BEA

Bureau d'Enquêtes et d'Analyses
pour la sécurité de l'aviation civile

STRATEGIC PLAN 2018 2022

MESSAGE FROM THE DIRECTOR

I am pleased to present BEA's strategic plan for the period 2018-2022; it will constitute our road map to guide us for the next five years. This plan was drawn up after discussions involving all the BEA personnel. It builds on the work initiated by my predecessor who defined strategic priorities in 2012.

The ambitions and goals described in this plan illustrate our determination to consolidate our safety mission. The BEA already has both national and international recognition through its actions, results and independence in conducting in-depth and quality investigations.

The 2018-2022 strategic plan puts into perspective a regulatory framework and a context that evolve alongside technical developments and expectations of society as a whole. The BEA's regulatory framework is principally structured around Regulation (EU) No 996/2010 of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation. These rules reiterate the principles, standards and recommended practices in Annex 13 to the Chicago convention on international civil aviation. The plan also takes into account the recent Annex 19 on safety management, which significantly modifies relations between the civil aviation safety actors and the authorities. These changes lead us to reformulate our missions.

Over the last few years, the BEA has noted a significant increase in its international activities through its participation, as Accredited Representative, in investigations conducted by foreign entities into events that occurred on their territory, in particular to aircraft designed and/or manufactured in France. This increase is linked, notably, to the French aeronautical industry's growing share of the international market. The growth in world traffic, a greater exposure to incident and accident risks as well as the propensity to investigate a larger number of serious incidents also form part of the context for the safety investigations and their evolutions which are described in this plan.

To successfully implement this strategic plan, the BEA relies on qualified and motivated staff. It is essential that this motivation is maintained, that new talent is attracted and that our personnel continue to be trained so that they can meet the new challenges in aviation safety. The BEA has also acquired resources that are adapted to its needs. The new hangar at Le Bourget, the result of a thought process about the traceability of evidence, illustrates this strategy of continuous adaptation and improvement.

As Director of the BEA, I undertake to uphold the BEA's excellent reputation, by relying on committed teams and by continuing to work with our national and international partners so that together, we contribute to further improve aviation safety.

Rémi Jouty, Director of the BEA

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FOREWORD

Safety is an integral part of the aeronautical system, particularly in the area of air transport where society's expectations remain extremely high. In order to maintain an acceptable safety level for the public, the aeronautical system has always endeavored to continuously improve flight safety.

The safety investigations into accidents and incidents constitute a fundamental element of the aeronautical system, materialized by the validated data and lessons that are supplied to decision makers and the issuing of safety recommendations that encourage measures to be taken to improve safety. The safety investigations are also a means for having an unbiased and neutral assessment of the effectiveness of the organization and procedures of the civil aviation safety system.

In this respect, an investigation is not only essential for aviation safety, it is also a factor of stability. An immediate and satisfactory reaction to aviation disasters maintains the public's confidence in the quality of the civil aviation safety system. The credibility of the process depends on an independent and impartial investigation carried out by qualified teams, and the quick release of information about the investigation's progress and its conclusions. The notion of information validated by the BEA reinforces this credibility.

Accident to an A330 in Atlantic Ocean, 2009

THE BEA

Established in 1946, the BEA (Bureau Enquêtes-Accidents) was known as the French Accident Investigation Bureau. In 2001 it became the Civil Aviation Safety Investigation and Analysis Bureau but kept its acronym. While being part of the French Ministry of Transport, it has a separate budget. To guarantee the independence of the safety investigations, the BEA can neither receive nor seek instructions about how they are conducted. The main BEA site has been at the Le Bourget airport since 1994. It has branches in Toulouse, Aix en Provence, Rennes, Lyon and Bordeaux allowing the BEA to optimize its reactivity in Metropolitan France.

Over the course of its history, the BEA has developed an expertise and technical capabilities, which place it with the world leaders in the area of safety investigations, in terms of exposure, experience and activity. France's international obligations in the civil aviation field entail the appointment by the BEA, of an ACCREP[1] for the accidents and incidents that occur across the world when France has a responsibility as State of Registry, State of the Operator, State of Design or State of Manufacture.

Each year the BEA opens more than a hundred investigations following accidents or incidents in commercial air transport, general aviation and aerial work occurring in French departments and territories. Furthermore, the BEA participates in around three hundred foreign investigations as a representative of the State of Design, Manufacture, Registry and/or the Operator for all types of aircraft (aeroplanes, helicopters, microlights, balloons, etc.). The high level of activity of the BEA in the international field reflects the vitality of the French aeronautical sector.

To carry out its missions, on 1 January 2018, the BEA had a staff of 96 with around 50 investigators.

1 The term ACCREP refers to France's international obligations and to the appointment by the BEA of an accredited representative for accidents and incidents that occur across the world when France has responsibilities as State of Registry, State of the Operator, State of Design or State of Manufacture. When French citizens are among the fatalities or seriously injured, France may also participate in the investigation.

Head office at Le Bourget

Regulatory framework

European Regulation (EU) No 996/2010 follows on from the International Civil Aviation Organization (ICAO) Convention and its Annex 13 by integrating their definitions of the fundamental notions and their main "standards and recommended practices". It establishes the authority of the safety investigation bodies and their national character, institutes a network grouping these authorities[2] and organizes the participation of the European Aviation Safety Agency (EASA) and the national civil aviation authorities of the member States in the investigations. It also fixes new procedures for the exchange of information between the actors working towards aviation safety and between these actors and the public. It gives the investigation authority a key role in providing information to victims of air accidents and their relatives.

The Code of Transport and the Civil Aviation Code establish in French law the legislative and regulatory provisions relating to the organization of investigations, the status of the BEA and the prerogatives of the BEA Director and BEA investigators.

2 Article 7 establishes the European Network of Civil Aviation Safety Investigation Authorities (ENCASIA)

Independence

Article 4 of Regulation (EU) No 996/2010 guarantees the independence of the BEA by ensuring in particular, that there is no conflict of interest.

It is written in law that the BEA shall "neither seek nor take instructions from anybody" and shall have "unrestricted authority over the conduct of the safety investigations".

Decree No 2014-530 dated 22 May 2014 clarifies this independence by providing the Director of the BEA with specific guarantees as regard his status: Article R1621-6 of the Code of Transport gives the Director a five year mandate; Article R1621-2 gives the Director complete control over BEA's expenditure and personnel; Article R1621-3 gives him complete freedom to determine the investigation scope and the methods of each safety investigation; Article L1621-17 empowers the Director to make public statements regarding the progress of investigations.

A safety investigation is carried out with the participation of technical advisors who mainly come from the regulatory authorities, the operator, aircraft manufacturers and equipment manufacturers. The latter provide the BEA with elements that are useful for the progress of the investigation. The technical advisors have access to safety data that allows them to take corrective measures as soon as possible when imminent dangers are identified.

Cooperation

The BEA cooperates with other national or international organizations without this affecting its independence. The DGAC has a role notably in channeling[3] its funding. In addition, the implementation of a staff recruitment process, via a framework shared with the DGAC, has the advantage of providing more career possibilities for BEA staff. The BEA also uses a certain number of logistical tools that are shared with the DGAC, in order to optimize the quality and effectiveness of the support that it requires for its mission.

As an investigation authority with significant experience and capabilities of European repute, the BEA actively participates in the activities of the European Network of Civil Aviation Safety Investigation Authorities (ENCASIA), notably with respect to technical assistance.

Signature of a cooperation agreement with Romanian SIA, 2016

Public relations

The BEA's safety messages are primarily intended for the actors who are able to influence aviation safety. The reports are also made public in order to explain the results of the investigations opened after each accident or serious incident and to convince of the relevance of their conclusions. Furthermore, the BEA is in direct contact with the victims of air accidents and their relatives. It provides them with validated information and explanations before the official statements are released, in accordance with regulations.

Databases

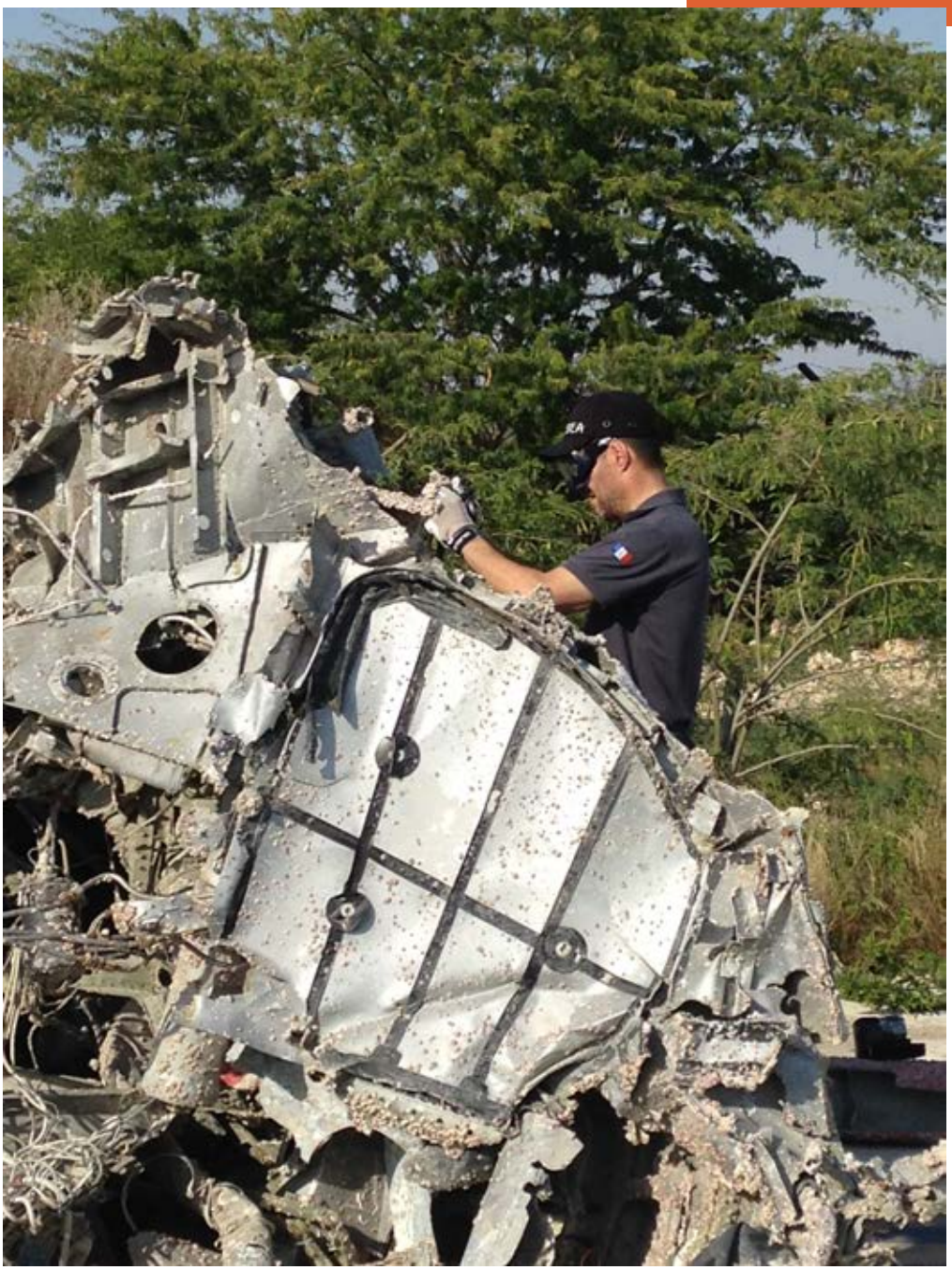
The BEA uses two databases: one concerns the safety recommendations and the other, the accidents and incidents that have been recorded since it was created. The information contained in these databases is essential for structuring the investigation data collected and for carrying out safety analyses and studies in order to better identify and quantify risks or trends. Moreover, the BEA has access to other databases, notably those shared by institutions such as ICAO, EASA or the DGAC, which allows it to capitalize on all types of data and events. The BEA has processes for validating its data as well as methodologies to use the data with rigor and to issue safety messages.

3 The term "channeling" illustrates the fact that the BEA benefits from the financial structures of the DGAC while keeping its budgetary independence.

Safety actions

The investigation reports, studies, recommendations and activities to promote safety are the feedback messages from the BEA that aim to convince the various actors to take safety actions.

The BEA is not a regulatory authority. Its sole aim is to prevent accidents without apportioning blame or liability.



Accident to a Falcon 20 in Iran, 2014

MISSION

• **Continue to improve aviation safety** and keep the public's confidence by means of safety investigations and studies carried out in an independent, effective and impartial manner.

• **Contribute to the quality** and objectivity of the investigations carried out abroad in which the BEA participates, at least with respect to the French entities involved.

• **Capitalize and promote** the safety data and lessons learned by the BEA to prevent future civil aviation accidents.

Accident to a MD-83 in Mali, 2014

BEA'S VALUES

RESPECT

Mutual respect is the starting point for the listening and dialog that will establish a constructive relationship between BEA staff and the persons they are in contact with, partners and stakeholders, despite potential antagonisms.

INTEGRITY/IMPARTIALITY

Integrity is the fundamental value held by the women and men who contribute to the BEA's mission. Their high level of honesty, integrity and loyalty guides their commitment and inspires the respect of those they are in contact with. Impartiality prevails in the performance and exemplarity of the BEA mission.

CURIOSITY

Curiosity is a fundamental aspect of the personality and professional qualities of BEA staff: openness, willingness, a critical mindset and motivation give rise to innovative actions that serve the BEA mission.

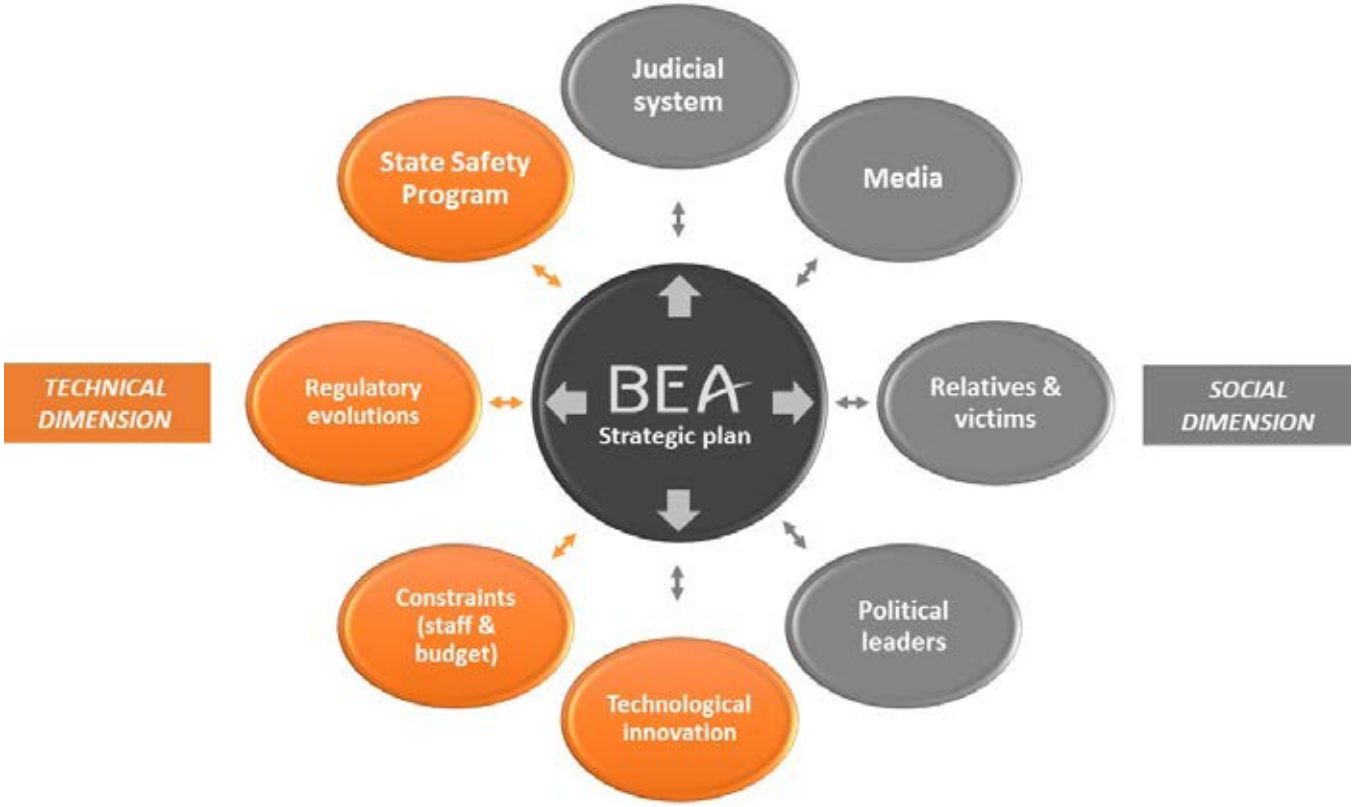
ADAPTABILITY

Adaptability is part of the BEA culture, linked to the very nature of its activity, each investigation having its share of the unknown, the new and the unexpected.

DETERMINATION

Determination underlies the pugnacity, persistence and the will to succeed, in order to complete each investigation.

CHANGES IN THE CONTEXT OF THE BEA MISSION



THE SOCIAL DIMENSION

The societal, political, media and judicial context has gained in importance over the last few years in investigations of major accidents. Today, at a national level, the BEA has a recognized standing in the political, judicial and media worlds as well as in accident victim associations.

This position must be consolidated. When the social dimension is not taken into account, there is a risk of destabilization and the possibility that the credibility of the BEA investigation, report and safety messages is undermined. To establish the credibility of its action, the BEA therefore has to talk from the

BEA Twitter account

beginning of the investigation, in particular to families, their relatives and the media. Within the BEA, all the information concerning an investigation is jointly managed by its various components.

The BEA should also be part of the communication and crisis management systems of the French political authorities in order to optimize its reactivity in the event of a major aviation accident. These systems must be adapted to the specific circumstances of each event.

The technical dimension

Technological innovations and regulatory changes directly or indirectly affect the BEA. To cope with the changing context, the BEA must adapt with human resources and budget constraints that it would not be realistic to increase in the current context of overall reductions in public means. Given the growth in air traffic and a foreseeable increase in the number of notified events, the BEA must, therefore, define priorities and accept that choices have to be made by voluntarily reducing its level of involvement in certain occurrences. The concern to efficiently use available resources also means that each investigation that is opened will always end with the publication of a report, the content and form of which will be adapted to the anticipated benefit for aviation safety. The safety lessons can also have more outreach by, for example, subsequently combining them with other similar cases. The BEA will ensure that the context of the occurrence is analyzed and that the scope and objectives of the report are adapted so that its resources are put to good use in compliance with its commitments.

The technical context of the safety investigations has also evolved from a regulatory point of view with in particular, the application over the last few years, of the provisions in Regulation (EU) No 996/2010 that are regularly assessed by the European Commission in liaison with the ENCASIA network. At a national level, France has been a pioneer in the setting up of a State Safety Program (SSP) that complies with the new ICAO standards and recommended practices. While ensuring that it keeps its independence, the BEA has been involved in this national program managed by the DGAC, that defines the orientations and actions in three areas: commercial aviation, helicopter operation and recreational aviation.

The SSP and the resulting Safety Management Systems (SMS) have an increasingly important place in the vision of aeronautical actors. The latter act taking into account the notion of a hierarchy of risks and the cost effectiveness of each action. At the BEA's level, this means that to convince of the importance of taking safety measures, it is necessary to go beyond simply determining a risk or a failure based on a single event dealt with in one investigation. In certain cases, the investigation must analyze the extent of the problem, quantify it (in terms of frequency or probability) and put it into perspective with respect to other risks. This implies that it has to be sometimes accepted that certain risks, notably in General Aviation (GA), are not addressed during certain investigations in a systemic manner.

Accident to a MD-82 in Venezuela, 2005

ORIENTATIONS OF STRATEGIC PLAN

The orientations of the BEA strategic plan are based on the continuity of BEA's safety mission in the context described above. They are expressed by ambitions which come within the sphere of this mission and which resulted in the definition in-house, of the following four projects to be carried out within the scope of the 2018-2022 strategic plan:

PROJECT A
Live and work well together

PROJECT B
Improve the structure of our investigation process

PROJECT C
Optimize the presence of the BEA on the international scene by defining our priorities in this area

PROJECT D
Optimize our relations with the DGAC.

These projects (or processes) accompany the BEA's ambitions which are summarized hereinafter.

BEA's AMBITIONS

Continue to have motivated, skilled staff whose expertise is acknowledged internally and externally

For the BEA, teamwork, the motivation of its staff and internal relations between the various components of the BEA are primordial (project A). The highly technical nature of our mission and the variety of areas covered give added importance to the recruitment of our staff and their training, areas that were focused on in the previous strategic plan. The challenge is to have highly capable and motivated personnel who meet the needs of the BEA.

Read out and analysis of a flight data recorder at BEA

Taking part in a selection of international conferences and seminars allows investigators to know each other better and improves international knowledge and recognition of the expertise and investigation capabilities of the BEA as well as the results of the BEA investigations/studies in the aeronautical community (Project C).

Preparatory work for strategic plan, 2017

Fully integrate the support functions in the performance of BEA missions

The BEA which has to operate all over the world without warning, needs highly operational support functions despite a stretched workforce. To achieve this, they must be better integrated in the investigation process and relations with the DGAC must be optimized in order to draw on existing resources (project D). The conditions of success are the BEA's means of action, its human resources and its budget that must be defended in an overall context of significant restrictions.

Aim for excellence in conducting all the BEA safety investigations and studies:

The goal is to control the quality and the time to carry out the investigations led by the BEA and publish its reports (project B) as well as the quality of the BEA's contribution to foreign investigations (project C).

"Excellence" is associated with the correct use of means according to the expected results, for all of the BEA investigation portfolio.

To increase efficiency, the selection of investigations and studies for in-depth work is to be optimized in order to obtain relevant safety lessons. Moreover, project C aims to define the priorities for the participation of the BEA in foreign investigations.

Accident to an EC130 in France, 2017

Safety reports and recommendations to convince

The investigation must be carried out with a view to producing a convincing report adapted to its readers, taking into account societal expectations. The priority reader remains the "aviation safety actor" but the perception of the report by other interested readers must not be neglected as their reactions could have an impact on its credibility. With respect to analyses and notably recommendations, the BEA must also consider the growing importance that the aeronautical sector gives to the notions of risk management, safety management systems and systemic analyses. This implies substantiating most of our safety recommendations with a demonstration that goes beyond the failure observed in the single event under investigation but which is based on several events linked to the systemic failures identified. These safety recommendations must also be carefully targeted: too many recommendations that do not produce results may ultimately have a negative impact on the influence of the BEA and the contrary, for example, could be perceived as the BEA renouncing the promotion of safety actions

Consolidate the position of the BEA at a national level by taking into account the context and associated constraints.

In GA, the BEA's ambition is to be a key reference in accidentology.

With the French general aviation activity constituting around half of all the European activity, the BEA has a complete view of this sector and can produce significant data regarding its accidentology. The BEA's GA investigation policy currently goes beyond regulatory obligations by investigating fatal accidents involving non-certified aircraft (microlight).

The BEA aims to better enhance the overall capitalization[4] of the GA reports and statistics for actors and decision makers or steering bodies in this sector, namely the DGAC, EASA and pilot federations. The quality of the exchanges that have developed over the last few years with these contacts are a stimulus to continue these efforts.

4 Namely:

- develop BEA's vision regarding safety priorities;

- supply summary data (in particular regarding the hierarchy of risks) for the bodies concerned;

- participate in joint safety promotion actions.

Cutting a piece of wreckage at BEA

Accident to an A380 in cruise, 2017

In the French commercial aviation sector, the BEA makes sure that it is ready to deal with a major accident occurring in France or involving a French operator.

As to the overall processing of incidents, BEA resources and the volume of traffic in France are such that these figures do not constitute a reference from a statistical point of view. However, the BEA aims to carefully select the serious incidents where the consequences could have been fatal in order to draw safety lessons from them.

Adapt to the SSP or SMS context in the prioritizing of risks

The improvement of aviation safety through BEA actions must be adapted to the context of the State Safety Program (SSP), which also includes SMS aspects and the prioritizing of risks. To play a role in this improvement of safety, the BEA must not be an isolated actor and must produce results (investigation reports, safety studies, recommendations) in a pertinent form and with arguments that must take into account this new context in order to be convincing.

Continue to be leader at a European level

The BEA, as one of the largest European investigation bodies, is very active in the ENCASIA network. The BEA director was elected chairman of this network in January 2017. He maintains close contacts with his counterparts and the European institutions. The BEA has an active role in possible regulatory changes in the safety investigation field.

European citizens have high expectations regarding the management of a major accident irrespective of the country of occurrence within the Union. The members of the ENCASIA network are developing a European capability for managing a major investigation by building a mutual-support system (EMSS). This will result in particular, in the setting up of shared practices and processes, better mutual understanding, intra-European training programs, etc. The experience and capabilities of the BEA mean that it can make a considerable contribution to this measure.

European forums such as the ENCASIA working groups or the ACC Group of Experts are also an opportunity of sharing BEA's safety vision and culture in order to improve feedback both in and outside the EU.

The BEA's objective is to stay ahead in investigative technical skills and methodology expertise.

Flight recorder listening room at BEA

Presentation by a BEA investigator specialized in human factors at ISASI, 2017

Position/establish the BEA internationally as a Center of Excellence in safety investigations and studies.

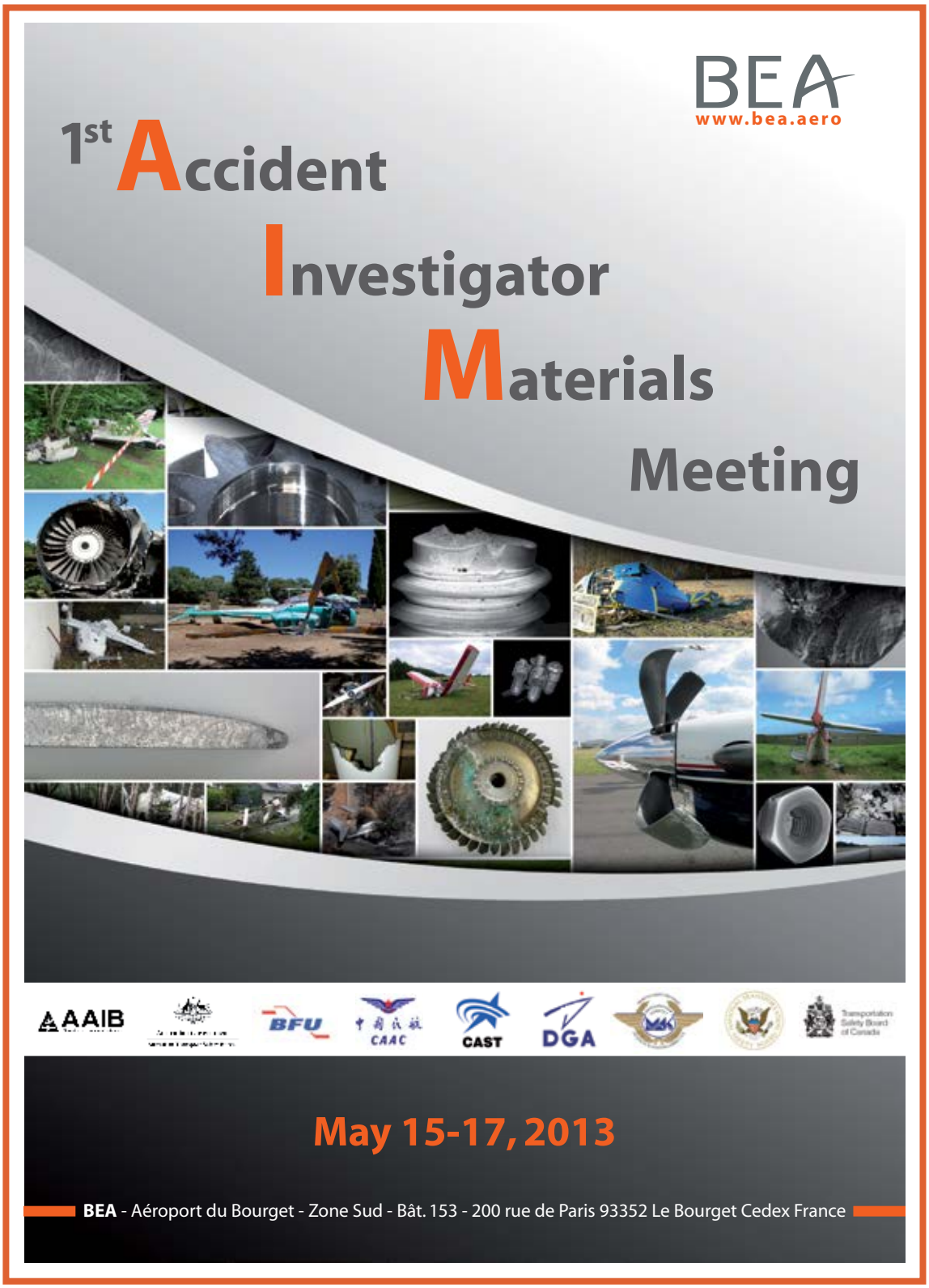
In commercial aviation, the number of French occurrences investigated by the BEA is too small to constitute an accidentology reference. However, at an international level, the BEA has a unique position that gives it a global view of the Airbus fleets and of other products of French design or manufacture (ATR, Daher-SOCATA, Dassault, SAFRAN, etc.). It thus has validated data to use and enhance the safety lessons from foreign investigations.

Enjoying an international standing and with a global vision of the accidents in international public transport, the BEA is thus able, on a case by case basis, to put into perspective safety risks which it has identified itself during its investigations, as for example those described in the study concerning the execution of go arounds (ASAGA) or those related to the loss of control in cruise flight. This results in actions to prevent these risks and the promotion of aviation safety.

The taking into account of resource constraints means, however, that the BEA has to target its involvement in ACCREP investigations or in technical assistance (project C).

GLOSSARY

ACC	Group of accident investigation experts of the ECAC
ACCREP	ACCredited REPresentative
ASAGA	Aeroplane State Awareness during Go-Around
BEA	French civil aviation safety investigation authority
DGAC	French civil aviation authority
EASA	European Aviation Safety Agency
ECAC	European Civil Aviation Conference
EMSS	ENCASIA Mutual Support System
ENCASIA	European Network of Civil Aviation Safety Investigation Authorities
GA	General Aviation
ICAO	International Civil Aviation Organization
IIC	Investigator In Charge
SMS	Safety Management System
SSP	State Safety Program



The BEA kicked off the AIM meetings in 2013

BEA

Safety, together.

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