





WITH THE SUPPORT OF DGAC

fnam
Fédération Nationale de l'Aviation Marchande

THE GENERAL AND BUSINESS AVIATION COMMISSION
OF FRENCH AVIATION INDUSTRY FEDERATION (FNAM) PUBLISHES

THE FIRST STUDY ON SOCIOECONOMIC IMPACT OF GENERAL AND BUSINESS AVIATION IN FRANCE

QUANTITATIVE AND QUALITATIVE APPROACH

40 400
Pilots of airplane (excluding student pilots)

91%
of French registered aircraft belong to General Aviation

8 100
General Aviation aircraft registered in France

68 700
licenses for non paid volunteers in aero clubs

2'054 M€
Total cumulative production*

9 650
Jobs generated directly*

1417 Aero Clubs
recognized by the authorities

660 Aerodromes and airfields

1 865 000
Annual Flight hours

11 213
Micro light aircraft holding a identification card

20 900
Jobs (direct and indirect)*

4'140 M€
Total economical impact*

To these figures should be added 585 M€ generated by aeronautical manufacturing.

This document presents the major findings of a study performed in 2013 on the major impacts of General and Business Aviation in France. 2010 figures.
** Except aeronautical manufacturing*

General aviation and business is defined as any form of aviation excluding military and commercial air transport.

OCTOBER 2013

A COLUMN

General and business Aviation brings back the memories of the pioneers but is also a symbol of the latest technology, flavored with the spirit of freedom. However, it also is a full-blown economic sector that is not well known to the public. It is complex, difficult to define as to comprehend its real value; one has to define its perimeter by excluding the activities related to airlines. General and Business Aviation adopt multiple aspects because of the diversity of its components: aerial work, leisure flights in aero clubs, ground-related activities, maintenance and private flying for business purposes are all encompassed into General Aviation.

For the first time, a global economic study allows us to better understand and quantify the impact of GA. This study takes into account verified objective figures as well as data gathered in the field. It usefully complements the « Agenda for a sustainable General and Business Aviation » that was created at the European level by the European commission.

It has taken over two years to get all the facts and figures together, The main actors, whether being non-profit organizations or professionals, have taken an active part in building this study and gathering the data. I would like to thank them all for their hard work and dedication. With this study, it is a whole sector that can be explained in lay mans terms, revealing how GA is the growth medium and the nurturing tank of the whole aerospace industry. The qualitative approach shows us the way General and Business Aviation benefit our society. This is especially true for the employment market and local development among the French provinces. The quantitative approach allows to describe, in greater details than ever before, the financial contribution of GA related to the employment and the sector's activities.

« All together, let's face these challenges and contribute to perpetuate the development of General and Business Aviation in France. »

The study could be perfected, of course, but, for the first time, after a great collective effort to gather verified data and apply accepted statistical and financial formulas, we are able to look at the big picture.

With 1,9 Million of flight hours, more than 8,100 French registered aircraft (all types), over 2 Billion € of cumulative production and 9,265 directly generated jobs, General and Business Aviation have a real impact, financially on the national economy. When looking at the total impacts of GA on the economy, these figures rise to over 4 Billion € and 20,900 jobs. It is also to be considered that it is the regions that benefit the most from General and Business Aviation, as the activities are spread out over the whole country. These figures, even if they are impressive, must not lead us to underestimate the difficulties encountered today. To continue to grow in the future, we will have to face new challenges. Competitiveness, growth are among these challenges, but the regulatory environment should also be taken into account. While we live through in the times of European rules' harmonization and fall under the jurisdiction of EASA, how are we going to use the French approach as an asset for the future?

Françoise Horiot
President of the General and Business Aviation Commission of French Aviation Industry Federation (FNAM)

GIPAG FRANCE
ebaa FRANCE
Syndicat National des Exploitants d'Hélicoptères
UNION DES AÉROPORTS FRANÇAIS
UNSAC
Union Française de l'Hélicoptère
AOPA
Académie de l'Air et de l'Espace Air and Space Academy
FFA Fédération Française Aéronautique
Aéro Club de France

With the support of: dgac

DEFINITION

WHAT IS GENERAL AND BUSINESS AVIATION?

It is not easy to define rigorously what General and Business aviation really is in France. It is nonetheless a critical step if one is looking to describe and measure its social and economic weight. There is no official, internationally accepted clear cut definition of General Aviation. The generic name of General Aviation remains imprecise. A restrictive amalgam is often made, between General Aviation, training activities of aero clubs and the private use of aircraft by pilot/owners. Aerial work activities are disregarded.

The ICAO definition

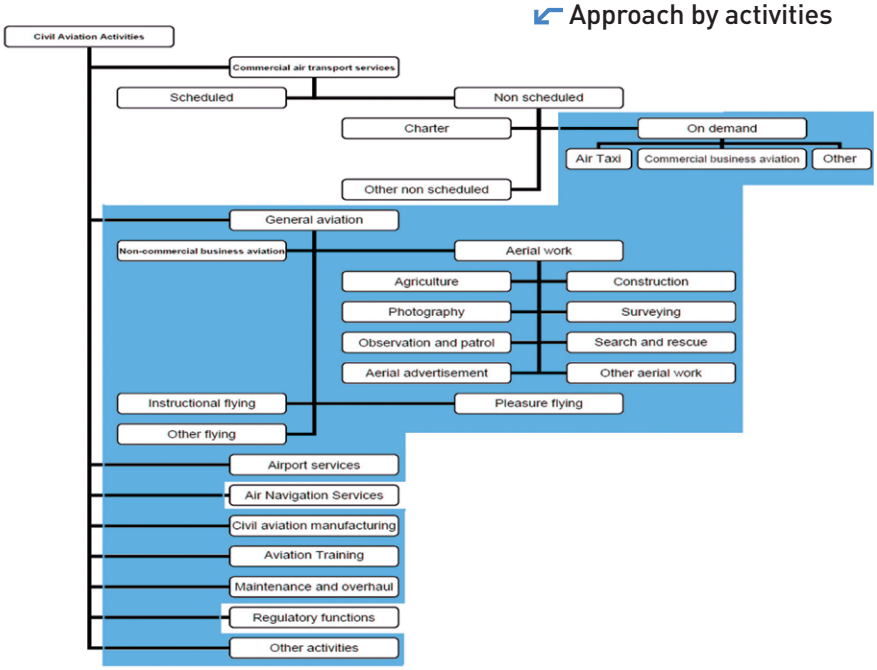
ICAO, using the Chicago Convention and its Annexes, divides the field of civil aviation operations in three categories: commercial air transportation («an aircraft operation Involving the transportation of passengers, cargo or mail for remuneration on hire «), aerial work operations (« an aircraft operation in which an aircraft is used for specialized services: such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc.. «) and finally, general aviation operations («aircraft operation other than commercial air transportation operations or aerial work operations «). General aviation is defined by exclusion of other activities, and aerial work is not integrated into general aviation.

French authority's definition

For the DGAC General Aviation is defined by excluding certain activities included in civil aviation: Public Air Transport (airlines) and Flight testing activities.

French definition of General Aviation generally does not include business aviation, air taxi operations, etc. who are affected by EASA regulations and the «Arrêté de 1997» regarding operating rules concerning aircraft used by a public transport company. Beyond these regulations, The French DGAC has put in place a special department that is in charge of General Aviation: the MALGH (Mission Aviation Légère, Générale et Helicoptères : Light aircraft, helicopters and general Aviation Mission).

Approach by activities



The American vision

General and business aviation includes the construction and operation of any type of aircraft which has been issued a certificate of airworthiness by the FAA, with the exception of aircraft used for scheduled air service, business (airlines) or operated by the U.S. Army. It includes fixed-wing aircraft, helicopters, balloons, airships and gliders. It thus includes the construction and operation of aircraft equipped with turbine or piston engines and operation of non motorized aircraft.

General and Business Aviation includes Business and Corporate flights (people or freight transport purposes), personal flights (family), medical flights, rescue and medical emergency flights, training activities and many other specific activities such as air surveillance (forest fires, pipe-lines, electrical lines etc.).

The European Commission's position

Concerning Europe, «General and Business Aviation regroups very different activities, ranging from non-powered recreational flying to operating business aircraft and aerial work The development of policy initiatives is made harder, as they must take into account this diversity of the missions and sectors.» It is this diversity, pointed out by the European Commission, that characterizes General and Business Aviation and makes it so difficult to develop a simple and comprehensive definition.

Proposed scope and definition for the study of the impact of General and Business Aviation in France

General aviation and business can be globally defined as any form of aviation excluding military and commercial air transport. There is still need to give a more restricted meaning to the activities of commercial aviation such as airlines, charter, freight and express cargo, low cost, ... If this definition of general and business aviation may be exhaustive, it is exclusive (it defines what general aviation is not) and is not characterized (it does not say what general aviation is). For this study, we must also elaborate on all business activities «in flight» and include all related activities associated with it: maintenance, management of aerodromes, construction, etc.. Geographically, the scope of this study is national (France only): we only consider the set of activities of general aviation being based in France and / or taking place on French soil.

In France, the rule established on 24/07/1991 determines the way civil aircraft, in general aviation, shall be used for any activity other than those relating to the rules governing the use of aircraft or helicopters for aerial work or passenger transportation and flight testing.

A GREAT DIVERSITY

AIRCRAFT TYPE BASED APPROACH

The plane is probably the best-known aircraft in general aviation. There are distinct main families of aircraft, depending on the type, number of engines, aerodynamic configuration, the characteristics of their landing gear or their avionics. These aircraft may be very different from each other, but those most frequently used by general aviation operators are single-engine pistons of low tonnage. Of course, depending upon the activities, one will also find twin pistons but also turbine or jets.

The helicopter is an aircraft where lift and propulsion are provided by rotating blades, commonly known as rotors and driven by one or several engines. Most helicopters use a single rotor system. Helicopters possess flight characteristics that make them the perfect fit for some applications: hovering, handling, translation flight, sling lifting, etc. The ease of handling and its vertical take off and landing capabilities makes them irreplaceable while reaching inaccessible locations where the traditional aircraft, for example, require of a certain length of runway to land and take off.

Motorized ultra lights,
more commonly known as micro light aircraft, they are single or two-seater with light engines that meet certain criteria for maximum take off weight (MTOW) and engine power. They are exempt from the requirement to obtain an airworthiness certificate. This is one of the reasons they became so popular in France. The owner of an ultra light must obtain an identification card. He is also responsible for the maintenance of his aircraft.

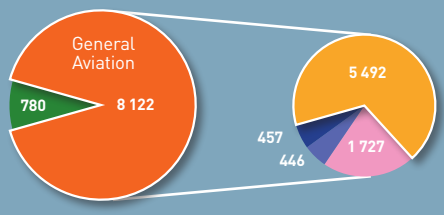
DID YOU KNOW ?

1’800’000
flight hours per annum

This is what is generated by all the components of General Aviation. This is more than 50% more than the flight hours generated by all the aircraft of Air France.

KEY FIGURES

Split of aircraft registered in France for public transportation versus general aviation



A great diversity of aircraft

91% or aircraft registered in France belong to General aviation

- Fixed wing
- Glider
- Balloon
- Helicopter
- Public transportation

• Ultra Lights are not included as they are not registered on the normal registry.
• Source: OSAC 2011

Gliders are similar to airplanes but lack an engine. However, there are versions that incorporate a retractable engine. They are called motor gliders. The practice glider is called soaring. One of the main characteristics of gliders is its ability to cover a long distance with a minimum loss of altitude. Gliders are very efficient from an aerodynamic standpoint and use hot air currents to gain altitude.

The balloon is a device that remains in the atmosphere with a lighter-than-air gas. The ballooning is a discipline that combines the use of balloons or more commonly called « balloon « (or hot-air balloon). Among the balloons, there are also airships, which have the particularity to be equipped with an engine and propeller that control pitch and yaw. Note that the airship activity is almost non-existent in France at this time.

USE
ACTIVITIES APPROACH

Contribution to economic activity
Impacts in terms of employment, value creation by companies and indirect redistribution of wealth produced.

General interest services
Missions of general interest for the society: emergency Medical Services Flights, fire control, surveillance of high-voltage lines, educational activities for the youth...

Local transportation
Strengthening of territorial network of aerodromes and airfields allowing national and international access by air.

Recreational activities' development
Development of recreational and tourism activities, private leisure flights, discovery or introductory flights, mainly performed through flying clubs.

Regional planning implementation
Implementation of infrastructures related to airport activities (kindergartens, restaurants, hotels, corporate headquarters), benefiting the overall regional planning and development.

Sustainability of infrastructure and maintenance of aeronautical equipments capabilities
Infrastructure maintenance inside and outside of the airport, contributing to the attractiveness of the territory and benefiting the labor pool. Sustainability of historical and technical heritage.

SYNTHESIS OF QUALITATIVE IMPACTS

Relative importance of these impacts →

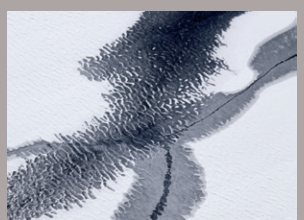
		Aerial Work*	Buisness Jet	On Demand Transportation	Private Flights
IMPACTS	Contribution to economic activity	●	●	●	●
	Contribution to employment	●	●	●	-
	Genral interest Services	●	●	●	-
	Local Service	-	●	●	●
	Leisure Development	●	●	●	●
	Regional Planning and development	●	●	●	●
	Sustainability of infrastructure and maintenance of aeronautical equipments capabilities	●*	●	●	●
ACTIVITES	Activities - Ground	●	●	●	●
	Activities - In Flight	●	●	●	●
	Aero Clubs	-	-	-	-
	Airfield - Aerodrome	●	●	●	●
	Owner Pilots	-	-	-	●
	Business Aviation	-	●	●	-

General and business aviation are the roots of commercial aviation. They have, over the years, allowed the development and rise of skills in the aeronautics sector. Today, general and business aviation still play a major role in the continuance of services to the population and the development of local areas. General and business aviation are the pool where future aeronautical professionals start their career.

DID YOU KNOW ?

Medical evacuation (MEDEVAC)

Helicopters carry out medical flights (MEDEVAC), fly to places that are inaccessible by road or when time is critical. 42 civilian helicopters, in France, are operated by hospital ER services on a permanent basis and account for more than 15,000 flight hours per annum. They complement the fleet of red and yellow helicopters operated by the national civil defense services.



Aerial thermography

Some aircraft are equipped with thermal cameras to visualize the energy losses in rural or urban areas. This allows better control over energy costs and actively participate in the fight against climate change.

OF GENERAL AVIATION USES

Aircraft rental	Airfield/Airport Management	Maintenance	Flight Training	Trade / Import / Export	Discovery flights First Flights
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	-	●
●	●	-	-	-	-
●	●	-	●	-	●
-	●	●	●	●	●
●	✕	●	● **	●	●
●	●	●	●	-	●
●	●	-	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	-	●	●	-	-
●	●	●	●	-	-

* *Linked to training activities - Aero Club*

** *When present on site*

● **Critical impact**

● **Heavy impact**

● **Significant impact**

General Aviation generates excitement and interest (especially among young people) through the training activities and other activities offered by the aero clubs. This is the reason why they benefit from a "public utility" status. In the end, the airport remains the focal point of all activities related to general and business aviation. The most active were able to obtain additional business revenue by implementing multiple activities on site.

Ground Activities
Maintenance, repair of aircraft, aircraft construction (general and business aviation), continuing airworthiness and training.

Flying Activities
Passenger transport, aerial work and flight training.

Aero Clubs
Aero clubs are non profit organizations which regroups recreation and leisure flights and flight training of future pilots (non-professional).

Aerodrome
Area especially adapted for landing, take off or maneuvering of aircraft, including the ancillary installations.

Owners/Pilots
Independent owner-pilots (not necessarily attached to a flying club) operating flights on their own aircraft, sometimes allowing their aircraft to be rented.

Business Aviation
Activities related passenger transportation (business or personal travel needs), using small capacity aircraft for on demand flights.

DID YOU KNOW ?

100 000 km of power lines inspected and maintained

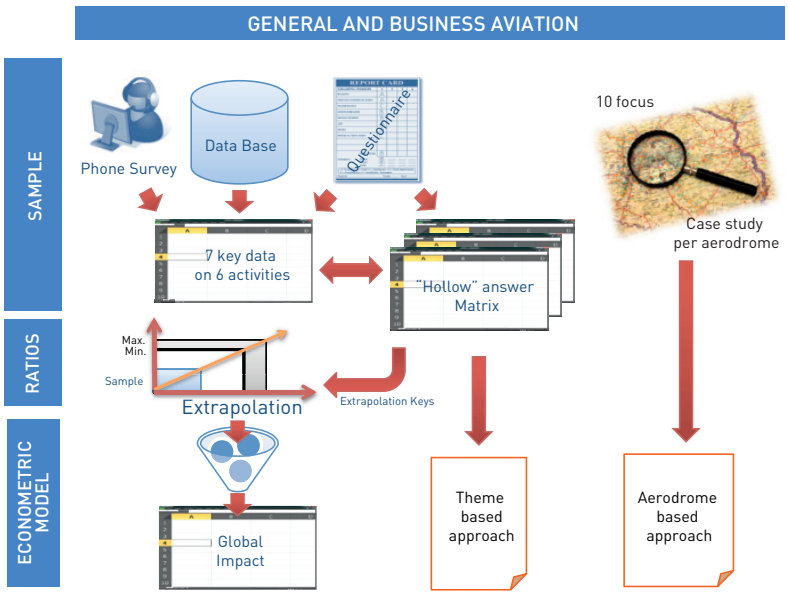
Electricité de France (EDF), through its specialized subsidiary RTE, uses helicopters dedicated to the construction, monitoring and maintenance of 100,000 km of high and very high-voltage lines. In total, nine helicopters flew more than 240,000 flight hours over the last 30 years.

Aerial Advertising

Aerial Advertising is a communication mode that uses a banner towed by a plane as a media. It is mainly used in summer, along the beaches, as the concentration of population on the sea shores guarantees a wider audience. Nearly 10,000 flight hours are performed annually, now mainly using micro light aircraft.

HOW TO DETERMINE THE IMPACT OF GENERAL AND BUSINESS AVIATION

Methodology of the study



Methodology of the study

Socio-economic impacts of general and business aviation in France were determined from a wide data collection campaign. For more than six months, all stakeholders and the general aviation companies, associations, airports, private pilots were polled and interviewed... The analysis of this data focused on significant samples for each activity.

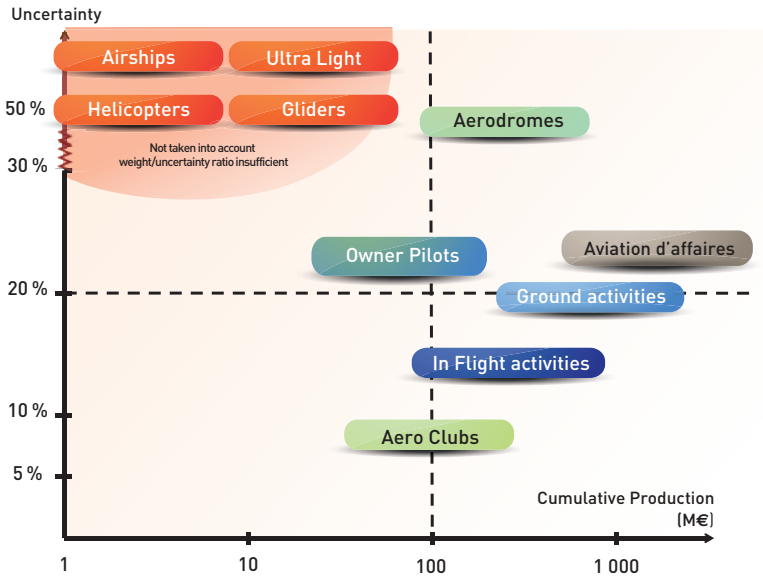
They were characterized by using existing databases, targeted telephone conversations and an on-line general questionnaire. This analysis allowed, by extrapolation, to supply an econometric model and develop insights by theme. Ten case studies were completed during the campaign, providing background and figures for different types of airfields.

Input-Output Table / IOT
The input-output table (IOT) is part of the «national accounts' tables ». IOT attempts to describe all transactions in goods and services produced within an economy during a year. It describes, in particular, the resources of goods and services as well as the different uses that can be made of them. IOT is a double-entry tables that describe, in columns, the different branches of the nomenclature of economic activity and in lines, the corresponding products. For each product, the IOT establishes resources / employment accounting balance.

The main activities of general and business aviation were examined separately for each of the seven econometric data criteria. For some activities, it did not make sense to take them into account in determining the socio-economic impacts of general and business aviation, because of the relatively low weight of the cumulative production figures, associated with the high degree of uncertainty.

For airports, the results are marked by a high variability. The fact that many of the smaller airfields are subsidized also accounts for this. Concerning owners/pilots of aircraft, we are not looking at an economic activity in itself, but faced with end-users. Their spending is nonetheless, contributing directly to social and economic impacts. Economically, these must be considered as indirect and direct impacts.

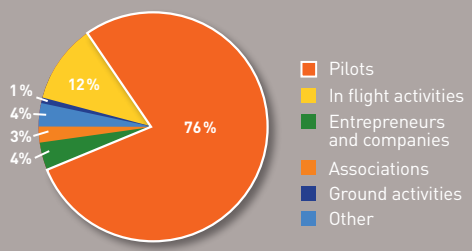
Cumulative productions and uncertainty of the activities



Le site Internet de l'étude

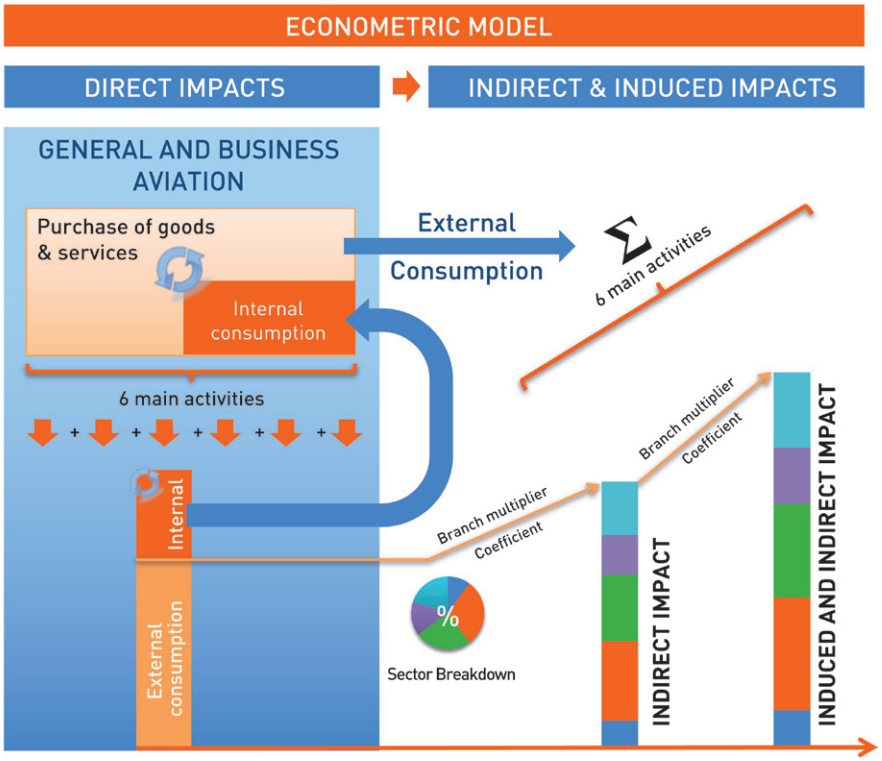
DID YOU KNOW ?

Answer breakout by type of activit



A questionnaire? What for?

Communication about the questionnaire survey was conducted by the press and relayed by the members of the General Aviation Committee driving the study groups.
1,644 replies were received, and 208 telephone interviews conducted. The questionnaire was used to collect descriptive data, volume of activity indicators, socioeconomic variables and elements of qualitative assessment.



Econometric modeling

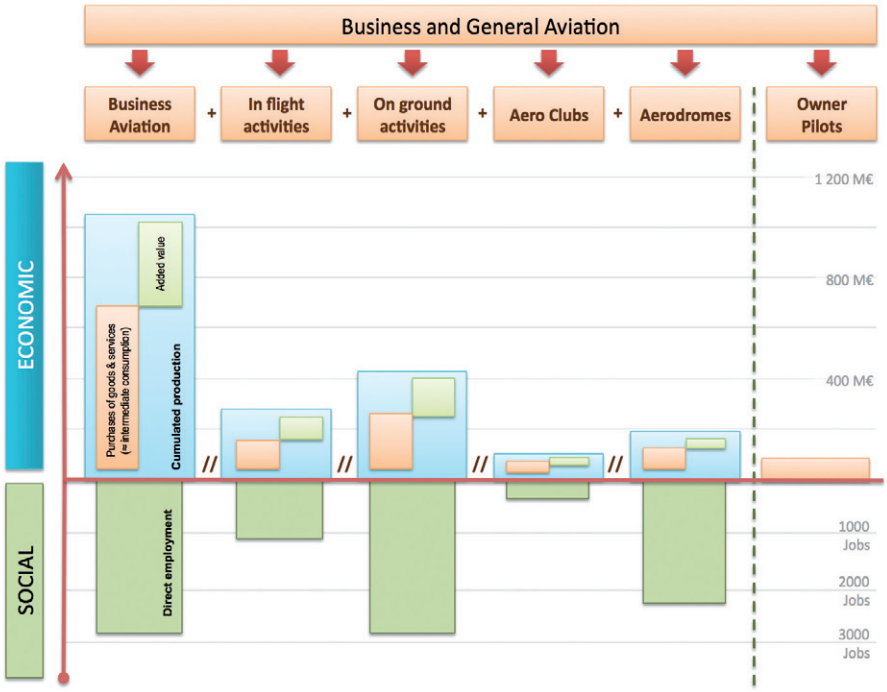
Econometric modeling

Econometric modeling consisted in identifying general and business aviation as a sub-branch of an input / output table (IOT).

This identification, which does not exist in the official nomenclature of the INSEE, has identified the induced impacts of general and business aviation from these direct impacts.

For each activity, the internal consumptions were distinguished. These purchases of goods and services are clearly within general and business aviation. They do not generate indirect and induced impacts in other industries.

External consumption, broken down by industry, determined the indirect and induced impacts that have been added to those resulting from the spending of private pilots.



Direct impacts for the 6 main activities – 2010 figures

The seven points of econometric data

- Turnover (in € HT)
- Intermediate consumption (€ HT)
- Gross compensation benefits (in € HT)
- Taxes on production (taxes, fees, etc... not including the income tax) (in €)
- Possible Grants (in € HT)
- Investment (purchases of durable goods - eg. aircraft, buildings, machines, etc.) (in € HT)
- Share of investments from companies located in France (in %)

Direct impacts

Jobs, revenues and values fully and directly generated by general aviation and business added. These economic variables related to operation and maintenance. They include training and education of pilots, fuel purchases, aeronautical taxes and charges, parts ...

Indirect Impacts

Jobs, turnover and value added generated by the supply chain of goods and services from the general aviation activity and direct sales. Economic actors who have benefited from this contribution (including maintenance, airports, schools, training ...), also purchase goods and services from other industries, which themselves generate impacts. These impacts are called 'indirect'.

Induced Impacts

Jobs, turnover and added value generated by the spending of employees of direct and indirect activities related to general and business aviation. These and additional economic impacts are called 'induced'.

Total Impact

Sum of direct, indirect and induced impacts.

KEY FIGURES

Direct impacts

2,054 Billion €

of cumulative production,
610 Million € of which are internal consumption

9 650 direct jobs

Total impacts

4,140 Billion €

of total impact of economical activities,
of which 0,9 Billion € are indirect impacts and 1,160 Billion € are induced impacts

20 900 total jobs

of which 6,250 are direct jobs and 5,000 are induced jobs

THE ACTORS

AIRFIELDS: A DYNAMIC EMPLOYMENT ENVIRONMENT

Airfield, a growth factor

The French airfields are a dense network, spread throughout the country. Since 2005, a major reform transferring ownership of many airfields from the state to local communities, has fundamentally changed the landscape of French airports, which had hardly evolved since the postwar period.

These airfields are a mixed set, including both grass fields and airports welcoming more than one Million passengers annually. Their common denominator is that they gather all general aviation and business activities, whether personal, professional, leisure and sports flights and related activities. Parallel to the practice of various aerial disciplines, the most dynamic airports in thane developed annex activities associated with tourism or industrial development.

660 aerodromes

in France service the various needs of General and Business Aviation.

Some aerodromes may become bio diversity niches through their adaptive mode of management, such as the airfield located at Niort-Souché. The operator has integrated a responsible environmental management plan since 2010 to associate eco friendly activities the aviation-related activities, without affecting the development of the latter. Measures to preserve the bio diversity are implemented to promote the diversification of the flora and fauna, such as the prohibition of pesticides (except around the runways). So many protected species are able to reproduce and live on this site, in harmony with the aircraft.

Only 12 major regional airports have a specific set of rules governing them, thus allowing them to remain within the jurisdiction of the State. « Aéroports de Paris » is a public listed company, whose major shareholder is the state.

Today, the general and business aviation airports are either private land or properties of local authorities (regions, departments), with broad powers to organize the activities of public service airports. The operation of these aerodromes is performed directly or governed by public service delegation to third parties.

General and Business Aviation reside on airports that may be very different in nature and in the way they are managed.

Shared resources

The airfield is primarily the central infrastructure without which aviation activities would not be possible. It is also the catalyst for the value chain of the general and business aviation: it generally includes, in its grip, all aviation activities related to GA: maintenance, construction, services to users ...

However, the airport is a shared resource based on upon its size; its use is split between the various GA players and the other aeronautical users, first of which, commercial air transportation of passengers and cargo. This characteristic induces a great variability of structures and organizations to airports welcoming general aviation: from an activity dedicated airfield (e.g., skydiving) to a large commercial airport that can accommodate General aviation flights.

It is impossible to define ONE type of but only MULTIPLE types of airfields. Various examples are given in this study, illustrating typical cases.

In terms of socio-economic impact, production, intermediate consumption and their distribution within the various branches of activities are affected by a great deal of variability. Furthermore, this variability also affects the various players using the airfield. These needs may be expressed by commercial aviation while business and general aviation will have other needs. And this varies from one aerodrome to another. It is difficult to attribute socioeconomic effects precisely as, in the case of smaller airfields, General and Business Aviation might justify the up-keeping of certain aerodrome infrastructures largely under utilized by commercial aviation.

The first aerodrome to be officially established worldwide was an «Aviation Harbour» established on the territory of the city of Viry-Chatillon (next to Paris) in 1909. It is the ancestor of Paris Orly International.

ANNEMASSE

The alliance of private flights and aero clubs

- **30,000** aircraft movements per annum
- **3,500** aircraft movements per annum related to private transportation and business aviation flights
- **111** acres of real estate
- **30,000** square feet of hangars used by Mont Blanc Helicopters
- **1** fueling station
- **Customs services** on site
- **About 100** employees on site (**17** for Parachuting, **74** compagny, **16** for the Annemasse Aero club, **16** for Mont Blanc Helicopters, **51** in other structures)
- Aircraft activities represent about **1.5 Million**
- **Activities:** private transportation (airplane and helicopter), Business aviation, EMS flights (helicopter), helicopter maintenance, skydiving, pilot initial training

Source : BIPE for FNAM

BORDEAUX LÉOGNAN SAUCATS

An aerodrome dedicated to General Aviation and Maintenance

- **39,000** aircraft movements per annum
- **47** based aircraft (airplanes and helicopters) and **20** gliders
- **700** users
- **212.5** acres of real estate
- **2** runways of 800 m and 16 buildings
- **2** Flight schools
- **1** aero club (3 full time employees and 15 non paid volunteers)
- **1** fuelling station
- **Managed** by the Montesquieu community of commons
- **Activities:** maintenance company, model flying, ultra light flying, glider flying, airplane flights including, introductory flights, initial pilot training, leisure flights, sightseeing flights, aerobatics, amateur building, aerial work (aerial photography)

THE ACTORS

COMPANIES PERFORMING GROUND, FLIGHT & TRAINING ACTIVITIES

Companies performing flight activities regroup activities such as public passenger transportation and aerial work. Ground activities encompass aeronautical construction, maintenance companies and continued airworthiness service providers. The training centers train pupils for their future job: pilot, mechanic, engineer, cabin crew.

Aeronautical maintenance

It consists in all operations related to aircraft maintenance and continued airworthiness certification. These are performed by companies that are constantly audited by the relevant regulatory body. The set of rules applied to aviation are extremely strict in order to insure the highest levels of flight safety. Some maintenance activities are performed on site and some equipment are sent off site. Maintenance is divided in preventive operations (inspections) and curative operations (repair to sub components that have failed).

Aeronautical Professional Training

Under this term are encompassed all the schools, academies or universities that provide professional training in all the fields related to aviation: engineers, pilots, cabin crew, mechanics etc. These structures contribute to create the pool of know-how from which all aeronautical related companies will hire the employees they need.

Aerial Work

Under this term are regrouped all activities such as aerial advertising, aerial photography, crop spraying, fire detection and control, skydiving or sling load activities as long as they are performed with a specifically adapted aircraft.

Passenger and freight transportation

This regroups all activities related to transporting cargo or paying passengers. Even though considered as public transportation, this activity is different from those of the airlines. It it not mass transportation on scheduled flights, but transportation of a few passengers, in relation to their professional activities or their recreational activities. Nonetheless, these flights are governed by the same rules as the ones applied to the airlines.

DID YOU KNOW ?

Over **50%** of the turnover **generated by General Aviation in France,** excluding business aviation, is generated by helicopter operators.

DID YOU KNOW ?

General and Business Aviation aircraft manufacturers

Only 4 certified aircraft manufacturers are in existence, today, in France: Daher-Socata, Dassault Aviation, Robin Aircraft and Issoire Aviation. Thanks to their know-how, passed down by one generation to the other, they have acquired the largest market share in Europe: 65%, which represents over 580 M€ of commercial value generated in 2010 (source ASD/EGAMA)

In France, Daher-Socata is the general aviation equivalent of Airbus in the world of airlines. Integrated as the defence and aeronautical division of the DAHER Group, Socata celebrates this year its 150th birthday. DAHER is one of the leading European solution integrator and equipment providers. Daher-Socata also designs and manufactures the TBM850, the world's fastest single engine turboprop aircraft. The company also provide avionics and maintenance services to a wide range of clients, from private to government related clients for aircraft and helicopter weighing less than 8.6 tons. DAHER-SOCATA, on its own, represents 1/3 of the turnover of the ground activities of general aviation in France.

Dassault aviation is known worldwide for its range of military and civilian jets. Boosted by an exceptional design bureau, responsible for the civilian and military aircraft such as the Rafale, the group is one of the leading companies in the business aviation sector. After producing more than 2000 jets belonging to the Falcon range of products, Dassault continues to innovate with products such as the Falcon 2000 LX, LXs and, of course, the Falcon 7X. Dassault is a global company with factories, research labs, completion centers and maintenance and service operations strategically implanted all over the planet. Dassault Falcon Service maintains Falcon Jets in France from their base in Paris le Bourget Airport.

Regarding helicopter manufacturers, French manufacturers are the world leaders. With 5,200 M€ of turnover (71 % of which being export) and 29,000 jobs generated by these latter, Eurocopter, Turbomeca and their 200 partners constitute a sector of size comparable to the French nuclear industry.

UNSAC

UNSAC (Union nationale de syndicats de l'aviation civile) regroups professional operators that represent:
- 288 ultra light operators,
- 301 skydiving operations,
- 63 balloon operators.

KEY FIGURES

Indirect impacts

680 Million € of production

3,780 direct jobs

Total impacts

1,210 Billion € of impacts combined (direct, indirect and induced)

6,685 jobs (direct, indirect and induced)

ACTORS

BUSINESS AVIATION

Business aviation gathers companies and individuals who use the aircraft or helicopter as a tool for business travel or by establishing a private fleet or chartering flights from specialized operators, or by using the new possibilities offered by fractional ownership. Multiple actors contribute to this diverse industry: manufacturers, operators, lessors, airports, ground handling companies (handlers) and service and maintenance centers.

A strong impact on the economy

In order to overcome the «elitist» image too often associated with business aviation, it is important to remember several points. Business aviation is used mostly by companies, for which it is an efficient business tool. By offering more suitable services than airlines (flexible hours, point to point travelling, efficient security checkpoints), business aviation is a factor of economic development for businesses. Business aircraft also contribute to perform many utilitarian, humanitarian or public and safety related missions.

For the territories, the business aviation platforms are a strategic infrastructure and this for several reasons: corporate hospitality and development of those already established, job creation on the site and in the region, means of communication and dynamism. This practice, little known to the general public, however, has an important contribution to our economy. Indeed, it is a direct impact of more than 1 Billion Euros in sales, more than 3,000 direct jobs and more than 2 Billion Euros in total impacts and 9000 total employment.

In terms of number of business aircraft, registrations by French operators are losing ground to the registrations abroad, due to higher tax and regulatory competitiveness.

KEY FIGURES

Direct impact

1,040 **Billion €** of direct production

3,780 **direct jobs**

Total impact

2,154 **Billion €** total impact

9,000 **jobs**

DID YOU KNOW ?

Business flights main locations in Europe

More than 2/3
of European business flights

originate from the UK, France, Switzerland and Italy. The main routes follow an **London-Rome axis.**

More than 17%
of business flight departures

originate in France, making it **the leader** of the European countries for business flights.

70% of the business aviation activities in France

are located in the **Paris Le Bourget Airport.**

FOCUS

Paris le Bourget Airport, the first Business Aviation Airport in Europe

The airport is solely **dedicated to Business Aviation.** Le Bourget is reserved to aircraft with less than **19 passenger** seats (except for special authorization) and **non scheduled flights.**

Source : BIPE for FNAM

INFRASTRUCTURES AND ACTIVITIES

- **3 Runways**
- **30,000** square meters of hangars
- **7500** square meters of office space
- **Activities:** public and private transportation, handling and aircraft assistance, maintenance, training, aircraft repairs and refurbishment
- **80%** of the airport activity orientated to international business with more than **800** destinations served.
- **Over 68** business flights departing daily
- Also located at the airport is the Air and Space Museum, **the Paris Air Show** and **the ViParis exhibit area** (attached to Paris Villepinte Exhibition Center)
- **Major works are in progress to modernize the airport, with projects ongoing to enhance public transportation access, a new terminal entrance and some embellishment works.**

ACTORS

OWNER PILOTS

Definition

Characterization of the general and business aviation does not depend on the nature of the owned aircraft or the type of license held by the pilot. While the majority of pilots fly in flying club in an associative framework, owner pilots constitute a particular category of general aviation. It is even more difficult to characterize as they are individuals that do not belong to an organized framework. Some even «Host» their aircraft in a flying club, to benefit from the structure. These are the privileges of the **Private Pilot** license that best define their activity: exercise, without remuneration, as pilot on airplane, micro light aircraft, gliders and sometimes helicopters.

KEY FIGURES

Aircraft owners, in France, represent (estimation):

1,430 aircraft **registered in France**

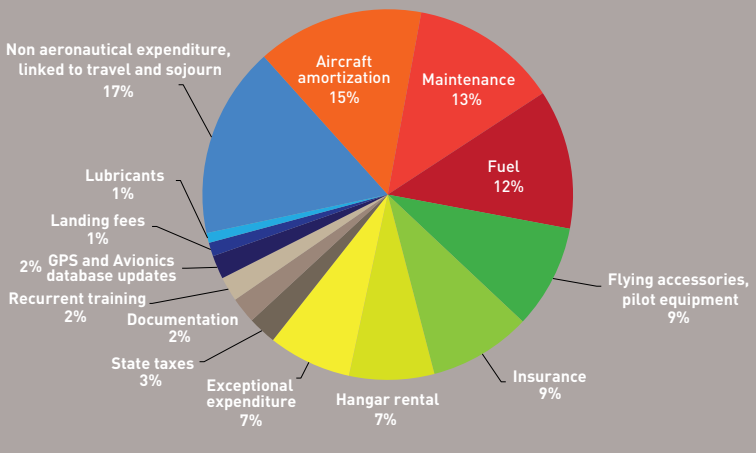
1,110 aircraft **reregistered abroad**

Over 350,000 annual flight hours

DID YOU KNOW ?

Owner pilots expenditure

2010 figures – ESCP Junior Conseil survey from 2012



DID YOU KNOW ?

Nearly half of the privately owned aircraft flying in France are registered abroad. This is easily explained by a second hand market that is much more active (especially in the USA) in other geographies. Currency exchange rates also favour buying aircraft abroad. But it is mainly the less stringent regulatory environment that is cited by owners as the main reason to opt for a foreign registration. Maintenance, aircraft betterment and modifications, pilot licenses and training play the major role in the decision making. The choice of an American registration is easily explained this way, but more curiously, the choice of a German registration is also popular for the same reasons. This constitutes a paradox as Germany falls under the jurisdiction of the European Safety agency for Aviation (EASA) and, therefore, should apply the same regulatory framework than France. But the German authorities take a more pragmatic approach on these subjects...

AOPA estimates that over 10,000 aircraft are registered in the USA but permanently based in Europe in 2010. Concerning France, over 1,100 American are registered abroad, 50% of them in the USA and 25% in Germany.

High spenders

Although much less numerous than pilots renting aircraft in aero clubs, owner pilots have a much higher economical impact. They invest in more recent and modern aircraft that are much more expensive than the ones used in aero clubs and they fly much more. During their trips, they spend more on amenities (hotel, restaurant etc.). The study shows that these amenities represent 16% of the total expenditure. Recurring costs, fuel costs being the first one, are the major concern for these owner pilots. Immediately behind comes the costs related to the regulatory rules. They are a real burden to the development of this sector in France. It is also one of the reasons that pushes owner pilots to seek foreign pilot licenses and foreign registrations.

AOPA, the Aircraft Owners and Pilots Association is present in 72 countries. The association represents the interests of pilots and owner pilots. It promotes the use of General Aviation aircraft for personal private transportation, safety of flight and demonstrates the economic impact of the sector on the general economy. AOPA counts over 450 000 members worldwide. Under the umbrella of the International Council of AOPA's, national AOPA are established in the various countries. AOPA France counts over 1500 members.

KEY FIGURES

- **2,650** on site jobs
- **7,200** jobs, direct, indirect, induced and linked to the tourism sector
- **159,000** passengers in 2010
- **58,000** movements in 2010
- **600 Million €** of added value
- **75** companies (**8** ground handlers, **15** airline operators, training organizations, maintenance and repair companies and training companies.
- **Dassault Falcon Services** employs **550** people and has a **128 Million €** turnover (80% maintenance, 20% flight operations)
- **Embraer Aviation International** employs **170** people and has a turnover of **200 Million €** (50% commercial aviation, 21% business aviation)

ECONOMICAL IMPACT

- Business Aviation attracts **business executives** and **CEO's.** A lot of aircraft are **financed (leasing)**, but are rented by the hour by companies that manage all aspects of the usage of the aircraft. Dassault Falcon Service or other companies rent owners aircraft by the hour while managing the aircraft maintenance, the flight crews etc.
- The airport generates **603 Million €** of added value, of which **306 Million € are injected in the French economy,** thanks to the salaries paid and the investments made by the actors of Business Aviation on the Paris Le Bourget Airport
- By supporting these activities, the vendors of these actors generated **153 Million € of indirect economical impact** in 2010. Furthermore, the purchases of the companies based on the airport represent **131 Million €** in 2010. Last but not least, **visitors of the airport have spent over 13 Million €** locally in 2010
- The airport generates **7,200 jobs, 1/3 of which are directly related to the companies located at the airport**. The other 2/3 (4,570 jobs) illustrates well the impact of local General Aviation companies on the local economy
- **Eurocopter** has decided to move their «La Courneuve» factory to the airport. This will generate another **700 jobs** in 2015

ACTORS

THE AERO CLUBS

The National Committee of Aeronautical Federations and Aerial Sports (CNFAS) regroups 9 sports Federations:
• French Aeronautical Federation (FFA),
• Federation of French Ultra- light glider and Motorized Ultra-light aircraft (FFPLUM),
• French Federation of Model Aircraft (FFAM),
• Experimental Builders network (RSA),
• French Free-Flight Federation (FFVL),
• French Federation of Glider Pilots (FFVV),
• French Skydiving Federation (FFP),
• French Federation of Rotary Flying (FFG),
• French Federation for Ballooning (FFA).
Combined, the CNFAS regroups about 130,994 members in 2010.

For over a century, flying clubs have contributed, in a very dynamic fashion, to make France one of the major aviation nations in the world. Airfields and aviation fields have led Million of people to dream of becoming a pilot and the early epics of aviation were the pride of the French people.
France holds today the second highest population of pilots in the world, with more than 45,500 pilots and 18,300 students (all types of aircraft combined).

Social and educational activities

Aero clubs are intimately linked to the preoccupations of the civil society, both in terms of environment, sustainable economic development or social aspects developed by local authorities and carried by the local community, territorial collectivities, or national ministries.

Taking advantage of the unique mesh of airfields on the national territory, flying clubs are the natural cradle for sharing aviation knowledge, social mix and inter generational exchanges.

Through educational activities in collaboration with the Ministry of National Education, more than 4,000 young high school students enrol in Brevet d'Initiation Aéronautique to discover new concepts and future prospects in aviation related careers.

Infrastructure and resources

There are 2490 aircraft identified by the FFA, that are operated by aero clubs, mainly two-seater and four seaters. These aircraft are carefully managed with an eco-responsible mind-set, leading to invest in new generation equipment training that are quieter and less fuel hungry.

The flying club presidents are involved to be part of a long-term management policy, conscious of the wishes of their neighbours and equip existing aircraft with devices specifically to lower noise levels. Aero club training activities account for 60% of aviation fuel consumption in France and in light aircraft maintenance activities in the same proportion.

Through effective partnerships with the local communities, Aero clubs contribute to make sure that our airports are places that are attractive and contribute to the education of pilots and non pilots, to perpetuate the heritage of our culture, history and promote tourism.

« Aviation is federating sports that relies on a strong community of volunteers and multiple activities »

French Aeronautical Federation (FFA)
• Created in 1929, the FFA regroups the French aero clubs and the pilots that fly in aero clubs. It is the main source of flight training for private licences in France.
• 606 aero clubs (non profit associations)
• 40,113 license holders
• 2,033 pilots trained and licensed in 2010
• 2 ,490 aircraft
• 558,730 flight hours in 2010

Federation of French Ultra-light glider and Motorized Ultra-light aircraft (FFPLUM)
• Regroups all ultra light pilots, promotes safety of flight and flight training.
• 640 associations
• 165 commercial companies
• 13,534 license holders
• 8,713 aircraft
• 376,477 flight hours in 2010

French Federation of Glider Pilots (FFVV)
• Created in 1966, FFVV regroups all glider activities in France.
• 162 associations
• 9,668 license holders
• 557 glider pilot trained and licensed in 2010
• 2,101 gliders
• 247,381 flight hours in 2010

French Federation of Rotary Flying (FFG)
• Non profit association that represents notionally and internationally rotary wing pilots (helicopters). Federates the non profit organizations, companies et pilots that fly helicopters.
• 14 associations
• 193 license holders
• 14 helicopter pilots rated in 2010
• 17 helicopters
• 3,320 flight hours in 2010

Source: French Federations 2010

FOCUS

Lognes, an airfield at the doors of Paris, dedicated to aero clubs

• **83,840** annual movements
• **180** locally based aircraft
• **214** acres
• **2 runways:** concrete 700m, grass 1,100 m
• **1 customs** on site for international traffic
• **15** hangars
• **12** aero clubs, **2** maintenance companies
Operated by Aéroports de Paris (ADP) (as Le Bourget, Orly or Charles de Gaulle)
• **5** Million € of revenue generated by the aero clubs
• **50** direct jobs
• **15** employees full time and over **100** volunteers in the aero clubs

Source : BIPE for FNAM

DID YOU KNOW ?

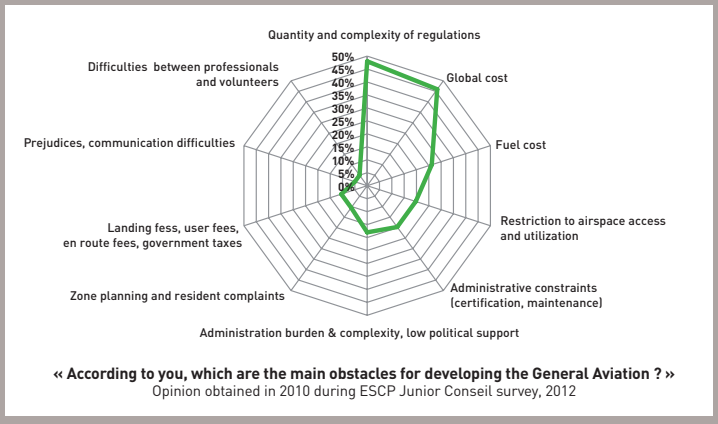
68,700
volunteers hold a sport license

in one of the French federations related to General Aviation. They are enthusiasts, retired or not and participate in an active manner in the activities located on the airfields. When all components of these federations are combined, they use a total of over 13,300 aircraft.

ASSETS, CONSTRAINTS, EXPECTATIONS

REALITIES AND PERSPECTIVES

Regulatory environment and costs, two major difficulties



« According to you, which are the main obstacles for developing the General Aviation ? »
Opinion obtained in 2010 during ESCP Junior Conseil survey, 2012

Recent regulatory developments, with the transfer of national competencies and regulatory power from national authorities to the European Agency for the Safety of Civil aviation (EASA) is a major concern. The accumulation of requirements, without simplification of national constraints or perceived contribution to the safety of flights, affects the competitiveness of French general aviation. To these concerns, we have to add the fact that national authorities tend to delegate their authorities to local authorities that do not have the funds available to maintain airfields or develop them. More and more resources become unavailable (closure of weather stations, airfield information office or airfields themselves...). This results in a feeling of lack of coordination and dialogue between the different actors (government, elected officials, airfields managers and other operators), reinforced by the problem of pressure of increased land planning and zoning and some form of intolerance resulting of increased complaints of residents.

« The national mesh of airports and airfields, a community of passionate pilots and high quality training are the heart of the activity today »

General aviation and business benefits, in France, from an excellent regional coverage, with an important number of airfields. It is an asset to both businesses - benefiting from a densely distributed infrastructure for the benefit of the operators and their customers - and for the voluntary sector - which can be located as closely to their audience as possible. In addition, this territorial coverage allows public safety missions and public health activities (Medevac, EMS, Organ transportation and harvesting...) to be performed.

Beyond that, General and Business Aviation is the catalyst of professional vocations. Employers consider that there is a great contribution from the sector to the acquisition of general knowledge that can be applied successfully to professional training later on, serving as a building block to aeronautical related careers (pilots, maintenance, operations etc.).

EXPECTATIONS OF THE GENERAL AND BUSINESS AVIATION

3 axes to promote its development in France

1. Simplify and adapt the regulatory framework

- To maintain the competitiveness of the operation of aircraft registered in France
- By pressing the ' level -playing field' EASA's European regulation framework and removing unnecessary national overlays
- Ensuring that the same competitive regulatory framework applies to all, whatever region in the world is considered
- Seeking the best «cost / benefit» ratio from the regulatory framework
- Strengthening the role of sponsor of the French DGAC on the European stage for the defence of national interests

2. Ensure the economic viability of the activities

- Promoting a better visibility of the sector and its socioeconomic impacts to the general public, policy makers elected officials and business decision makers
- Supporting at its right value an full blown economic sector that is largely underestimated
- A harmonized tax provisions to avoid distortions of competition relative to foreign operators in France

3. Preserve the aviation infrastructures which are the strength of our regions

- By promoting the acceptability of activities of general and business aviation through a policy of responsible development
- Developing educational and cultural projects on aviation related locations

To support this development, it remains important to continue to better characterize the General and Business Aviation activities and its impacts, through measurement tools of the activity, as the available data, today, is scattered and disparate.

Glossary

AOPA - Aircraft Owners and Pilots Association
ASD - Aerospace and Defence
CNFAS - National Committee of Aeronautical and Sports Federations
DGAC - Directorate General of Civil Aviation (French CAA)
EASA - European Aviation Safety Agency
EBAA - European Business Aviation association
EGAMA - European General Aviation Manufacturer's Association
EVASAN - Medical Evacuation
FAA - Federal Aviation Administration
FFA - French Aeronautical Fédération
FFG - French Federation Rotary wing
FFPLUM - French Federation of Ultra light Gliders and motorized Ultra light aircraft
FFVV - French Gliding Federation
GIPAG - Association of Industrial Business and General Aviation Professionals
INSEE - National Institute of Statistics and Economic Studies
MALGH - Mission for Light, General Aviation and Helicopters (French DGAC)
ICAO - International Civil Aviation Organization
PNC - Cabin Crew
PNT - Cockpit crew
RTE - Réseau de transport d'Electricité (French electric network operator)
SAMU - French Emergency Medical Service
SNEH - French Union of helicopter operators
TES - Input-Output Table
UAF - Union of French Airports
UFH - French helicopter Union
ULM - Motorized Ultralight
UNSAC - National Federation of Unions of Civil Aviation

We wish to thank

General and Business Aviation commission, French Aviation Industry Federation (FNAM)
Françoise Horiot (Troyes Aviation)
Olivier de l'Estoile (EBAA France)
Gérard David (UFH)
Jean-François Georges (Aéroclub de France)
Eric Bazinet (FFA)
Jean- Claude Simon (UAF)
Emmanuel Davidson (AOPA France)
Serge Marolle (UNSAC)
Michel Ziegler (Académie de l'Air et de l'Espace)
Patrick Charrier (AOPA France)
Elisabeth Bouffard-Savary (DGAC)
Thibaut Lallemand (DGAC)
Frédéric Fouchet (FNAM)
Edwige Vinet (FNAM)
Mildred Dauphin (FNAM)
Marlène Prost (FNAM)
Olivier Bougan (FNAM)

And by Alphabetic order:
Jérôme Arnaud (SNC Lavalin)
Philippe Aliotti (UAF)
Christian Aubert (Maison de l'Air/Aérodrome de Gap-Tallard)
Philippe Ayoun (DGAC)
Georges Bambara (OSAC)
Eric Barbeau (SNC Lavalin)
Denis Beckrich (Aéroclub d'Alsace)
Philippe Belguiral (MA2L)
Fabrice Bos (Aéroclub Bordeaux Léognan-Saucats)
Magalie Bouchard (CSP- Keolis airport)
Fabienne Brogi-Luthar (DGAC)
Nicolas Chabbert (Daher Socata)
Axelle Chambost (UAF)
François Charritat (Aéroports de Paris)
Jean-Marie Chavant (CCI Grenoble)
Maxime Coffin (DGAC)
Martine Corboliou (DGAC)
Olivier Dupont (Aéroport de Niort)
Bertrand Eberhard (UAF)
Corinne Fitzgerald (Icarius Aerotechnics)
François Fournier (Aéroclub Sadi-Lecointe)
Nicolas Gandolfo (DGAC)
Dominique Geraud-Coulon (Association aéronautique du val de Durance)
François Gonnet (Aéroclub d'Annemasse)
Christian Gourin (OSAC)
Charles Hauton (FFA)
Jeannine Lafon
Henri Lanoe (Aérodrome de Laval Entrammes)
Didier Marrant (SDRA - Société de comptabilité de l'aérodrome du Touquet)
Patrick Moreneau (Aéroclub d'Alsace)
Jean-Christophe Martin (Université Montesquieu-Bordeaux IV)
Jean-Michel Ozoux (FFA)
Gérard Pic (GIPAG France)
Jean-Marc de Raffin Dourny (OSAC)
Christophe Rosset (SNEH)
Jean-Pierre Trimaille (Trimaille Aéro Formation)
Omr Saleh (Aéroport St Tropez-La Mole)
Pierre-Hugues Schmit (Aéroports de Paris)
Francis Viaud (CCI de la Vendée)

Bibliographic Sources

AOPA - Données adhérents
ASD - Données constructeurs d'avions
BIPE (pour la Commission aviation générale et d'affaires) - Étude des aérodromes d'aviation générale et d'affaires, au-travers de 10 focus locaux - 2012
Braibant M, Pilarski C : La synthèse du tableau entrées-sorties en année courante base 2000, (2008) CCI de Paris - L'aviation d'affaires et l'aéroport du Bourget
Commission Européenne - Un agenda pour un avenir durable de l'aviation générale et d'affaires (2008)
CROCIS - L'aviation d'affaires en Île-de-France (2005)
DGAC - Arrêté du 24 juin 2011
DGAC - Base de données AERAL
DGAC - Liste des organismes approuvés pour la formation aux qualifications de type avions (TRTO)
DGAC - Liste des organismes proposant des formations approuvées au vol avion (FTO)
DGAC - RTA 3 - Personnels Navigants
DGAC - Titres aéronautiques valides 2010 - 2011
DGAC - Rapport sur la sécurité aérienne 2011
DGAC - Bearing Point - Étude sur l'importance de l'aviation d'affaires en France et les facteurs clés de son développement
DGAC - Situation, enjeux et perspectives de l'aviation d'affaires (2007)
EASA - Règlement (CE) n° 216/2008 et connexes
EBAA - The role of business Aviation in the European economy (2012)
EGAMA - Données constructeurs d'avions
ESCP Europe Junior Conseil (pour la Commission aviation générale et d'affaires) - Analyse des questionnaires de l'enquête « Aviation générale & d'affaires » - 2012
Eurocontrol - Business Aviation in Europe in 2011
Eurostat - Tableaux d'entrées/sorties nationaux
FFA - Données adhérents
FFA - Structures aéronautiques : Compte-rendu annuel des aéroclubs FFA
FFG - Données adhérents
FFPLUM - Données adhérents
FFVL - Données adhérents
FFVV - Données adhérents
FNAM - Enquête adhérents
FNAM / BT Consulting - Améliorer la compétitivité du secteur aérien français (2005)
General Aviation Manufacturers Association : General Aviation's contribution to the U.S. economy (2006)
GIPAG France - Données internes
Greffe des tribunaux de commerce - Données économiques & comptables
INSEE - Base de données : Licences sportives
INSEE - Base de données : Trafic dans les aérodromes
Martin J-C. Université Montesquieu-Bordeaux IV: Multiplicateurs d'impacts directs, indirects et induits
Martin J-C : Les impacts économiques d'une politique de réduction des émissions de gaz à effet de serre pour la région Aquitaine, Thèse Université Montesquieu-Bordeaux IV
OACI - Data Definition Standard: Aviation operations
OSAC - Base de données Aéronefs immatriculés en France avec CDN valide (2012)
OSAC - Répertoire des agréments délivrés par l'Autorité Française (2012)
RTE - Dossier de presse : RTE poursuit sa contribution au plan de relance de l'économie, et engage le renouvellement d'une partie de sa flotte d'hélicoptères (2009)
SNEH - Données internes
UAF - Base de données : Mouvements d'avions commerciaux et non commerciaux des aéroports de la France métropolitaine
UAF - Résultats d'activité des aéroports français (2011)

Graphic Design : Laure Deschandol (deschandol.laure@gmail.com) - Crédits photos : FNAM, Shutterstock

fnam
Fédération Nationale de l'Aviation Marchande

28, rue de Châteaudun - 75009 Paris
Tél : +33 1 45 26 23 24 - Fax : +33 1 45 26 23 95
info@fnam.fr - www.fnam.fr - www.observatair.fr