Safety
Regulation
Division

Irish Aviation Authority
Údarás Eitlíochta na hÉireann

Annual Safety Performance Review 2010


IAA

Forward

It is my privilege as Director Safety Regulation to present the 2010 IAA Annual Safety Performance Review.

2010 has been an exceptionally hard year for the aviation sector where a hostile environment in the form of volcanic ash and extremely harsh cold weather, posed challenges which had not been anticipated. Aviation proudly proclaims its safety record as a transportation mode but we, as regulators, know that this level of safety is achieved by a continuing vigilance by all involved, in the airworthiness and operation of aircraft and by ATC service providers and airport authorities.

No one participant in the aviation system has a monopoly on safety. By constantly assessing the strength of our system through accident and incident investigation, occurrence reporting and the expansion of Safety Management Systems to inform the State Aviation Safety Programme we are all challenged to maintain and improve the exceptional level of safety our industry provides.

I would like to acknowledge the work of all IAA Safety Regulation personnel in 2010 and the Safety Analysis section for preparing this comprehensive report which will help to inform all stakeholders of the safety performance of the sector in Ireland and Europe.

Kevin Humphreys

Director Safety Regulation Division


IAA

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Executive Summary

The worldwide safety trend up to the end of 2009 and preliminary figures for 2010 indicate that the rate of fatal accidents in commercial air transport has levelled at approximately four for every 10 million flights. The preliminary fatal accident figures for 2010[1] shows a small increase in the total number of fatal accidents over 2009, however, it is not expected that this will result in a sizeable increase in the rate as air traffic volume continues to increase worldwide. IATA[2] has reported the level of international air travel is now 4% above the pre-recession peak of early 2008 and continues to grow.

The worst fatal accidents in 2010 included a Boeing 737-800 crash in India with 158 fatalities, an Airbus A321 accident in Pakistan with 152 fatalities, an Airbus A330 accident in Libya with 104 fatalities and a Boeing 737-800, which crashed into the sea shortly after take-off from Beirut, Lebanon, with 90 fatalities.

In 2009, European airlines accounted for only 2.6% of all fatal accidents in commercial air transport worldwide and the fatal accident rate in Europe is lower than the worldwide figure at approximately two for every 10 million flights. There were no fatal commercial air transport accidents in Europe in 2010. In 2009 there were two major fatal accidents in Europe, the loss of an Airbus A330 over the Atlantic involving 228 fatalities and the loss of a Super Puma helicopter while performing offshore operations involving 16 fatalities.

Irish commercial air transport operators experienced three events formally categorised as aircraft accidents in 2010. All three events occurred outside Ireland – in Italy, Spain and United Kingdom. All three are being investigated by the applicable investigation authority of those states.

General Aviation (aircraft over 2,250kg) in Ireland has experienced a good year in terms of safety with no accidents for large aeroplane and helicopters. It must be noted, however, that the economic downturn has impacted this area and the level of activity has decreased significantly.

Sadly, there was one fatal accident in the light aircraft category (aircraft <2,250kg maximum takeoff weight) involving an Irish registered aeroplane in April 2010.

Overall accident rates (fatal and non-fatal) in General Aviation have remained steady with thirteen in 2010 compared to fourteen in 2009, however, this rate remains higher than the average of 12.2 accidents per year over the last five years. The number of aircraft registered in this category in Ireland has decreased from 587 in 2006 to 543 in 2010 while foreign registered aircraft account for 46% of all accidents in this category in Ireland.

The IAA received eight safety recommendations from the Air Accident Investigation Unit (AAIU) during 2010. The IAA responses to these recommendations are detailed in section 4 of this report.

The IAA continue to implement a state safety programme and the national programme will be aligned with the European programme as EASA develop it over the next four years.

[1] Source – Flight Safety Foundation, see http://aviation-safety.net/index.php for more details
[2] IATA – International air Transport Association, see www.iata.org for more details


IAA

Introduction

The purpose of the Annual Safety Review is to inform all aviation stakeholders how the aviation system in Europe and Ireland is performing, highlighting emerging safety trends and to generally raise awareness of safety in the aviation sector.

The review is structured into individual sections. The 1st section provides a brief synopsis of world safety trends for fatal accidents in commercial air transport. This section concentrates on providing data up to the end of 2009 as the official accident investigation reports are not yet available for many of the accidents in 2010.

Section 2 summarises European safety trends as reported by the European Aviation Safety Agency (EASA). The data presented is up to the year ending 2009 as data for 2010 will not be available from EASA for some time. The main areas described are commercial air transport for helicopters and airplanes. Information pertaining to the number of accidents in general aviation and light aircraft is also included.

The 3rd section summarises safety trends in Ireland and provides detailed information on the number of accidents and serious incidents which occurred in the Irish State or involved Irish registered aircraft up to the end of 2010.

Section 4 details all safety recommendations addressed to the IAA by air accident investigation bodies in all states in 2010. In 2010 there were 8 recommendations to the IAA, all from the Air Accident Investigation Unit (AAIU) of the Department of Transport.

External oversight of the IAA is outlined in Section 5. This includes oversight by external bodies such as ICAO and EASA.

Finally section 6 gives a brief overview of the future direction of safety regulation. It highlights the introduction of performance based oversight in addition to the existing compliance based approach through the introduction of State Safety Programmes.

The data presented in this report is based on a number of sources and is subject to change as additional data on each accident becomes available. As formal investigations are completed the categorisation of accidents may change and can lead to variations in data presented in previous years. While every effort has being made to ensure the accuracy of the data some errors may occur. The IAA will provide updates on the IAA website if necessary.


IAA

About IAA Safety Regulation Division

The IAA Annual Safety Review is produced by the Safety Regulation Division of the IAA. The Safety Regulation Division carries out safety regulatory functions on behalf of the IAA. The Division is headed by Mr Kevin Humphreys, Director and divided into 4 departments.

Currently there are 82 people employed in the safety regulation division with detailed expertise and experience in all aspects of aviation safety regulation and oversight.

The Aeronautical Services Department (ASD)

ASD is responsible for the licensing and certification of aerodromes, airspace classification, instrument flight procedures and aeronautical charts. It is also responsible for regulating air traffic control service providers and aeronautical information services (AIS) in Ireland.

ASD licenses the three State airports, eleven public licensed aerodromes and 15 private licensed aerodromes. It classifies airspace in accordance with international rules, establishes Temporary Restricted Areas and sets standards for instrument flight procedures. It validates instrument flight procedures produced by ATS providers, validates aeronautical charts in accordance with ICAO Annex 4 and validates positional data in accordance with ICAO annexes and national standards.

ASD also licenses air traffic controllers, aerodrome flight information services officers (AFISOs) and radio officers. It regulates the air navigation services activities in 451,000 sq km of airspace and also regulates communication, navigation, surveillance and air traffic management (CNS/ATM) Systems within the state.

ASD also fulfils the functions assigned to the IAA by the State as the National Supervisory Authority (NSA) for the purpose of carrying out the functions assigned to the NSA under the EU Single European Skies (SES)[3] legislation.

The Airworthiness Department (AWSD)

AWSD is responsible for regulating aircraft certification and maintenance standards, and ramp inspections of foreign aircraft.

The Airworthiness Department is responsible for the registration and certification of:

- large commercial transport aircraft
- small aircraft
- helicopters
- approved facilities for maintenance, manufacturing and storage

[3] SES – for more information please go to http://www.eurocontrol.int/ses/public/subsite_homepage/homepage.html

The Flight Operations Department (FOD)

FOD oversees the operating standards of 18 airlines and oversees the training standards of flight and cabin crew. FOD is responsible for certifying and regulating all Irish air operators.

FOD is responsible for surveillance and oversight of industry operating standards, including type rating training organisations and synthetic training devices (simulators).

It is also responsible for oversight of general and recreational aviation in Ireland and provides permits or approvals for sport aviation, aerial work aircraft, airshows, balloons and parachuting activities.

The Regulatory Performance and Personnel Licensing Department (RPPL)

RPPL has two functional areas:

Regulatory Performance is responsible for the development of the state safety programme and for aviation safety analysis including the production of the annual safety performance review.

Personnel Licensing is responsible for flight crew licensing, aircraft maintenance engineer licensing, medical certification and for the approval of aero medical centres and aero medical examiners. At present it licenses:

- commercial & airline pilots,
- student and private pilots
- aircraft maintenance engineers .

Flight crew licences are issued to persons who are suitably qualified by satisfactory completion of a course of flight training and who have been examined and flight tested by approved organisations and persons.

Personnel Licensing is also responsible for the oversight of flight training organisations, aircraft maintenance engineer's training organisations (Part 147) and the appointment of designated flight examiners.

Section 1

World Safety Trends

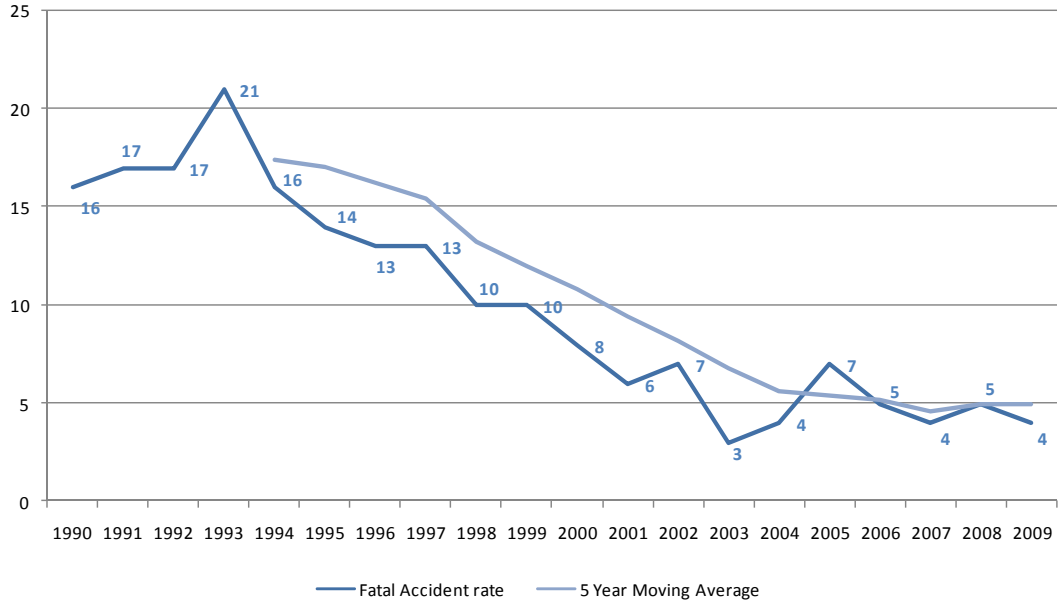
Fatal Accident Statistics for Commercial Air Transport

This section presents data up to the end of 2009 as the formal reports for many of the accident investigations in 2010 are not yet completed and the final formal reports have not being published. The worst fatal accidents in 2010 included a Boeing 737-800 crash in India with 158 fatalities, an Airbus A321 accident in Pakistan with 152 fatalities, an Airbus A330 accident in Libya with 104 fatalities and a Boeing 737-800, which crashed into the sea shortly after take-off from Beirut, Lebanon, with 90 fatalities.

During 2009 there were 38 accidents[4] involving passenger fatalities on scheduled commercial air transport services worldwide (in aircraft with a maximum certificated take-off mass of more than 2,250kg). Two major accidents accounted for the majority of these fatalities. On the 1st June 2009 an Air France Airbus A330 went missing over the Atlantic Ocean killing all 228 passengers and crew. On the 30th June 2009 a Yemenia Airbus A310 crashed into the sea on approach to Comoros, an island nation of the coast of Mozambique, killing 152 of the 153 passengers and crew. There was also a fatal accident in Europe involving a Turkish Airlines B737 on approach to Schiphol airport in the Netherlands which resulted in 9 fatalities.

The overall trend in fatal accidents on scheduled commercial air transport services worldwide over the last 20 years has been downward with fatal accidents dropping from 16 per 10 million flights in 1990 to a rate of 4 per 10 million flights in 2009. Much of this reduction, however, was achieved in the 1990s and since 2005 there has been no evident decline in the rate.

Figure 1.1 Number of accidents globally involving passenger fatalities per 10 million flights on scheduled commercial air transport operations, excluding acts of unlawful interference.



It should be noted that the rate varies substantially in different regions of the world. Figure 1.2 shows the rates by main geographical regions.

[4] Source: EASA Annual Safety Review 2009 available on EASA site: www.easa.eu.int

It should be noted that a single accident in areas with low traffic volume will have a greater impact on the rate compared to a single accident in areas with high traffic volumes. For example, in 2008 African airlines completed 558,000 domestic and international departures. A single fatal accident is equivalent to a rate of 18 fatal accidents per 10 million flights. Europe completed 7,569,000 domestic and international departures[5]. A single fatal accident in Europe is equivalent to 1.3 fatal accidents per 10 million flights, thus, will have less impact on the overall European annual rate compared to a single fatal accident in Africa. To avoid annual peaks in the data due to single accidents, figure 1.2 shows accumulated data from 2000-2009.

Figure 1.2 Number of accidents involving passenger fatalities per 10 million flights, by region (2000-2009)

During the last decade safety concerns were raised in Europe at the gap between accident rates in different world regions and that some airlines with unacceptable safety levels were able to operate into Europe, posing an unacceptable safety risk to EU citizens.

To address this issue the European Commission developed Regulation 2111/2005/EC[6] establishing a European list of banned carriers. The current list of airlines banned or allowed restricted operation can be found on the EU Commission website at http://ec.europa.eu/transport/air-ban/list_en.htm .

[5] Source of traffic statistics for Africa and Europe: ICAO Annual Report 2008 Appendix 1 Table 4.
[6] Regulation details are at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32005R2111:EN:NOT


IAA

EUROPEAN AVIATION SAFETY AGENCY
AGENCE EUROPÉENNE DE LA SÉCURITÉ AÉRIENNE
EUROPÄISCHE AGENTUR FÜR FLUGSICHERHEIT

Section 2

European Safety Trends

EASA Safety Statistics for 2009

This section contains a synopsis of EASA's Annual Safety Review for 2009. The full report may be obtained from the EASA website at http://easa.europa.eu/communications/general-publications.php

Established by EU regulation the European Aviation Safety Agency (EASA) promotes common standards of safety and environmental protection in a single European civil aviation market. Based in Cologne, the agency already employs some 500 professionals from across Europe.
The agency's responsibilities include:

- *expert advice to the EU for drafting new legislation;*
- *implementing and monitoring safety rules, including standardization in the EU;*
- *type-certification of aircraft and components, as well as the approval of organisations involved in the design, manufacture and maintenance of aeronautical products;*
- *authorization of third-country (non EU) operators;*
- *safety analysis and research.*

EASA have provided the number of accidents, fatal accidents and fatalities by commercial aeroplane and helicopter operations, general aviation, aerial work and light aircraft. This synopsis of EASA's report focuses more on the number of accidents and number of accidents which resulted in a fatality rather than the number of fatalities as the result of an accident as a measure of safety in the industry.

Commercial Aeroplane Transport

Table 2.1 indicates that the number of accidents involving aeroplanes operated by EASA Member States (EASA MS) carriers fell from 31 in 2008 to 17 in 2009. The number of accidents which resulted in a fatality remained at 1. The safety record for EASA MS registered aircraft conducting scheduled passenger operations continues to be substantially better than the world average.

The percentage of accidents that resulted in fatalities has decreased substantially over the recent decades. This can be largely attributed to improved design requirements that improve the ability of passengers to exit an aircraft after an accident. Examples include improved exit routes and escape path lighting, improved seating requirements and improved material inflammability characteristics.

A total of 228 persons were fatally injured when an Airbus A330 crashed into the Atlantic Ocean on 1st June 2009. This single accident has led to an increase in the number of fatalities.

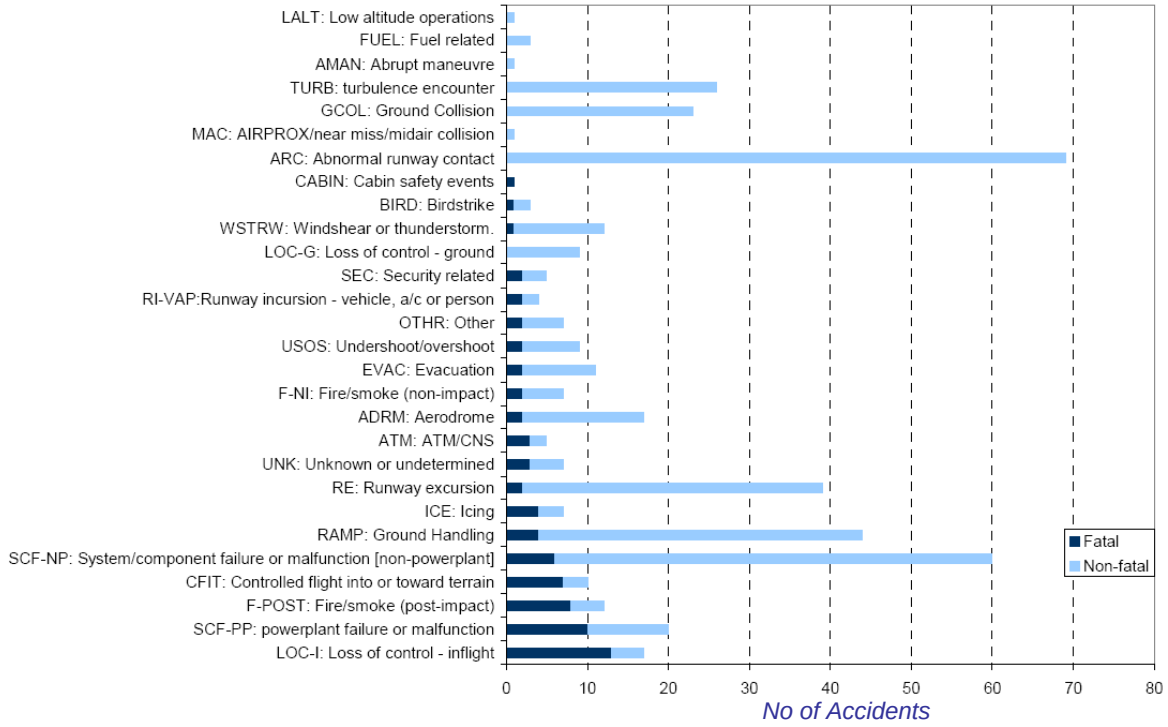
Table 2.1: Total number of accidents and fatal accidents for EASA Member States registered aeroplanes

Period	Number of accidents	Fatal Accidents	Fatalities on board	Ground Fatalities
1998-2007 (average)	26	4	93	1
2008 (total)	31	1	154	0
2009 (total)	17	1	228	0

Basic fatal accident statistics provides little information on what the key risks are or where safety improvements can be made. In order to understand what safety issues are involved each accident is analysed and is assigned under one or multiple categories. These categories are based on the definitions developed by the CAST-ICAO Common

Taxonomy Team (CICTT)[7]. Figure 2.1 shows the number of accidents per category for all accidents involving aeroplanes operated by EASA Member State (EASA MS)[8] airlines in the decade 2000-2009.

Figure 2.1 – Categorisation of fatal and non-fatal accidents involving EASA MS operated aircraft which occurred during commercial air transport operations (2000-2009)



Loss of control in flight (LOC-I) has been the most common category for fatal accidents. Loss of control occurs when the aircraft enters a flight regime which is outside its normal envelope, that is, outside its normal operating limits. The causes of loss of control in flight are numerous and include loss of situational awareness, weather events such as extreme turbulence and windshear, unintentional mis-management of aircraft systems and incorrect load distribution.

Abnormal runway contact (ARC), accidents where the landing or takeoff involved abnormal runway or landing surface contact, was the most common category overall. These accidents usually involve long, fast or hard landings. Often during such accidents the landing gear or other parts of the aircraft are damaged. Although none of the accidents in this category resulted in fatalities, the frequency of occurrence of such events is a cause for concern.

Powerplant failure (SCF-PP) involves the malfunction of a single or of multiple engines which might have led to a complete or partial loss of engine power. The failure of the number 2 engine on the Qantas A380 on the 4th November 2010 is an example of a SCF-PP accident[9].

[7] CAST CCITT – see www.icao.int/fsix/cast/index.html for more information on CAST and the taxonomy.
[8] EASA MS – the 27 EU Member States plus Iceland, Liechtenstein, Norway and Switzerland.
[9] Classification and categorisation based on Australian Transport Safety Bureau Investigation Number AO-2010-089 preliminary report

Commercial Helicopter Transport

Table 2.2 indicates that the number of accidents involving EASA registered helicopters decreased from 10 in 2008 to 5 in 2009, however, the number of fatalities have increased. In April 2009, sixteen people died when a Super Puma crashed during an offshore flight from an oil platform to Aberdeen, Scotland.

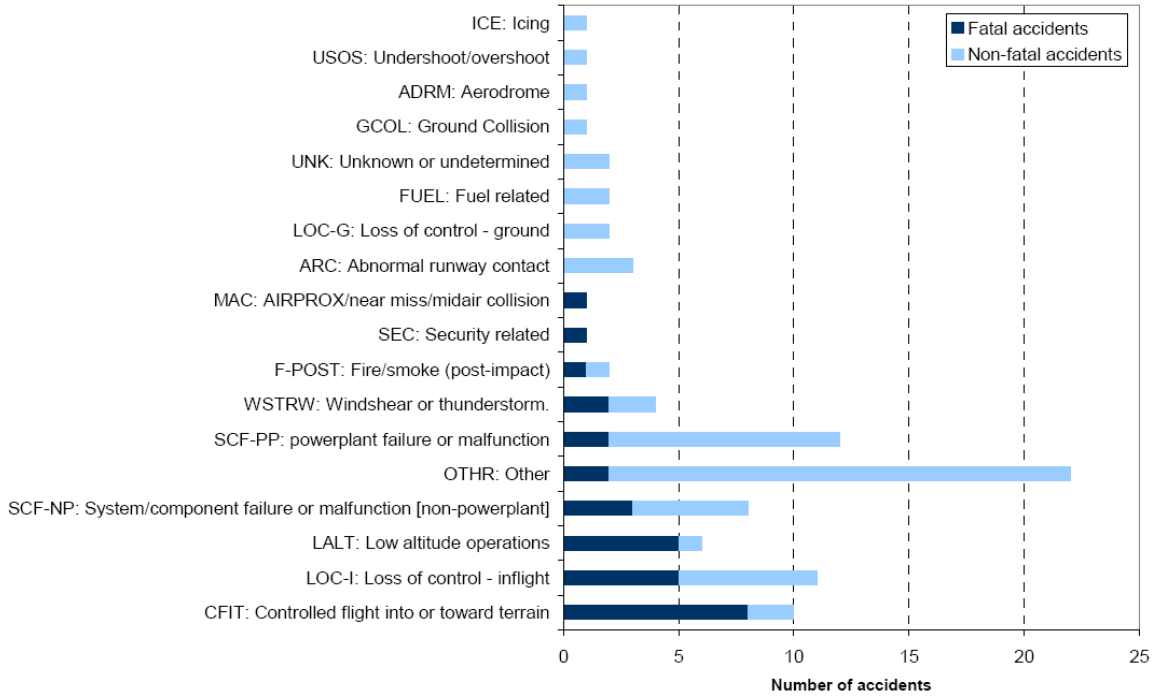
Table 2.2: Number of accidents & fatal accidents - EASA MS registered commercial helicopters

Period	Number of accidents	Fatal accidents	Fatalities on board	Ground fatalities
1998–2007 (average)	8	3	11	0
2008 (total)	10	2	4	0
2009 (total)	5	2	18	0

Similar to commercial air transport, the primary causal factors for commercial helicopter transport are also categorised and figure 2.2 shows the main categories. Controlled Flight into Terrain (CFIT) is the category with the highest number of fatal accidents. In most cases adverse weather circumstances were prevalent, such as reduced visibility due to mist or fog. Also, several flights had taken place at night or in mountainous or hilly terrain.

Loss of control in flight (LOC-I) has the second highest number of fatal accidents assigned and the third highest number of total accidents assigned.

Figure 2.2 – Categorisation of fatal and non-fatal accidents involving EASA MS operated helicopters (2000-2009)



The Other (OTHR) category is assigned when the accident is not covered under another category. The accidents in this category mainly involved accidents during take-off and landing phases where the main or tail rotor collided with objects on the ground. Helicopters often operate in confined areas close to obstacles. Also, in several accidents the powerful rotor downwash resulted in serious injuries to people on the ground or caused loose objects to damage the helicopter.

General Aviation

The EASA report defines 'general aviation' as all civil aviation operations other than scheduled or non-scheduled air transport operations for remuneration, hire or aerial work. 'Aerial work' is defined as an aircraft operation in which an aircraft is used for specialised services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, or aerial advertisement.

Using this definition Table 2.3 indicates the number of accidents, fatal accidents and fatalities on board for helicopters and aeroplanes utilised for general aviation purposes. The number of accidents in aerial work operations is similar for aeroplanes and helicopters for the decade 1997 to 2006. In General Aviation the small number of accidents involving helicopters in comparison to aeroplanes is a reflection on the relatively small number of helicopters used in this type of operation across Europe.

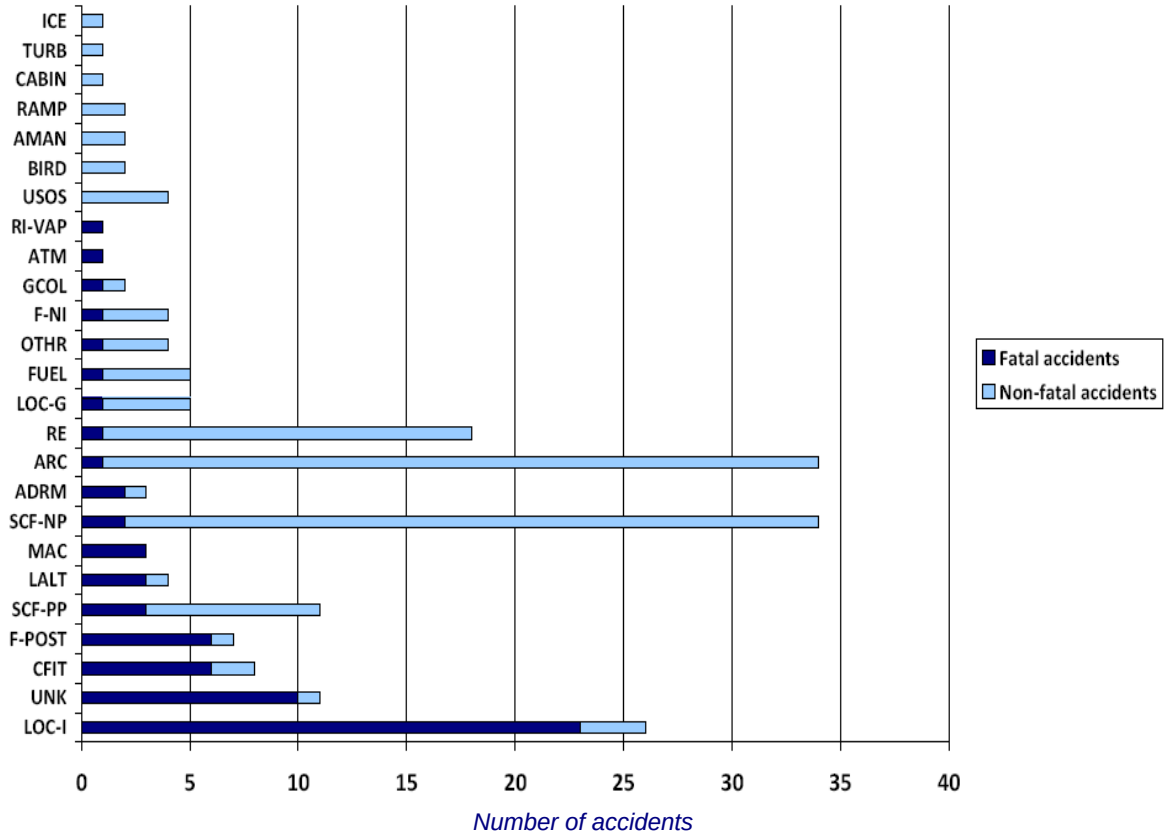
Table 2.3: Number of accidents & fatal accidents - EASA MS registered aircraft

Aircraft category	Operation type	Period	Number of accidents	Fatal accidents	Fatalities on board	Ground fatalities
Aeroplane	General aviation	1998-2007 (average)	16	6	25	0
		2008	19	7	18	1
		2009	12	5	9	0
	Aerial work	1998-2007 (average)	6	2	4	0
		2008	7	2	3	0
		2009	3	1	2	0
Helicopter	General aviation	1998-2007 (average)	5	2	3	0
		2008	1	0	0	0
		2009	2	2	3	0
	Aerial work	1998-2007 (average)	6	2	3	0
		2008	5	1	2	0
		2009	1	1	4	0

Fire fighting aerial work accounted for 50% of all the fatal aeroplane accidents in the period 2000-2009.

EASA have been unable to obtain classifications for all general aviation accidents, however, figure 2.3 shows the main categorisations for those accidents that were classified.

Figure 2.3 Categorisation of Accidents - General Aviation – aircraft over 2,250Kg – EASA MS registered (2000-2009)



Once again, loss of control in flight (LOC-I) is the biggest cause of fatal accidents. The European General Aviation Safety Team (EGAST)[10] is currently analysing all LOC-I events in Europe from 2006 to 2009 to identify any common root causes, however, it is expected that a large portion of these accidents will have involved a degraded visual environment.

Light Aircraft

The EASA report defines light aircraft as those below 2,250kgs. Table 2.4 contains the number of accidents, fatal accidents and number of fatalities as a result of accidents, grouped by type of light aircraft.

Although the supply of data from EU member states to EASA has improved on the previous year, there are still gaps in the dataset. The data below shows increases across most aircraft categories, however, this increase may be attributable to the simple fact that one large EU State provided data in 2009 and had not provided data previously. There are also differences in aircraft categorisation across various EU States and this may have led to some inconsistent categorisations in table 2.4 below.

[10] EGAST – for more information on EGAST see http://www.easa.europa.eu/essi/egastEN.html

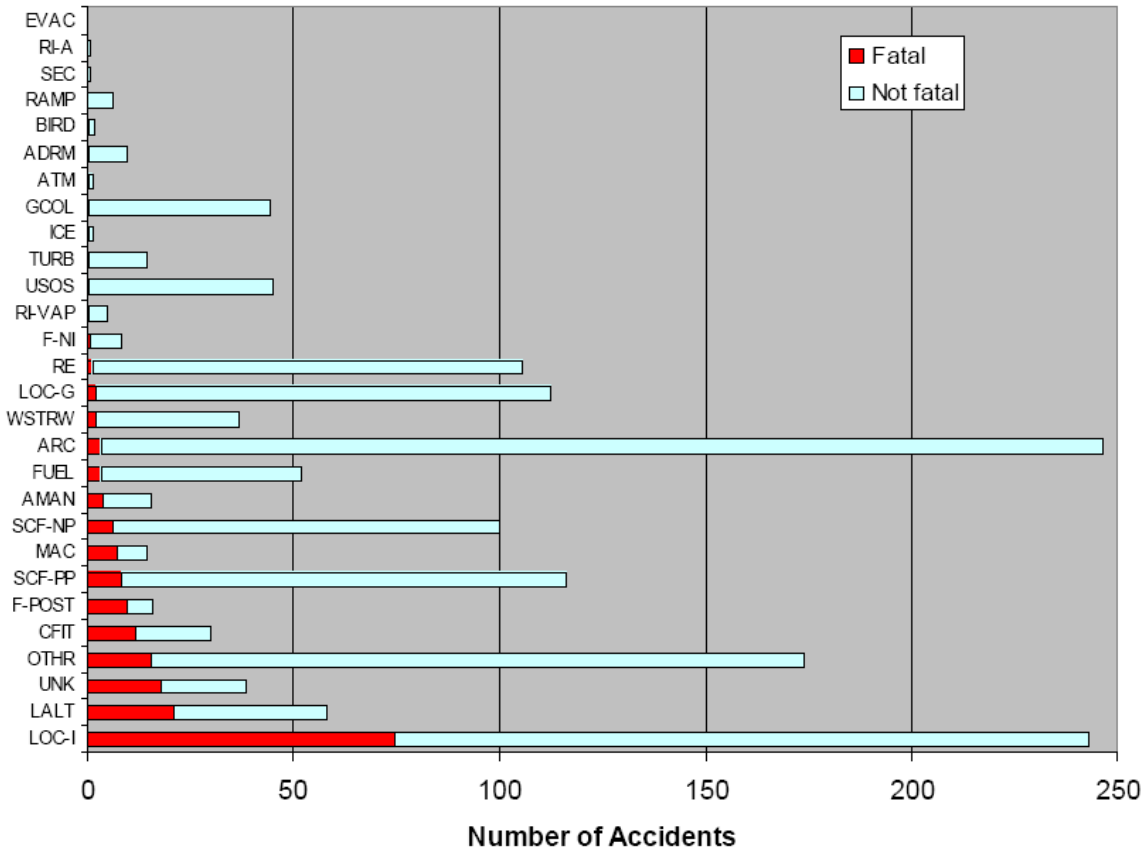
The majority (42%) of light aircraft involved in fatal accidents during the period 2006-2009 are aeroplanes. Microlights were involved in 24% of the fatal accidents. As in previous years, the utilisation data for aircraft (number of hours and flights completed) is unavailable. As a result it is not possible to determine if the number of fatal accidents correlate with the utilisation of each of the aircraft categories.

Table 2.4: Total number of accidents and fatal accidents for EASA MS registered aircraft with a mass below 2,250kg

Aircraft Category	Period	Total no. of accidents	Fatal accidents	Fatalities on board	Ground fatalities
Aeroplanes	1997-2006*	546	72	124	1
	2007	533	61	120	0
	2008	517	53	98	2
	2009	528	62	118	2
Balloon	1997-2006*	21	0	0	0
	2007	14	0	0	0
	2008	25	1	1	0
	2009	20	0	0	0
Glider	1997-2006*	175	17	17	0
	2007	187	20	21	1
	2008	178	16	16	0
	2009	213	20	25	0
Gyroplane	1997-2006*	5	1	1	0
	2007	6	3	4	0
	2008	12	3	3	0
	2009	12	1	2	0
Helicopter	1997-2006*	89	7	17	0
	2007	86	11	23	4
	2008	64	7	12	0
	2009	95	15	28	2
Microlight	1997-2006*	177	34	44	0
	2007	213	26	35	0
	2008	261	45	70	0
	2009	225	45	60	0
Motorglider	1997-2006*	52	9	15	0
	2007	46	9	19	0
	2008	41	10	11	0
	2009	74	8	8	0
Other	1997-2006*	56	11	13	2
	2007	72	12	16	0
	2008	46	5	5	0
	2009	67	12	12	0
Total	1997-2006*	1121	151	231	3
	2007	1157	142	238	5
	2008	1145	140	216	2
	2009	1234	163	253	4

**1997-2006 figures shown are the average per year for the period 1997-2006*

Categorisation of the accidents where adequate data is available shows that loss of control in flight represents the greatest cause of fatalities once again.



EASA will continue to make efforts to obtain light aircraft accident data for their future annual safety reviews and expects better data coverage as the reporting systems and awareness of lack of data matures in EASA Member States.

Section 3

Safety Trends in Ireland

This section primarily contains a synopsis of accident and serious incident data for Ireland from January 2006 to December 2010. The data used is collated by the IAA and the Air Accident Investigation Unit (AAIU) of the Department of Transport. The AAIU perform the classification of events as accident or serious incident. The definition of an accident and serious incident is defined by ICAO in Annex 13.

Commercial Aeroplane Transport

The commercial air transport operators in Ireland completed approximately 600,000 commercial flights in 2010. This represents just over 6% of the 9.5 million flights handled by Eurocontrol in 2009[11].

During 2010 there were three events categorised as accidents and eleven events categorised as serious incidents. In September 2010 an Irish registered Airbus A319 operated by Italian operator Windjet suffered extensive damage when landing at Palermo-Punta Raisi Airport, Italy. The investigation of the accident by the Italian air accident investigation board, Agenzia Nazionale per la Sicurezza del Volo (ANSV), is still ongoing at the time of publication of this review. The other two events classified as accidents occurred during airport ramp operations. In October, at a Spanish airport, passengers were subjected to jet blast from an aircraft departing its stand. This event is currently being investigated by Comisión de Investigación de Accidentes e Incidentes de Aviación Civil (CIAIAC), Spain. In November, at a UK airport, an aircraft struck a light post during pushback. This event is currently being investigated by the Air Accident Investigation Branch (AAIB) in the UK. The IAA will review any safety recommendations received from these events and action as appropriate.

At the end of December 2010, there were 617 large commercial air transport aircraft on the Irish register.

Table 3.1: Total no. of accidents, fatal accidents and serious incidents to Irish registered aeroplanes over 2,250 kg's involved in commercial air transport

Year	Non-Fatal Accidents	Fatal Accidents	Total Accidents	Serious Incidents
2006	1	0	1	10
2007	0	0	0	7
2008	5	1[12]	6	3
2009	2	0	2	12
2010	3	0	3	11
Total	11	1	12	43

Due to the very small set of data available (small number of accidents and serious incidents) it is not possible to identify any trends or common causes. Figure 2.1 earlier shows an analysis for the entire European dataset and includes the accidents from Ireland.

[11] Eurocontrol Annual Report 2009 available at http://www.eurocontrol.int/epr/gallery/content/public/docs/AR_2009.pdf

[12] Fatal accident involving Irish registered aircraft operated by TACA International Airlines, El Salvador. The Airbus A320 aircraft overran the runway while landing in Tegucigalpa-Toncontin Airport.

In 2010 the IAA received over 5,500 occurrence reports[13] in the IAA Safety Occurrence Tracking system.

> *The definition of an occurrence is contained in SI 285 of 2007 and it defines an occurrence as an operational interruption, defect, fault or other irregular circumstance that has or may have, influenced flight safety and that has not resulted in an accident or serious incident.*

The value of reporting occurrences is not in the individual reports but in the aggregated data. Each occurrence reported rarely contains an immediate safety concern that represents an immediate or pending danger to the aircraft and its passengers. It does, however, allow for the identification of possible areas of safety concern and help identify scenarios where a particular sequence of events could lead to a serious incident or accident.

The commercial Irish aviation industry, including airlines, air traffic service providers, airports, maintenance organisations and many other organisations involved in aviation report occurrences and provide details for minor events that pose no immediate safety threat. Figure 3.1 shows the most common occurrence categories for 2010.

The five most commonly reported occurrence categories are system component failures – non powerplant (SCF-NP), cabin events (CABIN), events during aircraft handling on ground (RAMP), bird strikes (BIRD) and mid-air collision related events (MAC).

The most common reported occurrences are the failure of components in various aircraft systems. This can include mechanical and electrical systems. Aircraft design allows for multiple component redundancies and, by design, the failure of a single component should not put the aircraft at risk of an accident or serious incident.

Events in the Cabin rarely lead to fatalities although EASA have recorded one fatal accident in this category in their European wide analysis. Cabin occurrences are predominantly minor safety events involving the general cabin and passengers. This can include items such as ill passengers, scalding from hot drinks and failure of general cabin equipment such as toilets and passenger seat items.

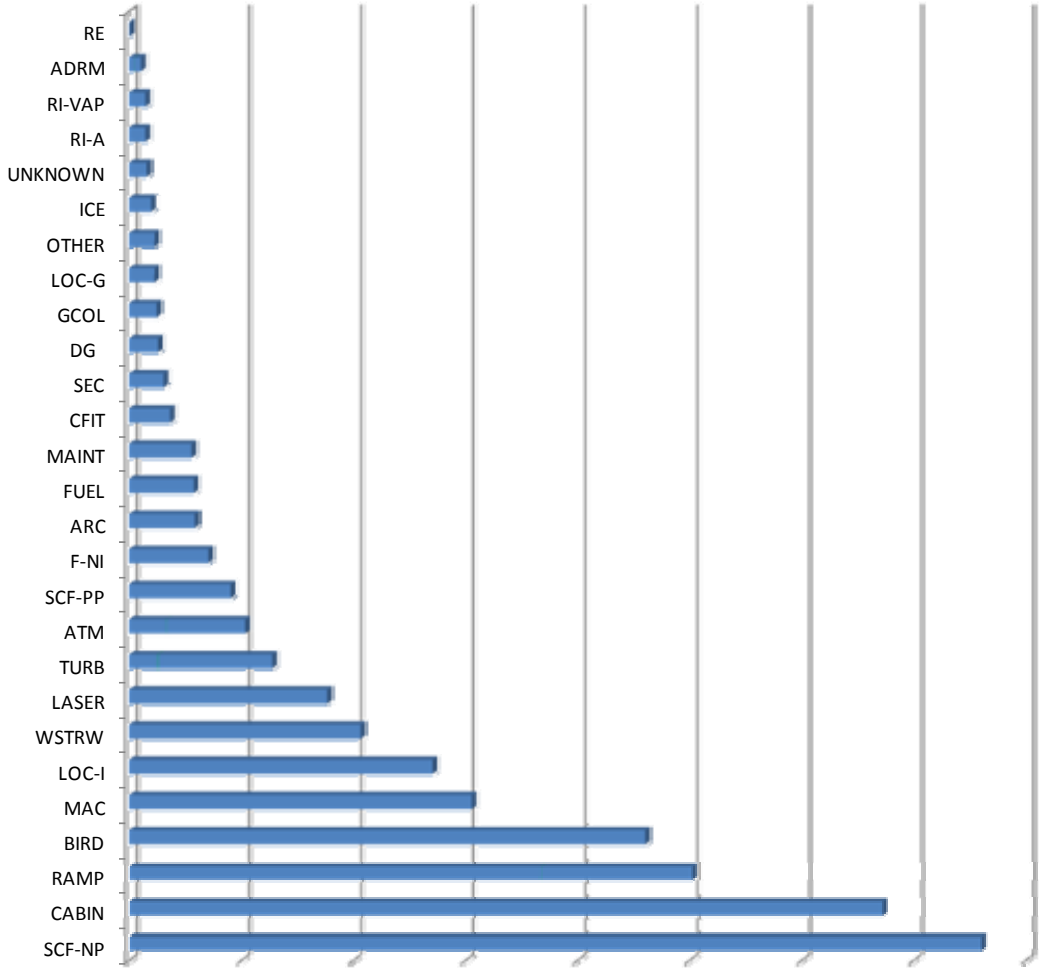
The category RAMP includes all ground handling events. This includes items such as the loading of passengers, aircraft cargo and passenger baggage, fuelling and de-icing services and the collision of servicing vehicles with stationary aircraft.

The BIRD category captures the reported possible or actual birdstrikes, the collision of an aircraft with a bird or multiple birds. Birdstrikes usually occur either on approach to, or takeoff from, an airport and can cause a great deal of damage and lead to serious incidents and accidents. The management of birds and other wildlife at airports is a key safety task of each airport.

MAC stands for mid air collisions, where two or more aircraft come into contact with each other while flying. All commercial air transport aircraft in Europe are fitted with an aircraft collision and avoidance system (ACAS). This system provides a safety barrier to ensure that aircraft remain adequately separated. The occurrences reported to the IAA predominantly involve the normal activation of ACAS warnings that advise the crew other aircraft are in the vicinity of the reporting aircraft.

[13] For more information on Occurrence reporting go to the IAA website at http://www.iaa.ie/index.jsp?p=139&n=148

Figure 3.1 Categorisation of Occurrences reported to the IAA during 2010



Large Helicopters

Table 3.2 indicates the number of accidents, fatal accidents and serious incidents involving helicopters over 2,250 kg's from 2006 to 2010 inclusive. Over the last five years there have been three accidents, one in 2006 and two in 2008. Two of the helicopters were registered abroad and none of the accidents resulted in a fatality. Three serious incidents were reported, 2 to helicopters registered abroad. The number of helicopters in this category registered in Ireland has decreased to 25 at the end of 2010.

Table 3.2: Total no. of accidents, fatal accidents and serious incidents to helicopters over 2,250 kg's

Year	No. A/C Registered	Total No. Accidents	Non-Fatal Accidents		Fatal Accidents		Serious Incidents	
			Irish	Foreign	Irish	Foreign	Irish	Foreign
2006	42	1	0	1	0	0	0	0
2007	45	0	0	0	0	0	0	2
2008	40	2	1	1	0	0	0	0
2009	31	0	0	0	0	0	0	0
2010	25	0	0	0	0	0	1	0
Total		3	1	2	0	0	1	2

General Aviation – Aeroplanes over 2,250 kg

The number of fatal accidents, accidents and serious incidents to airplanes over 2,250 kg's involved in general aviation from 2006 to 2010 is shown in Table 3.3. Since the beginning of 2006 there have been six accidents involving three Irish and two foreign registered airplanes. One accident involving a foreign registered aircraft during 2007 resulted in fatalities. The number of serious incidents reported in 2010 has dropped to zero. There were 30 aeroplanes registered in this category in Ireland at the end of 2010.

Table 3.3: Total no. of accidents, fatal accidents and serious incidents to GA Aeroplanes over 2,250 kg's

Year	Total Registered in Ireland	Total No. Accidents	Non-Fatal Accidents		Fatal Accidents		Serious Incidents	
			Irish	Foreign	Irish	Foreign	Irish	Foreign
2006	19	1	0	1	0	0	0	0
2007	23	2	0	1	0	1	0	0
2008	28	2	2	0	0	0	0	0
2009	33	1*	1	0	0*	0	1	0
2010	30	0	0	0	0	0	0	0
Total		6*	3	2	0*	1	1	0

* During Oct. 2009 an accident involving an Irish military airplane which resulted in the loss of two lives occurred. It is not included in the data as the IAA is responsible for safety oversight of civil aviation only.

Light Aircraft

The EASA report defines light aircraft as those below 2,250kgs maximum takeoff weight and the data presented in this section will use the same definition for consistency. Table 3.4 contains the number of accidents, fatal accidents and serious incidents according to the different types of light aircraft and whether the aircraft was registered in Ireland or abroad.

A total of 32 accidents to light aeroplanes have occurred over the last five years. Eight of these occurred during 2010, one of which resulted in fatalities. Two serious incidents were reported in 2010.

The fleet of light helicopters in Ireland continues to decrease. In December 2010 the fleet of light helicopters on the register has decreased to 69. In 2006 there were 140 light helicopters registered in Ireland. There were no accidents or serious incidents involving light helicopters in 2010. The total number of accidents since 2006 is 10. Foreign registered helicopters were involved in 6 of the 10 accidents.

There have been 10 accidents involving microlights since 2006. Once again foreign registered aircraft accounted for the majority of these accidents – 6 of the accidents involved foreign registered microlights. There were 2 serious incidents reported in 2010. There have been no fatalities in this category in the last five years.

The microlight fleet registered in Ireland has continued to grow and increased to 151 aircraft by the end of 2010. New licensing regulations introduced in 2010 will assist further growth of this category aircraft and reduce the number of foreign registered aircraft based in Ireland. It must be noted that not all microlights on the register are continuously

maintained in an airworthy condition. In 2010, just under 100 microlights held a valid permit to fly. This means that over 50 microlights currently registered with the IAA did not have a valid permit and were not able to fly in 2010.

Table 3. 4: Total number of accidents, fatal accidents and serious incidents to light aircraft

Year	Total Registered in Ireland[14]	Total No. Accidents	Non Fatal Accidents		Fatal accidents		Serious Incidents	
			Irish	Foreign	Irish	Foreign	Irish	Foreign
Light Aeroplanes								
2006	339	3	0	2	1	0	0	0
2007	423	3	0	2	1	0	1	1
2008	447	9	6	1	1	1	0	0
2009	392	9	5	4	0	0	1	2
2010	298	8	4	3	1	0	1	1
Total		32	15	12	4	1	3	3
Light Helicopter								
2006	140	2	0	1	0	0	0	1
2007	161	6	0	5	1	0	0	0
2008	160	0	0	0	0	0	0	0
2009	107	3	2	0	1	0	1	0
2010	69	0	0	0	0	0	0	0
Total		10	2	6	2	0	1	1
Microlights								
2006	108	1	0	0	0	0	0	0
2007	118	4	1	3	0	0	0	0
2008	122	2	0	2	0	0	0	0
2009	147	2	1	1	0	0	0	0
2010	151	2	2	0	0	0	1	1
Total		10	4	6	0	0	1	1
Glider								
2006	-	2	1	0	1	0	0	0
2007	-	1	0	1	0	0	0	0
2008	-	0	0	0	0	0	0	0
2009	29	0	0	0	0	0	0	0
2010	22	2	2	0	0	0	0	0
Total		5	3	1	1	0	0	0
Other*								
2006	-	0	0	0	0	0	0	0
2007	-	1	1	0	0	0	0	0
2008	-	0	0	0	0	0	0	0
2009	-	0	0	0	0	0	1	0
2010	-	1	1	0	0	0	0	0
Total		2	2	0	0	0	1	0

**Other includes events involving equipment that is not required to be registered by the IAA such as powered parachutes and powered foot-launched gliders.*

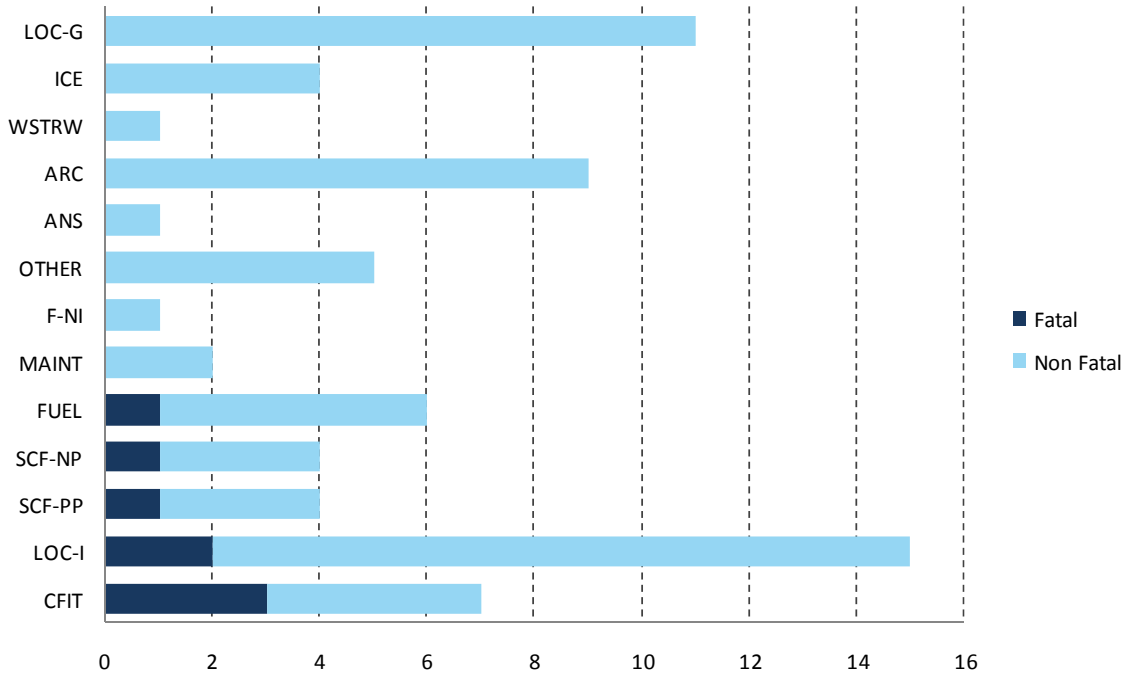
[14] Total Registered – 2010 figures are for aircraft on Irish register on31st December 2010

The recent survey of the GA Community in Ireland has provided some valuable information. For example, 85% of the microlight respondents indicated they own their microlight and fly a median[15] of 65 hours in the last year. This would indicate the Irish microlight fleet flew in the region of (100 aircraft X 65hours=) 6,500 aircraft hours in 2010 with two accidents and one serious incident, a rate of accident or serious incident once every (6,500/3) 2,167 aircraft flying hours.

The number of accidents involving gliders has increased to 5 in the last 5 years. This is relatively high considering the low level of activity in this area. Gliding carries its own unique risks including 'off field' landings, the need to land at a location other than an aerodrome. Two of the accidents involved 'off field' landings. The number of registered gliders in Ireland is 22 and there are few foreign registered gliders based in Ireland.

A preliminary categorisation of Irish accident and serious incidents between 2006-2010[16] (a small dataset of approximately 70 events) shows similarities to the wider European accident data for light aircraft. Controlled flight into terrain or obstacles (CFIT) and loss of control in flight are the two major categories involving fatalities. Similar to the categorisation of light aircraft accidents at the European level, the quality of this categorisation has limitations. The number of events is statistically small and the categorisation criteria may not be the same as that applied by EASA.

Figure 3.2: Preliminary categorisation of GA Accidents and serious incidents in Ireland 2006-2010



It was evident in the review of the data that there have been a number of events involving collision with obstacles (CFIT) either on final approach or takeoff from licensed and unlicensed aerodromes. Likewise there were events involving serious injuries where aircraft struck solid objects in the vicinity of the aerodrome or landing site after some other initiating event such as loss of control.

[15] Median – the middle or half way point when the respondent flying hours figures were arranged in order from smallest to largest. See the IAA GA Survey report for further details.

[16] The categorisation was limited to AAIU published accidents and incidents reports from 2006-2010.

Carburettor icing has been identified as a contributory factor in a number of events in Ireland but does not feature in the European accident analysis. This may be a simple result of carburettor icing being categorised as SCF-PP elsewhere or may be a unique product of the prevailing Irish weather conditions. In any case, it is important for Irish aviator's to understand the problem and include it as part of their threat and error management when flying.

There are a number of issues which remain of particular concern to the IAA;

a) A high proportion of all GA accidents in Ireland involve foreign registered aircraft. Although these are foreign registered aircraft, the accidents and serious incidents primarily involve people resident in Ireland.

b) There is a lack of occurrence reporting in the GA community. Without this vital information it is impossible to pro-actively identify GA hazards and to raise awareness of them, preventing future similar events that may lead to a serious incident or accident.

c) There are a number of events involving collisions with obstacles in the close vicinity of aerodromes. In most cases the obstacle was not the primary cause of the accident, as is the case with some CFIT incidents, but played a factor in its outcome. The proximity of solid obstacles such as maturing trees and concrete posts will increase the risk of serious injury or fatality.

Aerodromes and Air Navigation Services

There are 29 licensed aerodromes in Ireland. Air traffic services in Irish airspace and at the three main airports Dublin, Cork and Shannon are provided by the IAA Operations Division. This division is functionally separate from the Safety Regulation Division. The Safety Regulation Division is also responsible for the regulation and oversight of seven other Air Navigation Service providers within the State.

Accident and serious incident statistics are presented by linking a particular category of aircraft to the event, however, the aerodrome where an event occurs can often be a contributory factor to the accident or serious incident. Likewise air traffic management can be a contributory factor in accidents and serious incidents.

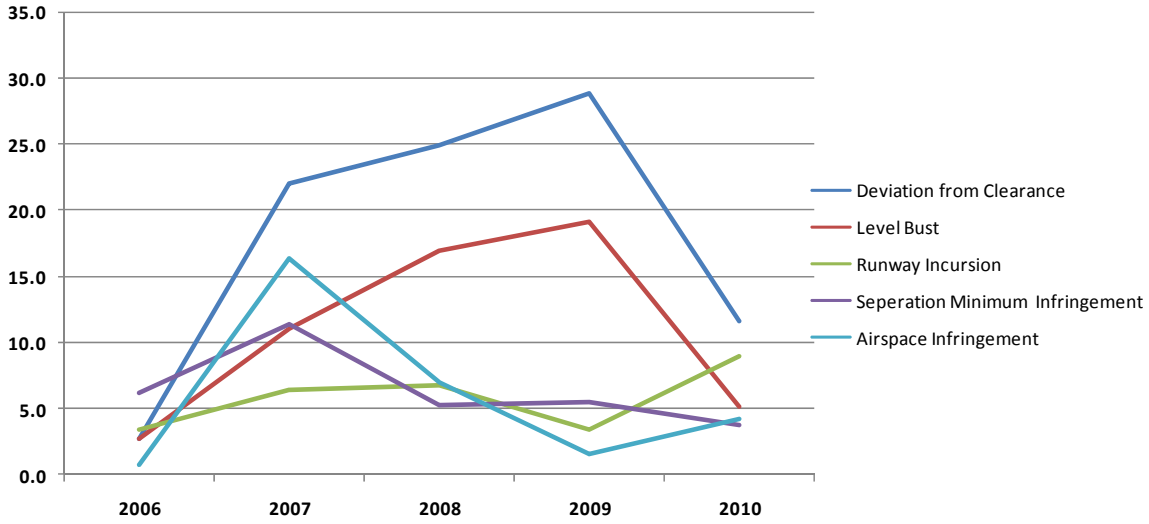
Ireland's safety performance in the area of Aerodromes and air traffic management faces the same challenges as all aerodromes and airspace worldwide. EASA has identified a number of key event categories, including mid-air collision and runway incursion, which they will target to achieve safety improvements in Europe from 2011-2014.

Aligned with the European strategy Ireland tracks a number of key safety performance indicators that are linked to these categories - separation minimum deviations, deviation from ATC clearance, level busts, airspace infringement and runway incursions.

Figure 3.3 shows the trends (number of reported occurrences per 100,000 terminal and enroute movements) for each of these key safety performance indicators over the last five years at the three main international airports, namely Dublin, Cork and Shannon.

In the periods 2006 to 2009 there was a marked increase in the rate of deviations from clearances and level busts. Focussed analysis in these areas and the implementation of mitigation actions has seen these rates decrease dramatically in 2010. There has been a small rise in the rate of runway incursions and this shall be a priority for the IAA in 2011.

Figure 3.3: Number of reported occurrences of each risk type per 100,000 movements



Note 1: rate for runway incursion is per 100,000 terminal movements

Service providers are continuously developing their systems and technology to achieve greater efficiency and higher safety standards. Some system improvements that will have a positive impact on safety rates in the next two years will include the introduction of advanced surface movement guidance and control systems (A-SMGS) and the restructuring of standard terminal arrival routes (STARS) and departures (SIDS) at Dublin airport.


IAA

Section 4

Safety Recommendations

Safety Recommendations

Each year the IAA may receive safety recommendations from accident investigation authorities of any State where an Irish registered aircraft, approved organisation or Irish airspace has been a factor in an accident, serious incident or incident.

> *In Ireland, the Air Accident Investigation Unit (AAIU) is the responsible body for the investigation of accidents, serious incidents and incidents and regularly issue reports and make safety recommendations based on their investigation findings.*

In 2010, the IAA received a total of eight safety recommendations from the AAIU. The IAA did not receive any safety recommendations from any other State in 2010.

The AAIU made one recommendation (Serious Incident: Gulfstream IV SP, VT-MST, near Killarney Co. Kerry, Ireland, on 13 July 2009, recommendation SR 16 of 2010) to Kerry airport to review, in conjunction with the Irish Aviation Authority, the provision of radar information to support the air traffic control service provided by Kerry ATS unit. This recommendation involves the IAA Operations Division (air navigation services provision) only and is therefore not included in this review.

Serious Incident: Airbus A319-132, D-AGWK, 27 May 2008, Report No. 2010-008

Recommendation SR 12 of 2010:
The Irish Aviation Authority (IAA) should review the licensing requirement of major airports in Ireland, as specified in the Manual of Aerodrome Licensing, to comply with ICAO guidelines for large airports and to ensure that the provision of adequate medical services are part of the licensing provisions.

IAA Action:
The IAA do not accept this safety recommendation.

The Irish Aviation Authority publishes the Irish national regulations applicable to aerodromes as the Aerodrome Licensing Manual, ALM.002. These regulations contain all the Standards and Recommended Practices published by ICAO in Annex 14.

ICAO also publishes additional supporting documentation for airports. The principal documents are the Airport Service Manuals Parts 1 to 9 and the Aerodrome Design Manual Parts 1 to 6 which are not included verbatim in ALM.002. References are made to these supporting documents where appropriate.

Chapter 6 of ALM.002 deals with Emergency Planning and contains two references to the ICAO Airport Services Manual, Part 7, first as a general note to the opening paragraph, and then specifically in Clause 6A.4.2 under Aerodrome Medical Services. It would be inappropriate to amend the Aerodrome Licensing Manual to include only this part of the complex array of supporting documentation for aerodromes published by ICAO.

The IAA is satisfied that its standards for airports meet ICAO recommended guidelines.

Accident: Stampe SV4A, EI-CJR, Craughwell Co. Galway, 9 August 2009: Report No 2010-006

Recommendation SR 04 of 2010:
The IAA should consider revising AN A16 to include relevant scientific and operational information such as that made available by Transport Canada and the UK's CAA and LAA.

IAA Action:
The IAA accept this safety recommendation.

The IAA have recently re-issued Aeronautical Notice A.16 in two parts: A.16A and A.16B available on the IAA website.

Recommendation SR 05 of 2010:
The IAA should review and clarify the position regarding the use of Mogas in aircraft operating in Ireland without carburettor heating systems.

IAA Action:
The IAA accept this safety recommendation.

The IAA have recently re-issued Aeronautical Notice A.16 in two parts: A.16A and A.16B available on the IAA website.

Recommendation SR 06 of 2010:
The IAA should consider the use of additional means to educate the General Aviation community regarding MOGAS related safety issues.

IAA Action:
The IAA does not accept this safety recommendation.

The IAA have published a wealth of reference and safety information regarding the use of MOGAS as an alternative fuel to AVGAS 100LL such as:

i General Aviation Safety Information Notice - Motor Gasoline Fuels (MOGAS).
ii Piston Engine Icing ("MOGAS makes carb icing more likely"). (Reproduced from UK CAA Safety Sense Leaflet 14A)
iii Airworthiness Advisory Memorandum 01/01 - The use of Motor Gasoline Fuels (MOGAS) in aircraft and the current situation Re. AVGAS.
iv AIC 11/93 - Operation of Propeller Driven Aircraft in icing conditions.
v AIC 11/97 - Induction System Icing on Piston Engines.
vi AIC 28/99 - Fuelling.
vii AIC 11/00 - Pre Flight Preparation by Pilots for VFR Flights.
viii AIC 12/00 - Fuel at Aerodromes and Heliports.
ix General Aviation Memorandum 02/09 - General Aviation Winter Flying.

The IAA will, however, review the availability of information on the IAA website and, where appropriate, include cross references in an effort to make the information more user friendly.

Accident: Schweizer Model 269C-1, EI-CZL, Near Kilshanchoe, Co. Kildare at 53° 22' N, 006° 52' W, 1 Apr 2009: Report No 2010-009

Recommendation SR 15 of 2010:
That the IAA undertake to develop a suitable awareness campaign to inform general aviation pilots on the potential hazards of cable strikes.

IAA Action:
The IAA accept this safety recommendation

The IAA has published safety information on wire strikes in the aviation magazine 'Flying in Ireland' and on the IAA website.

Additionally, specific wires strike awareness training material will be produced and distributed as part of safety promotion initiatives for general aviation.

Accident: Pipistrel Taurus 503, EI-ECS, Birr Airfield Co. Offaly, Ireland, 6 December 2008: Report No 2010-013

Recommendation SR 17 of 2010:
The Irish Aviation Authority should require that adequate markings be placed on the exterior of an Irish registered aircraft equipped with a ballistic parachute/recovery system.

IAA Action:
The IAA accepts this recommendation for non-type certified aircraft.

SR 18 of 2010 addressed to EASA deals with type certified aircraft.

The IAA have written to the owners of all Irish registered aircraft with ballistic parachute recovery systems requiring the installation of the placard before 12/01/2011.

The IAA have agreed a revised procedure for registering non-type certified aircraft coming onto the Irish register. These aircraft shall have the placard installed prior to registration and this will be confirmed by the person or association processing the application for aircraft registration.

Accident: Sikorsky S-76B, N399BH, Bettystown Co. Meath, 18 September 2008: Report No 2010-019

Recommendation SR 23 of 2010:
The IAA should incorporate the provisions of OAM No. 08/00 into Irish Air Law Regulation.

IAA Action:
The IAA does not accept this recommendation.

The purpose of the IAA Operation Advisory Memorandum (OAM) is to provide additional guidance to rotorcraft pilots when selecting landing sites. Each rotorcraft type is different and the detailed minimum requirements for landing and take-off of a specific type is contained in the approved Flight Manual.

Irish Air Law Regulation already contains the requirement for a Pilot-in-Command to operate an aircraft in accordance with the appropriate Rotorcraft Flight Manual. This requirement is contained in S.I. 61 of 2006, (Operations) Order at Article 51(1)(a & b).

Accident: Robinson R 44 Raven II, Reg: EI-UNI, at Enniskerry Co. Wicklow, Ireland, on 25 July 2009: Report No 2010-023

Recommendation SR 24 of 2010:
The IAA should issue a safety advisory to the aviation community that promotes awareness of the risks arising from the use of mobile phones in aviation, including the use of such devices in the flight preparation stage.

IAA Action:
The IAA accepts this recommendation.

The IAA shall issue a safety leaflet in the 1st quarter of 2011 highlighting the danger of distractions associated with the use of portable electronic devices, such as mobile phones, when piloting or in the vicinity of aircraft.


IAA

Section 5
Oversight of the IAA

Oversight of the IAA

External oversight of the IAA Safety Regulation Division is conducted by a number of external independent bodies.

In 2000 ICAO commenced a system of audits of all 190 ICAO contracting states to verify the implementation of certain ICAO standards in national regulations. This programme was further expanded in 2005 to audit the effective implementation of all ICAO safety related standards and recommended practices.

Part of the European Aviation Safety Authority (EASA) remit is to ensure a common standard of implementation of the aviation regulation across all European states. EASA conduct standardisation audits at regular periods.

Eurocontrol, who commenced audits of Member States in 2002, performs audits on the implementation of ANS Regulation functions and ESARRs.

Under Section 32 of the Irish Aviation Authority Act, 1993, the Minister of Transport commissions an audit of the IAA Safety Regulation Division.

Ireland has a bi-lateral aviation safety agreement with the USA and the IAA conducts oversight of FAR 145 aircraft maintenance organisations in the State under that agreement on behalf of the FAA. This agreement is also subject to regular review by the FAA.

The IAA is an E.N. ISO 9001:2000 accredited organisation and is regularly subject to surveillance audits. These are carried out by the National Standards Authority of Ireland (NSAI), to ensure the effectiveness of our Business Management Systems.

In 2010, there were five major audits of the IAA Safety Regulation Division. ICAO completed a 'comprehensive system audit' of the complete aviation system in Ireland and the results are published by ICAO on http://www.icao.int/fsix/auditRep1_icvm.cfm . EASA completed four separate standardisation audits in the areas of initial airworthiness, continued airworthiness, safety assessment of foreign aircraft and flight training devices. EASA do not publish the results of their standardisation audits. The IAA was also subject to an ISO 9001:2000 audit in 2010 and continues to hold this accreditation.

Section 6

Future direction of Safety Performance

Improvements to Worldwide Aviation Safety

ICAO continues to develop new strategies to continuously improve the level of safety in aviation. In 2010 ICAO organised a high level safety conference to build consensus, obtain commitments and formulate recommendations deemed necessary for the effective and efficient progress of key safety activities by ICAO.

A number of the recommendations have now been agreed as resolutions by the contracting states of ICAO at the recent ICAO 37th Assembly and will be adopted over the next three years.

Some of the key recommendations agreed are as follows:

- Identify and monitor existing types of safety risks to civil aviation and develop and implement an effective and relevant global response to emerging risks.
- Ensure the timely implementation of ICAO provisions by continuously monitoring the progress towards compliance by States.
- Conduct aviation safety oversight audits to identify deficiencies and encourage their resolution by States.
- Develop global remedial plans that target the root causes of deficiencies.
- Assist States to resolve deficiencies through regional remedial plans and the establishment of safety oversight organisations at the regional or subregional level.
- Encourage the exchange of information between States to promote mutual confidence in the level of aviation safety between States and accelerate the improvement of safety oversight.
- Promote the timely resolution of safety-critical items identified by Planning and Implementation Regional Groups (PIRGs).
- Support the implementation of safety management systems across all safety-related disciplines in all States.
- Assist States to improve safety through technical cooperation programmes and by making critical needs known to donors and financial organisations.

In addition the ICAO Global Aviation Safety Plan (GASP) includes three safety targets to be achieved by 2011:

- Reduce the number of fatal accidents and related fatalities worldwide
- Achieve significant reductions in the global accident rate
- Ensure that no ICAO region has an accident rate more than double the world average

European Approach

A regional approach to the ICAO requirements of State Safety Programmes is being developed in Europe. The European Aviation Safety Programme (EASP)[17] is an integrated set of regulations and activities to improve safety within the EASA Member States. Based on the roles and responsibilities established in the regulatory framework, it places the management of safety at the core of the system and establishes new processes to collectively address safety priorities by all the players, beyond just regulatory authorities.

The risks identified through this mechanism are mitigated by a set of actions collected in a Safety Plan, a public document to be published by EASA[18]. The present document is the first attempt at the collective identification of priorities, a process that will evolve in the years to come once the activities designed under the EASP are fully deployed. The EASP is the basis for setting high level safety objectives in support of an overarching Aviation Safety Strategy. The Strategy will set out a clear aim to the European Union's objective of maintaining a high and uniform level of civil aviation safety in Europe. It will aim to move the European Union's management of safety towards a more systematic and proactive one which utilises the best safety management techniques.

The proposed new activities deployed in the EASP are organised around a PDCA (Plan, Do, Check, Act) cycle in order to highlight the focus on continuously improving the approach. Furthermore, the activities carried out to collectively improve safety are conceptually grouped in three functional areas:

- The **rulemaking function** consists of developing all the necessary regulatory material in order to not only take action where a specific safety risk must be mitigated through regulation, but also to create the proper environment for the other actors and stakeholders to best play their role through other implementation measures (such as Acceptable Means of Compliance, Certification Specifications and Guidance Material). In the system set forth by the Basic Regulation, this is mainly the function of EASA. Through its activity, the Agency helps create the proper regulatory environment for the system to function.

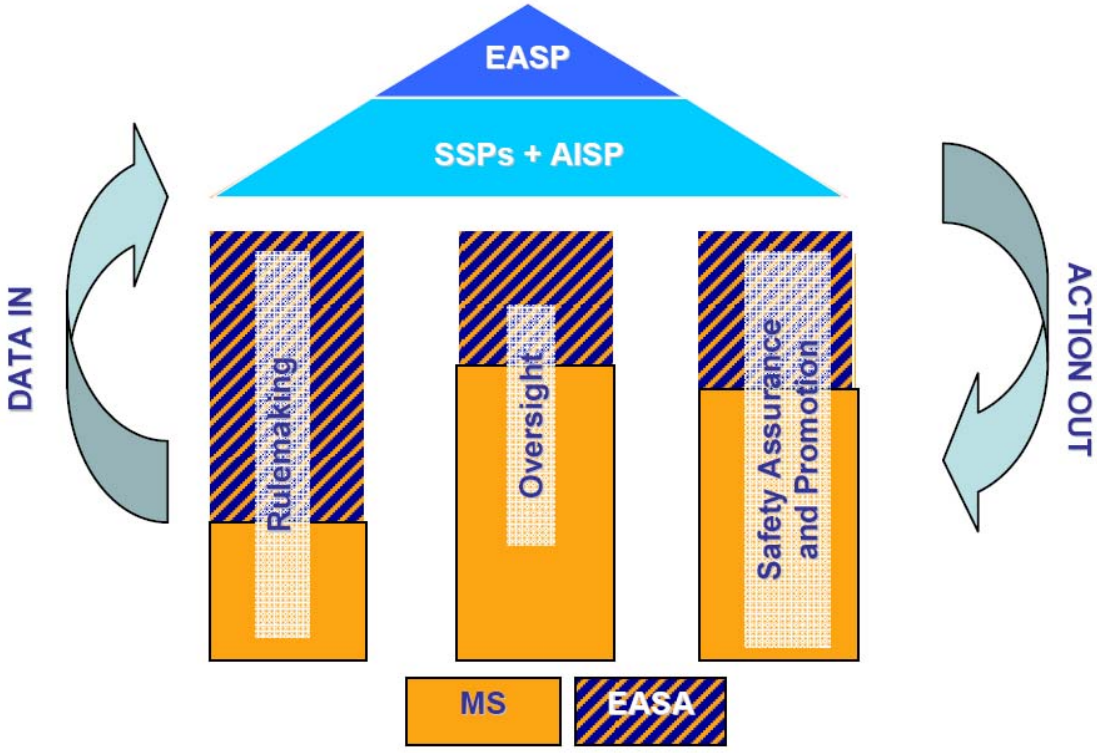
- The **oversight function** is taken here in its broadest meaning. All those who act to ensure that regulated persons, products or services comply with the regulations are included. Oversight encompasses both the review that is done when issuing an approval for the first time, and the continuous surveillance thereafter. The responsibility for carrying out oversight lies with the Member States and EASA, each one being the *certifying authority* according to the split of responsibilities defined by the Basic Regulation.

- The **safety assurance and promotion function** aims at gathering, sharing and analysing safety data coming from accident and occurrence reports, issuing safety recommendations for the improvement of safety, fostering research in particular areas where safety concerns exist and promoting safety through national and pan-European initiatives or communication campaigns. Through this function safety data is fed into the system and its performance can be measured.

[17] EASP will be made available on the EASA website at www.easa.eu.int
[18] European Aviation Safety Plan 2011-2014 will be made available on EASA website at: www.easa.eu.int

Figure 6.1 summarises the three areas described above which EASA describes as its three pillars. The split of responsibilities between EASA Member States and the Agency is also highlighted.

Figure 6.1: Structure of the proposed European Aviation Safety Programme



Rulemaking, Oversight and Safety Assurance and Promotion activities are shared among the Member States and the European Institutions. The EASP describes the roles and responsibilities that each of them have while performing these functions.

National Approach

Ireland's State Safety Programme[19] (SSP) describes the regulations and activities to manage safety in Ireland.

As certain competencies have been transferred to EASA it is necessary and sensible that Ireland's SSP and the EASP are linked and actions co-ordinated. The present EASA Plan 2011-2014 collects pan-European issues and priorities while individual national safety concerns remain at the individual state level. National action plans should reflect how national efforts may contribute to the actions at European level and where the States need to act solely at the national level.

The IAA remains the competent authority for the regulation of certain operations and aircraft as detailed in Annex II of regulation EC No. 216/2008. Annex II include aircraft such as homebuilt, classic and vintage aircraft and microlights and the IAA will continue to develop national legislation and oversight functions in line with the overall state safety programme concepts, namely, the proactive management of risk.

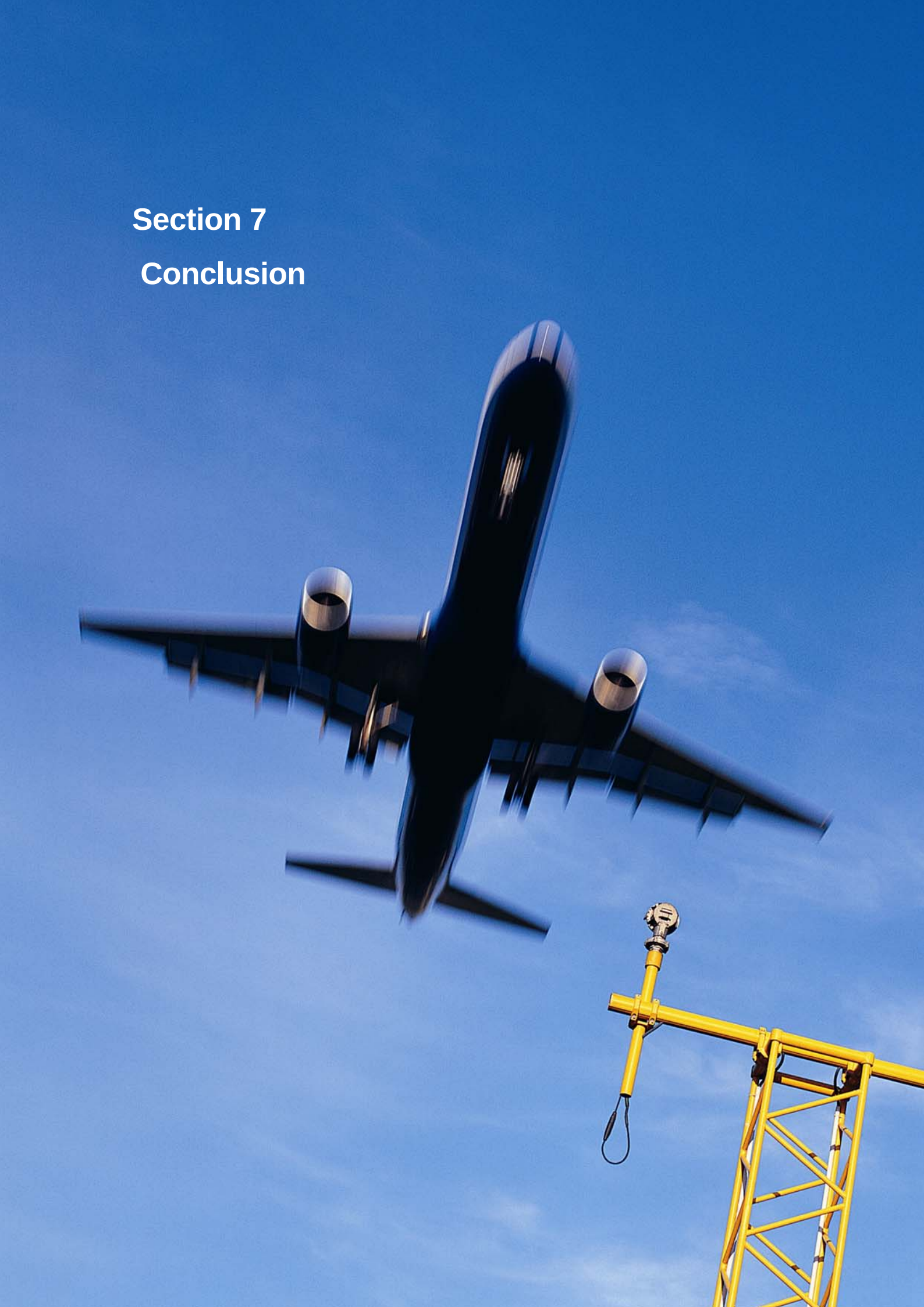
In early 2011, the IAA will publish a Safety Plan 2011-2012. This plan will outline the key safety areas that the IAA will target in the next two years and shall be aligned with the EASA priorities where applicable. The plan will be revised annually and the annual safety performance review will provide an update on how the IAA is performing against the plan.

[19] Details of Ireland's SSP are in the IAA General Advisory Memorandum 03/10 available at: http://www.iaa.ie/index.jsp?p=93&n=97&a=225&pp=470&nn=474&lID=754


IAA

Section 7

Conclusion



Since the commencement of passenger services in the last century, safety of the passenger quickly became a major imperative for aviation. Fatal accidents rates have dropped substantially over the last few decades and commercial air transport in Europe today is safer than in any previous decade.

Within Europe, the focus is on developing a common safe aviation system across all Member States. This common approach extends from the provision of air navigation services through to the design of aircraft and the regulatory oversight regimes applied in each Member State. When analysing the performance of commercial air transport it is somewhat misleading to look at Irish operators in isolation. Each operator flies to other Member State airports, use air traffic services from other countries and indeed utilise a multitude of services regulated by other States. While an operator from one State may suffer an accident, the root cause of the accident may lie with, for example, the airport design or operation in another State.

The EASA initiatives to develop a European Aviation Safety programme and to publish a European Aviation Safety Plan 2011-2014 are welcome developments. It will provide the opportunity to co-ordinate safety initiatives at a pan-European level and hopefully we will see the results of this initiative over the next decade in a further reduction in the fatal accident rates.

The GA sector in Ireland differs to commercial air transport. While there are elements of this sector that are international, it is primarily based in Ireland and most of the services utilised are regulated by the IAA.

This review gives detailed information for Ireland on all GA accidents and serious incidents over the last five years. What the review is unable to provide is a benchmark against other European countries. Europe is unable to collate accurate aircraft utilisation data for the GA fleet at this time. Without this data it is impossible to calculate accident rates. EASA will continue in their efforts to collate the relevant data across Europe and the IAA will explore a number of options with industry to gather this data in Ireland.

While the decrease in the overall number of accidents in the general aviation sector from 15 in 2009 to 13 in 2010 is welcome, we cannot conclude that this is the result of an overall improvement in safety culture or practices. Accurate aircraft utilisation data is not available and the drop in accident figures may be simply attributable to less activity in the sector in 2010. The challenge for the IAA and the aviation community is to continually increase awareness of the risks and how to reduce exposure to them.

Glossary of Terms

A
AAIB Air Accident Investigation Branch, UK
AAIU Air Accident Investigation Unit, Ireland
ADREP Accident Data Reporting system
AFISO aerodrome flight information services officer
ALM aerodromes licensing manual
ANS air navigation services
ANSV Agenzia Nazionale per la Sicurezza del Volo, Italy
ARC abnormal runway contact
ASD Aeronautical Services Department
ATC Air Traffic Control
AWSD Airworthiness Department

B
BEA Bureau d'Enquêtes et d'Analyses

C
CAST Commercial Aviation Safety Team
CFIT controlled flight into terrain
ICAIAC Comisión de Investigación de Accidentes e Incidentes de Aviación Civil, Spain

E
EASA European Aviation Safety Agency
(MS) 27 EU Member States plus Iceland, Liechtenstein, Norway and Switzerland.
EASP European Aviation Safety Plan
ECR European Central Repository
EGAST European General Aviation Safety Team
ESARR European Safety and Regulatory Requirements

F
FAA Federal Aviation Authority (of the United States of America)
FOD Flight Operations Department

G
GA General Aviation

I
IAA Irish Aviation Authority
IATA International Air Transport Association
ICAO International Civil Aviation Organisation
ISO International Organisation for Standardization

L
LOC Loss of control
LOC-I Loss of control in flight
LOC-G Loss of control on ground

M
MAC Mid air collision

O
OAM Operations Advisory Memorandum

R
RPPL Regulatory Performance and Personnel Licensing
RSSO Regional Safety Oversight Organisations

S
SAFA Safety Assessment of Foreign Aircraft
SCF-PP System Component Failure – powerplant
SCF-NP System Component Failure – non powerplant
SID Standard instrument departure
SMS Safety Management system
SSP State safety programme
STAR Standard terminal arrival route

T
TAWS Terrain Awareness and Warning System

W
WSTRW Windshear or thunderstorm related events

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