Chaillot Papers

- 40 -

July 2000

FROM COOPERATION TO INTEGRATION: DEFENCE AND AEROSPACE INDUSTRIES IN EUROPE

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CHAILLOT PAPER 40

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Paris - July 2000

CHAILLOT PAPER 40
(*Translated from the French; the French version of this paper is also available*)

The Institute for Security Studies of Western European Union

Director: Nicole Gnesotto

ISSN 1017-7566

Published by the Institute for Security Studies of Western European Union and printed in Alençon, France, by the Imprimerie Alençonnaise.

Contents

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This paper has benefited largely from discussions with representatives of industry and government who have been directly involved in the recent restructuring process. The author is particularly grateful for their support. Thanks are also due to Sophie Divet and Andrew James for their help in the production of this paper.

Preface

Over the last two years, two processes have considerably modified the European strategic landscape: the development of a common security and defence policy within the European Union on the one hand, and accelerated restructuring of defence industries on the other. On one side there has been political determination, at the highest level among the fifteen member countries, to make progress – which now has to be realised – and on the other a pragmatic and revolutionary bottom-up integration that the constraints of the market have now made irreversible. A priori, these two movements towards a greater Europeanisation of defence have gathered pace independently of each other, even differently, with industry and governments each following their own logic, the first in an integrationist, transnational manner, the second intergovernmentally and sovereignly. Is the logic of the market in conflict with the logic of sovereignty, or can one expect to see political upheavals in the field of European defence along the lines of what has already happened in industry?

European governments admittedly sometimes do decide to drive things forward in the field of armaments: thus the decision by the United Kingdom to buy the European *Meteor* rather than an American missile, Germany's decision regarding the future Airbus military transport aircraft and, rather more on the institutional front, the Letter of Intent (LoI) signed by the defence ministers of the six major arms-producing countries. However, what is novel in this twin movement towards greater Europeanisation of defence matters is undoubtedly the reversal of roles: it is no longer governments that are steering European cooperation on armaments but industry itself that is moving ahead of political constraints and adapting them, precipitating change and now acting as a driving force in the implementation of a common defence.

In this *Chaillot Paper*, Burkard Schmitt, a research fellow at the Institute and responsible for its defence industries task force, makes an authoritative analysis of recent industrial restructuring in the aerospace and defence sector. The creation of EADS heralds a revolution in European industrial affairs whose political repercussions are also potentially revolutionary. In the face of a supply side of the

defence industry that is increasingly transnational and integrated, can the demand side remain at the stage of *ad hoc* cooperation between independent States? Faced with a common manufacturer, will not governments be obliged to consider common military planning, equipment replacement dates and research budgets, and therefore a common strategic concept? In the long run, will not the integration of European policy on defence issues be naturally bound up with accelerating industrial integration?

Published at a crucial moment for European developments in the field of defence, this *Chaillot Paper* opens the way for fresh thinking on common defence. Many instances of industrial restructuring illustrate the validity of certain founding principles of the ESDP: the pooling of assets and capabilities, setting a priority on capabilities rather than institutions and the strengthening of a European defence capability as the precondition for a true transatlantic partnership. Yet in other cases the industrial model is at variance with the formulas adopted at this stage on the political and institutional level. The hard core is taking precedence over the community of 15; integration is happening in an *ad hoc* way, outside the Treaty, and two or three large groups are playing a leading role; the integration of structures and capitals is taking priority over the juxtaposition of means and political will. Nothing, of course, proves that it will one day be decided to create a 'European army' following the model of industrial integration. But neither does anything now preclude thinking on that possibility.

Nicole Gnesotto

Paris, June 2000

Introduction

It is trite to remark that the defence industry is not like other industries. Because of the nature of its products, economic and commercial factors are not the only influence on the sector: politics and national security are also critical.

For the main armaments-producing countries, this industry is strategic in the sense that it plays a major role in their national security and can play a non-negligible part in international affairs: a State that has a defence industrial capability on its territory can by itself develop weapons systems. It has greater control over sources of supply for its armed forces and has at its disposal an instrument with which to evaluate military technological level of its allies and adversaries. Through participation in cooperative projects it can influence international industrial restructuring and decisions on joint procurement. Last but not least, it can use arms exports as a tool in its foreign and trade policy.

The political and strategic importance of defence industries is reflected in the distinctive relationship they have with their national government. Defence companies must define their strategy largely in accordance with national policies: for public defence companies governmental influence is obvious in that it represents both supply and demand, acting as a producer and as a customer. But its role is also preponderant *vis-à-vis* private companies: as a customer (and sponsor), it defines the characteristics of products and has a direct influence on firms' technological know-how and production capabilities. As a regulator, it defines export markets, keeps a watching brief on mergers and acquisitions and intervenes directly in internal production and management procedures.

With its close links to the State, the defence industry has traditionally been a national industry. Even though, in certain sectors, exports and international cooperation have become commonplace, none the less until the fall of the Berlin Wall the traditional model of defence company was a nationally based firm whose primary objective was to meet the requirements of national armed forces, whatever the cost.

By completely changing conditions in the armaments market, the political, economic, financial and technological challenges of the post-Cold War era

have demolished that model. The symbiotic relationship between States and defence industries has been gradually replaced by new forms of partnership that (more) clearly distinguish between government and business. Whereas the former behave increasingly like 'real' customers, the latter have been obliged to adapt to the logic of the market economy and to embark upon a wide-scale process of concentration and rationalisation.

In Europe, this movement has gradually extended beyond borders, turning international cooperation into true transnational integration. Of course, internationalisation is happening at very different speeds from one sector to another. Whereas it has hardly begun in land systems and naval shipbuilding, it is far advanced in aerospace and defence electronics. In these high-technology businesses, the industrial landscape has changed radically in less than two years. The speed of this change is all the more remarkable since transnational restructuring has taken place before the setting up of an appropriate political and regulatory framework. Indeed, there is neither a European company status, nor common fiscal or social law. At the same time, a European security and defence policy worthy of the name is still a long way off, and governments have hardly begun to harmonise their procurement processes and security regulations. The fact that companies have nevertheless ventured into Europeanisation shows just how powerful the new economic and financial constraints are.

Following the acquisition of GEC Marconi by BAe, the creation of EADS and some sector-specific consolidation, the restructuring of the aerospace and defence electronics industry in Europe now seems to have been largely accomplished. The moment has therefore come to take stock of the situation. The aim of this *Chaillot Paper* is to explain why and how these industries have restructured and on the basis of this to deduce the political challenges that governments will face.

The first chapter looks at the main trends that have characterised the armaments sector since the end of the Cold War. This review permits a better understanding of the driving forces behind industrial restructuring. The reaction of defence companies in general, those in the high-technology areas in particular, is then explained.

In the second chapter, certain characteristics of the aerospace industry are analysed in a bid to explain why it is especially far down the road to

internationalisation. The path that restructuring has followed is then retraced: the failure of the project to create a single European enterprise (EADC) and the main actors' strategies are examined. Although companies base their decisions essentially on economic and financial criteria, political decisions and psychological reactions are far from irrelevant: only German bitterness at BAe's 'treachery', on the one hand, and the pragmatism of the Jospin government regarding privatisation, on the other, made the marriage of Dasa and Aerospatiale-Matra possible. The resulting couple, EADS, which was subsequently enlarged to include CASA, is analysed in detail in the third part of the chapter. Merging three national champions and bringing together the greater part of the high-technology defence activities of three countries, the creation of this group represents a quantum leap towards the establishment of an integrated European defence industrial and technological base, and a major political event. The aim of this section is to show both the importance and the difficulty of finding a fair balance between the partners, and to consider the challenges with which a transnational group of this size will be faced.

The third chapter deals with the consequences of industrial restructuring for European governments. It would of course be too ambitious (and in certain cases too soon) to attempt to evaluate in this paper all the current initiatives in the field of armaments. Here, the emphasis is put on the LoI (Letter of Intent) process, which aims specifically at facilitating industrial restructuring. After an analysis of the first concrete results, an attempt is made to determine the extent to which the creation of a group like EADS and the LoI process could be mutually reinforcing.

While transatlantic cooperation is not often mentioned, it is after all always an underlying factor. It is evident that recent industrial restructuring fundamentally changes the relationship between the United States and Europe in this area: as both competitors and partners, the European groups are now of a sufficient size and financial and technological weight to play in the same league as the American giants. This balance will permit transatlantic regrouping on an equal footing and the links between European and American companies will become closer despite the persistence of many political and regulatory obstacles. Accordingly, transatlantic cooperation is touched upon in this paper and, in recognition of its growing importance, a separate *Chaillot Paper* will be devoted to the subject this autumn.

Chapter One

MAJOR TRENDS

I.1 A difficult environment

The environment in which defence industries operate has changed radically during the last decade. On the one hand, the NATO countries have greatly reduced their national defence budgets, which has resulted in a considerable fall in orders. Export markets have also contracted, due to both the strategic context and the economic difficulties of some major customers. On the other hand, defence industries face spiralling research and development (R&D) costs, and therefore a continuous rise in fixed costs. At the same time, commercial technologies are increasingly making inroads into defence industries. As for governments, these are tending more and more to behave like real customers.

Reduced budgets

Since the end of the Cold War, European countries have cut their defence budgets considerably. Between 1989 and 1998, the defence expenditure of the three 'big' Europeans (France, Germany and the United Kingdom) have fallen by, respectively, 12, 24 and 28 per cent.[1] The rate of decline has slowed down since 1995, but the trend has not reversed (see Annexe 1). With the exception of the United Kingdom, reductions have above all affected equipment budgets (procurement as well as R&D), which directly concern defence industries (see Annexe 2).

Comparison with the situation in the United States highlights the significance of European reductions: the Americans have also made a large cut (36 per cent) in their defence expenditure, but it none the less remains very much higher than that of the Europeans. On top of that there are structural differences between US and European budgets: the fall in investment credits in the United States has affected mainly equipment acquisition, whereas funding of research, studies and development has

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1 *SIPRI Yearbook 1999* (Oxford: Oxford University Press for SIPRI, 1999), p. 298.

remained at a high level. The United States today devotes over three times as much to R&D as do all of the European members of NATO plus Sweden ($38 billion compared with $11 billion). If, in addition, one takes into account the numerous duplications that result from the fragmentation of European expenditure, one understands the disadvantages that European industries have *vis-à-vis* their American competitors.

Exports have only been able to compensate in part for shrinking domestic markets. After the sudden fall in world demand at the beginning of the 1990s, armaments exports have stabilised since 1995, although at a lower level than at the end of the 1980s. European companies' share of the world market has risen considerably, but turnover in exports is stagnant. The uncontested champion in arms exports since the beginning of the 1990s has been the United States, with nearly 50 per cent of sales in 1998. Given that the Pentagon signed contracts worth $8.5 billion for 1998 alone,[2] this American domination will no doubt persist for at least the next ten years (see Annexe 3).

Spiralling costs

The slashing of defence budgets is in striking contrast with the rise in the development costs of weapons systems that are ever more sophisticated and complex. This phenomenon is not new: it goes back to the time of the arms race during the Cold War, which was a competition not only for quantity but also quality, involving a search for technological superiority and thus leading to a huge rise in the cost of programmes. Studies of the evolution of the cost of American equipment show, for example, that the cost of tanks (M-60 and M-1A1 respectively), without taking inflation into account, rose by a factor of three between 1960 and 1980. As regards combat aircraft, the price of an F-15 brought into service in 1976 was seven times that of an F-86 (1950) in real terms. The unit cost of an F-16, which was developed in the 1970s, is today around $30 million, that of an F/A-18F is $50 million and that of the future F-22 will be over $100 million.[3] The same spiralling of prices can be seen in Europe: in France, for example, the overall cost of the

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2 Ibid., p. 423.

3 See Charles Grant, 'Global defence industry', *The Economist*, 14 June 1997, pp. 1-18 (survey).

Mirage III (entry into service 1960) programme was FF7.74 billion (at 1992 prices), that of the *Mirage* F-1 (entry into service 1973) FF26.7 billion, *Mirage* 2000 (1983) FF104.5 billion and that of the *Rafale* is put at over FF202 billion.[4]

One thus notes falling equipment budgets and rising development costs. Paradoxically, budgetary restrictions contribute further to the rise in costs. They lead not only to postponements and the spreading of work over time but also to considerable reductions in the size of programmes. This in turn results in a contraction of companies' activities and a consequent rise in unit production costs. For the NH-90 helicopter, for example, it is reckoned that postponements, spreading of work and the lowering of targets resulted in a rise in the unit price of over 40 per cent (from FF90 to 129 million) for the army version and nearly 30 per cent (from FF144 to 184 million) for the naval version.[5] For the same reasons, the unit cost of the *Rafale* rose from FF349 to 688 million in eight years.[6]

The explosion of costs has led inevitably to a reduction in the number of programmes: in the United States, six types of fighter aircraft were introduced in the 1950s, two in the 1960s and two in the 1970s. For their next combat aircraft, the requirements of the three armed forces will be met by adapting a single basic model, the Joint Strike Fighter (JSF). In Europe, it is considered that this is the last time that several combat aircraft programmes will be able to coexist (*Rafale*, *Eurofighter* and *Gripen*). For companies, this development has serious consequences: as the number of programmes falls, the impact of not being selected for a given project becomes increasingly dramatic. Non-participation in a major programme may even oblige a company to leave the sector.[7]

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4 Paul Quilès and Guy-Michel Chauveau (French *députés*), 'L'industrie de défense : quel avenir ?', Report 203, Defence Committee, National Assembly, Paris, 1997, p. 43.

5 *Le Monde*, 21 January 1999.

6 Programme cost divided by the number of aircraft. The selling price is however, much lower, and is put at around FF320 million. See Jean-Paul Hébert, *Les exportations d'armement. A quel prix ?* (Paris: la Documentation française, 1998), pp. 79-98.

7 The number of equipment orders placed for the German Army, for example, is so modest that the company IWKA was obliged to sell its defence division to Rheinmetall because it was not a member of the consortium that won the contract to produce the MRAV. In the United States, the fact that it had been eliminated from the competition for the JSF was a key factor in McDonnell-Douglas's decision to merge with Boeing.

New trends in technology

The end of the Cold War resulted in a radical review of defence strategies. This review of course relied on an analysis of threats but also on the progress being made in defence technology. From this point of view, strategic thinking is today largely dominated by the Revolution in Military Affairs (RMA). This US concept envisages the integration of new intelligence, surveillance and reconnaissance (ISR) and command, control, communications and computing systems (C4) systems, and long-range precision weapons, into a single 'system of systems' that gives complete dominance of the battlefield.[8] The key RMA technologies are digitisation, data processing and global positioning. Consequently, space and cyberspace are becoming dimensions in the conduct of war in the same way as land, sea and air.[9]

RMA-related systems are based on the combination of electronics, information and telecommunications. One of the characteristic features of these technologies is their commercial origin: to a large extent they have not been developed by defence companies but by civilian firms. In the key area of 'digital warfare', one thus sees an important flow of technology from the civil to the military sectors, overturning the 'spin-off paradigm'[10] between the two areas.

The growing role of civil technologies in the RMA represents one of the most fundamental changes that the defence industrial base has ever experienced.[11] On the one hand, companies that produce 'classical' armaments must increasingly make use of technologies that they themselves lack or that they are developing less rapidly than companies in the

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8 Robert Grant, 'The Revolution in Military Affairs and European Defence Cooperation', Konrad-Adenauer-Stiftung working paper, St-Augustin, June 1998; 'The Revolution in Strategic Affairs', *Adelphi Paper* 318, April 1998.

9 Charles Grant, 'Transatlantic alliances and the revolution in military affairs', in *Europe's defence industry: a transatlantic future?* (London: Centre for European Reform, 1999), p. 67; Laurent Murawiec, 'La révolution dans les affaires militaires aux Etats-Unis : puissance de l'innovation', *Défense nationale*, July 1998, pp. 62-77.

10 Frédérique Sachwald, 'Defence Industry Restructuring: The End of an Economic Exception', *Les notes de l'IFRI*, 15bis, Paris, September 1999, p. 17.

11 See Jacques Gansler, 'The Changing Face of Arms Production and Cooperation – Technological Trends', ESAN Projekt: Arms Production and Cooperation – Projektpapier 5, SWP-AP 3002, Ebenhausen, January 1997.

commercial markets. On the other, electronics systems are becoming increasingly important in comparison with platforms. Consequently, military electronics and systems integration are the most profitable markets for defence enterprises. Last but not least, it is becoming increasingly difficult to define defence industries. The most innovative contributions come from sectors on the periphery of the traditional defence industry, such as telecommunications, electronics, optronics and aerospace. It is the latter that have become the true strategic sectors and the heart of the modern armaments industry.

The 'new' customer

The entry of commercial technologies into the world of defence is explained by the great capacity for innovation found in the civil sectors concerned, on the one hand, and by financial considerations on the other. These two aspects are of course linked: as the time between successive generations of products in electronics, telecommunications and data processing is today only of the order of four to five years, it is impossible to finance the development of purely military components in this domain. Indeed, the latter are produced in very small quantities and would therefore be much too expensive.

The use of commercial components in weapons systems depends above all on countries' procurement policies: it is only possible if suppliers do not have rigid military specifications imposed on them. In this respect, one notes a growing flexibility on the part of the authorities concerned, who increasingly make use of commercial components in order to reduce the cost of military programmes. This tendency forms part of a general change of governments' procurement policies, who are increasingly behaving like 'true' customers. Faced with budgetary constraints, the defence sector is moving from a 'regulatory mode' to a 'system that is more industry-oriented, more concerned with economic considerations'[12] in which price is becoming a major criterion for decision-making compared with technological performance. Countries are now striving to achieve a lowering of armaments costs and thereby to reverse the continuous upwards trend of recent decades. The new rules of the game are: competition between

[12] Jean-Paul Hébert, 'Armement : le choc de l'Europe', *Ramsès 99*, p. 232.

manufacturers, participation by industry in the funding of R&D, a demand for gains in productivity similar to those in the civilian sector and a responsibility of industry to ensure quality and manufacturing costs.[13] This reorientation has led to new programme management methods and the reorganisation of procurement systems. Increasingly, the relevant agencies are following commercial practice, inventing new forms of cooperation with their suppliers and reforming their long-term planning. The 'smart procurement' initiative in the United Kingdom and the reform of the DGA in France are good examples of this.[14]

This reorientation is a sign of a general transformation of the relationship between government and industry. Today it is generally recognised that the State can no longer be a major industrial actor. Defence is of course a specific business in which the role of governments as customer, sponsor and regulator is still preponderant. However, even in this area for several reasons the State is becoming less predominant: crucially, the new strategic industries all have important commercial activities, and depend only partly on the armaments market. In addition, the double shock of a lack of public finances on the one hand and the explosion of development costs on the other have caused governments to redefine their relationship with industry. Even in countries that have a strong tradition of State intervention, governments have followed the path of privatisation of defence companies, because their budgets alone are not capable of sustaining them and companies' status would not allow them to adapt to the dictates of commercial market nor to cope with increased competition. 'Withdrawal' and repositioning strategies certainly vary from one country to another, yet it is clear that all governments are distancing themselves more from the defence industry and are delegating strategic and economic responsibility to companies. In assuming that responsibility, the latter are giving absolute priority to economic and financial criteria, and increasingly consider their national market as just one among others. As a result, the relationship between supply and demand gives rise to new forms of partnership, with a clearer distinction between those who govern and those who do business.

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13 See Robert Pandraud (*député*), 'L'Europe et son industrie aérospatiale', report 3219, European Union delegation, National Assembly, Paris, 1996.

14 See Peter Norris, 'Smart procurement goes into action', *Defence Procurement Analysis*, Spring 1999, pp. 13-15; Philippe Le Pape, 'La France et le Royaume-Uni face aux retards et aux surcoûts des programmes d'armement', *Arès*, 42, March 1999, pp. 45-64.

I.2 Industry's reaction

Faced with these challenges, defence industries are increasingly obliged to subscribe to the logic of the free market economy. The drive for greater productivity and broader market access has become the central plank of companies' strategies and has done away with the traditional model of defence company, whose sole aim was to meet the requirements of the armed forces of the nation whatever the cost of the equipment. This phenomenon of globalisation was especially bound to affect Europe, given its historically small and fragmented national markets.

At the risk of over-simplifying things, one can say that defence companies' strategies in recent years have been characterised by four main features: concentration, portfolio reshaping, rationalisation and internationalisation.

Concentration

Concentration has become an essential means of reducing duplication, pooling resources devoted to R&D and increasing market shares.[15] It is also a means by which companies can expand their product portfolios to cover a sufficient number of programmes and reach a critical size to sustain the financial investment that is necessary in the modern defence industry. Since the end of the 1980s, the defence industry in Europe first saw national concentration, a process that happened at different speeds depending on the country and the sector. In Germany, for example, concentration in the land systems sector led only in 1999 to the creation of a large duopoly centred on Rheinmetall and Krauss-Maffei, whereas in aerospace Dasa became the national champion at the beginning of the 1990s. In France, on the other hand, land systems and naval construction have always been concentrated in the former arsenals of GIAT and DCN, whereas consolidation in electronics and aerospace only ended in 1998, with the privatisation of Thomson-CSF and the merger of Aerospatiale and Matra.

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15 Op. cit. in note 10.

Portfolio reshaping

Companies have adopted widely varying strategies to redefine their range of defence activities: while some have quite simply left the business by selling off their defence divisions, others have increased their presence in defence markets through new acquisitions. Among the groups remaining in the sector, one notes not only a concentration on core businesses but also the transformation of platform builders into systems integrators, and of systems manufacturers into service providers. These two transformations are reactions to changes in the market. The more complex weapons systems become, the more critical integration of the various subsystems becomes as regards technology and the creation of value. At the same time, defence companies are widening their range of activities by taking over certain tasks from the armed forces, notably in the field of maintenance and logistics. This redrawing of the boundary is illustrative of the new partnership between customer and supplier that is appearing: the former is privatising certain activities in order to benefit from companies' savoir-faire in commercial and industrial management, the latter gains from it partial compensation for the fall in equipment orders.[16]

Rationalisation

The third feature of companies' strategies has been internal rationalisation. In order to improve efficiency and profitability, most companies have undertaken a thorough overhaul of their operating procedures and strategic cost-management. They have had to adopt production techniques used in the commercial sector in order to reduce costs and improve production times. They are thus seeking to optimise the organisation of their work using modern techniques such as concurrent engineering and design to cost.[17] The

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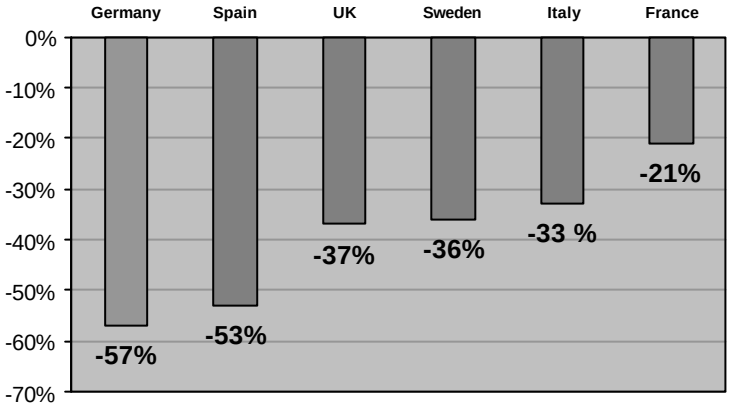
16 See, for example, the Public-Private Partnership in the United Kingdom or the framework agreement between the *Bundeswehr* and German defence companies, *Handelsblatt*, 5/6 May 2000.

17 The concurrent engineering approach emphasises the importance of involving, from the beginning of development of a product, all expertise normally required during the different phases of the life of a product: design, industrialisation, manufacture, testing, maintenance and operation. Bringing together all these skills in a project team can help to reduce design, manufacture and maintenance costs, and also cut overall time from design to manufacture.

systematic use of new computer-based technologies and information systems, as well as modern simulation and modelling methods can also deliver greater efficiency, in particular in the development and manufacturing phases.

Reacting to shrinking markets, rationalisation has also meant a reduction in over-capacity and the slimming down of structures, and, as a major consequence, lay-offs. This has particularly been the case where rationalisation has followed concentration. The number of job losses in the defence sector during the 1990s shows just how painful this process has been.

European defence industry employment 1990 to 1995[18]



Sources: SIPRI, Defense News Research

In certain sectors, efforts to rationalise have had remarkable effects, with a clear improvement in companies' profitability.[19] It is however true that there is still much duplication between European countries, and national markets are too small even for a consolidated industrial base.

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[18] The figure for Spain covers the period 1990-98. For other countries, redundancies also continued after 1995. Between 1990 and 1999 the number of employees fell from 280,000 to under 100,000 in Germany, from 25,500 to 14,225 in Sweden and in Italy from 56,000 to 28,000. For other countries figures since 1995 are not available. See *Defense News*, 23, 14 June 1999.

[19] See, for example, on reforms within British Aerospace, 'From Lean Manufacturing to Systems Integration', in 'Aerospace Europe – 21st Century Powerhouse', *Aviation Week & Space Technology*, 5 October 1998, supplement, pp. 22-30.

Internationalisation

The internationalisation of defence industries is therefore essential, but, like national consolidation it is progressing at different speeds from country to country and sector to sector. Because of its very specific nature and the many resultant political obstacles, internationalisation of the defence industry in Europe has for long been limited to cooperation among national actors on specific programmes. Some of these projects have led to lasting alliances, which have gradually been transformed into common structures. Under the pressure of new financial and economic constraints, these structures have in the last few years been turning into true transnational joint ventures. At the same time, the major groups are trying to penetrate new export markets by buying into local firms. These cross-frontier link-ups are an innovation in an industry that has traditionally been organised on a national basis; they may be seen as additional proof of the globalisation of the defence industry.

Chapter Two

THE CHAMPIONS OF INTEGRATION: AEROSPACE AND DEFENCE ELECTRONICS

II.1 The aerospace and defence electronics industries' leading role

Aerospace and electronics have a dominant position among defence industries. They are high-technology industries that produce the key systems for the conduct of modern warfare, and R&D expenditure in them is particularly high.[20] The importance of these high-technology industries is also seen in the size of companies: in 1998, prior to the wave of European consolidation, 32 European firms appeared among the 100 biggest defence companies in the world; of these 24 were in aerospace and defence electronics (See Annexe 4).

Aerospace and defence electronics are also the areas in which internationalisation has made most headway. Over the last few years there have been a growing number of cross-border mergers and acquisitions. Aerospace champions were in particular the first to create truly transnational companies. The process began at the beginning of the 1990s, when national champions started to merge divisions and subsidiaries in specific sectors, and today even extends to parent companies. The reasons for this rapid integration are historic, economic and political.

Experience of cooperation

Aerospace and defence electronics companies have a long tradition of cooperation.[21] They have for long been linked through a vast number of joint projects, and a significant proportion of their turnover comes from

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[20] On the high expenditure on R&D in the aerospace industry compared with other high-tech sectors, see *OECD Stan Database for Industrial Analysis*, 1998, and 'OECD-Stan, OECD-Anbed, Berechnungen des ZEW', Mannheim, 1999.

[21] See Burkard Schmitt, 'Defence Industry Cooperation in Europe', in *The Changing European Defence Industry Sector – Consequences for Sweden?*, National Defence College, Stockholm, 2000, pp. 48-67.

international cooperation.[22] Over the years their arrangements have become both more numerous and more intensified.

The first cooperative programmes had no common structures at all. They were organised solely on the basis of task-sharing. Each industrial partner was responsible for a precisely defined share of the development and production work, and commercialisation was done on the basis of a simple distribution of markets. This type of cooperation was current in the 1960s and 1970s (for instance, *Jaguar* and *Transall*).[23]

The next stage was the setting up of semi-structured projects. In such cases development and production work is also distributed between the partners. Commercialisation, after-sales business and possibly programme coordination, on the other hand, are done by a common subsidiary, which represents the only interface with the customer. It may be responsible for just one or several successive programmes. The subsidiary is either subject to the law of one of the participating countries (e.g. Eurofighter GmbH) or is set up as a French (GIE, e.g. Euromissile) or European (GEIE, e.g. Eurosam) *groupement d'intérêt économique*.

The limits of this type of cooperation are, however, being reached: on the one hand, it has made possible the sharing of fixed R&D and industrialisation costs, and longer production runs. On the other, each participant has looked on the joint project as an opportunity to improve its own savoir-faire and add to its range of technological capabilities. The perverse result of this approach has been new duplication and overcapacity. Added to that is a complexity of administrative and industrial organisation that has created considerable extra costs for the coordination and management of joint programmes.

Nor are the commercial structures of such types of cooperation satisfactory: the G(E)IE lies somewhere between a simple cooperation agreement and a

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22 Of the 59 European armaments programmes launched since the beginning of the 1950s, 24 concerned aeronautics and 16 missiles. Cooperation is much lower in naval shipbuilding (3 programmes) and in land armaments (12 programmes, but only one armoured vehicle programme, the MRAV infantry combat vehicle). For a full list of collaborative programmes, see Pierre Dussauge and Christophe Cornu, 'L'Industrie française de l'Armement', *Economica*, 1999, p. 118.

23 Ibid, pp. 157-166.

company, which has the advantage of combining the flexibility of the first and the legal personality of the second. It is, however, only a 'simple legal shell for cooperation whose competence is limited to the exercise of an auxiliary activity'.[24] It can neither directly exercise management powers, nor does it have its own capital structure. Its capacity to recruit personnel is also restricted. As a result, it cannot hold shares nor rationalise the work of its industrial participants. In short, it is an instrument that is ill-suited to meeting the new economic and financial challenges.[25]

Hence the development of more integrated structures. During the 1990s, joint venture companies emerged. These companies are common subsidiaries of two or more parent companies in charge of a whole sector of activity.

Year	Name	Parent company
1990	Matra Marconi Space (satellites)	Matra, GEC-Marconi
1991	Eurocopter (helicopters)	Dasa, Aerospatiale
1994	TDA (missile propulsion systems)	Dasa, Thomson-CSF
1996	Thomson Marconi Sonar (sonars)	Thomson-CSF, GEC-Marconi
1996	Matra BAe Dynamics (missiles)	Matra, BAe
1998	Alenia Marconi Systems (electronics)	Finmeccanica, GEC-Marconi
1999	Astrium (satellites)	BAe, Dasa, Aerospatiale-Matra[26]

Joint ventures are not limited to a particular programme, nor to a fixed period of time. They are 'true' companies resulting from the merger of existing divisions or subsidiaries. Covering all of a sector, the activities of joint ventures can be both civilian and military (e.g. Eurocopter). They often take the form of holding companies: each partner organises its own activity within the partnership in a company subject to its national law. These activities are contributed to a holding company created for that purpose and

24 In the original 'simple coquille juridique de coopération ayant une compétence limitée à l'exercise d'une activité auxiliaire', Jean-Louis Scaringella, 'Les industries de Défense en Europe', *Economica*, 1998, p. 132.

25 WEU Assembly Document 1623, 'European armaments restructuring and the role of WEU', Report submitted to the Defence Committee by Mr Colvin, Rapporteur, 9 November 1998.

26 Astrium emerged from the integration of Dasa's satellite activities in Matra Marconi Space. The latter's shareholding changed following the takeover of Marconi by BAe and the merger of Aerospatiale and Matra (see below).

subject to the regulations of one of the participating countries or that of a third country (e.g. Matra BAe Dynamics).[27]

Joint ventures have wider economic competence than that of G(E)IEs. Their holding structure preserves the apparent national identity of each entity while allowing it to coordinate marketing, exports, finances and strategy under a single management. Moreover, the common ownership of two companies makes it possible at last to abandon the industrial rationale of the principle of *juste retour* that has traditionally complicated international cooperation.[28]

On the other hand, industrial rationalisation continues to come up against the question of national considerations. Until now, neither the governments nor the companies concerned have been prepared for true specialisation, which implies abandoning certain technological capabilities. The former have held back for reasons of national security, the latter for reasons of competitiveness *vis-à-vis* partners who have *de facto* always been competitors in other sectors.

The consequence of these persistent reservations, the existence over a long period of 'loose' arrangements and the variable geometry of European cooperation is that capabilities and know-how are still widely duplicated, as the table opposite shows.

Of course the merger of parent companies alone cannot do away with all of this duplication. Indeed, the defence industry is not completely free in the distribution of capabilities and the organisation of work, as governments intervene directly using their regulatory power. None the less, the integration of parent companies is a precondition for internal rationalisation of joint ventures: national champions have never ceased to regard

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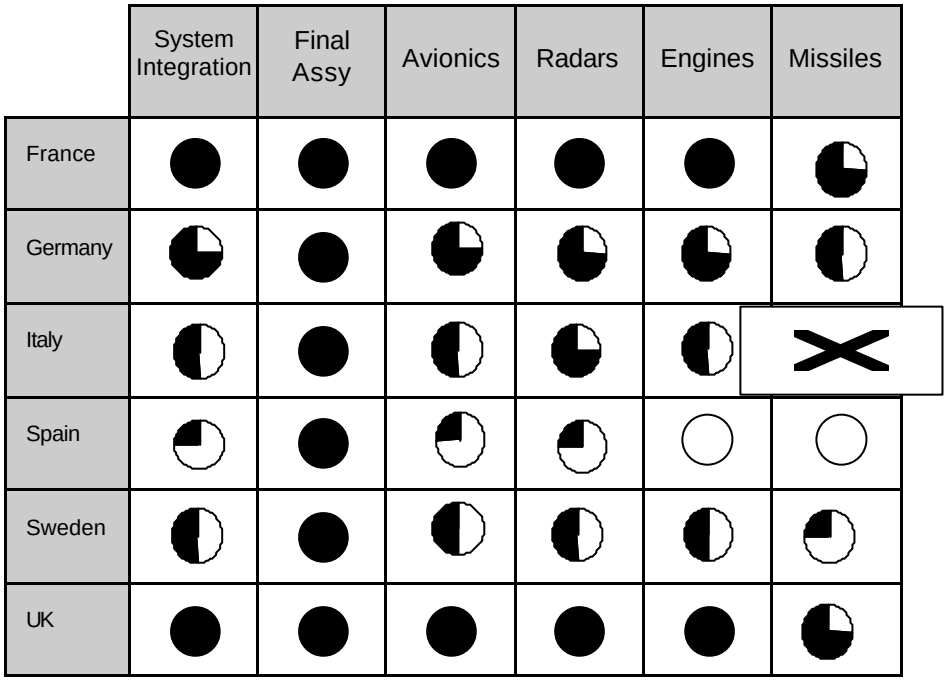
27 On joint ventures in general, see Viveca Bjurtoft, 'Joint ventures and their role in European defence industry restructuring – the case of aerospace', The FIND programme, FOA, Stockholm, December 1998; for an analysis of specific joint ventures, see for example Björn Hagelin, 'Saab, British Aerospace and the JAS 39 Gripen Aircraft Joint Venture', in *European Security*, vol. 7, no. 4, Winter 1998, pp. 91-117; Nicholas Franks, 'Corporate Mergers – The Matra Marconi Space Experience', in *RUSI Journal*, August 1997, pp. 31-5.

28 According to the principle of juste retour, companies participating in a cooperative project are awarded a share of the work that corresponds to the nearest decimal point to the annual financial contribution made by their respective governments.

subsidiaries integrated into joint ventures as ‘members of their family’. In these conditions, the search for a balance between partners is essential and results in a distribution of posts and workshares that has more to do with national sensibilities than with economic rationale. What is more, joint ventures are responsible for day-to-day management but depend on their parent companies for strategic decisions. As these decisions normally require unanimity, this method becomes very complex if several industrial partners are involved who do not share the same strategic interests. To optimise the internal working of joint ventures, it is therefore essential to reduce the number of parent companies.

Duplication of assets and skills in European aircraft industries



Source : A.T. Kearney Analysis

Raising the level of integration to that of national champions also makes it possible to bring down overheads, which are particularly high in this sector due to the complexity of international collaborative networking. Added to this are important economies in the fields of marketing and the

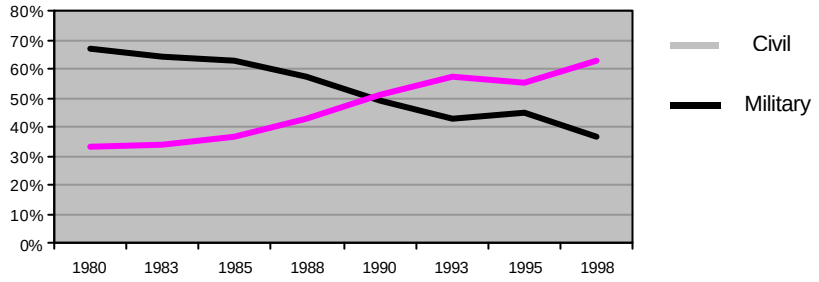
centralisation of purchasing, etc. All of these arguments have existed for a long time of course, but the new market conditions give them an entirely new significance.

Long experience of cooperation has thus prepared the ground for mergers between parent companies: firstly, companies are in the habit of working together. Second, they have set up a whole network of joint structures that has been an excellent starting point for further consolidation. Finally, this experience has heightened awareness of the weaknesses of sector-specific *rapprochements* and the necessity to take integration to a higher level.

Predominance of the civil sector and the success of Airbus

The restructuring of aerospace and defence electronics has been encouraged by the growing role of the commercial business in these industries. The reasons for this evolution are, however, different: in defence electronics, it has been a strategy aimed at increasing civil activities to compensate for the fall in military orders. The potential dual-use nature of many technologies and their considerable spillover effects facilitate diversification. In aerospace, commercial markets are even more important. Thus, it is incorrect to speak of a defence industry *sensu stricto.* Whilst its origins are military, and the strategic significance of its defence activities cannot be questioned, the civil business has become increasingly important.

EU Aerospace industry civil/military turnover 1980 to 1998

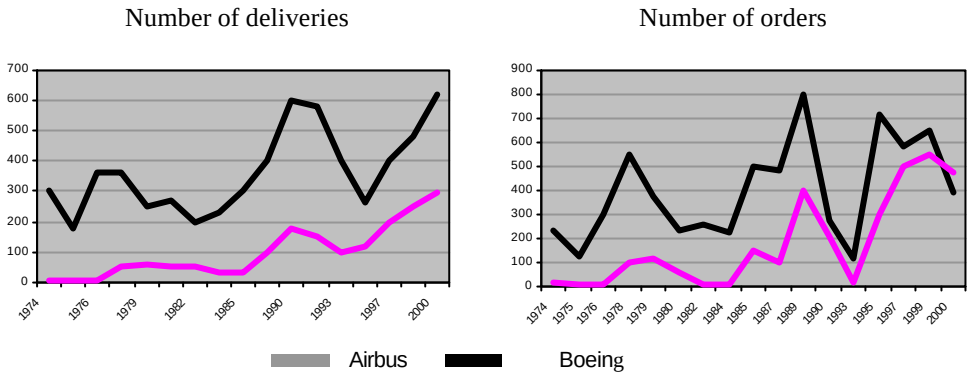


Source : AECMA

This is due to the strong growth of civil aviation in general, and to the huge success of Airbus in particular. Starting from nothing thirty years ago with very varied sites and partners, the European aircraft manufacturer has

achieved success in very competitive markets. In 1999, Airbus's order book was for the first time in its history stronger than that of Boeing. Even if that year is not typical as a result of the difficulties being encountered by the Seattle company, it shows that Airbus is now entirely comparable to Boeing.

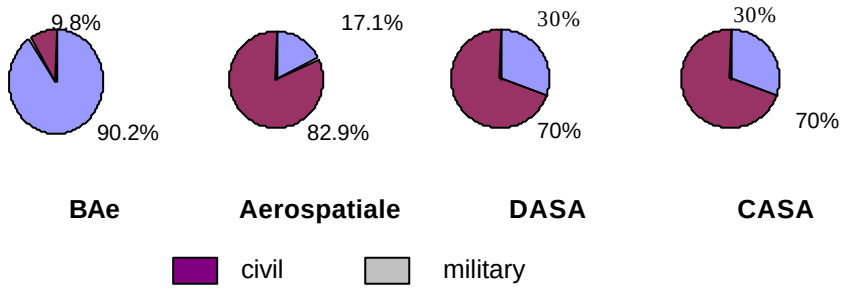
Airbus versus Boeing (100+ seat aircraft)



Sources : Boeing, Airbus

The success of Airbus is reflected in the proportion of civil and military activities of the major European groups. Among Airbus's partners, only BAe (now BAE Systems) has given priority to defence activities.

Airbus partnership: breakdown of 1998 turnover



Source : Defense News Research

The predominance of commercial business has important consequences for companies' organisation and strategies. Within Airbus, the partners have undertaken a real specialisation by keeping to the same workshare over several successive programmes. This specialisation has favoured participants' complementarity in a key sector of their activity and given birth to a very solid alliance. The Airbus Industries GIE has until now had no manufacturing activity of its own, but has merely had responsibility for marketing, the definition of new models (together with the partners' design offices), financial arrangements for sales (with associated banks), support to customers and the negotiation and formalising of contractual guarantees.

However, in January 1997 the partners signed an MoU on the transformation of the GIE into a truly integrated company (AIC). It is generally recognised that this is essential to ensure the continuing success of Airbus in the civil aircraft market and to exploit technological advantages and the potential for rationalisation. It would however be problematic to say the least without a wider restructuring of the aerospace sector as a whole, including defence activities. Firstly, separating Airbus from its parent companies would have left Aerospatiale and Dasa very much weakened and without the necessary size to stay in the market. Secondly, even an integrated Airbus company could not alone sustain the repeated shock of cyclical peaks and troughs that characterise the commercial aircraft business. Only defence activities, which are often out of phase with the civil sector, can compensate for these fluctuations. Hence the necessity to combine military and civil activities and to have a broader industrial organisation that oversees both. Airbus will therefore obtain legal autonomy but not the financial independence that would have resulted from its flotation on the stock market.

The growing importance of civil activities has influenced not only companies' strategies: it has also changed their culture profoundly. Both aspects have been mutually reinforcing: Airbus's success has only been possible because commercial criteria have progressively become more important than political, technological or industrial considerations. This success has in turn strengthened the orientation of its partner companies

towards profitability and efficiency, allowing the culture of managers to gain the upper hand over that of engineers and functionaries.[29]

This marketing culture has become general within groups, with the gradual privatisation of the industry. Today, all the major aerospace (and electronics) companies are privatised and listed on the stock market. The participation of private investors in groups' capital completes this cultural revolution: it is the 'Anglo-Saxon' model of corporate governance, aimed at high profits and return on shareholders' investment, that became dominant during the 1990s. Shareholder value has become the supreme business objective and an overwhelming incentive for growth, competitiveness and consolidation. Despite the specific nature of defence markets, this development was bound to have an effect on groups' defence activities: to meet the new profitability criteria, military divisions and subsidiaries too had to improve productivity, increase their market share and consequently strive for cross-border integration.

The American 'threat'

To the internal transformation of companies must be added an external element that has also promoted European restructuring, namely the very strong competition from American companies. Between 1993 and 1997, a wave of mergers and acquisitions in the United States produced aerospace and defence giants with turnovers several times greater than those of national champions in Europe (see diagram on next page).

The consolidation of American industry corresponds clearly to an economic rationale but it is more than simply the result of market forces. The US government paved the way for it in 1993 on the occasion of the famous 'last supper',[30] and subsequently actively promoted it by the non-application of the anti-trust law on the one hand and through financial help on the other. Up until the end of 1997, the Administration subsidised seven consolidation

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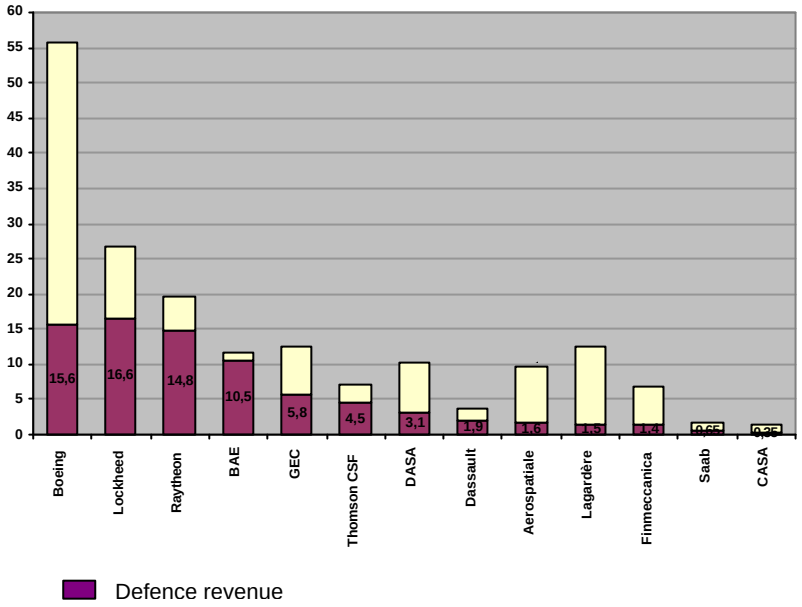
29 See Pierre Muller, 'Aerospace Companies and the State', in Jack Hayward (ed.), *Industrial Enterprise and European Integration, From National to International Champions in Western Europe* (Oxford: Oxford University Press, 1995), pp. 158-88.

30 At that meeting, Defence Secretary William Perry told CEOs of the major groups that the number of defence companies would have to come down considerably and very rapidly to adapt to the foreseeable reduction in budgets.

arrangements to the value of $1.5 billion, which represented more than half the restructuring costs incurred by the companies concerned. The Administration brought an end to the restructuring process in 1998, when it announced its opposition to the merger of Lockheed Martin and Northrop Grumman, citing concerns about the consequences of such a deal for competition (see Annexe 5).[31]

Defence turnover compared with total turnover
(1998 figures, in $US billion)



Source: Defense News Research

Although the United States represents by far the largest defence market in the world, the new industrial giants are not content simply to rely on the Pentagon's orders but have increasingly turned towards international

31 See Ann Markusen, 'The Post-Cold War Persistence of Defense Specialized Firms', in Gerald I. Susman and Sean O'Keefe, *The Defense Industry in the Post-Cold War Era* (Oxford: Pergamon, 1998), pp. 121-46; Gary Pagliano, 'The US Defense Industry: Trends and Issues', ESAN Projekt: Arms Production and Cooperation – *Projektpapier* 12, SWP-AP 3018, Ebenhausen, May 1997; 'Concentration des industries d'armement américaines, modèle ou menace?', *Cahier d'Etudes stratégiques* 23, CIRPES, Paris, 1999, pp. 9-36.

markets.[32] With the very active support of the Clinton administration, there has been a noticeable 'reorientation of American exports globally that takes the form of an unprecedented commercial aggressiveness'.[33] At the same time, US industrialists have not concealed their intention to increase their presence on European markets.[34] In Europe's major arms-producing countries, which also represent the most important markets, this penetration can only happen through links with local companies. For European firms, this prospect has not been free of risks, because the difference in size would have *de facto* ruled out an alliance on an equal footing: for cooperation on a specific project, they would have run the risk of relegation to the level of subcontractor; a full-scale merger could easily have ended up as simply the acquisition of the European company by an American giant.[35] In the view of one analyst, 'The tremendous restructuring of the defence industry, the new importance of exports for American firms, the increased pugnacity of these groups on international markets and the clear intention of the Administration to use arms sales as a way of preserving and developing its technological lead mean that we are now witnessing a new type of arms race between the US and European defence industries . . . with the prospect of [US] hegemony through industrial and economic confrontation in both military and civil aerospace and electronics.'[36]

In the middle of the 1990s, the perception of an American 'threat' was widespread in politico-industrial circles in Europe.[37] In particular, the takeover of McDonnell Douglas (MDD) by Boeing heightened European awareness of the necessity for true industrial integration. In acquiring MDD's defence activities, the leading commercial aircraft manufacturer had

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32 See Andrew James, 'Post-merger strategies of the leading US defence aerospace companies', The FIND programme, FOA, Stockholm, December 1998.

33 *Cahier d'Etudes stratégiques* 23, p. 92.

34 See for example Norman Augustine, CEO of Lockheed Martin, in *Les Echos*, 19 June 1997; John Johnson, chairman of the American Association of Aerospace Industries, 'Conventional Arms Transfer Policy', in *Military Technology*, February 1994, pp. 30-3.

35 See Jens van Scherpenberg, 'Transatlantic Competition and the European Defence Industries – A New Look at the Trade-Defence Linkage', ESAN-Projekt: Arms Production and Cooperation, Projektpapier 1, SWP-AP 2992, Ebenhausen, December 1996.

36 *Cahier d'Etudes stratégiques* 23, p. 92.

37 See, for example, John Weston, 'The Challenge for Europe's Aerospace Industry', in *RUSI Journal*, June 1997, pp. 43-7; Wolfgang Piller, 'Dasa's Viewpoint', in *Military Technology*, March 1998, pp. 85-7.

obtained the means to compensate for the cyclical nature of the civil aircraft market and thus seemed capable of sidelining Airbus, the only competitor remaining in the market for civil aircraft above 100-seat capacity.[38] The apparently ultra-powerful competition from the other side of the Atlantic alarmed both industry and governments: manufacturers saw themselves faced with the risk of being squeezed out of the market and forced to form unbalanced alliances. Governments for their part feared both the consequences for Airbus (an industrial venture in which they had invested huge sums) and, in the long term, the appearance of an American monopoly in high-technology defence sectors.[39]

The race for size

Faced with the new American giants, national champions in Europe were obliged to launch into a race for critical mass. As concentration within national boundaries had been largely accomplished, external growth could only be achieved by crossing frontiers. A firm's size is important for several reasons.

First, in aerospace, fixed R&D (and industrialisation) costs are particularly high. In 1998, the European aerospace industry spent ECU10 billion (16.1 per cent of its turnover) on R&D, of which around ECU5.8 billion was military.[40] To exploit this investment to the maximum it is essential to pool available resources and to avoid duplication. A brief look at the sums spent in 1998 by eight national champions in Europe gives an idea of the economies to be made and potential gains in efficiency that result from pooling resources:

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38 See Deutsches Institut für Wirtschaftsforschung, DIW, 'Nach der Boeing/McDonnell Douglas-Fusion: Wird die Luft für den Airbus dünner?', in *Wochenbericht* 37/97, 11 September 1997, pp. 663-70.

39 For certain officials in Washington the temptation of an American monopoly was very real. See for example the article by Ethan B. Kapstein, 'America's Arms-Trade Monopoly', in *Foreign Affairs*, May-June 1994, pp. 13-19.

40 *Statistical Survey 1998* (Brussels: AECMA, 1999). AECMA gives its statistics in ECUs.

1998 R&D expenditure in EU aerospace industry ($US million)

Company	Turnover	R&D	R&D self-financed
Dasa	€8,770	€2,047	€367
BAe	£7,042	£621	Not available
Aerospatiale	€10,888	€1,276	€587
Matra	€3,200	€379	€109
Finmeccanica	€5,867	€709	€137
Saab	Sw kr. 8,248	Sw kr. 2,123	Sw kr. 378
CASA	€1,008	€120	€29
Dassault	€3,068	Not available	Not available

Source : Annual reports. The figures for Finmeccanica, Dassault and CASA have been calculated in € using the following rates of exchange: 1 lire = €0.00051, 1FF = €0.152449, 1 peseta = €0.00601. The current rate of exchange of the £ is £1 = €1.63733, that of the Swedish krone Sw kr. 1 = €0.118686.

Becoming larger makes it easier, on the one hand, to self-finance major programmes and, on the other, to concentrate government R&D funding in order to achieve synergies among the various programmes.

In addition to this, there are potential economies of scale. In military aerospace, R&D expenditure represents 25-30 per cent of programme costs. With investment on such a scale, it is essential to spread the cost over a larger production runs in order to reduce the unit cost. It is reckoned, for instance, that development costs per unit fall by 50 per cent if production is raised from 200 to 400 units. Added to this are learning effects, which, for military aircraft, are estimated to generate savings of 20 per cent of production costs for each doubling of the production run.[41]

Size is also important in order to have the broadest possible market access. As the number of programmes falls, it is increasingly important for companies to be present in as many sectors as possible of the market with a wide range of products so as to obtain a sufficient number of projects. Since the national champions do not all have the same portfolio, mergers allow them to fill their respective gaps and thus to avoid dependence on a single programme and balance the business and programme cycles that are typical of the aerospace industry.

41 Op. cit. in note 22, pp. 127 ff.

Lastly, size gives greater room for manoeuvre in the compensation and offsets that are today systematically asked for in export contracts.[42]

Political will

There has been general agreement between industry and governments on the necessity for consolidation in the European aerospace sector. This consensus was essential for the internationalisation of a defence-related industry. Because of their role of customer, sponsor and regulator, governments have considerable influence over the alliance policy of 'their' national champion, but the ability actively to influence the path of restructuring nevertheless varies considerably from one country to another.

When dealing with a private company, the State's degree of influence depends above all on the importance of the domestic market: the more important the customer, the more its views will be taken into account in making strategic decisions. From this point of view, the attitude of the British government, for example, might have been more important to BAe than that of the German government has been to Dasa. Firstly, the investment budget is much more important in the United Kingdom than it is in Germany; second, defence activities have been much more important to BAe than to Dasa; and finally, Dasa is part of DaimlerChrysler, a group of enormous size that has corresponding political influence.[43]

In public firms, the State's influence is of course greater. In France, Italy and Spain, the large defence groups have traditionally been state-owned or controlled. Acting as the sole or principal shareholders, the governments of these countries have been able to intervene directly in the choice of industrial partners and influence the pace of restructuring. The degree of intervention has varied considerably from one country to another, but each time government influence has concerned essentially tactics rather than strategy: there was no real alternative to privatisation and Europeanisation.

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42 On the importance of offset arrangements, see op. cit. in note 6, pp. 43-57; see also Jacques Cresson, 'Offset et européanisation des entreprises de défense', in Jacques Cresson, Jean-Marc Montserrat and Loïc Tribot La Spière, *La défense dans tous ses états* (Paris: Publisud, 2000), pp. 108-123.

43 In 1999, DaimlerChrysler had a turnover of nearly €150 billion; Dasa's contribution represents only around 6 per cent (€9.2 billion).

Faced with discrepancy between the huge funding requirement of this industry and a lack of public finances, flotation on the stock market is the only way of finding the necessary capital. Moreover, privatisation is indispensable to free industry from the inertia of the public sector, which is incompatible with the new economic imperatives. Last but not least, privatisation was a prerequisite to Europeanisation in so far as private champions such as Dasa and BAe refused to merge with public groups. The partial withdrawal of governments from shareholding in firms has thus become inevitable.

Economic and financial necessities have thus created a strong political will in Europe to see national aerospace champions finding a common response to the new challenges. This will has become all the more real since industrial restructuring has coincided with the attempt to give a politico-military dimension to the European Union. There is in fact a wide consensus among arms-producing EU countries that a European defence policy needs a dynamic industrial and technological base as the prerequisite to achieving both a certain autonomy and a balanced transatlantic partnership.

II.2 From EADC to EADS

The grand vision: EADC

Political backing for transnational industrial consolidation was seen in particular in the trilateral declaration of 9 December 1997 in which the British, French and German governments called for their national champions to present, by 31 March 1998, a clear plan and detailed timetable for industrial restructuring and integration.

Since the beginning of 1997 the four Airbus partners (Aerospatiale, BAe, CASA and Dasa) had already been negotiating the transformation of the GIE. The announcement of the merger of Boeing and McDonnell-Douglas convinced them of the necessity of including military activities in the process. On 27 March 1998, they responded to the trilateral declaration with a report on founding principles for a European Aerospace and Defence Company (EADC). This report was submitted to the governments concerned as well as to Saab of Sweden and Finmeccanica of Italy; intergovernmental consultation followed in which Italy and Sweden

participated. On 9 July 1998, ministers of industry from the six countries asked the companies to settle outstanding matters as quickly as possible and to submit a second report by the end of October of that year. Beginning in September, Matra (represented by Aerospatiale), Saab and Finmeccanica took part in preparation of the document, and Dassault Aviation was associated. The second report was finally presented in mid-November 1998.

Admittedly, the discussions never reached the stage of real negotiations. They were essentially an exchange of ideas and a general discussion of possible avenues to explore. A brief glance at the results does however give an indication of the complexity of transnational consolidation in Europe.

In their reports, the six companies agreed on the following points:

- the final target structure would be a single integrated company, EADC;
- the perimeter of EADC should include as core businesses: civil and military transport aircraft, combat and military mission aircraft, helicopters, space launchers and orbital infrastructure, satellites and satellite operations, guided weapons and defence and aerospace systems;
- EADC's business objectives would be determined by economic and financial performance criteria; shareholder value would be the major objective, and each business sector should achieve threshold profitability;
- EADC would be managed as a single entity, wholly owning and controlling all its assets and resources. The management structure would have three elements: headquarters central functions providing central finance, management coordination, group strategy and policy; business clusters grouping together similar businesses and containing the relevant resources and assets; and national entities responsible for managing relationships with home governments;
- shareholders' rights would be governed by three principles: no one party should be able to exercise control over the business; protection must be established against takeover; and the dispersed interests of a distributed shareholder base should not be disadvantaged with respect to the concentrated interests of block shareholders.

These points were drawn up by the members of Airbus and subsequently approved by Saab and Finmeccanica. On the other hand, even the second report did not supply answers to certain other questions.

- Concerning the scope of the business, the six were at variance over the question of whether ballistic missiles (manufactured only by Aerospatiale) and regional aircraft (an area that Dasa and Saab had just left) should be considered as core activities. The other outstanding question was the integration of Dassault Aviation, a prerequisite to bringing all European combat aircraft activities within EADC.
- The implementation of the desired EADC target structure also posed a problem. Several models were examined:
  - in the 'Airbus-plus' option the future Airbus integrated company would be the holding company, successively or in parallel integrating the other business lines in the form of subsidiaries;
  - the second option was to create EADC initially as an empty shell held by the national champions. The latter would subsequently establish, successively or in parallel, sector subsidiaries in each sector and then bring them into EADC when ready (following a 'step-by-step' approach);
  - the third option, favoured in particular by BAe, was simultaneously to merge all core activities of the future company (the other sectors obtaining a specific interim status). Most of the partners in the end accepted such a 'come as you are' merger as the preferred solution because of its rapidity and clarity. They did however recognise that a merger in a single step involving all six companies would be far too complex. BAe, Dasa and Saab therefore favoured a sequence of 'come as you are' mergers, starting with two or three companies. Following its own merger with Matra, Aerospatiale accepted this idea but insisted that the first stage should include at least three partners, that is BAe, Dasa and itself. CASA and Finmeccanica refused both options.
- Lastly, there was the question of how to protect the rights of current shareholders and what the structure of EADC's shareholder base should be. It proved impossible to reach a compromise on these points, as the situation at the time was very complex and unsettled. The privatisation of Aerospatiale, CASA and Finmeccanica had been announced or were in hand but not yet finished. The private groups for their part had very different shareholder structures (distributed in the case of BAe, privately owned block shareholder for Dasa and an intermediate position for Saab). Lastly, shareholders had widely varying ideas on the way ahead. DaimlerChrysler, the French government and Lagardère, Aerospatiale's new reference shareholder, were prepared to transfer to EADC their holdings in, respectively, Dasa and Aerospatiale, on condition that they

retained direct or indirect ownership of that holding, without dilution of rights attaching to the shares. This was rejected by BAe and Saab, who feared the domination of EADC by reference shareholders to the detriment of their own distributed shareholders' interests.

The last two points illustrate that the complexity of the operation and the diversity of the partners was too great to allow a multilateral solution. Most companies preferred the 'come as you are' merger option. This option presupposed, however, a resolution in one step of awkward questions like due diligence, distribution of shares and responsibilities and relationships with home governments. All these issues are already extremely difficult to resolve between companies of two different countries. They became impossible when three and, a fortiori, six were involved, especially since two of the main actors – BAe and Dasa – had their own hidden agendas (see below). Since a European 'big bang' was out of reach, it is hardly surprising that discussions 'at six' ended in failure. The real question was who would get married first, and to whom. The stakes were very high: for the small companies it was a matter of not being sidelined by a merger of the large. For each of the large companies, it was essential not to allow itself to be isolated by a merger of two of the others.

The intermediate stage: national consolidation as a priority

France. The first industry to be worried about isolation was that of France, which was far behind in its own national restructuring. Whereas on a European level the talk was already of the creation of EADC, the defence industrial landscape in France was still dispersed, and the very principle of privatisation hotly debated. At the beginning of 1996 Jacques Chirac had put forward the idea of federating companies around two poles – electronics and aerospace, and linking this restructuring to the privatisation of Thomson-CSF and Aerospatiale. However, attempts by the government of Alain Juppé to achieve this ended in failure.

In the spring of 1997, frustrated by the slow pace of events in France and suspicious of French claims to industrial leadership in Europe, Dasa decided to rupture its traditional alliance with Aerospatiale and to team up with the latter's competitor from the private sector, Matra Hautes Technologies, the defence branch of the Lagardère group. Rather than, as expected, creating

two joint ventures with Aerospatiale, the German champion chose to merge its satellite activities with MMS (a Matra-Marconi 51-49 joint venture), and to sell 30 per cent of its LFK missile division to MBD (a joint subsidiary of Matra and BAe). Moreover, BAe and Dasa announced their support for Matra's bid for the privatisation of Thomson-CSF in the face of an offer by an Aerospatiale-Dassault-Alcatel consortium. With this reversal of alliances, Aerospatiale, the real leader of Airbus, Ariane and Eurocopter, was on the point of being isolated inside the European aerospace industry.[44]

Early elections in France meant that decisions on restructuring were once again delayed by a few months, while at the same time opening the path to a definitive solution. Paradoxically, it was a left-wing government that managed to realise the project of a Gaullist president.

The first stage concerned defence electronics. In October 1997, the Government announced that, as part of a strategic partnership with Alcatel, the space, defence electronics and military communications businesses of Alcatel, the commercial and defence electronics activities of Dassault, and the satellite division of Aerospatiale, would be integrated into Thomson-CSF. This restructuring gave birth to two new subsidiaries: Alcatel Space, a Thomson-CSF-Alcatel satellites 50-50 joint venture, and Detexis, wholly owned by Thomson-CSF and specialising in electronic countermeasures. For their industrial contributions, Alcatel, Dassault and Aerospatiale became shareholders in Thomson-CSF, with, respectively, 16, 6 and 4 per cent of its capital. This resulted in a fall in the State's participation from 58 to approximately 40 per cent.

The second stage began in July 1998 with the Government's decision to privatise Aerospatiale by merging it with Matra Hautes Technologies. This was the return in strength of the Lagardère group, which had been the big loser in the privatisation of Thomson-CSF. The operation proved very complex: it was necessary not only to define the financial conditions for the merger but also clarify the relationship between the future Aerospatiale-Matra group and Dassault and Thomson-CSF.

- Regarding Dassault, the Government did not succeed in integrating the manufacturer of military aircraft (*Mirage* and *Rafale*) and business jets

[44] *Le Nouvel Economiste*, 23 May 1997; *Defense News*, 12-18 May 1997, p. 1.

(*Falcon*) in the new group. The Dassault family remained the main shareholder of Dassault Aviation, with 49.9 per cent of the capital, and still had the right to appoint its president. The State transferred its 45.76 per cent to Dassault Aviation, but without its double voting rights. In return, the shareholder agreement stipulated that important decisions would require a two-thirds majority in a steering committee in which Aerospatiale-Matra and Dassault would have equal representation. The former thus gained a veto right on strategic decisions by Dassault.[45]

- Another problem concerned the dividing line between Aerospatiale-Matra and Thomson-CSF. Having sold its satellite activities to Thomson-CSF in 1997, the merger with Matra brought Aerospatiale back into this business again (through Lagardère's 51 per cent stake in Matra Marconi Space). To compensate for this violation of the shareholder agreement of the previous year, Aerospatiale-Matra agreed on the one hand to sell to Thomson-CSF its share of their Sextant-Avionique joint venture and, on the other, to maintain the balance within the Eurosam GIE.[46] Aerospatiale's 4 per cent of the capital of Thomson-CSF was recovered by the State.

These negotiations were only completed at the end of 1998; the financial arrangements for the Aerospatiale-Matra merger were only settled in February 1999; and the new aerospace champion was privatised and quoted on the stock exchange in June of that year. This rate of progress was certainly impressive when compared with the stagnation of the previous years but nevertheless there was a risk that it was too late and too limited for the companies concerned to participate in the first stage of European integration.

United Kingdom. BAe and Dasa began negotiations on a merger at the beginning of 1998, that is, in parallel with the discussions among the six. Given their common features, this *rapprochement* seemed natural: BAe and Dasa participate in the main European programmes – Airbus and Eurofighter – and, what is perhaps more important, they have the same

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45 *Flight International*, 18 November 1998.

46 Eurosam is responsible for the Franco-Italian FSAF missile programme, in which Thomson-CSF, Aerospatiale and Alenia have equal shares. Aerospatiale's merger with Matra has considerably increased its weight in the missiles sector, which could have led to a redistribution of the workshare in the GIE.

business philosophy: shareholder value as the absolute priority, and no State participation in the firm's capital.

It is therefore not surprising that BAe and Dasa justified exclusion of Aerospatiale by pointing to the public shareholding in the company. Even the merger with Matra, which would bring down public participation in Aerospatiale to below the 'magic' threshold of 50 per cent could not halt the *rapprochement* between the British and German companies. The latter also ignored signals from the government of Lionel Jospin, which discreetly but constantly reiterated its preparedness to reduce further its share if it would lead to a truly European solution. All the signs therefore indicated that BAe and Dasa were determined to create by themselves a major, entirely privatised group, if only to be in a strong position subsequently to negotiate with the French state and French industry.

The most difficult questions in the Anglo-German negotiations were to do with the difference in size – how could power be shared equally between the two even though BAe was bigger than Dasa – and the shareholding structure – how to prevent DaimlerChrysler, as Dasa's sole shareholder, dominating the new entity, given BAe's fragmented shareholder base. Despite these difficulties, negotiations reached an advanced stage, and at the end of 1998 the finalisation of an agreement was thought to be imminent. It seemed that even the French threat to block the transformation of Airbus would not prevent the merger from going ahead.[47]

The *rapprochement* failed at the eleventh hour, however, when GEC announced that it was shedding its defence electronics division, Marconi. For BAe, the temptation to absorb its traditional rival was too hard to resist: with its purchase of Marconi, the British champion has diversified away from being just a platform builder to also having the technology to design and build the important platform systems. These represent in effect the more important growth market and reduce the risk of production gaps with which platform manufacturers are usually faced. Moreover, thanks to its purchase of Marconi, BAe reduced its dependence on the Al Yamamah contract with Saudi Arabia[48] and gained direct access to the American market (thanks to

47 *Flight International*, 16 December 1998.

48 In 1985 Britain and Saudi Arabia signed a 20-year contract on arms sales in exchange for oil, associated with an economic development programme, called Al Yamamah. This was the largest export contract ever recorded in the United Kingdom. Two

Tracor, a US subsidiary of Marconi). However, the suggestion that BAe was 'obliged' to buy Marconi in order to prevent Lockheed-Martin from absorbing the electronics company seems less plausible. It is of course true that the installation in the United Kingdom of the producer of the F-16, a direct competitor of the *Eurofighter* on certain export markets, would have posed an unacceptable threat to BAe, but it seems that British government had already let it be known that the American offer had to be rejected, and that Thomson-CSF was the only possible foreign bidder.

BAe therefore acquired Marconi for over £7.7 billion. The takeover was not a move to consolidate but a portfolio change. BAe was however strongly criticised for it: the British government would have preferred a marriage between Marconi and Thomson-CSF in support of the reorientation of its European defence policy, as symbolised by the Anglo-French St-Malo declaration of November 1998. Financial analysts for their part took issue with the very high price paid by BAe,[49] and judged the potential gains of this (vertical) integration to be less than those of a (horizontal) merger with Dasa.

In the end, the German champion found itself left in the lurch. The last-minute change of mind by the British firm took Dasa by surprise and permanently damaged their relationship. BAe's senior management no doubt underestimated the psychological effect that their volte-face would have on the German negotiators; what it saw as simply a detour in the path to a merger with Dasa in fact turned out to be the end of the affair. The latter vigorously criticised the vertical nature of the BAe-Marconi deal, which it

framework agreements were signed by the British and Saudi governments for the setting up of an integrated defence system, for which the prime contractor was BAe. These agreements are of fundamental importance to BAe, since in recent years they have represented nearly 20 per cent of the group's turnover, half being military equipment and half various services (civil engineering, training, maintenance, logistics, etc.), with a margin estimated at 10 per cent. The latest deliveries of aircraft, notably *Tornado* and *Hawk*, were made in 1998, but the presence of BAE Systems in the Saudi kingdom is still considerable (5,500 employees engaged in maintenance and support).

49 Analysts put a value of £5.8 billion on Marconi – some 30 per cent below what BAe paid. A few examples indicate that BAe did in fact pay a very high price. In April 1998 GEC had bought Tracor, Marconi's US subsidiary, for $1.4 billion and then sold it to BAe for $2.5 billion – giving a profit of over $1 billion in the space of nine months. In 1994, BAe had sold its space activities to GEC for £56 million and bought them back for £300 million.

saw as in contradiction with the initial project. Above all, it clearly pointed out that the size of BAe and Marconi combined ruled out any possibility of an Anglo-German merger.[50] With a turnover of over €17.4 billion, BAe in fact became much larger than the other European companies (Aerospatiale-Matra €11.6 billion, Dasa €9.8 billion).[51] In a business as strategic, and therefore politically sensitive, this imbalance was bound to have consequences for the future of the restructuring process: given that neither the French nor the Germans (nor, for that matter, the Italians) would have agreed to a transnational merger that de facto simply meant the absorption of their leading industries, it is logical that the subsequent stages of industrial restructuring happened without 'New BAe', as the company provisionally called itself before finally, in December 1999, renaming itself BAE Systems.

The relaunch of the multilateral via bilateral agreements

The failure of the negotiations between BAe and Dasa ended the possibility of an Anglo-German axis, which had been a nightmare scenario for French political and industrial circles. At the same time, the merger with Matra helped improve the Aerospatiale-Dasa relationship, which had been very unsettled since 1997. Nevertheless, initially the German champion seemed to be heading for a link-up across the Atlantic rather than the Rhine. In spring 1999, these Atlanticist temptations were very real, especially as Dasa, as a subsidiary of a transatlantic group, seemed particularly well placed for an American marriage. There was no doubt some discussion but apparently Dasa did not find any appropriate suitor for a balanced relationship. Added to that, numerous political and legal obstacles made a transatlantic alliance very difficult.

On the other hand, a new opportunity arose in Europe. As part of its policy of privatisation, the Spanish government was attempting to integrate the state-owned CASA in a structural alliance with a European partner. BAe, Aerospatiale-Matra and Finmeccanica were in the running, but in the end Dasa was the successful bidder. During the Paris air show in June 1999, the two companies signed a letter of intent under which the privatisation of

50 *Le Monde*, 21 January 1999.
51 Provisional figures for 1998 given in *Air & Cosmos*, 22 January 1999.

CASA would happen through the creation of a holding company owned 87 per cent by Dasa and the remainder by Sepi. At the same time, the latter, a public holding company controlling the Spanish state's industrial participation announced its intention to sell its shares on the stock market in the coming three years.

Given the difference in size of the two companies, this alliance naturally looked like simply the takeover of CASA. It was, however, important for two reasons. First, two national champions were for the first time deciding to pool all their activities. Second, it radically improved Dasa's position *vis-à-vis* its British and French partners: CASA was the smallest of the six national champions in Europe but, at that time, its participation in Airbus and Eurofighter gave it considerable strategic weight. The new Dasa-CASA group would in effect have occupied a key position in both programmes (with 43 per cent in *Eurofighter* and 42.1 in Airbus).

However, the German-Spanish agreement was quickly overtaken by events. Just after the June 1999 Paris air show, Jürgen Schremp, Jean-Luc Lagardère and Dominique Strauss-Kahn began negotiations aimed at the merger of Dasa with Aerospatiale-Matra. These were held in the utmost secrecy (codenamed 'Diamond'), and not even the Spanish were kept in the picture. On the French industrial side, the bargaining was led exclusively by Matra executives, leaving out the top management of the former Aerospatiale. This discrimination shows that privatisation *à la française* went further in practice than the level of public participation would have suggested. The importance that the French government attached to Lagardère as a shareholder also shows just how much it wanted to reach a solution with the Germans.

Restricting the dialogue to industrialists with a private sector background (together with the cordial relationship between Schrempp and Lagardère) contributed considerably to the success of the negotiations. The business was concluded in under four months: whereas everybody was waiting for the Dasa-CASA marriage to take place, it was in fact the Franco-Spanish couple who announced, on 14 October 1999, the creation of the first transnational aerospace and defence champion – EADS (European Aeronautic, Defence and Space Company).

Yet restructuring did not stop there. As has been seen, the Franco-German *rapprochement* had suddenly sidelined CASA. Aerospatiale-Matra and Dasa were however quick to reassure their Spanish partner by immediately striking up negotiations with it. These efforts met with success: the agreement confirming CASA's integration into EADS was signed on 2 December 1999.

II.3 EADS, the first European champion

The group's size and scope

EADS is an ambitious project, in the first place because of its size. As a Franco-German entity, the new group would already have been the third aerospace and defence company in the world, with 89,000 employees, a turnover of nearly €20 billion and profits of €1 billion in 1998.[52] With the addition of CASA, EADS has over 95,000 employees and a turnover of €21 billion.

As a result of the combination of the respective participation of the three groups, EADS has a central role in most European programmes. These activities cover all of the aerospace sector:

- *Civil aviation*. In Airbus EADS holds 80 per cent of the future integrated company (AIC) and the aircraft assembly lines. This activity represents nearly half of the new group's turnover.
- *Military aviation*. EADS is present in the two most important European programmes. Aerospatiale-Matra contributes its 45.76 per cent of Dassault Aviation, while Dasa and CASA hold, respectively, 30 and 13 per cent of *Eurofighter*. This 43 per cent will be pooled with Alenia's 19.5 per cent in the European Military Aircraft Company (EMAC, or JV Co., its provisional name), the new 50-50 EADS-Finmeccanica joint venture, which, with 62.5 per cent, will have a majority holding in *Eurofighter*.
- *Space*. By merging the Dasa and Aerospatiale-Matra participation in Astrium, EADS, with 75 per cent of the capital, becomes the reference shareholder of the new European space company. EADS also becomes

[52] *Les Echos*, 15 October 1999.

the main private shareholder in Arianespace, with 25.9 per cent, giving it a pre-eminent place that could be consolidated in the event of reorganisation of the capital of the world leader in space launchers.

- *Helicopters*. Having already integrated their respective activities in Eurocopter, the merger of the parent companies does not fundamentally change the situation in this business, but it without doubt facilitates management of the world leader in helicopters. Moreover, the integration of CASA in EADS could allow Spain to become a full partner in the Tiger programme.
- *Missiles*. Aerospatiale-Matra contributes to EADS its 50 per cent stake in Matra BAe Dynamics (MBD), the former Aerospatiale's missile division and its participation in Euromissile. For its part Dasa also brings its participation in Euromissile and its subsidiary LFK, in which MBD already has a 30 per cent share.
- In addition to these five core businesses, the three partners make other contributions: Dasa its defence electronics business; Aerospatiale-Matra its regional aircraft activities and CASA its self-proclaimed world leadership in light military transport aircraft.[53]

A difficult balance

EADS's shareholder structure has two levels:

- The first concerns the French part, which is a holding company controlled 50 per cent by the State, 50 per cent by a common structure comprising Lagardère SCA (37 per cent) and French institutional investors, in particular BNP (13 per cent).
- At the second level the French holding company, DaimlerChrysler and Sepi make up a Dutch holding partnership, controlling 65.57 per cent of the EADS company proper, the German and French parts holding 30 per cent each and Sepi 5.57 per cent. The remaining 34.43 per cent are listed on the Paris, Frankfurt and Madrid stock exchanges. For fiscal reasons, and without a European company status, both and EADS are registered in the Netherlands.

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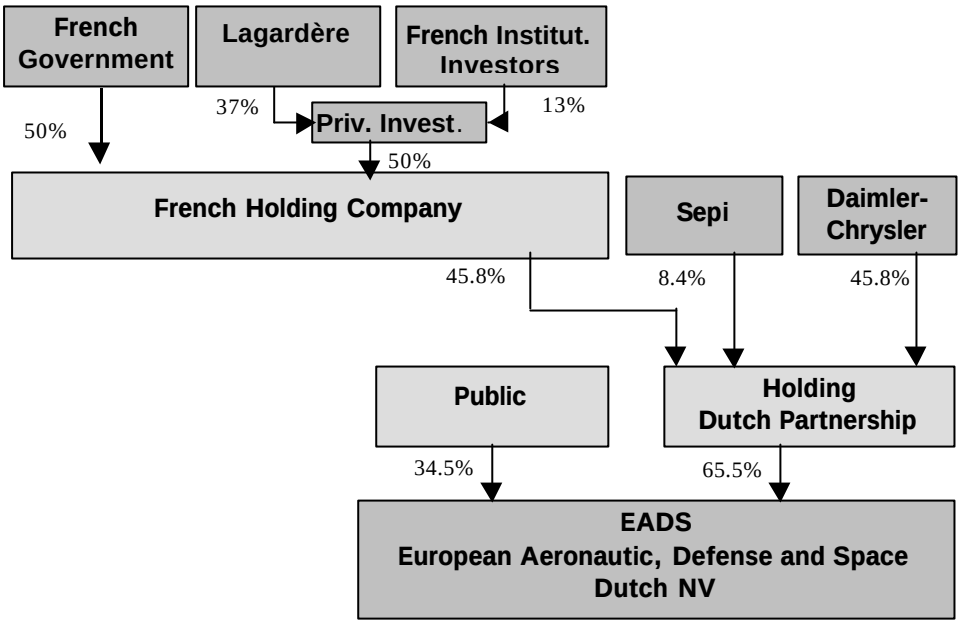
53 *Le Monde*, 16 October 1999.

EADS – Shareholder structure



To achieve parity between Dasa and Aerospatiale-Matra, before the merger DaimlerChrysler withdrew €700 million in cash. To bring its share in EADS to parity with the 30 per cent of the French part, DaimlerChrysler is retaining its aero-engine subsidiary MTU, together with €2.7 billion, which corresponds to 13 per cent of EADS. The additional €2 billion capital increase resulting from its listing on the stock market brings DaimlerChrysler to 30 per cent. On the French side, 15 per cent of EADS is owned by the Government, 11.1 per cent by the Lagardère group and 3.9 by institutional investors. Sepi contributes 99 per cent of CASA in exchange for 6.25 per cent of EADS. The capital increase dilutes Spanish participation to 5.57 per cent. Other shareholders maintain their initial participation by an adjustment in the number of shares they sell on the market. Floating capital will in time rise to 40 per cent, since Sepi has agreed to sell its 5.57 per cent in the short to medium term.

With this cascaded shareholder structure the partners have transferred to the group level the main provisions that have appeared in joint ventures. The aim is to express clearly the equality of the main shareholders and to organise collective decision-making in key matters (mergers and strategic alliances with third parties and investments of over €500 million). Given the respective weight of the various actors, Franco-German balance is of course at the heart of the structure. Neither of the two partners can take control of EADS, since 'the principle of equal rights between DaimlerChrysler and the French partnership is inviolable. If one of the shareholders wishes to sell, it can only do so on the market, and that does not alter powers within EADS. Shares and voting rights have in effect been decoupled. In addition, French and German shareholders have a pre-emptive right on shares sold by either partner.'[54]

The management structure is based on the 'Anglo-Saxon' model: there is no supervisory board along French or German lines but a board of directors and an executive committee. On the board of directors, Jean-Luc Lagardère and Manfred Bischoff act as non-executive chairmen. Five directors – two German (nominated by DaimlerChrysler), two French (nominated by the French government and Lagardère together) and a Spaniard (nominated by Sepi), will support them. Also in the board of directors will be EADS's two chief executive officers (CEO) plus two outside directors. To prevent the Spanish director from having a strategic position as arbitrator between the French and Germans, the voting rules specify a qualified majority of seven votes out of eleven.[55]

The group's activities will be organised in five divisions, two of them headed by a Frenchman (Airbus, space systems), two by a German (aeronautics, defence and civil systems) and one by a Spaniard (military transport aircraft). Each entity will be wholly responsible for its performance and results. There will also be three central headquarters functions (finance, strategy and marketing). Heads of division and headquarter functions form an executive committee chaired by the two CEOs.

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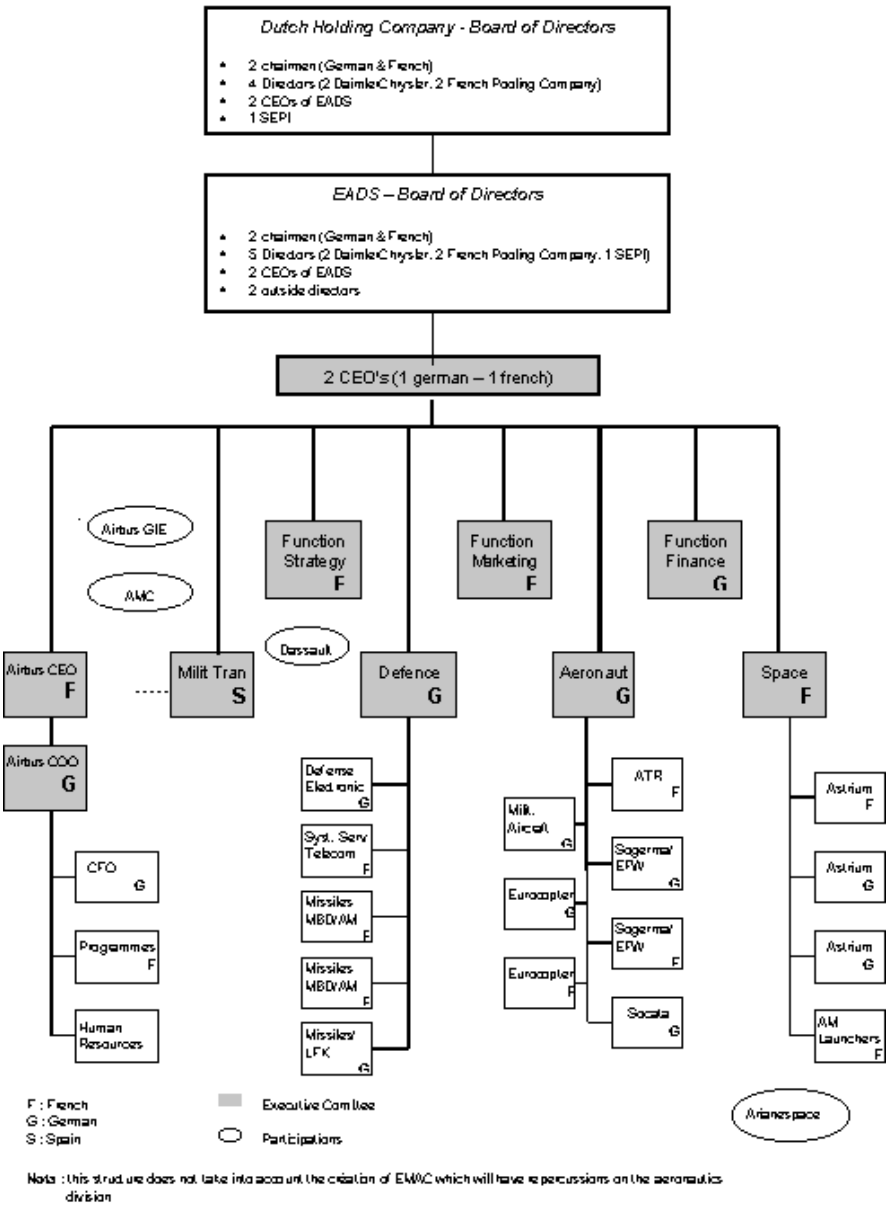
54 Philippe Camus, interviewed in *Les Echos*, 18 October 1999.
55 *Les Echos*, 3-4 December 1999.

Management structure



Note : this structure does not take into account the creation of EMAC which will have repercussions on the aeronautics division

The heads of central headquarters functions are supported by 22 senior executives, working in integrated teams. The only exceptions to this integrated working are: 'political affairs' (which is responsible for contacts with national governments), 'integration' (charged with managing the integration process and therefore with a limited life) and 'human resources' (which has to take into account the different labour and social laws of each country, and maintain contacts with national staff representatives). In the event of disagreement at the operational management level, questions will be referred to the board of directors and then to the chairmen of the two industrial shareholders, Jean-Luc Lagardère and Jürgen Schrempp.[56]

To set up EADS, the partners were obliged to make major concessions: the German 'swallowed the pill' (in the words of Mr Bischoff) of the presence of public shareholders in the group's capital. Whereas Sepi will have only a minor stake for a limited period of time, the French State remains an important shareholder in EADS and the duration of its involvement is unlimited. The statutes of the French holding company guarantee the State special rights in questions of acquisition, strategic alliances or capital increase. Moreover, EADS's statutes give the State controlling rights over changes in capital – in particular any exceeding of the 10 per cent upper limit. Lastly, these provisions will be underpinned by a convention (in French law and subject to French jurisdiction) which accords the State specific guarantees concerning the group's activities in the field of nuclear deterrence. According to the French Ministry of Defence, these guarantees are the same as those provided for by the Golden Share that it had in Aerospatiale-Matra, i.e. control over operations regarding the group's prime contractorship, design and integration of ballistic missiles, as well as that of its four subsidiaries that are involved in this activity;[57]

The French for their part have had to accept parity with the Germans. Psychologically, that was not a forgone conclusion: many leading figures in Paris have always looked on the German aerospace industry as a minor partner that was not at the same technological level as French industry. Moreover, Dasa's weight in terms of business is well below that of Aerospatiale-Matra: at the end of 1998 Dasa declared a turnover of €8.77

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56 *Air & Cosmos*, 1721, 22 October 1999, pp. 11-15.

57 CILAS (lasers), SODERN (nuclear studies and projects), NUCLETUDES (nuclear engineering) and COSYDE (defence system design).

billion, whereas Aerospatiale-Matra's provisional figure was €12.3 billion. In 1999, the relative size of turnover was the same (€9.2 against 12.9 billion) but Aerospatiale-Matra is well ahead of its German fiancé regarding its order book (€15.4 billion – up 19 per cent , compared with €9.9 billion – down 29 per cent).

This arithmetic does not, however, take all relevant factors into account. First, it was politically necessary to anchor Dasa to the French industry before the German group was seduced by other partners, which would have left France isolated.[58] Second, the two partners do not calculate their turnover in exactly the same way: Aerospatiale-Matra consolidates proportionally its share of the turnover of the GIE Airbus Industries (37.9 per cent), which Dasa has not done.[59] Third, Aerospatiale-Matra has a profit margin that is well below that of Dasa (it was 4.0 per cent in 1998 compared with Dasa's 7.1 per cent, and figures for 1999 were 3.7 and 8.0 per cent respectively).[60] From a profitability point of view, therefore, due diligence clearly worked to the advantage of Dasa.[61]

Finally, the Spanish were obliged to play a relatively modest role. The distribution of responsibilities nevertheless corresponds to the relative sizes of the three partners. Yet as a founder-member of EADS, Sepi will be represented in the board of directors of both the Dutch holding and the group, as will as in the executive committee. The Spanish will also have the leadership in the military transport aircraft sector, and will receive 10 per cent of the work on the Airbus A3XX. The Spanish State is a shareholder in EADS but does not enjoy special rights comparable to those of France. Moreover, Spanish representation in the two boards of directors once Sepi has disposed of its shares is still an open question.[62]

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58 *Libération*, 15 October 1999.

59 Each Airbus partner is both owner of and supplier for the GIE. This means that it makes profits twice: when it sells its parts of the aircraft to the GIE at a price fixed together with the other partners, and when the GIE sells an aircraft to an airline. In the first instance the partner has a 100 per cent margin and in the second receives a share of the profits corresponding to its percentage participation in the GIE.

60 *La Tribune*, 9 March 2000.

61 *Les Echos*, 18 October 1999.

62 Ibid.

The challenges

It is certainly an advantage for the future of EADS that the partners know each other well and are used to working together. Indeed, over 70 per cent of their combined business has already been organised in common joint ventures. The end of divergences between parent companies and the integration of these activities can only improve their economic and industrial efficiency. That does not, however, alter the fact that the 'real' problems are still to come. After all, the integration of the parent companies is a challenge on a completely different scale to cooperation in a particular business sector.

In the military sectors, cross-border industrial rationalisation will probably remain limited because of the pronounced complementarity of the three partners:

- in the missiles sector, rationalisation will mainly concern the French facilities of MBD and the missile division of the former Aerospatiale. Compared with these two entities, LFK is a minor player. Even if there is duplication among all three, EADS will no doubt hesitate to suppress it in LFK, knowing that any reduction in its presence in Germany could reduce its access to the German market;
- in defence electronics only Dasa has important activities. Consequently, synergies between partners are virtually non-existent in this area;
- in the field of combat aircraft, potential synergies are very substantial, but impossible to exploit as long as Dassault Aviation and 'EMAC', the new EADS-Finmeccanica joint venture, remain as separate entities;
- the situation is similar for transport and special mission aircraft, two areas in which the Spanish division of EADS and the Italian subsidiary of 'EMAC' produce certain similar types of aircraft.

Furthermore, the workshare in ongoing programmes (missiles, helicopters) is already defined in MoUs, which will doubtless not be modified. Consequently, industrial rationalisation will only have its full effect in new programmes. The first areas concerned will no doubt be transport and special mission aircraft, and missiles, two areas in which important programmes – the Airbus A400M and the *Meteor* missile – are about to start. In the other military businesses, the mergers will in the first place allow the cutting back of overheads and opportunities for savings through

joint marketing. Sales of systems abroad will also benefit. In this context, EADS's simultaneous participation in *Rafale* and *Eurofighter* is particularly advantageous: it doubles its chances of winning in export markets and creates the basis for standardisation of equipment when it comes to mid-life upgrades of both aircraft. At the same time, EADS brings together the know-how of both programmes under the one roof and thus gains a great technological advantage for the development of the next-generation combat aircraft.

In the civil aircraft business, synergies are much more important. After all, it should not be forgotten that simplifying cooperation in Airbus was probably the main factor behind the creation of EADS. Reducing the number of partners was the *sine qua non* for the agreement on the transformation of the GIE that was reached towards the end of June 2000, and at the same time will be the best guarantee of the success of the future integrated company. The creation of AIC makes it possible to do away with an organisation that has entailed waste and opacity. Lastly, it makes production costs transparent, allows centralised purchasing and integration in the design and production of aircraft.[63] At the same time, political considerations will prevent EADS from taking industrial rationalisation to the limit: the balanced geographical distribution of sites is essential for the continuing financial and political support of the three national governments.[64]

In addition to questions of rationalisation, there are legal and social problems, which are particularly complex in the absence of any European company status. In terms of company law and tax law, EADS has opted for a registered office in the Netherlands, a practice that is not unknown in Europe. From a fiscal point of view, it is the best choice; from a political viewpoint, it is a 'neutral' alternative to the politically difficult choice between a base in France or in Germany. This leaves social issues, where the absence of European employment and social law obliges EADS to make use of separate employment contracts to meet the social regulations in the countries concerned. These legal constraints could make it very difficult for EADS to take full advantage of the benefits of the merger. 'It is a weighty matter with which the trade unions will be associated and it will mean

63 *Libération*, 7 December 1999; *Frankfurter Allgemeine Zeitung*, 16 May 2000.

64 Arguments over the Airbus A3XX assembly sites clearly shows that, even in the civil sector, the distribution of work among participating nations is a very political question. See *La Croix*, 6 April 2000.

having to reach compromises between the German and French co-determination models, based on a dialogue that combines consultation and confrontation, and which in this case will apply to companies where industrial relations were relatively peaceful.'[65]

Indeed, in considering organisational and regulatory aspects, it is essential not to overlook the importance of the human factor for the success of the merger. Paradoxically, the greater the degree of integration, the more the question of difference in national and business cultures gains in importance. It is difficult to set up a joint management structure but it is even more difficult for individuals of different nationalities and company backgrounds to work together within a new organisation.

In the case of EADS, the situation is particularly complex because Aerospatiale-Matra has not even had the time to come to terms with the culture shock of its own merger.[66] Moreover one must also take into account the numerous French, German and Spanish cultural particularities. Given all these factors, it will be fascinating to see how EADS manages to develop its own truly European corporate identity.[67]

Understanding between French and Germans will be decisive. In this respect, the participation of a third, smaller founder-member could have the advantage of mollifying confrontations between the two large ones.[68] At senior management level, the Franco-German climate will certainly profit from the 'strong representation of Lagardère's men'.[69] In fact, four of the five French members of the executive committee are intimates of Jean-Luc Lagardère, whereas only one comes from the former Aerospatiale management. The trend already seen in the secret negotiations is thus being confirmed, i.e. a takeover of key posts and a monopolising of the decision-

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65 Jean-Pierre Maulny and Burkard Schmitt, 'De EADC à EADS: la naissance difficile d'un champion européen', in *Revue internationale et stratégiques*, Summer 2000, pp. 35-47.

66 Some observers maintain that not even Dasa, the result of Daimler-Benz's 1990 takeover of MBB, has yet developed its own identity.

67 See Matthias Maier, 'Kooperationsmanagement im deutsch-französischen Kontext', in Walter Schertler (ed.), *Management von Unternehmenskooperationen* (Munich: Überreuther, 1997), pp. 389-437.

68 See Marie Henckel von Donnersmarck and Roland Schatz (eds.), *Fusionen gestalten und kommunizieren* (Bonn: Innovativ Verlag, 1999).

69 *Le Figaro*, 15 February 2000.

making process by the reference shareholder. This balance of power on the French side could soften the clash of cultures between a private group and a formerly public group, even if the 'Matra boys' have greater experience of cooperation with the British than with the Germans.[70]

On the German side, Dasa will doubtless be able to take advantage of the experience of the Daimler-Chrysler merger. That does not however mean that the merger of the two car makers is an adequate model for the creation of EADS – far from it. Given the important disengagement of US investors and the departure of many American senior executives since the birth of the transatlantic giant, the so-called 'merger of equals' between Daimler and Chrysler today looks more like a takeover of the latter by the former. In a defence-related industry, the slightest hint of similar developments would probably be fatal.

The present shareholder structure is nevertheless a safeguard against such an eventuality. At this level, it is likely that the 'cohabitation' of public and private shareholders, particularly that of the French State and DaimlerChrysler, will work without any major problem. The very fact that the merger has happened despite state participation prove that those involved have gone beyond the ideological quarrels of recent years and have adopted a fairly pragmatic attitude. Today, all the signs are that the French government is prepared to refrain from interference in the management of the group and instead to play the role of a 'normal' shareholder.

The true 'masters' of EADS will be the industrial shareholders DaimlerChrysler and Lagardère. It must not, however, be forgotten that the provisions of the shareholders' agreement concerning the stability of the shareholder structure will cease to have effect in 2003, leaving DaimlerChrysler and Lagardère free to dispose of their share. If either or both were to decide to withdraw, corporate governance of EADS could be completely overturned.

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70 Matra's defence activities are concentrated in the MMS and MBD Anglo-French joint ventures.

II.4 The new industrial landscape in Europe

At the centre, the BAE Systems-EADS duopoly

In less than two years the industrial landscape in Europe has completely changed. In aerospace there are now two major actors: EADS and BAE Systems (the former BAe). Whereas the former is horizontally integrated with strong points in the civil business, the latter is vertically integrated and highly specialised in the field of defence, where it has a wide range of activities. Thanks to its acquisition of Marconi, the British group has changed from being a military aerospace platform builder to a real systems manufacturer that has important capabilities in defence electronics. At the same time, the integration of Marconi North America has made BAE Systems a major actor in the American market. Through its subsidiary BAE Systems North America it has a workforce of over 18,000 in the United States. The group is one of the Pentagon's main suppliers and should have a higher turnover in the United States than in the United Kingdom. It has further strengthened its presence in the United States through the purchase of Lockheed Martin's control systems business,[71] and is also a possible buyer of its electronics and avionics activities (Lockheed Sanders).[72] Moreover, the Pentagon claims to treat BAE Systems North America like an American firm, which is a clear advantage when tendering for contracts or making further acquisitions in the United States. Because of its strong position in the US market, BAE Systems no longer sees itself as a British company but as a global one. According to CEO John Weston, his group is 'the leading American company in Europe and the leading European company in the United States'.[73]

In Europe, BAE Systems and EADS are structurally linked through a multitude of joint ventures:

- In space, the recent merger of Matra Marconi Space (MMS) and the space activities of Dasa has produced the fourth group in the world, Astrium, with over 8,000 employees and an annual turnover of €2.25 billion. So far

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71 *Les Echos*, 28 April, 2000.

72 If successful, BAE Systems would become the largest defence group in the world, even ahead of Lockheed Martin. See *Franfurter Allgemeine Zeitung*, 3 Jun 2000.

73 Speech by John Weston at the Forum Europe conference on 'Privatisation in Europe' on 19 April 2000 at the French Centre for Overseas Trade, in Paris.

Astrium has been a company with equal voting rights but its capital has been owned 55 per cent by MMS and 45 per cent by Dasa. With the Dasa-Aerospatiale-Matra merger, EADS's share is 75 per cent and that of BAE Systems 25 per cent. Following due diligence, Astrium will also integrate Finmeccanica's Alenio Spazio.[74]

- In missiles, MBD, the joint 50-50 subsidiary of BAE Systems and Matra, has become the focal point of the European industry. The integration in MBD of the missiles business of Alenia Marconi Systems (AMS), an Anglo-Italian joint venture, was made public the day following the announcement of the creation of EADS. The new triad will have a turnover of €2.32 billion and over 10,000 employees and control some 80 per cent of European missile production. On completion of a very complex operation, BAE Systems and EADS will each own 37.5 per cent of MBD, and Finmeccanica 25 per cent.[75] With the merger of Aerospatiale-Matra and Dasa, MBD might take over the 70 per cent of LFK's activities that it does not yet control. When that happens, the distribution of MBD's capital will no doubt change again.
- In the civil aircraft business, BAE Systems contributes its activities in the construction of wings to the new Airbus company. In exchange, it obtains 20 per cent of the capital of AIC, which corresponds to the 20 per cent it has held in the GIE, and financial compensation that will be calculated in accordance with deliveries of the Airbus A340-500/600, which will begin to come into service in 2002. Within the AIC structure, BAE Systems will have two representatives on the shareholder committee (whereas EADS will have five) and two on the executive committee. Day-to-day decisions will be taken on the basis of a simple majority, whereas strategic decisions (approval of the business plan, important investments and any decisions implying a dilution of BAE Systems' participation) will have to be agreed by both BAE Systems and EADS. Moreover, BAE Systems has the right to sell its shares in AIC to EADS.[76]
- In combat aircraft, the relationship between BAE Systems and EADS is paradoxical: on the one hand, EMAC, the joint venture of Finmeccanica and EADS will control 62.5 per cent of *Eurofighter*, which means that BAE Systems, with 37.5 per cent, is relegated to second place in its own combat aircraft programme. On the other hand its integration of Marconi,

74 *Air & Cosmos*, 1721, 22 October 1999, p. 15.
75 *Les Echos*, 21 October 1999.
76 *Les Echos*, 22 June 2000.

> a major subcontractor for the *Eurofighter* allows BAE Systems to increase the value of its participation by around 10 per cent and to strengthen further its technological lead in the European programme. At the same time, EADS holds 45.76 per cent of the capital of Dassault Aviation, the manufacturer of *Rafale*, a competitor of *Eurofighter* on certain export markets. The situation is also contradictory for the French government: with a 15 per cent share of EADS, it finds itself a party to the *Eurofighter* programme whereas at the moment it is the only customer for *Rafale*.[77]

The creation of EADS therefore poses new questions, but by reducing the number of participants in the various joint ventures it will no doubt simplify cooperation with BAE Systems. Senior French and German executives in EADS have already declared their intention to reinforce existing links. Relations between the two groups seem to be stable in the field of satellites and missiles and, following the very recent agreement on AIC, civil aircraft.[78] In the long term, the situation will have to be adjusted concerning combat aircraft: will there one day be a single European focal point that includes BAE Systems, Saab, Dassault and EMAC? Alternatively, will one see transatlantic restructuring in this sector, with BAE Systems allied to Boeing and EADS to Lockheed?

It also remains to be seen whether a full-scale merger of BAE Systems and EADS is definitely out of the question, or whether it is a long-term possibility.[79] The fact remains that the success of one is linked to that of the other: 68 per cent of EADS's business comes from the various joint ventures with BAE Systems, 25 per cent of whose turnover comes from its cooperation with EADS.[80]

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77 *Le Monde*, 28 October 1999.

78 BAE Systems may veto any dilution of its participation in AIC, the modification of AIC's statutes or dissolution of the company. On the other hand, the British company may reject the business plan, which will be tantamount to an indication that, after three years, it intends to exercise its option of selling its participation to EADS. See *Les Echos*, 22 June 2000.

79 See the divergent statements by EADS's two CEOs, Reiner Hertrich and Philippe Camus, in *Le Monde*, 25 February 2000 and *Les Echos*, 28 February 2000.

80 *Handelsblatt*, 2/3 June 2000.

The periphery

Europe's remaining national champions are grouped around the two giants:

- Dassault Aviation is still formally independent but nevertheless lies within the orbit of EADS. Following the announcement of the Franco-German merger, Serge Dassault insisted on the right to terminate the shareholder agreement that had been imposed on him in 1998 giving Aerospatiale-Matra a veto on strategic decisions taken by Dassault Aviation. A clause of this agreement indeed stipulates that Aerospatiale-Matra must, in the event of a change of control, choose between the sale of its shares or relinquishment of its special rights within Dassault Aviation. This fact, which was once challenged by Aerospatiale-Matra, now seems to have been accepted by the latter. For the moment, EADS is simply a shareholder in Dassault Aviation, although it considers this participation to be one of its core businesses. The fact remains, however, that EADS will always be able to block any decision requiring agreement by two thirds of the shareholders. To make a clear distinction between the Eurofighter and Rafale programmes, EADS's participation in Dassault Aviation is managed within the European group by the head of corporate strategy (and not the director of the aeronautics division).[81] There are several possible scenarios for the future of the Dassault-EADS relationship:

- Dassault Industries, the holding company covering the Dassault family's interests, could split up Dassault Aviation's activities, keeping the civil part and bringing the military into EADS. This is, however, unlikely: Dassault Industries would then be obliged to exercise its pre-emptive rights – which would be difficult politically. Moreover, such a separation would cut off Dassault's civil activities from the military R&D from which it had previously benefited.
- Dassault Industries could bring its 49.9 per cent holding in Dassault Aviation to EADS and in return become a shareholder of the latter. That would be the French government's preferred solution, but the two industrial parties concerned are rejecting it for the moment.[82] In both cases Dassault Aviation would merge with EMAC, reducing Finmeccanica's participation from 50 to 35 per cent.

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81 *La Tribune*, 17 February 2000.
82 *Le Monde*, 28 October 1999.

- Finmeccanica, the holding company that controls the greater part of the Italian defence industry, is not considering direct participation in a large European alliance. The group was privatised in early June 2000, but the Italian State retains 30 per cent of Finmeccanica's capital. Of the remainder, half is held by private investors and half by institutional investors, with voting rights limited to 3 per cent.[83] Mergers play an important role in Finmeccanica's strategy, but only on the level of subsidiaries. The group's various activities are or soon will be integrated in international joint ventures, Finmeccanica itself remaining an independent holding and directly controlling Italian participation in these joint ventures. There is a simple reason for this: faced with the big groups, sector-specific link-ups offer the only way for the Italians to gain real powers of co-decision. The ideal solution is a 50-50 agreement; in areas where this is not possible, Finmeccanica has chosen to integrate its subsidiaries in multilateral joint ventures (which allows the minority partner to benefit from variable majorities). Integration has happened in defence electronics (AMS) and is scheduled for satellites (Astrium), missiles (MBD), and military and regional aircraft (EMAC). Regarding helicopters, an alliance with the British company GKN was announced over two years ago (Agusta/Westland) but has still not been finalised; if it were to fail, Agusta could (once again) consider a *rapprochement* with Eurocopter.[84] Which leaves civil aircraft: as part of the EMAC deal, the EADS partners offered Finmeccanica the option of 5 per cent participation in the capital of the future Airbus Integrated Company, an offer valid for three years and at a cost put at €1 billion. In addition, the Italians have also been offered 10 per cent participation as risk-sharing partners in the A3XX programme. Concerning the commercial business these proposals were probably the reason why Finmeccanica decided to link Alenia Aeronautica to EADS and not to BAE Systems.[85]

- Saab is linked to BAE Systems through an agreement on commercialisation of the *Gripen* aircraft that has led to financial participation of BAE Systems in the Swedish champion. It is possible that

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83 *Handelsblatt*, 13 May 2000.

84 *Air & Cosmos*, 21 April 2000, p. 11. Agusta had already been in negotiations with Eurocopter before turning to Westland. It appears that the creation of Agusta/Westland is at present suspended because of the possibility of a takeover of Westland by BAE Systems.

85 *Les Echos*, 14-15 April 2000.

cooperation between them will stop there. The situation in fact seems satisfactory for both groups since, rather than compete on export markets, they are coordinating their strategies and giving support to the other's proposals when they seem best placed. Moreover, BAE Systems's 35 per cent participation in Saab leaves control of the company with the Wallenberg group, which seems to wish to maintain it. As the CEO of Saab, Bengt Halse, indicated in May 1999, the mergers in France and the United Kingdom have created two European groups that are too big for Saab to find a place in them. The creation of EADS can only reinforce that perception. On the other hand, Saab recently took over Celsius, the number two in the Swedish defence industry, which has very diversified activities that will probably be integrated into international joint ventures. The German shipbuilder HDW already has control of its submarines division, and the next step could be for the new Nordic champion to integrate its combined missile activities in MBD.[86]

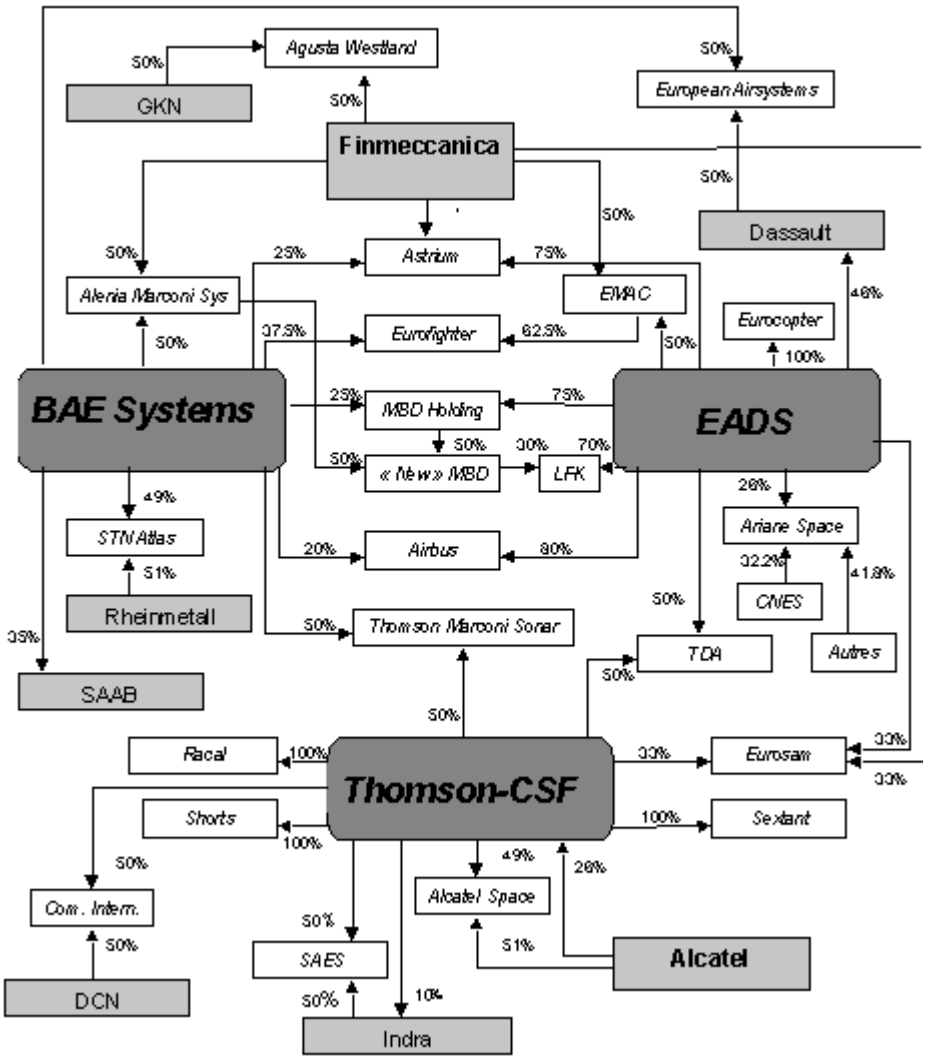
- Thomson-CSF remains the European leader in defence electronics, with a turnover in 1998 of $7 billion (against 6 billion for BAE Systems and 2 billion for EADS). Instead of participating in the major restructuring in Europe, Thomson-CSF has developed a specific strategy aimed at both the development of its commercial activities and geographical diversification of its defence activities. Its strategic alliance with Alcatel, the reference shareholder, presents opportunities for Thomson-CSF to exploit the synergies between civil and military electronics (in telecommunications in particular). In the defence business, Thomson-CSF is following a 'multidomestic' approach: in order to penetrate export markets, it is buying into local industry. In 1999, the electronics company thus strengthened its position in Australia (through the acquisition of ADI), in Brazil (participation in Embraer, together with Aerospatiale-Matra and Dassault), South Korea (purchase of 50 per cent of the capital of Samsung's defence electronics subsidiary), Singapore (acquisition of Avimo), South Africa (complete control of its subsidiary ADS) and in the United Kingdom (acquisition of Racal and complete control of Shorts). In Europe, Thomson-CSF's relations with EADS and BAE Systems are complex: the electronics company is both a partner (of EADS in TDA and Eurosam, and of BAE Systems in Thomson Marconi Sonar), a leading supplier (to Airbus, Eurocopter and Dassault) and a competitor (of BAE

[86] *Handelsblatt*, 17 November 1999.

Systems and EADS in space, missiles and defence electronics, and of BAE Systems in naval systems). These complex interrelationships will doubtless persist, even if cooperation with EADS could become stronger in certain areas.[87]

[87] See interviews with Philippe Camus (*Les Echos*, 18 October 1999), Serge Tchuruck (*Les Echos*, 25 October 1999) and Denis Rauque (*Le Monde*, 3 February 2000).

The new European landscape of aerospace and defence electronics industry



Chapter Three

POLITICAL CHALLENGES

Given the central role of States in the field of armaments, governmental support has been an essential condition for the transnational consolidation of defence companies. Governments have intervened more or less actively in the process in accordance with their influence and political will. In this context, the flexible, pragmatic policy of the left-wing government in France has been essential to the success of Europeanisation. Others, like the German government, supported consolidation without attempting to influence companies' decisions.

From a government point of view, however, the industrial restructuring that has been accomplished represents merely the beginning of a Herculean task. While the supply side has reorganised under the leadership of industry, it is now up to governments to reform both the market's regulatory framework and the functioning of the demand side. It is a matter, on the one hand, of creating the appropriate conditions for transnational companies to operate in a rational, efficient way and, on the other, of safeguarding States' interests *vis-à-vis* an increasingly transnational defence industrial and technological base. It will always be difficult to strike the right balance between the two as long as defence is the domain par excellence of national sovereignty and a common European armaments policy remains a project rather than a reality.

While it would be utopian to envisage an integrated armaments policy, it is evident that traditional forms of cooperation, which have been based on an *ad hoc*, programme-by-programme approach, are no longer appropriate. To gain full advantage from a consolidated industrial base, governments must change their mode of cooperation throughout the procurement process and redefine their role of customer, sponsor and regulator.

The debate on a common procurement system is not a new one. In certain areas European bodies exist (EUROLONGTERM, WEAG, WEAO, etc.),

but their success has been modest.[88] Today, in addition, many legal and political questions arise that are directly linked to the internationalisation of industries. National regulations regarding armaments are particularly complex in Europe, and for historical and cultural reasons they lack homogeneity. They make the operation of transnational companies very complicated and therefore present a major obstacle for the Europeanisation of the industry.

It was against this background that the defence ministers of the six major European armaments producing countries (France, Germany, Italy, Spain, Sweden and the United Kingdom) signed a Letter of Intent (LoI) on 6 July 1998 aimed at harmonising existing regulations. They set up six working groups dealing with: security of supply, export procedures, security of information, research and technology, harmonisation of military requirements and treatment of technical information. These groups presented their reports in July 1999 and, on the basis of their findings, an executive committee produced a final document. Once ratified by national parliaments (where this proves necessary), this agreement is intended to become an international treaty.

A detailed analysis of the LoI negotiations is outside the scope of this paper. The areas dealt with under the LoI are very varied, and each one is very complex. A brief glance at each will show just how complicated issues related to cross-border restructuring are.

III.1 Areas covered by the LoI

Security of supply

The internationalisation of defence industries means that security of supply is more essential than ever: for industry, on the one hand, because transnational restructuring requires the transfer of products and components as well as rationalisation of production across frontiers: for governments, on

[88] Pierre De Vestel, 'The Future of Armaments Cooperation in NATO and the WEU', in Kjell A. Eliassen (ed.), *Foreign and Security Policy in the European Union* (London and New Delhi: Thousand Oaks, 1998), pp. 197-215.

the other, because their defence policies depend on an industrial and technological base that is becoming increasingly international.

Commercial considerations and the search for greater productivity would suggest that transnational companies could themselves decide on the organisation and internal distribution of their work. This would imply that in time certain national capabilities would disappear and that the countries concerned would become interdependent. That poses several problems.

- It is possible that a country will consider a sector to be strategic and vital to national security. So long as it is a matter of a precise activity such as, for example, one related to nuclear deterrence, specific regulations can be applied that do not greatly hamper the firm's internal rationalisation. In other sectors, governments could work out procedures that would make it possible to reconstitute a national supply capability, for example under licence, or through leader/follower arrangements. The risk is that governments accept interdependence as a principle but dilute it by making too many exceptions.
- States have a legitimate interest in seeing that the Europeanisation of industry leads to a balanced geographical distribution of capabilities. The problem is how to work out that balance. It is obvious that a country participating in a given programme will want an appropriate share of it to take place on its territory, if only for reasons of employment. The danger is that this will lead to a new version of the economically inefficient principle of 'juste retour', requiring transnational companies to distribute sites and workload according to a political rather than an economic logic.
- Security of supply also concerns the ownership of defence companies. Should enterprises be free to decide their shareholder structure or should restrictions on change of control be established? Should firms' capital be completely open to foreign investors? What should be done in the event of a takeover bid by a non-European competitor? Some countries have national safeguards against undesirable changes of control, but would they be adequate to protect a European company? Given these problems, should a legal arrangement comparable to the American system be established at the European level?
- Security of supply does not concern just governments, but also companies. In order to use a component or subsystem produced in another country, defence companies must be sure of obtaining it without difficulty. In the absence of a common armaments market, this type of

transfer requires firms in Europe to go through long, non-harmonised export procedures. Moreover, the awarding of an export licence for a component depends on the destination of the final product: if it is a third country, it can happen that the country exporting the component refuses delivery on political grounds. For defence companies this possibility is an element of insecurity that hampers cooperation.

Export procedures

The question of exports is particularly complex since it covers the following:

- transfers of components and subsystems as part of international cooperative projects;
- the export of an item produced through international cooperation to a third, European or non-European country;
- export of a national product to European or non-European countries.

Even at the level of intra-European cooperation, a distinction must be made between transfers in the following cases:

- a cooperative programme covered by an intergovernmental agreement (MoU);
- industrial cooperation approved by governments, but not conducted pursuant to an intergovernmental programme;
- industrial cooperation without political 'cover'.

Among the various types of export and transfer there are many national regulations and they are far from homogeneous. 'Apart from general rules directly linked to States' administrative regulations, there are a series of clauses that the latter include in arms sales contracts. These clauses vary according to the country that draws them up, but in any event they set out standards with which national industry is obliged to comply when selling abroad.'[89] On top of this variety of regulations come divergences in political orientation. An integral part of foreign policy, arms sales vary in practice in accordance with States' ambitions, traditions and economic and security

[89] Op. cit. in note 24, p. 68.

interests. Public sensibilities, which are much more pronounced in some European countries than in others, is another determining factor and a source of differences.

The absence of common export policy and regulations hinders industrial cooperation in general and the functioning of transnational companies in particular. Regarding transfers as part of an intergovernmental programme, for example, companies are obliged to go through export procedures in order to transfer a component from one site to another. The situation is even more complex for purely industrial cooperative projects, which are becoming increasingly important. For systems produced through international cooperation, exports to a third country are normally subject to a covering intergovernmental agreement (MOU), although that does not rule out differing interpretations. The code of conduct adopted by the European Union in May 1998 is based on very general principles and is not binding; it is therefore merely a first step towards a common export policy.[90]

Security of information

In this area the challenge is to ensure that appropriate security provisions for the protection of classified information are enforced within transnational defence companies without putting unnecessary restrictions on the free movement of personnel, information and materiel.

Harmonising security regulations raises many technical problems: the security clearance of personnel and sites, access to classified information, protection and transmission of data, etc. Without mutual recognition of national personnel security clearance, for example, an employee of a transnational defence company, although he holds national security clearance, is required, on each occasion that he visits a site of his company in another country, to request permission from the national authorities of the latter. In the same way, an engineer with clearance in one country may not join an integrated project team without the explicit approval of the authorities of the other participating countries. As the procedures for

[90] See Elisabeth Clegg and Alexandra McKenzie, 'Developing a Common Approach? The EU Code of Conduct on Arms Exports', *Bulletin of Arms Control*, 32, December 1998, pp. 22-8.

obtaining permission are long and tedious, this complicates the work of transnational companies considerably.

Progress in this area is hindered by traditional national reflexes, but also by the security arrangements that participating countries may have with partners outside the LoI, particularly the United States. It is reckoned that the free circulation of information among Europeans could aggravate American reservations *vis-à-vis* transatlantic cooperation.

Research and technology (R&T)

It is obvious that R&T is the foundation of a competitive defence industry. Attempts to set up a European system, notably through the creation of the WEAO, have always come up against differences over questions such as the permissibility of restricted projects, the appropriate method of awarding contracts (competitively or not) and application of the principle of juste retour. In the absence of a central authority, there has until now been no systematic exchange of information on defence-related R&T programmes, nor coordination of R&T policies, nor common definition of future technological requirements. These shortcomings result in much duplication, the relative cost of which is all the greater since European R&T budgets are modest.

Duplication in R&T can easily end in the parallel development of several weapons systems of the same category. The creation of transnational companies by itself does not improve this situation, since the greater part of government financing of research and development is still devoted to national programmes. The only way of avoiding this type of duplication is to harmonise the procurement process as early as possible, and this requires governments to focus on the area of basic research and the capabilities requirement phase.

Harmonisation of military requirements

Harmonisation of requirements is essential for all the parties concerned. For industry it is important to rationalise manufacturing methods and thus to improve competitiveness. For governments, there are major potential

benefits to be gained from combining their purchasing power while at the same time improving the interoperability of their armed forces. For the last few years there have been a growing number of initiatives in this area, in NATO, the WEAG and now the LoI.

The results of these have, however, been modest. The procurement of weapons systems is a very complex process in which many military, political and industrial bodies participate. It is already very difficult to reconcile the various actors' interests in a purely national framework; when it is a question of bringing together several national decision-making processes, the number of difficulties grows exponentially each time that a new country joins the project.

European countries often have conflicting priorities, if only because of their geostrategic orientation. Even though in principle they have a common requirement, they may none the less arrive at different specifications for the same weapons system because of their specific military doctrines. One also has to take into account diverging philosophies on procurement and competing industrial interests that make it difficult to arrange joint projects. These problems are very difficult to surmount without a common defence policy, a high-level military body responsible for the harmonisation of requirements, and an authority to ensure cooperation throughout the procurement process.[91]

Treatment of technical information

Current restrictions on the communication and use of technical information could also be an obstacle to the effective functioning of transnational defence companies. Arrangements should therefore be made that, on the one hand, provide a guarantee to governments that the creation of a transnational enterprise will not affect their rights concerning technical information and, on the other, assure industry that governments will not interfere in the running of the company if it is not necessary.

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[91] See Keith Hayward, 'Towards a European weapons procurement process', *Chaillot Paper* 27 (Paris: Institute for Security Studies of WEU, June 1997), pp. 4-17.

Again, practical problems with the treatment of technical information have important implications for companies that merge across borders. One of the main problems in this area is the difference between national philosophies. Whilst in some countries technical information belongs almost exclusively to the government, in others intellectual property rights lie primarily with companies. Some countries have very strict regulations, whereas in others deregulation is such that negotiation of a contract is often done on a case-by-case basis. With such diversity it is very difficult to produce a common framework or to harmonise national regulations.

III.2 LoI achievements and prospects

Results so far

LoI work will result in an international treaty covering the six areas mentioned above. The entry into force of the LoI in two countries will enable them to begin to apply the treaty's provisions, the remaining countries joining in subsequently. Time-consuming national ratification will not therefore, as was the case with OCCAR, create frustrating delays. It is a framework agreement, with details to be given in specific MOUs where appropriate and necessary. The results so far are fairly mixed, in that the agreement is in most areas limited to declarations of intent. In view of the complexity and the politically sensitive nature of certain subjects, this is hardly surprising. What is more, the timetable of the negotiations was very ambitious. Even though they were restricted to armaments-producing countries, whose interests are relatively similar, it would have been very optimistic to expect working groups to resolve in twelve months problems that have existed for years or even decades.

In general results have been more concrete in technical areas than in political areas.

- Regarding security of information and treatment of technical information, the agreement provides for certain very precise advances. For example, security clearance given by a country will now, for a given programme, be recognised *ipso facto* by the other participating countries. In the same way, personal security clearance will allow an agent to carry classified documents from one country to another permanently (formerly, authority

was required for each mission). In general, clauses of the treaty dealing with these areas are so detailed that it will probably not be necessary to specify them in MOUs. However, adjustment of existing regulations will require further time and energy.

- In the area of security of supply, the LoI countries have agreed on several general guidelines, but on certain conditions. Thus, the six countries accept that industrial restructuring will lead to interdependence but insist on retaining the possibility to reconstitute a national source of supply in certain very exceptional cases for reasons of national security. They are in agreement that transnational companies should be free to distribute industrial capabilities according to economic logic and their own commercial judgement but reserve the right to keep certain key strategic capabilities on their respective territory. The six intend to simplify and harmonise national regulations and not to hinder the delivery of weapons systems from one LoI country to another, yet they have not reached agreement on common regulations. Each signatory has also agreed that, in a period of crisis, it will supply other LoI countries, if necessary from its own stocks. The agreement does not, however, include a clear undertaking on unrestricted mutual supply. As far as the takeover of a defence company by foreign investors, the LoI partners merely stress that governments should be kept informed of any change of control in good time.
- The provisions are more concrete regarding exports and transfers. For each cooperative programme that is the subject of an MOU, companies can make use of a global project licence specifically authorising the transfer of components and subsystems. The same procedures may be applied at the request of the companies concerned for industrial cooperation not conducted pursuant to an intergovernmental programme. For industrial cooperation outside the framework of an intergovernmental or approved industrial programme, the six countries undertake to simplify transfer procedures. For exports of a system produced in a cooperative programme, participants must all agree on a list of permitted destinations. At the request of any one of the participants, any such country may be removed from the list if after consultation there is no consensus among participants.
- In the field of harmonisation of requirements, the treaty outlines a programme of future work. The six partners propose to establish a methodology that will improve cooperation between them in all relevant collaborative bodies. The aim is to produce a common military concept,

harmonised acquisition planning, a common profile of future investment and common user requirements. The LoI countries therefore envisage a certain number of measures that would lead to a long-term master plan on future operational needs. They also undertake to 'organise consultation' in order to harmonise their programme management and equipment acquisition procedures. The methods, means and organisation for doing this will be set out in a specific international instrument.

- Concerning R&T, there is clearly real consensus among the six on difficult points such as globalised juste retour or the permissibility of restricted projects.[92] They agree to keep each other informed of their policies, strategies and programmes in this field, and to coordinate their respective relationships with transnational defence companies. Moreover, they intend to task, where appropriate, an organisation with contracting and managing R&T programmes. That agency will therefore have a legal personality and manage its own funds. The details will once again be set down in appropriate international instruments.

There is no doubt that the treaty represents an important step in the right direction. There is agreement that it is only a beginning, but that its great merit is that it clarifies and spells out the real regulatory problems. Nevertheless, most of the areas it covers will require a long-term effort. The six countries have taken this into account in continuing their work on the details of certain clauses, in MOUs. Cooperation will again be coordinated by an executive committee, supported where necessary by subcommittees.

The future

For the LoI exercise to succeed will require great political will, and here two problems arise. First, the political climate might be fairly unfavourable regarding armaments issues. In the field of European defence, the setting up

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92 In its traditional form, industrial juste retour is calculated each year, programme by programme. A globalised return, on the other hand, seeks a multi-programme/multi-year balance. This second approach, which has been chosen by OCCAR, gives greater flexibility in project management, and allows a distribution of work according to criteria that are more economic and technological than political. The permissibility of restricted projects is for its part an innovation compared with WEAO methods, which require that research projects carried out under its aegis be open to all WEAG members (see following footnote).

of new decision-making structures and the attainment of the Headline Goal defined in Helsinki will probably hold the attention of governments in the years to come. Any progress in these areas will no doubt have a positive effect on armaments cooperation. In the short term, however, it is likely to be pushed into the background. In addition, most of the subjects dealt with are of a very technical nature. Consequently, the officials dealing with them are the real masters of any reform, and not the political decision-makers. That being the case, the danger is that the principles set out by ministers will remain a dead letter because their practical implementation become bogged down in bureaucratic inertia.

There are, however, reasons to be more optimistic today than in the past, if only because of the impetus that has been given to European defence issues since St-Malo and Cologne. For example, attempts to harmonise requirements could gain from the experience of Kosovo, which has brought this question to the attention of the political class. Moreover, the Petersberg tasks could represent a sufficiently coherent operational framework within which to work out common capabilities and systems requirements, and the corresponding equipments. The creation of a European rapid reaction will underline the need to standardise the equipment of national armed forces. Last but not least, the EU's new Military Committee is a body that would be appropriate for encouraging the harmonisation of requirements. On the other hand, it has to be noted that there are many new programmes in progress today. In the areas in question, it will probably be necessary to wait several years before the opportunity arises to do better than in the past.

In the field of exports, the LoI agreement has made real progress concerning transfers. On the other hand, the effectiveness of the clause on exports to a third country of a system produced in the context of a cooperative armaments programme will depend on the way that lists of permitted destinations are managed. What, for example, will be the role of industry in drawing up these 'white' lists? Will all participating countries have equal rights of decision on the establishment and modification of a list, even if their participation in the project is minimal? At what stage in the programme will the list be drawn up, given that in certain cases the question of exports arises only fifteen to twenty years after the project has started? Nevertheless, whatever the details of the regulations in their final state, the real problem will remain a political one: so long as European consensus only concerns general principles but not their interpretation, the proposed

mechanism will doubtless not prevent the usual disagreements from reappearing when it comes to concrete decisions.

Concerning R&T, the LoI agreement is vague when it comes to relationships between governments and transnational companies. These aspects are however dealt with in a specific code of conduct aimed at a common approach *vis-à-vis* these companies and better coordination of R&T programmes. This is useful but it scarcely takes into account the way in which research projects are managed within companies, which should be able to work in transnational teams and to share the results of R&T whatever the source of the request and funding. In general the principles set out in the LoI treaty regarding R&T seem ambitious, but it remains to be seen whether they are acceptable to all the other members of the WEAG. The WEAG is currently preparing a new MOU called EUROPA, which seeks to make the EUCLID system more flexible.[93] If EUROPA is not compatible with the LoI principles, the six will certainly not hesitate to produce another MOU, bypassing WEAG and its research organisation WEAO. Independently of such a decision, there is a strong possibility that the OCCAR will also be given responsibility for R&T in the near future, reducing even further the importance of the WEAO as a contracting agency.

These institutional questions are linked to the exclusiveness of the process. Other countries can only become signatories to the LoI treaty once it has come into force in all six countries and with the approval of all of them. It remains to be seen whether the process will be opened to other European countries, but there is at present every indication that the LoI countries have decided to continue their work in a restricted group, preferring deepening to widening.[94] Given that they collectively account for over 90 per cent of

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93 EUCLID is the WEAO's R&T programme. Until now it has met with little success since, for the big countries and groups, the key elements of EUCLID hold little attraction. The absolute right of all WEAG countries to join a given project, the sharing of costs equally and provisions on intellectual property rights diminish, from their point of view, the attractiveness of the programme. For further details see for instance, WEU Assembly Document 1671, 'Armaments cooperation in the future construction of defence in Europe – reply to the annual report of the Council', Report submitted on behalf of the Technological and Aerospace Committee by Mr O'Hara, Rapporteur, 10 November 1999, p. 13.

94 Entry conditions are quite demanding and discriminatory. Other EU members can apply for membership, in which case the six examine the candidature and must agree

armaments production in Europe, this wish to limit the number of participants in order to first arrive at a sufficient level of efficiency is understandable.[95]

The question of exclusiveness in armaments cooperation arises regarding not only the LoI but more generally. The problem is to find an arrangement that is satisfactory both for armaments-producing countries and for countries that have little or no industrial capacity. There are two reasons why the latter should not be left out. First, non-LoI countries as a whole represent a non-negligible market, and involving them in the framing of a European armaments policy could encourage them to buy European systems more often. The second reason is political: as armaments cooperation is an important aspect of European defence, it would be preferable not to create new divisions between the Europeans. It remains to be seen how and in what areas the non-LoI countries can be involved.

Although it is too early to tell what the final architecture will look like, the emergence of a two-level structure seems probable. OCCAR and the LoI illustrate that programme management and rules for cooperation can develop independently of each other. This process could be transferred to the European level and in other areas. All European countries being customers, it would doubtless be rational for them to define common rules for the armaments market. Since, however, the development and production of weapons systems involves only a limited number of countries, why should their cooperation not happen in a restricted framework? In that case, OCCAR could look after R&T and the management of cooperative programmes, leaving procurement and perhaps maintenance to a European agency that includes all members of WEAG.[96]

unanimously. In the case of European non-EU members, an invitation to join must come from the six who, once again, must all agree on this.

95 Given its political status and the size of its defence industry, the Netherlands is best placed as a candidate for both the LoI and OCCAR.

96 Although OCCAR is restrictive, this does not prevent other countries from participating on an *ad hoc* basis: the A 400M, for example, will be managed by OCCAR, even though three of the seven countries participating in the programme (Belgium, Spain and Turkey) are not members of the organisation.

III.3 Could industry drive political integration forwards?

Industry's effects on intergovernmental cooperation

It is obvious that the significant divergences in Europe are between the major arms-producing countries and those that have no, or only limited, industrial capacities. In addition, however, the difficulties encountered in the LoI negotiations show that the latter themselves form a very heterogeneous group. Also, internationalisation affects them to varying degrees: with the creation of EADS, three of the six LoI countries saw a major portion of their high-tech defence industries incorporated into a single European champion. Consequently, it would be in the interests of France, Germany and to a lesser extent Spain, even more than the others, to take cooperation even further forward. These countries could thus act as a motor in the LoI process.[97]

The impact of EADS on cooperation between governments certainly varies according to the area, just as the different areas of the LoI do not have the same importance for EADS. Regarding security of supply, the abandoning of national capabilities is not a question for EADS in the short term. For political reasons – local sites have to be preserved so as not to lose access to national markets or the support of national governments – and for contractual reasons – the details of current programmes have already been fixed in MOUs – opportunities for reducing duplication within EADS are likely to be limited. The question will, however, arise when new programmes are launched and the division of work has to be decided again. Yet even at that point the distribution of tasks will no doubt correspond to States' financial contributions.

On the other hand, the governments concerned should think about the future control of the group in good time. This aspect, which was scarcely touched on in the LoI agreement, might become relevant as from 2003, when DaimlerChrysler and Lagardère will be free to sell their holdings in EADS. Although this hypothesis may seem purely academic today, it would be better not to advocate total political laissez-faire. If today's industrial shareholders really do pull out, would it not be desirable for an activity as

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97 Despite the integration of CASA in EADS, Spain is less concerned to the extent that it buys off the shelf more often than Germany and in particular France.

cyclical as aerospace to find other block shareholders capable of cushioning the pressure from financial investors? Could the French state play this role alone faced with a distributed shareholder base? Is it necessary to establish explicitly the group's European character? If so, how might it be done? Could it be stipulated in EADS's statutes that a majority of shareholders and/or executive directors must be European? What would the reaction of the financial markets to such a stipulation be? Will the French government remain the only shareholder with special rights within EADS, and will these apply only to facilities in France? If a system of safeguards against a change of control were established, what body would be responsible for its application? These questions are all the more difficult to answer since the States concerned have traditionally had different perceptions of the matter.[98]

Governments should also fairly quickly tackle the questions of harmonisation of requirements and defence-related R&T. While it is true that the possibilities for rationalising current programmes are limited, commitments have to be made today so that the organisation of future programmes are as rational as possible. To that end, governments should harmonise their preliminary studies as early as possible and provide common R&T funding. Now that there is this new common industrial tool, why not set up a really integrated structure that is responsible for the joint preparation of future projects and management of all national funding in aerospace? The '3+3' structure that France and Germany established in 1999 should also be strengthened. In this framework the national armaments directors, chiefs of defence staff, relevant German secretary of state and French DCI-DGA meet four times a year to verify their long-term planning. Given the trilateral character of EADS, it would seem useful, at least in aerospace, to go through a similar exercise including Spain. In order to involve industry as early as possible in the process, the structured dialogue that the DGA has established with French industry as part of its 'Strategic partnership' could also be strengthened and internationalised.

The creation of EADS should also provide the occasion to take forward development of common procurement structures. OCCAR exists of course, but neither Spain nor Sweden is a participant and, because it has no legal

98 See Alain Hagelauer, 'Peut-on considérer la maîtrise du capital comme un enjeu de souveraineté?', in op. cit. in note 42, pp. 61-70; Olivier Provost and Loïc Tribot La Spière, 'Quelles peuvent être les conditions favorables au développement d'un véritable actionnariat?', ibid., pp. 71-80.

personality, it has not up till now had the opportunity to prove its effectiveness. Moreover, its field of action is restricted to programme management and it does not cover either the harmonisation of requirements or the specification of technical characteristics (nor in-service support). The need to re-think all of the procurement procedures is all the more urgent since European countries have begun to reform their national agencies, and this has included steps to make cooperation with industry both closer and more flexible. If States, independently one from another, strengthen their links to industry without setting up common agencies based on the same principle, the internationalisation of industry could even complicate the connection between supply and demand in Europe.[99]

Another issue that has to be clarified is exports. Whilst the global licensing system will no doubt make transfers between the various EADS sites easier, it remains to be seen how far the group will be able to extend this to projects outside the framework of an intergovernmental or approved industrial cooperative programme. As far as exports to third countries are concerned, aerospace systems manufactured through Franco-German cooperation are in theory covered by the Schmidt-Debré accord of 1972. This requires each of the two governments to inform the other before granting an export licence and to consult the other in the event of disagreement. However, the central element of the Schmidt-Debré accord is a tacit agreement that allows the country holding the export contract to take the final decision. In view of the German government's reservations on arms exports, it is important to rebuild the consensus on the interpretation of this accord. Without a joint policy, Germany might see a gradual transfer of all its activities that are associated with defence exports to France, which has traditionally been less restrictive in this area.

This last issue touches on a problem that goes beyond the scope of the LoI: there is in effect no European company status, nor common fiscal, social or employment law. National policies of support to industry also vary. This lack of harmonisation has disadvantages for both companies and countries. The former are obliged to set up extremely complex legal structures and take on extra administrative costs. The experience of Eurocopter shows that bilateral and trilateral solutions are possible in certain areas like, for

99 See Jordi Molas-Gallart, 'Defence Procurement Reform, Systems Engineering and International Markets', op. cit. in note 21, pp. 83-99.

example, employees' social rights.[100] However, the internal fragmentation of companies will persist so long as there are no European solutions. Governments for their part run the risk of joining in a competition to attract an optimal workload for 'their' sites thanks to fiscal, social and other advantages. In the long term, such a race for investments will not help either the employees or the countries concerned.

These questions concern the deepening of the single market in general, a subject that is much too vast and important to be affected by the creation of EADS. However, in certain defence-related areas (harmonisation of requirements, R&T and exports), the emergence of a European champion could have important effects, pushing the countries concerned towards even greater cooperation. Through the numerous joint ventures that link EADS to other European companies, this cooperation could gradually involve all the LoI countries. If this were to happen, European armaments policy would come about rather from the bottom up, and driven by industry.

Effects on competition

There is a similar phenomenon regarding the creation of a European defence equipment market. Until now, attempts by WEAG and, more recently, the European Commission, to open up national markets through common regulation have ended in failure. At the same time, growing cooperation in high-tech areas (aircraft, missiles, etc.) has already caused the partial opening up of the national markets of armaments-producing countries.[101] In the case of such collaborative projects, the domestic market is in effect no longer national but includes all participating countries. 'This European market is admittedly limited (to complex weapons systems), [often] exclusive (to the LoI countries) and variable (depending on the groups of countries that are working together on the respective programme). It is nevertheless very important economically (involving the most expensive systems and the largest armaments-producing countries) and its share of European procurement will no doubt continue to rise (because of the increased importance of sophisticated systems and the generalisation of

[100] For a detailed analysis of Eurocopter see ibid, pp. 58-67.

[101] It should be noted that non-LoI European countries normally buy their state-of-the-art equipments off the shelf. The markets for these products are already open and competitive.

international cooperation).'[102] Mergers and acquisitions across national frontiers will reinforce the development of a common armaments market. 'By becoming transnational, enterprises themselves "merge" their domestic markets and thus create a new market that is also transnational.'[103]

The recent wave of industrial restructuring means that the creation of a European defence equipment market is highly topical. However, the consequences need to be qualified. It is generally recognised today that it would be very difficult if not impossible to impose a common defence market merely by doing away with Article 296 of the TEU. Hence the European Commission's proposal to divide the defence sector into three categories, and not to apply the rules to 'highly sensitive' systems, which would certainly include – in addition to nuclear – complex weapons systems.[104] The exclusion of the latter category is justified on two grounds: firstly, defence ministries choose major weapons systems according to many very specific criteria that *de facto* make it impossible for a third party to control the objectivity of the decision to purchase.[105] Secondly, the creation of a European defence market will not change the situation regarding competition for complex systems, in that transnational consolidation has already largely reduced the number of producers. In the sectors concerned, the importance of a common market is above all that it would facilitate transfers, combine governments' purchasing power and standardise armed forces' equipment through joint procurement. As a result, attempts to create a common market should emphasise, on the one hand, the abrogation of Article 296 concerning non-sensitive systems and, on the other, the setting up of a joint procurement system and the development of the LoI agreement concerning non-sensitive systems.

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102 Sandra Mezzadri, 'L'ouverture des marchés de la défense: enjeux et modalités', *Occasional Papers* 12 (Paris: Institute for Security Studies of WEU, February 2000), p. 33.

103 Ibid.

104 The three categories proposed by the Commission are: (a) products destined for armed forces but not for a military use; (b) products destined for armed forces and for military use but not highly sensitive; (c) highly sensitive equipments. See Anne Riegert, 'Quelles seront les incidences en matière d'exportation de la constitution de groupes transnationaux de défense au niveau européen?', op. cit. in note 42, pp. 97-107.

105 See Pierre De Vestel, 'Defence markets and industries in Europe: time for political decisions?', *Chaillot Papers* 21 (Paris: Institute for Security Studies of WEU, November 1995), p. 45.

Hence, for most sophisticated weapons systems, the problem of competition arises independently of the creation of a common market. Transnational consolidation of the industry will certainly lead to European monopolies, but the negative effects of this have to be kept in perspective. After all, competition in the sectors in question happens increasingly at a global level. Customers that have no defence industry, whether they are European or not, will thus always at least have the choice between a European and an American system.

The situation is more complex for armaments-producing countries. Competition in high-tech sectors had already been reduced before the recent wave of restructuring, and very few such countries have been prepared to turn to a foreign competitor if their home industry could produce the same system. Furthermore, most complex systems have already been produced cooperatively by national champions. In these cases, the merger of the latter, whether global or sector-specific, does not change the situation regarding competition, but improves their competitiveness in the face of American competition.

If one looks at the three main European markets one sees that certain areas of competition remain in the new industrial landscape. In Germany, there are still second-rank actors that can compete with EADS in the particular sectors of missiles (BGT) and defence electronics (STN-Atlas).[106] In France, Thomson-CSF is in competition with BAE Systems and EADS joint ventures in the fields of missiles and satellites. Through its subsidiaries Racal and Shorts, Thomson-CSF is also present in the United Kingdom, where it can compete with BAE Systems in defence electronics and certain types of missiles.

However it is also true that, in most of the hi-tech areas, the number of European prime contractors and systems integrators capable of making complex weapons has been greatly reduced. For arms-producing countries, the only way to introduce competition is to open their markets to non-European, particularly American, suppliers. The British invitation to tender for the BVRAAM showed that doing so can considerably strengthen the

[106] Note, however, that BAE Systems owns 49 per cent of STN-Atlas (and Rheinmetall 51 per cent) and MBD owns 20 per cent of BGT (Diehl 80 per cent).

customer's position *vis-à-vis* a European monopoly.[107] In these areas where transnational consolidation has already happened, it is very likely that other armaments-producing countries will in future adopt a similar procurement policy in order to avoid the potentially negative effects of monopolistic situations. For France in particular, which has traditionally followed a policy of national autonomy, this would represent a radical change.

The opening of markets to American firms will doubtless be facilitated by the persistence of a minimal amount of intra-European competition. This will allow, for example, an American company to team up with Thomson-CSF or a second-rank player like BGT in order to win a European contract in preference to BAE Systems and/or EADS. An alliance between an American prime and a second-rank European would probably put forward a (more or less) modified version of an American product. The other possibility would be simply for Europeans to buy a system off the shelf in the United States instead of developing one themselves. In the face of budgetary constraints, this 'cheap' solution will no doubt become increasingly attractive to European countries. It is after all a political decision in which areas Europe wants to make the necessary investment in order to keep its technological and strategic autonomy.

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[107] Raytheon's competitive bid in effect helped the British government to obtain better conditions from the European consortium that was putting forward the *Meteor* missile. In this context it is interesting to note that one of the reasons why London chose *Meteor* was in order to break Raytheon's world monopoly in long-range air-to-air missile. This illustrates that competition in high-tech sectors now happens on a global level.

Conclusion

During the course of the last two years, the takeover of Marconi by BAe, the creation of EADS and several sector-specific *rapprochements* have created the basis of a competitive European industry. The restructuring has not followed the expected path, but the end result shows that some of the ideas underlying the concept of an EADC were valid and sound:

- from the point of view of technology, European joint ventures are competitive but their organisation and structures are often far from optimal. To make them economically more effective, the network of alliances had to be simplified and the strategic interests of parent companies brought into line;
- the majority of national champions lack the critical mass necessary to face American competition. They had to merge in order to pool R&D resources, broaden their portfolios and enlarge their markets;
- the link between civil and military businesses is vital to the aerospace industry, hence the necessity to combine the two and create strong ties between parent companies and their subsidiaries.

The EADC concept has, however, undergone substantial modifications: the idea of bringing together several national champions from the beginning was unrealistic. The only way to take things forward was to advance via bilateral negotiations. In addition, the aim of having a *single* large company was in practice replaced by an 'enlarged duopoly' or, if one takes into consideration defence electronics, an 'enlarged trio'. Yet this is more than a second-best solution: provided that the criteria of efficiency and economic and technological competitiveness are met, a certain multiplicity at the industrial level perhaps corresponds better to Europe's political plurality. It leaves a minimal amount of intra-European competition for military tenders and helps to avoid giving the impression that there is a 'fortress Europe'.

The three large groups that have emerged from the restructuring are all international actors but each has its own individual character: Thomson-CSF and BAE Systems became internationalised through the acquisition of subsidiaries abroad and the creation of joint ventures, whereas EADS was created out of the complete merger of three national champions. It can therefore be considered the 'legitimate heir' of EADC.

It now remains for governments to create the right conditions for industries to exploit fully their potential. For the moment the European armaments edifice is still at the building site stage: elements exist here and there but the architects have difficulty in agreeing on the plans for the building. There is no common, comprehensive approach, the work of the various actors (LoI, OCCAR, WEAG, WEAO, European Commission, Polarm) are hardly coordinated and there is no systematic discussion of the issue as a whole.

Cynics maintain that this state of affairs suits the interests of the key countries, who, whatever happens, will prefer to go ahead alone in the OCCAR and LoI frameworks. The fact remains that a multi-storey Europe is emerging with, in particular, a separation of armaments-producing countries on the one hand and customers on the other. The moment of truth will arrive in autumn 2001, when defence ministers will decide whether or not to implement a 'Master Plan' for a European Armaments Agency that is at present being drawn up by a WEAG group of experts.

For armaments-producing countries, a redefinition of relations with industry is essential. This is, however, a major challenge, because it covers political, strategic, military, financial and industrial questions. As these factors can diverge, tensions emerge that slow down progress and lead to contradictions. As customers, for instance, governments increasingly treat defence industries as 'normal' industries. As regulators, on the other hand, they insist on their prerogatives regarding exports, security of information, etc.

In an area that lies between two very different worlds – defence and economics – such contradictions are inevitable. They are, however, particularly pronounced today because the logic that applies in each of these worlds has never been so different: whereas technological, financial and economic considerations drive companies in the direction of globalisation, defence is still a national matter. Hence the innumerable political and bureaucratic obstacles that complicate industrial business, obstacles that none the less will gradually be broken down by economic realities.

As customers, sponsors and regulators, governments will continue to play an essential role but they cannot ask industry to adapt to the new economic and financial conditions without adjusting their own policies. In the first place this means harmonising national regulations and creating a (more)

homogeneous defence economic area. Then, a procurement system that is appropriate to the new industrial landscape will have to be established, with increasingly integrated solutions throughout the process. In addition, a stable funding of programmes, based on multi-year contracts, is indispensable if companies are to be able to make the customer satisfactory offers (fixed prices, guaranteed performance and delivery date, etc.).

Quick, effective measures along these lines are also necessary because companies are now quoted on stock markets and hence depend on attracting private capital: the obligation to satisfy investors (who today expect short-term profits) is by definition difficult to respect in a defence-related business (where R&D investment is very substantial, and production and life cycles very long). Since they want to have a competitive defence industrial base, governments will have to take an interest in the stability of enterprises' share prices; the best way to help in this would no doubt be to follow modern procurement and industrial policies.

Reform of the regulatory and procurement systems is all the more urgent since budgetary problems in Europe seem likely to continue: a substantial increase in defence budgets does not seem probable, and a large portion of the available funds will be devoted to the restructuring of armed forces. Resources remaining for equipment will largely be used for the procurement of a few major programmes that were begun even before the fall of the Berlin Wall. In the short and medium term, these projects will certainly represent important growth factors for industry, but the long-term prospects are less optimistic. In aerospace, for example, the *Airbus* A400M and the *Meteor* missile are the only two new programmes for the foreseeable future. R&D/T funds will be severely reduced, which could call into question the technological competitiveness of tomorrow. One can but hope that this situation will put governments under pressure so that the redefinition of their armaments policy is rapid and innovative.

For industry, budgetary constraints in Europe are a further reason to follow the path of globalisation. In this context, transatlantic relations are essential: gaining access to the most important market in the world and the technological know-how of the American giants is indeed a major attraction for the European groups, who now have the size, technology and financial power to enter into balanced transatlantic partnerships.

However, many political and regulatory constraints restrict transatlantic prospects:

- there are very few joint programmes because military planning is not coordinated and there is no harmonisation of requirements;
- the possibility of direct sales is very limited, for legal reasons ('buy American' Act) and because the American military are extremely reluctant to depend on equipment that is not made exclusively in the United States;
- a series of regulations in the United States oppose the acquisition of American defence-related companies by foreign investors;
- there are many important restrictions on the transfer of technology between American and foreign companies;
- Congress and certain branches of the Administration are opposed to any attempt to lift the political and legal barriers.[108]

The current state of the American industry confirms this rather gloomy prospect. Firstly, the large American groups lack international experience. They are very active in the export market but are not used to forming lasting, balanced partnerships with foreign companies. Next, Lockheed, Raytheon and Boeing are all experiencing great difficulties in digesting their numerous mergers and acquisitions of recent years. As a result, their management will doubtless be more preoccupied with internal problems than with transatlantic prospects. Last but not least, these growing pains have caused a dramatic fall in the value of shares, which considerably reduces the American giants' strategic options. Their main objective will be to restore investors' confidence, and Wall Street has always been sceptical of transatlantic link-ups.[109]

This does not mean that a strengthening of transatlantic ties is out of the question. However, at the level of prime contracts it will happen rather through cooperation in certain very precise areas. Boeing's membership of the *Meteor* consortium,[110] as well as discussions between the EADS

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108 See Robert Grant, 'Transatlantic Armament Relations under Strain', in *Survival*, vol. 39, no. 1, Spring 1997, pp. 111-37.

109 See Andrew James, 'Post-Merger Strategies of the Leading US Defence Aerospace Companies: Lessons for Europe?', op. cit. in note 32, pp. 68-82.

110 *Les Echos*, 20 October 1999.

partners, Lockheed and Grumman on cooperation on, respectively, mission aircraft and defence electronics, fall into this category.[111] Transatlantic cooperation will doubtless progress more quickly among second and third-tier suppliers. Having a lower profile, the latter can form alliances without making headlines in the leading newspapers and touching national sensitivities.[112]

For the Europeans, the big American groups are not simply interesting partners but also examples from which lessons can be drawn. By looking at their competitors' experiences, the European champions should be able to avoid some fatal mistakes during their integration process. The crises in Boeing, Lockheed and Raytheon in effect show how difficult it is realise expected synergies and carry out an integration while at the same time not neglecting the management of ongoing programmes.[113] In any event, mergers in Europe will not be easier than those in the United States. BAE Systems still has to demonstrate the virtue of vertical integration. EADS has not only to resolve the usual post-merger integration problems but to handle the consequences of being transnational. The main lesson from the American experience is quite clear: to be competitive, sheer size is not sufficient.

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111 *La Tribune*, 18 June 1999; *Le Monde*, 18 June 1999; *Jane's Defence Weekly*, 23 June 1999; *Les Echos*, 26 April 2000; *Military Technology*, vol. XXIV, issue 3, 2000, pp. 94-6.

112 See Andrew James, 'Medium Sized Defence Electronics Companies and US Industry Restructuring', Report to FOA, Stockholm , February 2000.

113 Op. cit. in note 32.

Abbreviations

ADI	Australian Defence Industries
ADS	African Defence Systems
AECMA	Association Européenne des Constructeurs de Matériel Aérospatiale (European Association of Aerospace Industries)
AIC	Airbus Integrated Company
AMS	Alenia Marconi Systems
BAe	British Aerospace, now BAE Systems
BGT	Bodensee Geräte Technik GmbH
BVRAAM	Beyond Visual Range Air-to-Air Missile
C4	Command, Control, Communications and Computing systems
CASA	Construcciones Aeronáuticas S.A.
CEO	Chief executive officer
COO	Chief operator officer
DASA	DaimlerChrysler Aerospace AG
DGA	Direction Générale de l'Armement (Delegation-General for Armaments)
DCN	Direction des Constructions Navales
EADC	European Aerospace and Defence Company
EADS	European Aeronautic Defence and Space Company
EEIG	European Economic Interest Grouping
EIG	Economic Interest Grouping (French law)
EMAC	European Military Aircraft Company
EU	European Union
EUCLID	European Cooperation for the Long Term in Defence
FLA	Future Large Aircraft
FSAF	Future Surface-to-Air Family
GEC	General Electric Company
GIAT	Groupement d'industries d'armement terrestre
GKN	Guest Keen Nettlefolds Limited
HDW	Howaldtswerke Deutsche Werft
ISR	Intelligence, Surveillance, Reconnaissance
JSF	Joint Strike Fighter
LFK	Lenkflugkörpersysteme GmbH
LoI	Letter of Intent
MBD	Matra BAe Dynamics
MDD	McDonnell Douglas
MMS	Matra Marconi Space
MoU	Memorandum of Understanding
MRAV	Multi-Role Armoured Vehicle
MTU	Motoren und Turbinen Union
NADS	National Armaments Directors
NATO	North Atlantic Treaty Organisation
OCCAR	Organisation for Joint Armaments Cooperation
PAAMS	Principal Anti-Air Missile System
R&D	Research and Development

R&T	Research and Technology
RMA	Revolution in Military Affairs
SCE	Single Corporate Entity
TDA	Thomson Dasa Armaments
WEAG	Western European Armaments Group
WEAO	Western European Armaments Organisation
WEU	Western European Union

Annexes

ANNEXE 1

Defence, R&D and acquisition budgets of the six LoI countries and the United States 1995 – 1999

	Defence Budget					Equipment: Acquisition					Equipment: R&D				
	1995	**1996**	**1997**	**1998**	**1999**	**1995**	**1996**	**1997**	**1998**	**1999**	**1995**	**1996**	**1997**	**1998**	**1999**
Germany	34 625	32 745	26 641	26 002	23 790	3 969	3 705	2 956	3 455	3 715	1 981	1 850	1 487	1 410	1 262
France	42 240	37 861	32 711	30 703	28 353	7 952	7 588	6 465	5 620	5 242	5 525	4 932	3 821	3 254	3 148
Spain	7 243	7 014	5 942	5 888	5 464	998	1 243	1 012	781	744	299	282	242	198	170
UK	35 725	34 196	35 736	36 111	33 254	7 334	8 189	8 466	9 354	8 263	3 408	3 422	3 491	3 785	3 909
Italy	16 619	20 680	18 237	17 495	15 609	1 642	2 026	2 100	2 394	1 905	579	756	751	533	298
Sweden	6 290	6 253	5 021	5 241	4 350	2 485	1 943	1 671	1 895	2 205	163	160	158	160	95
Total LoI	142 742	138 749	124 288	121 440	111 820	24 380	24 694	22 670	23 499	22 074	11 955	11 402	9 950	9 340	8 882
USA	274.624	271.739	257.975	253.423	252.379	46 251	43 332	42 930	43 887	47 052	36 597	35 722	36 404	36 469	35 324

(in millions of constant $US 1997)

ANNEXE 2

R&D and equipment budgets of the six LoI countries and the United States 1995 – 1999

	Percent of equipment in defence budget					*Percent of R&D in equipment budget*				
	1995	**1996**	**1997**	**1998**	**1999**	**1995**	**1996**	**1997**	**1998**	**1999**
Germany	17%	17%	17%	19%	21%	33%	33%	33%	29%	25%
France	32%	33%	31%	29%	30%	41%	39%	37%	37%	38%
Spain	18%	22%	21%	17%	17%	23%	18%	19%	20%	19%
UK	30%	34%	33%	36%	37%	32%	29%	29%	29%	32%
Italy	13%	13%	16%	17%	14%	26%	27%	26%	18%	14%
Sweden	42%	34%	36%	39%	53%	6%	8%	9%	8%	4%
USA	30%	29%	31%	32%	33%	13%	13%	14%	14%	14%

Source: The Military Balance 1999/2000 IISS London 1999 p. 37

ANNEXE 3

Value of arms deliveries and market share
1987 / 1992-1998

	World Total		USA		West. Europe		UK		France		Germany		Italy		Sweden	
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
1987	88,907	100	23,989	27.0	22,099	24.9	7,359	8.3	7,969	9.0	2,159	2.4	978	1.1	1013	1.1
1992	51,539	100	28,161	54.6	15,683	30.4	5,532	10.7	4,610	8.9	1,877	3.6	1,150	2.2	942	1.8
1993	46,890	100	26,075	55.6	12,417	26.5	5,106	10.9	3,199	6.8	1,629	3.5	749	1.6	540	1.1
1994	42,790	100	22,946	53.6	12,530	29.3	4,960	11.6	3,580	8.4	1,502	3.5	610	1.4	573	1.3
1995	46,891	100	23,989	51.2	15,212	32.4	7,776	16.6	3,970	8.5	1,442	3.1	789	1.7	514	1.1
1996	51,061	100	25,032	49.0	18,984	37.2	9,854	19.3	5,871	11.5	685	1.3	795	1.5	653	1.2
1997	55,996	100	27,118	48.4	21,820	39.0	10,948	19.6	7,419	13.2	751	1.3	1,213	2.1	481	0.8
1998	55,756	100	26,154	48.6	22,394	40.2	8,971	16.2	9,804	17.6	834	1.5	1,147	2.0	574	1.0

(in millions of constant $US 1997)

Source : The Military Balance 1999/2000 IISS London 1999 p. 281

ANNEXE 4

Most important defence electronics and aerospace companies in Europe (1998)

in millions of US dollars

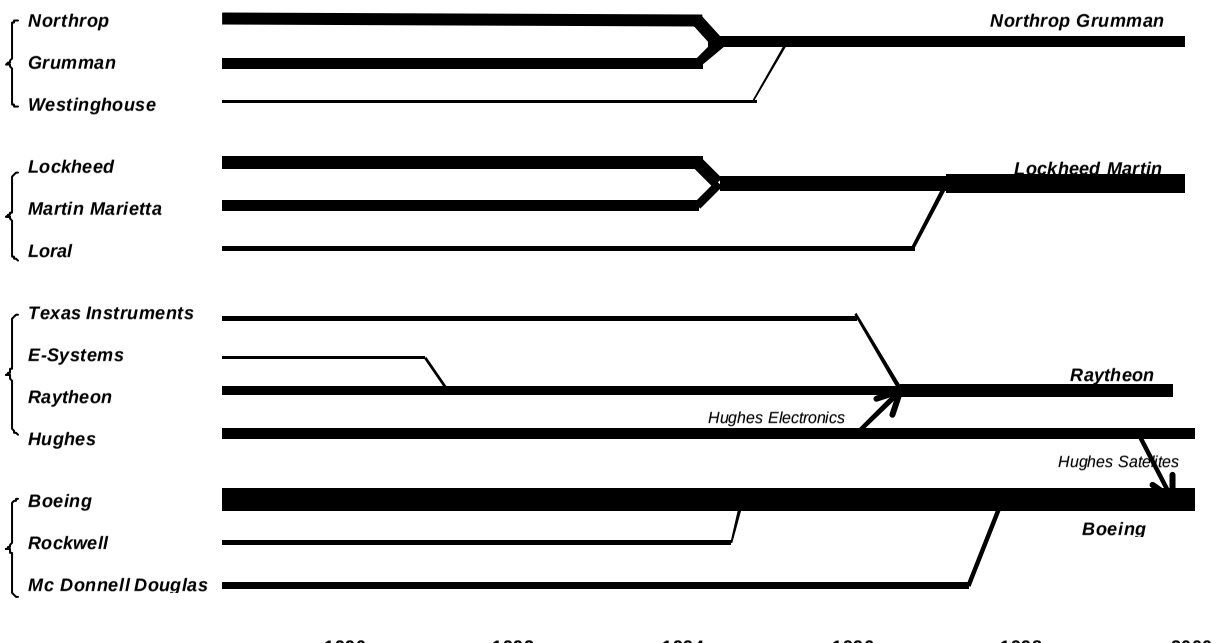
World Ranking	Company	Country	1998 Defence Revenue	1998 Total Revenue	% of revenue in defence
4	British Aerospace plc	UK	10,546.0	11,686.0	90.2
5	General Electric Co. Plc	UK	5,866.6	12,653.7	46.4
7	Thomson CSF	France	4,500.9	7,205.7	62.5
9	Daimler Chrysler Aerospace	Germany	3,087.0	10,290.0	30.0
15	Rheinmetall Group	Germany	2,246.3	4,818.0	46.6
16	Rolls Royce plc	UK	2,238.3	7,461.1	30.0
19	Groupe Dassault Aviation	France	1,947.7	3,596.4	54.9
21	Aerospatiale	France	1,674.1	9,765.3	17.1
22	Lagardère	France	1,542.1	12,481.9	12.4
25	Finmeccanica	Italy	1,402.7	6,847.5	20.5
31	Celsius Corp	Sweden	1,171.0	1,759.0	66.6
34	Snecma Group	France	989.5	5,065.6	19.5
35	Diehl Stiftung & Co	Germany	964.8	1,827.6	52.8
37	Hunting Defense Ltd	UK	812.5	1.629.3	49.9
40	Smiths Industries plc	UK	764.0	1.978.0	38.6
47	Saab Group	Sweden	638.8	1,015.0	62.9
48	Racal Electronics plc	UK	617.8	1,740.0	35.5
49	Sagem	France	604.9	3251.0	18.6
71	Cobham	UK	382.4	637.4	60.0
75	CASA	Spain	353.1	1,177.0	30.0
85	Sextant Avionique	France	296.0	925.1	32.0
88	Indra Systemas SA	Spain	271.6	604.2	44.9
92	Oerlikon Contraves AG	Switzerland	252.6	300.5	84.1
94	LM Ericsson	Sweden	249.7	22,704.0	1.1

Source : Defence News Research

The other eight, from other sectors of defence industry were: DCN (turnover 2,010.3), GKN Group (6,150), GIAT Industrie (1,281), Krauss-Maffei (1,813), Vickers Defence Systems (1,481), Empresa Nacional Bazan SA (509.9), Alvis plc (433.4) and Kongsberg Group (918.4).

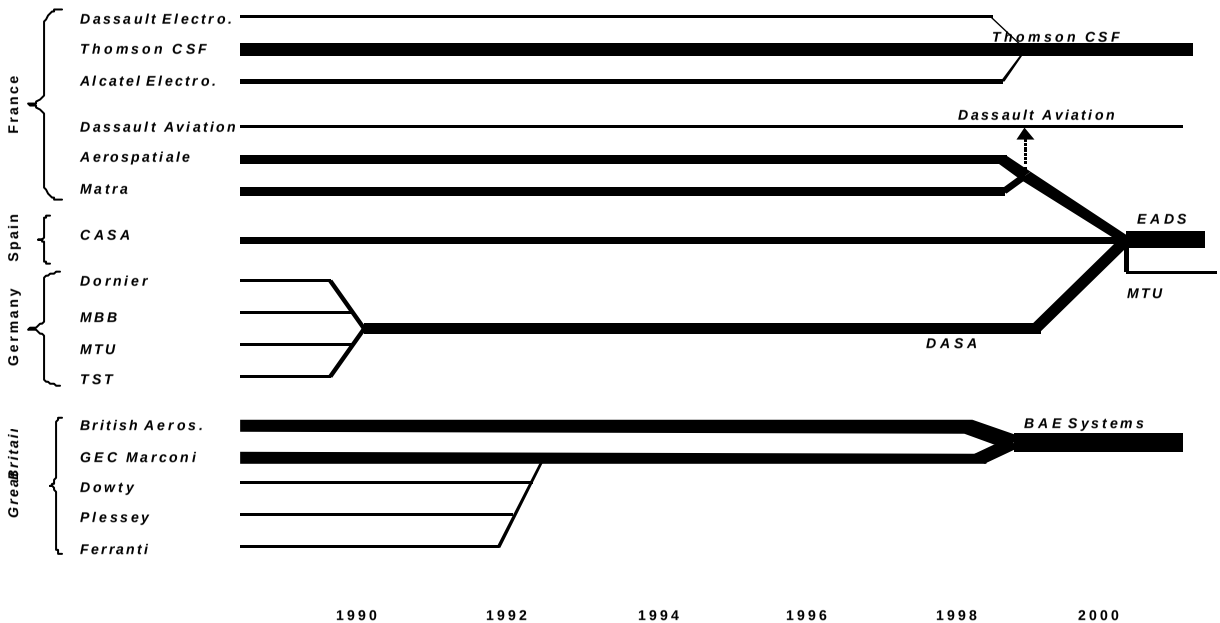
ANNEXE 5

Development of aerospace industry in the USA



ANNEXE 6

Development of aerospace industry in Europe



ANNEXE 7

Defence companies – financial data

Company	Market capitalisation (in M€)	Turnover 1999 (in M€)	Turnover 2000 (in M€)	Operating profit 2000 (in M€)	Net income 2000 (in M€)	Stock price (currency)	Net debt equity ratio
BAE Systems	20,050	19,604	19,830	2,200	230	420 pence	10%
Boeing	36,927	60,643	54,260	3,600	2,300	39.25 $	30%
EADS	20,000	22,553	22,550	450	89	23.50 €	- 15%(*)
Lockheed	10,092	26,697	26,350	1,800	453	24.3125 $	180%
Raytheon	8,232	18,081	18,300	1,680	515	23.5625 $	87%

* after capital increase

Source : Les Echos, 19 June 2000