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CAA

Autoriteti i Aviacionit Civil i Kosovës
Autoritet Civilnog Vazduhoplovstva Kosova
Civil Aviation Authority of Kosovo

Occurrence Reporting Overview

2012

Autoriteti i Aviacionit Civil – Autoritet Civilnog Vazduhoplovstva – Civil Aviation Authority
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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 Republic 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 few years. Furthermore, the industry has its own Safety Management Systems, 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 the ECCAIRS (European Co-ordination Centre for Aviation Incident Reporting Systems) system in its office and at Prishtina International Airport "Adem Jashari" Limak Kosovo International Airport (LKIA) for facilitating the reporting of occurrences by all persons who have a duty to report such occurrences. The CAA will subsequently integrate its systems with the EU ECCAIRS central office for exchange of occurrence information and for facilitating 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 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 2012, a short explanation of each category and 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

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).

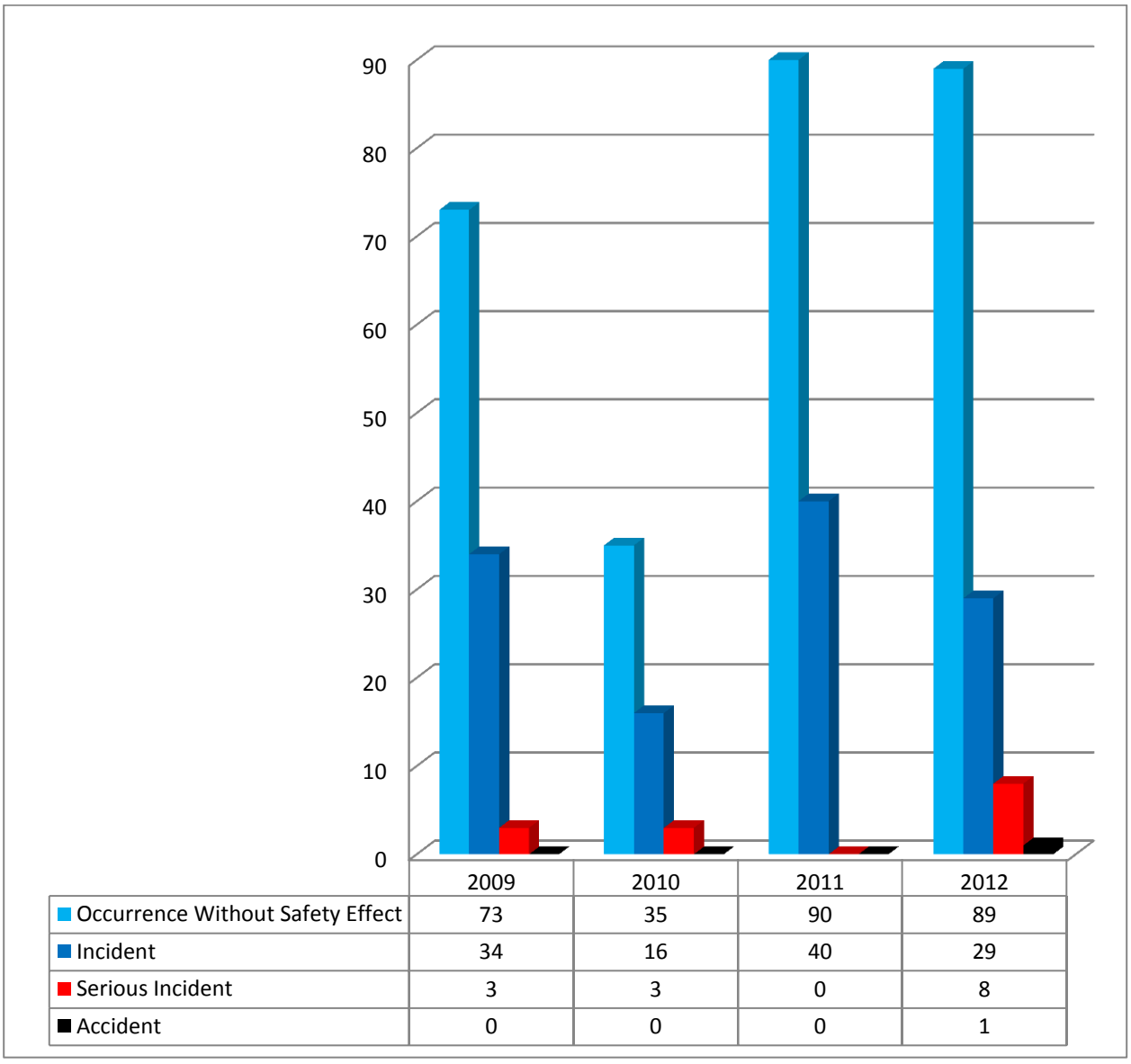
Significant incident

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.

Statistics



	2009	2010	2011	2012
Occurrence Without Safety Effect	73	35	90	89
Incident	34	16	40	29
Serious Incident	3	3	0	8
Accident	0	0	0	1

Figure 1. Number of ORs received in the last four years according to occurrence class

Figure 1 shows that except in 2010, the number of reported occurrences in 2009, 2011 and 2012 is consistent. While, in 2009, 2011 and 2012 the number of reported occurrences is well above 100, peaking at 130 in 2011, in 2010 only 54 were reported. Observing the trend of received ORs in 2012, a contributing factor to the overall high number of reports is the number of reported occurrences of technical nature (60). While there is still a significant number of reported bird strikes (16), the

number of this type of occurrence has halved compared last year. On the other hand, an increase from last year can be noted in the number of occurrences related to operational aspects, ground and otherwise, as well as laser attacks (see Figure 3).

Out of the 127 reported occurrences, 89 were classified as "Occurrence Without Safety Effect", 29 were classified as "Incident", 8 were classified as "Serious Incident" and 1 as "Accident". More details regarding these occurrences can be found in the sections dedicated to each category.

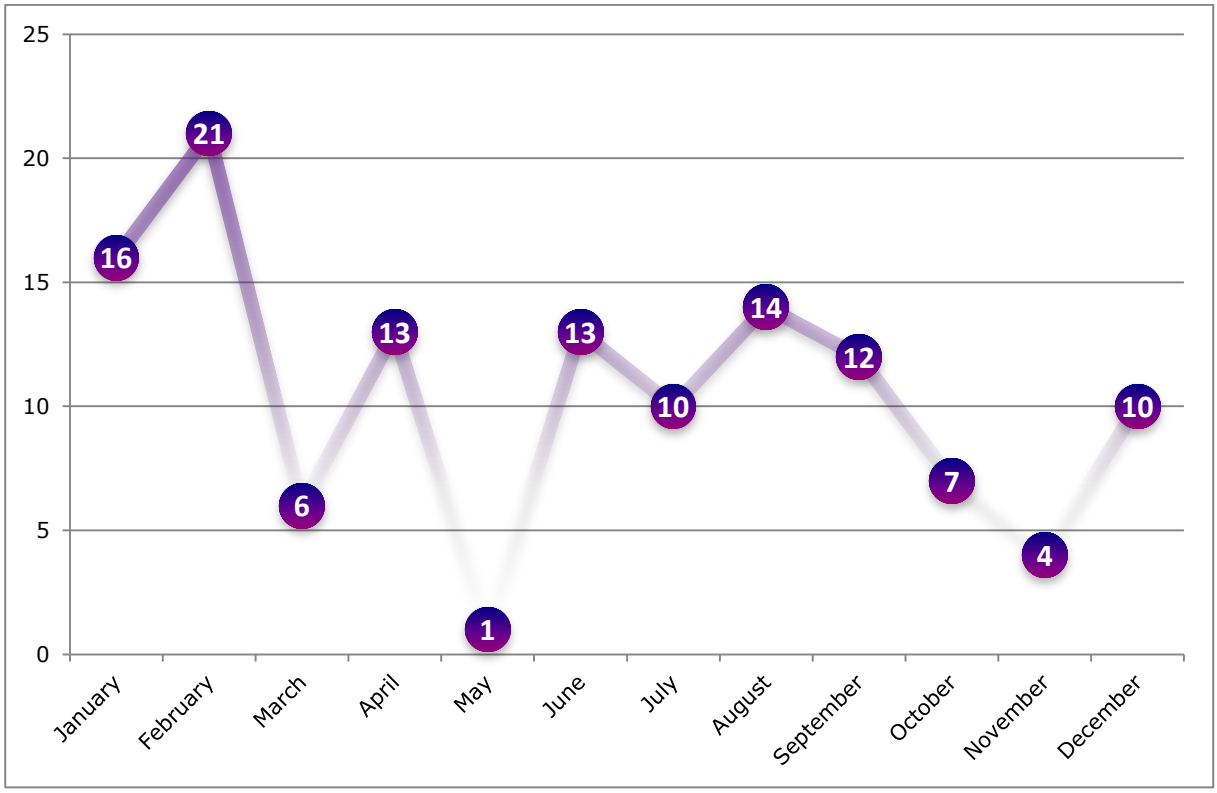


Figure 2. ORs received during 2012

Figure 2 demonstrates the number of received Occurrence Reports during 2012 for each month. Due to the bad weather prevailing in the first couple of months of 2012, the numbers of reported occurrences were highest in January and February, increasing again during the summer season, which is the peak season at PIA "Adem Jashari".

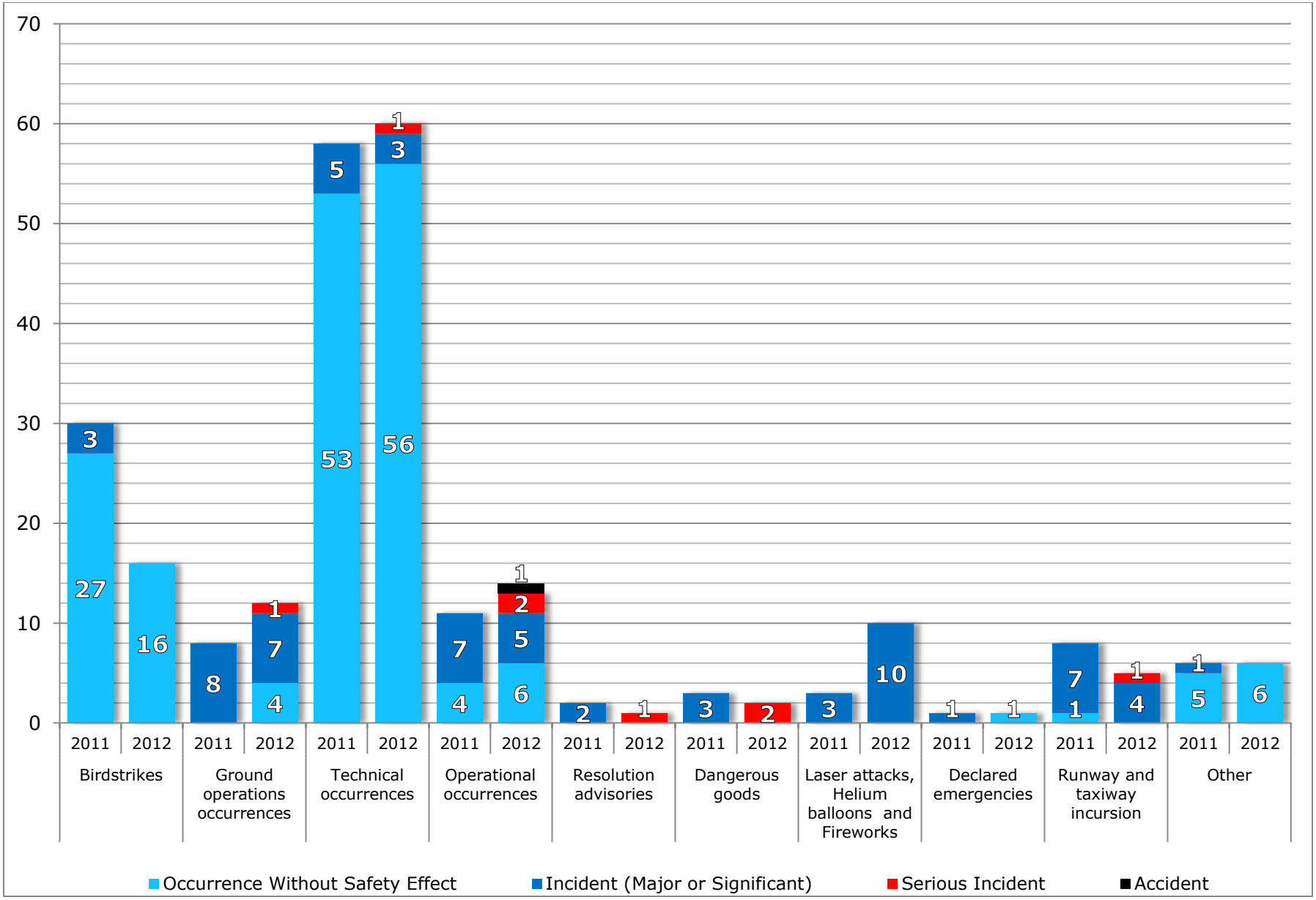


Figure 3. Number of received ORs in 2011 and 2012 according to occurrence class and category

Category	Occurrence Without Safety Effect		Incident (Major or Significant)		Serious Incident		Accident		Total	
	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012
Birdstrikes	27	16	3	0	0	0	0	0	**30**	**16**
Ground operations occurrences	0	4	8	7	0	1	0	0	**8**	**12**
Technical occurrences	53	56	5	3	0	1	0	0	**58**	**60**
Operational occurrences	4	6	7	5	0	2	0	1	**11**	**14**
Resolution advisories	0	0	2	0	0	1	0	0	**2**	**1**
Dangerous goods	0	0	3	0	0	2	0	0	**3**	**2**
Laser attacks, Helium balloons and fireworks	0	0	3	10	0	0	0	0	**3**	**10**
Declared emergencies	0	1	1	0	0	0	0	0	**1**	**1**
Runway and taxiway incursion	1	0	7	4	0	1	0	0	**8**	**5**
Other	5	6	1	0	0	0	0	0	**6**	**6**
Total	**90**	**88**	**40**	**30**	**0**	**8**	**0**	**1**	**130**	**127**

Table 1. ORs received in 2011 and 2012 according to major categories

Technical occurrences. Figure 3 and Table 1 show that during 2012 occurrences of technical nature account for around half of the received ORs. Occurrences covering technical failures or defects, mainly related to communication, navigation, surveillance, meteorological equipment etc., are categorized as *Technical Occurrences.* Around 50% of Technical Occurrences (see Figure 4) received during this year were related to short-term problems with the Aeronautical Fixed Telecommunication Network (AFTN) system, internet connection and meteorological equipment, mainly with the Automated Weather Observing System (AWOS) and its components. Due to the fact that these were short-term problems with functioning back-ups, safety of operations was not affected. Occurrences involving failure of the AFTN system and Internet connection, which frequently occur together, have decreased significantly since last year (see Figure 5).

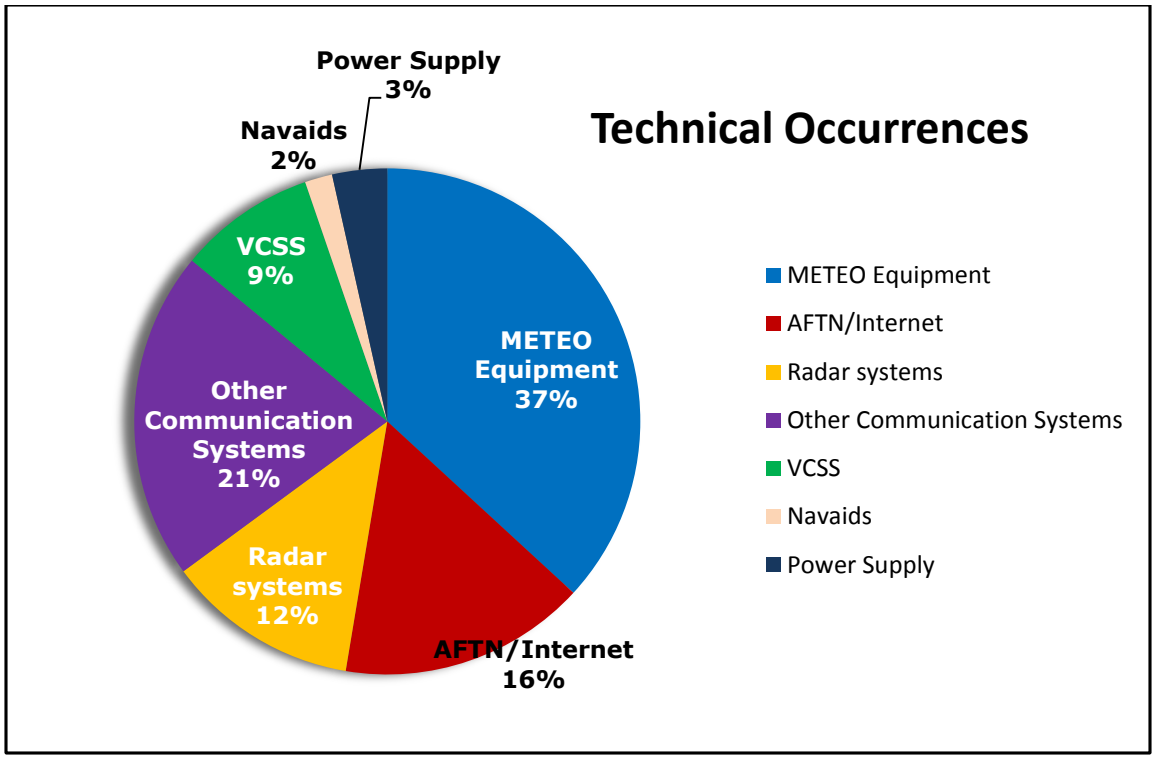


Figure 4. Technical occurrences

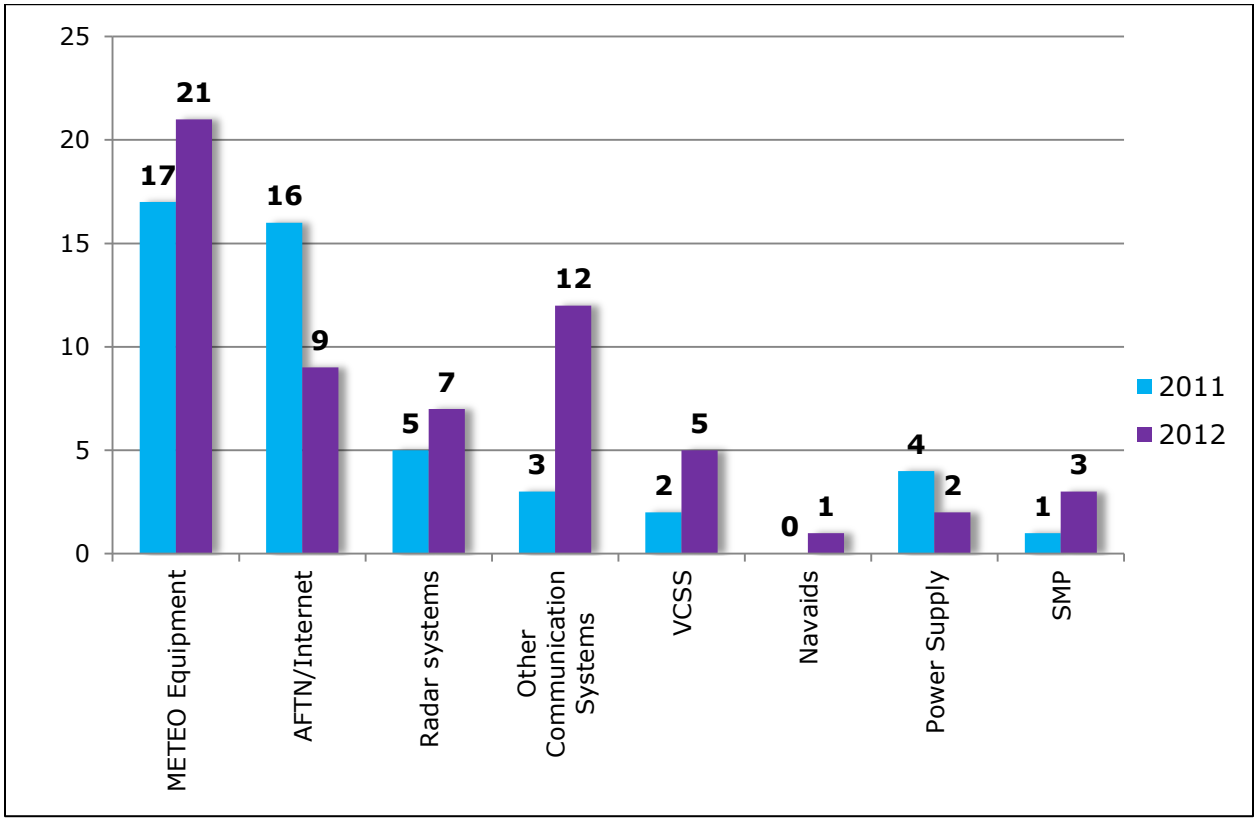


Figure 5. A comparison of technical occurrences in 2011 and 2012

A much smaller number of reported occurrences were related to problems with surveillance equipment (around 12%). An increased number of occurrences involving problems with other communications systems, such as radio communications failures, interferences and land line communications problems (around 20%), were reported compared to 2011. More problems with the VCS system (around 9%) were also reported. In these categories two occurrences were classified as incidents, which involved the failure of the VCS system while ATC was communicating to airborne aircraft. In both cases the back-up equipment or procedures were used to resolve the situation, without affecting the safety of the aircraft. Another incident was related to problems with the Radar picture at one of the main Controller Working Positions. The occurrences were immediately investigated by the ANSP and appropriate recommendations to mitigate the problems were produced. The CAA will continue to monitor closely the implementation of the recommendations during its regular oversight activities.

Another technical occurrence, classified as a serious incident, was related to a major power supply failure at the ANSP, which shortly disabled the provision of Air Traffic Control services.

The significant number of reports was helpful in identifying trends regarding equipment, both by the Air Navigation Service Provider (ANSP) and the CAA, and thus 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 the consistency of reported occurrences in this category compared to last year (see Figure 3) is an indication that reporting continues to be widespread in the industry, especially in the ANSP, due to raised awareness regarding benefits from occurrence reporting and its clear contribution to the improvement of safety.

Birdstrikes. In 2012 sixteen birdstrikes were reported and classified as occurrence without safety effect.

Operational occurrences. Occurrences related to violation and/or noncompliance with established procedures and Air Traffic Control clearances are categorized as *Operational Occurrences*. There were 14 reported operational occurrences during 2012; one was an accident, two serious incidents, five incidents, and six have been classified as occurrences without safety effect.

The reported accident involved an EULEX helicopter that made a forced landing right after takeoff from PIA "Adem Jashari" LKIA. The quick reaction from the pilots made it possible to perform a safe landing with minimal damage to the helicopter

and no injuries to passengers. This accident has been investigated by Kosovo AAIIC, in coordination with the state of helicopter registry and EULEX air ops.

Two serious incidents that were reported involved a military and civilian aircraft. The military aircraft experienced a nose gear false indication and the civilian aircraft was having difficulty following appropriate ATC arrival and approach procedures into PIA. Both flights landed at PIA safely.

To stress the importance of correctly following approach and departure procedures by pilots whenever they are flying in and out of airports, the CAA has prepared an explanatory note in order to raise awareness in the aviation community regarding this issue. The note is attached to this document as Appendix B.

Of five reported incidents one was related to a rejected take-off due to engine malfunction.

Laser attacks, helium balloons and fireworks. There were ten laser attacks reported in 2012 and they were all classified as incidents. All of the events occurred during the approach phase or while the aircraft were operating at low altitude. There were three reports from helicopter pilots and seven from aircraft pilots. All ten aircraft involved landed safely at Prishtina International Airport.

Civil Aviation Authority of Kosovo has published an Advisory Circular regarding Laser Attacks in the Republic of Kosovo. Because these kinds of attacks are carried out deliberately by individuals and pose hazard to the safe operation of aircraft when it is exposed to laser light in flight, they are considered to be a crime under Article 99.2, 99.6 of the Law Nr. 03/L-051 on Civil Aviation and Article 165 of the Criminal Code in Republic of Kosovo.

Runway and taxiway incursion. Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle, person or wildlife on the manoeuvring area is categorized as *Runway and Taxiway Incursion*. At PIA in 2012 there were five reported occurrences categorized as runway and taxiway incursion, out of which 4 were classified as incident and one was classified as a serious incident. The occurrence classified as a serious incident was related to a runway incursion involving aircraft and a vehicle near the runway. The four other incidents were related to taxiway incursions by vehicles without ATC clearance.

Ground operations occurrences. Occurrences related to ground handling (cabin service, catering, ramp service, etc.) and aerodrome maintenance are categorized as *Ground operations occurrences.* There were 12 occurrences reported in 2012, out of which 4 were classified as occurrence without safety effect, 7 as incidents and one as a serious incident.

The occurrence classified as serious incident was related to an aircraft hitting snow banks while manoeuvring on the taxiway and damaging the right wing. No other effect on the flight/aircraft was reported. Two out of eight occurrences classified as incidents were related to aircraft loading problems. To stress the importance of following loading/offloading procedures, the CAA has prepared an explanatory note which is attached to this document as Appendix A.

Declared emergencies. In 2012 there was one occurrence reported where the pilot declared a medical emergency and was given priority to land at PIA. However, no effect on the flight was recorded.

Dangerous goods. In 2012 two occurrences were reported concerning transport of dangerous goods by air. In one case there was a shipment containing non-declared dangerous goods originating from PIA "Adem Jashari". Other case involved the incoming shipments of dangerous goods that were discovered during unloading of luggage, for which the airline didn't have the appropriate authorization from KCAA.

Law Nr. 03/L-051 on Civil Aviation and Regulation 06/2011 on transport of Dangerous Goods by air in Republic of Kosovo requires that all dangerous goods offered for transport by air, shall be declared, packed, marked and labelled in accordance with provisions of this regulation, Annex 18 and ICAO Technical Instructions for Safe Transport of Dangerous Goods by Air. Also, weapons and munitions, including explosives and toxic gases, nuclear fuel and radioactive materials shall be carried on board aircraft, only with special written permission from Director General of KCAA.

Figure 6: Dangerous Goods[1]

[1] *Source: http://www.thoughtprocess.com.au/index.asp?pagename=Web-Based+Training+-+Dangerous+Goods&site=1&siteid=432*

TCAS Resolution Advisories (RA). Traffic collision avoidance system (TCAS) is an aircraft collision avoidance system, mandated by ICAO and designed to reduce the incidence of mid-air collisions between aircraft. It monitors the airspace around an aircraft for other aircraft equipped with SSR transponders and operates independently of ground-based equipment to provide advice to the pilot on potential conflicting aircraft. A Resolution Advisory (RA) is issued when two aircraft are on a collision course and are too close to each other (around 25s). When an RA is issued, pilots are expected to respond immediately to the RA unless doing so would jeopardize the safe operation of the flight. When an RA is issued it is also an indication that the separation minima between the aircraft might have been infringed. In 2012 one occurrence related to TCAS RA and to loss of separation was reported; the occurrence was classified as a serious incident. The loss of separation occurred as one of the aircraft involved in the occurrence did not follow the approach procedures correctly, which inadvertently led to an airprox with another aircraft on the approach sequence. The occurrence was forwarded to the Aeronautical Accident and Incident Investigation Commission (AAIIC) for further investigation which is on-going. The occurrence was also investigated internally by the ANSP and appropriate recommendations were produced and measures taken to prevent the repetition of the same.

To stress the importance of correctly following approach and departure procedures by pilots whenever they are flying in and out of airports, the CAA has prepared an explanatory note in order to raise awareness in the aviation community regarding this issue. The note is attached to this document as Appendix B.

APPENDIX A

Aircraft Loading

Introduction

In the interest of safety, ground handling provider shall establish procedures for an efficient load control and ensure a high level of proficiency of all staff engaged in load control work and loading supervision.

Load Control is a procedure ensuring that:

- weight and balance conditions of the aircraft are correct and within limits;
- the aircraft is loaded in accordance with carriers' guidelines and loading instructions for the flight in particular;
- the information on the loadsheet corresponds with actual load on the aircraft, including passengers and fuel.

It is crucial to the safety of an aircraft in flight that it is loaded in such a way that the specified maximum allowable weights are not exceeded and that the centre of gravity as loaded will be and remain within the permitted flight envelope for all stages of the intended flight. Once these conditions have been satisfied, it is equally crucial that the flight crew is aware of the prevailing weight and centre of gravity so that they can make appropriate settings to aircraft equipment. Aircraft baggage and freight load shall comply with the restrictions on carriage of dangerous goods.

Loading process

It is important to define the Load Control process clearly according to the carrier's guidelines. During load planning process, considerations should be given to:

- Aircraft prepared for service;
- Fuel load and distribution;
- Aircraft equipment, catering, crew, etc.;
- Planned deadload;
- Expected passenger load;
- Aircraft manufacturers' defined, and company imposed, limitations;
- Carrier business rules, e.g. productivity; fuel efficiency;
- Special load including Dangerous Goods Regulations, etc.

Weight and Balance

Method of calculating the aircraft weight and balance shall be established. It shall consider all manufacturers defined, and company imposed, limitations to ensure the safety of flight, taking into account the previously planned load.

The traditional requirement, which dates from the days when all load and trim sheets were completed manually on specific forms designed for use with each aircraft type, is as follows:

- the completed document is presented to the Pilot in Command
- the aircraft commander checks that it is consistent by carrying out some simple cross checks of input and calculated data for gross errors and,
- if the cross checks are satisfactory, the commander formally accepts the load and trim sheet by means of a signature on at least two copies, one being retained by the departure agent and the other by the flight crew.

The process with DCS (Departure Control Systems) is slightly different in that only the input data need to be checked and the completed document may not necessarily be signed by the agent presenting it, as he/she may have had no part in its preparation.

In both cases, however, the acceptance of an apparently correct load and trim sheet does not by its existence provide any assurance that the aircraft has necessarily been loaded as stated.

Supervision of the Loading of the Aircraft

It is important that groundhandling provider establish procedures to ensure the accurate and safe loading/offloading of the aircraft. It should include:

- Off-loading and loading information/instructions including any special load;
- Ensure compliance between loading instructions and load presented;
- Check condition of lock and restraints that could affect the load capacity of the aircraft prior to loading;
- Ensure ULDs are serviceable, correctly tagged and properly secured;
- Ensure bulk load is correctly secured;
- Ensure lashing/load spreading is correct, e.g. overhangs, special loads, etc.;
- Check condition of dangerous goods packages presented for bulk loading;
- Ensure that special loads, including Dangerous Goods, are stowed according to regulations and carrier procedures;
- Upon completion of loading, confirm, or advise deviations, according to the procedure defined by the carrier;
- A basic knowledge of weight and balance principles.

Risks arising from aircraft loading

The primary risks arise from the aircraft being ‘set up’ for take-off with pitch, trim and/or take off reference speeds which are not correct. This can arise in one of three ways:

- The aircraft is not loaded in the way stated on the accepted load and trim sheet (any load sheet type);
- The aircraft load and trim sheet uses correct input data but the output data is wrong (manual load sheets);
- The flight crew apply the (correct) load and trim data incorrectly when using it to calculate pitch trim, or reference speed data;
- The hold load is not properly secured or contains prohibited or incorrectly packed items.

Consequences of actual misloading or incorrect input of load-related data

Either actual misloading of an aircraft or incorrect use of correct load related data for aircraft systems set up can severely affect aircraft control. Loss of control may occur during an attempted take off or during subsequent flight because either:

- an attempt (usually inadvertent) is being made to operate the aircraft outside the Aircraft Flight Manual, limits, or
- the actions of the flight crew to control the aircraft are ineffective because the aircraft is not in the condition of load and/or balance which is believed to prevail and/or has been used to set up key aircraft control parameters.
- Runway Excursion has been a regular result of errors of both these types in the past, whether or not an aborted take-off has been attempted.

APPENDIX B

Departure, Arrival and Approach Procedure and their importance

Departure, Arrival and Approach Procedures are published to help simplify complex clearance delivery procedures, reduce frequency congestion, ensure obstacle clearance, and control the flow of traffic around an airport.

In different countries Standard Instrument Departures (SID's), Standard Terminal Arrival Routes (STARs) and Instrument Approach Procedures (IAPs) are established and published according to the individual country's publication procedures. In Republic of Kosovo these procedures are published in Aeronautical Information Publication (AIP).

The Authority approves SID's, STAR's and IAPs proposed by the Air Navigation Service Provider (ANSP) after thorough analyses of obstructions, terrain features, and navigational facilities in accordance with Civil Aviation Authority of Kosovo Regulation 10/2011 on Approval of flight procedures (that complies with EASA and ICAO standards).

Standard Instrument Departure (SIDs) provide obstacle clearance, protection to aircraft in instrument meteorological conditions (IMC), while reducing communications with ATC and departure delays. SIDs are published in text and/or charted graphic form. Regardless of the format, all SIDs provide a way to depart the airport and transition to the en route structure safely. When available, pilots are strongly encouraged to file and fly a SID at night, during marginal visual meteorological conditions (VMC), and IMC.

Standard Terminal Arrival Routes (STARs) depict prescribed routes to transition the instrument pilot from the en route structure to a fix in the terminal area from which an instrument approach can be conducted. If you do not have the appropriate STAR in your possession, you can write "No STAR" in the flight plan. However, if the controller is busy, you might be cleared along the same route and, if necessary, the controller will have you copy the entire text of the procedure.

Instrument Approach Procedures (IAPs) provides the method to descend and land safely in low visibility conditions. Maneuvers, including altitude changes, course corrections, and other limitations, as prescribed in the IAPs.

The instrument approach can be divided into five separate segments which blend to form one complete approach these segments are: arrival segment or feeder rout,

initial approach segment, intermediate approach segment, final approach segment, and missed approach segment.

Arrival segment is the feeder route taken from the enroute phase of the flight to the initial approach fix (IAF). The IAP will show the feeder route, or routes, minimum altitudes, course to be flown and the distance to the IAF. In some instances, the IAF is part of the enroute structure and there is no feeder route. There may also be several feeder routes to accommodate flights from different directions leading to the same IAF.

Initial approach segment commences at the IAF and may consist of a course, radial, Distance Measuring Equipment (DME) arc, procedure turn, holding pattern, radar vector, or a combination of one or more of these procedures. During the initial approach segment, the aircraft is maneuvered to enter the intermediate section, which will align it, approximately, with the final approach course.

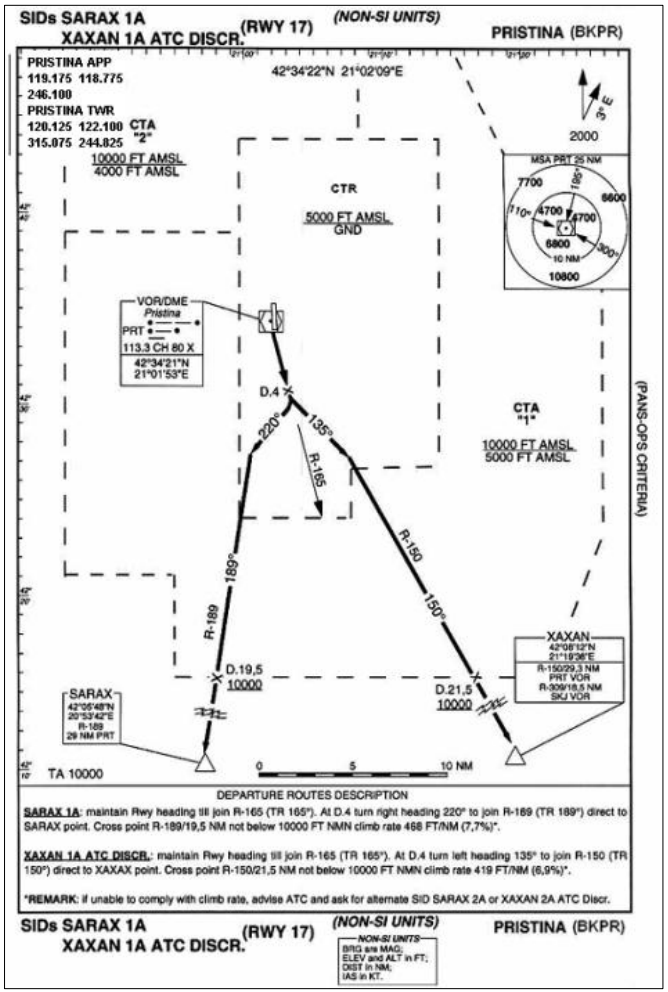
Intermediate approach segment serves as preparation for the final approach. Speed adjustments and positioning should be completed at this time. Pre-landing checks are also normally done during the intermediate segment. The intermediate segment ends at the final approach fix (FAF).

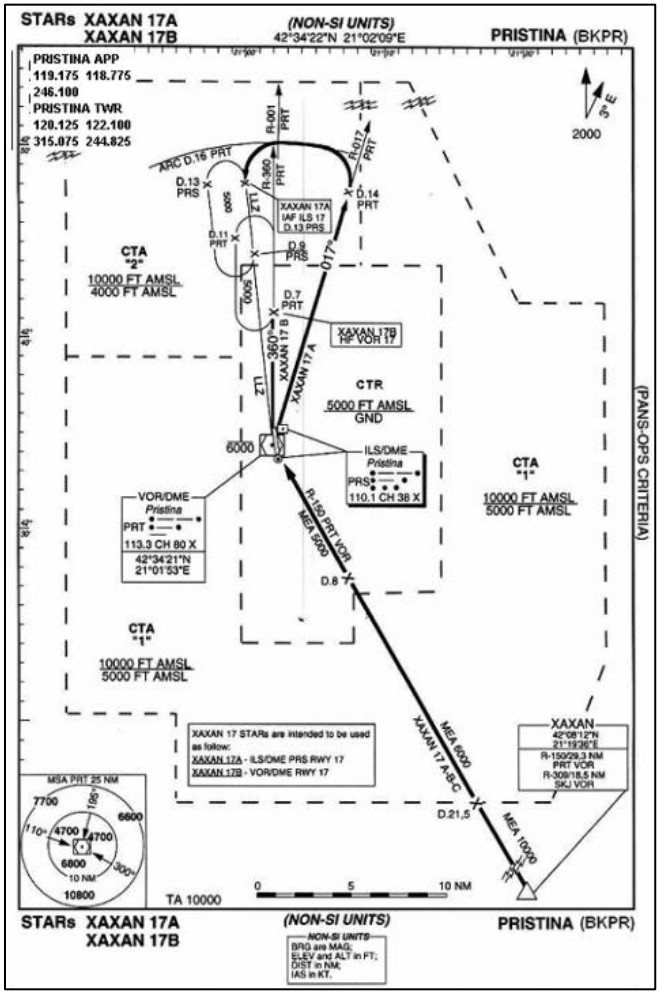
Final approach segment starts at FAF for non-precision approach and at glide slope intercept for precision approach. The final approach segment ends at Missed Approach Point (MAP) for non-precision approach and at decision height (DH) for precision approach.

Missed Approach segment starts at the MAP or DH if pilots do not see the runway or the runway environment at which point the must execute a missed approach procedure.

From missed approach segment pilots can make a decision to try another approach at the same aerodrome (if improvement in weather was reported) or they can proceed to their alternate aerodrome where better weather conditions are reported.

When pilots use them these published procedures, they are obligated to follow them in accordance with published details to avoid disruption of traffic and or possibility of causing a resolution advisory (RA) or worst a midair collision.





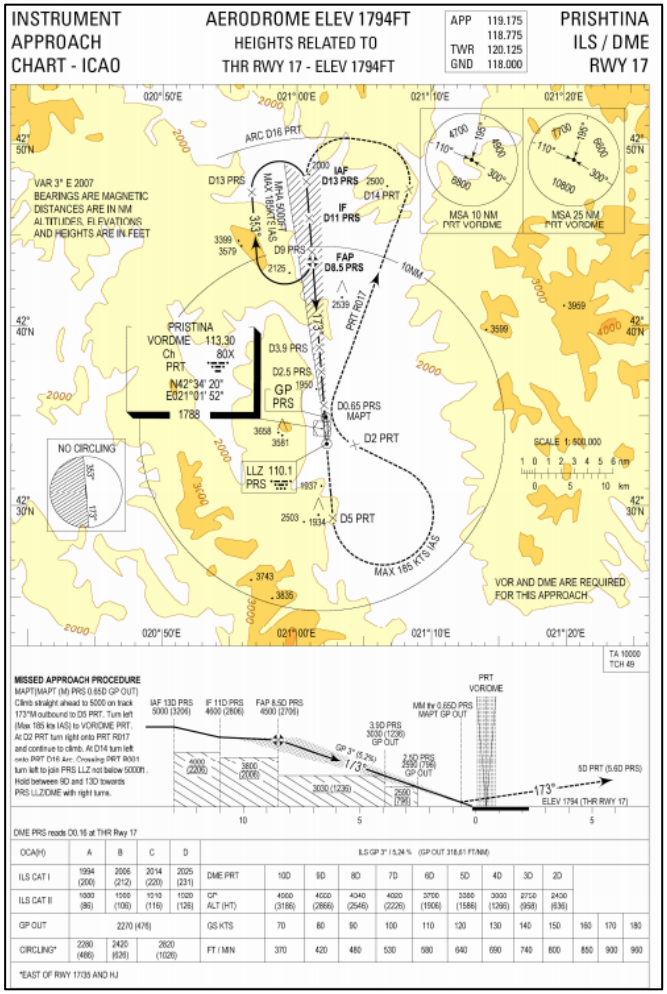


Figure B1. Standard Instrument Departure (SID), Standard Terminal Arrival Route (STAR) and Instrument Approach Chart, PIA "Adem Jashari" LKIA