Belgian Safety Plan 2010-2014
2011 Update
One of the duties of the Belgian State is to create an environment in which the civil aviation sector performs its activities at the highest possible safety level. Belgium is required to comply with the Annexes of the United Nations International Civil Aviation Organization (ICAO). Each member state is required to develop, update and maintain a national safety programme, and the implementation of such a programme has prompted the Belgian Civil Aviation Authority (BCAA) to draft and implement a Belgian Safety Plan. The BCAA Safety Policy also states that aviation safety must remain guaranteed to a high level (see Appendix 2).

The Belgian Safety Plan is based on the following premises:
- the policy document of the State Secretary of the Federal Public Service for Mobility and Transport with respect to the implementation of the Belgian Safety Programme (BSP);
- the European Aviation Safety Programme (EASP) and the European Aviation Safety Plan (EASp) 2011 - 2014;
- the specific objectives derived from the BCAA risk management system of civil aviation occurrences (see Appendix 1);
- safety recommendations and guidelines of the Belgian Accidents and Incidents Investigation Unit.

The General Measures (GM) outlined in the first part of this safety plan are designed to the further development of the BSP. This objective is included both in the policy document of the State Secretary of the Federal Public Service for Mobility and Transport and in the BCAA Director-General Management Plan.

The measures contained in the second part of this plan are Operational Measures (OM) largely derived from the risk management system for civil aviation occurrences. All occurrences must be reported by the service providers to the BCAA. The BCAA analyses these occurrences and subsequently identifies the main safety risks. A number of risk-mitigation measures are developed in consultation with the Belgian service providers and incorporated into this safety plan.

The primary focus of this Safety Plan is on commercial air transport operations, especially those carried out by aeroplanes. Additionally an effort has been made to capture actions that also address general aviation. The BCAA for example will take measures to improve the general aviation safety level through risk awareness and safety promotion.

The Belgian Safety Plan covers the period 2010-2014 and will be reviewed annually and updated where necessary to ensure that the right actions are being taken to mitigate the most important risks.

This document is the first update to the 2010-2014 Belgian Safety Plan. Good progress has been made in most areas. New safety actions have been added due to the results of the risk analysis 2010 and due to the alignment with the European Aviation Safety Plan (EASp). The BCAA is also committed to ensuring the further involvement of aviation industry in the process of developing future safety plans. To this end, the BCAA is in discussion with the various aviation industry committees and teams for the discussion of safety concerns.
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LINK BETWEEN THE EUROPEAN AVIATION SAFETY PLAN (EASp) AND THE BELGIAN SAFETY PLAN

In the European aviation system rulemaking, oversight and safety promotion activities are shared between the Member States and the European Institutions. The European Aviation Safety Programme (EASP) describes the roles and responsibilities that each of them have while performing these functions. As certain competencies have been transferred from the Member States to the European Union, in order to obtain a complete picture of safety in any single State, both the EASP and the BSP needs to be considered.

Through this Belgian Safety Plan, the BCAA aims to contribute to the realisation of the European Aviation Safety Plan (EASp). The alignment between the EASp and the Belgian Action Plan is shown for the relevant safety actions.

The BCAA also remains committed to supporting the European Strategic Safety Initiatives (ESSI), and specifically each of the three pillars: European Commercial Aviation Safety Team (ECAST), European Helicopter Safety Team (EHEST) and European General Aviation Safety Team (EGAST).
GENERAL MEASURES (GM) TO FURTHER DEVELOP THE BELGIAN SAFETY PROGRAMME (BSP)

The missing elements of the BSP were determined on the basis of a gap analysis. This analysis was conducted on the basis of the checklist included in ICAO Doc 9859 (Appendix 3 to Chapter 11: Guidance on the development of a State Safety Programme).

I GM1: Establishing a National Safety Library

a. Description

The BCAA will create a central Safety Library, which will consist of the following components:

– the legislative framework for implementing and maintaining the Belgian Safety Programme;
– the Belgian Civil Aviation Safety Policy;
– the processes, procedures, responsibilities and accountabilities for the correct implementation of the BSP;
– data related to the number of accidents and serious incidents;
– data related to the reported occurrences and aviation risks;
– the results of the annual risk analyses;
– the SMS reports provided by the Belgian service providers;
– the safety performance indicators (SPI’s) and safety performance targets.

Expected Safety Benefit:

Improvement of the monitoring of Belgian safety performance to enable proportionate and timely corrective actions to be taken, to continuously improve aviation safety

Safety Performance Indicators:

Dynamic Integrated Risk Management (DiRM) used by BCAA

Safety Outcome Owner:

– The BCAA Aviation Inspectorate;
– The BCAA General Affairs Directorate.

Alignment with EASp:

Safety Actions SYS1.1, 3.1

b. Progress on Actions

– A Decision of the BCAA Director-General has been elaborated and implemented in the course of January 2010.
– The BCAA Safety Policy has been defined and implemented in the course of January 2010;
– Safety Risk Management Processes and Procedures have been developed in the course of 2008-2010. These processes and related procedures define the responsibilities and accountabilities of all concerned parties. The Safety Risk Management System is based on the Dynamic Integrated Risk Management (DiRM) model. This model is fully described in the procedures manual “Inspection Manual – Part II Risk Management Procedures”;
– The yearly risk analyses of civil aviation occurrences were performed and subsequently discussed at the BCAA Safety Committees. Aviation risks to be handled with priority were selected and risk-mitigation measures were put in place.
– For SMS reports and development of SPI’s: see General Measure 2.
I GM2: Developing Safety Performance Indicators (SPI’s)

a. Description

The BCAA has a risk management system in place for aviation occurrences in order to determine SPI’s for Belgian civil aviation. The BCAA risk management system represents a structured process to establish a treatment priority for aviation risks. However, the BCAA has not yet reached the SPI’s applicable to the safety management systems (SMS) at the Belgian service providers.

Consequently, the BCAA will take the following measures:

– Contribute to the safety actions of the EASp with regard to the development of SPI’s at the level of the European Aviation Safety Agency (EASA) and EUROCONTROL;
– Systematically implement SMS at the service providers in accordance with the regulatory requirements;
– Determine SPI’s and safety performance targets in conjunction with the Belgian service providers.

Expected Safety Benefit:

– Improvement of the monitoring of Belgian safety performance to enable proportionate and timely corrective actions to be taken, to continuously improve aviation safety;
– Increase the safety performance of service providers leading to an increase of the overall safety performance of the Belgian aviation system.

Safety Performance Indicators:

– SPI’s established for all key safety issues;
– Number of Service Providers that have fully implemented SMS before the final transitional dates allowed by EASA regulations.

Safety Outcome Owner:

– The BCAA Aviation Inspectorate;
– The BCAA Operational Directorates.

Alignment with EASp:

Safety Actions SYS2.7, 2.9, 2.10, 3.4, 3.5, 3.6, 3.7

b. Progress on Actions

Systematically implement SMS at the service providers in accordance with the regulatory requirements:

Belgium has confirmed his voluntary commitment to the implementation of the EASp 2011-2014. The EASp 2011-2014 deals among others with the implementation of SMS in aviation industry. Belgian service providers will be required to start SMS implementation according to European standards as of 2012. The initial requirements will cover the domains of air operations and flight crew licensing. These requirements will be further extended to other domains of aviation. Aerodrome operators and ATM will follow in 2012 and airworthiness in 2013. In preparation for the European rules, extensive guidance material has already been developed by the different teams of the European Strategic Safety Initiative (ESSI). This guidance material addresses SMS principles and implementation in commercial aviation, helicopters and aerodromes. The BCAA continuously encourages the implementation of this material across their service providers.
Develop SPI’s
The BCAA has already developed a number of SPI’s that are in use at national level. These indicators are published in this safety plan. The BCAA organises periodic consultative meetings with representatives of the Belgian aviation sector (Belgian Flight Safety Committee, Local Runway Safety Teams, ANSP’s, aviation clubs, etc.) to debate on SPI’s and safety levels in the Belgian civil aviation sector and to communicate the achievements related to the Belgian Safety Plan.

Determine ANS SPI’s and safety performance targets in conjunction with the Air Navigation Service Providers (ANS’P’s)
EUROCONTROL has been delegated parts of the Single European Sky (SES) by the European Commission (EC). Moreover, EUROCONTROL has been designated as the Performance Review Body (PRB) by the EC.

The EC has issued a second package of the Single European Sky (SES) concerned with developing and measuring ANS SPI’s and safety performance targets, among other things. The European Commission has asked EUROCONTROL to develop a proposal for these issues. The BCAA will actively participate in this project.

The European Commission Regulation (EU) No 691/2010 (Performance Regulation) established that for the first reference period (RP1 2012-2014) the following ANS SPI’s shall be established and monitored:

- Effectiveness of Safety Management as measured by a methodology based on the ATM Safety Maturity Framework;
- Application of the severity classification of the Risk Analysis Tool (RAT) to allow harmonized reporting of severity assessment;
- Reporting of Just Culture.

With the development of Functional Airspace Blocks (FAB), the decision was taken to have a common “Performance Plan” for the six States composing the FAB Europe Central (FABEC).

At first the effort will be concentrated on the harmonisation of the Safety Management System, at ANSP’s and States level, and safety occurrences handling, followed by setting an emphasis on getting a mature safety culture.

According Regulation Requirements and European recommendations the following ANS SPI’s are monitored:

- Effectiveness of Safety Management: scores obtained by ANSP’s and States for effectiveness of safety management as measured by a methodology based on the ATM Safety Maturity Survey Framework;
- Application of the severity classification of the RAT:
  - Effective implementation of the RAT;
  - Application of the RAT and monitoring for:
    - Separation Minima Infringement (SMI);
    - SMI between IFR and ATM Ground Contribution;
    - Runway Incursions (R1);
    - RI and ATM Ground Contribution;
    - ATM-Specific Technical Event for Communication Systems;
    - ATM-Specific Technical Event for Navigation Systems;
    - ATM-Specific Technical Event for Surveillance Systems;
    - ATM-Specific Technical Event for Data Processing and Distribution Systems.
The European Regulation does not require any targets for safety for the first reference period; nevertheless, the following objectives are set:

- Based on the FABEC ATM Safety Maturity Survey scores from the 7 ANSP’s, a baseline shall be defined during 2012, and an objective shall be set for the 2013-2014 period, on the level to be achieved at the end of RP1.
- Based on the FABEC ATM Safety Maturity Survey scores from the 6 states, a baseline shall be defined during 2012, and an objective shall be set for the 2013-2014 period, on the level to be achieved at the end of RP1.
- To allow the harmonization of the reporting of severity assessment, FABEC ANSP’s are committed to implement the RAT before the end of RP1.
- FABEC ANSP’s are requested to perform a Cost Benefits Analysis and an initial feasibility study for the implementation of automated reporting systems, at least for En-Route traffic. The added value of those automated systems shall be assessed and the objectives of those tools shall be clearly identified and stated in Just Culture policies. The feasibility study shall be completed prior the end of RP1 and based on the results, the implementation phase should be considered for RP2.
- Harmonization of set of definitions, working processes and historical data shall be completed prior the end of RP1.

For the reporting of “Just Culture (JC)”, the methodology is still under development and RP1 will be used for the implementation and monitoring of the indicator. If possible a baseline will be defined prior the end of RP1.

The SPI for Just Culture will be assessed through three main areas:

- Policy and its implementation - assessing the existence of JC policy within organizations;
- Legal / Judiciary – assessing whether the national legal environment is supportive or not of JC;
- Occurrence Reporting and investigation – assessing policies and practices of occurrence reporting.

The ANS Safety Data related to the required indicators will be collected on a yearly basis and will be monitored by the Belgian Supervising Authority for Air Navigation Services (BSA-NSA) and will be published in reports by the competent authorities.
GM3: Developing a strategy with respect to safety training and safety promotion

a. Description

The BCAA has already taken a number of important steps to improve the communication of information related to safety. The operational departments of the BCAA have access to data related to aviation occurrences in the ECCAIRS database and, based on this information they can launch an investigation or gather additional data. The BCAA and the Accidents and Incidents Investigation Unit hold bimonthly meetings to discuss accidents, incidents and occurrences. This process is in line with the concept of accident prevention and helps establish potential causes and formulate any measures to be taken and safety recommendations to be made. The reports of all accidents and serious incidents occurring in Belgian airspace or involving Belgian aircraft can be consulted on the website of the Federal Public Service for Mobility and Transport. The Belgian Safety Plan is communicated to both the employees of the BCAA and the Belgian aviation sector.

The BCAA will further develop safety training and safety promotion through the following measures:

- Providing initial and recurrent training related to the BSP and SMS as part of the BCAA employees training programmes;
- Organising safety seminars in conjunction with the Belgian commercial and general aviation sector in association with the Accidents and Incidents Investigation Unit.

**Expected Safety Benefit:**

- Employees of the BCAA and the Accidents and Incidents Investigation Unit are trained and competent to perform their BSP duties;
- Safety information is communicated and disseminated to the Belgian aviation sector.

**Safety Performance Indicators:**

- Proportion of relevant BCAA employees appropriately trained against their competence requirements;
- Belgian aviation sector timely informed of new promotion material developed by the European Commercial Aviation Safety Team (ECAST), the European Helicopter Safety Team (EHEST) and the European General Aviation Safety Team (EGAST).

**Safety Outcome Owner:**

- The Belgian Accidents and Incidents Investigation Unit;
- The BCAA Policy Unit;
- The BCAA General Affairs Directorate;
- The BCAA Licensing Directorate (EHEST recommendation).

**Alignment with EASp:**

Safety Actions SYS 2.7, HE1.3

b. Progress on Actions

- The BCAA will provide initial and recurrent training related to BSP and SMS as part of the BCAA employees training programmes. All initial BSP training courses will be organised before the end of June 2012.
- The BCAA supports the European Strategic Safety Initiatives (ESSI), and specifically each of the three pillars: European Commercial Aviation Safety Team (ECAST), European Helicopter Safety Team (EHEST) and European General Aviation Safety Team (EGAST) by:
  - continuously encouraging the implementation of the promotion material developed by ECAST, EHEST and EGAST. The BCAA will continuously inform the Belgian aviation industry of the availability of new promotion material at the EASA website;
  - organising in partnership with industry representatives a helicopter safety event before the end of June 2012 to address the recommendations proposed by EHEST.
Operational issues are brought to light by the reporting and analysis of occurrence data. The primary focus of this Safety Plan is on commercial air transport operations, especially those carried out by aeroplanes.

The operational measures are designed to reduce the risks derived from the risk management system for aviation occurrences. The risks to be handled were selected by the BCAA Safety Committee and the related corrective measures were further developed in conjunction with the Belgian aviation sector.

**I OM1: Establishing a Belgian Aviation Wildlife Hazard Committee and drafting a national action plan to prevent collisions with animals**

*a. Description*

The presence of wildlife (birds and other animals) on and in the vicinity of an aerodrome poses a serious threat to aircraft operational safety. Annex 14-certified aerodrome operators are required to take the necessary actions to identify, manage and mitigate the risk to aircraft operations posed by wildlife by adopting measures likely to minimise the risk of collisions between wildlife and aircraft, to as low as reasonably practicable.

The appropriate authorities are required to have in place procedures for the identification and control of wildlife hazards on and in the vicinity of an aerodrome, and to ensure that competent personnel evaluates the wildlife hazard on a continuing basis.

The majority of collisions occur at low heights, in the vicinity of an airport during takeoff and landing, and the Belgian State will move to establish a Belgian Aviation Wildlife Hazard Committee, which will act as a coordinator in this area. This committee will act as a Focal Point for analysing these problems and as a source of information for the exchange of best practices. The Belgian Aviation Wildlife Hazard Committee will prepare an action plan in order to reduce risk related to collisions with animals.

The BCAA will take the following measures:

- Documenting the possible operation of the Belgian Aviation Wildlife Hazard Committee, for example by performing benchmark tests;
- Appointing the potential members of this team;
- Organising preparatory meetings with the members in order to establish the Committee’s objectives and procedures (i.e. Terms of Reference);
- Organising an official appointment meeting for the Committee;
- Organising meetings (number yet to be specified) which, after approximately one year, will result in a national action plan to prevent collisions with animals.
Subsequently, the Belgian Aviation Wildlife Hazard Committee will hold annual or biannual meetings. These meetings will follow the introduction of the national action plan, amending the plan where necessary and ensuring the exchange of information.

**Expected Safety Benefit:**
Minimise the risk of collisions between wildlife (birds) and aircraft, to as low as reasonably practicable

**Safety Performance Indicators:**
- Wildlife Strikes at Belgian aerodromes;
- Bird Strikes at Belgian aerodromes.

**Safety Outcome Owner:**
The BCAA Airspace and Airports Directorate

**Alignment with EASp:**
Safety Actions AER1.5

### b. Progress on Actions

Based on the guidance in the ICAO Airport Services Manual Part 3 (Doc 9137) the BCAA established the Belgian Aviation Wildlife Hazard Committee (BAWiHaC) to amongst others share information and exchange views on the subject of wildlife strikes.

During the second meeting of the BAWiHaC, the members of the committee (the airport authorities of the certified aerodromes, the Aviation Safety Department of Defence and the BCAA) defined – in addition to the terms of reference of the committee – the top priorities that need attention to lower the wildlife risk in Belgium.

These top priorities are listed below, together with the already agreed actions:

- **Organisation of courses for Bird Control Unit (BCU) personnel**
  All airports have different levels of training, and finding a good course for BCU personnel is not easy. Moreover, the existing courses are focusing too much on lethal methods and are not giving enough attention to for example habitat management.

  In 2011-2012 the Aviation Safety Directorate of Defence (ASD) will organise a course (15 modules) for BCU personnel. Every module will be organised two times in French and two times in Dutch. Within the framework of the BAWiHaC and the collaboration between ASD and BCAA, personnel from all civil airports will participate in this course.

- **Exchange of experience**
  Airport authorities need a discussion forum to exchange ideas about specific technical issues in the field of wildlife management. Until now, two specific topics were mentioned during the BAWiHaC meetings: grass management (especially the long grass policy) and systems and materials used for scaring and killing wildlife.

  In the Terms of Reference of the BAWiHaC, this aim is clearly mentioned. Therefore regular meetings will be organised at least once a year to achieve this goal. The committee meetings will be held at the different airports in order to combine them with a visit of the local BCU service. In future meetings, the members of the BAWiHaC will invite other players of the aviation community (pilot associations, air traffic control, airline companies,...) in order to widen the scope of experience.
– Improvement of the reporting of wildlife occurrences

The BCAA is keeping statistics on the reported wildlife incidents, but it is very difficult to draw clear conclusions from these figures. The statistics are very basic as the quality of the reports is rather low: The quality of the reports should increase in order to obtain more detailed statistics.

Shortcomings:

- BCAA receives no reports from foreign airline operators;
- The reporting culture is company dependent;
- Different occurrence reporting templates are in use;
- No differences are made between confirmed/unconfirmed wildlife strikes/near misses;
- The received occurrence reports are not detailed enough.

The BAWiHaC will develop uniform reporting practices (among others a uniform template) and will encourage the wildlife risk awareness within the aviation community and the reporting of wildlife incidents to the BCAA (campaign).

– Development of Regulatory Actions

Although in some other European countries a manual on wildlife management is available, the BCAA is not providing such a manual for the moment. The certified airports request a manual that determines and explains how to realize wildlife management in Belgium. Especially the lack of land use regulations for the surroundings of the airports and the unclear division of responsibilities in the wildlife risk issue between airport authorities, the BCAA and the regions need further attention. Next to this, there is the problem of the restrictions in the regional legislations for hunting.

The BCAA will therefore start developing a wildlife management manual in the course of 2011. The members of the BAWiHaC will review and comment the manual. Furthermore the BCAA will continue to support the quest for waivers on the hunting decree and the species resolution by the civilian airports. Finally, wildlife management issues should be introduced in the project "Aeronautical Safeguarding" launched by the BCAA and the regional governments.
I OM2: Resolving problems related to ground handling in partnership with the market sector

a. Description

The risk analyses of the reported occurrences have demonstrated that problems related to ground handling are common. This represents a broad spectrum of occurrences, e.g. incorrect loading procedures and filling up fuel without the necessary authorizations, near-collisions between aircraft and ground vehicles or damage caused to an aircraft by one such ground vehicle, etc.

The Belgian State currently does not have sufficiently detailed national regulations in place with respect to ground handling.

The BCAA will take the following measures:

– Investigating the handling companies in order to gather information on their organisational structure, activities, equipment, training courses completed, etc.
– Thoroughly inspecting the procedural manuals of handling companies and airlines;
– Examining the contracts with the airlines and the internal and external audit reports;
– Drafting national regulations for ground handling.

The implementation of the measures listed above should result in lower risk levels as well as in a relative decline in the number of occurrences related to ground handling.

Expected Safety Benefit:
Increased internal supervision and auditing to monitor the handling companies.

Safety Performance Indicators:
– Collisions, near-collisions and conflicts involving vehicles and taxiing aircraft at Belgian aerodromes;
– Collisions involving vehicles and parked aircraft at Belgian aerodromes.

Safety Outcome Owner:
The BCAA Airspace and Airports Directorate

Alignment with EASp:
Safety Actions AER5.9 and 5.10

b. Progress on Actions

In collaboration with the Cabinet of the State Secretary and the Brussels Airport Company, the BCAA has drawn up a new Royal Decree (RD) on access to the ground handling market at Brussels National Airport. This RD was published on 6 November 2010 in the Belgian Bulletin of Acts and Decrees.

The RD makes provision for an active, regulatory role for the BCAA, enabling measures to be taken for a relative decrease in the number of incidents relating to ground handling and for a reduction in the risk level.

The BCAA receives in particular the competence for:

– the accreditation of providers for ground handling services or self-handlers (after audits and inspections);
– the establishment of conditions for survey, maintenance and periodic inspection of rolling equipment used for ground handling services;
– the approval of renewal programmes and maintenance programmes for centralised infrastructure facilities (after audits and inspections);
– the approval of maintenance programmes for equipment essential to the provision of ground handling services (after audits and inspections).
The BCAA has now elaborated an action plan for putting these measures into practice. By the end of 2011 the BCAA will draw up a Ministerial Decree for the accreditation of ground handlers. Actual accreditation is foreseen from 2012, once the newly selected ground handlers have started their activities. Regulatory texts will also be drawn up for the other BCAA ground handling competences.

The BCAA will also formally conclude contracts or Memorandums of Understanding with external parties for specific inspection tasks (eg. for the inspection of rolling equipment).
OM3: Drafting regulations with respect to unruly passengers

a. Description

While security related acts like unruly passengers can lead to accidents as defined as by ICAO Annex 13, they are not considered accidents by some organizations. Regardless, these events have similar consequences in that they result in serious injury or death to person(s) and/or substantial damage to the aircraft.

A certain number of occurrences are related to unruly passengers. Two-thirds of these cases represented occurrences related to smoking in the lavatories of the aircraft, which is strictly prohibited due to fire hazard. In addition, air rage incidents are prevalent as well.

The BCAA will take the following measures:

– Instructing all airports and airlines to report occurrences related to unruly passengers to the BCAA through ECCAIRS;
– Assessing the current regulations and identifying any loopholes in the legislation;
– Amending the current regulations if necessary and drafting procedures with respect to unruly passengers;
– Systematically investigating the conclusions regarding ‘Unruly Passengers’ and prosecuting any violations administratively or through the courts.

b. Progress on Actions

The BCAA has sensitized the airports and airlines to report all incidents regarding unruly passengers. Reporting such an incident however cannot in itself lead to a prosecution. This requires a more formal complaint to be filed.

Article 27 of the Belgian aviation legislation has provisions for criminal procedures in case of such incidents. Article 38(2) of the aviation legislation lists BCAA officials able to determine violations and issue fines as administrative sanctions.

The BCAA has investigated whether such incidents should be eligible for immediate recovery under “caught in the act of a crime”. Such a system of immediate recovery would for example allow to immediately imposing an administrative fine to passengers in transit before travelling to their final destination.

In practice, cabin crew and passengers do not have the time following a flight to lodge a complaint and be interviewed. Therefore they often prefer to simply mention the incident so that the airport police and the BCAA do not dispose of an official complaint.

In order to improve willingness to lodge complaints, the airport police at Brussels National Airport have now a form in use that victims of unruly passengers can fill in. The airport police consider such a form as a statement and this document forms together with the interrogation from the unruly passenger, the basis of the charge. On this basis the prosecutor may proceed to a prosecution or the BCAA may impose an administrative sanction. The airport police and the BCAA Aviation Inspectorate investigate all findings in connection with unruly passengers. Actual offences are transferred to the competent Crown Prosecutor. If the violation is dismissed for reasons unrelated to the constituent elements of the violation, the BCAA Aviation Inspectorate will impose an administrative fine.

Expected Safety Benefit:
– Improved investigation and prosecution of unruly passenger incidents

Safety Performance Indicators:
Unruly Passenger Occurrences;

Safety Outcome Owner:
The BCAA Aviation Inspectorate
OM4: Annual check of the reliability of the flight controls for commercial aircraft in Belgium

a. Description

The yearly risk analyses have demonstrated that there have been technical problems related to flight controls.

The BCAA will take the following measures:

- Perform a detailed annual analysis of all occurrences related to flight controls for commercial aircraft in Belgium;
- Setting annual SPI's and identifying any negative trends;
- Determining items to be addressed and taking targeted measures where necessary (this includes analysing the reliability programmes of the Belgian airlines).

The annual analysis takes into account the number of flights operated by Belgian airlines, thereby creating a similar frame of reference.

Expected Safety Benefit:
Imputation of the flight controls reliability

Safety Performance Indicators:
Flight Control Occurrences

Safety Outcome Owner:
The BCAA Company Approvals Directorate

b. Progress on Actions

The detailed analysis of all occurrences related to flight controls for commercial aircraft revealed a significant decrease in occurrences in 2010.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Number of Events</th>
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<tr>
<td>2008</td>
<td>51</td>
</tr>
<tr>
<td>2009</td>
<td>53</td>
</tr>
<tr>
<td>2010</td>
<td>21</td>
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The decrease might be explained by a number of reasons:

- several actions and campaigns were initiated by the BCAA and the Belgian airlines in order to increase the flight controls reliability and the aircraft safety in general (improved de-icing procedures, improved greasing procedures /instructions,...);
- some older aircraft types have deregistered from the Belgian aviation register (A300, B757);
- ...

The detailed analysis further identified some specific recurring occurrences due to human errors on ground. An investigation was launched by BCAA and resulted in actions that should prevent reoccurrence of this problem in the near future.
I OM5: Complete the regulation with respect to the “Targeting of Aircraft with Lasers”

a. Description
The last two years have seen a rapid growth in the number of reports of Belgian aircraft being targeted by hand held lasers. A number of reports were received from Belgian aircraft when operating outside Belgium so the table below has been broken down into events within Belgium and events outside Belgium.

Laser emitters pose a significant threat to aviation safety and security. The use of hand lasers could potentially harm aircraft operations and asks for adequate countermeasures to mitigate this threat.

The BCAA will take the following measures:
– Complete the Aviation Law of 27th June 1937 to make the (malicious) use of lasers against aircraft and ATS personnel an offence;
– Improve the cooperation between, BCAA – ANSP’s- Federal Police by developing procedures to follow in the case of laser interference.

Expected Safety Benefit:
Minimize the effects of laser attacks during the critical phases of flight

Safety Performance Indicators:
Number of laser occurrences

Safety Outcome Owner:
– The BCAA Aviation Inspectorate;
– The BCAA Legal Affairs Department.

b. Progress on Actions
New operational measure due to the results of the BCAA risk analysis 2010

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<thead>
<tr>
<th>Within Belgium</th>
<th>Outside Belgium</th>
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<tbody>
<tr>
<td>Year</td>
<td>Number of Events</td>
</tr>
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<td>2009</td>
<td>5</td>
</tr>
<tr>
<td>2010</td>
<td>80</td>
</tr>
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</table>

a. Description

The prevention of runway incursions is a key issue for airport safety. The European Action Plan for the Prevention of Runway Incursions (EAPPRI) is the result of the combined efforts of multiple organisations representing all areas of aerodrome operations, and its 2nd edition was published in 2011. It contains recommendations to all airport stakeholders (including regulators, airport operators, ATC, airlines...). When implemented, the EAPPRI recommendations will enhance runway safety. A major recommendation is the organisation of Local Runway Safety Teams. At every Belgian airport Local Runway Safety Teams have been established, which comprise representatives from Aircraft Operators/ Airlines, Air Navigation Service Providers, Aerodrome Operators and the BCAA.

The BCAA will take the following measures:

– Promoting the recommendations from the EAPPRI to the Belgian aviation industry;
– Verifying the implementation of EAPPRI recommendations by all stakeholders (including Aircraft Operators, Air Navigation Service Providers and Aerodrome Operators);
– Ensuring that Local Runway Safety Teams are dealing with runway safety and runway incursions based on local risks.

Expected Safety Benefit:
Enhanced runway safety

Safety Performance Indicators:
– Runway Incursions at Belgian aerodromes;
– Proportion of EAPPRI recommendations implemented.

Safety Outcome Owner:
– The BCAA Company Approvals Directorate;
– The BCAA Airspace and Airports Directorate;

Alignment with EASp:
Safety Actions AER1.5 and 1.6

b. Progress on Actions

New operational measure due to the results of the BCAA risk analysis 2010 and the alignment with the European Aviation Safety Plan (EASp)
The risk management performed by the Belgian State relates to any occurrences occurring on Belgian territory and in Belgian airspace. In addition, occurrences occurring on foreign territory and foreign airspace involving Belgian airlines are also included. The various aspects of aviation are considered, including aircraft, companies operating in the aviation sector, air traffic control services, airports, ground equipment, etc.

Any occurrences reported are entered in the ECCAIRS database, which was created by the European Union in 2003 for the implementation of the European Directives related to reporting aviation occurrences. The main safety risks can be deduced from the analysis of these occurrences, and the priorities to be set by the management in view of accident prevention can be determined.

The BCAA risk management system for aviation occurrences is based on the Dynamic Integrated Risk Management (DIRM) model. The BCAA risk management system is described in the Risk Management Procedures Manual with reference BCAA/PM/10/INS Part II. The risk level of a specific type of occurrence is determined by two factors: probability and impact.

Probability represents the likelihood that an incident will occur. In order to determine probability, the number of occurrences of a specific type is considered that occurred within a one-year period. Depending on the number of occurrences, the probability is then assigned a quote on a scale from 0 to 5.

The impact of an occurrence takes into account the possible impact on personnel, operations, equipment, the environment and public confidence, along with the media attention that an occurrence may attract. Depending on the strength of the impact, it is assigned a quote from 1 to 5. Class 1 means that there are no noteworthy effects while class 5 indicates potentially disastrous effects.

The risk level of a type of incident is established by applying a combination of probability and impact based on the formula displayed below.

\[
\text{RISK LEVEL} = \frac{\text{PROBABILITY} + \text{IMPACT}}{2}
\]
The table below shows the types of occurrences with the highest risk levels derived from the risk analysis 2010.

<table>
<thead>
<tr>
<th>OCCURRENCES in ECCAIRS</th>
<th>RISK LEVEL R</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACAS/TCAS triggered</td>
<td>4.5</td>
</tr>
<tr>
<td>Ground Proximity Warning</td>
<td>4.5</td>
</tr>
<tr>
<td>Communications Pilot / ANS</td>
<td>4.5</td>
</tr>
<tr>
<td>Near-Collisions - Loss of Separation</td>
<td>4.5</td>
</tr>
<tr>
<td>Aircraft – Bird Strike</td>
<td>4</td>
</tr>
<tr>
<td>Turbine - Bird</td>
<td>4</td>
</tr>
<tr>
<td>Explosions /Fire /Fumes /Smoke</td>
<td>4</td>
</tr>
<tr>
<td>Systems / Crew Mismatch</td>
<td>4</td>
</tr>
<tr>
<td>Air Space Infringement</td>
<td>4</td>
</tr>
<tr>
<td>Deviation /ATC clearance</td>
<td>4</td>
</tr>
<tr>
<td>Runway Incursions</td>
<td>4</td>
</tr>
<tr>
<td>Declared Emergency</td>
<td>4</td>
</tr>
<tr>
<td>Collision Aircraft-Object Ground</td>
<td>4</td>
</tr>
<tr>
<td>Windshear</td>
<td>4</td>
</tr>
<tr>
<td>Ground Handling Services</td>
<td>4</td>
</tr>
<tr>
<td>Aircraft Flight Controls</td>
<td>3.5</td>
</tr>
<tr>
<td>Landing Gear</td>
<td>3.5</td>
</tr>
<tr>
<td>Engine Controls</td>
<td>3.5</td>
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<tr>
<td>Unstabilized Approach</td>
<td>3.5</td>
</tr>
<tr>
<td>Flight Preparation</td>
<td>3.5</td>
</tr>
<tr>
<td>Difficult /Unruly Passenger</td>
<td>3.5</td>
</tr>
<tr>
<td>Vehicle Equipment Operations</td>
<td>3.5</td>
</tr>
<tr>
<td>Aircraft Return</td>
<td>3.5</td>
</tr>
<tr>
<td>Rejected Take-off</td>
<td>3.5</td>
</tr>
<tr>
<td>Rejected Landing</td>
<td>3.5</td>
</tr>
<tr>
<td>Missed Approach</td>
<td>3.5</td>
</tr>
<tr>
<td>Weather Encounters</td>
<td>3.5</td>
</tr>
<tr>
<td>Interference by Laser / Beamer</td>
<td>3.5</td>
</tr>
<tr>
<td>Separation Provision</td>
<td>3.5</td>
</tr>
</tbody>
</table>

The Safety Committee has discussed these types of occurrences and subsequently addressed the aviation risks to be handled with priority, selected by taking into account factors such as the level of the risk-mitigation measures already in place.
**Introduction**

One of the duties of the Belgian State is to create an environment in which the aviation sector can perform its activities at the highest possible safety level. The Belgian Civil Aviation Authority (BCAA) is responsible, on behalf of the Belgian State, for developing and maintaining the Belgian Safety Programme (BSP) in accordance with the requirements of the United Nations International Civil Aviation Organization (ICAO). The BSP applies both to the BCAA and to the Accidents and Incidents Investigation Unit and is based to a large extent on the system of risk management.

The purpose of risk management is to prevent accidents, personal injury and material damage. An effective risk management policy ensures that potential causes of safety problems can be swiftly detected and resolved through the optimisation of regulatory and supervisory measures.

In addition, the BCAA has begun implementing one of the main elements of the Belgian Safety Programme: the implementation of the Safety Management Systems (SMS) at the Belgian Service Providers.

**General provisions**

- **Definitions**
  - Belgian Safety Programme (BSP): a coherent whole of regulations and activities through which the Belgian State, in its role as a regulator, aims to improve aviation safety;
  - Service Providers: air traffic control and air navigation services (ATC/ANS), airport operators, air operators, flight training organizations, aeromedical centres, production organizations, maintenance organizations and maintenance training organizations;
  - Safety: a situation in which the risks of physical injury and material damage are reduced to acceptable levels through a continuous process that facilitates risk identification and management;
  - Safety Management System (SMS): a systematic approach to managing safety at Belgian Service Providers including the necessary organizational structures, accountabilities, policies and procedures;
  - Occurrences: any accidents and incidents arising in the Belgian civil aviation sector.

- **Purpose of this document**
  - Inciting the Belgian aviation sector and the relevant BCAA employees to develop and maintain a culture of safety in civil aviation;
  - Providing the BSP with internal management structures that ensure its implementation; identifying risks and potential dangers; and drafting and amending the Belgian Safety Plan for the Improvement of Aviation Safety. These structures have been established through a series of processes and procedures.

- **Objective of the BSP**
  - The BSP is developed to improve aviation safety by promoting close cooperation between the Belgian aviation sector and the BCAA.
I 3. Strategic orientation

a. BCAA Safety Culture

As safety is of primary importance at the BCAA, the latter will never yield to economic, commercial and political pressure. The BCAA is committed to integrating a safety culture into all its activities in order to ensure that aviation safety is managed as effectively as possible.

b. Regulatory and Supervisory Activities

The BCAA is dedicated to improving cooperation with the Belgian aviation sector in order to identify key safety issues and optimise its regulatory and supervisory activities.

The BCAA undertakes to modify and optimise its regulatory and supervisory activities following the introduction of SMS at the Belgian Service Providers.

The BCAA undertakes to perform safety assessments on foreign airlines in order to ensure a standardised safety level within the context of European regulations.

c. Belgian Safety Plan for the Improvement of Aviation Safety

The implementation of the BSP has resulted in the drafting of a Belgian Safety Plan. This plan forms part of the safety policy of the Belgian State and seeks to eliminate potential sources of safety problems through the optimisation of regulatory and supervisory activities.

The Safety Plan, which is valid for a period of five years, is based on a) the policy document of the State Secretary of the Federal Public Service Mobility and Transport with respect to the implementation of the BSP; and b) the operational objectives derived from the risk management system. Recommendations and guidelines of the Accidents and Incidents Investigation Unit are also incorporated into the Safety Plan. The operational objectives contained in the Safety Plan are developed in consultation with the Belgian Service Providers.

The Safety Plan is approved by the BCAA Director-General and annually assessed and published.

d. Means and Human Resources

The allocation of means is based on the operational activities that contribute to increasing safety levels and, by extension, to the realization of the Belgian Safety Plan.

As part of its training programmes, the BCAA offers training related to BSP. This training helps foster a culture of safety and clarifies the roles played by each of the parties in implementing the plan.

e. Internal quality audits

The BCAA internal audits are conducted in accordance with the processes and procedures contained in the Quality Manual. These compliance audits serve to establish whether the BCAA Departments respect the regulations and correctly execute the applicable processes, procedures and guidelines.

The internal audits are performed on the basis of an audit programme approved annually by the BCAA Director-General. The audits, which are based on the PDCA cycle (‘Plan, Do, Check, Act’), contribute to the continuous improvement of the operational activities.
4. Organisation of the BSP

a. Scope of the risk management
The BCAA is responsible for collecting and managing the aviation occurrences reported to the BCAA by the service providers. Risk management relates both to aviation occurrences occurring on Belgian territory and those occurring in Belgian airspace. In addition, occurrences occurring on foreign territory and foreign airspace involving Belgian airlines are registered in the risk management system as well.

b. Procedures and processes
The BCAA has a number of processes and procedures in place designed to effectively implement the BSP. These processes and procedures are approved by the Director-General and subsequently managed by the relevant BCAA departments. The processes and procedures of the Accidents and Incidents Investigation Unit are approved by the Chairman of the Federal Public Service for Mobility and Transport in order to protect the independence of this unit.

c. Safety Committee
The Safety Committee is comprised of the Director-General, the directors of the operational departments, the risk manager and the manager of the Accidents and Incidents Investigation Unit. The Safety Committee, which convenes three times per year, is responsible for:

- discussing and selecting the aviation risks to be handled with priority;
- taking corrective actions where necessary;
- assessing, approving, modifying and following up these corrective actions;
- validating and amending the Belgian Safety Plan.

d. Risk manager
The risk manager is responsible for:

- collecting data on, and managing, aviation occurrences;
- participating in bimonthly meetings regarding occurrences that require immediate action;
- performing the risk analysis (i.e. preparing a list of risks to be handled with priority);
- Drafting the Belgian Safety Plan, including annual changes and updates.

e. Operational Departments
The operational departments are responsible for:

- performing regulatory and supervisory activities;
- proposing, implementing and realising corrective measures in order to increase aviation safety;
- participating in bimonthly meetings regarding occurrences that require immediate action;
- investigating these occurrences if necessary.

g. Involvement of external departments
The BCAA has signed a Service Level Agreement (SLA) with the Accidents and Incidents Investigation Unit in order to ensure smooth cooperation between these two entities.
h. Coordination with international agencies

The BCAA supports the initiatives to develop and implement the European Aviation Safety Programme and Plan at the level of the European Aviation Safety Agency (EASA) and the initiatives of the regulatory bodies of the European Commission and the EUROCONTROL Safety Regulation Commission.

i. Consultation with the Belgian aviation sector

The BCAA organises periodic consultative meetings with representatives of the Belgian aviation sector (e.g. representatives of Belgian service providers, pilots’ associations, aviation clubs, etc.).

These meetings have the following objectives:

– Conducting a debate on safety levels in the Belgian civil aviation sector;
– Communicating achievements related to the BSP to aviation sector representatives;
– Presenting the Belgian Safety Plan to aviation sector representatives, including any modifications and updates;
– Consulting on the policy objectives of the Belgian Safety Plan (including on the relevance of the risks to be handled with priority).

The Belgian Safety Plan is assessed and published annually. The Belgian service providers and aviation associations receive a copy of the Safety Plan each year.

j. Internal communication of the Belgian Safety Plan

The employees of the BCAA and the Accidents and Incidents Investigation Unit are informed annually about the Belgian Safety Plan and any amendments to this plan.

The BCAA will introduce a training course on BSP into its employees training programmes.
**Belgian CAA Risk Management Process**

**Process 1 (SPOC):**
Data Collection & Storage in ECCAIRS

**Process 2:**
Bimonthly BCAA meetings concerning analysis of individual occurrences requiring immediate action

**Process 3:**
Yearly Risk Analysis of Occurrences by Risk Manager

**Process 4:**
Draw-up and realize six yearly Belgian Safety Plan

**BCAA Safety Committee**
- Prioritize Risk Domains
- Evaluation
  - Risk Mitigation (Actions & Projects)
  - Project / Action closed
  - Project / Action continues

**Occurrence Reports from Industry**

**BCAA Directorates & Aviation Industry**
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I Useful Links

Federal Public Service Mobility and Transport: www.mobilit.fgov.be
ICAO: www.icao.int
EASA: www.easa.eu

I Pictures

The Belgian CAA wants to thank Brussels Airport, Antwerp Airport and Air Service Liège for their contribution.
Notes:

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