



**Recommendations to avoid a strategic  
downgrading of Europe in the field of**

# **Combat Aviation**

*Following the European Forum organised by AAE and  
CEAS on 16 May 2013 at Ecole Militaire, Paris*



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# The Opinions

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Opinion No.2 on the Proposed European regulation on investigation and prevention  
of accidents and incidents in civil aviation

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# FOREWORD

The Air and Space Academy having noted, through a study of the many recent examples, that air warfare scenarios without advanced combat aircraft are no longer feasible, considers that Europe is running the risk of losing its advanced air power independence, in spite of the fact that the combat aircraft industry is a driving force for advanced technologies and qualified employment.

How to avoid this imminent demise, faced with stiffer and stiffer international competition? How to protect the strong industrial base which still exists today but which must be maintained through concrete demonstrators and European development programmes?

If Europe wishes to secure its future strategic air power independence and thus maintain its place in the newly emerging multipolar world, urgent action must be decided on and funded.

The Air and Space Academy, in collaboration with CEAS (Council of European aerospace societies), organized an international forum in May 2013 at the Ecole

Militaire in Paris, bringing together a panel of high-level political, industrial and operational policy makers in order to take stock of this vital issue.

AAE prepared a summary of the discussions that took place during the forum, enhanced by recommendations, which together constitute an Opinion of the Academy. This document was distributed to all concerned European policy-makers sufficiently in advance of the European Council on European defence of 19 and 20 December for these ideas and recommendations to be taken into account as much as possible on that occasion.

The present paper contains the text of AAE's Opinion with, in an appendix, the programme of the original forum.

**Philippe Couillard**

*President of the Air and Space Academy*

# 1. EFFECTIVE, AUTONOMOUS COMBAT AVIATION

*Recent crises have demonstrated that Europe now fully relies on a powerful and autonomous combat air power to ensure its security*

## 1.1. Fundamental needs

Mastering combat aviation<sup>1</sup> is vital in terms of national and European sovereignty. This capacity is key in each of the three main military missions: to protect, to deter and to act.

Air power is the only military power capable of *“providing an efficient answer in very short time to any political decision makers and to react to an unexpected threat. Key words are: reactivity, accuracy, flexibility, reversibility, strike coordination and long-range operations”*<sup>2</sup>.

Fast, efficient and accurate air power can act immediately and send a strong political signal in time of peace, crisis or war.

The recent crises which have been managed successfully have proven that without a powerful air combat force, the final issue could have been different and maybe inhibited the decision to intervene.

Air superiority has become the asymmetric tool of advanced nations: without this capacity in the third dimension, acquired thanks to long lasting investments, there is no freedom of action for the troops on the ground and little “strategic” visibility for the political decision-maker. This explains why a competition is on-going worldwide to acquire autonomy and excellence in the field of air power.

In a parallel to the initiatives taken by the United States who have developed the F22 and are developing the JSF / F35 with the financial participation of some European nations, quite a few emergent States are now developing and producing, in the framework of a relentless quest for autonomy and technological control, some powerful combat aircraft which will soon

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<sup>1</sup> In our wording, “combat aviation” means “air combat systems” including the whole global system with ground, the couple inhabited plane and UCAV, engines, equipment and armament.

<sup>2</sup> General Mercier, French Chief of air staff, at the forum in Paris on May 16 2013: *Safeguarding the future of the European combat aircraft industry*

be exported all over the world. Their strategic ambition will become a reality in 10-15 years from now with the arrival of next generation aircraft such as T50 in Russia and in India or J20 and J31 in China.

At present, despite this clear evidence of developments in technologies and capacity amongst the other leading powers, Europe is not preparing any roadmap or structured plan towards its own next generation air combat system.

## **1.2. Needs derived from NATO Membership**

Coherently with Robert Gates' June 2011 declaration, the Pentagon, with the recent "Defence Strategic Review" made public on January 5<sup>th</sup>, 2012, has begun a strategic reallocation of US military assets towards the Pacific. Since that date, the United States has decided that it would supply no more than 50% of military means at the disposal of the NATO in conformance with each of the necessary military capacities: the US needs strong allies in Europe.

Whether it likes it or not, Europe will increasingly have to assess its own strengths and its ability to take on the responsibilities of stabilization and possible intervention, in its own sphere of geographical responsibility.

These decisions should drive the Europeans to federate their strengths and to maintain important strategic and autonomous capacities regarding air combat power.

## **1.3. New needs in a predictable future**

Emerging countries are demonstrating a strong determination to develop new airborne systems among which some will be in advance of current European capabilities. They will probably be prepared to export them to third countries with no guarantee that they will not be used against Europe's interests. This new threat could be real by 2025, before the first flight of any new generation European combat aircraft. The remarkable Russian T50 should in particular begin to be exported in this timeframe.

Most of the European countries consider however that if new threats do arise in 2025, the capability gap in air defence, combat air support and in-depth strike, will only materialise between 2030 and 2035.

As regards the recce UAVs operating medium or high altitude, needs are immediate and the lack is already obvious: nations have no other choice of leasing or buying from the US either Predators A or B or Reapers. These UAVs can also carry weapons and operate accurate destruction missions, but this need seems less urgent than the intelligence ones.

#### **1.4. Specific needs for European nations**

France and the United Kingdom seem more sensitive than other European nations to the need for multi-role aircraft, inhabited or remote-controlled. Germany seems to give priority to the intelligence mission for UAVs, knowing that France, United Kingdom, Italy and other nations also clearly express this need.

#### **1.5. Economical and political aspects**

The combat aerospace industry remains a substantial contributor to national economies creating highly qualified employment and advanced technology, feeding the civil aviation sector as well as many of the other state-of-the-art branches of industry, laboratories and universities. This industrial know-how is dependent on a vast network of major suppliers including engine makers, equipment manufacturers and all the industry of armament. All in all, more than 120,000 specialists are employed in the combat aerospace industry in Europe.

The real risk of the disappearance of these skills would have far reaching and damaging consequences putting at risk current export markets where there are needs to keep a significant competitive advantage.

Even though the current economic crisis has deeply impacted defence budgets there is ample scope to achieve considerable economies by merging design and development capabilities for new shared programmes.

It is also important to note that the sale of successful armament systems, in particular combat aircraft, has allowed in the past the conclusion of strategically important security agreements between some European nations and some nations outside Europe.

## 2. A POINT OF NO RETURN

*Europe is approaching the point of no return in the preservation of its air power and the associated industry*

### 2.1. Fighter aircraft and UCAV

Since World War 2, Europe has developed and produced a number of generations of internationally competitive combat aircraft. Today three different planes are in production and operating: the Rafale, Eurofighter and Gripen. They guarantee the needs for Europe and strengthen its industrial and strategic independence.

This industrial inheritance must be maintained to enable a common successor from pooled capabilities. To date, no such initiative in this direction has yet been taken.

Some European nations have chosen, on the contrary, to co-finance the American F35 for an amount of about 8 billion euros, comparable to the price of a European development.

The R&D teams of the main European prime contractors have lost 50% of their

staff members since the end of the development phases of the current in service aircraft.

However, some clear-sighted decisions have been taken to the launch of two UCAV demonstrators: nEUROn of Dassault in France and Taranis of BAE Systems in the United Kingdom. They should open the way to a common development (LOI signed on 17/02/2012).

It is also worth mentioning the Barracuda of EADS-Cassidian, a demonstrator of UAV for ground penetration and recognition roles, still in operation, and Sky X-Y from Finmeccanica-Alenia.

It is finally necessary to underline the quality of the study FAS4Europe led under the aegis of the EDA (European Defence Agency) in 2011. This excellent study identifies a road map in three phases (technical projects, demonstrators and programmes to be launched) allowing the development of future European air systems.

## **2.2. Recce and intelligence UAV capable of being armed**

France has ordered some modifications to the Israeli UAV Heron by EADS, and bought 3 models of this new version called "Harfang". The experiment is now terminated: France is now going to join United Kingdom and Italy to buy American Reapers.

Germany, who developed the concept Talarion, plans to move in the same direction. It has also just stopped the EuroHawk programme, which demonstrates the fragility of importing of a foreign concept and the value of internal developments in Europe to meet European needs.

## **2.3. Technical needs and technical capacities to be maintained**

On the technical side the needs are high performance and global strength organized in a complete network in which the missions are managed and optimized with flexibility and for safety standards and interoperability of networks.

System studies, design of the plane, architecture of the functions, and technological performance are already mastered in Europe but need to be preserved and developed in some cases. These capacities need long lasting investments but are easily and rapidly lost.

## **2.4. Importance of a strong industrial base**

A more and more important element of such a base is linked with the use of the air combat systems in operations. A permanent industrial support, close to the user, is absolutely necessary during air operations. This industrial support is also needed to ensure the evolution of the system during its life cycle. This double industrial support is the responsibility of the system supplier and requires the preservation in Europe of state-of-the-art industrial skills in order to have complete independence. It should also be noted that such freedom to update systems requires Intellectual property usually denied for imported products

## **2.5. Participation in a non-European programme**

The acquisition outside Europe or even the participation to a non-European programme of development and production are not sufficient to maintain a European know-how, because the key technologies always stay under the complete control of the industrial leader. This has become clear with the experience of the nations collaborating with the USA on the F35.

## 3. PROPOSED ROADMAP

### *Proposed roadmap with six key recommendations*

#### Recommendation No.1

##### **Definition of a European vision for air combat**

To avoid difficulties previously encountered in trying to converge national requirements it is recommended to first construct a European vision for future air theatre of operations.

Such a task ideally fits the responsibilities of the EDA (European Defence Agency) which could be mandated to undertake this by member states willing to support it.

#### Recommendation No.2

##### **Definition of needs, doctrines and systems**

From the above vision and using analysis already conducted, in particular the Global System Study of ETAP (European Technology Acquisition Programme) as a base for combat air systems, create a European working group for the analysis of needs and common definition of interest of all parties. This working group, presided over by the EDA, should consist of institu-

tional representatives coming from nations who have decided to cooperate. When needed, industrialists will bring their support to the systems studies with technico-operational simulations.

The mission of the group would be: to federate the prospective vision, to define a concept of needs and use, to develop a collective project and to define the hard point, schedules and major milestones of the programmes.

*Important remark: The priorities between fighter aircraft and recce UAVs being different amongst the various nations, and corresponding to rather different technologies, it seems reasonable to envisage that these two domains would be separately managed with different industrial responsibilities.*

#### Recommendation No.3

##### **Focus of the skills and the technical financing**

The technological skills will need to be focused on a more limited number of

suppliers, to minimize the financing of the preliminary research before the development phases. A working group bringing on equal footing Member States and industrial associations, led by the EDA and ASD (Aerospace and Defence Industries association of Europe), could be set up quickly to propose a methodology and terms of reference. A roadmap for technological tasks and a plan of long-term investment will need to be settled in a coherent way with this organization, based on the development programme previously defined. These reflections and decisions would take into account the study FAS4Europe realized under the aegis of the EDA with the same participants.

A particular attention will have to be paid in the definition of common standards, aiming at a maximal interoperability and an optimization of the developments.

#### Recommendation No.4

### **Decision to launch technical and operational demonstrators**

Beyond the need to mature the required technologies and keep the high level of skills and knowledge in design teams, Demonstrators will be necessary to understand and solve the technical and operational hard points and maintain the development programme. They should be defined as a result of the studies emerging from Recommendation 2. The FR/UK LOI

of February 17<sup>th</sup>, 2012 provides a good example of this.

#### Recommendation No.5

### **Decision to launch fighter and UAV programmes**

It is recommended that one or possibly several programmes of operational fighters and UAVs will need to be initiated from the previous work. The FCAS project of the LOI between FR and UK of February 17<sup>th</sup>, 2012 is a promising step towards this wider goal.

*Important remark on the industrial organization: For the demonstrators or the programmes, every development will need to be placed under the responsibility of a prime contractor (this prime contractor could be an existing company or a new entity created by industrialists after programme decision is given) with a supply chain, all chosen on the basis of "best athlete".*

#### Recommendation No.6

### **Modernization of the fleets**

In parallel to the previous recommendations, a logic of modernization of the fleets must be pursued to maintain at all times the operational capacities of Europe and to perpetuate the technological level of the industry.

# APPENDIX

*Programme of the forum on “Safeguarding the future of the European Combat Aviation Industry” organised by AAE and CEAS on 16 May 2013 in Ecole Militaire, Paris*

- Presentation, Philippe Couillard (AAE president)
- Keynote speech, General Denis Mercier (French Air force chief of staff)

## **Round Table 1: Operational and capability needs**

- Chair: General Jean-Georges Brévot (AAE)
- Strategy for Europe, Olivier Zajec (Compagnie européenne d’Intelligence stratégique CEIS - FR)
- Future threats-capability needs, General Manfred Lange (former SHAPE chief of staff - GE)
- Needs-use of combat aircraft, Air Marshal Greg Bagwell (Royal Air Force, deputy commander for operations - UK)
- European needs, operational integration, Ioan Mircea Pascu (European Parliament, subcommittee on security and defence SEDE)

## **Round Table 2: Technology and industrial capability needs**

- Chair: Dr Georges Bridel (AAE)
- European Defence Agency viewpoint, Christian Bréant (EDA research and technology director)
- Plane manufacturer viewpoint (1), Lars Sjöström (SAAB Aircraft vice-president strategy aeronautics - SW)
- Equipment manufacturer viewpoint, Paul Stein (Rolls Royce scientific director - UK)
- System engineering viewpoint, Marko Erman (Thales chief technical officer - FR)
- Plane manufacturer viewpoint (2), Pierclaudio Iaia (Alenia Aermacchi, head of research & new programs development - IT)

### **Round Table 3: Possible cooperation schemes**

- **Chair:** Antonio Viñolo (AAE)
- **Industry viewpoint (1),** Bernhard Gerwert (EADS Cassidian chief executive officer - GE)
- **Industry viewpoint (2),** Bruno Stoufflet (Dassault Aviation vice-president R&D and advanced projects - FR)
- **Industry viewpoint (3),** Chris Boardman (BAES Military Air managing director - UK)
- **Industry viewpoint (4),** Domingo Ureña-Raso (Airbus Military chief executive officer - SP)

### **Round Table 4: Preparing the future, recommendations**

- **Chair:** David Marshall (AAE, CEAS)
- **Industry viewpoint,** Prof. Holger Mey (Cassidian head of advanced concepts - GE)
- **Political viewpoint,** Keith Mans (Air League, chairman - UK)
- **Air Forces viewpoint,** General Carlo Magrassi (Italian Air Force, deputy commander operational forces command, former EDA deputy chief executive for strategy - IT)
- **Foresight viewpoint,** General Guy Girier (deputy chief of air staff for planning and programmes - FR)

### **Concluding remarks**

- **Presentation :** Claude Roche (AAE)
- **Dr Karl von Wogau** (former chairman of subcommittee on security and defence, European Parliament, secretary general of Kangaroo Group - GE)
- **His Excellency Tomasz Orłowski** (ambassador of Poland to France - PL)