

**BEA**

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

# Annual Report 2012

# Summary

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## A Message from the Director



The year 2012 saw a considerable drop in the number of fatal accidents that occurred to general aviation aircraft, since there were only seven deaths, in contrast with around thirty reported in previous years. It is still too early to say if this was simply a statistical blip or the start of a lasting trend.

In public transport, there were eleven fatalities corresponding to three accidents to business aircraft, though there have been no fatalities among French airline passengers for 4 years.

The outstanding event of 2012 was undoubtedly, for the BEA, the publication on 5 July of the final report on the investigation into the accident to flight AF447 Rio-Paris on 1st June 2009. This publication occurred 14 months after the flight recorders were recovered then read out in their entirety after being underwater for 23 months at a depth of 3,900 metres.

41 safety recommendations came out of this report.

In 2012 there was a significant increase, of about 33%, in the number of events notified to the BEA by foreign authorities, which confirms the gradual shift of BEA activity towards the international. This development is similar to that in activity for the laboratory.

This is analogous to the development of French and European aeronautical manufacturing. The increasing number of aircraft and equipment in service does in fact correlate to an increase in the number of events notified to the BEA, the majority of which fortunately have no fatal consequences.

Participating in all safety investigations led by foreign authorities involving aircraft of French design or that incorporate French-designed equipment, the BEA plays a more and more significant role in improving international aviation safety.

Le Directeur du BEA

  
Jean-Paul TROADEC



# 1. Overview of Accidents Involving the BEA that Occurred in 2012, 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.). The regulation 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, which 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 2012, investigations initiated by foreign bodies in 2012 in which the BEA is participating – or participated - by designating an accredited representative (ACCREP), and BEA teams sent to accident sites (Go teams).

### 1.2.1 Aircraft involved in accidents

In 2012 there was a large drop in the number of fatal accidents and the number of victims of general aviation aeroplane accidents. The statistics will be followed carefully in 2013, in order to establish whether conclusions can be drawn for safety. In addition, three fatal accidents involving public transport aeroplanes were reported. In all three cases they were business aircraft.

Note that 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 2012, there were three collisions in flight or on the ground).

	involved in accidents	Accidents	Of which fatal	Fatal	Serious
<b>Public Transport</b>					
Aeroplanes	5	3	3	11	0
Helicopters	0	0	0	0	0
Balloons	5	4	1	1	3
<b>Public transport total</b>	<b>10</b>	<b>7</b>	<b>4</b>	<b>12</b>	<b>3</b>

<b>Aerial Work</b>					
Aeroplanes	9	4	1	1	3
Helicopters	8	2	1	1	2
Microlights	1	1	0	0	1
<b>Aerial work total</b>	<b>18</b>	<b>7</b>	<b>2</b>	<b>2</b>	<b>6</b>

General Aviation					
Aeroplanes	96	10	5	7	5
Helicopters	5	2	1	2	3
Planeurs (dont motoplaneurs)	24	11	7	8	4
Balloons	2	2	1	3	2
Microlights	130	36	18	24	22
<b>General aviation total</b>	<b>257</b>	<b>61</b>	<b>32</b>	<b>44</b>	<b>36</b>
<b>Total</b>	<b>285</b>	<b>75</b>	<b>38</b>	<b>58</b>	<b>45</b>

Aircraft involved in accidents in France in 2012

### 1.2.2 Investigations initiated by the BEA

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 (microlights, etc.) are only subject to an investigation in certain specific cases.

Type of event	Public transport	General aviation	Aerial work	Total
Accidents	10	110	18	138
Serious incidents	6	7	1	14
Incidents	4	14	1	19
<b>Total</b>	<b>20</b>	<b>131</b>	<b>20</b>	<b>171</b>

Investigations initiated by the BEA in 2012

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

Type of event	Public transport	General aviation	Aerial work	State aircraft	Total
Accidents	36	57	20	6	119
Serious incidents	68	6	3	0	77
Incidents	21	4	1	0	26
<b>Total</b>	<b>125</b>	<b>67</b>	<b>24</b>	<b>6</b>	<b>222</b>

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

### 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 “go-team”) are decided on a case by case basis.

In 2012, 39 go-teams were thus sent out, including two for overseas accidents (Saint-Martin and Martinique), and 9 for accidents abroad: USA, Niger, Russia (2 events), United Kingdom (2 events), Slovakia, Germany and Kenya.



## 2. Investigations Completed and Reports Published in 2012

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 2012 the BEA published 12 reports of this type (see table below);
- 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 2012, the BEA published 19 simplified reports relating to public transport and 118 simplified reports relating to general aviation or aerial work;
- Recording of events in a database accessible to the public. 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 the subject of a recording in the BEA database, which is accessible to the public through its website. In 2012, of the 186 investigations closed by the BEA, 37 were the subject of a simple recording in the database, with no publication of any other form of report.

Events that led to publication of an ICAO report in 2012				
Registration	Type of aircraft	Place	Date of event	Type of event
F-GZCP	Airbus A330	Atlantic Ocean	1 June 2009	Flight AFR 447 (Rio Paris) Pitot probe icing in cruise, erroneous speed indications, stall, collision with the sea
F-GLZU	Airbus A340-313	North Atlantic Ocean	22 July 2011	Turbulence, altitude bust in cruise and activation of high angle of attack protection
F-HAIR	Falcon 50	Paris Le Bourget (93)	13 August 2010	Lateral runway excursion during landing, immobilisation on runway
F-HSFA	Beech 200 GT	South-East of Brive-la-Roche (19)	15 April 2010	Smoke in cabin in cruise
F-GOMP F-GTZK	Piper PA 28 and Robin DR 40	Arthaz-Pont-Notre-Dame (74)	8 November 2008	Mid-air collision between two aeroplanes in traffic pattern
F-GCIQ	Robin DR400-120	Montigny-sur-Vence (08)	21 August 2010	Collision with an electric cable
D-GGUS	Diamond DA 42	Sainte Eulalie (48)	6 June 2007	VFR flight in unfavourable meteorological conditions
F-GTPP	Robin DR400-160	La Teste du Buch (33)	26 July 2007	Degraded performance during initial climb, loss of control
N9245D	Piper PA 46 Malibu	Léguillac-de-Cercle (24)	25 May 2008	Loss of control, in-flight break up
F-GJFJ	Aérospatiale AS 350 B3	Off the coast of Adelie Land (Antarctica)	28 October 2010	Flight in unfavourable meteorological conditions
F-OIEL	Aérospatiale AS 350 B2	French Guyana	4 August 2010	Loss of load transported in sling, loss of control
G-CBVL	Robinson R22	Tourrette sur Loup	9 December 2010	Rotor mast bumping, rotor rotation deviation, loss of control, collision with terrain

All BEA reports are published in French but some of them are also published in English. In 2012, the BEA published translations of 5 ICAO public transport reports, 8 public transport simplified reports and 5 simplified reports on general aviation or aerial work.

European regulation 996/2010 specifies that an investigation report should be published rapidly and if possible within the twelve months that follow the date of the event. For the BEA, a maximum length of twelve months for each investigation is thus a general objective.

The tables below give the number of investigations closed in 2012, by type of event and operation, specifying the date of the events, and the investigations more than one year old not closed as of 31 December 2012.

Year of event	Before 2010			2010			2011			2012			Total
	PT	GA	AW	PT	GA	AW	PT	GA	AW	PT	GA	AW	
Accidents	3	16	1	5	16	1	2	57	5	2	39	1	148
Serious Incidents	2	0	0	3	1	0	4	3	0	0	0	0	13
Incidents	2	3	0	7	5	0	3	4	0	0	1	0	25
<b>Total</b>	<b>7</b>	<b>19</b>	<b>1</b>	<b>15</b>	<b>22</b>	<b>1</b>	<b>9</b>	<b>64</b>	<b>5</b>	<b>2</b>	<b>40</b>	<b>1</b>	<b>186</b>

Investigations closed by the BEA in 2012 (by year of event)

Type of event	Public transport	General aviation	Aerial work	Total
Accidents	10	43	1	54
Serious Incidents	14	4	1	19
Incidents	28	10	1	39
<b>Total</b>	<b>52</b>	<b>57</b>	<b>3</b>	<b>112</b>

Investigations initiated for over one year as of 31 December 2012



## 3. Reflections on Safety: Studies Undertaken

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 responsible for them. 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.

#### ❑ **ASAGA study (Aeroplane State Awareness during Go-around)**

The BEA's attention was drawn by three accidents with some similarities that occurred during go-arounds on twin-engine long-haul aeroplanes. More precise research showed that these events could be linked to a loss of situational awareness by crews and that the phenomenon was relatively frequent. The study is based on statistics from events, flight crew surveys, tests in simulators using oculometric techniques and interviews with crews. It involved, amongst others, airlines, manufacturers (Airbus, Boeing), authorities (DGAC, EASA, FAA) and Human Factor specialists (Sup Aéro, Dédale). A certain number of common factors have been identified, linked to pilots, aeroplanes or to an interaction between external influences such as radio-communications with ATC or the design of go-around procedures. The study is being finalised and will be published in summer 2013.

#### ❑ **Triple approaches**

A study is currently underway on loss of separation in flight between aircraft during triple approaches performed simultaneously at Paris-Charles de Gaulle and Le Bourget airports. Its aim is to detail the complexity of these approaches in this sector and to propose the necessary safety actions, in liaison with the operators involved, including the DSNA.

#### ❑ **Fuel pressure pumps on Thielert engines**

The study, published at the end of 2012, showed that the general rate of engine failure on Thielerts was comparable to that observed on other engines. Additional research was, however, launched to identify the cause of low pressure fuel pump failures whose recurrence was only observed in a part of the South of France. The results should be known in 2013.

#### ❑ **Other studies**

Note should also be taken of a study launched in 2012 on false glide captures on ATR, which occurred when the aeroplane is established on the LOC: several cases have been reported.



## 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 a State civil aviation authority or to the European Aviation Safety Agency (EASA). They must relate to the measures to be taken to prevent occurrences with similar causes.

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.

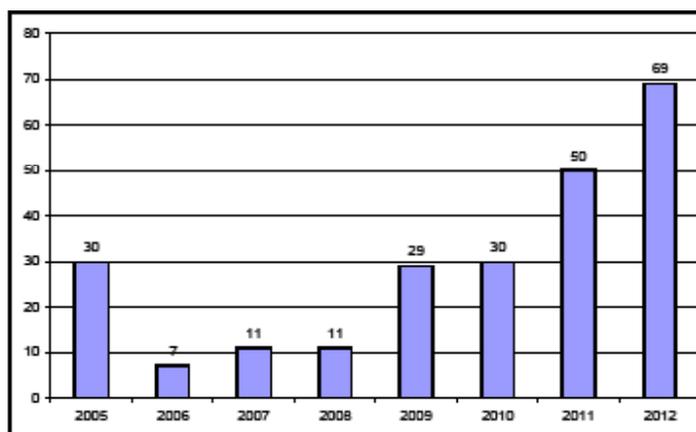
Within 60 days of the date of receipt of the answer, the investigation authority must make known to the recipient if it considers its response as adequate or, if it disagrees with the answer, to communicate the reasons for this.

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, chaired 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

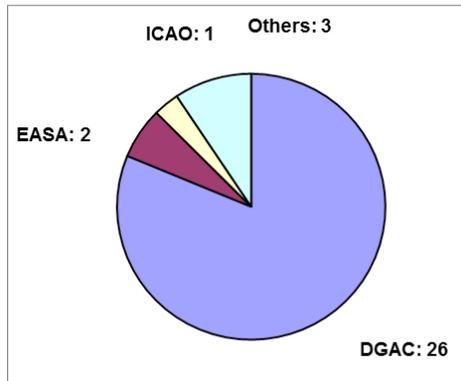
In 2012, the BEA issued 69 recommendations including 10 addressed to multiple recipients. The number of recommendations increased by 38% in comparison with 2011. It should be noted that 25 new recommendations were issued in the context of the investigation into the accident to AF447, Rio-Paris.



Recommendations issued

### □ Breakdown by recipient

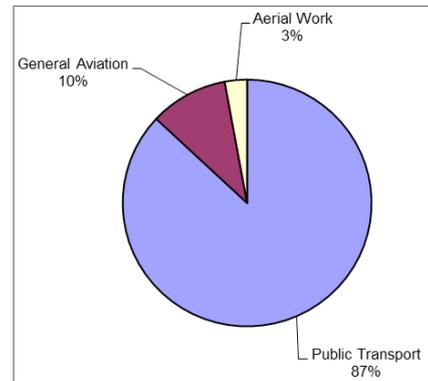
In 2012, EASA and the DGAC were the main recipients of recommendations. ICAO was the recipient of 9% of them. The 4% remaining were addressed to the FAA and to the civil aviation authorities of Senegal and Brazil.



Recipients of recommendations

### □ Breakdown by type of operation

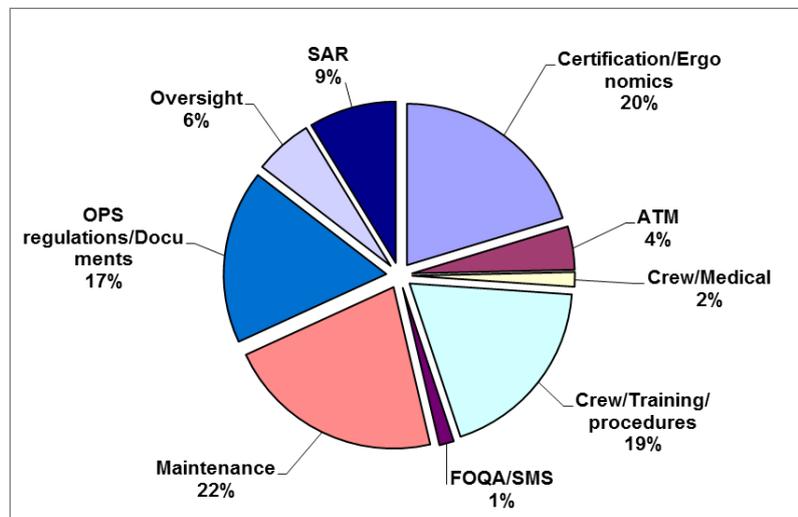
The majority (87%) of safety recommendations issued in 2012 involved events relating to public transport operations.



Breakdown by type of operation

### □ Recommendation themes

A thematic breakdown of recommendations issued in 2012 shows four major areas for which safety actions were recommended. The breakdown is as follows: maintenance (23%), certification/ergonomics (20%), training and crew procedures (19%), operational rules/documents (17%).



Thematic breakdown of recommendations

## 4.3. Answers to Safety Recommendations

In relation to follow up on the 69 recommendations issued by the BEA in 2012:

- 38 recommendations received a favourable response from the recipient authorities,
- 28 recommendations are pending a response from the recipient authorities.
- 3 recommendations received no response from the recipients.

Most safety recommendations issued in 2012 recommended amendments to European regulations. It should be noted that the process of developing and modifying regulations is long (between 3 and 5 years). Draft amendments are then passed by EASA to the European Commission, which has legislative power.



## 5. Laboratory Activity (Engineering department)

## 5.1. Engineering department activity in 2012

The volume of activity in the Engineering department was at a level close to that of 2011, with, however, an increase in the number of structure, equipment and engine examinations.

Significant work was undertaken during 2012 to update the procedures relating to use of parts from accident sites and to adapt traceability methods for parts examined by the BEA during its investigations, in accordance with the European regulation on safety investigations.

## 5.2. Flight recorders and avionics systems

In 2012, 26 CVR recordings and 61 FDR recordings were read out at the BEA. Almost a half of these recordings concerned investigations in which the BEA participated via an accredited representative, and one third corresponded to investigations led by the BEA. Some work was also undertaken in the context of technical assistance.

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	9	14	3	26
Data recordings processed at the BEA (FDR, DAR <sup>(1)</sup> and QAR <sup>(2)</sup> )	23	32	6	61
<b>Total number of recordings processed at the BEA</b>	<b>32</b>	<b>46</b>	<b>9</b>	<b>87</b>

<sup>(1)</sup>DAR : Direct Access Recorder

<sup>(2)</sup>QAR : Quick Access Recorder

In 2012 the BEA avionics laboratory read out 105 items of on-board equipment, broken down as follows:

	BEA investigation	BEA ACCREP	Technical assistance	Total
Avionics systems	13	30	2	45
Global Navigation Satellite System	41	3	8	52
Audio/video recordings	6	2	0	8

In 2012, 50 events were the subject of work on air traffic management (ATM) data, based on radar data or Air Traffic Control (ATC) communications. This type of work mainly concerned investigations led by the BEA.

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

	BEA investigation	BEA ACCREP	Technical assistance	Total
Number of events	42	8	0	50

The laboratory continued to develop its capacity with the acquisition of the latest read-out devices associated with new flight recorders that are installed on aircraft of French manufacture.

The flight recorder opening room was completely refurbished to allow work to be carried out in the best operational conditions and in an environment that is totally protected against electrostatic risks.

The diagnosis and read-out software for electronic components (ODILE) was consolidated by an outsourcing process based on architecture defined by the BEA laboratory.

### 5.3. Structure, equipment and engines

140 examinations were carried out in 2012. This activity increased in comparison with 2011 (117 examinations) and 2010 (130 examinations).

It should be noted that:

- 33 examinations were carried out by the BEA in the context of accredited representation,
- 3 examinations were carried out in the context of technical assistance.

Type of operation	Number of occurrences	Number of examinations
Public Transport	22	41
Aerial Work	8	16
General Aviation	44	83
<b>Total</b>	<b>74</b>	<b>140</b>

The examinations carried out can be broken down as follows:

	BEA investigation	BEA ACCREP	Technical assistance
On-site wreckage examinations	20	2	1
Examinations carried out at the BEA	34	1	1
Examinations at outside centres	50	30	1
<b>Total</b>	<b>104</b>	<b>33</b>	<b>3</b>

The BEA laboratory is continuing to consolidate its examination resources in the field of materials analysis with, in particular, significant developments in X-ray tomography equipment.



# 6. International Activity and Public Relations

The BEA undertakes many actions aimed at strengthening its presence on the European and international scene: public relations (including the organisation of press conferences and participation in international conferences for investigators and investigation bodies), 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, ICAO).

## 6.1. Public relations

For the year 2012, the main public relations exercise undertaken was linked to the publication of particularly significant reports, such as that on the accident to the Air France A330 (AF 447 Rio-Paris).

### **Accident between Rio and Paris on the night of 31 May to 1<sup>st</sup> June 2009**

The final report on the investigation into the accident that occurred between Rio and Paris on the night of 31 May on 1<sup>st</sup> June 2009 was published on 5 July 2012 during a press conference that was held in the French Air and Space Museum, attended by a hundred journalists and 21 French and foreign television channels.

The press conference was broadcast simultaneously in French and English via the Internet to the families of the 228 victims. This access was extended to the BEA's counterparts and foreign partners.

It had been preceded by an information meeting with the associations of the families of the victims from Germany, Brazil, Italy and France.

This investigation lasted three years due to the exceptional difficulties encountered in locating the wreckage at a depth of 3,900 m, 21 months after the accident. It was the subject of unprecedented national and international media attention. Logistical and IT resources were deployed to respond to the requirements of journalists and the media: 12 press conferences in France and Brazil, 57 press releases, and the release of 10 videos on-line that were filmed on board the ships carrying out undersea searches to explain the work of the investigators and specialists.

Priority was, however, given to the families of victims of 32 nationalities. The BEA systematically kept them informed at each stage of the searches and progress of the investigation. Summaries in German, English, French and Portuguese were given to the families of the victims in order to inform them regularly on the progress of the investigation. In total, more than fifty messages were issued and ten information meetings organised.

The three interim reports published respectively on 2 July, 17 December 2009, and 29 July 2011 and the final investigation report on 5 July 2012 were published in French and in English and downloaded 100,000 times.

All information relating to this investigation can be consulted on the BEA website: <http://www.bea.aero/en/enquetes/vol.af.447/vol.af.447.php>

## 6.2 International conferences for investigators and investigation bodies in which the BEA participated in 2012

- ❑ **European Society of Air Safety Investigators (ESASI)**, in Amsterdam (the Netherlands): presentation by the BEA of Human Factors analysis methodology developed in the context of BEA safety investigations.
- ❑ **International Society of Air Safety Investigators (ISASI)**, in Baltimore (USA): presentation of the final report on the investigation into the accident to the A330 between Rio and Paris, flight AF 447. Stress was laid on the challenges linked to the readout of the flight recorders, the work of the working group on the crew's human performance, information to the families of the victims and communication with the media.
- ❑ **International Transportation Safety Association (ITSA) conference**, in Apeldoorn (the Netherlands): this association brings together the main multi-modal investigation authorities in the world. The BEA presented a report on its annual activities, specifically the work carried out between May 2011 and May 2012 in the context of the investigation into the accident to flight AF 447.
- ❑ **Conference of the Directors General of the Asia/Pacific region (APAC)**, in Delhi (India): Presentation by the BEA on the theme of "Training Investigators to Face Rare Air Disasters". This conference was also an opportunity to develop links with new representatives of countries in the Region and to strengthen already established relationships.
- ❑ **AIR (Accident Investigation Recorders) meeting**, organised in the Netherlands: an annual meeting of investigation laboratories in the field of flight recorders and on-board systems.

## 6.3 Cooperation with foreign investigation organisations

### ❑ **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 Madagascar, Kosovo and Sri Lanka so as to assist them, according to means available, to cope with a major investigation.

### ❑ **Contact with foreign organisations**

In the context of the EUCCAP project between the European and China, the BEA welcomed to its premises a large delegation from Chinese civil aviation and accompanied it on trips to the AAIB (British investigation authority) as well as to Airbus (Toulouse) and Eurocopter (Marseille).

## 6.4 Training actions abroad

Among the training actions undertaken in 2012 in foreign countries, we may note:

- Participation in the "Aircraft Accident Investigation and Management" training course offered by Singapore Aviation Academy (SAA).
- Organisation of a training seminar and exchanges on accident investigation questions. This week-long seminar in Nouméa was financed by the Ministry of Foreign Affairs of France and Europe, the Government of New Caledonia and the DGAC. It also enjoyed the support of the General Secretary of the Community of the South Pacific. It was intended for various States and territories in the South Pacific.
- Organisation, at the request of the Indian Minister of Civil Aviation, of a seminar that was held in the Indian Aviation Academy, in Delhi, with around fifty participants.
- Organisation in Rabat of a training seminar and exchanges over one week, attended by representatives from Morocco, Algeria, Tunisia and Mauritania.

- A short training course in Serbia in the context of twinning with France for assistance in the organisation of an independent investigation bureau.
- Participation in the training of investigators from East African states, which was organised by ICAO and the NTSB in Nairobi.

## 6.5 Participation in the work of international organisations

### ☐ ICAO

During the 12th ICAO conference, the BEA presented a working document in the name of the 44 states of the European Civil Aviation Conference, the European Union and Eurocontrol. This document proposed taking worldwide steps to improve the monitoring of positions above oceanic or empty regions, and it recommended that the ICAO assess, as quickly as possible, the changes required in the field of the transmission of flight data and develop amendments to the appropriate Annexes to the Convention.

In addition, the BEA actively participates in the work of ICAO Flight Recorder Panel (FLIRECP). Annex 6 published in 2012 makes mandatory the installation of ULB beacons capable of transmitting for 90 days and low frequency ULB beacons, by 1 January 2018. Further modifications to Annex 6 on monitoring aircraft above oceanic areas are under consideration. All of these modifications are actively proposed and supported by the BEA. They correspond to recommendations published in the context of the investigation into the accident to AF 447.

### ☐ European Union

The European regulation 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 travail and heads one of them.

### ☐ ECAC

The investigation group of the Member States of ECAC, called the ACC, is a very active feedback forum. During its 2012 workshop, the BEA presented its organisation in terms of gathering information on and investigating incidents.

### ☐ EUROCAE

Eurocae WG-90 working group, headed by an investigator from the BEA, held its last meeting in Madrid. This international group of a hundred members updates the flight recorder ED-112 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-2013.



## 7. Finance and Training

## 7.1. Personnel (as of 31 December 2012)

BEA staff	Public servants	Contractual employees	Workers	Total
Flight crew	-	-	-	0
Engineers	31	14	-	45
Senior technicians	14	1	-	15
Workers	-	-	14	14
Administrative staff	16	6	-	22
<b>Total staff</b>	<b>61</b>	<b>21</b>	<b>14</b>	<b>96</b>

## 7.2. The budget

The BEA budget for 2012 was set in the initial finance law (IFL) at €4.378 million of commitment authorisations (CA) and €3.491 million of payment appropriations (PA).

Two anticipatory reserves reduced these amounts to €3.989 million in CA and €3.175 million in PA.

This budget represents the budget of an average year that is not marked by a major disaster investigated by the BEA. There was thus a reduction in the 2011 budget for which exceptional provisions of €5.8 million in CA and €5.6 million in PA had been required to finance the operations to raise the wreckage of the aeroplane from the Rio-Paris flight in the South Atlantic.

## Expenditure during the period

Services	Operations		Investment	
	CA (€)	PA (€)	CA (€)	PA (€)
Communication	143 332	224 539	0	0
Logistics	704 136	832 362	153 719	201 559
Engineering	293 805	396 663	181 245	192 045
Training	213 272	208 948	0	0
Travel	928 373	732 132	0	0
<b>Total (€)</b>	<b>2 282 918</b>	<b>2 394 644</b>	<b>334 964</b>	<b>393 604</b>

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