BEA

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

Annual Report 2013

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Sommaire

A Message from the Director

The level of transport aviation safety in 2012 was already considered the best ever achieved in the world. The first statistics published tend to show that it improved even more in 2013. While the number of passengers exceeded three billion for the first time, the number of fatal accidents has never been lower. Doubtless we will have to wait for the International Civil Aviation Organization (ICAO) statistics to be published to get the exact figures, but the trend seems to be confirmed and the international specialised press reflects this.

As regards general aviation, however, a significant increase in the number of fatal accidents and victims for aeroplane and helicopter activity was noted in 2013, compared to 2012, with stability for the other activities. This a priori negative overview must however be tempered: the figures for 2013 are in the same range as for 2010 and 2011. It would seem therefore that 2012 was an exceptional year and that 2013 is unfortunately simply confirming the stagnation of this sector's levels of safety.

The overall proportion of international activity in BEA activities remained stable. The number of investigations conducted by foreign organisations in which the BEA participated by appointing an accredited representative (ACCREP) has for several years been higher than the number of investigations that it itself conducts. This situation is clearly linked to the development of French and European aviation manufacturing. The growing number of aircraft and equipment in service is expressed correspondingly, despite improvement in the rate of public transport accidents, by an increasing trend in the number of events reported to the BEA, most of which were fortunately without tangible consequences.

The BEA has benefited from the relative stability in the volume of investigation activity to improve investigation processes, specifically by cutting the publication time for final reports. Future efforts should focus on improving distribution of information on investigations and on the publication of reports, particularly by improving the quality and attractiveness of the BEA website, so that the safety lessons learned from BEA work reach aviation stakeholders and the public more effectively. The ASAGA (Aeroplane State Awareness during Go-Around) safety study, published in July 2013, led to the issuing of many safety recommendations addressed to the world aviation community. As a result of considerable support, this study was well received, allowing us to hope that when its recommendations are taken into account, it will be possible to improve safety. As for laboratory activity (engineering department), it remained globally stable, with, however, pronounced development in the field of operating embedded electronic equipment (GNSS, on-board computers, audio/video recordings, etc). The latter activity, for which the BEA has acquired skills making it a world leader, contributes considerably to BEA's international reputation.

Rémi Jouty

1. OVERVIEW OF ACCIDENTS INVOLVING THE BEA THAT OCCURRED IN 2013, INVESTIGATIONS INITIATED

1.1 Background

In accordance with EU regulation 996/2010, any civil aviation accident or serious incident is the subject of a safety investigation in the Member State of Occurrence. This requirement applies to all aircraft, except those listed in Annex 2 of Regulation 216/2008 (the aircraft listed in this Annex are mainly non-certificated aircraft: microlights, aeroplanes of historic interest, etc.). European regulation 996/2010 also provides that States may investigate other events, including incidents that do not fit into the category of serious incidents.

ICAO Annex 13 also specifies that, when a security investigation is conducted by a State (usually the State of Occurrence of the event), the State of the Operator, the State of Registry and the State of Manufacture of the aircraft involved participate in this investigation, by naming an accredited representative (ACCREP).

In France, the BEA is the authority responsible for safety investigations. Its procedures provide that, in addition to the investigations it has an obligation to conduct in accordance with European regulation, it also investigates the following events:

- Reported incidents that are of particular interest for safety,
- Events involving *"Annex 2"* aircraft, when they occur in the context of instruction, paid flights, air shows or aerial work.

1.2 Data on investigations initiated by the BEA

The data shown in this first chapter relates to aircraft accidents in France, investigations initiated by the BEA in 2013, investigations initiated by foreign bodies in 2013 in which the BEA is participating – or participated - by nominating an accredited representative (ACCREP), and BEA teams sent to accident sites (Go teams).

1.2.1 Aircraft involved in accidents

The data in the table below comes from two sources:

- Investigations led by the BEA on certified aircraft accidents (the corresponding information has been validated by the BEA);
- Information supplied by field investigators on *"Annex 2"* aircraft accidents which were not the subject of a BEA investigation.

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Aircraft involved in accidents in France in 2013					
	Aircraft involved in accidents	**Number of aircraft involved**		**Number of injured on board**	
		accidents	of which fatal	fatal	serious
PUBLIC TRANSPORT (PT)					
Aeroplanes	4	1	0	0	1
Helicopters	0	0	0	0	0
Balloons	3	3	0	0	3
Public Transport total	**7**	**4**	**0**	**0**	**4**
AERIAL WORK (AW)					
Aeroplanes	2	0	0	0	0
Helicopters	4	1	1	2	0
Microlights	2	0	0	0	0
Aerial Work Total	**8**	**1**	**1**	**2**	**0**
GENERAL AVIATION (GA)					
Aeroplanes	93	20	13	31	9
Helicopters	14	5	3	6	4
Gliders (incl. motor gliders)	23	13	8	9	7
Balloons	3	0	0	0	0
Microlights (incl. autogyros)	88	30	18	25	14
General Aviation Total	**221**	**68**	**42**	**71**	**34**
Total	**236**	**73**	**43**	**73**	**38**

The significant drop in fatal accidents and the number of victims in general aviation, which was reported in 2012 (and which was particularly notable for general aviation aeroplane accidents), was not confirmed in 2013. The number of fatally injured people increased sharply in general aviation (71 fatalities in 2013 compared with 44 in 2012), returning to levels comparable to those observed in 2010 and 2011.

However, the total number of accidents (all types of operation combined) has dropped (236 accidents in 2013 compared with 285 accidents in 2012).

Lastly, we see that no lives were lost in scheduled public transport aeroplane accidents in 2013.

Note: The number of accidents reported may differ from the number of aircraft involved in accidents because the same accident may involve several aircraft (specifically, in 2013, there were three collisions in flight or on the ground).

1.2.2. Investigations initiated by the BEA

Investigations initiated by the BEA in 2013				
Type of event	Public transport	General aviation	Aerial work	**Total**
Accidents	7	122	7	**136**
Serious incidents	8	4	0	**12**
Incidents	0	3	0	**3**
Total	**15**	**129**	**7**	**151**

The number of investigations initiated by the BEA shown above is noticeably lower than the number of accidents, due in particular to the fact that Annex 2 accidents are only subject to an investigation in certain specific cases.

1.2.3 Investigations initiated by a foreign organisation for which the BEA appointed an accredited representative (ACCREP)

Foreign investigations initiated in 2013 for which the BEA appointed an ACCREP						
Type of event	Public transport	General aviation	Aerial work	State aircraft	Unknown	**Total**
Accidents	35	58	12	4	8	**117**
Serious incidents	62	7	5	0	0	**74**
Incidents	12	2	0	0	0	**14**
Total	**109**	**67**	**17**	**4**	**8**	**205**

1.2.4 Go Teams

In the event of a particularly serious accident (in France or abroad), the BEA sends a team of investigators to the site without delay. The size and composition of this team (commonly called the *"go-team"*) are decided on a case by case basis.

In 2013, 42 go-teams were sent out, including five abroad: USA, Laos, Italy and the United Kingdom (two events).

2. INVESTIGATIONS CLOSED AND REPORTS AND STUDIES

2.1 Investigations closed and investigation reports published

Over and above the number of accidents and investigations initiated, the number of investigations closed and reports published are the most relevant indicators of the BEA's activity.

European regulation 996/2010 specifies that each safety investigation must be concluded with a report that is appropriate to the type of event. The closing of an investigation is thus marked at the BEA by a report that takes one of three forms:

- ICAO reports: these reports follow the systematic plan defined by ICAO Annex 13. They are usually reserved for the most significant events. In 2013, the BEA published 8 reports of this type (see box);
- Simplified reports: these reports contain only the relevant chapters from the plan defined in Annex 13. They are, specifically, for events such as incidents in public transport or general aviation accidents. In 2013, the BEA published 14 simplified reports relating to public transport, and 126 simplified reports relating to general aviation or aerial work;
- Recording of events in a database: All events that were the subject of an investigation (whether or not this resulted in the publication of a report in one of the two forms described above) are recorded in the BEA database. In 2013, out of the 172 investigations closed by the BEA, 45 were the subject of a simple recording in the database. Information involving specific occurrences is regularly used for safety studies that the BEA is currently conducting or will conduct in the future.

Events that led to publication of an ICAO report in 2013

Registration	Type of aircraft	Site	Date of event	Brief description of the event
F-GRZE	Canadair – Regional Jet 700 series	Lorient Lann-Bihoué (56) Aerodrome	16.10.12	Runway overrun during landing on a runway contaminated by water
F-GIHM	Pilatus PC-6B	Le Blanc (36) Aerodrome	09.06.12	Entering IMC on climb, loss of visual reference, loss of control in flight, landing
F-GXES	Piper PA-42 Cheyenne III	Baie Orientale (971)	05.05.12	Collision with sea on initial climb during medical evacuation
F-OIJQ	Cessna 150	Basse-Pointe (972)	27.12.11	Reduction in engine power on go-around, turn back to land, stall, collision with ground, under examination
F-GMGF	Cessna 210 Centurion	St Christophe-sur-Avres (27)	26.02.11	Loss of control in IMC, in-flight failure, collision with the ground
TC-TLE	Boeing 737-400	Lyon Saint-Éxupéry (69) Airport	07.09.10	Final approach below the glide path, missed approach on controller's instruction
F-OIXZ	Cessna 208 Caravan I	Anse Bertrand (971)	05.09.10	Engine shutdown on climb, turn back, collision with ground on forced landing
F-GRHA HB-JZQ	Airbus A319 Airbus A319	Near Basel Aerodrome Mulhouse (68)	29.06.10	Loss of separation, collision avoidance following two successive RA-TCAS

Note: all BEA reports are published in French but some of them are also published in English. In 2013, the BEA translated 3 ICAO public transport reports, 4 simplified public transport reports and 2 simplified general aviation or aerial work reports.

European regulation 996/2010 specifies that an investigation report should be published rapidly and if possible within the twelve months following the date of the event. For the BEA, a maximum length of twelve months for each investigation is thus a general objective and a monitoring indicator. This is defined as the ratio of the number of investigations closed within one year to the investigations initiated in 2012.

The tables below give the number of investigations closed in 2013, by type of event and operation. They also indicate the date of the events, and the investigations more than one year old not closed as of 31 December 2013.

Investigations closed by the BEA in 2013 (by year of event)

Year of event	Before 2011			2011			2012			2013			Total
	PT	GA	AW	PT	GA	AW	PT	GA	AW	PT	GA	AW	
Accidents	1	8	0	3	9	1	4	58	12	0	33	3	**132**
Serious incidents	2	0	0	3	1	1	4	1	1	0	0	0	**13**
Incidents	7	2	0	9	1	1	1	6	0	0	0	0	**27**
Total	**10**	**10**	**0**	**15**	**11**	**3**	**9**	**65**	**13**	**0**	**33**	**3**	**172**

Investigations initiated by the BEA of more than one year, as of 31 December 2013

	Public transport	General aviation	Aerial work	Total
Accidents	10	37	5	**52**
Serious incidents	12	5	0	**17**
Incidents	13	15	1	**29**
Total	**35**	**57**	**6**	**98**

These results show an improvement in report production: the indicator on report publication time has moved from 63% in 2012 to 66% in 2013 and the stock of investigations initiated more than one year previously is decreasing; from 112 investigations initiated in 31 December 2012 to 98 investigations initiated in 31 December 2013.

2.2 Studies published in 2013

The BEA contributes to improvements in safety not only through its investigations into events that are notified to it, but also through safety studies that it undertakes on more general subjects.

These studies are usually decided on when the BEA observes either a recurrence of facts that led to serious events, or a potentially high risk of an accident. It is, however, difficult to decide on the subjects, since this requires a combination of subjectivity, experience and competence as the most significant risks are not necessarily brought to light by events that are easily

identifiable as precursors.

Safety studies are long and time-consuming operations for the investigators in charge. They aim to supply the aviation community with information that is useful for the prevention of accidents and serious incidents. They also lead to issuing safety recommendations addressed to the authorities that have the power to undertake any potential corrective action.

Four studies were published in 2013:

- ASAGA (Aeroplane State Awareness during Go-Around): this study aimed at identifying common factors in events occurring during go-arounds on public transport aeroplanes. It led to the BEA issuing 34 safety recommendations.
- Study on simultaneous triple approaches, facing west, on Paris Charles de Gaulle and Le Bourget airports: this study dealt with the dangerous proximity between aeroplanes in this runway configuration.
- Study on Thielert engines: this study led to the establishing of the fact that the Thielert engine failure rate was within the limits recognised by the Federal Aviation Administration (FAA), as a result of the manufacturer's efforts to deal with the failures observed successively. It will be completed with a specific study currently in progress on the fuel pumps used by Thielert, launched after a succession of failures of this type which occurred in the south of France.
- Study on approaches in TBM 700: this study aimed at identifying common factors in the loss of control in meteorological conditions in IMC flight.

3. GENERAL CONSIDERATIONS ON SAFETY

The 2013 appraisal, all activities combined (public transport, aerial work and general aviation), was globally positive in France, if the reduction of 18% of the total number of accidents reported to the BEA is considered.

3.1 Public transport

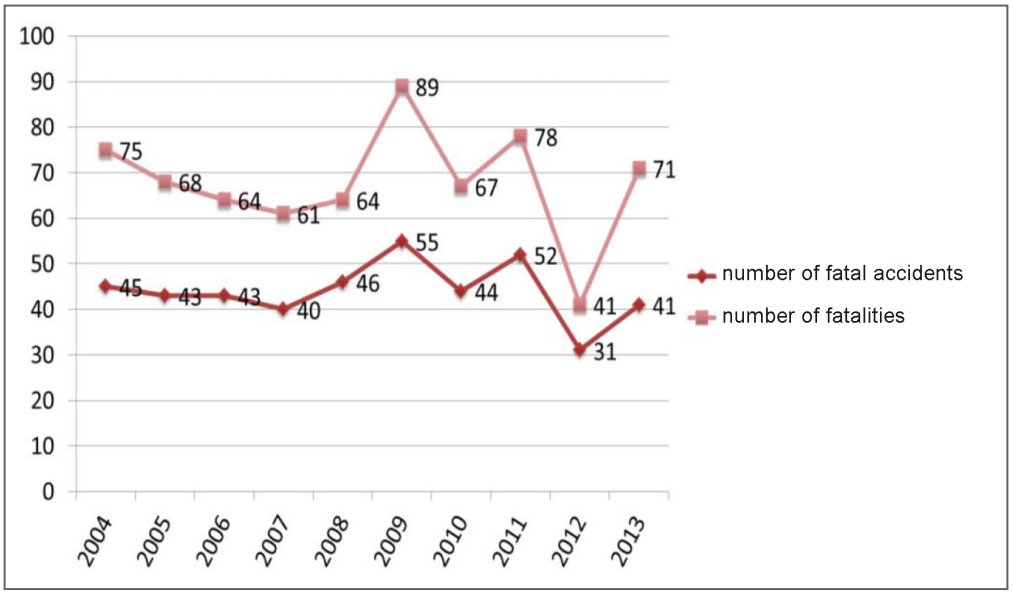
With specific regard to public transport, the general safety record in France in 2013 seemed very good, despite the difficulty in establishing statistics on a small number of events, as the number of accidents fell by 30% and none of the events recorded had fatal consequences.

3.2 General aviation

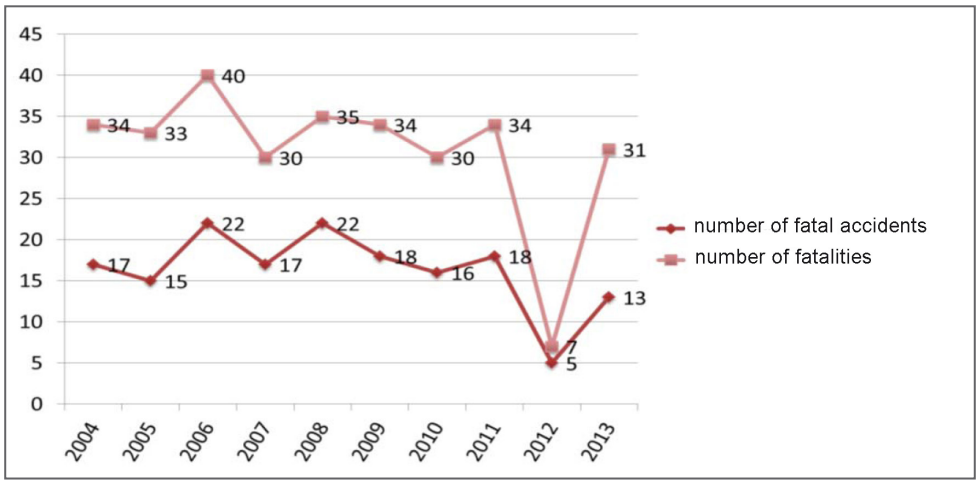
Regarding general aviation, the year 2013 did not confirm the drop in the number of fatal accidents and fatalities recorded in 2012. The records indicate a return to the previous years' order of magnitude. The graphs below illustrate this observation:

- The first graph shows the change in the annual numbers of fatal accidents and fatalities in general aviation, all activities combined: 2012 clearly appears to be an exceptional year;
- The second graph shows the change in these figures for pure aeroplane activity: the specificity of 2012 is even more striking;
- The third graph shows the change for all activities excluding aeroplanes. Not only does 2012 not appear exceptional, it is not even the best of the past 10 years.

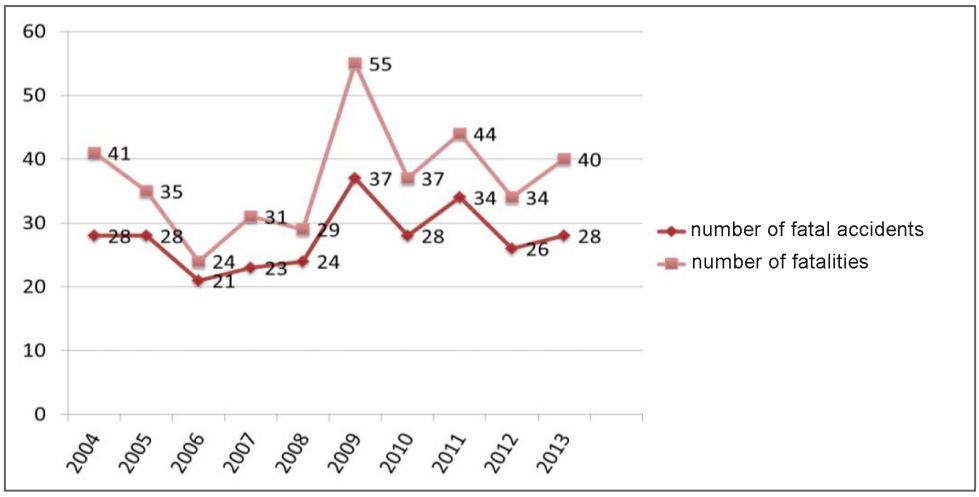
Analysis therefore shows that the improvement in the figures relating to general aviation in 2012 was entirely due to aeroplane activity, and it appears for the moment to be an exception in the statistics.



2004-2013 change in fatal accidents in general aviation
(All activities combined)



2004-2013 change in fatal accidents in general aviation
(Aeroplanes only)



2004-2013 change in fatal accidents in general aviation
(All activities excluding aeroplanes)

Analysis of the events that occurred in 2013 brought to light a certain number of losses of control of so-called *"high performance"* aeroplanes transporting several passengers. Investigators are trying to determine if these accidents have common factors. The question of the pilots' level of competence on this type of aircraft is being studied very carefully.

Furthermore, of the 31 persons who died in aeroplanes in 2013, 24 were victims of private aeroplanes not flying in the context of a flying club.

Lastly, almost 60% of the accidents in general aviation occurred in adverse meteorological conditions.

3.3 Foreign accidents in which the BEA participated in the investigation

Regarding events that occurred abroad that involved the BEA as representative of the country where the aircraft was designed, manufactured or registered, the trend observed in 2012 was confirmed in 2013: the number of these investigations now outnumbers that of investigations initiated in France (extended to Overseas). This trend remains linked to the success of the national aviation industry, whose exports continue to grow throughout the world.

4. SAFETY RECOMMENDATIONS

4.1 Background

For the International Civil Aviation Organisation (ICAO), a safety recommendation is a proposal made by an investigation authority on the basis of information gathered from an investigation or a study, in order to prevent accidents or incidents. Thus, the Safety Recommendation is the BEA's main means of improving safety.

The BEA sends most of its recommendations either to the civil aviation authority of a State or to the European Aviation Safety Agency (EASA). They must relate to the measures to be taken to prevent occurrences with similar causes.

4.1.1 Follow-up on Safety Recommendations

The provisions of European regulation (EU) 996/2010 of the European Parliament and Council of 20 October 2010 on investigations and the prevention of civil aviation accidents and incidents makes mandatory, for Member States, that recipients of safety recommendations acknowledge receipt and inform the issuing authority, responsible for investigations, of the measures taken, or under consideration.

This must be done within 90 days of receipt of the Safety Recommendation letter.

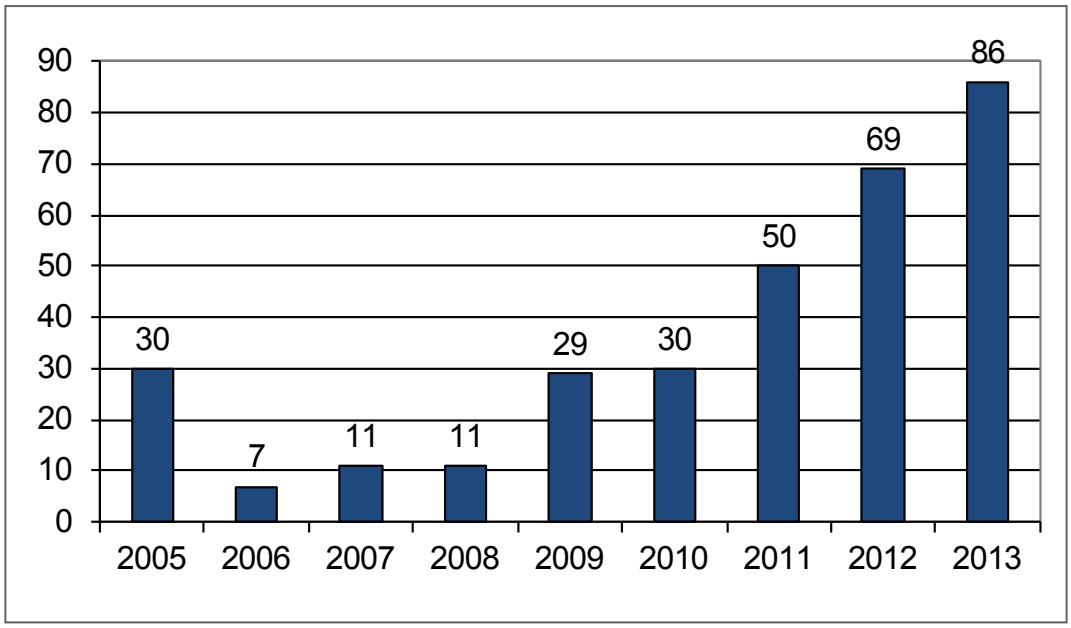
Within 60 days of the date of receipt of the answer, the investigation authority must make known to the recipient if it considers the response as adequate or, if it disagrees with the answer, to communicate the reasons for this.

In order to follow up this specific process related to Safety Recommendations in an effective and on-going manner, the BEA has set up a structure to validate and follow up recommendations (the COREC: COmmittee on RECommendations), from their conception to their being closed by the recipients.

The COREC, presided by the director of the BEA, meets monthly to analyse and approve draft investigation reports and recommendations and to give its opinion on the answers provided by the recipients of recommendations.

4.2 Safety Recommendations issued in 2013

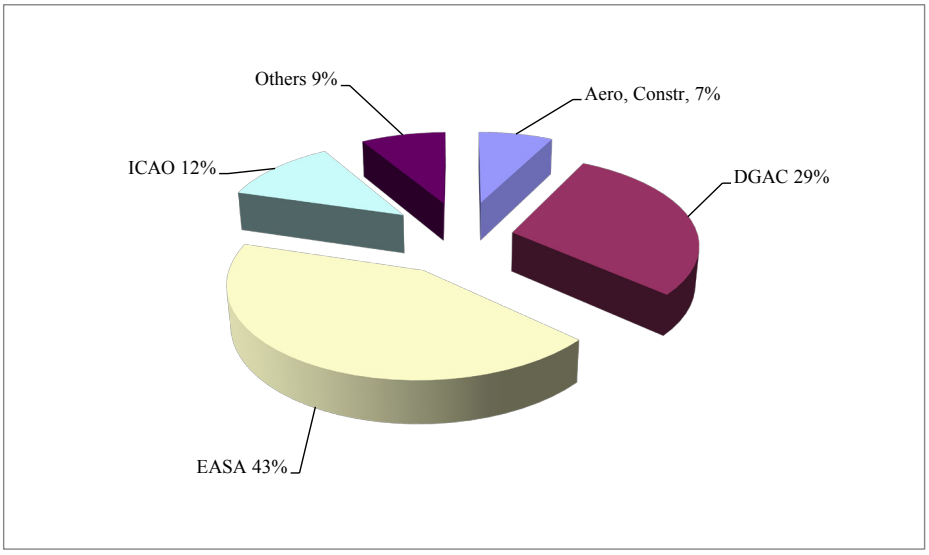
In 2013, the BEA issued 86 recommendations of which 6 were addressed to multiple recipients. The number of recommendations increased by 25% compared to 2012. It should be noted that 34 recommendations were issued in the framework of the ASAGA safety study.



Recommendations issued from 2005 to 2012

4.2.1 Breakdown by recipient

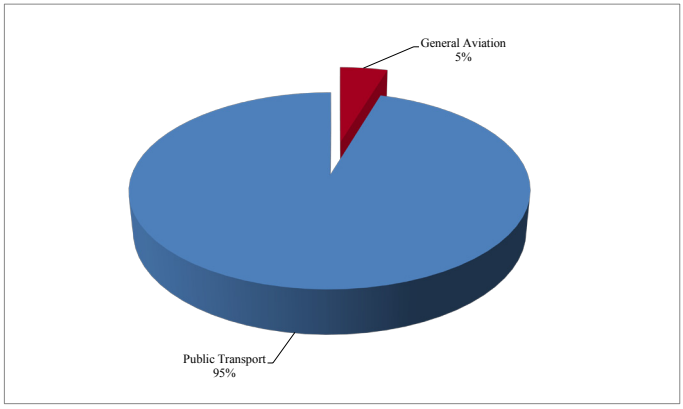
In 2013, EASA and the DGAC were the main recipients of recommendations (43% and 29% respectively). 12% were addressed to ICAO and 9% to the FAA and to other civil aviation authorities. It should be noted that this year, 7% of the recommendations were addressed to aviation manufacturers.



Recipients of recommendations in 2013

4.2.2 Breakdown by type of operation

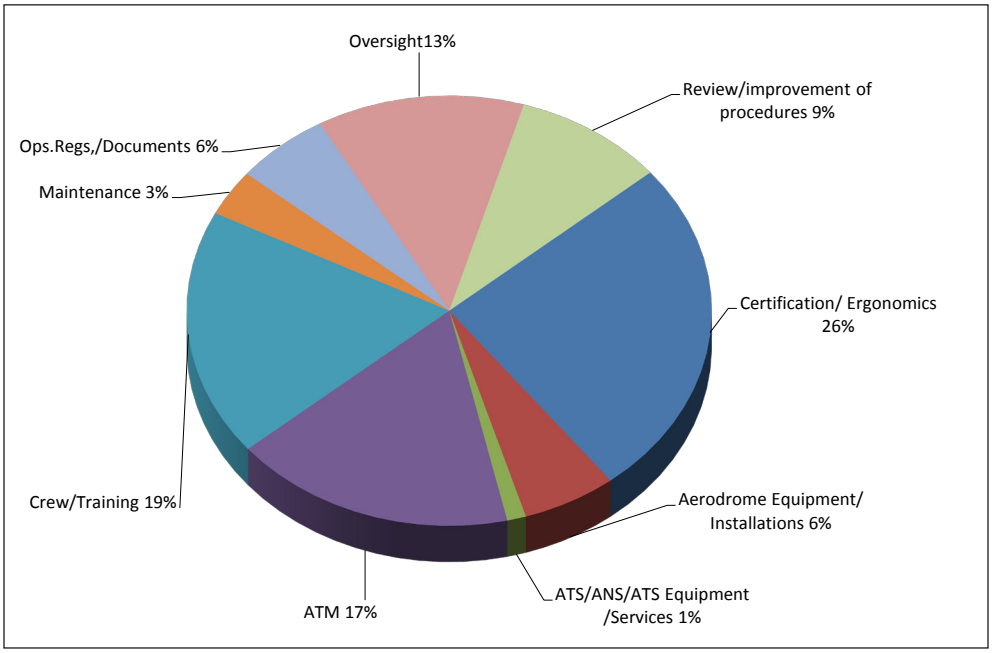
A very large majority (95%) of the recommendations issued in 2013 concerned events related to public transport operations (it should be noted that the ASAGA study mentioned above represents about 40% of all recommendations on public transport). For the year under consideration, no recommendation related to aerial work activities was issued.



Breakdown by type of operation

4.2.3 Recommendation themes

A thematic breakdown of recommendations issued in 2013 shows nine areas for which safety actions were recommended. The breakdown is as follows:



Thematic breakdown of recommendations

4.3 Answers to Safety Recommendations

In relation to follow-up on the 86 recommendations issued by the BEA in 2013:

- 35 recommendations received a favourable response from the recipient authorities;
- 5 recommendations received an unfavourable response;
- 24 recommendations have been acknowledged by the recipient stating that possible actions are still pending;
- 22 recommendations received no response from the recipients.

Note: The data above is as of 31 March 2014.

As regards the last two categories, it should be noted that, in accordance with European regulation 996/2010, recipients of recommendations have 90 days to inform the BEA of the actions planned or undertaken. This obligation is, however, not binding for non-European authorities or manufacturers.

Most Safety Recommendations issued in 2013 advocate amendments to European regulations. It should be noted that the process of regulatory development and modification takes a long time (between 3 and 5 years). Draft amendments are then submitted by EASA to the European Commission, which has legislative power.

5. LABORATORY ACTIVITY (ENGINEERING DEPARTMENT)

5.1 Overview of the Engineering Department in 2013

The volume of activity in the Engineering department was at a level close to that of 2012, with, however, a sharp increase in the number of examinations in the avionics laboratory.

The department was particularly sought after for accidents abroad, in the framework of accredited representation. We note, for example, the case of the accident to an Airbus A300 in Birmingham (USA), to an ATR72 in Laos and an EC135 in Glasgow (United Kingdom).

5.2 Flight recorders and avionics systems

In 2013, 25 CVR recordings and 51 flight data recordings (FDR, DAR, QAR) were read out and analysed at the BEA. More than half of these recordings related to investigations in which the BEA participated as accredited representative, and one third concerned investigations led by the BEA. Some work was also undertaken in the context of technical assistance for foreign investigation bodies. Lastly, about twenty CVR readouts were also performed for evaluations of recording quality in the framework of aircraft certification.

The number of recordings processed was close to that of previous years.

	BEA investigation	BEA ACCREP	Technical assistance	Total
CVR recordings processed at the BEA	11	10	4	**25**
Flight data recordings processed at the BEA (FDR, DAR and QAR)	17	31	3	**51**
Total number of recordings processed at the BEA	28	41	7	**76**

DAR: Direct Access Recorder; QAR: Quick Access Recorder

In 2013, the BEA avionics laboratory read out 70 GNSS computers and 82 embedded computers, to which was added work on audio/video recordings. These figures show an increase of about 50% compared to the previous year.

	BEA investigation	BEA ACCREP	Technical assistance	Total
Avionics systems	46	35	1	**82**
GNSS	64	6	0	**70**
Audio/video recordings	11	2	0	**13**

GNSS: Global Navigation Satellite System

In 2013, 46 events were the subject of work on air traffic management (ATM) data, from radar data or Air Traffic Control communications. This type of work is mainly related to investigations led by BEA.

The breakdown of ATM work by type of investigation is as follows:

	BEA investigation	BEA ACCREP	Technical assistance	Total
Number of events	42	3	1	**46**

The laboratory has continued to expand its capacity by acquiring the latest readout devices associated with the new flight recorders installed on aircraft of French manufacture.

There was a marked increase in activity related to audio/video data compared to previous years. Indeed, the use of touch-screen tablets, and GO-PRO type cameras is increasing in general aviation, as is the installation at the construction stage of embedded cameras on specific helicopter models. This equipment provides valuable data, particularly for investigations into accidents to aircraft not equipped with flight recorders.

The recorder and avionics system division was very involved in work relating to Boeing 787 batteries; the BEA was associated with the Japanese and American investigations as accredited representative for battery integration and certification. The division participated in the examinations carried out in France for the JTSB and the NTSB, as well as in investigation groups relating to systems and certification.

Laboratory investigators also took part in international and European regulatory development activities (mainly EUROCAE standards and EASA and ICAO regulations).

5.3 Structure, equipment and engines

160 examinations were performed in 2013. This activity increased compared to 2012 (140 examinations).

We note that 32 examinations were performed by the BEA in the framework of accredited representation.

Type of operation	Number of occurrences	Number of examinations
Public Transport	21	50
Aerial Work	2	2
General Aviation	64	108
Total	**87**	**160**

The examinations carried out can be broken down as follows:

	BEA investigation	BEA ACCREP	Technical assistance
On-site wreckage examinations	31	7	0
Examinations carried out at the BEA	38	8	0
Examinations at outside centres	59	17	0
Total	**128**	**32**	**0**

In general aviation, work on particularly difficult accident sites, due to strong forces on impact, was carried out on several occasions, in particular in the context of an accident to a TBM 850 and an accident to a TBM 700. This required considerable coordination of persons working on site and identification of parts with the manufacturer's technical advisors.

The laboratory was heavily mobilised in the investigations into the accident to the Fokker 27 (loss of a propeller blade, then the whole propeller and reduction gearbox, during initial climb after takeoff) at Paris Charles de Gaulle, using its own resources as well as those of its network of outside expertise centres.

6. INTERNATIONAL ACTIVITY, PUBLIC RELATIONS AND ASSISTANCE TO FAMILIES

The BEA does a lot of work on the European and international scene: public relations by participating in international conferences, setting up cooperation with foreign investigation authorities, organising training seminars abroad and participating in working groups in international organisations (in particular the European Union, ECAC, and ICAO).

6.1 Public relations

In 2013, the BEA participated in the following international investigator and investigation organisation conferences:

- European Society of Air Safety Investigators (ESASI), in Madrid (Spain)
  Presentation by the BEA of the use of safety investigation reports by courts of law.
- International Society of Air Safety Investigators (ISASI), in Vancouver (Canada)
  Presentation of the ASAGA safety study.
- International Transportation Safety Association (ITSA) conference, in Delhi (India)
  The BEA presented its annual activity report to this association which groups the main world multimodal investigation organisations. It also referred to the use of safety investigation reports in courts of law.
- AIR (Accident Investigators on Recorders) meeting, Berlin (Germany)
  The BEA took part in the annual meeting of investigation laboratories in the field of flight recorders and embedded systems which this year was organised by its German counterparts.
- AIM (Accident Investigators on Metallurgy) meeting, Le Bourget (France)
  This first meeting of world investigation laboratories in the field of metallurgical analyses was organised on the BEA's initiative and was very successful. It will now be held annually by different host countries.
- International Accident Investigation Forum, Singapore
  Presentation of the final investigation report on the accident to the A330 between Rio and Paris, flight AF 447.
- Go-around safety seminar, Brussels (Belgium)
  This seminar on go-arounds was organised by Eurocontrol with a presentation by the BEA of the ASAGA safety study.
- International Committee for Aviation Training in Extended Envelopes (ICATEE)
  This working group on loss of control was mandated by ICAO for monitoring recommendations relating to loss of control. In this context, the BEA presented the final investigation report on the accident to the A330 between Rio and Paris, flight AF 447.
- Flight Safety Foundation Annual Seminar, Washington (United States)
  The BEA was invited by the Flight Safety Foundation to present the final investigation report on the accident to the A330 between Rio and Paris, flight AF 447.
- National conference on transport, Algiers (Algeria)
  At this conference on transport safety in Algeria, the BEA spoke on issues related to aviation safety.
- European Commercial Aviation Safety Team (ECAST), Cologne (Germany)
  In the framework of the EASA working group, in partnership with aviation industry stakeholders for improving safety, the BEA presented the ASAGA safety study.

6.2 Collaboration with foreign investigation organisations

6.2.1 Agreements for assistance in setting up or organising investigation authorities abroad

In order to facilitate the exchange of information and experience, essential to the good conduct of safety investigation, the BEA signed cooperation agreements on civil aviation accident investigations with Algeria and Georgia so as to assist them, according to means available, to cope with a major investigation. This brings the number of countries with which the BEA has signed cooperation agreements to 28.

6.2.2 Contact with foreign organisations

In the context of On the Job Training (OJT), the BEA welcomed to its premises for three weeks a delegation of 7 foreign colleagues (from Sri Lanka, Hong Kong, Macao and Ukraine). This training course included interviews with the safety services of manufacturers Airbus and ATR (Toulouse).

6.3 Training actions abroad

The BEA undertook no training actions abroad in 2013.

6.4 Participation in the work of international organisations

6.4.1. ICAO

During the 38th ICAO assembly, the BEA presented a working document in the name of the 44 states of the ECAC, the European Union and Eurocontrol. This document addressed some of the difficulties that may be encountered during international safety investigations (problems connected with investigation delegation, consultation and the publication of reports, relations between judicial investigations and safety investigations, the requirements of independence and the need for competence) and proposed actions to improve the quality and effectiveness of safety investigations.

In addition, the BEA actively participates in the work of ICAO's Flight Recorder Panel (FLIRECP). New modifications of Appendix 6 on monitoring aircraft above ocean regions are currently being studied. All these modifications were actively proposed and supported by the BEA. They correspond to the recommendations published in the framework of the AF 447 investigation.

The latest meeting of the Safety Information Protection Task Force (SIP-TF) was held in Montreal (Canada). The BEA actively participates in this working group for improving the protection of sensitive data in the framework of safety investigations.

6.4.2 European Union

European regulations set up a structure to coordinate the work and experience of various investigation authorities in the European Union. This structure is called ENCASIA (European Network of Civil Aviation Safety Investigation Authorities). The BEA actively participates in this network's work. It is a member of four of the five established working groups and heads one of them, on sharing and formalising best practice in investigations.

6.4.3 ECAC

The investigation group of the Member States of ECAC, called ACC, is a very active feedback forum. During its 2013 workshop, the BEA presented its experience of working with engine manufacturers in the framework of safety investigations.

6.4.4 APAC/AIG

The Asia Pacific Accident Investigation Group is similar to the ACC in Europe. France is a member of this group. During its first meeting in 2013, the BEA presented the hosting of foreign colleagues in On the Job Training at the BEA.

6.4.5 EUROCAE

Eurocae WG-98 working group, headed by an investigator from the BEA, held its first meeting in Paris. This international group of about sixty members updates ED-62A emergency locator transmitter (ELT) operational specifications. Some of these modifications came from recommendations from the investigation into the accident to flight AF447. The new document should be published in mid-2015.

6.5 Information to families

The year 2013 saw publication of the first edition of the ICAO Policy on assistance to aircraft accident victims and their families – Doc. 9998. The BEA contributed greatly to the drafting of this document. It covers all assistance actions for the families of accident victims that should be put in place by a member State. In line with the provisions of European regulation 996/2010, it highlights the responsibility of the aviation accident investigation services to inform the families of victims on the progress of the safety investigation, though without compromising the latter's objectives.

In 2013, the BEA organised five information meetings for the families of victims to present the progress and findings of safety investigations. Three of them involved general aviation accidents, the last two relating to public transport accidents that had occurred previously. These last presentations for the families of French victims were organised with the agreement of the authorities in charge of the investigation.

7. PERSONNEL AND BUDGET

7.1 Personnel (as of 31 December 2013)

BEA staff	Public servants	Contractual employees	Workers	Total
Flight crew	-	1	-	**1**
Engineers	34	13	-	**47**
Senior technicians	11	1	-	**12**
Workers	-	-	14	**14**
Administrative staff	14	5	-	**19**
Total staff	**59**	**20**	**14**	**93**

7.2 Budget

The BEA budget for 2013 was set in the initial finance law at €3.070 million in commitment authorisations (CA) and payment appropriations (PA).

Two anticipatory reserves reduced these sums to €2.5 million in CA and PA.

7.2.1 Expenditure during the period

Services	Operation		Investment	
	CA (€)	PA (€)	CA (€)	PA (€)
Communication	137 081	105 358	0	0
Logistics	767 111	875 198	176 684	149 451
Engineering	202 890	219 710	128 083	128 083
Training	159 145	169 469	0	0
Travel	528 758	705 301	0	0
Total (€)	**1 794 985**	**2 075 036**	**304 767**	**277 534**

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