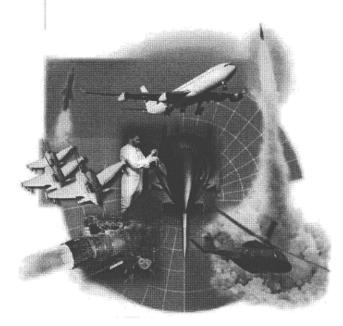
European Aerospace Industry



1998 Statistical Survey



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Introduction [OII

The data and information provided in this booklet represent the results of the statistical survey among the European Aerospace Industry (EAI) for 1998.

Data has been collected not only from the AECMA-member companies, but also from other aerospace companies (such as EU-Consortia like Airbus Industrie and airline maintenance companies) across all EU Member States. It, thus, truly reflects an EU-picture of the EAI.

However, the EAI statistics as presented here do not include the thousands of supplier companies to the EAI throughout the EU, whose principle interest is not in aerospace.

Since the publication of the results of the survey for 1997, a number of revisions of aerospace statistics in some of the EU Member States has taken place. Wherever data for 1997 and before is presented or referred to, this revision has been taken into account.

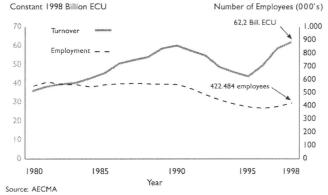
Key characteristics of the Europea	n Aerospace Industry for 1998 are:
Employment	422.484 employees
Turnover	62,2 Billion ECU
Operating Profit	6,6% of turnover
Order Intake	160% of turnover
R&D Expenditure	16,1% of turnover
Export Percentage	54,1% of turnover
Industry Trade Balance	+24,1 Billion ECU

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Trends

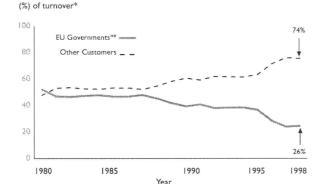
The growth of the EAI business which - after a number of years of declining sales - had been regained in 1996, continued in 1998. Compared to 1997, sales grew by 6% in 1998, see figure 1. There is expected to be some growth in 1999, inspite of a levelling out of sales for civil aircraft. Long term market forecasts indicate a sustained overall growth of the aerospace business with individual segments ranging from stable demand to strong increases, all segments being subject to cyclical developments.

Fig. 1: EU Aerospace Industry Turnover*+ and Employment+



(*) consolidated turnover (+) incl estimations for Sweden until 1992 and non-AECMA companies until 1995

Fig. 2: EU Aerospace Industry Turnover* by EU Governments / Other Customers

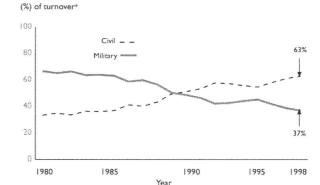


Source: AECMA

(*) based on consolidated turnover in constant 1998 prices, incl. estimations for Sweden until 1992 and non-AECMA companies until 1995

(**) incl. ESA, national aerospace research establishments and agencies

Fig. 3: EU Aerospace Industry Turnover by Civil / Military



Source: AECMA

(*) based on consolidated turnover in constant 1998 prices, incl estimations for Sweden until 1992 and non-AECMA companies until 1995

Compared to 1997, the number of employees of the EAI has increased by almost 7%, comparing year-end figures. Due to the stable employment level in 1997, the mid-year average increase would be closer to 3-4%. In the long term perspective, the number of employees is expected to remain relatively stable, with some growth following the increase in turnover, however not at the same pace, since the trend to higher productivity is assumed to continue due to further rationalisation and restructuring necessary to ensure the continued competitivity of the industry.

One has to bear in mind, that there is substantial additional aerospace-dependent employment within the supply chain outside the actual Aerospace Industry presented here. This additional employment is estimated at approximately another 800,000 jobs. A substantial amount of this has been transferred to the supply chain by outsourcing as part of the rationalisation process.

From 1987 the respective share of sales to EU Governments (incl. ESA, national aerospace research establishments and agencies) and other customers declined from a 50:50 ratio to current levels of around 25:75, see figure 2. This can be explained by the combined effects of considerable demand for civil aircraft and a certain shift from military domestic sales to military exports.

In the US, the corresponding figures for 1998 are around the 45:55 ratio. This demonstrates that the EAI depends to a much lesser extent on government contracts.

Historically, the EAI evolved from a military-oriented industry but has changed over the years to an increasingly civil-oriented industry, see figure 3. By 1998, the civil share reached 63% while the military share decreased to 37%.

Turnover

Total turnover of the EAI in 1998 was 62,2 Billion ECU. Of this, 90% was generated by the major European aerospace countries, France, Germany, Italy and the United Kingdom, and 99% by countries represented by AECMA.

There is an additional 4,5 Billion ECU of turnover generated by EAI subsidiaries located in the US and other countries outside the EU. This additional turnover is not further analysed here.

Compared to the total turnover in 1997 (58,7 Billion ECU), sales grew by 3,5 Billion ECU or 6%. The total turnover for 1997 published by AECMA in 1998 at 55,3 Billion ECU was revised to 58,7 Billion ECU in line with the routine change from economic conditions from 1997 to 1998 and due to revisions of aerospace statistics in some of the EU Member States.

The aerospace industry is generally subdivided into the industrial sectors Aircraft & Systems, Engines and Equipment and the product segments Aircraft (including helicopters), Missiles and Space (for further explanations see Annex). Turnover (and employment) information is detailed for these sectors and segments.

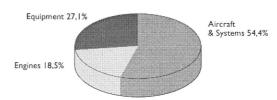
Figure 4 shows the individual industry sector contribution to the 1998 total turnover. (For explanation of industry sector contribution see Annex.)

Figure 5 outlines the breakdown of the EAI's turnover by product segment. As can be seen, aircraft production dominates the product range with civil aircraft being the single largest contributor.

(4)

Fig. 4: Breakdown of Industry Sector Contribution to 1998 EU Aerospace Industry Turnover*

Total: 62.2 Billion ECU



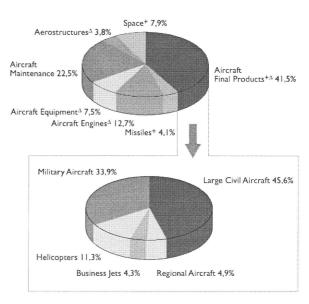
Source: AECMA, estimated

The figures reallocate internal turnover within the industry; i.e. Aircraft & Systems figures exclude EU-supplied Engines and Equipment: Engines figures exclude EU-supplied Equipment but include Engines supplied to European Aircraft & Systems manufactures: Equipment figures include Equipment supplied to European Aircraft & Systems and Engines manufactures.

(*) based on consolidated turnover.

.5: Breakdown of 1998 EU Aerospace Industry Turnover* by Product Segment

Total: 62,2 Billion ECU

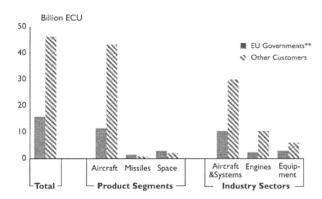


Source: AECMA. Aircraft breakdown estimated

- (*) based on consolidated turnover
- ⁺) data comprises EU and non-EU supplied aerostructures, engines and equipment
- (A) excl. maintenance

Fig. 6: Breakdown of 1998 EU Aerospace Industry Turnover* by EU Governments / Other Customers

Total: 62.2 Billion ECU

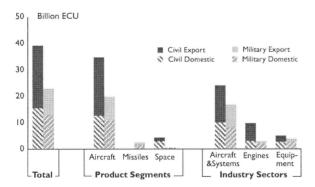


Source: AECMA

- (*) based on consolidated turnover
- (**) incl. ESA, national aerospace research establishments and agencies

Breakdown of 1998 EU Aerospace Industry Turnover* by Civil / Military and by Domestic / Export

Total: 62,2 Billion ECU



Source: AECMA
(*) based on consolidated turnover

Figure 6 demonstrates the particularly low dependence of the overall sector on contracts acquired from EU Governments, due to the aircraft product segment. The sector Aircraft & Systems represents the average level, while that share is 1/5 for the Engine sector and 1/3 for the Equipment sector.

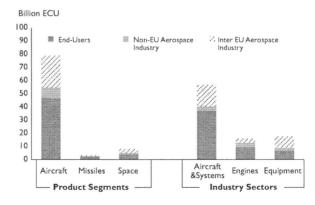
The split between civil and military turnover for the product segments and industry sectors can be seen in figure 7. It should be noted, that the Aircraft business reflects the overall ratio of civil to military business, as the exclusively military business of Missiles is compensated by Space being predominantly civil.

The export split by product segments and industry sectors is also given in figure 7. Civil Aircraft continue to be the single largest contributor to the total exports. The overall aerospace sector export percentage by turnover is 54.1%.

The relevance of the EAI internal trade as well as its role as supplier to aerospace companies outside the EU is described in figure 8. For the Engine sector it is particularly noticeable that there is a higher ratio of sales to aerospace companies outside the EU than to the EAI, and underlining the competitivity of the Engine sector outside the EAI community.

Fig. 8: Breakdown of 1998 EU Aerospace Industry Turnover by Customer

Total: 90,5 Bill ECU unconsolidated 28,3 Bill ECU Inter EU Aerospace Industry Sales 62,2 Bill ECU consolidated, i.e. excl. Inter EU Aerospace Industry Sales

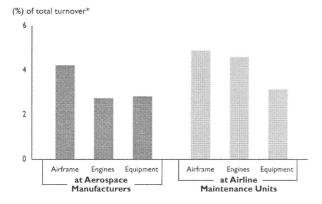


Source: AECMA

A significant part of many aerospace manufacturers' business relates to maintenance activities, but aerospace maintenance is also performed by other companies. The large maintenance units at EU airlines are particularly important. Total turnover resulting from sales of maintenance services reached about 14 Billion ECU in the EU which corresponds to 22,5% of total turnover, see figure 9.

Fig. 9: 1998 EU Aerospace Industry Turnover* resulting from Sales of Aircraft Maintenance

Total: 14,0 Billion ECU = 22,5% of total turnover*



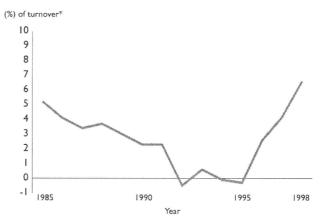
Source: AECMA

(*) based on consolidated turnover of 62,2 Billion ECU incl. maintenance

Profitability and Order Intake

The EAI profitability expressed in operating profit margin, see figure 10, had decreased over the period 1985 until 1995. Until 1991 this decrease was mainly due to a very low value of the US\$ against the ECU affecting both revenues and expenditures (for provisions against potential risks resulting from exchange rate instabilities).

Fig. 10: EU Aerospace Industry Operating Profit Margin*



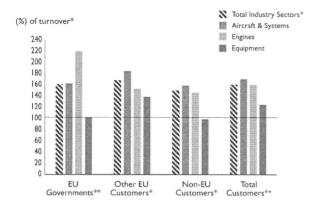
Source: AECMA

(*) operating profit over turnover

For the years 1992 through 1995 the results of the EAI were in addition marked by costly rationalisation efforts to adapt to the decreasing turnover and to ensure future competitivity. Since 1996, the effects of these efforts in combination with an increased value of the US\$ in relation to the ECU have brought back the EAI to profitability. In comparison to 1997 the EAI shows improved profitability, now back to the level achieved in 1985.

The order intake as shown in figure 11, being noticeably higher than turnover, indicates a continuation of the current growth trend. With a level of 160% compared to 122% in 1997, order intake in 1998 was particularly strong. High demand by customers other than EU-Governments tends to maintain their share of increase of the business, as previously shown in figure 2.

Fig. II: Breakdown of 1998 EU Aerospace Industry Order Intake* by Customer



Source: AECMA

- (*) based on unconsolidated order intake in percent of unconsolidated turnover (excl. EU-Consortia)
- (**) incl. ESA, national aerospace research establishments and agencies (*) weighted average

Employment / Industry Structure

Total direct employment in the EAI in 1998 was 422.484 employees. The increase compared to the published figure for 1997 (377.510) is mainly due to a number of revisions of aerospace statistics in some of the EU member states as well as to the fact that more companies responded to the survey. Real growth of employment was about 7%, corresponding to about 27.000 jobs generated by the EAI in 1998.

The additional employment within the supply chain (not represented here) is estimated at around twice the above number of jobs again. The overall employment generated by aerospace in the EU is therefore in the order of 1.2 million people.

In addition, there are some 33.000 employees working in EAI subsidiaries located in the US and other countries outside the EU. This additional employment is also not represented here.

About 50% of the EAI's activity in terms of employment is with prime contractors or overall system level companies, see figure 12. These companies are complemented by an *Engine* sector with a share of about 20% and *Equipment* sector with a share of 30% of the EAI's employment.

Fig. 12: Breakdown of 1998 Direct EU Aerospace Industry Employment by Product Segment and Industry Sector Total: 422.484 employees

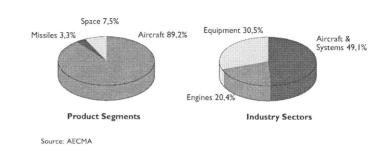
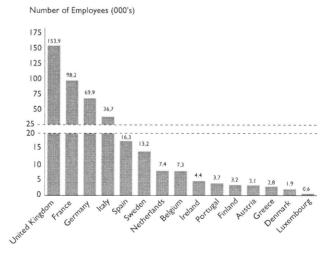


Fig. 13: Contribution to 1998 Direct EU Aerospace Industry Employment

Total: 422.484 employees



Source: AECMA

It should be noted, that close to 90% of all direct aerospace employees in the EU are related to Aircraft as opposed to Space (7%) and Missiles (3%),

Aerospace companies are based in all EU Member States and therefore all EU Member States contribute to the European aerospace business. The core of the industry is located in the 4 member states with the largest economies (i.e. United Kingdom, France, Germany, Italy), followed by groups of countries which host structured aerospace industries with activities in most segments, comprising of Spain, Sweden, The Netherlands and Belgium. Figure 13 gives the EU Member States' contribution to the EU Aerospace Industry's employment.

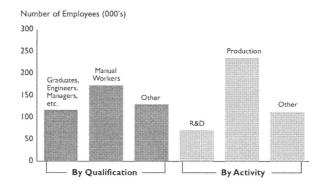
The EAI provides highly skilled jobs. 28% of all employees have a university degree or equivalent, see figure 14. Most others, which account for 31% of all employees and include technicians, draughtsmen, craftsmen, secretaries, etc., have enjoyed an education at institutions at below-university level. And even most of the manual workers, which account for 41% of all employees, have been highly trained either within the EAI or externally to cope with the sophisticated nature of the aerospace technology.

Most employees work in the field of production, see figure 14. However, the fact that 17% work in the field of R&D demonstrates the relevance of R&D to the EAI.

Average labour costs in the EAI are on a comparable level with those of the US Aerospace Industry, as can be seen in figure 15. The fluctuations in the development of the US labour costs are largely due to the influence of exchange rate variations.

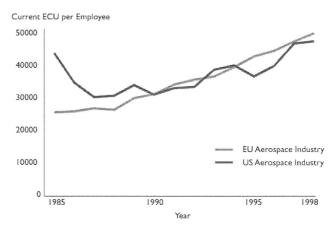
Fig. 14: Breakdown of 1998 EU Direct Aerospace Industry Employment

Total: 422.484 employees



Source: AECMA

Fig. 15: Comparative Aerospace Industry Average Annual Labour Cost per Employee EU/US**



Source: AECMA, AIA
(*) extrapolated from available data

Research & Development (R&D)

Various definitions of R&D exist and it is therefore difficult to achieve reasonably harmonised data throughout the EAI. For the purpose of this survey, R&D was defined to comprise:

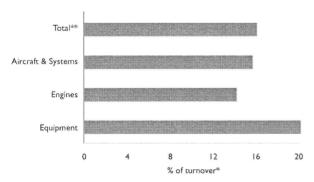
- Research and Technology activities which represent all those R&D activities which are not directly attributable to products. They can, thus, be regarded as generic technologies and are designed to maintain or expand the technological basis.
- Development activities leading to series production.

Average R&D expenditure of the EAI reached 16,1% of total turnover in 1998, see figure 16. The increase in R&D expenditure compared to 1997 (13,5% of total turnover) is mainly due to a certain recovery in EU-Government financed R&D expenditure following a substantial reduction in the preceding year.

The financing of the EAI's R&D expenditure is shown in figure 17. The level of company financing of R&D is comparable to that of financing by EU Governments. This demonstrates the EAI's strong contribution to technological advancement.

Fig. 16: 1998 R&D Expenditure* of EU Aerospace Industry

Total: 10,0 Bill ECU = 16,1% of turnover*



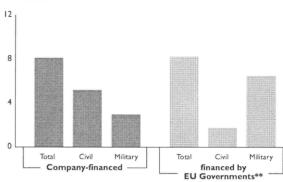
Source: AECMA

(*) based on consolidated turnover

(**) weighted average

Fig. 17: 1998 R&D Expenditure* of EU Aerospace Industry

Total: 10 Bill. ECU = 16,1% of turnover*
% of turnover*



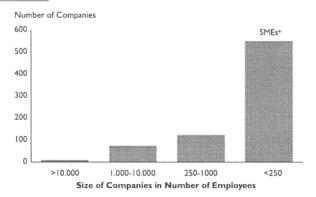
Source: AECMA

- (*) based on consolidated turnover
- (**) incl. ESA, national aerospace research establishments and agencies

Small and Medium -Sized Enterprises (SMEs

The EAI is characterised by a small number of very large firms, a larger number of medium sized companies, and a very large number of small enterprises, see figure 18. About 550 companies, or 73% of all companies belonging to the EAI in 1998, comply with the employment criteria of the definition of SMEs outlined by the European Commission.

Fig. 18: Structure of the EU Aerospace Industry in 1998



Source: AECMA

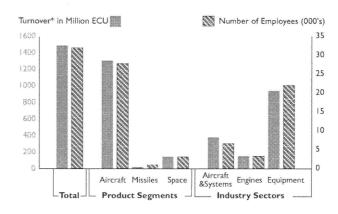
(*) Small and Medium-sized Enterprises

In addition, there are an estimated 78.000 European suppliers of goods and services to the EAI of which about 10% are estimated to be SMEs. see figure 19. Thus, not only among the classical aerospace manufacturers as represented by the EAI, but also down the supply chain, aerospace provides impetus to a large number of SMEs within the EU.

The EU Aerospace Industry SMEs' turnover and employment for the various product segments and industry sectors can be seen in figure 20. In line with the overall industry, SMEs are predominantly supplying to the Aircraft product segment (87%). In contrary to the overall industry, however, concerning SMEs the major employer is the Equipment sector.

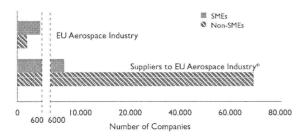
Company financed R&D expenditure in percentage of turnover for SMEs was somewhat lower than for non-SMEs in 1998, see figure 21 and 17. R&D expenditure in former years has been only slightly lower than for non-SMEs, demonstrating that high R&D expenditure not only a characteristic of larger aerospace companies but also of the EU Aerospace Industry SMEs.

Fig. 20: 1998 Turnover* and Employment of EU Aerospace Industry SMEs** Total Turnover*: 1,5 Billion ECU Total Employment: 31.904



(*) based on consolidated turnover (**) excl. suppliers to EU Aerospace Industry as mentioned in Figure 19

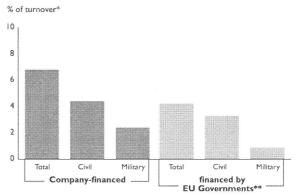
Fig. 19: SMEs in the EU Aerospace Industry



Source: AECMA

(*) Number of supplier companies estimated by extrapolation of available data

Fig. 21: 1998 R&D Expenditure* of EU Aerospace Industry SMEs Total: 164 Mio ECU = 11,0% of SME turnover*



Source: AECMA

based on consolidated turnover

incl. ESA, national aerospace research establishments and agencies

Fig. 22: 1998 Comparative Aerospace Industry Turnover* and Employment



Turnover* Employment
Total: 185 Billion ECU Total: 1,14 Million Employees

Source: AECMA,AIA,AIAC, SJAC

(*) based on consolidated turnover

(**) excluding products and services which are only aerospace related

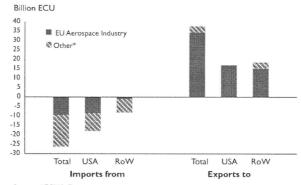
International Aspects

In 1998, the largest aerospace producing nations of the world (except Russia and China, where data is difficult to obtain) achieved a combined sales volume of 185 Billion ECU. The EAI contributed 34% or 62,2 Billion ECU to this amount, see figure 22. The US Aerospace Industry, with 50% more employees than the European Industry, remains the dominant player on the global market place. However, the EAI is - in rough terms - about 4 times bigger than the aerospace industries of Japan and Canada together.

Aerospace trade balances shown in figures 23 and 24 are based on aerospace relevant products and services. For the EAI, figure 23, this represents all exports minus all imports necessary to support production. For the overall aerospace trade balance of the EU, this takes all exports and imports into account, which would for example include imports of airplanes by EU airlines as well as exports of second-hand military aerospace equipment by EU Governments.

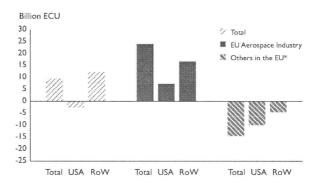
The European Aerospace Industry achieved a high positive trade balance of 24,1 Billion ECU in 1998 with countries outside the EU, maintaining the level of 1997. The overall European aerospace trade balance is still positive and considerable at 9,5 Billion ECU, in spite of the high imports of aerospace products from the US by EU Governments and EU airlines.

Fig. 23: 1998 Aerospace Import and Export of EU



Source: AECMA, Eurostat (*) estimated, incl. Governments, Airlines, etc.

Fig. 24: 1998 Aerospace Trade Balance of EU



Source: AECMA
(*) estimated, incl. Governments, Airlines, etc.

Annex

Total unconsolidated turnover is the sum of all turnover data provided by the companies. Consolidated turnover at EU level is calculated as the total unconsolidated turnover minus the turnover resulting from sales between EAI companies. This consolidated turnover therefore represents all sales to end-user customers as well as to aerospace companies outside the EU.

However, the appropriate weight of the industry sectors in the development and manufacturing process cannot be expressed by their share of consolidated turnover since the *Engine* and *Equipment* sectors also supply a substantial part of their output to the EAI's *Aircraft* & *Systems* companies. To calculate the individual contribution of the industry sectors to the total turnover one must rather

- exclude from the consolidated Aircraft & Systems' sales the Engines and Equipment supplied by the EAI to Aircraft & Systems manufacturers,
- add the engines supplied by the EAI to the European Aircraft & Systems
 manufacturers to and substract the equipment supplied by the EAI
 to the European Engine manufacturers from the consolidated Engines
 sales, and
- include the equipment supplied by the EAI to the European Aircraft & Systems and Engines manufacturers in the consolidated Equipment sales.

Fig. 25: Breakdown of EU Aerospace Industry Turnover

Industry Sectors

		Aircraft & Systems	Engines	Equipment	Total
egments	Aircraft	a	b	с	Aircraft = a + b + c
ct Segr	Missiles	d	e	f	Missiles = d + e + f
Produ	Space	g	h	i	Space = g + h + i
	Total	Aircraft & Systems = a + d + g	Engines = b + e + h	Equipment = c + f + i	

Total unconsolidated turnover

One peculiarity of the EAI are EU-Consortia such as Airbus Industrie, Euromissile, Arianespace. For the time being, they are still sales organisations without any production capabilities and are controlled by other EAI companies which usually also serve as suppliers to these EU-Consortia at the same time. Data provided by the EU-Consortia is generally taken into account here, whereby sales by the EU-Consortia's shareholders to the EU-Consortia have been eliminated.

List of Abbreviations

AECMA	European Association of Aerospace Industries
AIA	Aerospace Industries Association (of the US)
AIAC	Aerospace Industries Association of Canada
DAC	Data Analysis Committee
EAI	European Aerospace Industry
ECU	European Currency Unit
ESA	European Space Agency
EU	European Union
R&D	Research & Development
SJAC	Society of Japanese Aerospace Companies
SMEs	Small and Medium-Sized Enterprises
US	United States

Acknowledgements [

This booklet has been prepared on the basis of the results of the 1998 statistical survey of the European Aerospace Industry, which has been prepared and performed by AECMA's Data Analysis Committee (DAC) with the participation of experts from the national aerospace associations and companies of the EAI.

However, without the cooperative and most appreciated contributions from all the companies of the EAI who responded voluntarily to the questions raised by the survey, the results would never have reached this level of detail and sophistication.

Special thanks is therefore to be expressed to both the contributing companies, the national aerospace industry associations and to the members of the DAC.



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The European Association of Aerospace Industries (AECMA) has the objective of promoting the competitive development of the European Aerospace Industry, and representing the Industry on a European level in all matters of common interest.

Members of the Association are the national aerospace associations of Austria, Belgium, Denmark, France, Germany, Italy, The Netherlands, Spain, Sweden and the United Kingdom as well as the largest European aerospace companies. It thereby represents the European Aerospace Industry almost in its entirety on the level of aircraft/systems, engines, equipment and components.

July 1999

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Year	Turnover: Const 1998 Mio (ant Employment ECU of En	Number Ye oloyees		vernments** of turnover*	Other Customer in (%) of turnove		Year	Civil in (%) of turnover*		ry in (%) nover*	Aerospace I Total: 62.150 Mi	ndustry Turnov o ECU	/er*		urnover* by Pro stal: 62.150 Mio ECU	
1980	35.990	550.49	9 198		52,43	47,57		1980	33,42	66	.58		Turnover in Mio	ECU			Turnover in Mio EC
1981	38.366	582.7			46,94	53,06		1981	34,91		.09	Aircraft & Systems	33.83		Aircraft ⁺		54.700
1982	39.716	563.47			46,45	53,55		1982	33,63	66	.37	Engines	11.48		1	ft Final Products to	
1983	40.421	562.70	5 198	3	47,36	52,64		1983	36,37	63	,63	Equipment	16.836			arge Civil Aircraft	11.764
1984	42.840	543.53	1 198	1 .	47,71	52,29		1984	36,17	63	.83	Equipment	70.03		i i	legional Aircraft	1.268
1985	46.650	561.7	2 198	5	46,70	53,30		1985	36,86	63		Total	62.150)	3	lusiness Jets	1.098
1986	50.698	568.88	3 198	6	46,73	53,27		1986	41,17	58						Helicopter	2.922
1987	52.516	572.7		7	47,88	52,12		1987	40,14	59.					P	1ilitary Aircraft	8.731
1988	54.156	568.25	3 198	3 .	45,29	54,71		1988	43,34	56					Aerost	ructures [©]	2.378
1989	58.797	566.3	5 198	9 •	41,80	58,20		1989	49,58	50					Aircraf	t Engines ^a	7.905
1990	60.221	564.59	5 199) :	39,42	60,58		1990	51,25	48	1				Aircraf	t Equipment ^a	4.638
1991	57.465	528.6	6 199		40,81	59,19		1991	53,47	46					Aircraf	t Maintenance	13.995
1992	54.947	483.82	1 1	4	38,07	61,93		1992	57,82	42,					Missiles [†]		2.531
1993	48.838	443.7	1 1	3	38,37	61,63		1993	57,33	42,					Space*		4.919
1994	46.010	413.32			38,55	61,45		1994	55,87	44,							
1995	43.922	392.04			36,73	63,27		1995	54,75	45,					Total		62.150
1996	49.764	382.0			28,55	71,45		1996	58,23	41.							
1997	58.692	395.48			23,89	76,11		1997	61,23	38.		Source: AECMA, estimated					
1998	62.150	422.48	4 199	3 :	25,64	74,36		1998	63,03	36,	9/	The figures reallocate internal Aircraft & Systems figures exc			Source: AECM	A, Aircraft breakdown e	stimated
) incl. estima	1A ed turnover ations for Sweden ur 1A companies until	ntil 1992 and 1995.	(*) ba pr no	ces, incl. estim. n-AECMA cor	mpanies until 19	in until 1992 and		prices	EMA on corisolidated tumor incl estimations for Sw n-AECMA companies	eden until 1992		Fourpment. Engines figures exclude EU-süpplied Equipment but include Engines supplied to European Aurcraft & Systems manufactures, Equipment figures include Equipment supplied to European Aircraft & Systems and Engines manufacturers. (*) consolidated turnover		tems supplied to	(+) data comprises EU and non-EU supplied Engines		upplied Engines
Fig K. R	reakdown of	1998 FU Aero															
	y EU Governi	ments / Other		Turnove	er#	Total: 62.150 Mic	ECU	Fig. 7:	Breakdown of by Civil / Milita			Industry Turnover* / Export	Total: 62.150	Mio ECU		EU Aerospace I Operating Profi	
	y EU Governi		Customers EU Govern	ments**	Other Custon	ners Total		Fig. 7:	by Civil / Milita	ry and by Do vil EU Domestic	Civil Exp	/ Export port Military EU Domestic		Total		Operating Profi	t Margin*
	y EU Governi		Ċustomers	ments**		ners Total		Fig. 7:	by Civil / Milita	ry and by Do vil EU Domestic Mio ECU	Civil Exp Mio EC	/ Export port Military EU Domestic CU Milo ECU	Military export Mio ECU	Total Mio ECU		Operating Profi	t Margin* sace Industry
			Customers EU Govern	ments**	Other Custon	ners Total Mio El	cu	Fig. 7:	by Civil / Milita C Aircraft	ry and by Do vil EU Domestic Mio ECU 12.661	Civil Exp Mio EC	/ Export Oct Military EU Domestic CU Mio ECU 3 10.934	Military export Mio ECU 8.981	Total Mio ECU 54.699		Operating Profi	t Margin*
b		ments / Other	Customers EU Govern Mio E	ments**	Other Custon Mro ECU	ners Total Mio El	CU 00	Fig. 7:	by Civil / Milita C Aircraft Missiles	ry and by Do vil EU Domestic Mio ECU 12.661 0	Civil Exp Mio EC 22.12.	/ Export port Military EU Domestic Mio ECU 3 10.934 0 1.561	Military export Mio ECU 8.981 970	Total Mio ECU 54.699 2.531	Year	Operating Profi EU Aerosp Operat in (%) o	t Margin* sace Industry ting Profit of turnover
b	egments	ments / Other	Customers EU Govern Mio E	ments**	Other Custon Mro ECU 43.226	ners Total Mio Ei 54.7	CU 00 35		by Civil / Milita C Aircraft Missiles Space	ry and by Do vil EU Domestic Mio ECU 12.661 0 2.862	Civil Exp Mio EC 22.12.	/ Export port Military EU Domestic CU Military EU Domestic Milio ECU 3 10.934 0 1.561 5 516	Military export Mio ECU 8.981 970 17	Total Mio ECU 54.699 2.531 4.920	Year	Operating Profi EU Aerosp Operat in (%) o	t Margin* sace Industry ting Profit of turnover
b	egments	ments / Other Aircraft Missiles	Customers EU Govern Mio E 11.47	ments** CU 4 I	Other Custon Mio ECU 43.226 974	ners Total Mio E 54.7 2.5	00 35 15	Product	by Civil / Milita C Aircraft Missiles	ry and by Do vil EU Domestic Mio ECU 12.661 0	Civil Exp Mio EC 22.12.	/ Export port Military EU Domestic CU Military EU Domestic Milio ECU 3 10.934 0 1.561 5 516	Military export Mio ECU 8.981 970	Total Mio ECU 54.699 2.531	Year 1985 1986	Operating Profit EU Aerosp Operat in (%) o 5,2 4,1	t Margin* ace Industry arg Profit f turnover
b	egments	Ments / Other Aircraft Missiles Space Total	Customers EU Govern Mio E 11.47 1.56 2.90 15.91	ments** CU 4 I 3 8	Other Custon Mio ECU 43.226 974 2.012 46.212	Fers Total Mio E0 54.7 2.5 4.9 62.1	00 35 15 50	Product	by Civil / Milita C Aircraft Missiles Space Total	ry and by Do vil EU Domestic Mio ECU 12.661 0 2.862 15.523	Civil Exp Mio EC 22.12. (1.52! 23.646	/ Export Sport Spo	Military export Mio ECU 8.981 970 17 9.968	Total Mio ECU 54.699 2.531 4.920 62.150	Year 1985 1986 1987	Operating Profit EU Aerosp Operat in (%) o 5,2 4,1 3,4	t Margin* ace Industry ling Profit f turnover
b ^o Product S	egments	Aircraft Missiles Space Total Aircraft & Syste	Customers EU Govern Mio E 11.47 1.56 2.90 15.92 ns 10.48	ments** CU	Other Custon Mio ECU 43.226 974 2.012 46.212	Fers Total Mio Ed	00 35 15 50	Product Segments	by Civil / Milita C Aircraft Missiles Space Total Aircraft & Systems	ry and by Dc vil EU Domestic Mio ECU 12.661 0 2.862 15.523	Civil Exp Mio EC 22.12 (1.52: 23.640	/ Export Sort Military EU Domestic Mili	Military export Mio ECU 8.981 970 17 9.968	Total Mio ECU 54.699 2.531 4.920 62.150 40.365	Year 1985 1986 1987 1988	Operating Profit EU Aerosp Operat in (%) o 5,2 4,1 3,4 3,7	t Margin* sace Industry ting Profit of turnover
b'roduct S	segments sectors	Aircraft Missiles Space Total Aircraft & Syste Engines	Customers EU Govern Mio E 11.4: 1.5: 2.90 15.9: ns 10.4: 2.44	ments** 1 CU	Other Custon Mio ECU 43.226 974 2.012 46.212 29.869 10.376	rers Total Mio E0 54.7 2.5 4.9 62.1 40.3 12.8	00 35 15 50 66 23	Product Segments	by Civil / Milita C Aircraft Missiles Space Total Aircraft & Systems Engines	ry and by Do vil EU Domestic Mio ECU 12.661 0 2.862 15.523 9.981 2.905	Civil Exp Mio EC 22.12. (1.523 23.644 14.197 6.997	/ Export Domestic CU Military EU Domestic 3 10.934 0 1.561 5 516 8 13.011 3 8.149 2 2.182	Military export Mio ECU 8.981 970 17 9.968 8.042 745	Total Mio ECU 54.699 2.531 4.920 62.150 40.365 12.824	Year 1985 1986 1987 1988 1989	Operating Profit EU Aerosp Operatin (%) o 5,2 4,1 3,4 3,7 3,0	t Margin* sace Industry ting Profit of turnover
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b ^o Product S	segments sectors	Aircraft Missiles Space Total Aircraft & Syste Engines	Customers EU Govern Mio E 11.4: 1.5: 2.90 15.9: ns 10.4: 2.44	ments**	Other Custon Mio ECU 43.226 974 2.012 46.212 29.869 10.376	Total Milo Ed S4.7 2.5 4.9 62.1 40.3 12.8 8.9	00 35 15 50 66 23	Product Segments	by Civil / Milita C Aircraft Missiles Space Total Aircraft & Systems Engines	ry and by Do vil EU Domestic Mio ECU 12.661 0 2.862 15.523 9.981 2.905	Civil Exp Mio EC 22.12. (1.523 23.644 14.197 6.997	/ Export Sport Spo	Military export Mio ECU 8.981 970 17 9.968 8.042 745	Total Mio ECU 54.699 2.531 4.920 62.150 40.365 12.824	Year 1985 1986 1987 1988 1989 1990 1991	Operating Profit EU Aerosp Operatin (%) o 5,2 4,1 3,4 3,7 3,0 2,3 2,3	t Margin* sace Industry ting Profit f turnover
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Product S Industry S Industr	iegments ieectors ieecto	Aircraft Missiles Space Total Aircraft & Syste Engines Equipment Total a consolidated turnov 1998 EU Aero ECU unconsolidated CU consolidated End-U Mio 46	EU Govern	ments** CU 4 4 1 3 8 7 7 4 4 8 national aerocorrectorspace interespace interes	Other Custon Mio ECU 43.226 974 2.012 46.212 29.869 10.376 5.967 46.212 pspace research of the custon selection of the custon of the custom of the custon of the custom of the custon of the custon of the custon of the custon of the custom of the custon of the custom of the custon of the custon of the custom o	Total Milo Fi	CCU	Product Segments Industry Sectors Source AEC Fig. 9: I T	by Civil / Milita Aircraft Missiles Space Total Aircraft & Systems Engines Equipment Total IMA (*) based 998 EU Aerosp Total: 13.995 Mio ECU	ry and by Dc vi EU Domestic Mio ECU 12.661 0 2.862 15.523 9.981 2.905 2.637 15.523 on consolidated tun ace Industry T = 22.5% of total: At Aen Manufac Mio EC 2.1 1.1	Civil Exp. Civil Exp. Mio EC 22.12 (/ Export port Military EU Domestic Milita	Military export Mio ECU 8.981 970 17 9.968 8.042 745 1.181 9.968 of Aircraft Maint Total Mio EC 5.66 4.5	Total Mio ECU 54.699 2.531 4.920 62.150 40.365 12.824 8.961 62.150 tenance	1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997	Operating Profit EU Aerosp Operatin (%) o 5,2 4,1 3,4 3,7 3,0 2,3 2,3 -0,5 0,6 -0,1 -0,3 2,1 4,2	t Margin* sace Industry ting Profit of turnover
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In	dustry O	n of 1998 rder Intake	* by Custo	omer	EU Aero	own of 199 space Indus nents and 1	try Employment	Fig. 13: Contribut Aerospaci Total: 422.48	e Industry Emp
	U nments**					484 employee		1018: 722.70	- employees
Aircraft	(%)	(%) 185.0	(%)	(%)		t Segments Imployees	Industry Sectors Nr. of Employees	Country	Number of Er
& Systems Engines Equipment	219,9	153,3 138.6	146,6	159,8	Aircraft Missiles Space	376.919 14.088 31.477	14. of Employees	United Kingdom France	153.870 98.196
Total+ Source: AECMA (*) based on u		167,9	149,7	159,9	Aircraft & Systems Engines Equipment		207.498 86.217 128.769	Germany Italy Spain	69.90- 36.676 16.308
	ated turnove itional aeros	r (excl. EU-Co	onsortia)		Total Source: AECMA	422.484	422.484	Sweden Netherlands Belgium	13.162 7.444 7.338
	erospac	D Expend e Industry Mo ECU =	/		Aerospa	ace Industr	diture* of EU "y 16,1% of turnover*	Ireland Portugal Finland	4.398 3.650 3.201
			&D Expedi				R&D Expediture in (%) of turnover*	Austria Greece	3.089 2.758
Aircraft & Sy Engines Equipment	/stems		15,7 14,2 20.2		Company-financed	Cıvil Military Total	5, I 2,9 8,0	Denmark Luxemburg	1.90 ² 586
Total**			16,1		financed by	Civil Military	1,7	Total Source: AECMA	422.484
					EU Governments*	Total	8,1	Source: AECHA	
Source: AECMA (*) consolidati (**) weighted a	ed average				Source AECMA (*) based on consolidate (**) incl ESA, national ae etablishments and ap	rospace researc	.h		
Fig. 19: SM	1Es in the	e EU Aero	ospace In	dustry	Total Turr	rnover* ar lover*: 1,493 bloyment: 31.5	Mio ECU	f EU Aerospace Indu	stry SMEs**
		Nur	mber of Co	mpanies		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	·····	rnover* in Mio ECU	Number of 8
EU Aerospa	ce Industr	SM	Es Nor	-SMEs 206	Product Se	egments	Aircraft Missiles	1.312 28	27.78 1.04
Suppliers to		′					Space	153	3.07
	hold 1	8.1	UU 1 65	.500			Total	1.493	31.90

EU Aen by Segi	own of 199 ospace Indust ments and S 2484 employee	ry Employment Sectors
	ct Segments Employees	Industry Sectors Nr. of Employees
Aircraft	376.919	
Missiles	14.088	
Space	31.477	
Aircraft & Systems		207.498
Engines		86.217
Equipment		128.769
Total	422.484	422.484
Source: AECMA		

Country	Number of Employees			
United Kingdom	153.870			
France	98.196			
Germany	69.904			
Italy	36.676			
Spain	16.308			
Sweden	13.162			
Netherlands	7.444			
Belgium	7.338			
Ireland	4.398			
Portugal	3.650			
Finland	3.201			
Austria	3.089			
Greece	2.758			
Denmark	1.904			
Luxemburg	586			
Total	422.484			

	ion to 1998 Direct EU e Industry Employment 4 employees	Fig. 14: Breakdown of 1998 Direct EU Aerospace Industry Employment Total: 422.484 employees			
			Number	of Employees	
Country	Number of Employees		Graduates, Engineers,		
United Kingdom	153.870	Ву	Managers, etc. Manual Workers	118.318	
France	98.196 69.904	Qualification	Other	130.549	
			T_+_1	422.484	
Germany			Total		
Italy	36.676		R&D	71.669	
Spain	16.308	Ву	Production	237.001	
Sweden	13.162	Activity	Other	113.814	
Netherlands	7.444		Total	422 484	
Belgium	7.338	Source: AECMA			
Ireland	4.398	Ter va a			
Portugal	3.650		icture of the EU Aero	ospace	

Activity	Other		113.814	1988	26.716
	Total		422 484	1989	30.330
Source: AECM/		***************************************	12201	1990	31.537 34.565
	ructure of th		space	1992	36.054 37.062
Industry in 19 Size of Companies In Number of Employees		Number of	Companies	1994 1995	39.970 43.281
>10.000 1.000 - 10.000 250 - 1.000 <250 (SMEs)			9 74 123 550	1996 1997 1998	44.984 47.897 50.492
	Total		756		
Source AECM/				Source: AECI (*) extrapo	MA, AIA ated from available d

Year	EU Aerospace Industry Labour Cost Current ECU per Employee	US Aerospace li Labour Cost Current ECU per Employee
1985	25.964	44.258
1986	26.232	35.148
1987	27.206	30.634
1988	26.716	31.055
1989	30.330	34.384
1990	31.537	31.396
1991	34.565	33.444
1992	36.054	33.799
1993	37.062	39.170
1994	39.970	40.496
1995	43.281	37.068
1996	44.984	40.308
1997	47.897	47.246
1998	50.492	47.973
Campa A	ECMA, AIA	

Fig. 15: Comparative Aerospace Industry

	Number	of Companie
	SMEs	Non-SMEs
EU Aerospace Industry	550	206
Suppliers to EU Aerospace Industry*	8.100	69.500

	Turnover* in	Mio ECU	Number of Employee:
	Aircraft	1.312	27.789
Product Segments	Missiles	28	1.042
	Space	153	3.073
	Total	1.493	31.904
	Aircraft & Systems	387	6.617
Industry Sectors	Engines	159	3.296
•	Equipment	947	21.991
	Total	1.493	31.904

Aerospace Total: 164 Mio	R&I	D Expediture %) of turnover
Company-financed	Civil Military Total	4,4 2,4 6,8
financed by EU Governments**	Civil Military Total	3,3 0,9 4,2

	Turnover* Mio ECU	Employment
USA**	104.444	612.000
EU	62.150	422.484
Japan	9.489	34.761
Canada	9.204	66.870
Total	185.287	1.136.115

Sau-	rce: AECMA, AIA, AIAC, SIAC
	based on consolidated turnover
	excluding products and services which are only aerospace
	related

	by European Ae	erospace Industry Mio ECU	by Other* Mio ECU	Total Mio EC
Imports from	USA	-8.440	-10.040	-18.48
	RoW	-1.058	-7.474	-8.53
	Total	-9.498	-17.514	-27.01
Exports to	US Aerospace Industry	7.284		
	US Other Customers	8.526		
	USA Total	15.810	0	15.810
	RoW Aerospace Industry	1.740		
	RoW Other Customers	16.067	2.833	
	RoW Total	17.807	2.833	20.690
	Total	33.617	2.833	36.500

	EU Aerospace Industry Mio ECU	Others in the EU Mio ECU	Total Mio EC
USA RoW	7.370 16.749	-10.040 -4.591	-2.670 12.158
Total	24.119	-14.631	9,488
Source: AE	22.43		