Occurrence Reporting Overview

2014
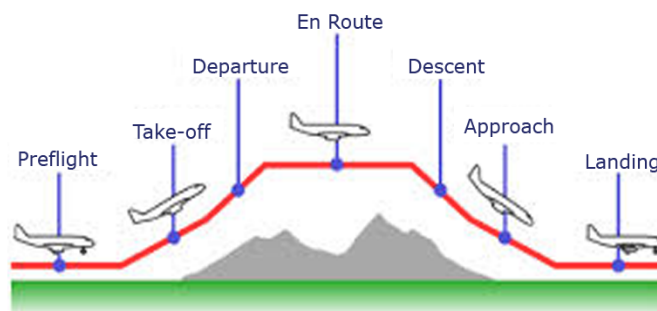
Introduction

The objective of Occurrence Reporting System is to contribute to the improvement of air safety by ensuring that relevant information on safety is reported, collected, analysed, stored, protected and disseminated. The ultimate goal of occurrence reporting is the prevention of incidents and accidents and not to attribute blame or liability.

Pursuant to Regulation 01/2009 on Occurrence Reporting in Civil Aviation, which transposes into Kosovo's national legal order the Directive 2003/42/EC, all relevant persons shall report aviation occurrences to the Civil Aviation Authority of the Republic of Kosovo (CAA). Such reporting contributes to the improvement of the safety of civil aviation through better knowledge of these occurrences to facilitate analysis and trend monitoring for initiating corrective actions.

Occurrence Reporting System in Kosovo has been in place since 2006. Despite the slow start, the occurrence reporting rate has substantially improved in the last years. Furthermore, the operators have their own Safety Management Systems (SMS), which have advanced significantly in the recent years. The SMS usually integrates a component for treating and addressing reported occurrences, enabling the industry to contribute directly to the collection and analysis of safety-related occurrences.

The CAA has set up and uses the 5th version of ECCAIRS (European Co-ordination Centre for Aviation Incident Reporting Systems) system. The CAA will subsequently integrate its safety data into the EU ECCAIRS central database to facilitate effective analysis and monitoring of safety critical information, in accordance with Regulation 8/2010, which transposes into our national legal order the Commission Regulation (EC) No.1321/2007. Accidents and serious incidents shall also be stored in the CAA ECCAIRS database, subject to the agreed terms and conditions with the Aircraft Accident Incident Investigation Commission of the Republic of Kosovo (AAIIC).

This report contains Occurrence Report (OR) statistics for 2014, a short explanation of each category and a short description of few occurrences.

ECCAIRS Occurrence Classes

The ECCAIRS occurrence classes are based on ICAO's ADREP 2000 taxonomy.

Accident

An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, in which:

    a) 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

    b) 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 the engine, its cowlings or accessories; or for damage limited to propellers, wing tips, antennas, tires, brakes, fairings, small dents or puncture holes in the aircraft skin; or

    c) the aircraft is missing or is completely inaccessible.

Serious incident

An incident involving circumstances indicating that an accident nearly occurred.
N.B.
Examples of serious incidents can be found in Attachment D of ICAO Annex 13 and in the ICAO Accident/Incident Reporting Manual (ICAO Doc 9156).

Incident

An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation. *N.B.*

The type of incidents which are of main interest to the International Civil Aviation Organization for accident prevention studies are listed in the ICAO Accident/Incident Reporting Manual (ICAO Doc 9156) and ICAO Annex 13.

Major incident

Eurocontrol: An incident associated with the operation of an aircraft, which safety of aircraft may have been compromised, having led to a near collision between aircraft with ground or obstacles (i.e. safety margins not respected which is not the result of an ATC instruction).

Significant incident

Eurocontrol: An incident involving circumstances indicating that an accident, a serious or major incident could have occurred, if the risk had not been managed within safety margins, or if another aircraft had been in the vicinity.

Occurrence without safety effect

An incident which has no safety significance.

Occurrence Categories

For the purpose of this publication, occurrences are categorised based on ICAO's ADREP 2000/ECCAIRS taxonomy.

ADRM	Aerodrome (Aerodrome design, service, or functionality issues are evident)
AMAN	Abrupt manoeuvre (The intentional abrupt manoeuvring of the aircraft by the flight crew)
ARC	Abnormal runway contact (Any landing or take-off involving abnormal runway or landing surface contact)
ATM	ATM/CNS (Air traffic management (ATM) or communications/ navigation/surveillance (CNS) service issues are evident)
BIRD	Birdstrike (Occurrences involving collisions / near collisions with bird(s)/wildlife)
CABIN	Cabin safety events (Miscellaneous occurrences in the passenger cabin of transport category aircraft)
CFIT	Controlled flight into or toward terrain (Inflight collision or near collision with terrain, water, or obstacle without indication of loss of control)
CTOL	Collision with obstacle(s) during take-off and landing (Collision with obstacle(s), during take-off or landing whilst airborne)
EVAC	Evacuation (An air carrier occurrence where either (a) person(s) are seriously or fatally injured during an evacuation, or (b) an unnecessary evacuation was performed)
EXTL	External load related occurrences (Occurrences during or as a result of external load or external cargo operations)
F-NI	Fire/smoke (non-impact) (Fire or smoke in or on the aircraft, in flight or on the ground, which is not the result of impact)
F-POST	Fire/smoke (post-impact) (Fire/Smoke resulting from impact)
FUEL	Fuel related (One or more powerplants experienced reduced or no power output due to fuel exhaustion, fuel starvation/mismanagement, fuel contamination/wrong fuel, or carburettor and/or induction icing)
GCOL	Ground Collision (Collision while taxiing to or from a runway in use)
GTOW	Glider towing related events (Premature release, inadvertent release or non-release during towing, entangling with towing, cable, loss of control, or impact into towing aircraft / winch)
ICE	Icing (Accumulation of snow, ice, freezing rain, or frost on aircraft surfaces that adversely affects aircraft control or performance)
LA[1]	Laser attack
LALT	Low altitude operations (Collision or near collision with obstacles/objects/terrain while intentionally operating near the surface (excludes take-off or landing phases))
LOC-G	Loss of control - ground (Loss of aircraft control while the aircraft

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[1] For the purpose of this publication this category has been used in addition to the official ICAO ADREP 2000 taxonomy

|	is on the ground)
LOC-I	Loss of control - inflight (Loss of aircraft control while inflight)
LOLI	Loss of lifting conditions en-route (Landing en-route due to loss of lifting conditions)
MAC	AIRPROX/near miss/mid-air collision (AIRPROX/loss of separation/near miss/mid-air collision)
RAMP	Ground Handling (Occurrences during (or as a result of) ground handling operations.)
RE	Runway excursion (A veer off or overrun off the runway surface)
RI-A	Runway incursion - animal (Collision with, risk of collision, or evasive action taken by an aircraft to avoid an animal on a runway in use)
RI-VAP	Runway incursion - vehicle, a/c or person (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 take-off of aircraft.
SCF-NP	System/component failure or malfunction [non-powerplant] (Failure or malfunction of an aircraft system or component - other than the powerplant)
SCF-PP	Powerplant failure or malfunction (Failure or malfunction of an aircraft system or component - related to the powerplant)
SEC	Security related (Criminal/Security acts which result in accidents or incidents (per the International Civil Aviation Organization [ICAO] Annex 13)
TURB	Turbulence encounter (In-flight turbulence encounter)
UIMC	Unintended flight in IMC (Unintended flight in Instrument Meteorological Conditions (IMC))
USOS	Undershoot/overshoot (A touchdown off the runway surface)
WSTRW	Windshear or thunderstorm. (Flight into windshear or thunderstorm)
OTHR	Other (Any occurrence not covered under another category)
UNK	Unknown or undetermined (Insufficient information exists to categorize the 99 occurrence)

Statistics
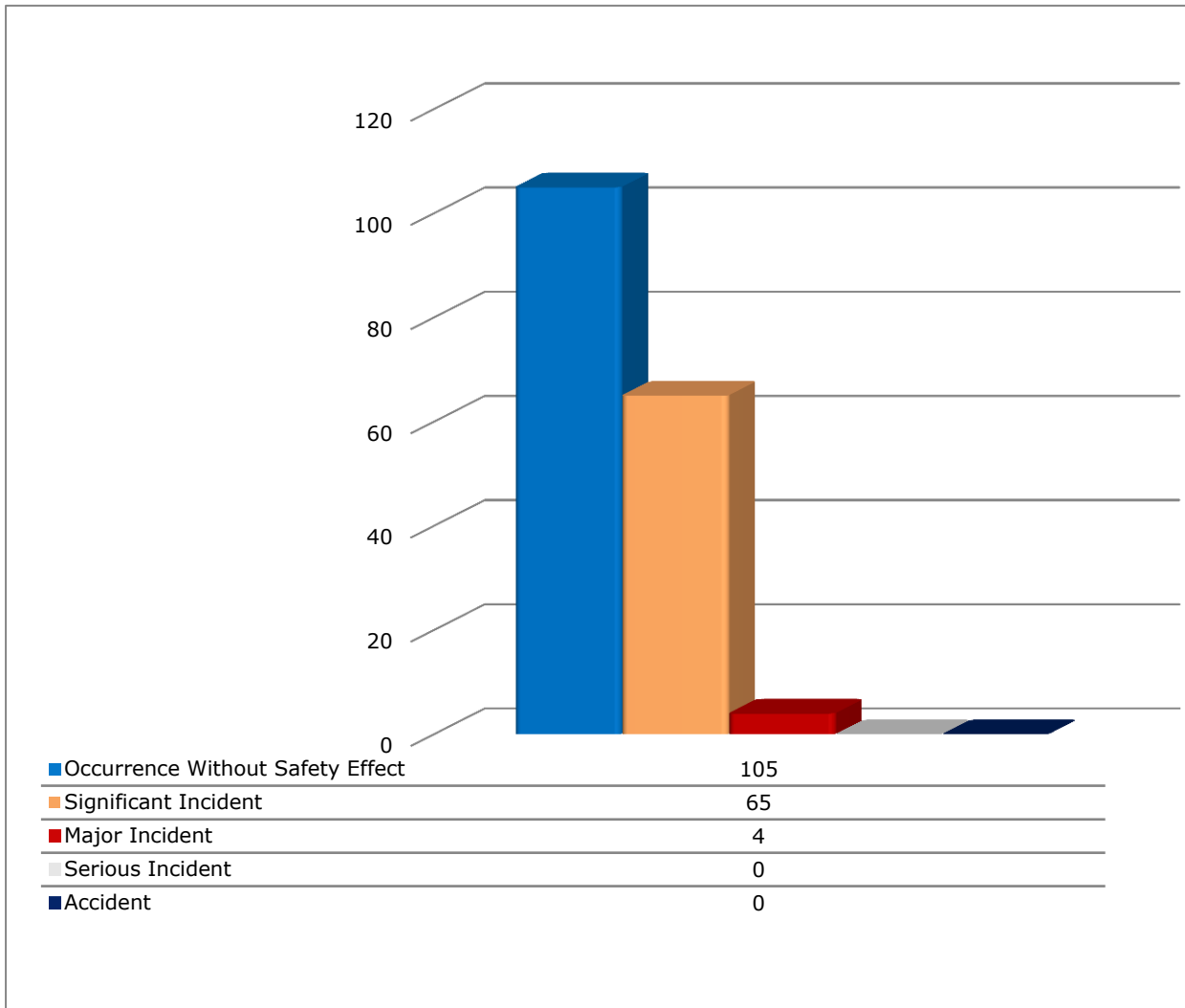
Figure 1. Number of ORs received in 2014 according to occurrence class

During 2014 a total of 174 occurrences were reported to the CAA. As shown in Fig. 1 occurrences without safety effect accounted for the majority (around 60%) of reported occurrences. The number of occurrences classified as significant incidents was also high making up around 37% of the total number. A very small number of occurrences reported during the last year were classified as major incidents (4 in total), while there were no reported serious incidents.
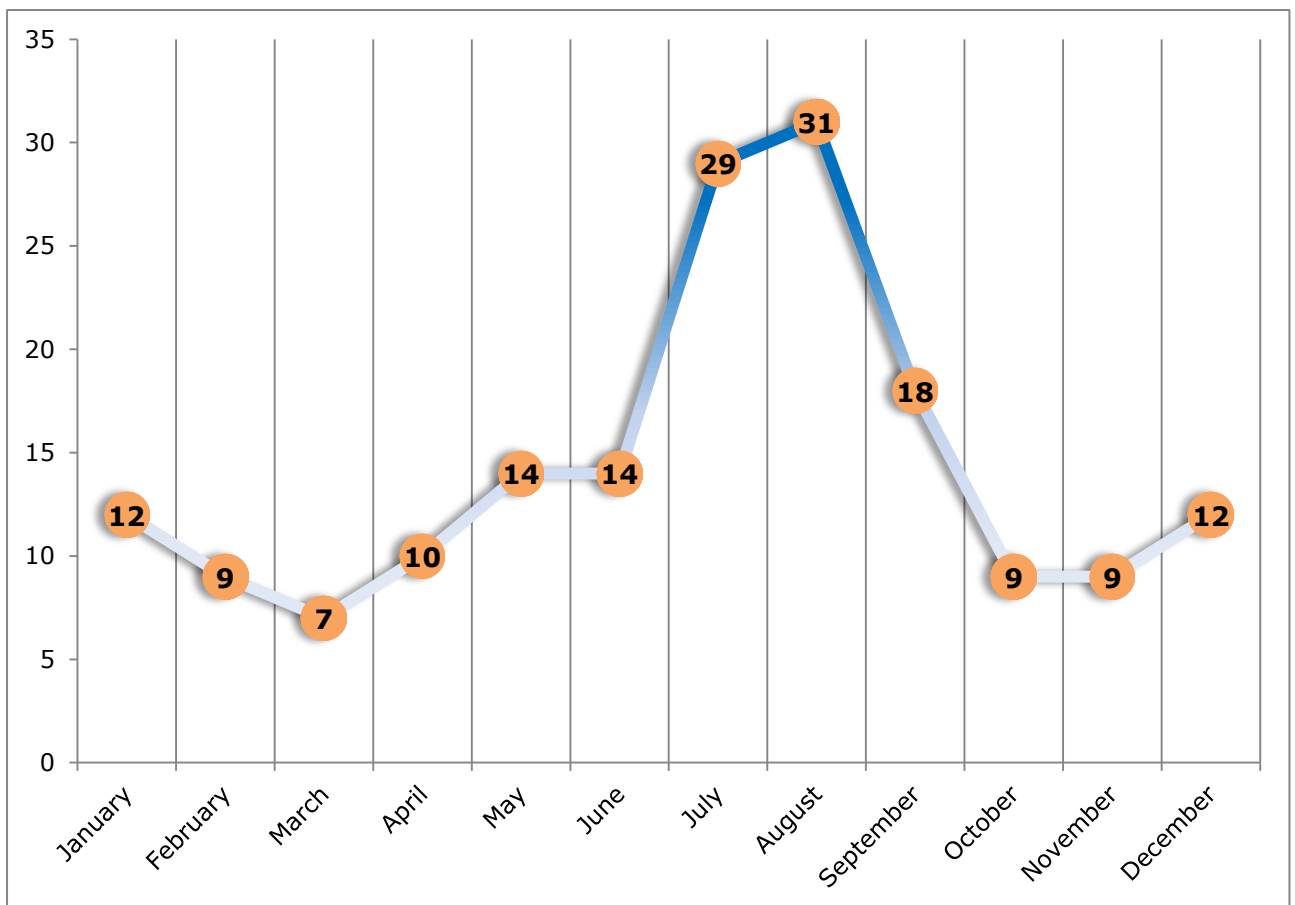
Figure 2. ORs received during 2014

Figure 2 shows the number of occurrence reports received by CAA on monthly basis during 2014. Consistent with the trends observed in the previous years, there was a sharp increase in reported occurrences during the summer months, which also coincides with the high peak season at Prishtina International Airport "Adem Jashari" (PIA "Adem Jashari"). This increase is consistent with the increase of aircraft activities and can be attributed mainly to the increase of laser and bird activities around PIA "Adem Jashari". During summer season, CAA received 22 Laser Attack reports and 16 Birdstrike reports. A return to average levels can be observed in September and October until the end of the year.
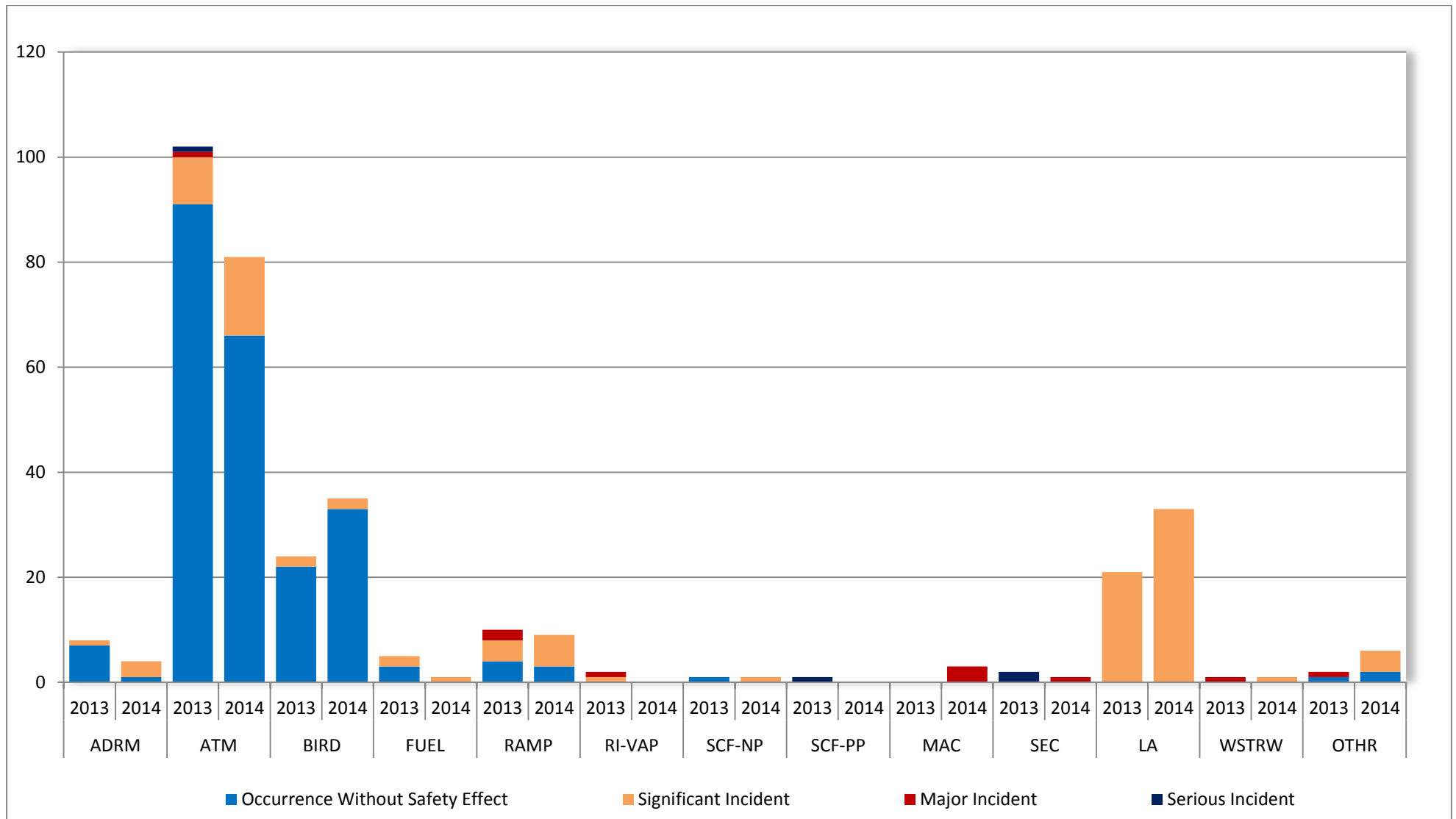
Figure 3. Breakdown of reported occurrences in 2013 and 2014 by category and severity classification

	Occurrence Without Safety Effect	Significant Incident	Major Incident	Serious Incident	Total
ADRM	1	3	0	0	**4**
ATM	66	15	0	0	**81**
BIRD	33	2	0	0	**35**
FUEL	0	1	0	0	**1**
LA	0	33	0	0	**33**
MAC	0	0	3	0	**3**
RAMP	3	6	0	0	**9**
SCF-NP	0	1	0	0	**1**
SEC	0	0	1	0	**1**
WSTRW	0	1	0	0	**1**
OTHR	2	4	0	0	**6**
Total	**105**	**65**	**4**	**0**	**174[2]**

Table 1. ORs received during 2014 according to categories and classes

Observing the trend of received reports in 2014 in Figure 3 and Table 1, it can be noted that a significant portion of the reported occurrences (around 45%) are related to the ATM system and procedures, including Aeronautical Information and Meteorological Services. Out of these occurrences, around 80% were classified as occurrences without safety effect and the rest were classified as significant incidents. This trend once again highlights the positive attitude and readiness of the relevant operational staff to report also events that do not have outright detrimental effects on the safety of operations, but which help in observing long-term negative tendencies and preventing more serious incidents.

The second and third most reported categories are Birdstrikes and Laser Attacks, respectively, which combined comprise around 40% of the overall number of reported occurrences. The significant increase in the number of reported laser attacks raises concerns, since laser attacks are classified as significant incidents due to the severe effects they may have on the safety of aircraft operations. The issue was also highlighted in previous editions of this report. Detailed summaries for each of the individual categories are provided below.

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[2] It should be noted that an occurrence may belong to more than one category.

ADRM (*Aerodrome*). In this category are included occurrences associated with runways, taxiways, ramp area, parking areas, buildings and structures, Crash/Fire/Rescue (CFR) services, obstacles on the Aerodrome property, power supply, lighting, markings, signage, procedures, policies, and standards. Occurrences from this category do not necessarily involve an aircraft.

There were 3 reported occurrences during 2014, out of which one was classified as occurrence without safety effect and two as significant incidents.

One significant incident involved vehicle entering aerodrome manoeuvring area without authorization from ATC and the other occurred due to delay of information flow. Both incidents were resolved with no harm to aircraft or person.

ATM (*Air traffic management (ATM) and communications/navigation/ surveillance (CNS)).* Table 1 and Figure 3 show that during 2014 occurrences concerning ATM systems and procedures (including Aeronautical Information and Meteorological Services) account for nearly half of the occurrences reported during 2014.

Occurrences covering technical failures or defects, mainly related to communication, navigation, surveillance, meteorological equipment, aeronautical information systems etc., are included here, as well as any other occurrence pertaining to or involving ATM procedures and systems. During 2014, 50% of ATM Occurrences (see Figure 4) were related to the ATM communications systems (Voice Communication Systems, AFTN/Internet and Other Communication Systems). The majority of these reported occurrences were short-term problems mainly with the Voice Communication Switching System (VCSS) and Internet, with no safety consequences. The other part of occurrences involving communication systems categorized in the Other Communications Systems category were largely concerning problems and difficulties with public and direct land lines with other ATC centres. Most of the occurrences in these three sub-categories were classified as occurrences without safety effect, while 3 were classified as significant incidents. Two of the significant incidents were related to failures of public land lines with neighbouring ATC centres which caused delays in traffic coordination. The other one was concerning the failure of the AFTN system, which disrupted the regular distribution of meteorological reports.
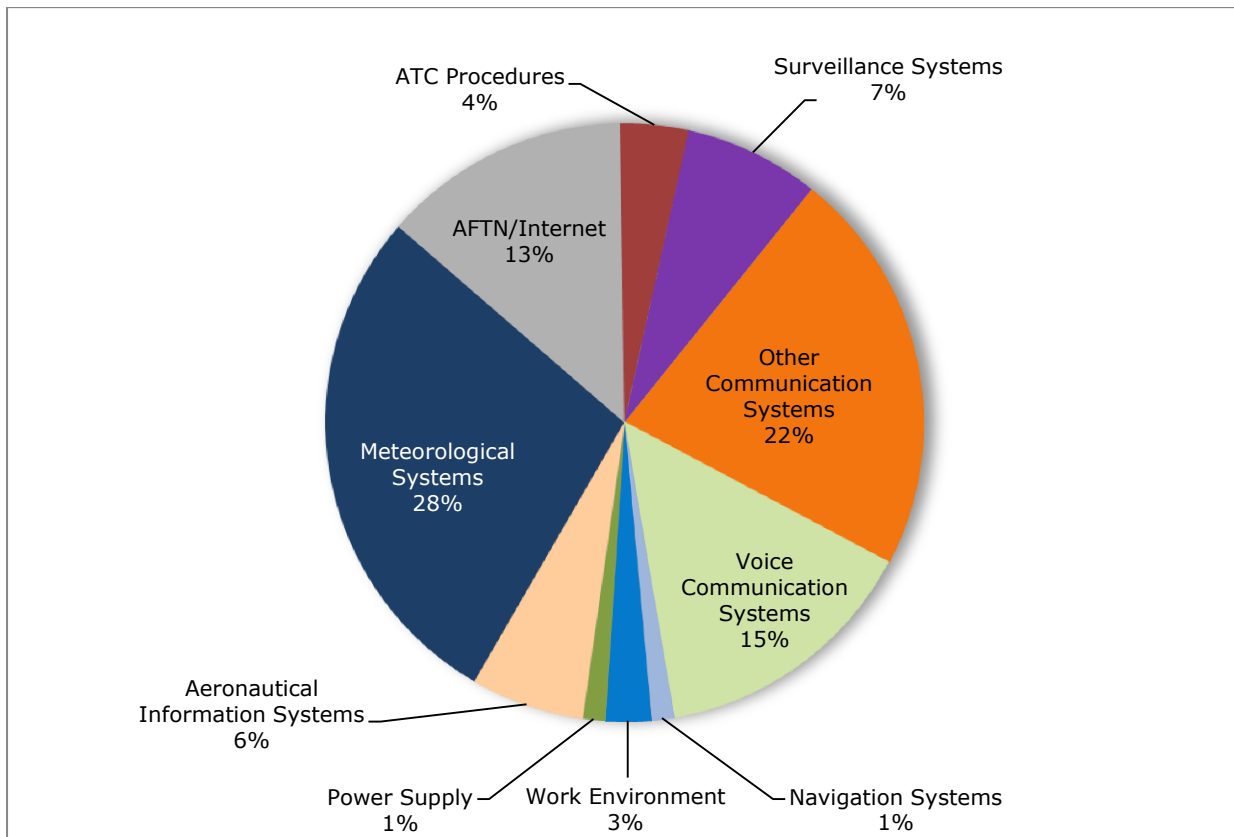
Figure 4. A breakdown of the reported ATM occurrences per sub-category

Kosovo ANSP has taken some necessary steps to address the abovementioned problems. In particular, regarding the frequent problems with the public phone lines, the ANSP has recently installed dedicated lines with some of the neighbouring ATC centres, and uses the public phone lines systems as a back-up communication system, thereby significantly improving the traffic coordination efficiency with other ATC centres.

Another sub-category of occurrences, which has experienced a significant increase in reports compared to the previous year, is the sub-category related to Meteorological Systems. During 2014 there were 23 occurrences that were reported related to meteorological equipment and service. The majority of these occurrences were caused by short-term problems or malfunctions and were classified as occurrences without safety effect. However, several of such occurrences (around 15%) were classified as significant incidents as they had direct effect on the traffic arriving/departing from Prishtina Airport. All of the occurrences classified as significant incidents concerned the failure of the Runway Visual Range (RVR) equipment, which measures the runway visibility range. Information coming from such equipment is especially important during bad weather and low visibility conditions. The values it generates are used as a trigger to initiate Low Visibility Procedures at the airport. Moreover, the failure of such equipment directly affects the category of the Instrument Landing System at the airport. Most of the problems with RVR are due to the technical state of the equipment, its age and lack of spare parts. The ANSP has taken the

necessary measure to return the equipment in service, and in the future, it plans to procure a new automatic weather observation system.

A significant decrease in reported occurrences can be noted in the Surveillance Systems subcategory. In 2014 there were only 5 reported occurrences concerning the Surveillance systems and function, compared to 26 reported during 2013. This improvement can be mainly attributed to the installation of the new Mode S Radar system, which has been put into function this year. Despite the small number, most of these occurrences were classified as significant incidents, as they significantly increased the ATCO work load when controlling the air traffic within Kosovo airspace. It is worth noting that most of these occurrences predate the installation of the new radar.

This year, we can also note an increase in occurrences reported related to Aeronautical Information Systems and services. Most of the occurrences categorized in this sub-category were of procedural nature and concerned erroneous or missing flight plans. Two out of five reported occurrences in this subcategory were classified as significant incidents as such occurrences led to delays and increased workload for the ATCOs as well as the pilots.

A smaller number of occurrences reported this year were related to ATC Procedures (4%), Work Environment (3%), Navigation Systems (1%) and Power supply (1%).
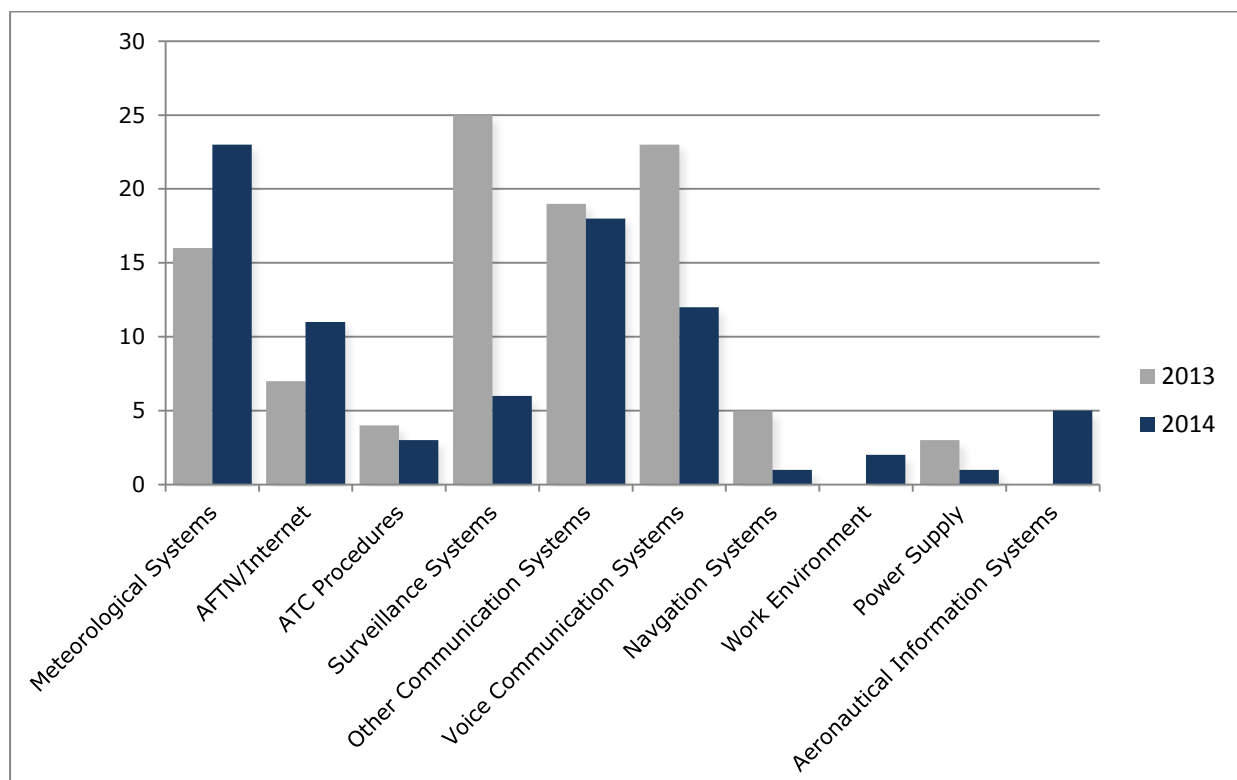

Figure 5. A comparison of the reported ATM occurrences between 2013 and 2014

The significant number of reports was helpful in identifying trends regarding equipment and other aspects of air navigation services and systems, both by the Air Navigation Service Provider (ANSP) and the CAA, enabling the ANSP to address these issues more carefully and ensure that proper measures are taken to mitigate the problems.

It is worth noting that there is a consistency in the number of reported occurrences in this category compared to the previous years, which is an indication that reporting continues to be widespread in the industry, especially the ANSP, due to raised awareness regarding benefits from occurrence reporting and its clear contribution to the improvement of safety.

BIRD (*Birdstrike).* This category includes a collision/near collision with or ingestion of one or several birds. Unconfirmed birdstrikes are also included in this category.

During 2014 there were 35 reported birdstrikes, out of which 2 were classified as significant incidents and other 33 as occurrences without safety effect.

Two incidents occurred when several birds hit an aircraft at once, however the safety of flights wasn't jeopardised.

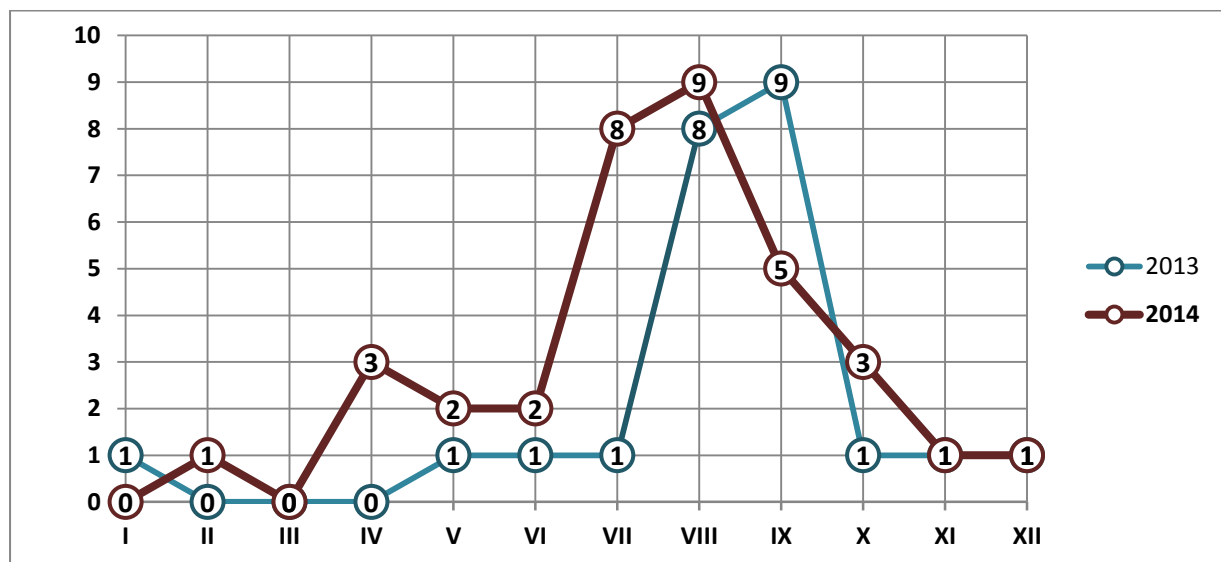Figure 6 shows the number and trend of reported birdstrikes per each month during 2013 and 2014.

Figure 6. Reported birdstrikes during 2013 and 2014

As shown above, the number of reported birdstrikes has increased during this year. Consistently, the largest number of birdstrikes occurs during summer months due to several factors, including increased number of aircraft

movements due to high peak season at PIA, weather conditions, harvesting season close to the airport boundaries, etc. In 2014, the largest number of reported birdsrtikes involved 9 kestrels (small falcons which hunt small mammals and large insects).

Habitat management is critical for the control of birds of prey, although a long grass policy is likely to be beneficial for species such as kestrels. Active control of small mammals is essential to reduce buzzard presence whilst proofing of perching areas will reduce opportunities for birds to reside on airfields.

In order to assess implementation of wildlife control measures as well as to verify that the required actions regarding risk reduction/habitat management were taken in compliance with required standards, CAA conducted several inspections at PIA "Adem Jashari". As a result, the aerodrome operator took additional corrective measures in order to manage wildlife more efficiently.

FUEL. There was one reported fuel related occurrences during 2014 and it was classified as significant incident. The fuel leak was noticed by the ramp personnel and reported to the pilot, who in turn, called maintenance and operations for further assessment. After the assessment the pilot received a no go decision from maintenance and operations centre. This fuel related occurrence happened while the aircraft was on the ground at BKPR, appropriate measures were taken and safety was not compromised.

LA (*Laser Attack).* There were 33 laser attack reports submitted to CAA in 2014 and they were all classified as significant incidents. Some of the reports contain two or more laser attacks reported during the same flight. All of the events occurred during the approach or departure phase of flight when aircraft were operating at low altitude. There were 11 reports from military flights (mainly helicopters) and 22 from civilian aircraft pilots. All aircraft involved landed safely at Prishtina International Airport or transitioned safely to their destination.
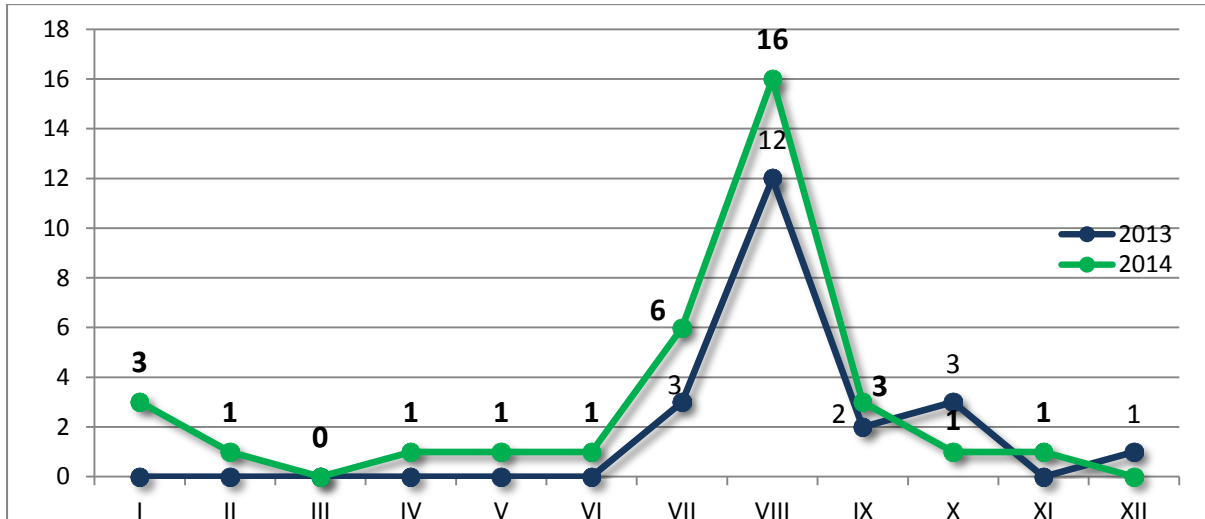
Figure 7. Reported laser attracts during 2013 and 2014

Occurrences with laser attacks have increased by 12 in 2014 in comparison to 2013. These kinds of attacks are carried out deliberately by individuals and pose great hazard to the safe operation of aircraft when exposed in flight. Laser lights that hit at a particular angle can illuminate the whole cockpit and blind the pilots as they're trying to land. The lasers can disorient pilots at crucial moments.

Photo 1: A picture from an instructional video simulating the effects of a laser pointer in a cockpit. ©http://convearth.com/2012/09/laser-attacks-airplane/

In an attempt to minimize laser attacks, Civil Aviation Authority of Kosovo in coordination with Kosovo Police have communicated a safety Press Release video on national Television with warnings and dangers that laser attacks impose on flying aircraft. Also, in 2013 a Memorandum of Understanding was signed between CAA, Kosovo Police and Air Navigation Service Provider in order to coordinate the actions when an aircraft is exposed to laser attack.

MAC (*AIRPROX/near miss/mid-air collision*) Occurrences related to loss of separation, near miss, mid-air collision. It includes all collisions between aircraft while both aircraft are airborne; both air traffic control and cockpit crew separation-related occurrences are included; used for AIRPROX reports. Also, Genuine TCAS alerts are included here.

There were 3 MAC occurrences reported during 2014 and were classified as major incidents. Two MAC major incidents involved military helicopter and one involved a civilian helicopter. All three occurrences involved helicopters unauthorised crossing of the extended runway centre line while commercial air traffic was on final for landing. ATC gave instructions to the helicopter pilots to take evasive maneuvers to avoid a mid-air collision.

Because, of these occurrences, ATC procedures are being revised for helicopter operations in Republic of Kosovo.

RAMP(*Ground Handling*) Occurrences related to ground handling (during or as a result of ground handling) include collisions that occur while servicing, boarding, loading, and deplaning the aircraft, propeller/rotor/fan blade strikes, pushback/powerback/towing events, jet blast and prop/rotor wash, aircraft external pre-flight configuration errors and all parking areas (ramp, gate, tiedowns).

There were 9 RAMP occurrences reported during 2014; 3 were classified as occurrences without safety effect and other 6 were significant incidents.

Two reported significant incidents were associated with transport of dangerous goods by air in incoming flights. Other incidents occurred due to allocation of wrong stand for incoming aircraft, un-coordinated push-back operations with taxi clearance and unauthorized aircraft engine test. In addition, one significant incident occurred when strong wind pushed a single-engine biplane from the stand. The appropriate measures for all incidents were taken and safety was not jeopardised. CAA is closely monitoring implementation of safety recommendations deriving from occurrence investigation reports.

SEC (*Security related*). One occurrence related to security was reported. It was related to an unruly passenger that had to be handcuffed during the flight from
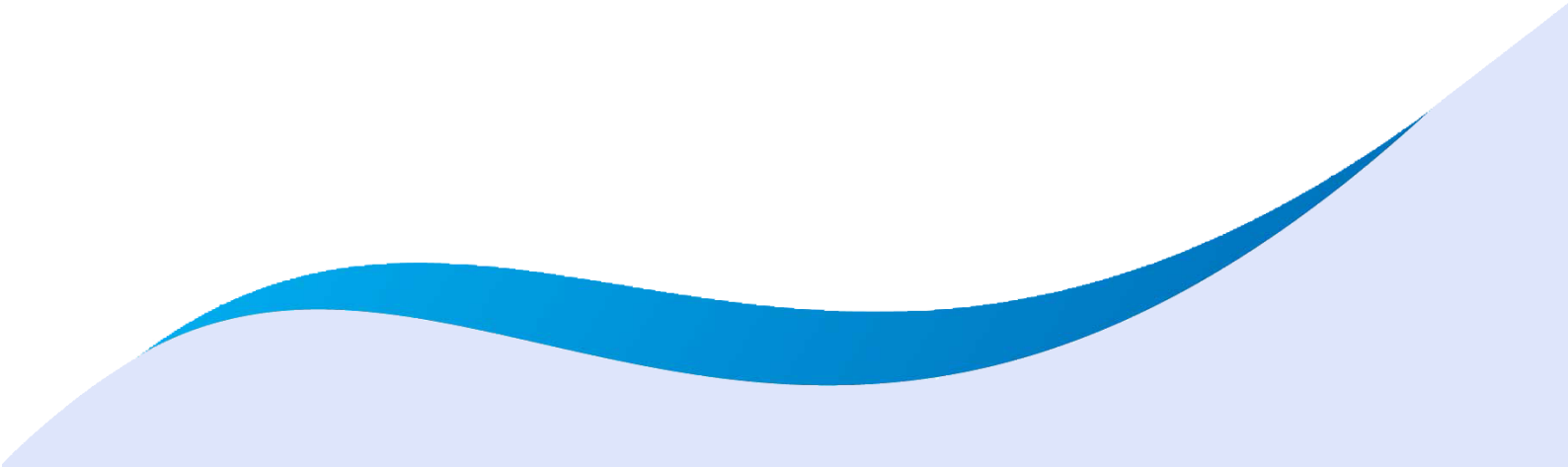
Zurich to Prishtina. Due to this event, the crew had requested for short-cuts and priority landing at PIA. They had requested also police assistance at the gate. The concerned passenger, that had a mental disorder, was detained and interviewed, and later released. The occurrence was classified as a major incident.

SCF-NP (*System/component failure or malfunction [non-powerplant]*). One occurrence of this category was reported. It was related to a leak of oil in the hydraulic braking system in the landing gear wheel well. The oil had penetrated into the aircraft cargo compartment and was visible on the floor of the compartment, which was cleaned by RFFS. The hydraulic pipes were retightened and the braking system was tested. The occurrence was classified as a significant incident.

WSTRW (*Windshear or thunderstorm*). One occurrence was reported and classified as significant incident. Lightning struck the runway causing significant damage to the pavement. At the time of occurrence, the runway wasn't in use. The operator took immediate corrective actions and repaired the potholes. Apart from damaged pavement, no effects on safety of operations were reported.

OTHR (Other). Reported occurrences which do not strictly fall in any of the categories listed above, are included in this category. In 2014, there were 6 such reports, 4 of which were classified as significant incidents.

Three of the significant incidents were related to airspace infringements involving powered gliders operating without prior notification and ATC clearance. All three occurrences have been investigated and the necessary measures were undertaken to prevent such occurrences from reoccurring in the future. Another significant incident concerned unknown traffic entering Kosovo airspace for a short period of time. The occurrence is currently under investigation.

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