

7. General Aviation

General Aviation (GA) in Ireland includes aviation activities not categorised as Commercial Air Transport (CAT) or addressed under Part NCC declaration. It includes aviation activities regulated under European and National legislation such as:

- specialised operations (Part SPO/Aerial Works) including aerial photography, surveys and parachute support operations.
- non-commercial operations using certified non-complex aircraft (Part NCO) such as private flying, pilot training, introductory flights, and cost-sharing flights.
- leisure flying involving non-certified aircraft (i.e. the so called Annex 1 aircraft). There are over 550 registered GA aircraft in Ireland.

7.1 Safety Promotion for General Aviation

7.1.1 Safety Issue

Good safety management depends on the sharing of safety information with GA pilots and instructors, including lessons learned from accidents or incidents. Safety promotion enhances awareness of hazards and provide best practices for mitigating these hazards to help reduce accidents in the general aviation sector.

7.1.2 Safety Objective

To share safety information within the general aviation community to help reduce the number of accidents and serious incidents involving general aviation operations in Ireland.

7.1.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Accident, Serious Incident and Incident rates and trends related to general aviation.

7.1.4 Stakeholders/Roles

Irish Aviation Authority – analysis of accidents, serious incidents and occurrences in general aviation and development of sector risk profile. Sharing safety information with general aviation operators.

Industry (General aviation clubs and associations) – analysis of risks within their own sector and sharing safety information with members.

GA Pilots and engineers – reporting of safety occurrences to improve safety awareness.

7.1.5 Actions

ACTIONS

TARGET DATE

- | | |
|---|---------|
| a) The IAA will work with GASCI to develop and promote Safety Information to general aviation community in Ireland.
EPAS Reference: MST.0015, MST.0025, MST.0027. | Ongoing |
|---|---------|

7.1.6 Status Highlights

- General Aviation Safety Council of Ireland established with representatives from most sectors of general aviation in Ireland, IAA and AAIU. GA public safety evenings held each year.
- Ongoing promotion of safety resources for GA.
 - www.GASCI.ie
 - www.iaa.ie/general-aviation
 - www.easa.europa.eu/community/ga
- Focus on improving safety reporting culture in general aviation to share safety information amongst the community (see also <https://flyinginireland.com/2022/10/do-you-report/>).
- A simplified occurrence reporting form, dedicated to general aviation was published on the IAA website at <https://www.iaa.ie/safety/safety-reporting/general-aviation-occurrence-reporting>

7.2 Airspace Infringement by GA aircraft

7.2.1 Safety Issue

An airspace infringement (AI) occurs when an aircraft enters controlled airspace without receiving the appropriate ATC clearance. The problem of airspace infringement is a serious risk to aviation safety and the risk is particularly serious when the infringing aircraft involved is a GA light aircraft that does not carry transponder equipment used by air traffic controllers to help prevent mid-air conflict between aircraft.

7.2.2 Safety Objective

To continuously improve safety by assessing and mitigating the risks due to airspace infringements involving general aviation in Ireland.

7.2.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Accident, Serious Incident and Incident rates and trends related to airspace infringement.

7.2.4 Stakeholders/Roles

Irish Aviation Authority – analysis of airspace infringement related accidents, serious incidents and occurrences. Sharing safety information with general aviation operators.

Industry (General aviation training organisations, clubs and associations) – assessment and management of the risk of airspace infringement within their own sector and sharing safety information with members.

GA Pilots and engineers – reporting of airspace infringement safety occurrences.

7.2.5 Actions

ACTIONS	TARGET DATE
a) The IAA will work with AirNav Ireland and the General Aviation Safety Council of Ireland to review airspace design issues at airspace infringement hotspots with a view to implementing measures to reduce airspace infringements by GA aircraft. EPAS Reference MST.0038.	Q4 2026
b) The IAA will work with GASCI to highlight the risk of airspace infringement by general aviation aircraft, and share best practices in its avoidance, during general aviation safety evenings.	Ongoing

7.2.6 Status Highlights

- Airspace design is relatively non-complex in Ireland with Class C airspace concentrated around the main airports and Class G airspace otherwise. Most airspace infringements occur around the interfaces of Class C/G, possibly due to loss of situational awareness or navigation error, rather than intent.
- Ongoing co-ordination with main air navigation services provider to update airspace design to facilitate sustainable Instrument Flight Procedures (e.g. continuous descent approach) in consultation with airspace users including GA community. This project is still in work and the associated SPAS action a) above is deferred accordingly.
- Airspace Infringement is regularly addressed in GASCI safety evenings, including AI hotspots.

The actions in this chapter support the GASR 2023-2025 Operational SEI Mitigate contributing factors to MAC accidents and incidents.

7.3 Key Risks for General Aviation aircraft

7.3.1 Safety Issue

Analysis of accidents and serious incidents in Ireland, Europe and globally identifies some key risks for general aviation, including:

- **Loss of Control – Inflight (LOC-I);** possibly caused by inadequate aircraft handling, loss of situational awareness or management of aircraft upset (e.g. induced by weather, technical failure, fuel shortage) possibly associated with an element of surprise.
- **Controlled Flight into Terrain or Obstacles (CFIT);** possibly caused by inadequate flight planning or navigation, or failure to properly manage changing meteorological conditions.
- **Mid-Air Collisions in GA (MAC);** most likely in areas of intensive general aviation activity, however the emerging risk from Drone operations is also a risk for general aviation operations.
- **Occurrences during take-off and landing;** heavy landings (ARC), runway excursions (RE) or collision with obstacles (CTOL) are often associated with technical failure, aircraft handling or weather events affecting take-off and landing performance in general aviation. The use of grass strips by general aviation brings specific risks.

7.3.2 Safety Objective

To continuously improve safety of general aviation by assessing and mitigating the key risks of loss of control inflight, controlled flight into terrain, mid-air collision, and occurrences during take-off and landing.

7.3.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Accident, Serious Incident and Incident rates and trends related to LOC-I, CFIT, MAC, ARC, RE, and CTOL in general aviation.

7.3.4 Stakeholders/Roles

Irish Aviation Authority – analysis of related accidents, serious incidents and occurrences. Sharing safety information with general aviation operators.

Industry (General aviation training organisations, clubs and associations) – assessment and management of the risks within their own sector and sharing safety information with members.

GA Pilots and engineers – reporting of safety occurrences (e.g. near miss) for information sharing to the benefit of the general aviation community.

7.3.5 Actions

ACTIONS	TARGET DATE
a) The IAA will work with GASCI to highlight the key risks of loss of control inflight, controlled flight into terrain, mid-air collision, and occurrences during take-off and landings, and to share best practices in their avoidance by: - Developing and promulgating safety information to address the main causes of these occurrences. - Organising safety evenings for general aviation to present safety information. - Using website and social media platforms to target intended audience.	Ongoing

EPAS Reference MST.0028.

7.3.6 Status Highlights

- During the reference period for this version of SPAS the following topics were addressed as part of general aviation safety promotion:
 - Lessons learned from recent Annex 13 accident reports.
 - Prevention of loss of control in flight (fixed and rotary wing).
 - Mid-air collision/Airspace infringements/Drones.
 - Crosswind Landings.
 - Human factors (decision making, startle effect).
 - Single pilot CRM/TEM.
 - Recency and skills fade.
 - Use of technology/iconspicuity devices.
 - Winter operations.
 - Carburettor Icing.
 - Airspace changes – New Parallel Runway in Dublin Airport.
 - Reducing Risks in Navigation.
 - Activities in Restricted and Military operating areas.
 - Strip Flying.
 - Sea Survival.
 - Winter Operations.
 - Inflight Energy Management.
 - Air Turnbacks.
- General aviation “areas of operation” symbology included in Aeronautical Charts and AIP, addressing areas of intensive GA activity (e.g. GA training fields).
- Consulted with Irish approved and declared training organisations on the learning objectives on the “Meteorological Information” part of the PPL/LAPL training syllabus and confirmed that relevant questions were included in the PPL(G) question bank. Related SPAS Action 7.3.5 b) was closed in the last SPAS update.
- Review EAPAIRR Version 2 recommendations relating to GPS use in General Aviation e.g. promoting benefits and hazards of GPS, importance of updating navigation systems etc.

The following table identifies the key risks in general aviation as published in the IAA Annual Safety Performance Review. It is repeated here for convenience.

Loss of Control -Inflight	• Recognition and recovery from aircraft upset. • Awareness of flight attitude. • Control of aircraft, following engine failure. • Recognition of, and response to carburettor icing. • Operations of light aircraft within recommended mass and balance limits. • Execution of forced landings. • Awareness of performance differences between different GA aircraft types.
Collision with terrain or obstacle	• Inadvertent flight into degraded visual environments. • Flight below minimum safe altitude (e.g. for weather avoidance). • Pre-flight planning. • Situational awareness during flight. • Use of advanced technologies. • Use of aeronautical charts and terrain and obstacle databases.
Mid-Air Collision	• Use of see and avoid. • Safety Management at Club Fly-ins and airshows. • Conflict with Drones. • Use of advanced technologies.
Occurrence during take-off or landing	• Runway excursion or heavy landing following aircraft handling or environmental issues. • Collision with obstacles (e.g. trees, buildings, electrical wires) during take-off and landing. • Take-off and landing from hard/soft airstrips.

Human Factors	• Threat and error management. • Decision making. • Wellness.
Miscellaneous Risks	• Public safety at club fly-ins. • Hand-propping engines. • Taildragger aircraft. • Carbon monoxide risk in small aeroplanes and helicopters (EASA SIB 2020-01).

The actions in this chapter support the GASR 2023-2025 Operational Safety Risks Roadmap safety enhancement initiatives in respect of general aviation.

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7.1.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

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7.1.4 Stakeholders/Roles

Irish Aviation Authority — analysis of accidents, serious incidents and occurrences in general aviation and development of sector risk profile. Sharing safety information with general aviation operators.

Industry (General aviation clubs and associations) – analysis of risks within their own sector and sharing safety information with members

GA Pilots and engineers – reporting of safety occurrences to improve safety awareness.

7.1.5 Actions

ACTIONS	TARGET DATE
a) The IAA will work with GASCI to develop and promote Safety Information to general aviation community in Ireland. EPAS Reference: MST.0015, MST.0025, MST.0027	Ongoing

7.1.6 Status Highlights

- General Aviation Safety Council of Ireland established with representatives from most sectors of general aviation in Ireland, IAA and AAIU. GA public safety evenings held in Q2 and Q4 each year.
- Ongoing promotion of safety resources for GA
 - www.GASCI.ie
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7.2.5 Actions

ACTIONS	TARGET DATE
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b) The IAA will work with GASCI to highlight the risk of airspace infringement by general aviation aircraft, and share best practices in its avoidance, during general aviation safety evenings	Ongoing

7.2.6 Status Highlights

- Airspace design is relatively non-complex in Ireland with Class C airspace concentrated around the main airports and Class G airspace otherwise. Most airspace infringements occur around the interfaces of Class C/G, possibly due to loss of situational awareness or navigation error, rather than intent.
- Ongoing co-ordination with main air navigation services provider to update airspace design to facilitate sustainable Instrument Flight Procedures (eg continuous descent approach) in consultation with airspace users including GA community.
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b) The IAA will ensure that learning objectives in the 'Meteorological Information' part of the PPL/LAPL syllabus used by Irish general aviation training organisations address: - practical interpretation of ground-based weather radar, strengths and weaknesses. - practical interpretation of meteorological satellite imagery, strengths and weaknesses. - forecasts from numerical weather prediction models, strengths and weaknesses. EPAS Reference MST.0036	Closed

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