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THE ECONOMIC AND SOCIAL COMMITTEE
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**The European Aerospace Industry
Meeting the Global Challenge**

The European Aerospace Industry - Meeting the global challenge

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I. INTRODUCTION

The world aerospace industry is undergoing dramatic changes. Momentous recent events such as the merger of Boeing and McDonnell Douglas and the proposed merger of Lockheed Martin and Northrop Grumman have been driven by a recognition that the structure of the industry will only allow for a small number of world-class prime contractors to sustain competitiveness and commercial success through the integration of capabilities in a broad range of inter-related aerospace disciplines. In the light of these events, this Communication sets out to assess the situation of the European aerospace industry as a whole focusing on a range of possible scenarios for its future development.

- Markets

In terms of **large civil aircraft** the Airbus share of the market grew steadily throughout the 1980's, as its aircraft range increased, but has remained essentially stable since 1989 and its share of the backlog stood at around 30% in 1996. Boeing's market share decreased somewhat in 1989 but grew again over the past few years to around 64% in 1996, whilst the McDonnell Douglas share of the civil aircraft market has been consistently decreasing throughout the 1980's and 90's to around 6% in 1996. Since the acquisition of McDonnell Douglas by Boeing, the European aerospace industry faces one dominant competitor with around 70% of the total order backlog.

While the market for civil aerospace products is clearly a world-wide market, **military aerospace** markets are constrained by differing national defence and procurement regulations. An illustration of recent market shares on the open international market can be provided by looking at the fighter aircraft contracts awarded between 1992 and 1996, where it is believed that in terms of value 15-20% went to European producers while nearly 80% went to US producers.

In the world **civil helicopter** market the European share decreased throughout the 1980s but has stabilised in the 1990s and in 1996 stood at around 28% (unit deliveries of EU-design origin helicopters), whilst in the **military helicopter** market the European share has been constantly decreasing, particularly after the end of the cold war and now stands at around 8% of the world market.

In **regional aircraft** (jet and turboprop), where the number of manufacturers is far greater but has been diminishing over the years, European companies held a majority share of the market for a long time (over 70% in 1994). More recently, however, rapidly increasing competition from Canadian, Brazilian and Asian producers combined with the collapse of Fokker and the sale of Dornier to Fairchild has resulted in a dramatic reduction in European market share whilst the Canadian industry now holds 40% of the regional jet market.

The position of the European industry in the world **space** markets varies between a market share of 5% or less in some categories of ground equipment, 20-25% in the satellite manufacturing sector and more than 50% in space launch services as a result of the Ariane programme, albeit only in markets which are effectively open to competition.

In the **civil aeroengine** market the level of co-operation between US and European companies is greater than within Europe (e.g. Snecma and GE produce the CFM engine, whilst MTU of Germany participates in Pratt and Whitney engines) however intra-European co-operation is the norm for **military aeroengines** such as Eurojet. Because of these levels of EU-US co-operation it is difficult to compare market shares. However, the turnover of the two largest US aeroengine producers is roughly double that of the two major EU producers.

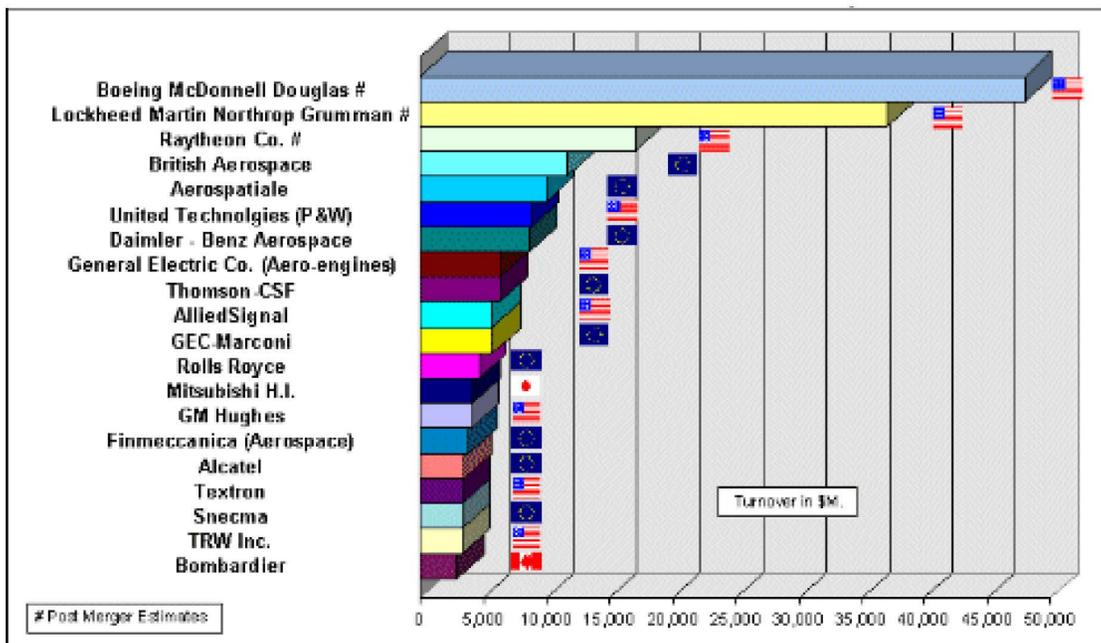
The **equipment** sector is growing in importance and complexity (it represents an ever greater part of an aerospace system's value and 30% of the total employment in the aerospace sector) but without successful European platforms its long term future would be compromised.

II. FACING THE CHALLENGE

Despite enormous and painful efforts over the last 10 years, the European aerospace industry suffers from the increasingly acute effects of the continued partitioning of its industrial structures. Previous Communications have addressed issues relating to different areas of the aerospace industry¹. By now taking a global approach to this industry three factors are apparent from the current situation:

- The ever greater complexity of aerospace products has led to spiralling development costs and financial risks which have long outstripped the resources of even the largest European companies and have led to ever fewer new programmes being launched.
- No single Member State can come close to matching the large home market for defence equipment or the level of RTD support provided to the US industry. National markets can no longer provide a sufficiently strong base to support a full-range independent aerospace activity.
- Few individual firms in Europe have been able to balance risks and maximise benefits from developing activities in a broad range of aerospace businesses. Those that have are too small to enjoy the economies of scale of the US mega-companies which now dominate the business.

It is apparent that any further delay in responding to the changes which have taken place in the aerospace market will jeopardise the future of the European aerospace industry and the hundreds of thousands of jobs it provides.



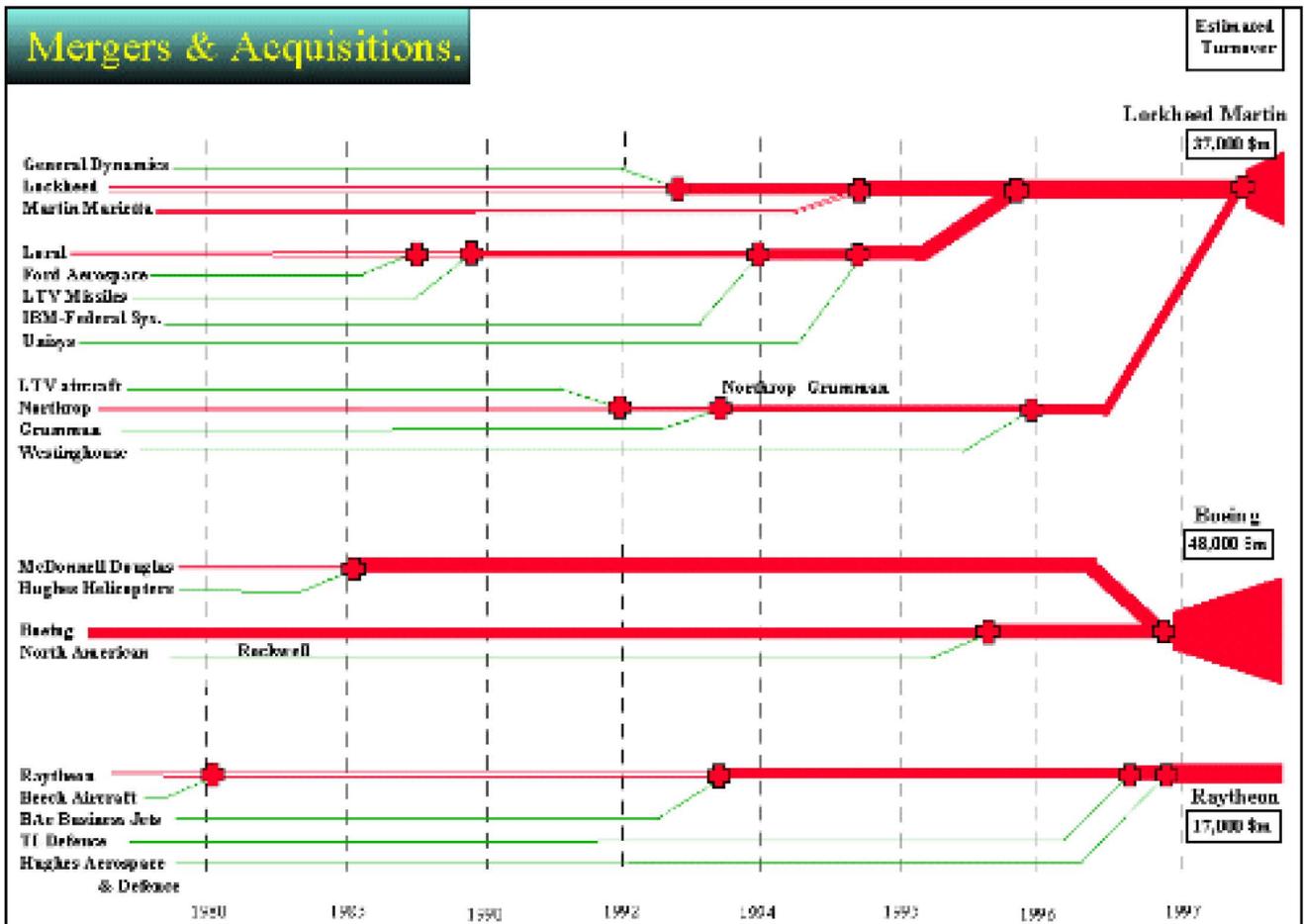
I. US Strategy

By far the largest competitor on the world aerospace market is the US industry with up to 58% of the world aerospace business (in terms of consolidated turnover) while the EU stands

¹ "The European Aircraft Industry: First assessment and possible Community actions", (COM(92) 164 Final) - "The challenges facing the European defence-related industry, a contribution for action at European level" (COM(96) 10 Final) - "The European Union and Space: Fostering applications, markets and industrial competitiveness" (COM(96) 617 Final)

at 29%. The US is the market leader in both civil and military aerospace and has a highly developed administrative structure to support its position.

The recent history of the US aerospace industry has been one of consolidation. From over 20 companies involved in the design or production of aerospace systems in 1980 the industry is now concentrated in the hands of three prime suppliers: Boeing, Lockheed Martin (which has recently announced plans to merge with Northrop Grumman) and Raytheon. Of these three companies, only the first produces large civil aircraft, and only the first two military aircraft. However, all are active across a wide range of aerospace activities in order to balance their risks, increase their ability to cope with market cycles and take full advantage of technology and skill transfers between the different sectors.



This consolidation process has been facilitated by US government's stated policy to "maintain the superiority" of US aerospace and ensure that federal investments are focused and effective to strengthen the public-private partnership to promote continued US leadership in aerospace and aviation through a clearly set out national aerospace policy to support its industry.

- **Research and Development**

The US government invests massively in both civil and military aerospace research and technological development. On the civil side, the Federal Aviation Administration has an annual aeronautics budget for R&D which exceeds \$2 billion. Moreover, in civil aircraft alone, according to estimates carried out for the EU, about 70% of NASA's annual \$1 billion aeronautics spending can be classified as support to the US large civil aircraft industry or

around four times the total large civil aircraft RTD support provided by the EU and its Member States combined

Whilst support for military aerospace is difficult to estimate accurately since much of it falls into the so-called “black budget”, publicly available Department of Defense figures show that its aerospace research, development, test and evaluation budget averages \$20 billion per year. This investment has strengthened the technology base upon which the industry relies to develop both military and civil products

Moreover a strong emphasis has emerged in the US on a number of well-funded and highly co-ordinated or programme-specific technology acquisition projects many of which have dual-use applications such as the High Speed Civil Transport (HSCT) and Integrated High Performance Turbine Engine Technology (IHPTET) projects.

- **Civil/military**

Contrary to the situation in Europe, the promotion of a dual-use approach has been a major element in US research and procurement policies for many years now and is leading to an increasingly integrated defence-civil technology and industrial base. The promotion of technological synergy between civil and defence activities optimises the use of RTD resources and encourages the restructuring and consolidation of the industry. For example, on the industrial side it is doubtful if a commercial space industry could ever have come into being without the benefit of defence programmes as a springboard for commercial applications. Conversely, the military sector can also benefit from civil technology standards and practices as can be seen in the field of transport aircraft.

- **Single regulatory framework and market**

The US industry obviously benefits greatly from being heavily supported by one single government while the European aerospace market remains fragmented because of national boundaries and separate research and defence policies. European undertakings such as Airbus, Eurocopter, Eurofighter or Arianespace must address themselves to a number of different governments with all too often differing priorities.

The US Aerospace industry also benefits from the fact that US government procurement has mostly been directed at US companies and at ensuring the continued well-being and supremacy of the US industry. In addition the amount dedicated to military equipment procurement (including RTD) in the US is, at around \$80 billion per annum, almost double the combined military equipment procurement and RTD budgets of EU countries. Within these figures, the amounts dedicated exclusively to military RTD represents annually at least \$35 billion in the US versus \$12 billion in Europe. Such significant differences in RTD spending risks marginalising the European technology base.

Similarly, NASA’s space budget (\$12 billion in 1995) combined with the Department of Defense space budget (\$10 billion in 1995) is about ten times that of Europe’s space budgets.

- **Advocacy Center**

Consolidating the US policy of lobbying on behalf of US companies, the Advocacy Center was established within the Department of Commerce. The Center is at the core of the US national export strategy and works in co-ordination with the 19 federal agencies of the congressionally mandated Trade Promotion Co-ordinating Committee (which include the Department of State, the Export Import Bank, and the Department of Defence). The aim of the Advocacy Center is to expand US exports and assist US government personnel, including US embassy personnel, in approaching foreign governments on behalf of US commercial

interests. By doing so the Advocacy Center fulfils its stated aim of pursuing deals on behalf of US companies from start to finish through “hands-on” support.

Although the Center is not an aerospace-specific facility, in the increasingly global and competitive aerospace market it has been proving widely beneficial to US aerospace companies and the Advocacy Center is vocal in highlighting its contribution to the sale of US built aircraft.

2 Situation in other countries

The **Canadian** aerospace industry (the bulk of which has been brought into one single company by Bombardier) is strongly supported by both Federal and provincial governments, and is extremely active in the regional aircraft market with both aircraft and engine production. Bombardier’s share of the world regional aircraft market was up to 40% in 1996 and is likely to increase further with the demise of Fokker and the recent successful launch of the new Canadair 70 seat jet.

The aerospace industry in the ex-USSR was long one of the largest producers in the world, it has however, been hard hit by the post-1989 events and is currently struggling and having to downscale massively. The **CIS** aerospace industry, apart from the space launcher segment, is thus not currently a major competitor on the world market but could in a relatively short period of time become an active player in both civil and military aerospace if appropriate financial and restructuring steps are taken. Indeed signs of a re-emergence are beginning to appear, in particular through competitive offers in export markets for combat aircraft and missiles.

While the **Japanese** industry has designed and produced its own aircraft, spacecraft and launchers, its has developed a role as high tech subcontractor to foreign (essentially US) aerospace companies.

China’s aircraft industry is still in its early stages, however the Chinese together with the Singapore aerospace industry entered an important agreement earlier this year to jointly produce a 100-seater aircraft with Airbus and Alenia. In the space field, China is pursuing a policy aimed at becoming one of the world's foremost launch providers and also has strong aspirations in the satellite field.

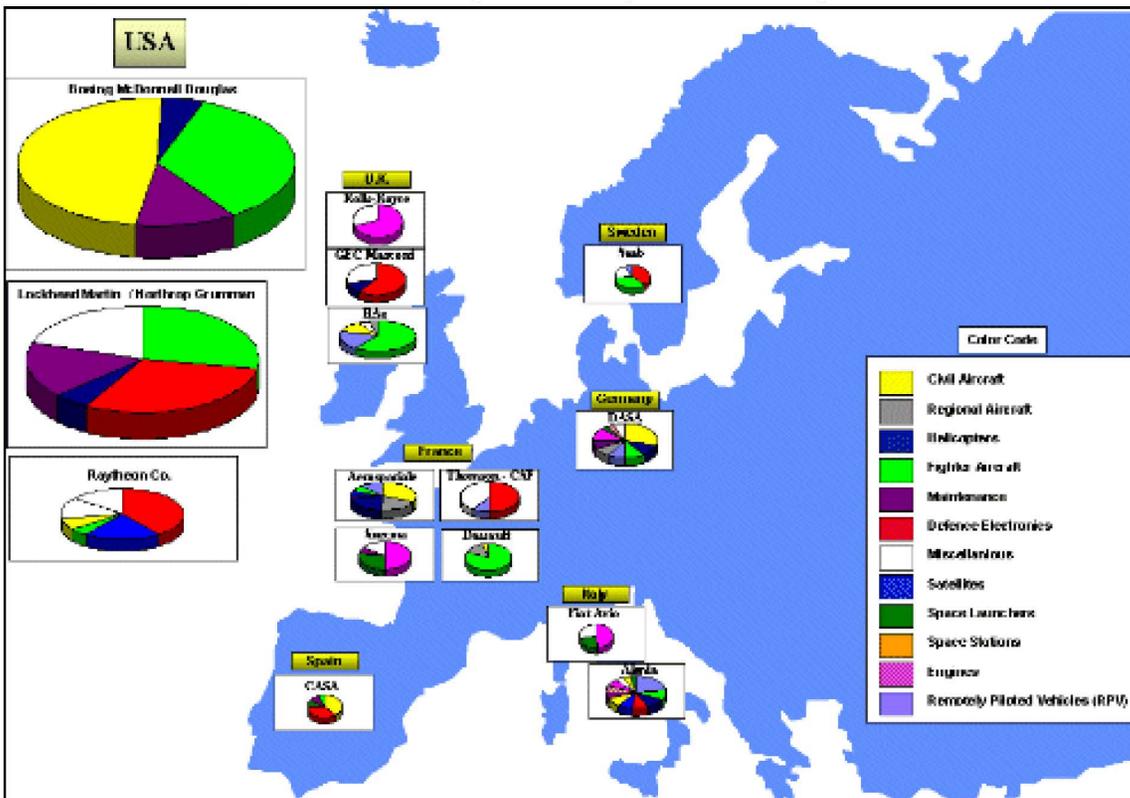
Embraer of **Brazil** produces regional aircraft (with 10% of the world regional aircraft market) and is involved in a number of minor military aerospace co-operations. **Indonesia** is also a competitor in the regional aircraft market, and from producing small turboprops in co-operation with other companies, it will now launch its own N250 turboprop regional aircraft.

3 EU fragmentation

In comparison with the US, the pace of consolidation in Europe has been dramatically slow. With much smaller home markets and overall shares than their American counterparts, there are still 6 civil aircraft producers (1 in the US), 6 combat aircraft companies (2 in the US), 3 helicopter manufacturers (3 in the US), 12 missile producers (4 in the US), at least 6 major producers of defence electronics (4 in the US) and 5 satellite prime contractors (4 in the US) in Europe.

- **Industry structure**

Very few European companies have the scale and the range of interdependent activities of their US competitors. Even the largest European aerospace companies, British Aerospace, Aerospatiale and Daimler-Benz Aerospace, are only between one-quarter and one-fifth of the



Size/range comparison of major EU/US companies

The period of sustained development which was enjoyed by the European aerospace industry in the 1970's and 80's was badly dented in the early 1990's, firstly because of the fall in defence-related activity following the end of the cold war and secondly because of the slump in civil orders which accompanied the massive losses experienced by the airline industry in the first four years of the decade in the aftermath of the Gulf War.

These difficulties served to highlight the fact that the European aerospace industry still has to cope with structural adjustment problems. In recent years, the European aerospace industry has lost ground to that of the restructured and revitalised US industry and in certain niche markets it is facing increasing competition from third countries' manufacturers.

In defence-related aerospace where Europe is handicapped by small, partitioned home markets, exports are crucial to the health of the European aerospace industry. Yet it is now exporting less than half as much as the US industry as the latter's export performance, thanks also to the political influence exercised on its behalf, started to benefit under the increasingly stable international political conditions of the current decade.

- **National focus**

Historically, Member States have viewed aerospace as a national industry, primarily for reasons of national security. This means that policies affecting this industry have been pursued with a national focus. National research policies, procurement decisions and decisions on direct support have been measured solely in terms of their impact on the "domestic" industry. Even the regulatory framework in terms of product certification, export

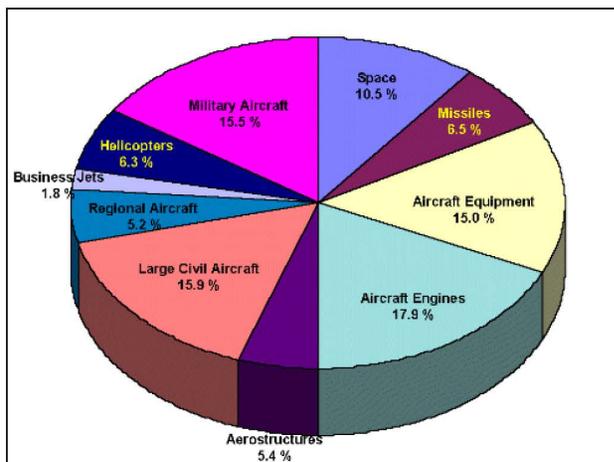
credits, company law and so forth is either non-existent or under-developed at a European level.

An exception to this national focus of the aerospace industry arises in the numerous collaborations within the Community's Research Framework Programmes where for many years now, the aerospace industry has participated along with research centres in pursuit of transnational goals and objectives. The Commission proposes to reinforce these efforts in the 5th Framework Programme.

However Europe spends much less than the US on RTD support and despite the transnational collaboration in Community RTD programmes, the difference is accentuated by the still very important duplication of spending by different Member States in pursuit of "national" aerospace objectives. Thus the objective of maintaining capabilities and competitiveness compared to other aerospace industries inside Europe is undermining the position of the European industry as a whole.

4. Importance of the Aerospace industry for Europe

This situation is all the more critical given the huge potential of the European aerospace industry which employs over 370 000 people directly and many times that number indirectly; and creates high quality jobs as well as critical and pervasive technologies that fuel the development of many other industries. The aerospace industry sustains the capability for an independent defence and it involves some 700 firms (many of them SMEs) with an estimated 70 000 suppliers operating in all Member States in the Union.



Estimated EU Aerospace turnover breakdown by final system level (source: AECMA)

The European aerospace industry is a diverse industry which produces complete systems covering all aerospace applications: large civil jet aircraft, regional aircraft (jets and turboprops), military aircraft, helicopters, missiles, satellites and launchers, as well as engines and equipment. The chart illustrates the estimated distribution of the turnover. The significance of a strong Aerospace industry for Europe as a whole is manifest not only because it is one of the top 15 industrial sectors by employment, but also because:

- **Trade and Competition:**

In 1996 the value of aerospace exports was put at over 15 billion ECU which represents almost 3% of total EU exports. Although EU aerospace exports and imports have remained broadly in balance over the last 10 years, Europe has consistently been a major net importer of aerospace products from the United States. It should also be remembered that in a market such as large civil aircraft (estimated to be worth around 1 000 billion ECU over the next 20 years) it is only the existence of the European aerospace industry's products that prevents the current dominance of Boeing from becoming an absolute monopoly.

- **Independent defence capability:**

The aerospace industry accounts for approximately 50% of the defence-related industries (including electronics for aerospace). Without the ability to develop and produce efficiently the necessary aerospace products, autonomy in the formulation of an independent defence policy would be significantly diminished. There are thus important foreign and security policy considerations in the maintenance of a healthy and competitive aerospace industry.

- **Technology transfer to other sectors:**

With around 15% of its turnover spent on Research and Technological Development, the aerospace sector is among the most research intensive sectors of the economy. It is not only strategic in itself but is also a driver for the development of a wide variety of technologies which are critical for innovation in other industries. It stimulates technological development in high-tech supplier industries (e.g. materials and electronics) and plays a leading role in technological innovations which diffuse to other sectors (e.g. energy and automotive). A weakening of the technological dynamism of the aerospace sector would therefore undermine European innovation and competitiveness much beyond the sector itself.

- **Space applications:**

Satellites, it is now recognised, will be fundamental in bringing the opportunities of the global information society to many parts of the world², complementing and replacing terrestrial infrastructure. Global satellite navigation is also becoming a cornerstone of civil transport systems and other applications (in the same way as it has already become for the majority of defence systems) and the EU is currently reliant on US and Russian military-based systems.

- **The air transport system**

The public demand for air transport is growing at around 5% per year. The aerospace industry has to meet this demand not only with new aircraft but also with associated air traffic control and avionics systems which will enhance the efficiency and safety of operations

- **The Environment**

The European aerospace industry has made considerable progress in developing quieter and cleaner aircraft. However the continuing rapid growth of air transport and the increasing importance of environmental aspects for competitiveness, means that these efforts will have to be enhanced in future so as to meet both local and global concerns. Local as in the case of noise annoyance around airports, or regulation on access to individual airports based on environmental targets. Global as in the case of the debate on climate change and greenhouse gases, such as CO₂ and NO_x. Measures, at a global or EC level, need to be taken to control the environmental impact of air transport in terms of noise and gaseous emissions, including support for further substantial investment in environmentally related RTD by the European aerospace industry.

III. SCENARIOS FOR THE FUTURE

An efficient, strong European industry should not be seen in opposition to the US industry, but as complementary to the US industry in the global market. If Europe wishes to be a real partner for the US with American companies participating in European programmes in the

² See the recent Commission Communication "EU action plan: Satellite Communications in the Information Society" European Commission(97)91 final

same way as European companies participate in American programmes, the European aerospace industry must be able to compete in terms of financial and technological resources as well as with attractive, commercial programmes. It is in the interest of the whole European Union and of customers from all countries, that the European aerospace industry should be a credible counterweight to the very real threat of a US monopoly in the aerospace business.

The particularities of the aerospace market determine to a very great extent the nature of the required response. The production and sale of aerospace products are marked by massive entry barriers, huge costs of programme development with commensurately long pay-back periods and ever greater technological complexity, but above all by increasing returns to scale and important benefits of scope. There are few if any, other industries where size is as important as it is in aerospace. Large civil aircraft for example require a production run of several hundred just to break even and it has been estimated that every doubling of production reduces costs by around 20%.

It is not the Commission's intention to propose, much less decide, the eventual shape of the European aerospace industry - such decisions should only be taken on commercial and economic grounds by those with a direct stake in the success or failure of the venture whilst respecting the Community policies on competition and other relevant areas. Nevertheless the Commission can outline the scenarios facing the industry and attempt to gauge them against the broader European interest.

1 National Solutions

One scenario would entail maintaining the current system of one or more aerospace industries separately in each Member State. Of course there are already a number of cross-border joint-ventures and alliances, but sustaining such a network of national champions would mean continuing with companies which are too small to enjoy the economies of scale of the US mega-companies. National markets can no longer provide a strong enough base for a full-range aerospace activity, and growing development costs of the aerospace industry have long surpassed the resources of even the largest European companies.

Within Europe the industry in certain Member States has come to appreciate the benefits of size and has gone through a process of consolidation on a national level. An example is the aerospace industry in Italy which through the 1970s and 1980s consolidated into one major aerospace group, Alenia, which is active in civil aircraft, airframe components, military aircraft and space applications. Alenia's parent company, Finmeccanica, also includes the helicopter producer Augusta. On the other hand the industry in some other Member States is still fragmented even at a national level. The short term advantages of national groupings are open to debate, but this lack of coherence in the different Member States only accentuates the differences and partitionings of the European aerospace industry.

Most analysts concur that maintaining isolated national companies is not a viable option for the future. There is an urgent need for increased cross-border business and progress towards the creation of a European defence procurement regime so as to overcome the problems arising from the current fragmentation. Even where there is agreement on the need for transnational integration, the companies and their shareholders must recognise that the pace of restructuring is too slow and acknowledge that another difference between the various aerospace companies in Europe is the ownership structure.

Any restructuring requires agreement between companies who have to take due account of their shareholders' interests as well as the commercial environment in which they operate. In the European aerospace industry we are currently faced with three main types of

shareholding structure: private and dispersed, private and concentrated, and public and concentrated. However, certain private companies have expressed a reluctance to propose to their shareholders that they enter a company with a major state holding. This would be seen as engendering weakness because of a perception that state companies can lack clarity on commercial objectives, suffer from political sensitivity of decisions and have insufficient speed of reaction. In addition it can be the case that state owned companies are undercapitalised compared to their private sector counterparts. Even where private companies are concerned, there can be a fear that without adequate safeguards, a concentrated minority shareholding could be used to exercise effective control for the benefit of that shareholder alone.

The slow pace of integration and the problems relating to the different corporate structures could lead to a scenario whereby a number of European aerospace companies form a sector-specific or multi-sectoral grouping but which does not include all the main European aerospace producers and Member States, in other words a partial integration.

2 Partial integration

Such a scenario entails some of the benefits of consolidation, in particular economies of scale and increased market base, but would also single out one or more of the European aerospace companies thus running the risk of isolating them.

These companies might decide to enter into mergers or alliances with US or other non-European firms. In certain sectors of the aerospace business such alliances, transatlantic or otherwise, could entail the loss of managerial control and of control over defence requirements and ultimately could see European firms becoming subcontractors or niche players with a limited technological base. This would not only split the European industry but could also call into doubt the advantages of a strong European aerospace industry and, more importantly, the question of political priorities in terms of a strong and independent technological base in the area of defence. Moreover, in space for instance, telecommunications are a vital link in the global information society, so control of that sector has wider implications in terms of cultural identity and access to information and services.

Regardless of these considerations, even such partial integration groupings would need to address a number of issues such as efficient organisation and corporate structure. Experience with joint ventures has shown that they can be no more than a first step towards meeting the competitive demands facing the industry. They have inherent structural weaknesses in speed of decision-making and component sourcing, and they do not eliminate duplication of facilities or capabilities. Moreover, joint ventures are generally organised around a single product and thus cannot enjoy the benefits of technological spin-offs or offsets.

These inherent disadvantages and rigidities are also shared, albeit to a slightly lesser extent, by the GIE (Groupement d'intérêt économique) structure used by Airbus Industrie amongst others. Unless such transnational undertakings are able to adopt more agile and efficient corporate structures, they will be handicapped in raising the ever greater levels of finance needed and in concluding the risk and revenue sharing partnerships which are essential for spreading the risks associated with new product development and improving market access for exports. For example Airbus Industrie plans to develop a new very large passenger aircraft, the A3XX, whose enormous development costs (up to \$10 billion) will require the participation of risk-sharing partners from third European and non-European countries.

In terms of organisation, whatever route industry decides to take in its restructuring, real progress will depend on any transnational European aerospace company being a fully independent commercial entity, responsible for programme decisions and raising its own

finance. The companies and Member States involved have recognised that the GIE structure which was well suited to the start up phase of Airbus Industrie, is no longer adapted to current needs and the business has to be transformed into a single corporate entity. But although this objective has been agreed for some time, a great deal of detailed work remains to be accomplished. Indeed even Trade Union representatives, fully aware that this will entail some degree of rationalisation, have urged the managerial level to accelerate the restructuring process.

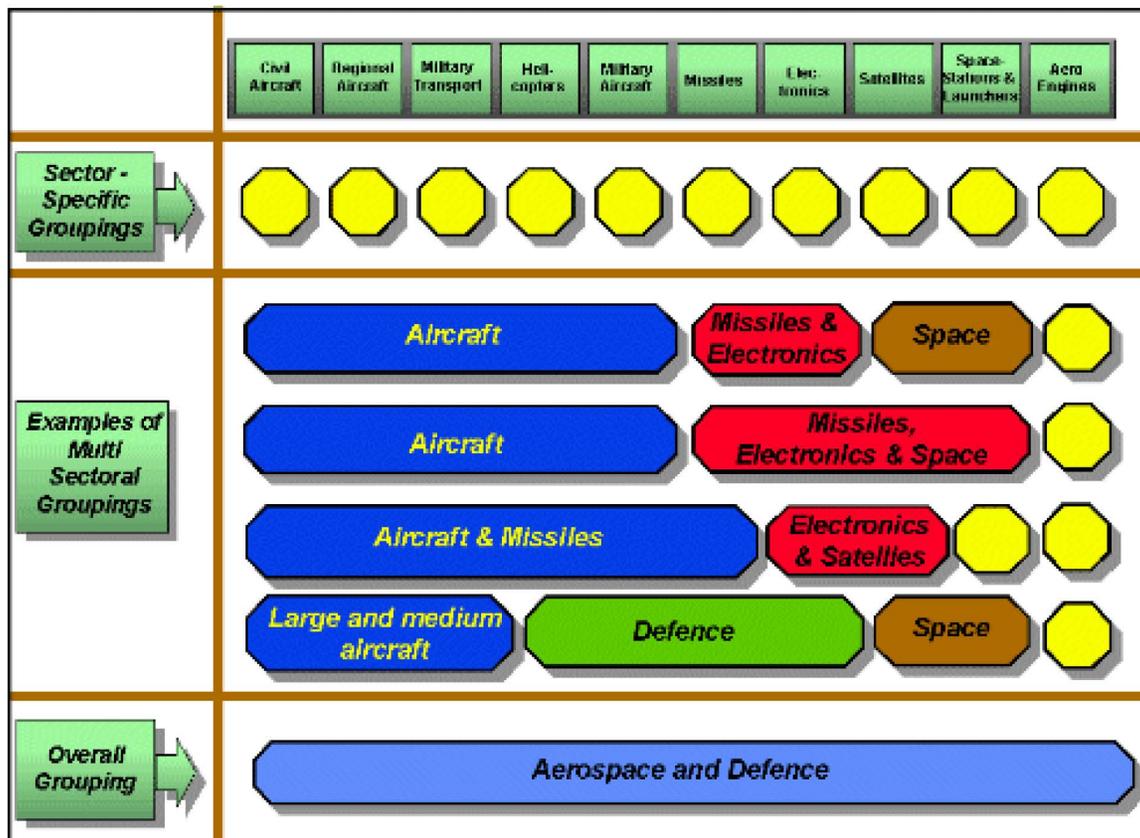
At the same time moves to charge Airbus with the development of the FLA (Future large military transport aircraft) are a positive first step in creating a large integrated European aerospace producer. These tentative first steps should be built upon by the incorporation of other activities and there should be parallel developments in other parts of the business to increase competitiveness by unlocking the full benefits of size and scope mentioned above.

If the aim is to create an integrated European aerospace industry, then it must be capable of maintaining industrial and technical capabilities in the Member States which will continue to be the primary source of support for the foreseeable future, while organising itself on a competitive and economic way. This argues in favour of the greatest degree of multi-product and civil and military integration since this provides each Member State involved with the opportunity of having an economic and efficient centre of excellence without recourse to narrow blinkered "juste-retour" policies within each system segment.

3 The need for European groupings

Given the specific factors which apply to aerospace, the full benefits of restructuring would only be realised if all the major aerospace producers and Member States are fully involved. Thus it is also important that a way is left open to bring in those companies which are unable to join from the outset.

It is possible to imagine a variety of configurations for European aerospace companies. There could be a single enterprise for almost all aerospace activities, a company built around aircraft and another around electronics, or perhaps a separate company for space related activities or, indeed, any of many differing combinations of sectors.



3.1 Sector-specific groupings

Sector specific groupings would have the advantage of bringing together companies from different Member States, thus increasing size, but would also entail having different companies in all the different sectors of production. The experience of Airbus has shown that even within a single sector, only if the current fragmented structures can be superseded by larger undertakings which are unimpeded by individual policies based on national borders can the European aerospace industry hope to remain competitive.

However, while sector-specific groupings might be appropriate for certain segments, in most other areas of the aerospace industry, one can wonder whether sector-specific groupings can provide sufficient scale and capabilities to compete in the world market. The particularities of the aerospace market demand a market base, a know-how and financial and industrial capabilities such that the balance of advantage lies with the giant US producers currently present on the market with a broad range of aerospace products.

A multi-sectoral European dimension, on the other hand, would encourage the development of competitive new products by allowing investment at a European scale not feasible for any single firm or Member State, nor probably for most sector-specific groupings, and enable the creation of industrial structures capable of efficient operations and at an economic scale. It could also give rise to a regulatory environment that encouraged competitive products and services to be created and lead to the development of European standards which make for efficient co-operation.

3.2 Multi-sectoral groupings

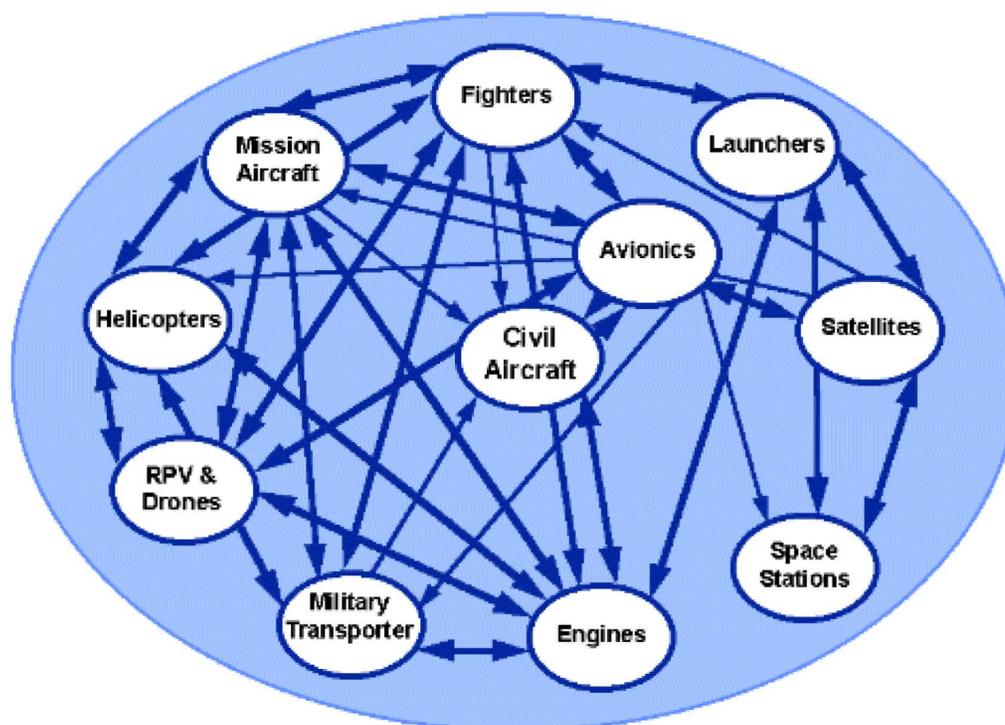
Industry and governments have to use their limited resources for RTD as a basis for as many products as possible. One of the reasons why the most successful firms are present in many areas is that each RTD action has potential applications in 2 or 3 branches of activity. Another is to allow companies to take advantage of benefits of scope where economies can be realised from applying similar techniques and incorporating the same basic elements across a number of closely related products.

Only industry itself can evaluate these benefits but it is instructive to note that in recent merger cases in the US, the benefits in terms of cost reductions accruing to the merging firms have been estimated to be worth several billion dollars.

In most branches of aerospace there is a close relationship between the civil and military sides of the business. Technologies, procedures, components and equipment are often identical or nearly identical in civil and military applications. From a business viewpoint, the combination of civil and military activities also helps to overcome cyclical market fluctuations and spreads exposure to risks.

Another important issue in civil/military integration arises out of the role of offsets in aerospace trade. Although limited by international agreements with respect to civil aircraft, the ability to conclude direct and indirect offset arrangements can be a determining factor in gaining access to certain foreign markets. Such offsets, including bundled sales of a range of civil and military aerospace products are facilitated in practical terms by flexible and fully-integrated civil/military aerospace companies.

The complexity of the links between the different aerospace sectors is shown graphically below.



Most aerospace companies have major defence interests and are reliant on government procurement and technology funding. However while some of the major European aerospace companies are striving to reduce their dependence on domestic defence-procurement contracts the US companies appear to be doing the opposite. One of the main stated reasons for the Boeing-McDonnell Douglas merger was the wish to combine the military capabilities of MDC with the civil capabilities of Boeing. The advantages of a merger such as this are that the possibilities for flexible pricing, bundled sales, and allowing the new merged company to benefit from the Department of Defence's procurement contracts are increased.

The nature of the aerospace market is such that in many, though not all, sectors it will only be possible for one entity to remain viable in Europe. For example, many commentators have suggested that in the medium to long term there is probably only room for one major civil-military producer of airframes in Europe. Such a suggestion need not necessarily give rise to competition problems if, as was the case with the Messier-Dowty landing gear merger, there is a fully functioning global market with strong foreign competitors.

In the case of defence markets which do not function globally for political reasons, since Member States have already shown a willingness to accept a situation at national level where there is only one producer, this could also be envisaged at European level. In any event some kind of reference framework could be provided by US competition in export markets and competition would be reintroduced if a stronger and more unified defence market in Europe could help persuade the US to open their market and allow the development of a true transatlantic market in defence goods.

European transnational restructuring is already beginning in some business sectors through the creation of companies like Messier-Dowty, Matra-BAe Dynamics, Eurocopter and Matra Marconi Space. However market imperatives of technological cross-fertilisation, economies of scale and scope, synergy and risk-balancing argue strongly in favour of the development of European companies producing a broad range of aerospace products.

3.3 Overall integrated grouping

It could be said that since multi-sectoral groupings would not benefit fully from the synergies between all the different sectors of the aerospace industry, another option for a European grouping is a scenario where all the companies from all Member States consolidate into one single European Aerospace company.

One could imagine that in such a scenario all the benefits of consolidation would be magnified. Moreover while it must be highlighted that even the largest US aerospace companies are not so disparately multi-sectoral as a single European Aerospace company would be if it were to exist, it must also be stressed that such a company would still be smaller than Boeing, the largest US competitor.

Nonetheless, it must also be recognised that the problems associated with restructuring would be amplified to such an extent that a swift transition from today's situation to an overall integrated European aerospace grouping is not very realistic. Thus in the short term, the most promising way forward appears to be through multi-sectoral groupings.

IV. PRIORITIES

1 Accelerate restructuring

The need for restructuring is clear and urgent, regardless of which scenario is deemed most appropriate. It is also unquestionable that the present pace of integration is too slow and that it is necessary to press ahead beginning with the already agreed conversion of Airbus Industrie to a single corporate entity. The extra difficulties of restructuring in the defence sector should not serve as a pretext for delaying restructuring in the civil sector.

The need for Europe-wide consolidation in the field of aerospace and the reality that no Member State can any longer retain complete autonomy in its aerospace capability have to be acknowledged through the acceptance of true interdependence within Europe in the interest of the continued well-being of the European aerospace industry as a whole. This restructuring must also take into account the necessary interdependence between aeronautics and space and the strong technological links with other sectors. The pursuit of competitiveness must also encompass the numerous subcontractors of the aerospace sector, especially SME's which play a major role in job creation and in the development and diffusion of technologies.

Although the primary responsibility for restructuring falls on industry itself, aerospace is and will remain one of the most politically sensitive industries. The role of governments is crucial for restructuring and it is essential that the Member States take all practical steps to encourage and assist the creation of truly European companies. Even where there is no direct state shareholding, state influence arises from its role of major client, financier of RTD, provider of launch aid, export control authority, certification agency and so forth.

Member States can act by adapting their support structures to facilitate restructuring. Governments must be willing to balance a narrow view of national sovereignty with the overriding objective of industrial competitiveness. Those Member States which have a direct shareholding in aerospace companies must adapt that shareholding or manage it in such a way that the restructuring process can advance. Industry must be given sufficient commercial freedom and support to make the required changes. The management of enterprises must be guaranteed maximum commercial flexibility in operational terms. This is not to negate the

vital role of governments but to propose that this role be exercised in ways that do not hinder, but promote the necessary changes.

Bearing in mind the possibilities permitted by the Community framework for state aid for research and development, Member States should also be ready to judge launch aid and RTD support decisions against the overall impact on the European aerospace industry as well as against national technological and employment benefits taking into account the global dimension of a large part of this industry. Co-ordination of RTD on both national and Community level will therefore be essential and, given the existence of a number of dedicated aeronautical research programmes and facilities, new strategic planning and management functions, including technology foresight, which take account of existing co-operative arrangements, will have to be developed so as to support an integrated European approach. Such co-operation will stimulate synergy between applied and fundamental research, and dual-use technologies and will increase the impact at all levels of the supply chain.

2 Accompanying measures

The diversity of the critical success factors means that no single initiative can address the challenge of building for the future - many separate, phased and related actions will be needed to accompany the industry restructuring if success is to be achieved. Nonetheless it must be stressed that without restructuring, the impact of any public measures would be severely limited. However, if industry is willing to take the difficult decisions which the market demands, the Commission and the Member States should also be ready to make further efforts in areas such as the following, which are of great importance for aerospace.

RTD support for aeronautics which has been increasing since the 2nd framework programme, should continue to be a major factor contributing to the co-operation both between individual aeronautics firms and between the different sectors of the industry - airframers, engine producers and equipment suppliers. In the 5th framework programme, the Community research effort should be centred around the proposed key action "New Perspectives in Aeronautics", while the industry will also benefit from other FP5 activities, e.g. the creation of a user-friendly information society, generic activities for the development and support to research infrastructures, activities in favour of SME's, the improvement of human potential and international co-operation. In line with the recommendations of the "New generation aircraft" Task Force, the research activities should focus on the strategic objectives identified at European level including technology integrator platforms at the required scale supporting the competitiveness of the aeronautics industry and the improvement of the air transport system, e.g. environmental, safety and operational factors which are also key elements for competitiveness. Also in the domain of space technologies and space applications the Commission will ensure a coherent approach in its RTD actions under the different specific programmes of the 5th Framework Programme, as well as a reinforced co-ordination with the national space agencies' and the European Space Agency's programmes

Defence procurement issues should be addressed as a matter of priority. With escalating costs and budget restrictions, ever fewer new programmes will be launched but the programmes will be of such importance and last so long that they will effectively structure the industry for the next 30 years or so. The Commission proposed the establishment of a European defence procurement regime which could lead to the creation of a European domestic defence market and harmonisation of procurement requirements, schedules and

procedures in its 1996 communication on the Defence-related industries. This must be accompanied by the necessary harmonisation of technical and operational specifications by the appropriate bodies.

The new Article J.7 on the Common Foreign and Security Policy in the draft Treaty of Amsterdam makes a special reference to the field of armaments. This creates further possibilities for new initiatives and actions in support of this process.

The report of the "Davignon Group" on the **European Company Statute** opens new perspectives for political agreement on employee involvement in the European Company in the months ahead. If this hurdle can be overcome it could lead the way to the adoption of the Statute by the accelerated procedure foreseen in the Single Market Action Plan agreed at the Amsterdam European Council of the European Union. This restructuring tool should be put at the disposal of the aerospace industry as an efficient means of blending the European and national identities of restructured companies.

Another subject of high priority is the creation of a **European Aviation Safety Authority** that would complement the single market by the establishment of a single legislative framework and a single certification process for all aeronautical products. This will not only reduce the regulatory cost borne by the European industry but also facilitate the world wide promotion of European safety standards. It is therefore essential that the Council acts quickly on the Commission recommendation for a Council Decision authorising the Commission to start negotiations with a view to establishing a European organisation responsible for civil aviation safety.³

It is also recognised that diminishing airspace congestion and increasing the efficiency of **air traffic management** will contribute to expanding the air transport market and ensure a sustainable growth to the manufacturing industry. In this spirit the strengthening of EUROCONTROL and the adhesion of the Community to this organisation, as proposed by the Commission will contribute to the acceleration of the development of new tools and concepts, giving a European edge in this field.

As far as satellite navigation is concerned, the Commission will bring forward an action plan for a European approach to the development of a global satellite navigation system based on public-private partnership.

In order to maximise the benefit of the internal market and in view of the current tendency world-wide and in the US to move from military to civil standards, it is of the utmost importance for Europe to strengthen its own **standardisation** activity in aerospace so as to avoid a *de facto* US monopoly.

- **External trade aspects:**

International rules exist both at the multilateral as well as the bilateral level to limit the distortion of trade due to government intervention especially with regard to subsidies. The 1992 EU-US bilateral Agreement on trade in large civil Aircraft is based on a trade-off between limiting direct (development) support, which is mainly granted on the European side, and limits on indirect (RTD) support granted by the US government. However, the implementation of the Agreement by the US has been heavily criticised by the EU and its industry. In March 1997, the Commission, with the support of the Member States and the industry, launched a review of the agreement. This process, which has not been concluded yet, has to be reviewed in the light of the new situation created by the Boeing/McDonnell-

³ SEC (96) 2152 final

Douglas merger and of the conditions imposed by the Commission's merger decision some of which are of the same type as issues addressed under the review process. Furthermore the Commission will remain vigilant with regard to any market access problems which may arise in the aerospace sector of third countries. If necessary, in close co-operation with the Member States, this includes taking action under the dispute settlement mechanism of the WTO.

As far as **export promotion** is concerned, the Commission is fully aware of the importance of ensuring that aerospace purchasing decisions are made on the basis of fair and objective, commercial and technological factors and that European products receive due consideration. Accordingly the Commission, working in close co-operation with the Member States, will respond positively to industry requests for action in line with the above position and will itself ensure that the above message is conveyed to all relevant authorities wherever and whenever appropriate.

V CONCLUSION

Sustaining growth and competitiveness against increasingly intense world competition will not be achieved by a single factor nor in a single Member State. In the European context it will require a number of separate objectives to be secured. Some of these will be secured at the level of individual firms. Their relative success or failure will determine their growth and survival. Nothing accomplished at a European level can substitute for excellence at the level of the firm. But individual firms cannot create the entire picture - even excellence across all the firms currently engaged in aerospace will not be enough. Over and above superior performance by individual firms, Europe will need to provide the context in which these firms can flourish in the massive collaborative endeavours which constitute modern aerospace products and the myriad of systems and supporting services which they need.

European aerospace in the next century will, however, depend upon a vision not only for aerospace but for Europe; yet time is not on Europe's side. The integration of action by the industry, Member States and the European Union in the remaining years of this decade will decide whether these visions can be realised in the next century. Continued inaction will probably condemn the European aerospace industry to a lingering death.

The Council is therefore invited to support the thrust of this Communication and to recognise the urgency of restructuring of the European aerospace industry. The Council and the Member States are also invited to support the required Community actions and to take the other appropriate initiatives needed to facilitate and encourage this process of restructuring.

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