



Ente Nazionale per l'Aviazione Civile

Safety Report

Annual Safety Report of the Italian Civil Aviation

Issued by ENAC Safety Unit



2014-2015

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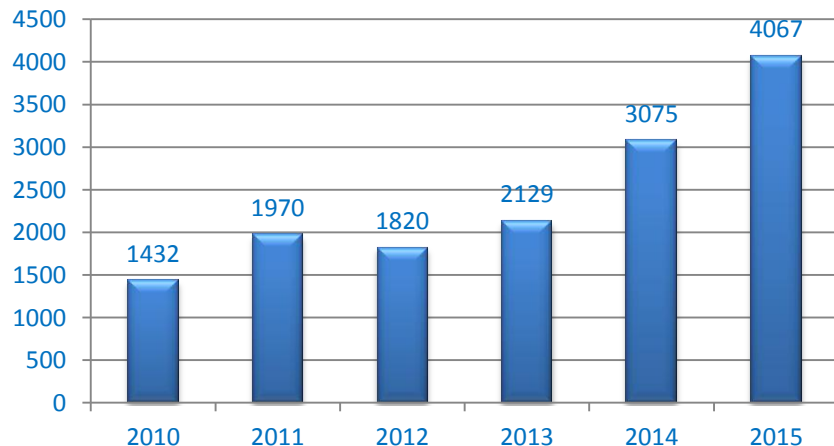
1. Introduction

This report comes from the need to publish the results of the analysis of safety events collected into the ENAC Occurrence Reporting system (**eE-MOR** system). Such analysis, in the framework of the *European Aviation Safety Programme (EASP)* and of the *European Aviation Plan for Aviation Safety (EPAS)* is the "driver" for safety actions that ENAC intends to apply through the **ENAC Safety Plan**. Results shown in this document can be also an useful reference for the SMS of aeronautical organizations and to help them to fix safety targets for their Safety Performance indicators (SPI's).

Moreover, ENAC has to comply with the obligation to make an analysis of safety data collected, as required by the Regulation (EU) 376/2014, entered into force on 15 November 2015, and for this reason, it was decided to publish this Safety Report in English too so it will be readable for the other Aviation Authorities and EASA as well as to the interested international aviation professionals.



eE-MOR reports per Year



ENAC wants to further expand the contents of the report and, therefore, it is expected that during the first half of 2017 results of the analysis made on 2016 data will be included in order to have a trend on a three-years period.

It is also provided that, on the experience gained with this initial edition, contents of the report should be further adapted to the needs of Italian stakeholders.

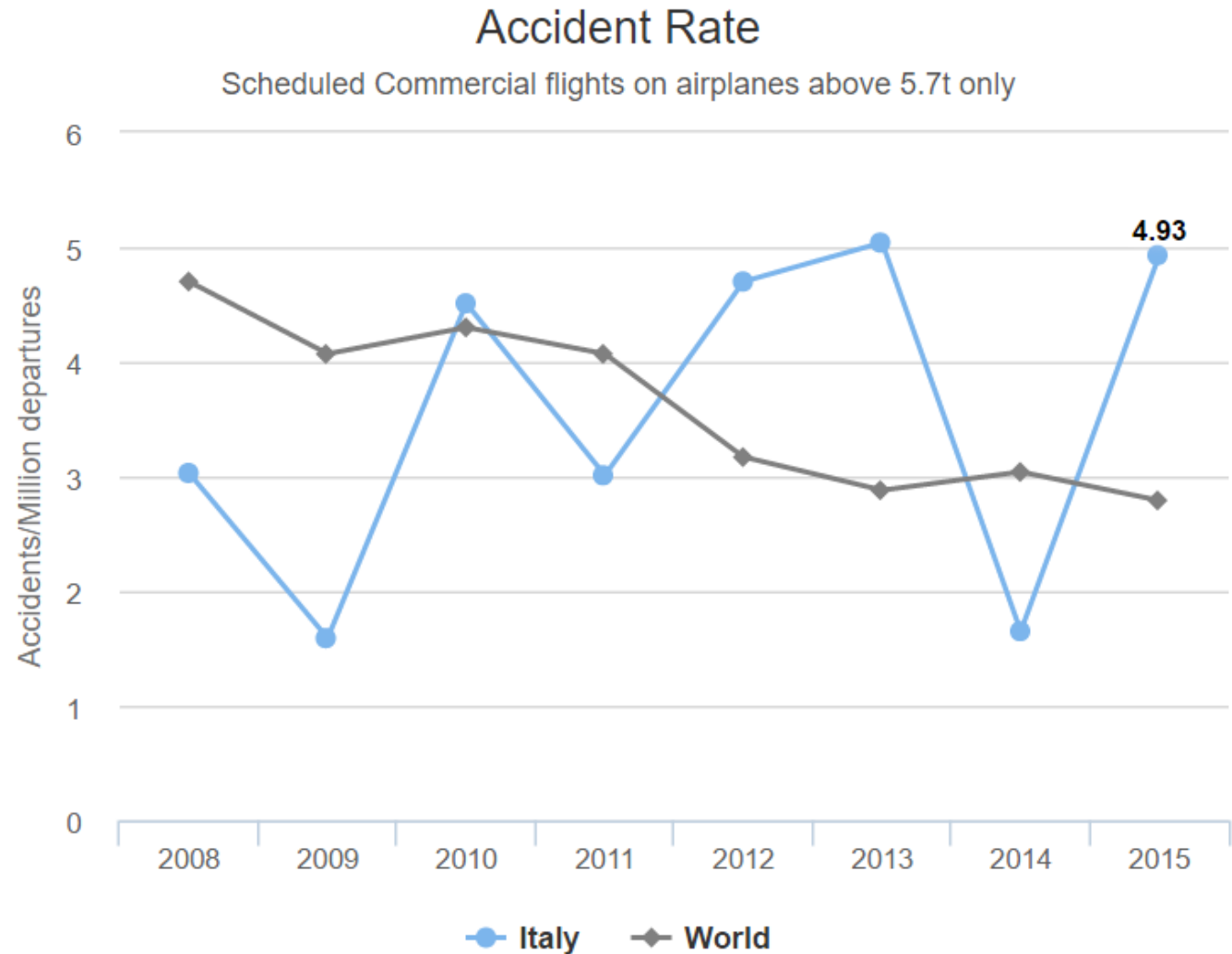
Note: Data used in this report are stored in the eE-MOR system as incident, serious incident and accident (see § 3) and analysis has been done using methodologies explained by ICAO during a special course held in ENAC's premises in 2016.

2. Accident Rate

The graph shows, for scheduled Commercial Flights of airplanes with MTOW > 5700 Kg, the accident rate of Italy versus the world (data source is ICAO).

Scattering of data for the Italy is due to the limited amount of data available, statistically not comparable to the much greater number of ICAO data.

However the Italy's trend can be considered substantially comparable to the world average.



3. eE-MOR system – Number of Occurrences

EE-MOR = electronic ENAC – Mandatory Occurrence System

For info about the [eE-MOR system](#) please visit the ENAC website.

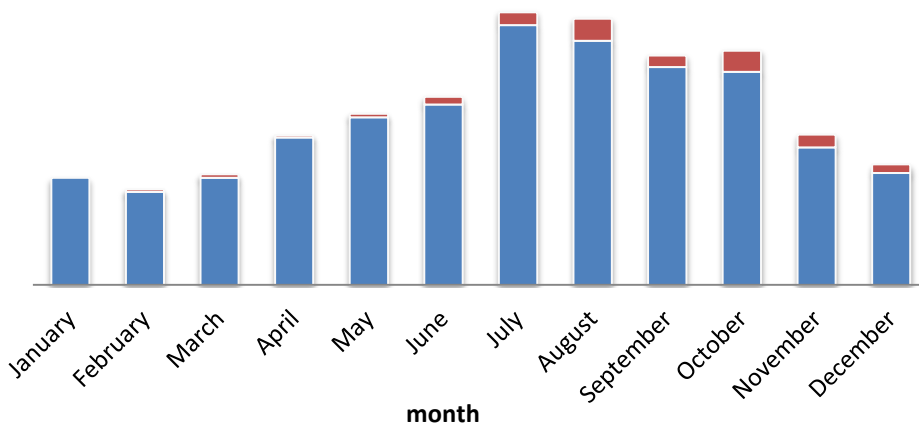
The table shows, annually for each month, the total number of occurrences collected in the eE-MOR database.

The “merged” column indicates the number of occurrences after the *merging-process*, where such process, based on specific parameters, combines in a single file two or more reports referred to the same occurrence and reported by different providers.

Year	Merged	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Tot	
2014	N	151	135	156	211	241	265	384	375	323	330	212	170	2953	
	Y	151	131	151	208	236	254	366	344	307	300	194	158	2800	
													Closed	2478	
														No closed	475
2015	N	213	187	262	307	478	458	450	441	429	354	255	193	4027	
	Y	193	166	234	268	422	414	408	413	385	318	228	176	3625	
														Closed	3110
														No closed	917

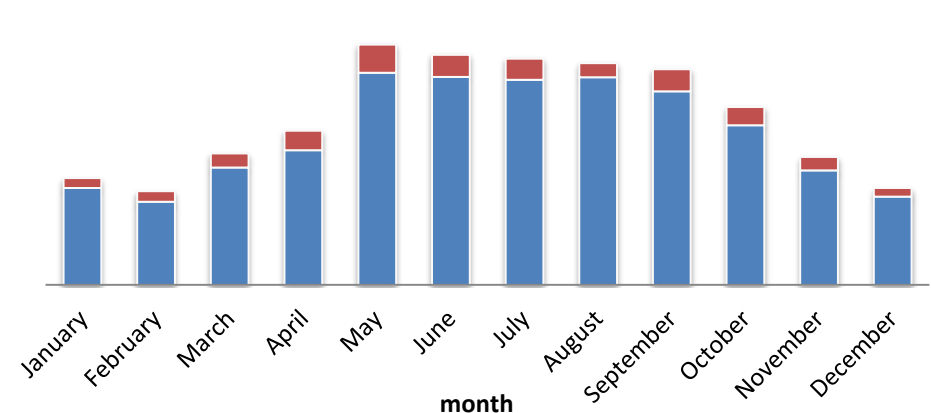
2014 - number of occurrences

■ Merge ■ No merge



2015 - number of occurrences

■ Merge ■ No merge

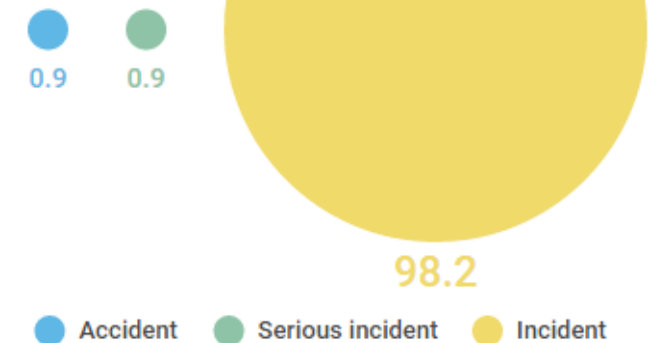


4. Occurrence Class

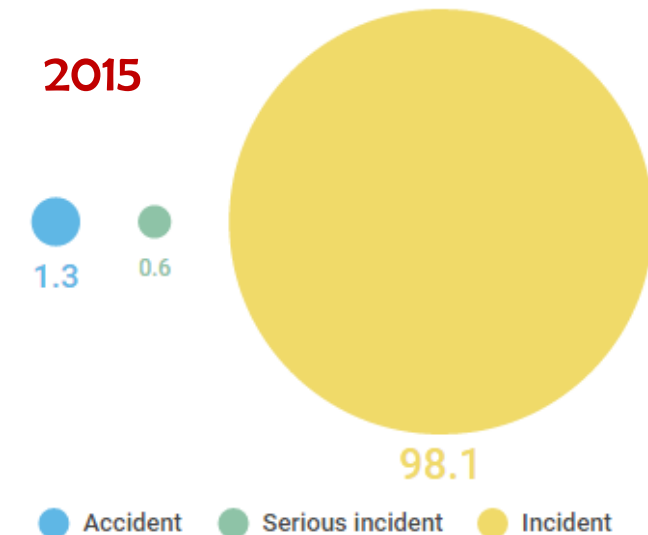
- **ACCIDENT:** an occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:
- a person is fatally or seriously injured as a result of:
 - being in the aircraft, or,
 - direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or,
 - direct exposure to jet blast, except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or
 - the aircraft sustains damage or structural failure which adversely affects the structural strength, performance or flight characteristics of the aircraft, and would normally require major repair or replacement of the affected component, except for engine failure or damage, when the damage is limited to a single engine, (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes) or minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike, (including holes in the radome); or
 - the aircraft is missing or is completely inaccessible.
- **SERIOUS INCIDENT:** means an incident involving circumstances indicating that there was a high probability of an accident and is associated with the operation of an aircraft, which in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time it comes to rest at the end of the flight and the primary propulsion system is shut down.
- **INCIDENT:** an occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.

[see Regulation (EU) 996/2010]

2014



2015



5. Responsible Entity

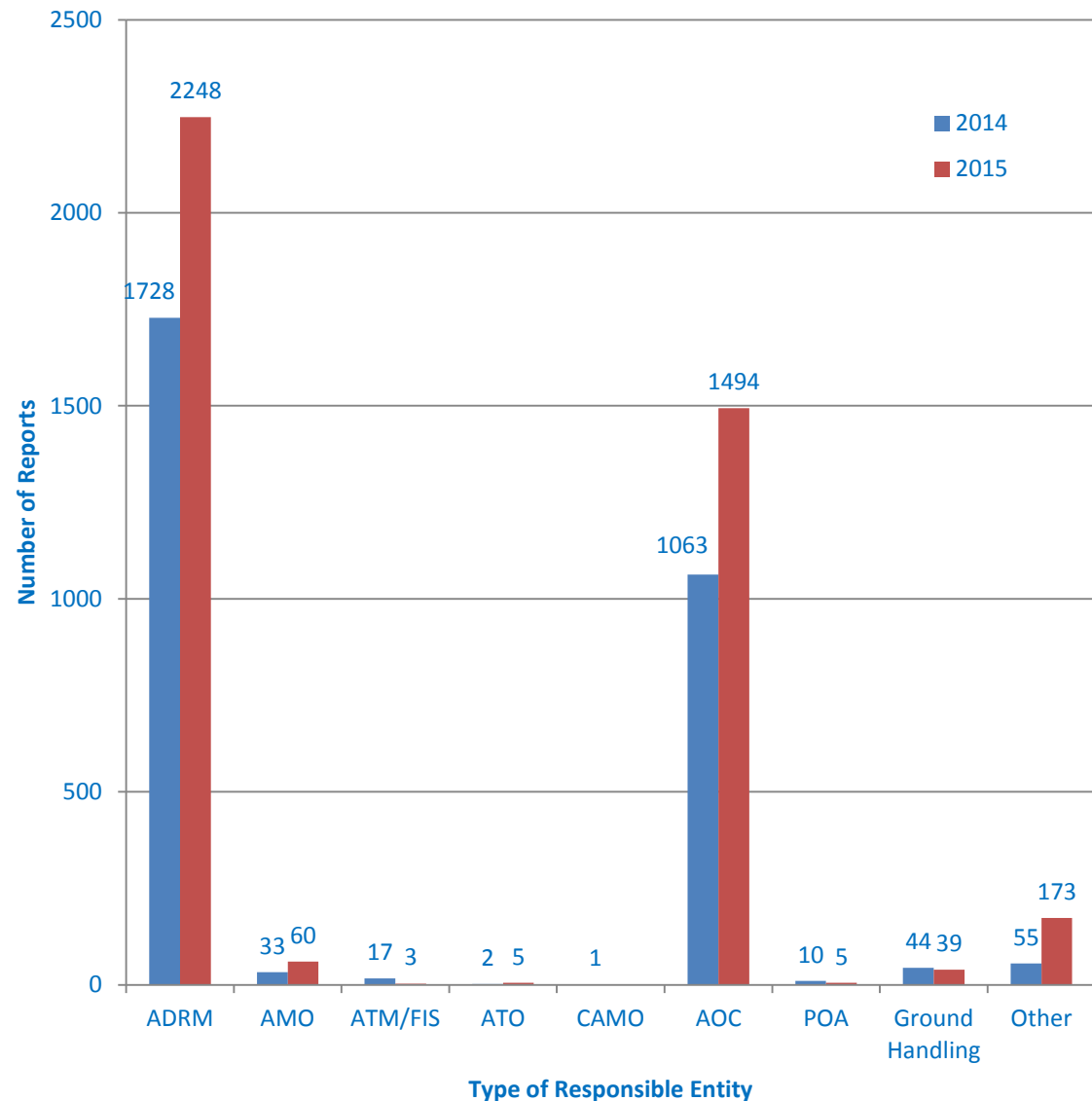
The “Responsible Entity”, according to ECCAIRS taxonomy, is the identification of the entity or organisation that is responsible for the report.

ADRM	Aerodrome Operator
AMO	Approved Maintenance Organisation
ATM/FIS	Air Traffic Management/ Flight Information Service
ATO	Approved Training Organisation
CAMO	Continuing Airworthiness Management Organisation
AOC	Air Operator Certificate
POA	Production Organizations Approvals
GH	Ground handlers, fuellers, cleaners, caterers, de-icing organizations, PRM providers, etc
Other	ENAC, ANSV, NAA, not-determined

In the ATM/FIS column there are very few occurrences because this Safety Report refers to 2014-2015 years, when the Air Navigation Service Providers reports were not yet included in the eE-MOR system.

ENAV and Aeronautica Militare started only at the middle of 2016 the test phase of their own reporting systems compatible with ADREP and ECCAIRS.

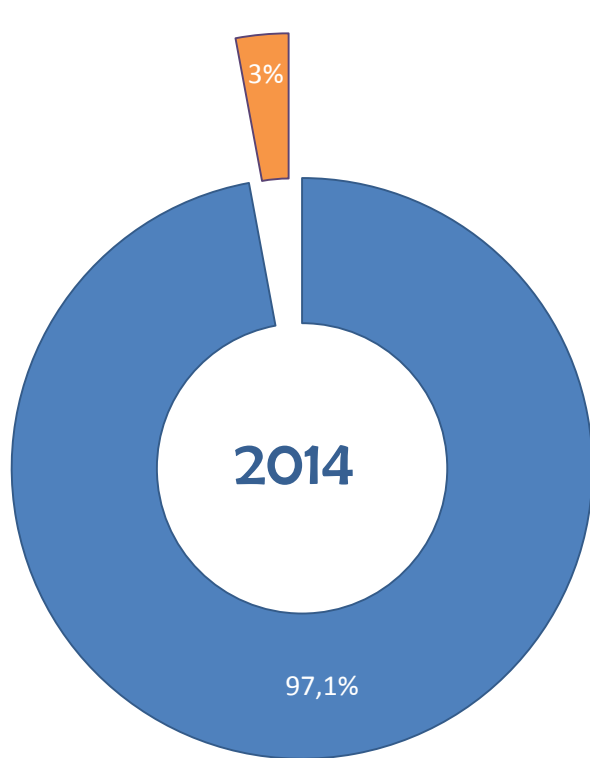
Therefore a large amount of data in ATM field is expected to be received by 2017.



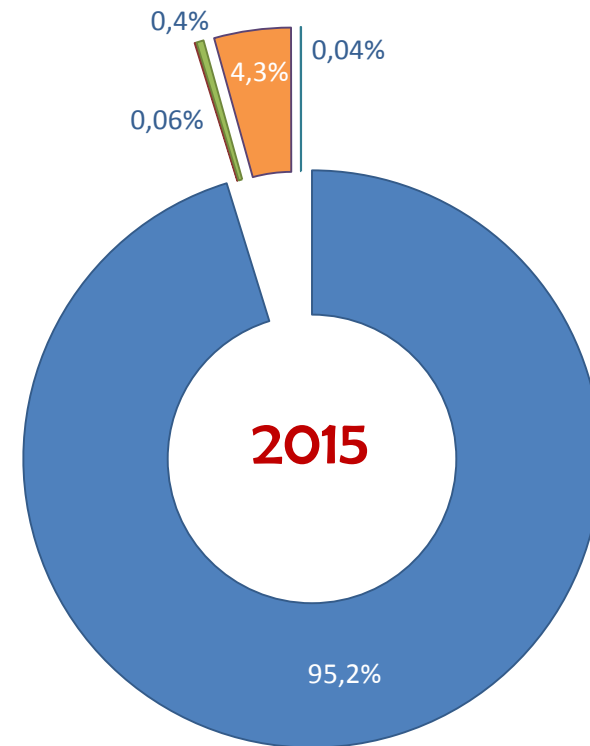
6. Aircraft Category

The **Aircraft Category**, according to ECCAIRS taxonomy, is the classification of aircraft to specified basic characteristics. Aircraft categories are the following:

FIXED WING	Aeroplane (small, large, military), Sailplane (powered, non-powered, ultralight), Ultralight/Microlight (fixed-wing, flex-wing)
ROTOCRAFT	Helicopter (small, large, military), Gyroplane
RPAS	Fixed-wing RPAS, rotary-wing RPAS, balloon RPAS
LIGHTER THAN AIR	Balloon (free gas, hot air, tethered), Airship (gas, hot)
HYBRID	Tilt Rotor



■ Fixed wing ■ Rotorcraft



■ Fixed wing ■ Lighter than air ■ RPAS ■ Rotorcraft ■ Hybrid

6. Aircraft Category

6.1 Fixed Wing

AEROPLANE: an engine-driven fixed-wing aircraft heavier than air, that is supported in flight by the dynamic reaction of the air against its wings. [EASA CS Definition]

SAILPLANE (GLIDER): a heavier-than-air aircraft that is supported in flight by the dynamic reaction of the air against its fixed lifting surfaces, the free flight of which does not depend on an engine. [EASA CS Definition]

ULTRALIGHT/MICROLIGHT: aircraft classified in Italy as **VDS** (Velivoli da Diporto e Sportivo) [Italian DPR 133/2010]

Number of occurrences for year, expressed in %, for **Fixed Wing** aircraft category is:

Fixed wing	2014 [%]	2015 [%]
Aeroplane	99.6	99.32
Sailplane (Glider)	0.33	0.34
Ultralight/Microlight	0.07	0.34



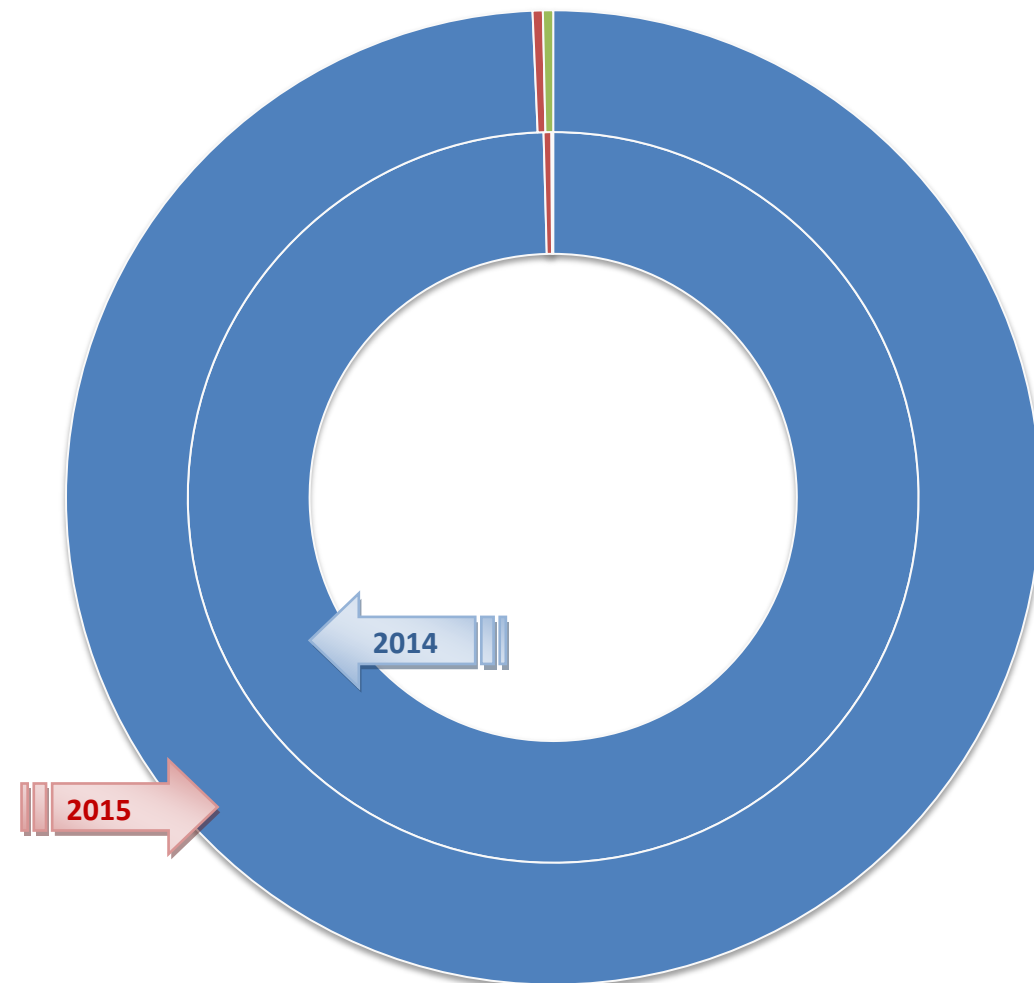
■ Aeroplane



■ Sailplane (Glider)



■ Ultralight/Microlight



6. Aircraft Category

6.2 Aeroplanes

SMALL AEROPLANE: normal, utility and aerobatic airplanes ≤9 pax seats and a MTOW ≤ 5670 kg (12500 lbs or Twin-engine commuter airplanes with ≤ 19 pax seats and an MTOW ≤ 8618 kg (19000 lbs) [CS 23]

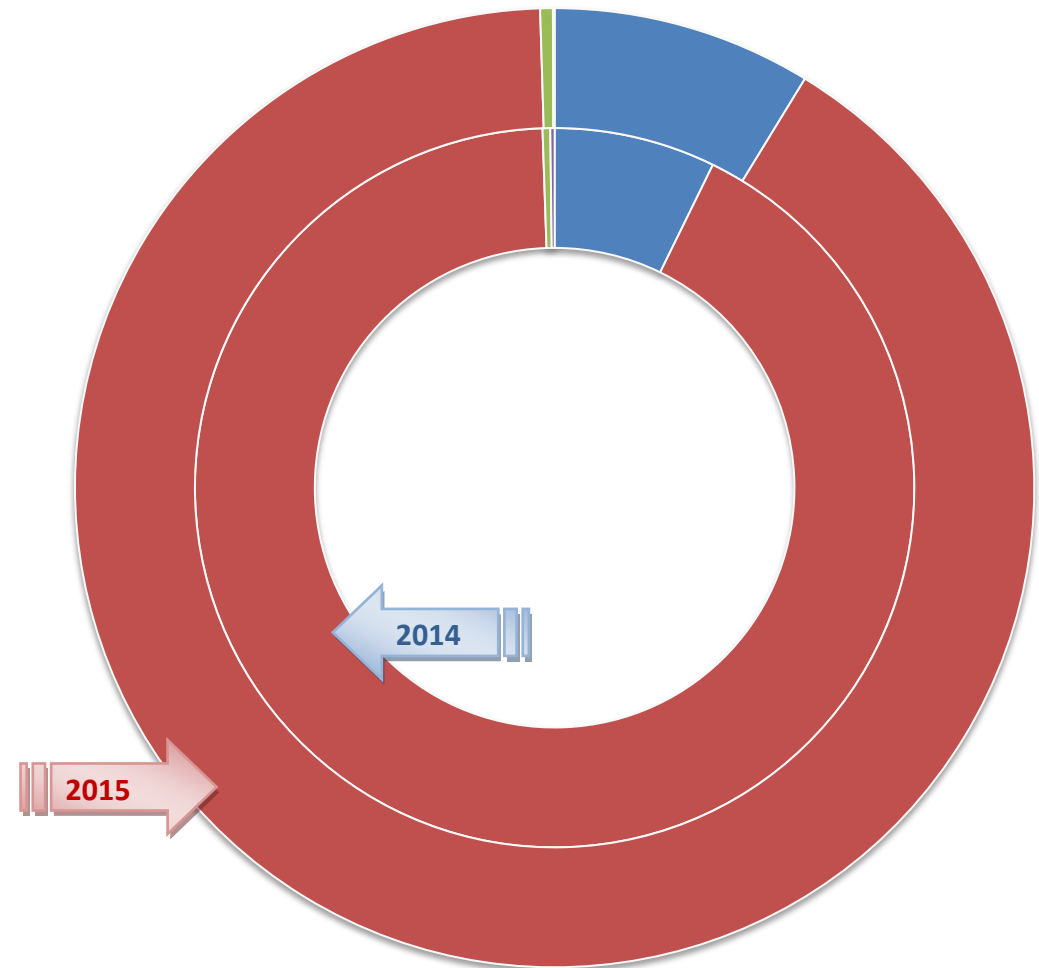
LARGE AEROPLANE: an aeroplane with a MTOW > 5700 kg (12.500 lb). This category does not include the commuter aeroplane category. [EASA CS Definition]

MILITARY AEROPLANE: an airplane exclusively used for military purposes.

UNKNOWN AEROPLANE: airplane of which do not know the category.

Number of occurrence for year, expressed in %, for the **Aeroplane** category is:

Aeroplane	2014 [%]	2015 [%]
Small Aeroplane	7.3	8.7
Large Aeroplane	92.2	90.8
Military Aeroplane	0.3	0,4
Unknown Aeroplane	0.2	0.1



6. Aircraft Category

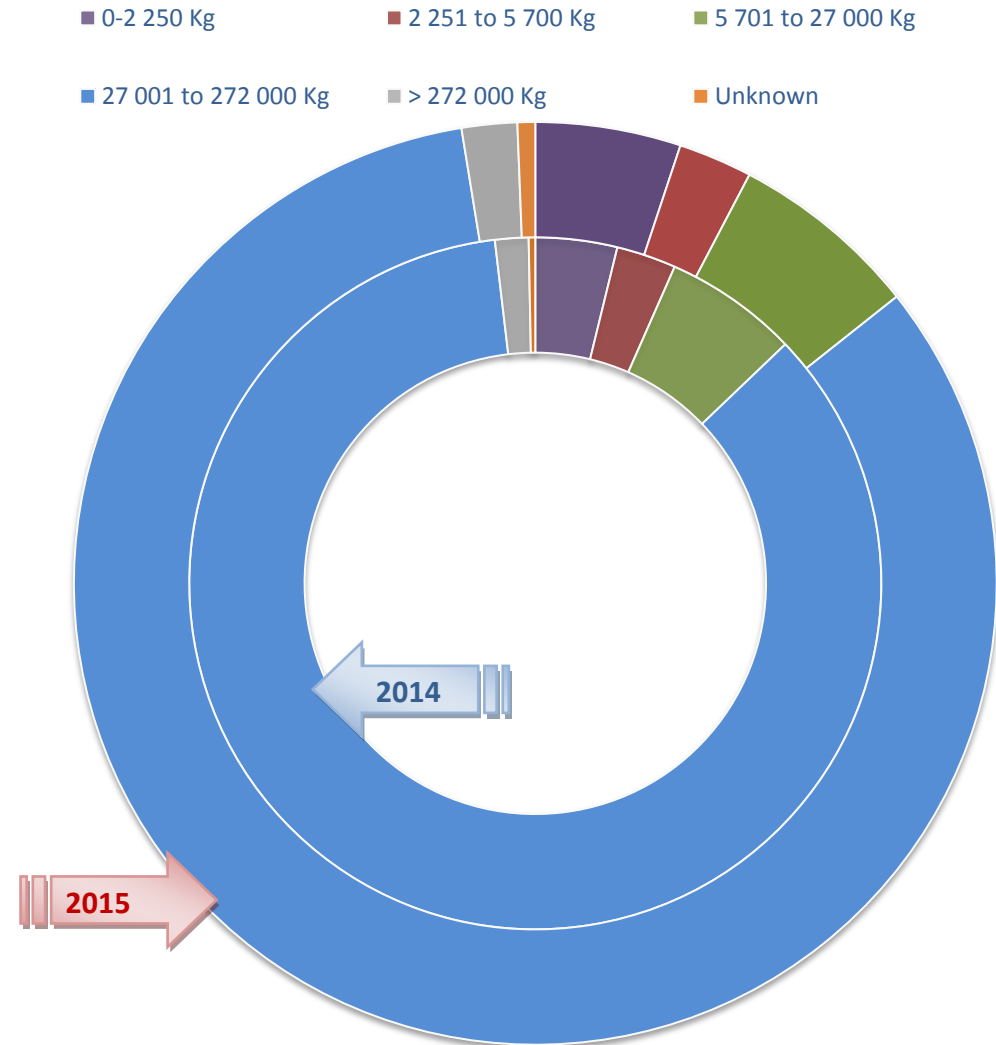
6.3 Aircraft Mass Group

Mass groups of aircraft based on the maximum certificated take-off mass (MTOM) are:

- 0 – 2250 Kg
- 2251 – 5700 Kg
- 5701 – 27000 Kg
- 27001 – 272000 Kg
- > 272000 Kg

The number of occurrences for year, expressed in %, according to the MASS GROUP of the aircraft is:

Mass Group [Kg]	2014 [%]	2015 [%]
0 – 2250	4	5
2251 – 5700	3	2
5701 – 27000	6	7
27001 - 272000	85	83
> 272000	2	2
unknown	0	1



6. Aircraft Category

6.4 Rotorcraft

ROTORCRAFT: a heavier-than-air aircraft that depends principally for its support in flight on the lift generated by one or more rotors
[EASA CS Definition]

SMALL HELICOPTER: rotorcraft with MTOW \leq 3175 Kg (7000 lbs) and \leq 9 pax seats
[CS 27]

LARGE HELICOPTER: rotorcraft with MTOW $>$ 3175 Kg (7000 lbs)
[CS 29]

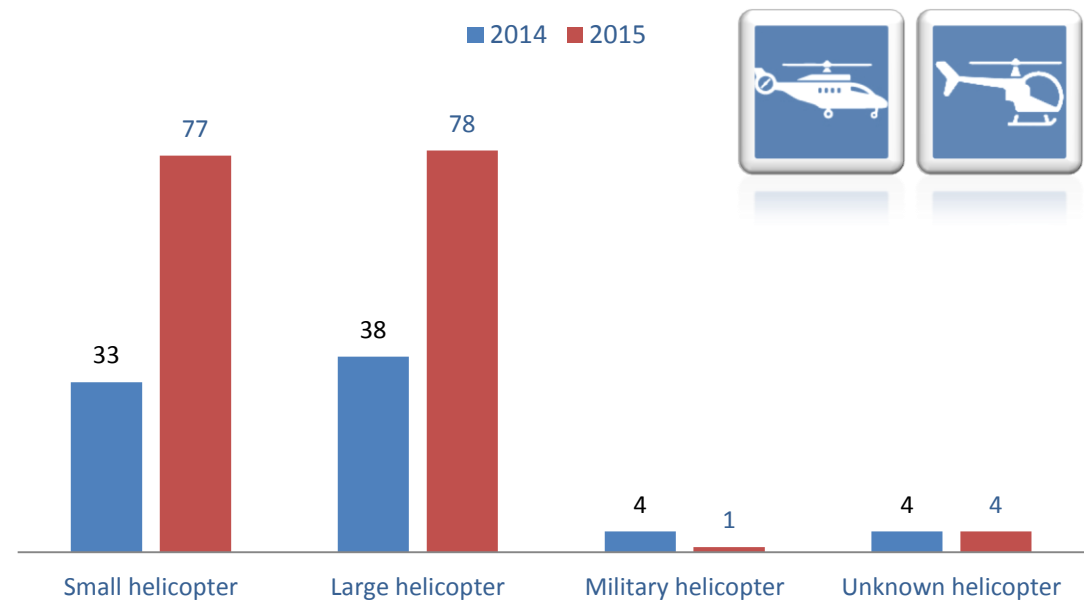
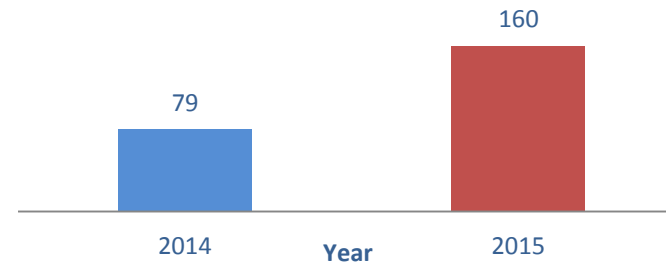
MILITARY HELICOPTER: an helicopter exclusively used for military purposes.

UNKNOWN HELICOPTER: helicopter of which do not know the category.

Number of occurrences for year, expressed in %, for the **rotorcraft** category is:

Rotorcraft Occurrences	2014 [%]	2015 [%]
Small Helicopter	41,8	48,1
Large Helicopter	48,0	48,7
Military Helicopter	5,1	0,7
Unknown Helicopter	5,1	2,5

Rotorcraft
Total Number of Occurrences



6. Aircraft Category

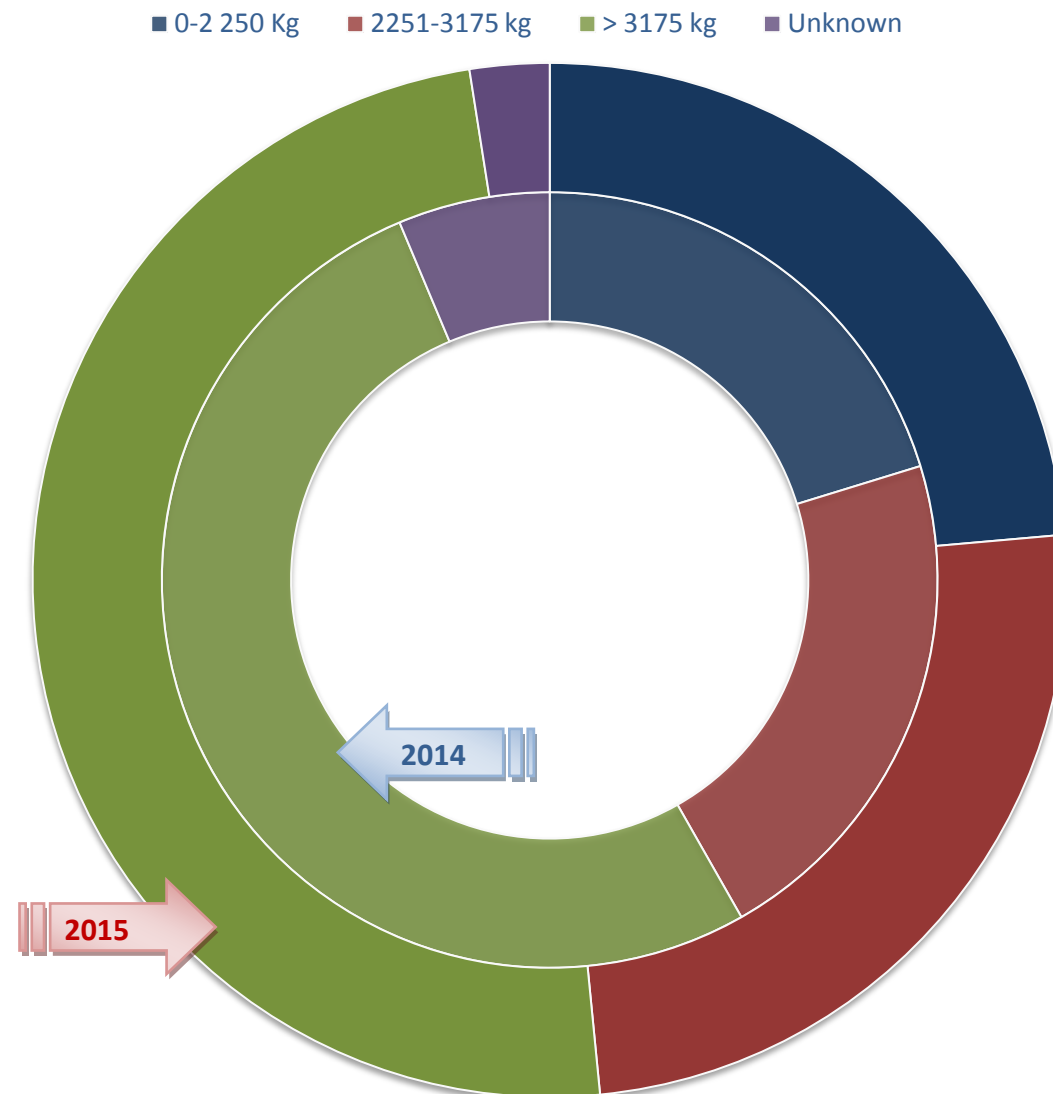
6.5 Helicopter Mass Group

Mass groups of the helicopter based on the maximum certificated take-off mass (MTOM) are:

- 0 – 2250 Kg
- 2251 – 3175 Kg
- > 3175 Kg

Number of occurrences for year, expressed in %, according to the MASS GROUP of the helicopter is:

Mass Group [Kg]	2014 [%]	2015 [%]
0 – 2250	20	24
2251 – 3175	22	25
> 3175	52	49
unknown	6	2



6. Aircraft Category

6.6 Drones

UAS: Unmanned Aircraft Systems, commonly called Drones

RPAS: Remotely Piloted Aircraft Systems, sub-set of UAS

Under the term “drones” are included very large aircraft which resemble in size and complexity manned aircraft, but also very small consumer electronics aircraft. Regulation (EC) No 216/2008 mandates the EASA to regulate UAS and in particular RPAS, when used for civil applications and with an operating mass of ≥ 150 Kg.

Experimental or amateur build RPAS, military and non-military governmental RPAS flights, civil RPAS < 150 Kg as well as model aircraft are regulated by individual Member States of the EU. Toys, even if capable of flying but not equipped with internal combustion engine, are subject to Directive 2009/48/EC.

“Drones” is a sector of aviation that is developing very fast; especially the smaller ones are increasingly being used in the EU.

In 2014 no occurrences were reported but in the 2015 the phenomenon began to increase with a significant number of reports.

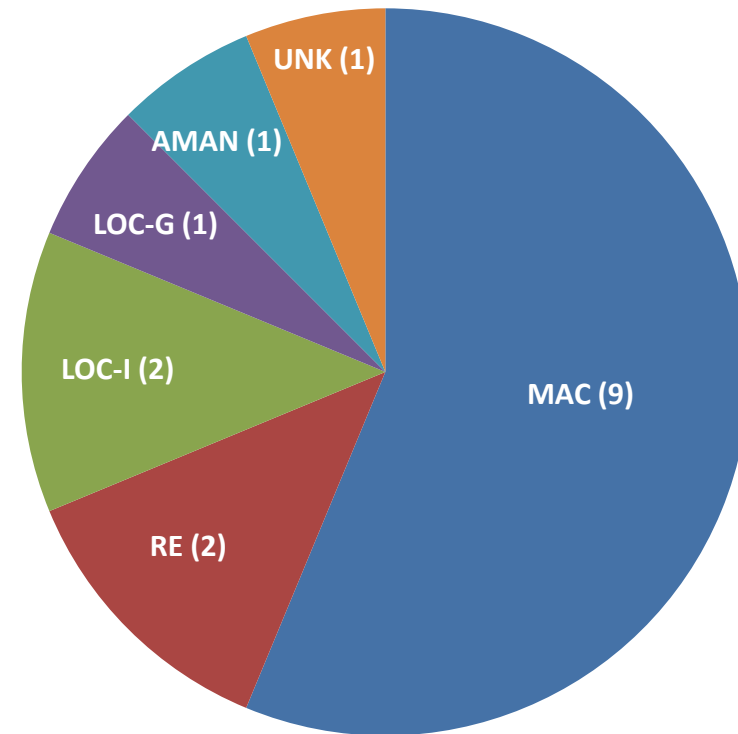
Therefore 2014-2015 data should be considered not enough reliable to have a real picture of the phenomena.

In 2015, the number of occurrences, divided for class of event, are shown in the side table.

The graph on the side shows 2015 data.

NOTE: There were 2 accidents, causing Runway Excursions, occurred to a large fixed-wing RPAS.

Since 2016, in order to collect the largest number of occurrences possible, the eE-MOR system has a new specific simplified reporting form for the [reporting of drones occurrences](#), accessible without login, to any private citizen.



Accident	Serious Incident	Incident
2	0	14

7. Occurrence Category

TAXONOMY	DESCRIPTION
ARC	Abnormal Runway Contact
AMAN	Abrupt Maneuver
ADRM	Aerodrome
MAC	Airprox/ TCAS Alert/ Loss of Separation/ Near Mid-Air Collisions/ Mid-Air Collisions
ATM	ATM/CSN
BIRD	Bird
CABIN	Cabin Safety Events
CTOL	Collision with Obstacle(s) during Take-Off and Landing
CFIT	Controlled Flight into or toward Terrain
EVAC	Evacuation
EXTL	External Load related occurrences
F-NI	Fire/Smoke (non-impact)
F-POST	Fire/Smoke (post-impact)
FUEL	Fuel related
GTOW	Glider Towing related events
GCOL	Ground Collision
RAMP	Ground Handling
ICE	Icing

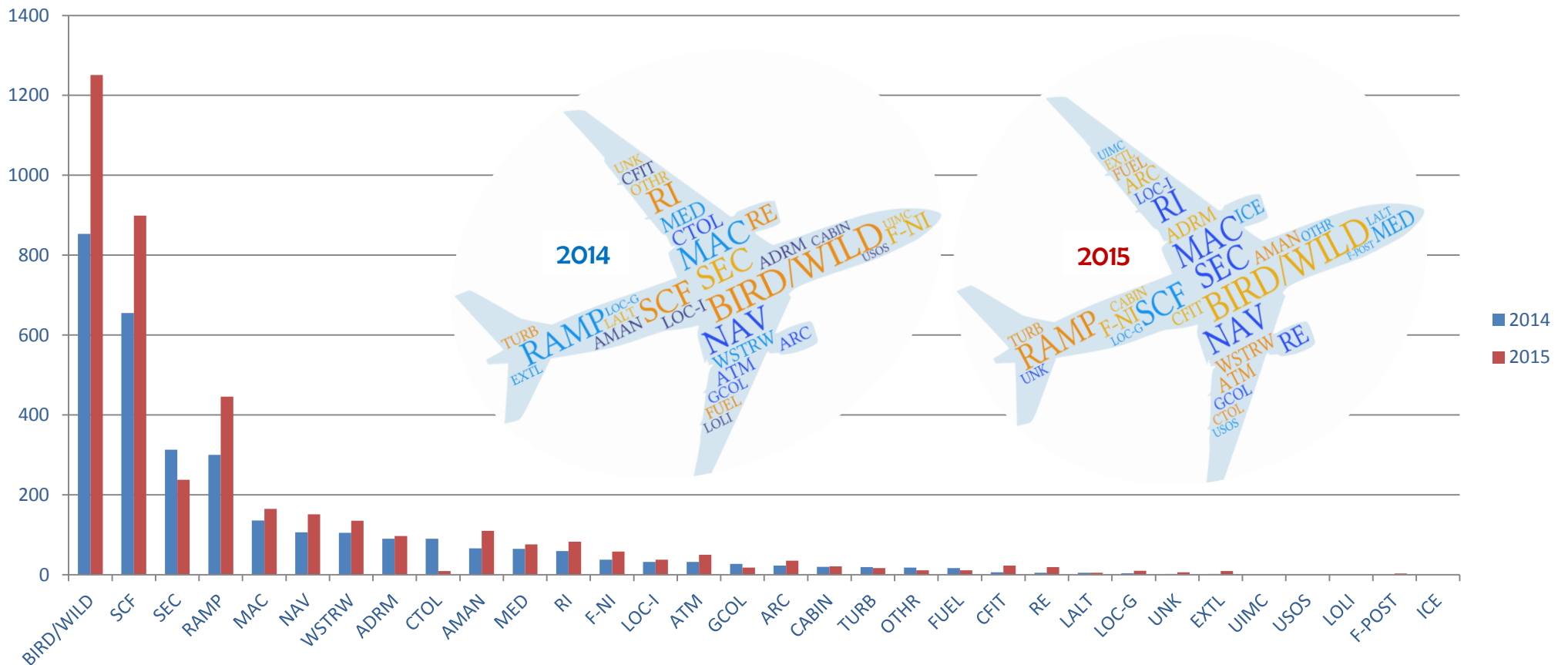
TAXONOMY	DESCRIPTION
LOC-G	Lost of Control-Ground
LOC-I	Lost of Control-InFlight
LOLI	Loss of Lifting Conditions En Route
LALT	Low Altitude Operations
MED	Medical
NAV	Navigation Errors
OTHR	Other
RE	Runway Excursion
RI	Runway Incursion
SEC	Security related
SCF-NP	System/Component Failure or Malfunction (Non-Powerplant)
SCF-PP	System/Component Failure Or Malfunction (Powerplant)
TURB	Turbulence Encounter
USUS	Undershoot/Overshoot
UIMC	Unintended Flight in IMC
UNK	Unknown or Undetermined
WILD	Wildlife
WSTRW	Wind Shear or Thunderstorm

from [CAST/ICAO Common Taxonomy Team \(CICTT\)](#)

7. Occurrence Category

Occurrence categories, as developed by CAST/ICAO Common Taxonomy Team (CICTT), are used to classify occurrences (either accidents or incidents) at a high level to permit analysis of the data in support of safety initiatives. Each category has a unique name and identifier to permit common coding in accident/incident systems, a text definition, and usage notes to clarify the category and aid in coding occurrences. An important element of the occurrence category design is that it permits the association of multiple categories with an occurrence.

NOTE: in this graph the category SCF includes both SCF-NP and SCF-PP (please refer to previous page for definitions).



8. CAT - Commercial Air Transport

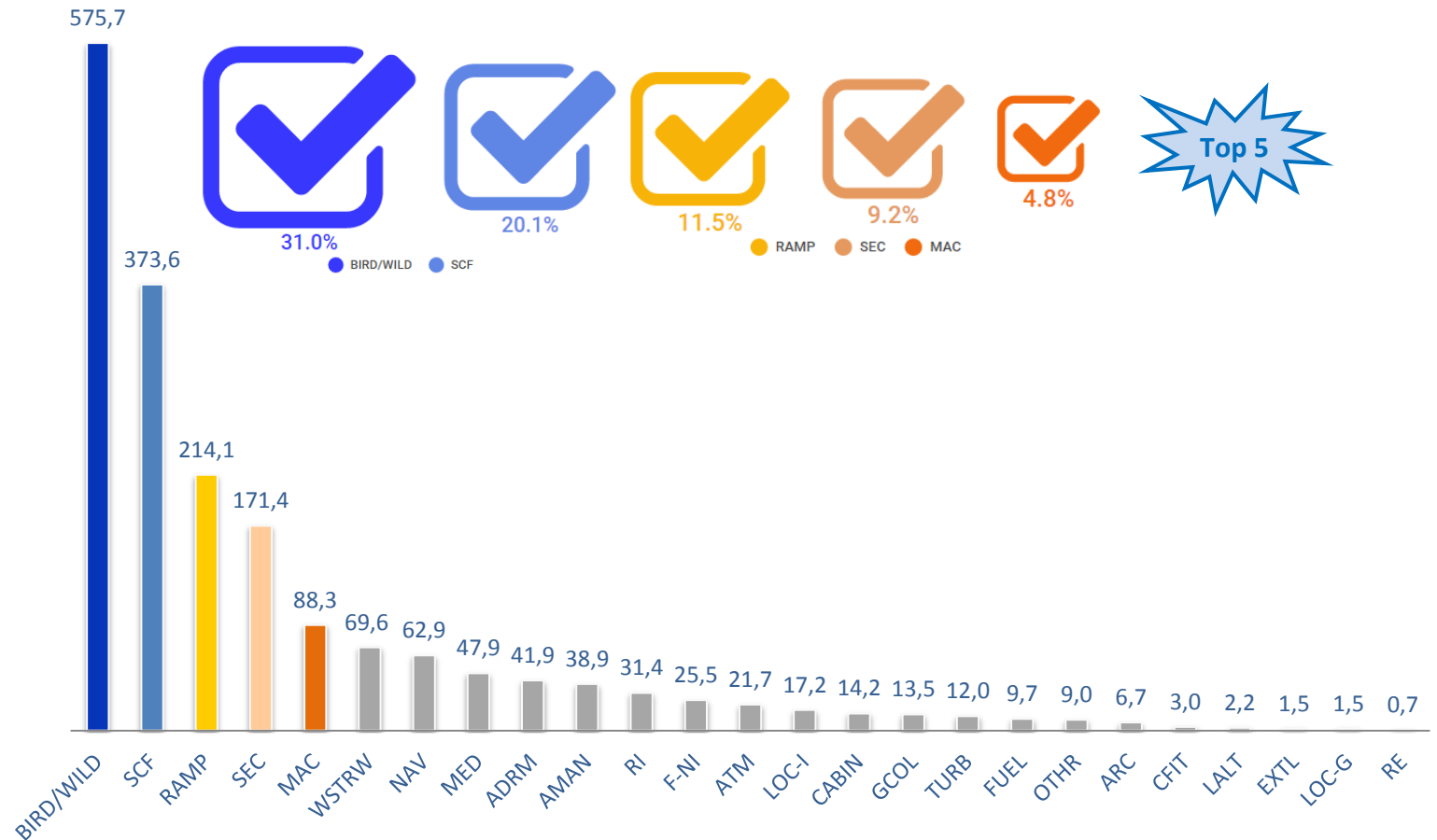
COMMERCIAL AIR TRANSPORT (CAT) OPERATION: an aircraft operation to transport passengers, cargo or mail for remuneration or other valuable consideration.

The rate of occurrences divided for category and per one million of flights in the field of Commercial Aviation Transport are shown in the following graphs.

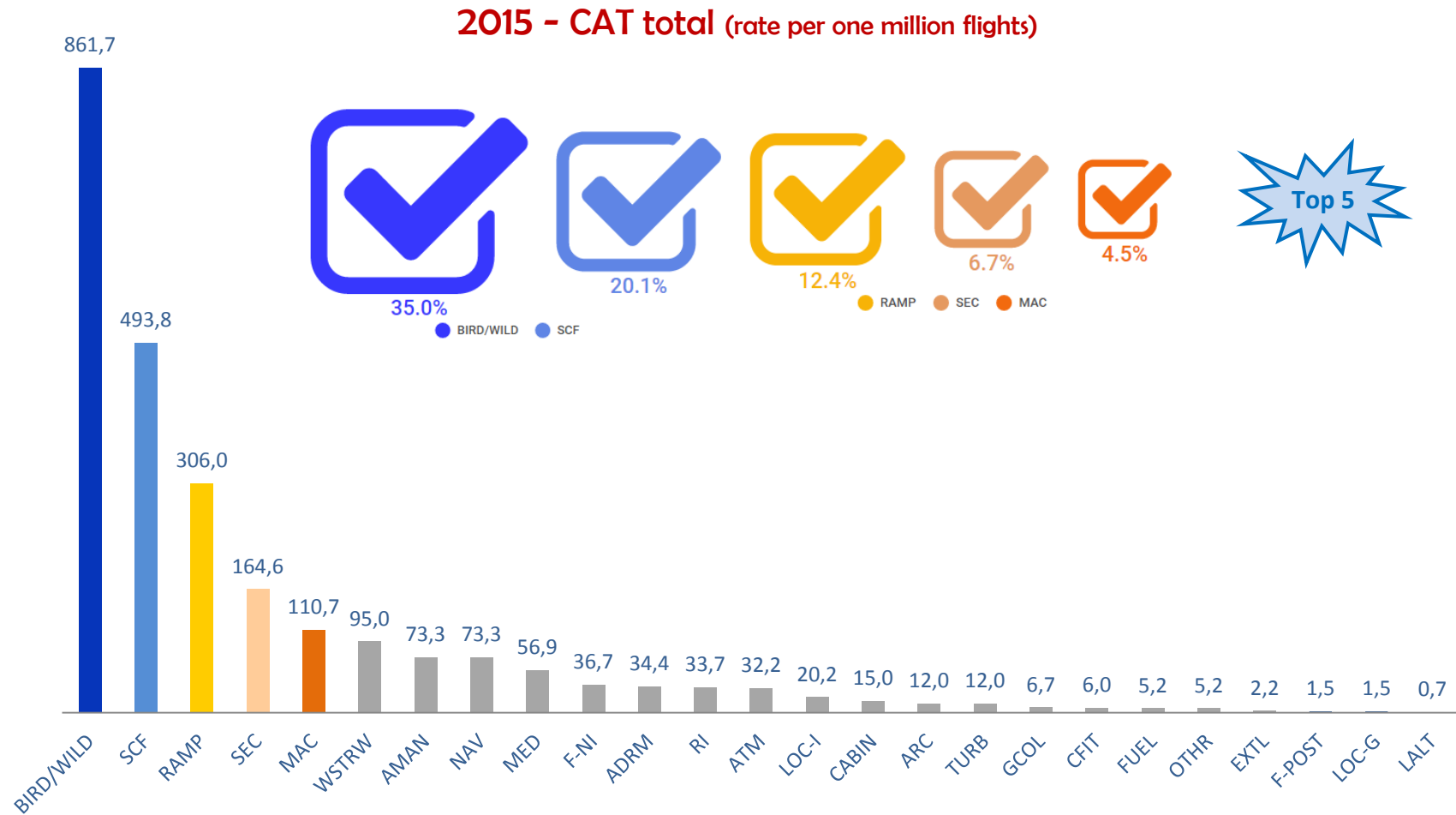
In each diagram are also highlighted the Top occurrence categories.



2014 - CAT Total (rate per one million flights)



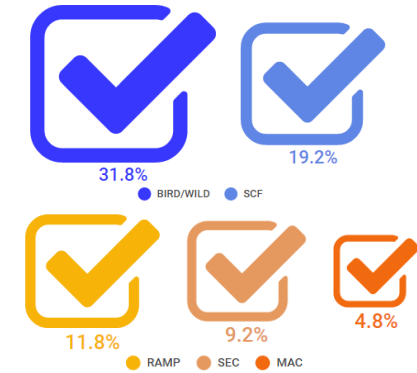
8. CAT - Commercial Air Transport



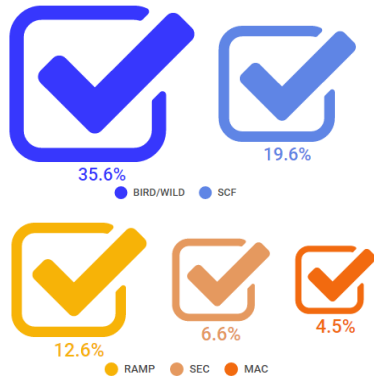
8. CAT - Commercial Air Transport

8.1 CAT - Aeroplanes

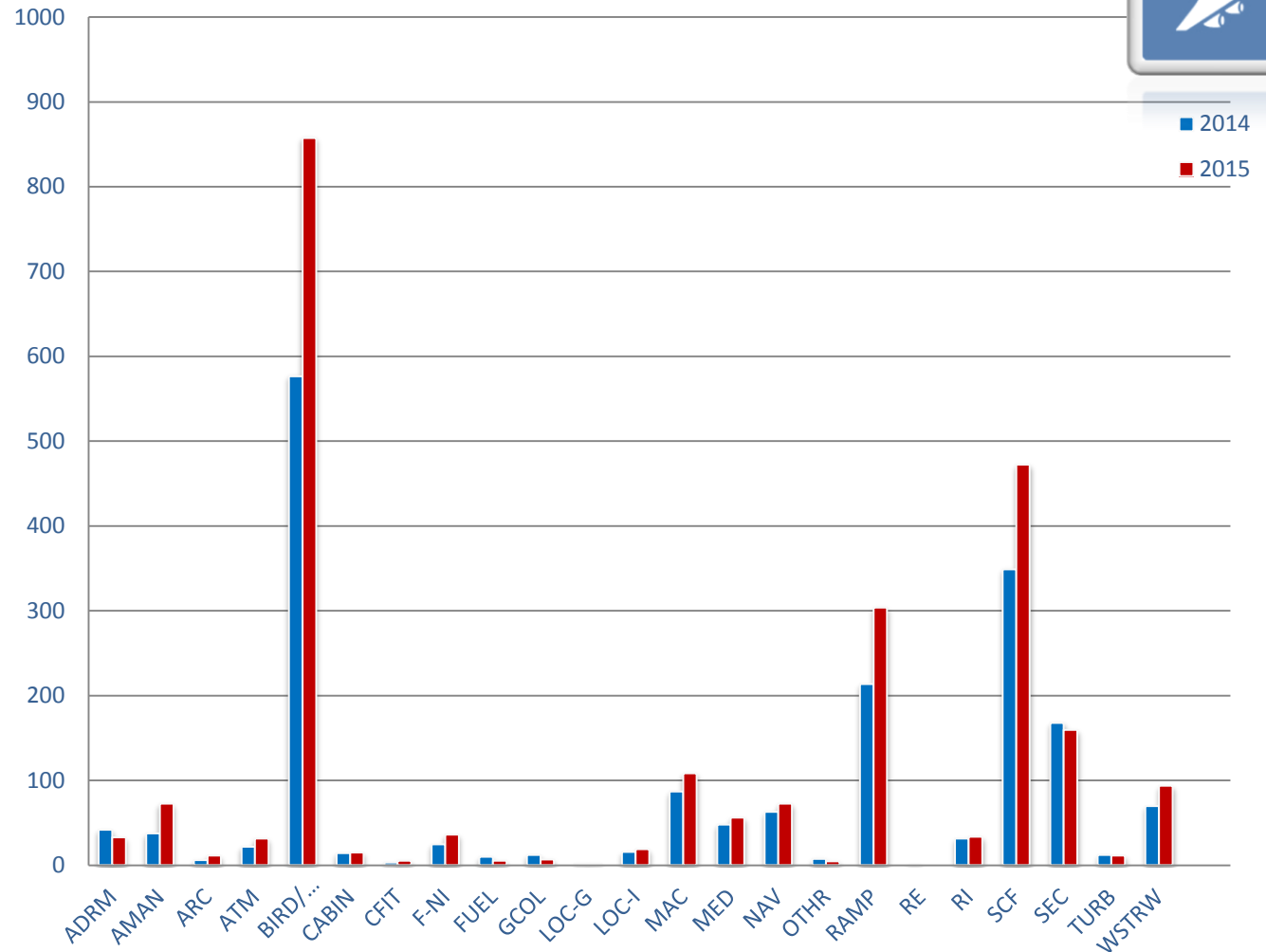
CAT aeroplanes (rate per one million flights)



2014

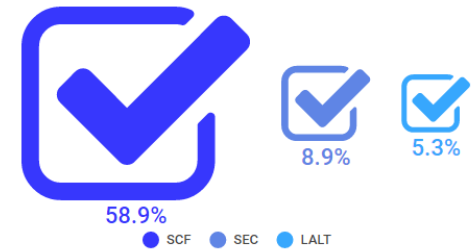


2015

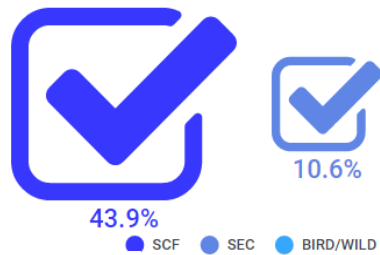


8. CAT - Commercial Air Transport

8.2 CAT - Helicopters

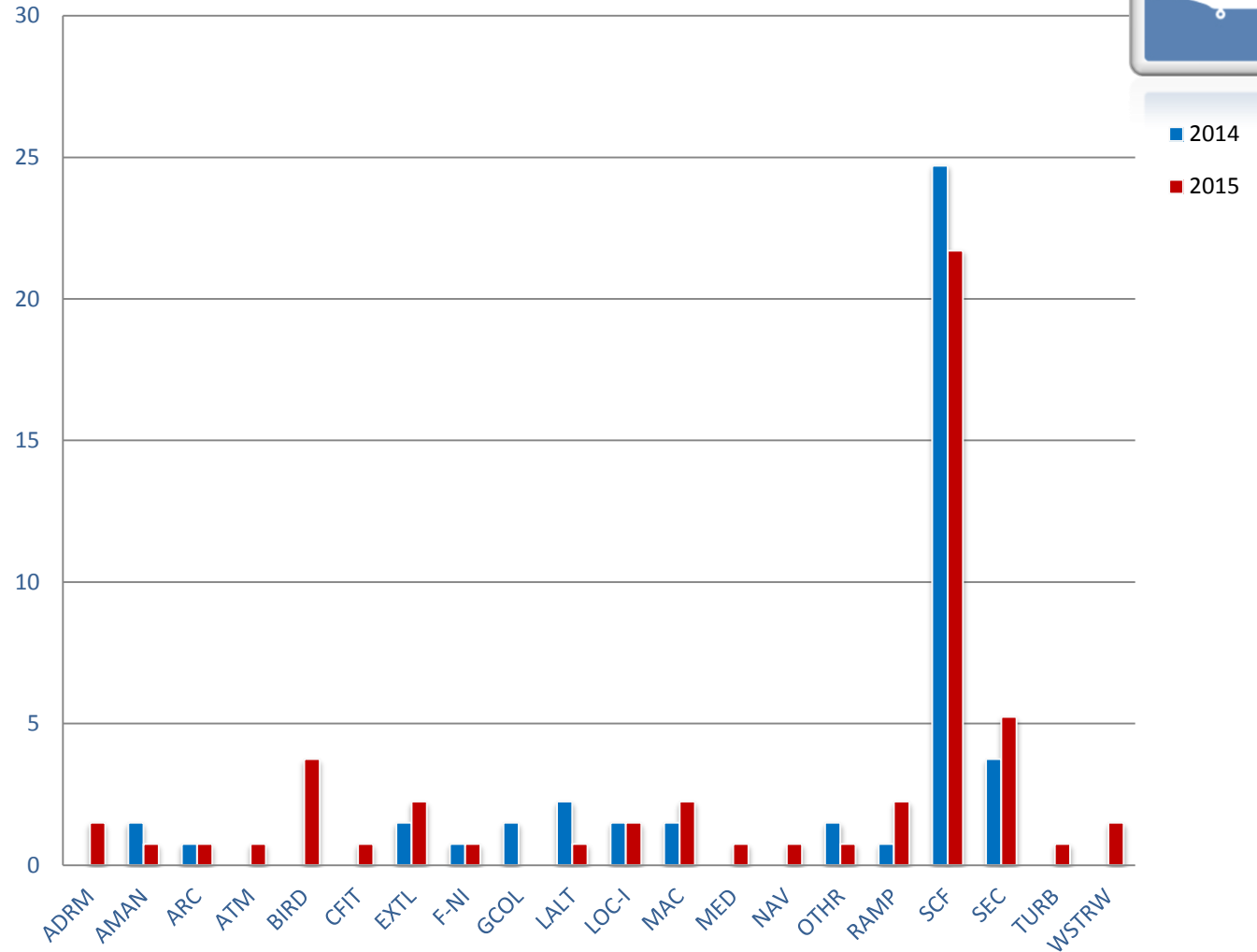


2014



2015

CAT helicopters (rate per one million flights)



8. CAT - Commercial Air Transport

8.3 BIRD – Bird, WILD - Wildlife

BIRD – BIRDSTRIKE: occurrences involving collisions/near collisions with bird(s)

WILD - WILDLIFE: collision with, risk of collision, or evasive action taken by an aircraft to avoid wildlife on the movement area of an aerodrome or on a helipad/helideck in use

[ICAO CICTT Aviation Occurrence Categories]



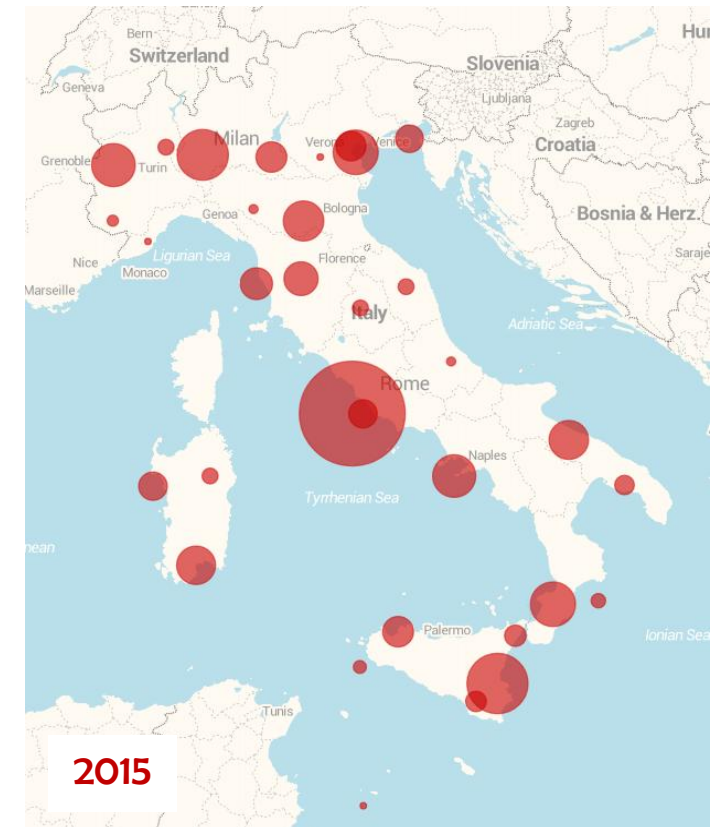
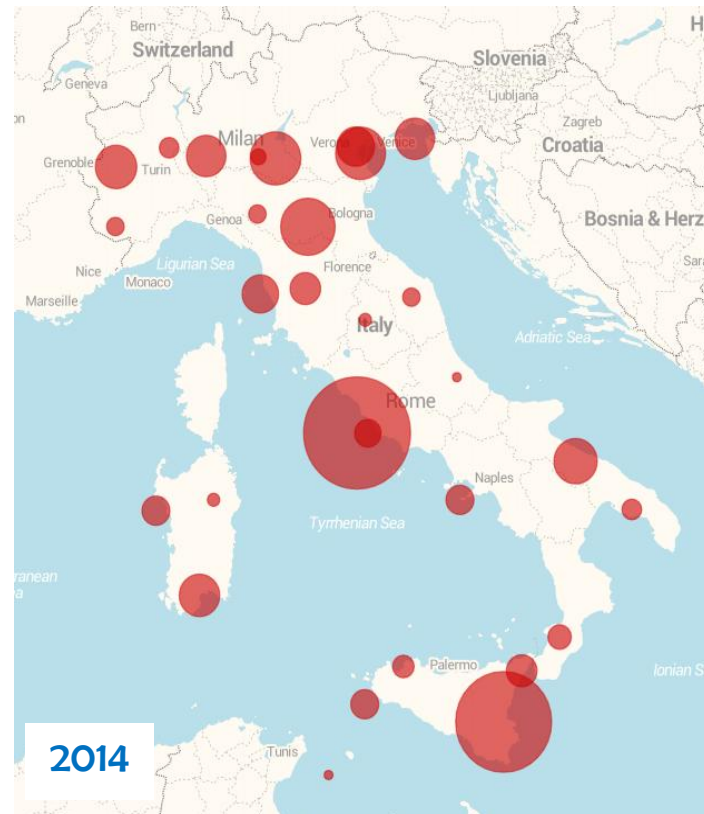
The following table include the number of occurrence for year, expressed in %, divided for the major consequence arised from the strike with bird or wildlife.

BIRD+SCF where, after the impact, some systems of the airplane had a failure or a malfunction.

BIRD + AMAN indicates occurrences where an abrupt manouver was induced by the flight crew after the impact (e.g. aborted take-off) or to avoid it (hard braking maneuver).

Category	2014 [%]	2015 [%]
BIRD + SCF	0,58	1,12
BIRD + AMAN	0,47	1,36

NOTE: informations and statistics of the BSCI (BirdStrike Committee) are available on the ENAC website on the [Wildlife Strike section](#).



8. CAT - Commercial Air Transport

8.4 SCF – System/Component Failure or Malfunction

SCF-NP-SYSTEM/COMPONENT FAILURE OR MAL-FUNCTION (NON-POWERPLANT): failure or malfunction of an aircraft system or component other than the powerplant

SCF-PP - SYSTEM/COMPONENT FAILURE OR MAL-FUNCTION (POWERPLANT): failure or malfunction of an aircraft system or component related to the powerplant

[ICAO CICTT Aviation Occurrence Categories]



Under the SCF category, the airplane's systems (according to the ATA chapters) mostly involved were:

- 21 - Air Conditioning & Pressurization System
- 27 – Flight Controls
- 28 - Fuel System
- 32 - Landing Gear System

The table shows in which flight phase the systems has been mostly involved:

Flight Phase	2014	2015
Standing	ATA 28	ATA 28
Taxi	ATA 32	ATA 32
Take-Off	ATA 32	ATA 32
Enroute	ATA 21	ATA 21
Approach	ATA 32	ATA 27
Landing	ATA 32	ATA 32

FLIGHT PHASES:

STANDING: this phase ends and starts when the aircraft respectively begins or stops moving forward under its own power.

TAXI: the phase of flight in which movement of an aircraft on the surface of an aerodrome under its own power occurs, excluding take-off and landing.

TAKE-off: the phase of flight from the applicant of take-off power until reaching the first prescribed power reduction, or until reaching the VFR pattern or 1000 ft (300mt) above runway and elevation, whichever comes first or the termination (abort) of the take-off. It includes initial climb into traffic pattern.

ENROUTE:

IFR (Instrumental Flight Rules): from completion the initial climb through cruise altitude and completion of controlled descent to the Initial Approach Fix (IAF).

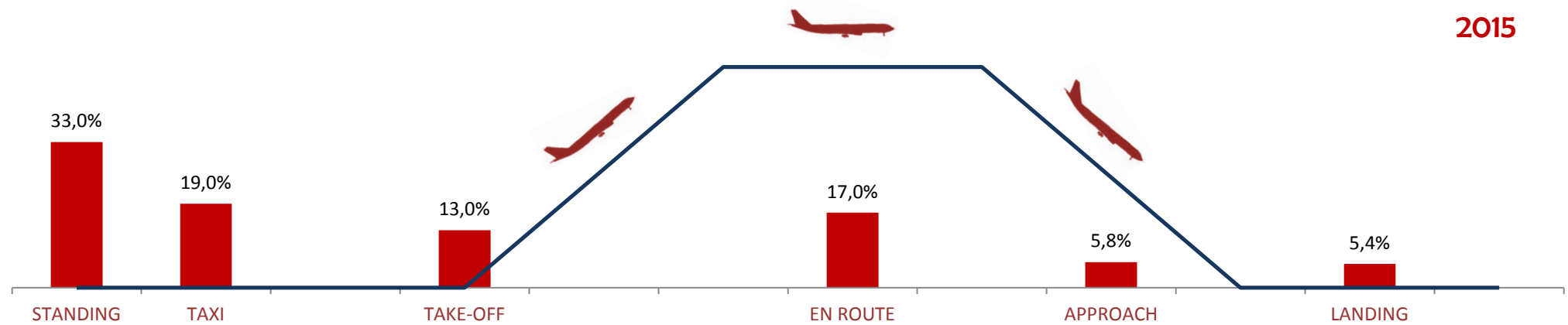
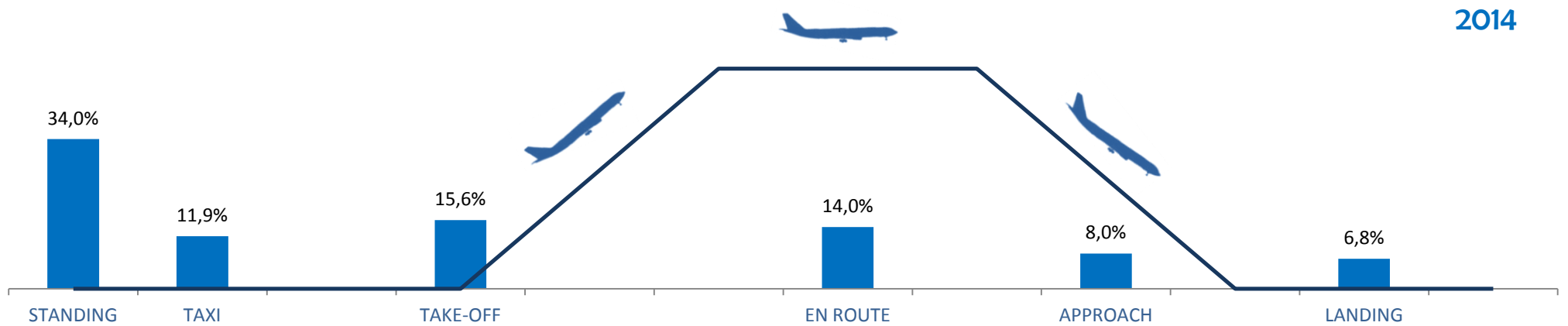
VFR (Visual Flight Rules): from completion of initial climb through cruise and controlled descent to the VFR pattern altitude or 1000 feet above runway elevation, whichever comes first.

APPROACH: the phase of flight from the outer marker to the point of transition from nose low to nose-high attitude immediately prior to the flare above the runway (IFR); or (VFR) from 1000 ft (300mt) above the runway end elevation or from the point of VFR pattern entry to the flare above the runway.

LANDING: the phase of flight from the point of transition from nose-low to nose-up altitude, immediately before landing (flare), through touchdown and until aircraft exits landing runway, comes to a stop or when power is applied for take-off in the case of a touch-and-go landing, whichever occurs first.

8. CAT - Commercial Air Transport

8.4 SCF – System/Component Failure or Malfunction



8. CAT - Commercial Air Transport

8.5 RAMP - Ground Handling

RAMP – GROUND HANDLING: Occurrences during (or as a result of) ground handling operations (while servicing, boarding, loading, and deplaning the a/c, involving boarding and disembarking while a helicopter is hovering, deficiencies or issues related to snow, frost, and/or ice removal from a/c, injuries to people from propeller/main rotor/tail rotor/fan blade strikes, pushback/powerback/towing events, Jet Blast and Prop/rotor downwash ground handling occurrences, navigation errors at an aerodrome made by vehicles or pedestrians, a/c external preflight configuration errors [e.g., improper loading and improperly secured doors and latches] that lead to subsequent events; all parking areas [ramp, gate, tiedowns], operations at aerodromes, heliports, helidecks, and unprepared operating sites.

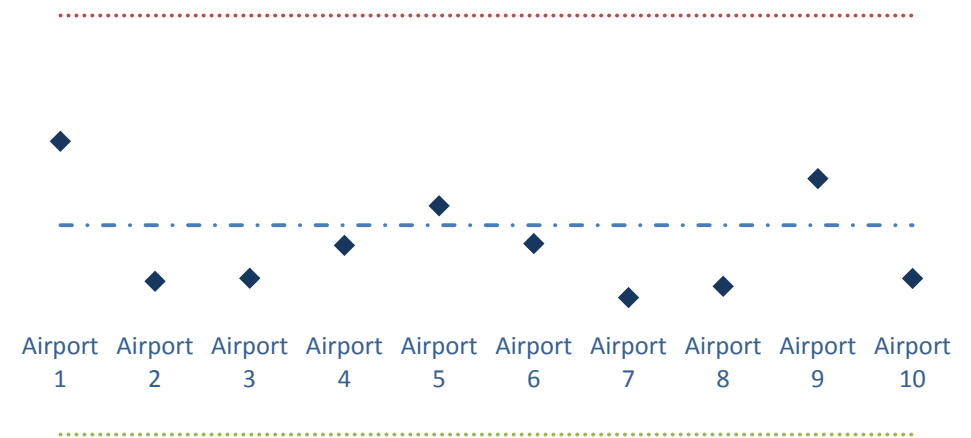


[ICAO CICTT Aviation Occurrence Categories]

2014 - RAMP



2015 - RAMP



The **standard deviation (SD)**, also represented by the Greek letter sigma (σ) is a measure that is used to quantify the amount of variation or dispersion of a set of data values.

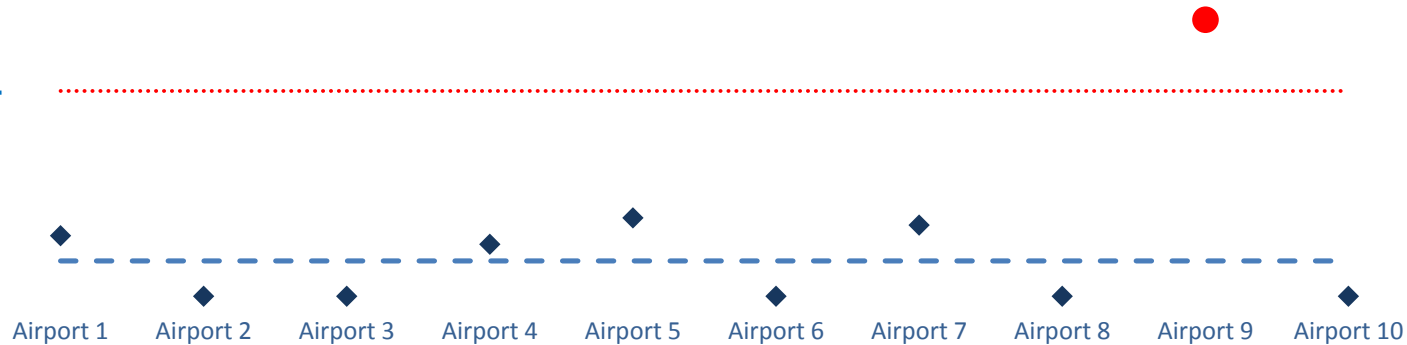
Note: Airports have been indicated with a code. The airport list is available in a separate file.

8. CAT - Commercial Air Transport

8.6 RAMP - Vehicle Traffic Violation



2014



2015

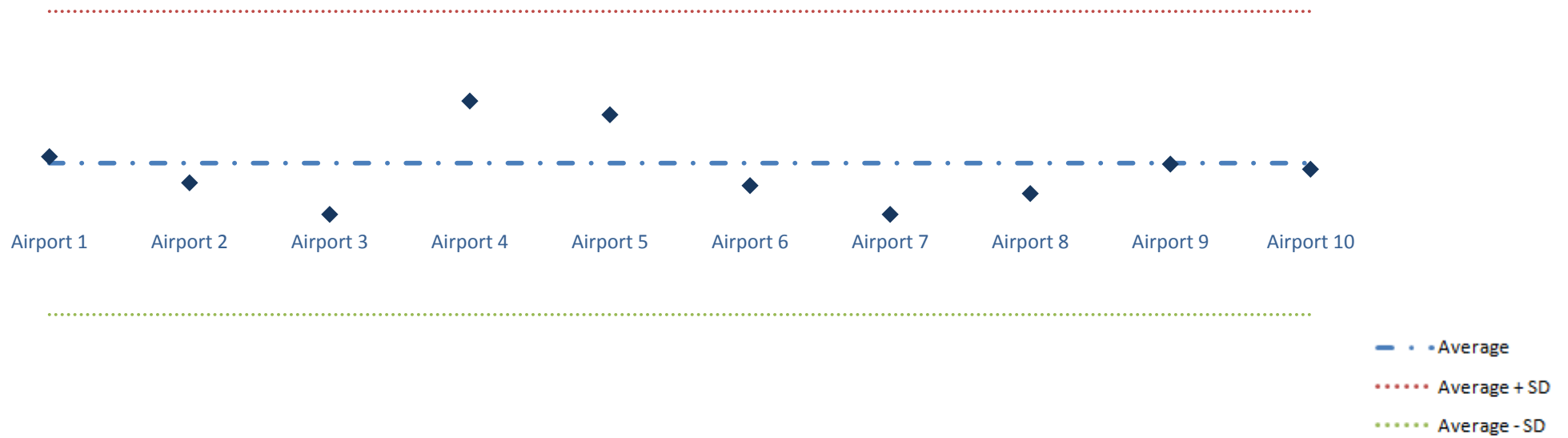


- · — Average
- Average + SD
- Average - SD
- ◆ Values

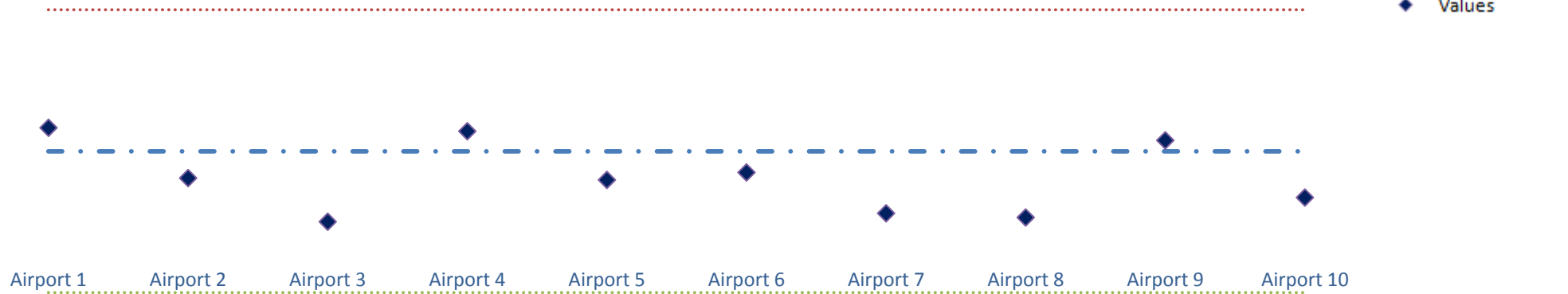
8. CAT - Commercial Air Transport

8.7 RAMP - Collision Vehicle with Standing Aircraft

2014



2015

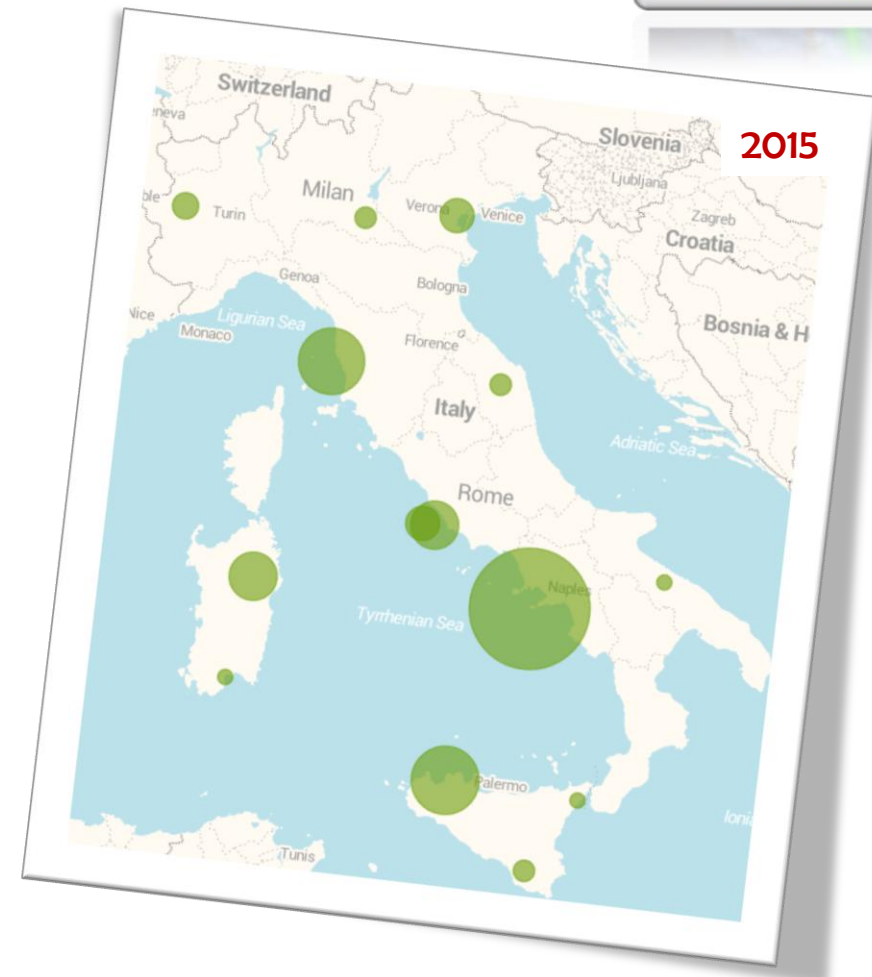
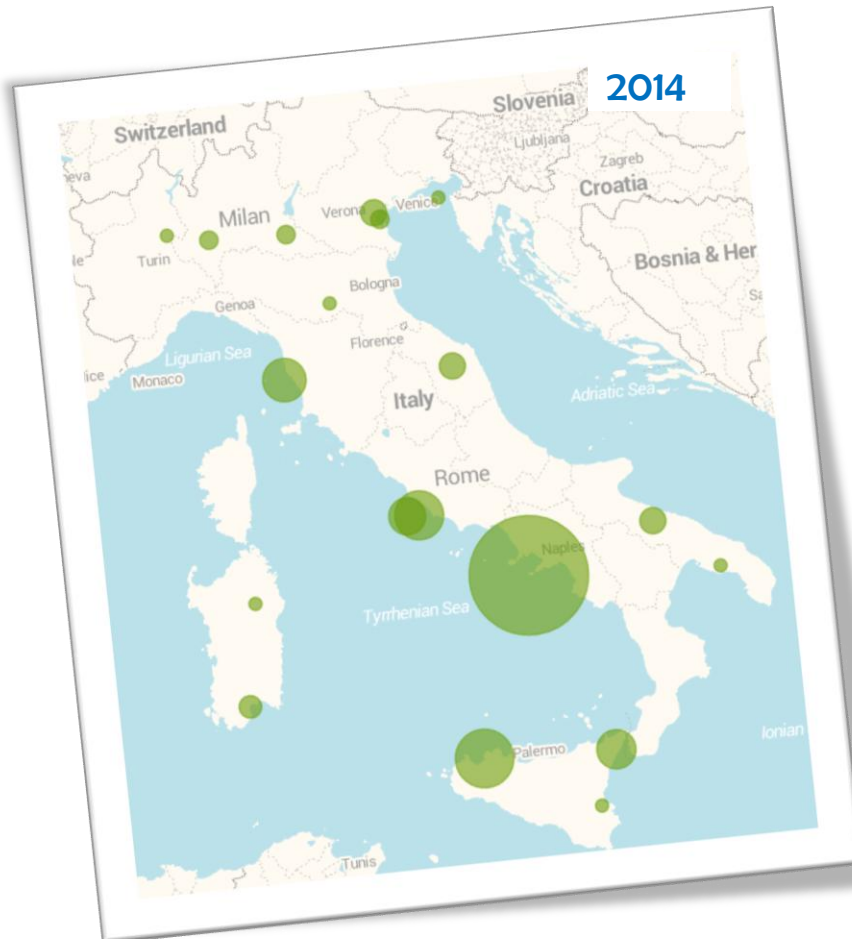


8. CAT - Commercial Air Transport

8.8 SEC - Security: LASER

SEC - SECURITY RELATED: Criminal/Security acts which result in accidents or incidents (per ICAO Annex 13). Intentional acts (suicide, homicide, acts of violence, self-inflicted injury, or laser attacks) are coded as SEC.

[ICAO CICTT Aviation Occurrence Categories]



8. CAT - Commercial Air Transport

8.9 SEC - Security: Unruly Passenger

DISRUPTIVE PASSENGER: a passenger who fails to respect the rules of conduct at an airport or on board an aircraft or to follow the instructions of the airport staff or crew members and thereby disturbs the good order and discipline at an airport or on board the aircraft. [ICAO Annex 17]

In-Flight, responsibility for determining the threat level of a specific situation of an unruly passenger and dealing with it appropriately lies in the hands of the Cabin Crew. In all cases, it is critical that the senior Cabin Crew member and the PIC be kept informed of any developing situation.

The **UNRULY PASSENGER** often requires additional actions by the Crew (cabin and flight crew) such as flight diversion, flight delay or return to stand of the aircraft.



UNRULY PAX	2014	2015
Total Unruly Events	5	19
Operational Issues after events	3	8
FLT DIVERSION – FLT DELAY – RETURN TO STAND	60%	42%



The Tokyo Convention (1963), also known as The Convention on Offences and Certain Other Acts Committed on Board Aircraft, makes it unlawful to commit “acts which, whether or not they are offences, may or do jeopardize the safety of the aircraft or of persons or property therein or which jeopardize good order and discipline on board” and also provides the authority to the Pilot in Command [PIC] to appropriately deal with an unruly passenger.

The PIC can disembark an unruly passenger in any State without coordination with the local law enforcement authorities. In this case, the individual is unlikely to face prosecution in that State unless the State itself has enacted enabling legislation allowing it press charges for the offence. If the PIC wishes the unruly passenger to face prosecution, he must land in a State that is a party to the Tokyo Convention and formally deliver the passenger to the local law authorities. For prosecution to be successful, it must be proven that the passenger committed a serious offence under the law of the State in which the aircraft is registered.

8. CAT - Commercial Air Transport

8.10 MAC – Mid-Air Collision

MAC - AIRPROX/TCAS ALERT/LOSS OF SEPARATION/NEAR MIDAIR COLLISIONS/MIDAIR COLLISIONS: Air proximity issues, Traffic Collision Avoidance System (TCAS)/Airborne Collision Avoidance System (ACAS) alerts, loss of separation as well as near collisions or collisions between aircraft in flight.

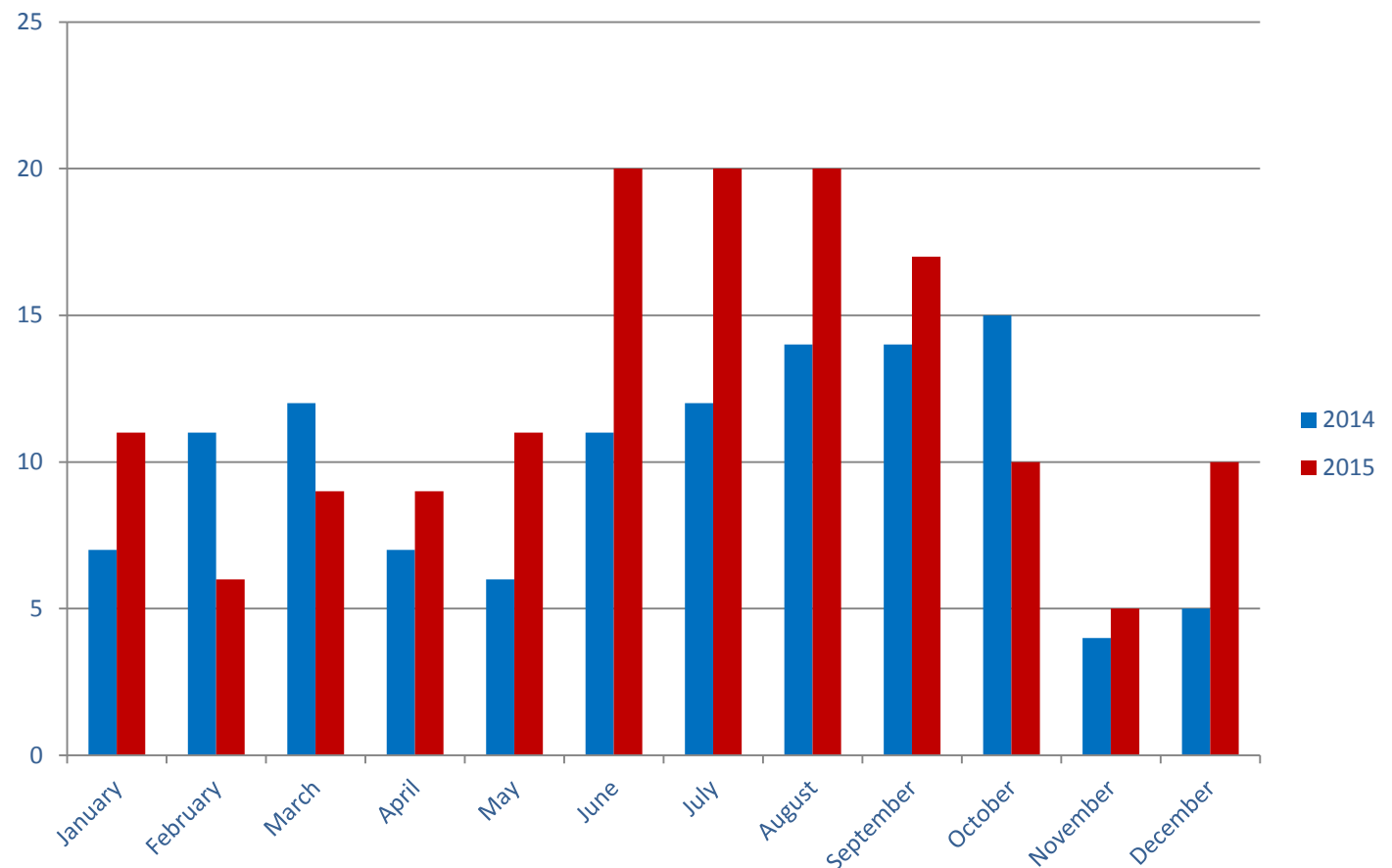
[ICAO CICTT Aviation Occurrence Categories]



Data could be not complete because this Safety Report refers to years 2014 and 2015, when the Air Navigation Service Providers reports were not yet included in the eE-MOR system.

ENAV and Aeronautica Militare started only at the middle of 2016 the test phase of their own reporting systems compatible with ADREP and ECCAIRS.

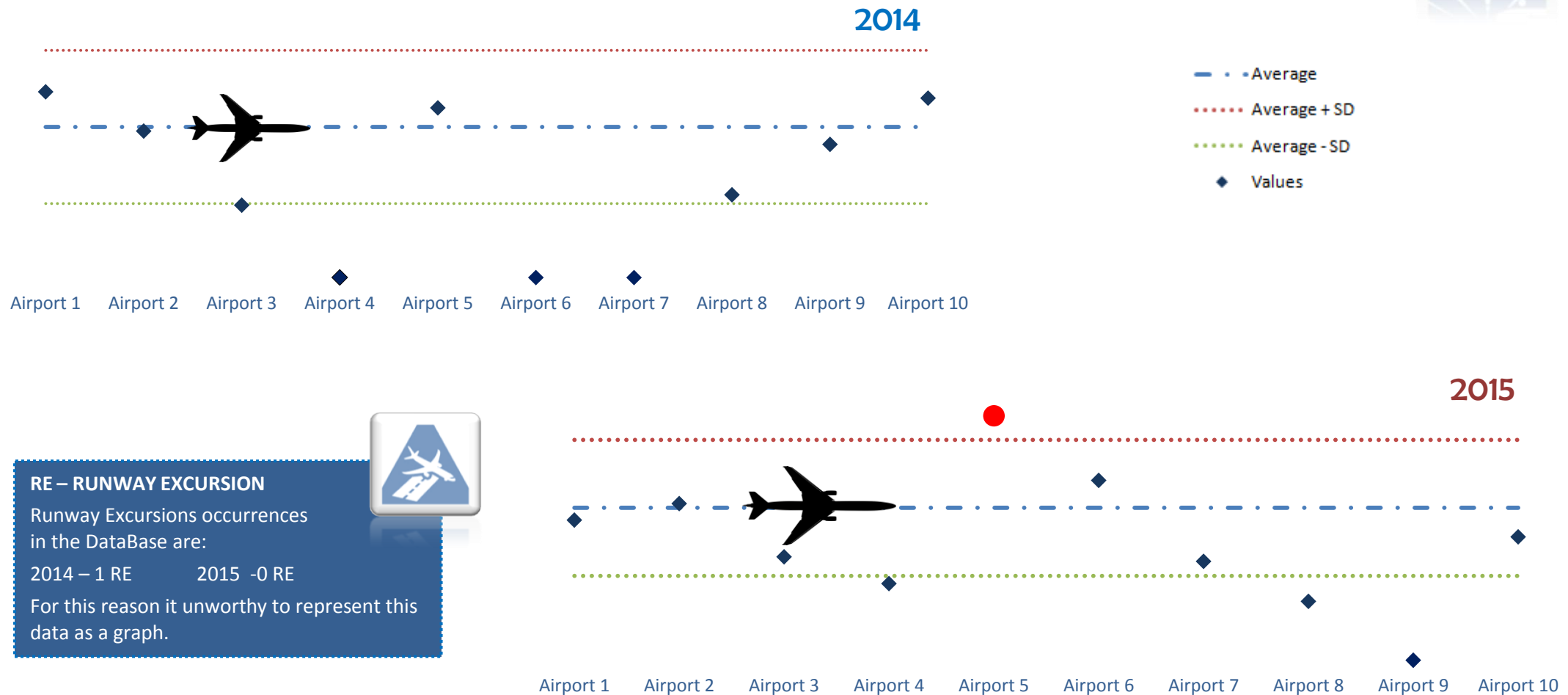
Therefore the comprehensive set of data is expected to be received by 2017.



8. CAT - Commercial Air Transport

8.11 RI – Runway Incursions

RI – RUNWAY INCURSION: Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and takeoff of aircraft. [ICAO CICTT Aviation Occurrence Categories]














8. CAT - Commercial Air Transport

8.12 DGs – Dangerous Goods

DANGEROUS GOODS: articles or substances which are capable of posing a risk to health, safety, property or the environment and which are shown in the list of DGs in the ICAO Doc. 9284 “Technical Instructions for the Safe Transport of Dangerous Goods by Air” or which are classified according to these Instructions.

[ICAO Doc. 9284]

<p>Class 1 Explosives</p> 	<p>Class 6 (Toxic, Infectious)</p>  
<p>Class 2 Gases</p> 	<p>Class 7 Radioactive Materials</p> 
<p>Class 3 Flammable Liquids</p> 	<p>Class 8 Corrosives</p> 
<p>Class 4 Other Flammables</p> 	<p>Class 9 – Miscellaneous (includes automotive airbag, Lithium battery, ...)</p> 
<p>Class 5 (Oxidizing, Organic)</p>  	

DANGEROUS GOODS ACCIDENT: an occurrence associated with and related to the transport of dangerous goods by air which results in fatal or serious injury to a person or major property or environmental damage.

DANGEROUS GOODS INCIDENT: an occurrence, other than a dangerous goods accident, associated with and related to the transport of dangerous goods by air, not necessarily occurring on board an aircraft, which results in injury to a person, property or environmental damage, fire, breakage, spillage, leakage of fluid or radiation or other evidence that the integrity of the packaging has not been maintained. Any occurrence relating to the transport of dangerous goods which seriously jeopardizes the aircraft or its occupants is also deemed to be a dangerous goods incident.

8. CAT - Commercial Air Transport

To obtain a better quality of data, starting from 2016 eE-MOR system included a new specific input form and a topic named “DGOR” (Dangerous Good Occurrence Reporting) which aids to collect more specific info about DGs (i.e. class, type, packaging, etc).

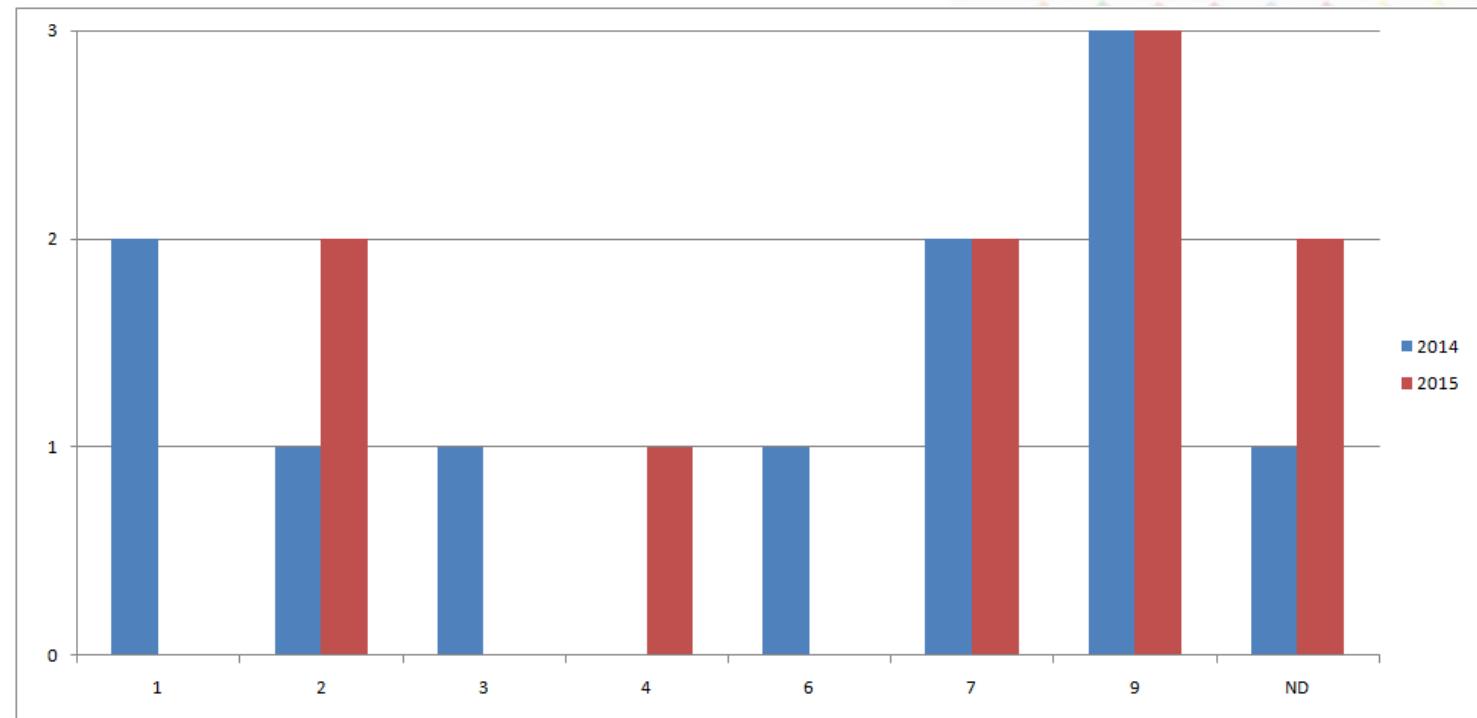
For the 2014-2015, number of occurrences in the database is:

Occurrence	2014	2015
Dangerous Goods	11	10

The graph shows, for each Class Number, the type of dangerous good involved in the event.

NOTE: The following alleviations, developed by EASA, are expected to be adopted:

in GA, it would be allowed to carry reasonable quantities of dangerous goods that are needed to facilitate flight safety. This applies to articles and substances carried for operational purposes, such as, e.g. a/c spare parts, components/substances needed for a/c repair, oil (for aircraft engine/gearbox), aircraft fuel, de-icing fluid, aircraft battery and an air starter unit. The responsibility relies with the pilot. Therefore collecting safety data will allow us to provide safety information to ensure proper awareness.



Dangerous Goods Class Number

Legenda:

1 – Explosives

4 - Flammable Solids

7 - Radioactive substances

2 - Non flammable gas + Oxy Compressed

6 - Toxic and Infectious Substances

9 - Li-BAT + Dry Ice + mix

3 – Formaldehyde solution, flammable

ND=Not Defined

8. CAT - Commercial Air Transport

8.13 ADRM – FOD Control

FOREIGN OBJECT DEBRIS: any object found in an inappropriate location that, as a result of being in that location, can damage equipment or injure personnel. FOD includes a wide range of material, including loose hardware, pavement fragments, catering supplies, building materials, rocks, sand, pieces of luggage, and even wildlife. FOD is found at terminal gates, cargo aprons, taxiways, runways, and run-up pads. The acronym FOD is used to describe both the foreign objects themselves, and any **FOREIGN OBJECT DAMAGE** attributed to them.

Into the **ADRM** category, ICAO/ECCAIRS provides with a specific item regarding the occurrence involving “loose foreign objects on aerodromes and heliports (deficiencies or loose foreign objects at unprepared or natural landing sites are coded as OTHER)”.

For the 2014-2015, number of occurrences in the database are:

Occurrence	2014	2015
FOD Control	12	19

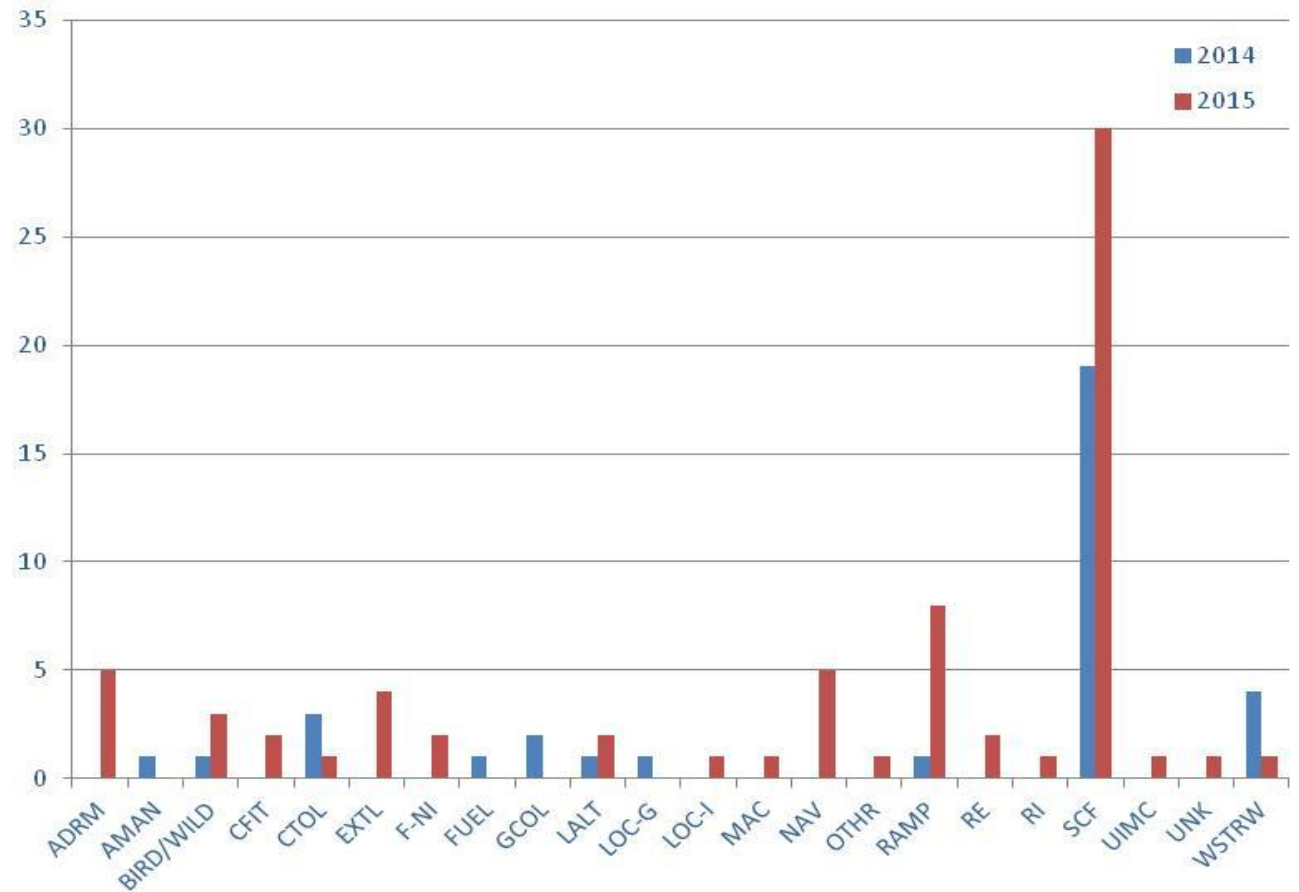
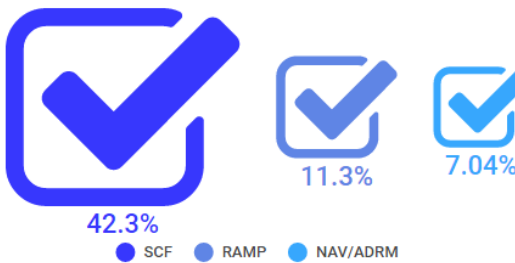
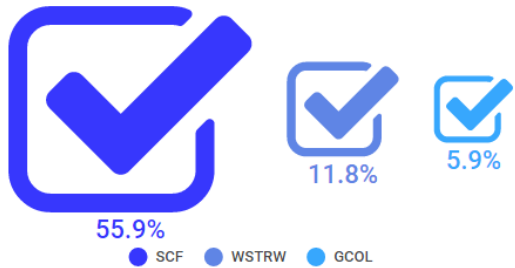
# occurrence → ↓ airport	2014	2015
Airport 1	2	2
Airport 2	5	4
Airport 3	3	0
Airport 4	1	0
Airport 5	0	1
Airport 6	1	0
Airport 7	0	3
Airport 8	0	2
Airport 9	0	1
Airport 10	0	1
Airport 11	0	2
Airport 12	0	3



Type of debris	2014	2015
Grass (<i>cut</i>)	0	1
Adhesive/Tape	3	1
Plastic/metallic objects	3	5
Chinese lantern/weather balloon	2	1
Tyres (<i>piece of</i>)	1	4
Paving (<i>piece of</i>)	2	2
Work tools	1	3
Not defined	0	2

9. SPO – Specialized Operations

SPECIALISED OPERATIONS (SPO): means any operation other than commercial air transport where the aircraft is used for specialised activities such as: agriculture, construction, photography, surveying, observation and patrol, aerial advertisement. [Reg. (EU) 965/2012]

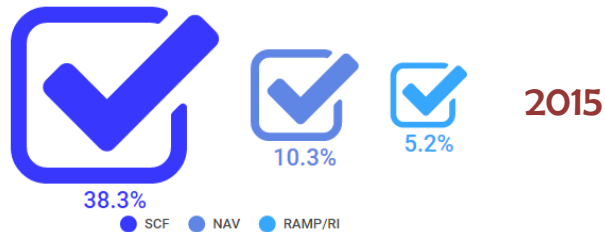
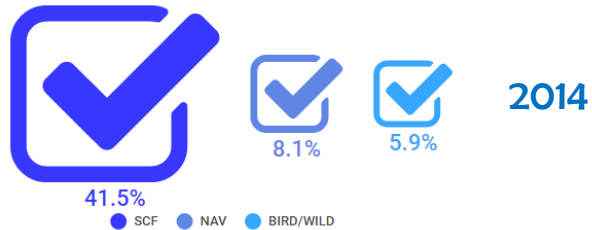


10. GA – General Aviation

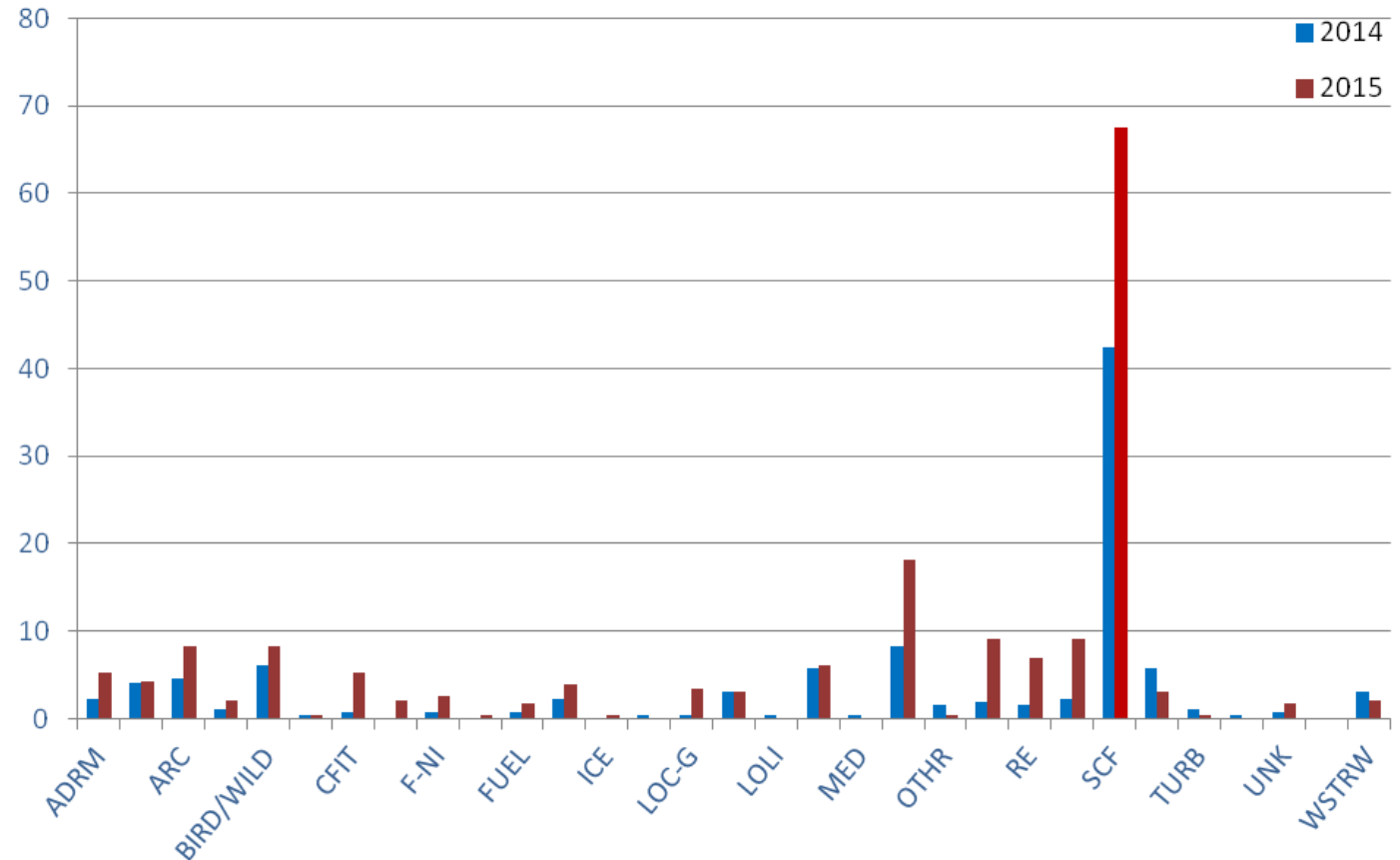
GENERAL AVIATION (GA): a civil aircraft operation other than a commercial air transport flight operating to a schedule, without any form of remuneration.



The graph is based on presumed number of flights and referred to General Aviation as to all flights other than military and scheduled airline flights, both private and commercial, departing or arriving on commercial Italian airports.



Rate of occurrences per one hundred thousand flights



11. Conclusions

Quality of Mandatory Occurrence Reporting is much improved after the implementation, in 2014, of a new eE-MOR system based on the release 5 of ECCAIRS and with the activation of a quality control process, as required by the Regulation (EU) 376/2014. This has allowed, for a first time, to use data relating to incidents to perform a safety analysis, which so far, even at Europe level, it is based solely on the data on accidents and serious incidents.

A further improvement step of the analysis is expected with the integration, in the 2017, of reports transmitted by ENAV and by Aeronautica Militare (Italian Air Force), so as to cover, in practice, almost 100% of the required mandatory reporting, excluding the reports of private pilots (ref. Annex V of Regulation (EU) 2015/1018). In that last sector a strong safety promotion activity is planned and an increase in reporting should be obtained in the next years.

However, even with the limitation explained, the analysis of reports received in 2014 and 2015 already allows to do some interesting considerations on the aggregated data. Furthermore it is important to say that the eE-MOR system is already capable to accept detailed reports for specific events, i.e. Dangerous Goods, FOD, Runway Incursions, and that the safety analysis could be further refined once the companies will be able to provide more detailed information.

We consider also useful to highlight that, as shown in the diagram on page 5, the majority of the reports received have been transmitted by AOC operators and by Aerodrome operators, that are the most advanced organizations in the application of SMS. A dedicated safety promotion activity for this kind of organizations was made in the [2013](#) and [2015](#). In the 2016, a dedicated workshop on “[Occurrence Reporting for Handlers](#)” has been made for the Ground Handlers. ENAC is going to plan the next safety promotion activity in the area of production, maintenance and flight schools.



Finally it is important that, for the first time, a comparative statistical analysis has been performed, anonymously, for some typical airport events (see RAMP events and Runway Incursions). This will allow to provide guidance to audit teams to better refine their inspection/surveillance activity.

Comment or suggestions must be addressed to the [ENAC Safety Unit](#) which will evaluate them and will take them into account for the future editions of this Safety Report.



Safety Report

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