



How European is Airbus?

Heinz Michaels

In the South-West of France there is a city which must be one of the most European, full of the European sense and sentiment which it is supposed will dominate the whole of Europe as from January 1, 1993—or at least the twelve nations which together constitute the European Community. It is not Brussels, the Belgian-Eurocratic metropolis of Commission bureaucrats. It is not Strasbourg, the bilingual Alemanic settlement with its eventful history and variable identity—the place where the Euro-parliamentarians reside. And it is not Luxemburg, the citadel of European law.

The city alluded to is Toulouse, and there, for some two decades, experimentation of common European high-tech development and common production has been taking place. A European microcosm, so to speak, in which citizens from the whole of Europe have been living and working together on a product which can only be realized under common technical and economic conditions: the European Airbus.

Stroke of doom

Not long ago, a wave of indignation swept through Toulouse, accompanied by a hail of protests. The mayor, the trade-unions, the municipal committees and the press were all up in arms, as though the most sacred legacy of the nation were in danger. And what had stirred feelings to such an extent was the following: the Supervisory Board of Airbus Industrie had dared to pass a resolution in which they deliberated that one of the Airbus models, the A321, would be assembled not in Toulouse, and not even in France, but in Hamburg—a national shame and a national failure. Who was really still thinking of Europe?

“The Germans have won” was the front page headline of the left-liberal regional newspaper *La Dépêche de Midi*, and the chief editor spoke of a “stroke of doom”. The Communist-oriented trade union CGT saw the decision as “subjection to the presently unlimited dominance of the Federal Republic” and organised a demonstration along with the other trade unions outside the headquarters of Airbus Industrie.

A great deal of fuss was made, then, over the fact that in the future one of the six Airbus models would be assembled in Germany. Yet a clear warning as to this fear and worry also came from the French association of the air and space industry (GIFAS): “The Germans are driving forward in every sphere—financially, politically and culturally”. United under the umbrella of the Daimler conglomerate, the German air-transport industry had replaced the French, taking up third place on the world scale.

To put it simply, then: the French mistrust the Germans’ real European identity and intentions. Yet in this case, a question must be allowed: are the French really open with their partners?

The Seven Dwarfs

The German aircraft industry has now been active for some 35 years. Together with the air transport sector, however, it has been the last “internee of the German economy” to be released. On June 5, 1945, when the victorious powers took over the administration of Germany, they forbade the production of all kinds of aircraft—and this ban was not lifted until the Germany Treaty came into force in 1955.

The revival of the German air transport industry gave new life to the older parts of the sector, and to those enterprises which were too small to operate on a world scale. The older mentality was also still vital, and many managers voiced claims they still had on the Reich which had disintegrated in 1945. They expected compensation for their companies, and demanded new orders which the Federal Republic would answer for. Hermann Göring had accustomed them to be fed in this way.

And the orders came, because the young German *Luftwaffe* needed aircraft. For the latter, Franz Josef Strauss, then Defence Minister, had selected the Starfighter, which was to be constructed under licence in the Federal Republic.

Yet the managers still kept to their old ways and manufactured according to the old cost-reimbursement system: they added up their production costs and increased them by five per cent—neither a market-based nor efficiency inducing system. The German authorities tried in vain to tie the companies to fixed prices, but found an audience only in the north, in Bremen, where the German firm VFW and the Dutch Fokker group were production partners.

Licence production of the Starfighter, however, should have shown the German enterprises which way the road towards the longer-term future was leading. The construction of the Starfighter required the companies to cooperate, and the factories to share the work amongst themselves. From the organisational point of view, this was carried out in two “work cycles”.

The enterprises, however, did not draw the conclusions of the above. Each defended its own autonomy, and in Bonn fought to the last drop of blood against its competitors over development aid and subsidies for all possible projects. Thus even by the end of the 1960s there were still seven aircraft companies in the Federal Republic—the “seven dwarfs of the German air transport industry”, as the weekly *Die Zeit* sarcastically concluded.

The “successes” were thus of the same order, each enterprise planning its own civil aircraft, mainly commercial aeroplanes, and producing a corresponding weight of waste paper. As each project was too much for the production capacity of its mother company, however, the latter would expect help from Bonn, and would hold its hands out accordingly. At international expositions the companies presented smart wood models of their planned aircraft, and in doing so earned the derision of their foreign competitors: “the Germans are the best model builders in the world”.

It took the gentle pressure and civilised hints of the Bonn government that research and development aid was to be concentrated and not divided up, and that defence contracts could only be awarded to powerful companies, to bring the enterprises round to the idea of the merger. In this way three companies remained: Messerschmitt-Bölkow-Blohm (MBB) and Dornier in Munich, as well as the United Aircraft Company (VFW) in Bremen.

In order to avoid suffocation by MBB, VFW joined its Dutch neighbours Fokker to form the first “European enterprise”. This, however, was more a publicity stunt than reality. Agfa-Gevaert had already tried the same

experiment; but amongst other things, there existed no European company structure (and this legislative vacuum still applies to this very day). Finally a share company under German law was founded, both firms participating equally with 50 per cent.

For over 30 years now, the European Commission and the member states have not been able to create a body of company law for international enterprises, and this was a disadvantage for both VFW/Fokker as well as for all future European joint ventures. The only solutions are temporary legal arrangements, and clear cut management principles do not exist.

This was all shown by the German-Dutch liaison. In Bremen it had been underestimated the fact that the production programs of the two companies overlapped; moreover the two partners had made the mistake of leaving the sales side to the Dutch, the latter having had more experience in that field. The Dutch, however, were not interested in selling the German product, the VFW 614, and were more concerned with their own Fokker models. Even violent remonstrances from the Düsseldorf headquarters changed nothing. Thus only 16 of the 614 models (subsidized by German taxpayers) were sold, too few to justify continuation of the project. German-Dutch collaboration was thus suspended, and after dramatic vicissitudes VFW finally ended up under the roof of MBB.

The spate of mergers (which had thus lasted some two decades) only came to an end with the Daimler conglomerate, under the aegis of Deutsche Aerospace (DASA), practically covering the whole of the German air transport industry, including MTU, the only well-known engine producer. The latter had no great developments of its own to point to, but it had been (and still is) a partner in numerous international projects. According to a recently signed memorandum of understanding, however, it is planned to link MTU closely to Pratt & Whitney, an offspring of the US concern, United Technologies.

This marked the end of a long established relationship with General Electric, the other large engine producer in the United States, and as a reaction to this, the Americans have just filed a damages claim. They want either MTU, or 1.15 billion dollars from Daimler, as the planned collaboration on the jumbo engine GE-90 will now fall through. They assert that MTU will profit from the technical know-how transferred from GE to the German company with the view to cooperate in GE-90 development.

In the meanwhile, DASA chief Jürgen Schremp has already led another project in: he has been talking to British Aerospace about cooperation in the construction of regional aircraft. In the long run it is inefficient if five or six models of regional aircraft are built, and no one makes any real profit out of them. This possibly announces a new project for European cooperation (in which the Germans, however, will have learnt from the past, and will be able to avoid the mistakes made on earlier projects).

In brief, then, this is the development of the German air transport industry, and it is necessary to be able to judge the German contribution to cooperation and concentration in the European air and space industry in general.

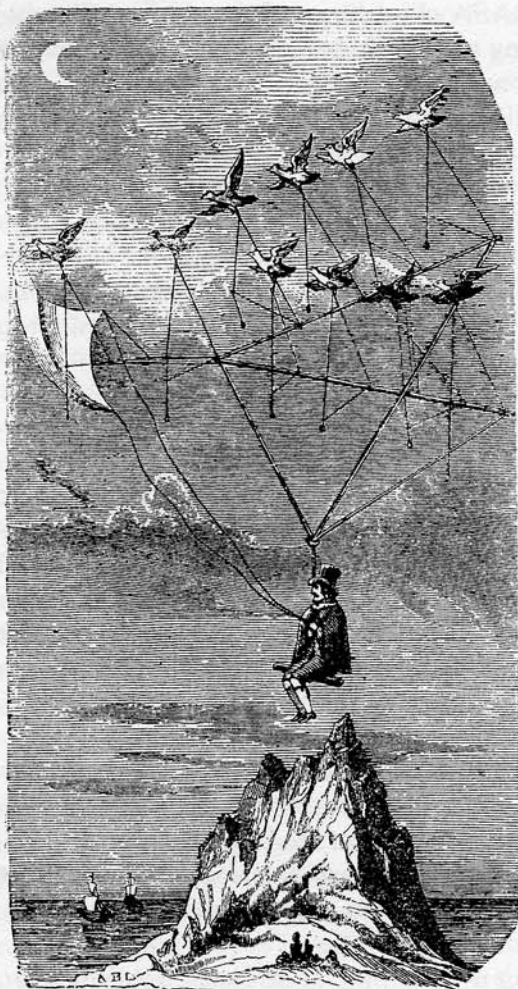
Omnibus

As mentioned above, the Germans were masters at developing clever plans during the 1950s and 1960s. In 1965 a group of engineers set up their drawing boards in some of the premises of the German Museum in Munich, in rooms directly adjoining the first gliders of Otto Lilienthal. Their aim was to revolutionise air travel: they wanted the aeroplane to become a means of mass transport, with its utilisation as matter-of-course a process as taking the omnibus. A name was thus immediately at hand: Airbus.

In fact this was not so original, as the German *Luft Hansa* (written as two words), had already instituted an “Aerobus” between Frankfurt and Cologne at the beginning of the 1930s. And at the beginning of the 1960s, the new Lufthansa made a second attempt on the Hamburg-Frankfurt route, offering an “Airbus” which was operated like an omnibus line.

The airline was using the example of an Eastern Airlines project, with a shuttle service on the Washington-New York-Boston route, which operated on the same principle: a plane left every hour, and seat reservations were not necessary. It was only the first American client of the later Airbus, and the then Eastern Airlines President Frank Borman objected to the name. He thought that it sounded “too similar to an omnibus”, and called his new acquisition from Europe a “whisper jet”: it was so soft that the inhabitants of airport areas could keep their peace and quiet.

With German thoroughness, the constructors in the German Museum were not satisfied with designing a new aircraft alone; they wanted to re-model the



Joining Forces

whole of air transport at the same time, and completely rebuild airports along the lines of bus stations. They covered their drawing boards with tempting designs for a new system: underground railways take the passengers from the city centre to the airport, where the runways and passenger conveyors are constructed in such a way as to allow the planes to take off only fifteen minutes after landing; long-winded checking in of passengers and luggage is eliminated; automatic ticket machines are installed; escalators convey the

passengers directly to the aircraft door, and the passengers enter the plane while the previous ones are still leaving the other side.

These ambitious plans all became waste paper. They failed due to the hard political and economic reality of the time: no one was prepared to spend billions of marks completely restructuring air transport. What did remain, however, was the kernel around which the system was to operate: an aircraft with a wide body, transporting 250 passengers—the Airbus, an aircraft of the second generation of jets.

While these German aircraft engineers mused over their Airbus plans, in October 1965 in London there was a meeting of the representatives of the European air companies, in order to reflect together on the kind of aircraft they really needed for the air transport of the future. Behind the talks was the fact that the air travel business had multiplied almost fourfold over the previous decade, and the tendency was further on the rise. And a typical feature of the marketing pattern was that some 50 per cent of the passengers travelled on routes of less than 500 kilometres.

The conclusion was clear, then: the airlines needed a plane for short distances, but with high passenger capacity. Within a range of 2000 kilometres, some 98 per cent of all European travel requirements could be covered by such an aircraft. It was only over aircraft size that there was disagreement: Lufthansa wanted 180 to 200 seats, whilst Air France wanted 250.

For aircraft constructors, the London symposium marked a turning point. Up to then the principle had been that only engineers really knew what an aircraft was, and that the airlines knew nothing of this. In accordance with this principle, then, the technicians developed aircraft following their own inclinations, and then

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offered them to—and even pressed them upon—the airline companies. In London, however, the relationship was reversed; it was the airlines who formulated their requirements and wishes, and the aircraft constructors who had to follow suit. The latter learned their lesson. They learned that they had to design aircraft interiors, wings and fuselage in such a way as to transport the maximum number of passengers with the minimum costs possible. Their technical ambition had to concentrate on these factors alone.

At this stage, however, it was no longer the Munich group alone which was occupied with this kind of project. British and French engineers as well had designs on this drawing boards. Only one year after the London conference, there were four similar aircraft projects available, yet none of the individual companies involved was in a position to stand the high development costs from its own resources—at the time, costs reckoned at some two billion German marks. The decision was thus referred to the governments, who would have to provide this kind of capital.

That the Europeans finally managed to get Airbus on the runway at all is close on a miracle. The Airbus story is, in fact, one of national jealousies and sensitivities, political rancour and economic doubt. Yet it was clear to all involved that this was the last chance for the old world to keep up with the Americans in aircraft construction and the relative technology.

Years of shuffling

On December 22, 1965, the British Air Transport Minister Roy Jenkins visited Bonn. As he left the German capital, he had a Christmas present for London in his pocket: the then German Finance Minister Kurt Schmücker had agreed that the Germans would participate in the Airbus venture with 25 per cent of the capital. The British and the French wanted to share the remaining 75 per cent. The British would be responsible for the engines (Rolls-Royce models of course), whilst the French would see to the fuselage (they were thinking of the “fat Julie”, a model with the name *Gallion* which aircraft constructor Marcel Dassault wanted to use to enter the civil sector). That the Germans had to play a junior role—both technically and financially—was appropriate to the situation at that time. Nevertheless this constellation of interests already contained the kernel of many of the arguments and dissensions which would later arise within the Airbus consortium.

The day after the representatives of four German aircraft companies (Messerschmitt, Siebel, Dornier and Hamburger Flugzeugbau) met in the Munich hotel *Vier Jahreszeiten* to found the Airbus joint venture (*Arbeitsgemeinschaft Airbus*). This took place, however, under an unlucky star, as (differently than with Air France) the Airbus planners came up against a refusal on the part of Lufthansa. Gerhard Hötje, Lufthansa's technology chief, was set on Boeing aircraft, and thought that the fleet ought to be kept to one constructor in order to save costs in spare parts, staff training and so on.

Despite the basic decisions, then, there was disappointment amongst all those who had expected work to begin after the New Year—1966. There were trilateral meetings, and the representatives of the three governments alternated between Bonn, London and Paris, and even Munich, but it all came to nothing. In the meanwhile, however, the representatives of the industries involved also met up on several occasions, and they had more success than their governmental counterparts.

The British insisted upon their RB 207, an engine which did not exist as then, and the French—driven by the technical director of Air France—designed a fuselage with 300 seats (hence the name A300 for the first Airbus model). Last but not least, the Germans continued to try and implant their four-engine model.

Finally, on May 9, 1967, the ministers took their decision: the industries involved had to design an aircraft with 300 seats and two RB 207 engines. In September they then signed a contract for the construction of the A300.

In Munich, and at more or less the same time, the *Deutsche Airbus GmbH* was founded as the successor of the above mentioned *Arbeitsgemeinschaft*. At that time it included five companies, each with a 20 per cent share of participation: Messerschmitt, Siebel ATC, Dornier, Hamburger Flugzeugbau and VFW. The chief of the Supervisory Board was Franz-Josef Strauss, himself an enthusiastic amateur pilot and the defence minister who had promoted the revival of the German air transport industry.

Dornier later opted out of its participation, as the family which controlled the company found the enterprise too risky. The other companies entered the MBB concern, and the Airbus company thus passed into sole possession, until the subsequent re-organisation under the DASA roof.

In Toulouse in the meanwhile, a working committee of representatives of all the companies was established, and in the summer of 1967 it deliberated just how the Airbus prototype was finally to be. The carrying capacity of the aircraft was reduced to 224 seats; the tail portion was chosen so that the cargo space could be used for the kind of containers transported in wide-body aircraft, and the British engines were declared a "second choice". General Electric and Pratt and Whitney engines were to be incorporated, and in fact there are only very few Airbus models fitted with Rolls-Royce engines.

It cannot be proved whether it was this decision which made the British pull out. In any case, at the end of 1967 the French Minister Chamant returned from London with bad news: "the English do not believe in Airbus". To complicate things further, the leading company Sud Aviation also ran into difficulties, and caused the Airbus project to quake yet again. A long war of nerves between London and Paris ensued, and was also influenced by quarrelling over the expensive Franco-British supersonic aircraft Concorde thus in April 1969, the British finally opted out of the consortium.

The then German Finance Minister Karl Schiller, however, had already let his French counterpart Chamant know that the German government was prepared to construct Airbus with the French and assume half of the costs. The Franco-German agreement was signed in a full-scale wooden model of the Airbus cabin on May 29, 1969, on the occasion of the opening of the Paris Air Show. Later the Spanish and the Dutch came in with minor shares of participation. The dice had thus been thrown, and work could begin. Four governments and eight companies set to work on the realisation of an aircraft programme which in America would have been carried out by one company alone.

On December 18, 1970, whilst the engineers and technicians of the partner companies were already designing and building parts for the first prototype of Airbus, a new company was founded in Paris: Airbus Industrie, a structure registered under French company law as a "group of economic interest" (*Groupement d'Intérêt Economique*). President of the time Georges Pompidou had required the government "to provide a better organised and more efficient structure for the Airbus enterprise". The programme was to be led by one company, and Airbus Industrie was thus made responsible for the organisation of production, for sales, for after-sales client contacts and for after-sales service.

But difficulties arose again with the airline companies. Reinhard Abraham, Höltje's successor as Lufthansa technical chief, asked a rhetorical question: "Just what kind of company is Airbus? With Boeing and Douglas I know where I am. They possess their own capital and have to stand behind their products. But what about Airbus Industrie?"

In fact the company was operating without any capital of its own, and the partner firms were running the risks and holding the responsibility. The actual money simply transited through Airbus Industrie, which made no profit and paid no taxes, these appearing only on the balance sheets of the partner companies. Critics of the Airbus program thus mocked the situation: the company was not acquainted with its figures and did not even know how much cash flowed through it.

Airbus the oddball

This company form was especially created for international cooperate business, however, and otherwise might have failed before tax obstacles. For Airbus Industrie, this was (and still is) an exceptionally embarrassing solution. In any case it was a result of the fact that over more than three decades of existence, the European Community had been unable to create a body of European company law to stand above national variations. Internationally planned companies such as Airbus Industrie are thus obliged to resort to less efficient provisional legal arrangements which are really intended for other purposes. A genuinely enterprise-based management of the programme, as needed in the very case of Airbus Industrie, is thus not available.

With Airbus Industrie, the choice of an independent form of enterprise under French company law led to giving the key position of chairman to a French manager, the Germans being thus left with the position of Supervisory Board president. Franz-Josef Strauss tried his utmost to make the best of this situation. Although the management corps is thoroughly international, the very fact of being located in southern France obviously makes the French element predominant in Airbus Industrie.

This unusual company form, however, has not only led to internal problems. As with Lufthansa, other airline companies were also sceptical. It is not an easy thing to sell an aircraft. The buyers expect good after-sales client service for the entire operating life of the plane—and this is a good 20 years.

They must be sure that there is a continuous supply of spare parts, and they expect the supplier company to be in a position to keep them fully up to date in the technical sector. "We need reliable partners", was Lufthansa manager Abraham's conclusion, and this expressed the views of all the airline companies.



The Fascination of Flying

Airbus Industrie, then, was obliged to create comprehension for its unusual company structure, and trust in the long life of the partnership. This was not easy, especially because the governments which were bearing the major financial risks were occasionally tempted to give the whole enterprise up. Yet the various problems were always solved, not least because the French tenaciously held on to the project they had chosen. Even the British came back on board, as Airbus finally took off, and are presently partners with a 20 per cent share in participation.

On September 28, 1972, the first prototype rolled out of the assembly hangar in Toulouse. "We had the great trump," observed the then chief executive Roger Béteille, "that having collaborated with the various national development teams, we had been able to exploit the most various concepts and experience, and we thus achieved an exceptional result." Technically, in fact, Europe works. Although production takes place in eleven locations spread out in six nations, everything fits in. When, for example, the English manufactured wings are assembled in Toulouse on to the tail section as prepared in Hamburg and St. Nazaire, the tolerance limits of the wing pinions are down to two-tenths of a millimeter. And these limits are maintained.

In time, however, the German partners came to the conclusion that the original division of tasks was no longer suitable. They felt their period of apprenticeship was up, and wanted more exacting jobs. But the French insisted upon producing the cockpit, a difficult task due to its electronic systems, and the British, even though by now they were only subcontractors, and not partners any more, wanted to keep wing manufacture due to the interesting aerodynamic specifications involved. The Germans did carry out a 35 per cent share of production, but this was simply considered blacksmith work by many aircraft constructors.

Lufthansa also made an important contribution to the European aircraft, even though it was hesitant in its orders. When the airline ordered its first Airbuses in 1975, it drew up a balance: it had invested 25,000 engineer hours in the development of the A300 and a further 6,000 engineer hours in maintenance systems. Fifteen hundred changes in the original technical specifications for Airbus were based on *Lufthansa* suggestions.

Despite everything, the French were good at creating the image of the Airbus being a French aircraft. It is assembled in Toulouse, and its buyers take

possession of it there. The work of the technicians in England, Germany, Holland and Spain is thus kept in the background, and is hardly mentioned. This fact has always irritated German engineers and managers.

The French aircraft constructors, however, have had steady political winds behind them. French presidents have not been ashamed to use state visits for discreet or express propaganda for Airbus. Furthermore the project has never been questioned in Paris, whilst the political debate in Bonn has frequently been behind queries as to whether Airbus production could not be improved. As Supervisory Board president, Franz-Josef Strauss often used his many foreign trips to give Airbus an airing ("without ever receiving travel expenses from us", as an Airbus spokesman has pointed out), although former Federal Chancellor Helmut Schmidt indignantly refused to act as a "commercial representative".

Grande famille or grande nation?

Nonetheless, Airbus has prospered. Three members of the Airbus family are already in the air: the A300, the A310 and the A320. And two further members will be starting service within two or three years: the A330 and the A340. Airbus Industrie is the second largest producer of civil aircraft, and is viewed by first-ranker Boeing as its primary competitor.

The Airbus managers make no profits, and Airbus Industrie must not change this, as it must show no profit and loss accounts. The partner enterprises must see to their own balance sheets, however, and especially in Germany where a private concern, namely Daimler, now has the Airbus helm under its control. It is high time that Airbus Industrie was made into a perfectly normal share company, with a management to take care of both authority and risk.

Yet where should such a company be located, given that a Europe Co. Ltd. is still not on the horizon? Should it be in France, and thus strengthen present French hegemony? Or in Germany, economically the strongest partner? Or perhaps in Luxemburg, which has no participation at all in the affair?

The French are still firmly determined to defend their position. They are determined to be the number one high-tech nation in Europe. They want to set the tune in air and space transport, and have accordingly occupied the key positions: the most recent General Director of the European Space Authority

ESA is French, the head of Arianespace, the marketing company for the European missile Ariane, is French, and the manager at the top of Airbus Industrie is French. Finally an incidental observation: the French trade unions also consider Airbus Industrie a French institution with international connections. They have refused German and British employees union representation, which would have been ideal given the European nature of the enterprise—and this, of course, much to the approval of the management which would hardly value such extra moves. The French magistrature upholds this behaviour, as French law obliges it to, and the European spirit is thus well bridled.

Two years ago, when the German demand was made to establish a second Airbus assembly unit in Germany, Paris first tried not to hear the request; then the French voiced the conclusion that the Germans were not in a position to assemble the Airbus.

There followed a battle of expert testimonials in which it was proved whether—or not—it were economic or uneconomic to build Airbuses in Hamburg. All attempts to clear the matter up were, of course, in vain. The heart of the matter was not whether some 20 million marks could be saved. The point was to document that German technical ability was equal to French, to curtail French hegemony somewhat, and to make clear to the world that Airbus was not a French but a European aircraft, which could also be assembled and delivered to its buyers in Hamburg.

The eventual decision to set up an Airbus assembly line in Hamburg was a political decision which—as is normal in politics—was the compromise result of a trade off. The compromise, however, was affected by factors that had nothing to do with Airbus: the French were to be incorporated into a common helicopter project which for them would mean system leadership. The decision was not very rational from the enterprise point of view; Franco-German division of tasks would only have made sense if the entire assembly of the short-tail aircraft, that is, the A320 and A321, had been moved to Hamburg, or if the assembly of the models currently in the development stage, the A330 and A340, had been concentrated in Finkenwerder. The decision was thus not really a European decision. It was the result of Germany's ambition to a larger role and of the proud attachment of the French to their *grande nation*.