, Traffic, Bird activity
- Other critical safety data

2.3 Report forms

In the top drawer below the computer the following forms are available:

- Incident Registration Form
- Hazard Registration Form

2.4 Red Letter box

The Red Letter box can be used to drop off the report.

As we promote a just culture, we encourage the reporter to contact the Head of Training to expedite the process.

2.5 Crisis Response Plan

In case of an incident or accident a binder with flow diagrams for initial actions, contacts and statements is available next to the Red Letter box.

2.6 Incident Management and investigation

When an incident is reported, the Head of Training or his deputy in consultation shall determine the required follow up:

- De-briefing members involved
- Safety Management meeting
- Incident investigation
- Reporting to authorities
- Other required actions

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3. Reporting

Safety management begins with data. The most direct and relevant data is from our own organization. All ACZ members are expected to report hazards and incidents.

The Hazard or Incident Registration Form must be filled in as completely as possible. It is possible to report the incident anonymously and as such, details that can lead to identification of the reporter may be left out. Be aware that ACZ is committed to a just culture and learning all details can considerably help the investigation and improve the outcome.

The completed forms can be put in the Red Letter box or can be sent digitally to the Head of Training.

The forms will be collected and stored.

In case of an accident or reportable incident the Head of Training or Safety Manager will inform the competent authority. Any member may at any time inform the authority via "Analyse Bureau Luchtvaartvoorvallen".

In appendix A a flow chart is published in what case which authority to contact.

3.1 Mandatory Reporting

The following items are mandatory to report within 72 hrs to the competent authority:

Air operations

- Unintentional loss of control.
- Landing outside of intended landing area.
- Inability or failure to achieve required aircraft performance expected in normal conditions during take-off, climb or landing.
- Runway incursion
- Runway excursion.
- Any flight which has been performed with an aircraft which was not airworthy, or for which flight preparation was not completed, which has or could have endangered the aircraft, its occupants or any other person.
- Unintended flight into IMC (Instrument Meteorological Conditions) conditions of aircraft not IFR (Instrument flight rules) certified, or a pilot not qualified for IFR, which has or could have endangered the aircraft, its occupants or any other person.

Technical occurrences

- Abnormal severe vibration (for example: aileron or elevator 'flutter', or of propeller).
- Any flight control not functioning correctly or disconnected.
- A failure or substantial deterioration of the aircraft structure.
- A loss of any part of the aircraft structure or installation in flight.
- A failure of an engine, rotor, propeller, fuel system or other essential system.
- Leakage of any fluid which resulted in a fire hazard or possible hazardous contamination of aircraft structure, systems or equipment, or risk to occupants.

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Interaction with air navigation services and air traffic management

- Interaction with air navigation services (for example: incorrect services provided, conflicting communications or deviation from clearance) which has or could have endangered the aircraft, its occupants or any other person.
- Airspace infringement.

Emergencies and other critical situations

- Any occurrence leading to an emergency call.
- Fire, explosion, smoke, toxic gases or toxic fumes in the aircraft.
- Incapacitation of the pilot leading to inability to perform any duty.

External environment and meteorology

- A collision on the ground or in the air, with another aircraft, vehicle, terrain or obstacle.
- A near collision, on the ground or in the air, with another aircraft, vehicle, terrain or obstacle requiring an emergency avoidance manoeuvre to avoid a collision.
- Wildlife strike including bird strike which resulted in damage to the aircraft or loss or malfunction of any essential service.
- Interference with the aircraft by firearms, fireworks, flying kites, laser illumination, high powered lights lasers, Remotely Piloted Aircraft Systems, model aircraft or by similar means.
- A lightning strike resulting in damage to or loss of functions of the aircraft.
- Severe turbulence encounter which resulted in injury to aircraft occupants or in the need for a post-flight turbulence damage check of the aircraft.
- Icing including carburetor icing which has or could have endangered the aircraft, its occupants or any other person.

3.2 Voluntary Reporting

The voluntary reporting system is intended to facilitate the collection of details of occurrences that may not be captured by the mandatory system and of other safety-related information which is perceived by the reporting organisation as an actual or potential hazard to aviation safety.

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4. Risk Management

4.1 Hazard Identification

A reporting scheme for both reactive event and proactive hazards is the formal means of collecting, recording, analysing, acting on and generating feedback about hazards and the associated risks that may affect safety.

Hazards exist at all levels. Mishaps occur when hazards interact with certain triggering factors. As a result, hazards should be identified before they lead to accidents, serious incidents or other safety related occurrences.

4.2 Categories of Hazard identification:

Reactive:

Through analysis of past outcomes and events. Hazards are identified through investigation of safety occurrences. Incidents and accidents are clear indicators of systemic deficiencies and therefor can be used to determine the hazards that were both contributing to the event or are latent.

Proactive:

Through analysis of existing or real time situations. This involves actively seeking hazards in the existing processes and responding to reports via the Hazard Registration Form.

Predictive:

Through data gathering in order to identify possible negative future outcomes or events. ACZ is too small to generate data, however trends, developments and investigation reports in the General Aviation as a whole can be indicative of possible developments.

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4.3 Risk Assessment and Mitigation

Risk assessment of Hazard Identification

Probabilistic Risk Assessment usually answers three basic questions:

1. What can go wrong or what are the initiators or initiating events (undesirable starting events) that lead to adverse consequence(s)?
2. What and how severe are the adverse consequences as a result of the occurrence of the initiator?
3. How likely to occur are these undesirable consequences, or what are their probabilities or frequencies?

RISK ASSESSMENT MATRIX						
Consequence		Probability				
		1 Extremely Improbable	2 Improbable	3 Remote	4 Occasional	5 Frequent
1	Not significant	1	2	3	4	5
2	Minor	2	4	6	8	10
3	Major	3	6	9	12	15
4	Hazardous	4	8	12	16	20
5	Catastrophic	5	10	15	20	25
Frequency						

Risk is the outcome of probability times consequence times frequency the risk is taken. Here lies a dangerous paradox: The more often a risk is taken, the greater the chance of a bad outcome. But with good outcomes the risk is taken easier the next time. Be aware of a gliding scale: Past non-events do not predict future non-events.

The following guidance helps in making coherent risk assessments. Two questions are answered:

Question 1:

If this event had escalated into an accident, what would have been the most credible accident outcome?

Question 2:

What was the effectiveness of the remaining barriers between this event and the most credible outcome?

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The three risk levels are as follows:

Acceptable risk (Green 1-6)

No further action needs to be taken, unless the risk can be reduced further with little cost or effort.

Tolerable risk (Orange 8-12)

We can live with the risk in order to have certain benefits, in understanding that the risk is being mitigated as low as reasonable practical (ALARP). Risk is considered tolerable if risk reduction is impracticable or if its costs are grossly disproportionate to the improvement gained.

Unacceptable risks (Red 15-25)

The operation under the current condition must cease until the risk is reduced to at least the tolerable level. An investigation shall be performed.

4.4 Risk Control and Mitigation

The objective of risk mitigation is to implement appropriate plans to mitigate the risk associated with each consequence of the identified hazards until they reach an acceptable level. A risk control is anything that mitigates the risk of a hazard's effect/consequences. A risk control strategy includes options and alternatives that lower the risk or eliminate the hazard. Several strategies are available:

Risk avoidance strategy (AVOID):

This is the basic strategy for a "go" or "no-go" decision.

Risk reduction strategy (CONTROL):

This means a reduction of the frequency of the activity or the adoption of specific actions to reduce the severity of the consequences of the accepted risk.

Segregation of risk exposure strategy (TRANSFER):

Action is taken to isolate the effects of the risk or build in redundancy for protection. Get information or transfer the risk decision to the one with the best overview.

Risk acceptance strategy (ACCEPT):

It is not usually acceptable to use this strategy when high risk is associated with a hazard. The safety risk should still be mitigated to reduce it to lower levels before it can be accepted. When selecting this approach, available countermeasures should be prepared against the assumed risk in advance.

It is beneficial to seek advice or recommendations and perform a cost-benefit consideration.

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5. Assurance

Safety Assurance includes systematic processes to monitor the safety performance of ACZ and the evaluation of the safety management processes and practices. Safety assurance is thus the means to demonstrate that the organizational arrangements and processes for safety achievement are properly applied and continue to achieve the intended objectives.

When mitigating measures are implemented after a hazard report or incident investigation a review shall be planned within a month to evaluate the effectiveness of the measures taken.

The following questions need to be answered:

- Is the measure effective
- Does the measure continue to be effective
- Is the new risk level lower
- Does the measures not introduce new hazards

If these questions cannot be answered positive, a new mitigating cycle has to be started.

At least once a year a safety meeting between the Head of Training, Safety Manager and the staff of ACZ shall take place to evaluate the safety performance of ACZ:

- The main objective of this meeting is to evaluate if the safety goals have been met.
- Review changes in the organization, equipment, procedures etc that may have an impact on safety.
- An evaluation of safety occurrences, reports, investigations and the effectiveness of the measures taken.

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6. Safety Promotion

Safety promotion ensures everyone is aware of:

- safety information for daily operation,
- safety measures taken with regard to
 - the management system
 - hazard & incident reports
 - change in procedures, equipment, etc
- What, where, when and to whom to report safety related issues
- How to enhance their knowledge, skills and attitude towards safety

6.1 Culture

We foster an open culture, where experiences are freely discussed and ideas are shared to enhance our knowledge and improve our skills.

We embrace a just culture where no one is blamed for their actions and decisions commensurate with their training and experience, but where gross negligence, willful violations and destructive acts are not tolerated.

We strive for a culture, in which safety has top priority and is second nature.

6.2 Promotion

The safety manual will be published on the website and a hard copy will be available in the briefing room.

Important and time critical safety issues are published on the Safety Notification Board and via e-mail to students and members.

Non time critical issues will be published on the website

Safety bulletins and reading material is available in the crew-room.

6.3 Training

Safety is an inherent part of our flight training both on the ground and in the air.

To become a competent pilot three elements are necessary:

Skill, Knowledge and Attitude. Especially the last element is essential for a safety conscious pilot.

During the pre-flight briefing we start with “Threat & Error Management” by identifying the possible threats and expressing the mitigating actions.

During the post-flight briefing we ask three questions:

- Have we been safe
- Were we effective
- Do we have to report

For all members of ACZ regular events are organized to enhance knowledge, promote safety and create a safety conscious attitude.

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Appendix A – Reporting Forms

Incident Registration Form

CONFIDENTIAL (When filled in)		INCIDENT REGISTRATION FORM						
Nr: <small>(filled in by Safety Manager)</small>	Title of incident:							
DATE & TIME	LOCATION							
AIRCRAFT INFORMATION								
Type	Registration	Owner/Operator	Weight	Configuration	Crew./Passengers			
OTHER PARTY (if applicable)								
A/C Type	Registration	Vehicle	Obstacle	Person	Animal			
FLIGHT DETAILS								
PARKED	TAXI	TAKE-OFF	CLIMB	EN-ROUTE	DESCENT	APPROACH	LANDING	
Departure	Destination	Alternate	Airspace class	Flight rules	Transponder code	Altitude	Speed	Heading
WEATHER INFORMATION								
Wind		Visibility	Cloud		Precipitation		Temperature	QNH
Direction	Speed		Sort	Base	Sort	Intensity		
DESCRIPTION OF INCIDENT (Report cause, consequence and factors which were of influence)								
DETAILS OF REPORTING PARTY (Not Compulsory)								
Name				Telephone nr		E-mail		

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Hazard Reporting Form

CONFIDENTIAL (When filled in)	HAZARD REGISTRATION FORM
Nr: <small>(filled in by Safety Manager)</small>	HAZARD Observed:
DATE & TIME	LOCATION

Description of Identified Hazard

To your knowledge has this hazard previously caused an incident? <input type="checkbox"/> NO / <input type="checkbox"/> YES, EXPLANATION:

Possible consequences when nothing is done about this

Your proposal for measures which could be taken

DETAILS OF REPORTING PARTY (Not Compulsory)		
Name	Telephone nr	E-mail

Appendix B - Melden van voorvallen

Melden van voorvallen met bemande luchtvaartuigen

Ik heb kennis van een luchtvaartvoorval

Ongeval

Hangt het voorval samen met het gebruik van een luchtvaartuig en vindt het plaats tussen het tijdstip waarop een persoon zich aan boord begeeft met het voornemen en vlucht uit te voeren en het tijdstip waarop alle personen die zich met dit voornemen aan boord hebben begeven zijn uitgestapt, waarbij:

1. **een persoon dodelijk of ernstig letsel heeft opgelopen** door zich in het luchtvaartuig te bevinden, direct contact met een onderdeel van het luchtvaartuig, inclusief de onderdelen die van het luchtvaartuig zijn losgeraakt of directe blootstelling aan de uitlaatstroom van de turbinemotor, behalve wanneer de letsel een natuurlijke oorzaak hebben, door de persoon zelf of door anderen zijn toegebracht, of wanneer een verstekeling die zich buiten de normale voor passagiers en het personeel bedoelde ruimten ophouden letsel oploopt; of
2. **het luchtvaartuig schade of een structureel defect oploopt**, aardoor afbreuk wordt gedaan aan zijn soliditeit, prestaties of vliegtuigeigenschappen die normaliter ingrijpende herstelwerkzaamheden of vervanging van het getroffen onderdeel noodzakelijk zouden maken, behalve wanneer het gaat om motorstoring of motorschade en de schade beperkt is tot de motor, de motorkep of motoronderdelen, dan wel om schade die beperkt is tot de propellers, de vleugelpunten, de antennes, de banden, de remmen, de stroomlijnkappen of tot deukjes of gaatjes in de vliegtuig huid; of
3. **het luchtvaartuig vermist wordt of volledig onbereikbaar is.**

Ja

▼ Nee

Ernstig Incident

Is er sprake van een voorval dat zich voordoet onder omstandigheden die erop wijzen dat bijna een ongeval heeft plaatsgevonden, zoals:

- een bijna-botsing die een ontwijkmanoeuvre vereist om een botsing of een onveilige situatie te voorkomen;
- een maar net voorkomen "controlled flight into terrain";
- voortijdig afgebroken opstijgen of opstijgen van een gesloten of bezette startbaan, een rijbaan (m.u.v. toegestane bewegingen door helikopters) of een niet toegewezen startbaan;
- een landing of poging tot landing op een gesloten of bezette landingsbaan, een rijbaan (m.u.v. toegestane bewegingen door helikopters) of een niet toegewezen landingsbaan;
- het duidelijk onder de verwachte prestaties blijven tijdens opstijgen of in eerste fase van het stijgen;
- brand of rook in de passagiersruimte of in laadruimten, of brand in de motoren, zelfs indien dergelijke branden worden geluist met blusvoorzieningen;
- voorvallen die het voor noodgevallen bedoelde gebruik van zuurstof door de bemanning vereisen;
- structurele gebreken van het luchtvaartuig of desintegratie van de motor, inclusief niet-beheerste panne (uncontained failures) van turbinemotoren, die niet als ongeval worden geclassificeerd;
- meervoudige storingen in een of meer boordsystemen, waardoor de besturing van het vliegtuig ernstig wordt bemoeilijkt;
- een situatie tijdens de vlucht waarin een bemanninglid (flight crew) niet in staat is te functioneren;
- brandstofvoorraad waardoor de piloot verplicht is een noodsituatie uit te roepen;
- runway incursions met ernstclassificatie A (volgens ICAO Doc 9870 Manual on the Prevention of Runway Incursions);
- incidenten bij het opstijgen of landen, zoals undershoot, overrun of het lateraal van de start/landingsbaan afzakken;
- systeemdefecten, weersomstandigheden, het vliegen buiten de goedgekeurde flight envelope of andere gebeurtenissen die het besturen van het vliegtuig bemoeilijken;
- het uitvalven van meer dan één systeem in een redundantsysteem dat verplicht is voor vluchtbegeleiding en navigatie.

Ja

▼ Nee

Incident

Is er sprake van een voorval, met uitzondering van een ongeval en ernstig incident, dat een luchtvaartuig, de inzittenden, andere personen of voor de vluchtuitvoering relevante uitrusting of installaties in gevaar (kunnen) brengen en die tot de hierna vermelde categorieën behoren:

- de vluchtuitvoering, bijvoorbeeld start-, en landingsvoorvallen, brandstoftekort, communicatie etc.;
- technische voorschriften, onderhoud en reparatie van luchtvaartuigen zoals constructiefouten, storingen, verkeerd uitgevoerd onderhoud of reparatie etc.;
- luchtvaartvermaatschappijen en -faciliteiten zoals voorvallen met risico op botsingen, verkeersleiding en of verkeersbeheer; luchtvaartterreinen en gronddiensten.

Ja

▼ Ja

Bent u beroepsmatig of hobbymatig actief in de luchtvaart in een of meer van de volgende functies:

- Gezagvoerder
- Boord-, grondwerktuigkundige
- Vliegtuigbouwer
- Verkeersleider
- Havenmeester
- Technicus van navigatiefaciliteiten
- Grondafhandelaar

▼ Nee

U kunt het voorval op basis van vrijwilligheid melden aan de ILT. Ga naar <https://www.ilent.nl/onderwerpen/voorvallen-luchtvaart>

Bent u de contactpersoon van de afdeling die zich bezig houdt met de verwerking van gemelde voorvallen binnen een organisatie actief in de burgerluchtvaart?

Werk u bij bij een (luchtvaart) organisatie die onder toezicht staat van de ILT?

▼ Nee

Meld de aan u gemelde luchtvaartvoorvallen door aan de ILT. Ga naar <https://www.ilent.nl/onderwerpen/voorvallen-luchtvaart>

Staat uw organisatie onder toezicht van EASA?

Is uw bewijs van bewijs van bevoegdheid in Nederland afgegeven?

▼ Ja

Meld de aan u gemelde luchtvaartvoorvallen door aan EASA via: <https://uat-aviationreporting.eu> (selecteer state: EASA)

Meld het voorval door aan de ILT. Ga naar <https://www.ilent.nl/onderwerpen/voorvallen-luchtvaart>

voor meldingen aan ILT geldt dat dit stroomschema van toepassing is op voorvallen en andere veiligheidsgerelateerde informatie met betrekking tot burgerluchtvaartuigen, met uitzondering van de luchtvaartuigen bedoeld in bijlage I bij Verordening (EG) nr. 2018/1139. Dit stroomschema is gebaseerd op de Rijkswet en Besluit Onderzoeksraad voor veiligheid en EU verordeningen 996/2010 en 376/2014. Het stroomschema is met zorg samengesteld, doch voor de juistheid en volledigheid daarvan kan niet worden ingestaan. Indien dit stroomschema afwijkt t.o.v. voornoemde documenten dan prevaleren deze documenten.

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Appendix C

Important telephone numbers and e-mails

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Onderzoeksraad voor Veiligheid

0800 6353688

Safety related web-sites

<https://www.ilent.nl/onderwerpen/voorvallen-luchtvaart>

<https://www.skybrary.aero>