COMMISSION OF THE EUROPEAN COMMUNITIES

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THE EUROPEAN AEROSPACE INDUSTRY

TRADING POSITION AND FIGURES

SUBMISSION OF THE DOCUMENT

This document is a compilation of the most relevant statistical data available to the Commission on the aerospace sector in Europe and the United States.

The Directorate-General for Internal Market and Industrial Affairs has been compiling and collating these data since 1972; its very first communication to the Council, dated 19 July 1972 (document COM(72)850), included a statistical annex on the trading position of the aerospace sector (market and manufacturing base).

In subsequent years*, it became possible to make a more detailed analysis, owing mainly to the co-operation of the professional associations in each Member State, which collaborated actively with the Commission in conducting an annual survey among companies in the sector. In 1976 this survey was extended to the employment position.

In addition, in its communication to the Council dated 3 October 1975 (document COM(75)475) regarding an action plan for European aviation the Commission also supplied information of a statistical nature on the current position of the sector and its prospects for the future.

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*Documents : SEC(73)813 dated 1 March 1973
III/243/73 dated 31 December 1973
SEC(75)1539 dated 23 April 1975
SEC(76)2657 dated 9 July 1976

CONTENTS

SUMMARY

The layout of the document is the same as in previous years:

I - The market
II - Manufacturing base

MARKET

1. In 1976 there was a marked recovery in scheduled passenger traffic: + 10% as against + 5% in 1974 and 1975. For non-scheduled traffic, on the other hand (which in 1975 represented some 27% of the total), the 1976 figures show that it dropped to slightly less than its 1973 volume.

2. As regards sales of large civil aircraft, whereas European aircraft sales had been relatively favourable in 1975 (16 Airbuses and 26 Fokker F28s in particular), 1976 sales were disappointing, viz only 3 Airbuses and 6 F28s, with Boeing winning a great many contracts (113 Boeing 727s and 36 Boeing 737s). The start of 1977 indicates that it will be a more favourable year for European aircraft.

3. Although the value of the European market increased from 21% of the "Western" market for large civil aircraft in 1970 to 26.4% in 1976, the share of this market won by European civil aircraft decreased from 9.5% in 1970 to 7.8% in 1976. The European industry is now covering only 2.4% of the "Western" market for long-range aircraft and 13% of the "Western" market for short- and medium-range aircraft.

4. In the military fleet of the Community, the proportion of European-designed aircraft is as high as 67%, but the position varies very widely from one Member State to another; exports of military aircraft from Member States go mainly to the Middle East and North Africa and to non-EEC Europe.

5. In intra-Community trade in aeronautics products (excluding instrumentation, for which no data were available), France shows a positive balance and the Federal Republic of Germany shows a negative balance.

With respect to the world, France shows a positive trade balance attributable to aircraft and helicopters and the UK shows a positive balance attributable to engines, while the Federal Republic of Germany shows a negative balance. With respect to the USA, all Member State balances are negative, with the sole exception of the positive UK balance for engines.

Turnover

6. The sum of the final turnovers of Member States continued to increase in relation to the "Western" total: from 16.9% in 1971 to 27.5% in 1975. At EEC level, growth in aerospace industrial activity reached 27% between 1970 and 1975, whereas growth in GDP was only 13%.

7. For the first time, the turnover of the French industry slightly exceeded that of the UK industry, but this sector still represents a relatively larger percentage of GDP in the UK than in France.

8. The amounts relating to industrial co-operation between Member States continued to show a relative increase since 1972, rising from 8.6% to 13.5% of the sum of final turnovers. They are three times the amounts relating to industrial co-operation with non-EEC countries.

9. Military sales represent 72% of the final EEC turnover. This turnover breaks down as follows: State 56.6%, exports 35.2% and domestic civil market 8.2%. The breakdown by subsector is as follows: aircraft 57.8%, engines 23.0%, instrumentation 16.6% and space 2.6%.

10. In the US turnover, the role of exports increased substantially, owing mainly to a 43% increase in the aircraft subsector (ie more than in the EEC), in 1975, as against 35% in 1972/73.

11. The distribution between "purchase and maintenance contracts" and "research and development contracts" is more evenly balanced in Europe than in the USA, where the "purchase" share is predominant.

Manpower

12. At Community level, following a decrease in the work-force until 1973 caused by a decrease in the British work-force, there has been an increase in the work-force caused by increases which have been substantial in the UK (+ 23 700) and smaller in France (+ 2100).

13. At Community level, the breakdown of the work-force by professional grading is as follows:

(percentage)	Aircraft	Engines	Instrumentation	Space
Engineers and managerial staff	13	17	15	14
Executive staff:				
- technical	23	9	19	40
- administrative	17	14	17	20
Skilled workers	39	50	36	22
Non-skilled workers	8	10	13	4
	100	100	100	100

Companies

14. Three US companies have a turnover in the region of or more than 2.5 thousand million u.a. (1 u.a. = 1.32 in 1975) and eight US companies have a turnover of more than one thousand m.u.a., whereas in the EEC only two companies have a turnover of more than one thousand m.u.a.

15. The degree of concentration is now higher in the USA than in the EEC.

16. The European industry has an overall level of productivity which is lower than that of the American industry, owing mainly to substantial structural differences and to the fact that its production runs are shorter. This handicap is, however, compensated to some extent by lower wage bills, which mean that it is still able to release a relatively large cash flow.

17. The value of US helicopter production is greater than that of the EEC but has remained at the same order of magnitude (between 550 and 650 m.u.a.).

18. The boom in the market for light and executive aircraft has continued to benefit the US industry, whilst the European industry has lost ground on this market.

Public financing of research and development

19. Within the EEC, the aerospace sector receives approximately 77% of the public funds allocated to industrial technology; this percentage reflects a fairly typical situation in all four of the large Member States and the Netherlands.

I. THE MARKET

A. Civil air traffic and the civil transport market

1. Civil air traffic

a) Scheduled traffic (1)

In 1973, 1974, 1975 and 1976 (estimates), total passenger-km output of the airlines of the 135 Member States of the ICAO(*) on scheduled domestic and international services was as follows (in '000 millions) (2):

Table 1

	(excluding USSR)	trend	(including USSR)	trend
1973	520	+ 12%	618	+ 10%
1974	548	+ 5%	656	+ 6%
1975	574	+ 5%	697	+ 6%
1975 (estimate)	630	+ 10%	765	+ 10%

Thus, the provisional figures for 1976 represent a marked recovery in world air traffic, since the growth rates in 1974 and 1975 had been well below the average growth rate for 1965-75, viz. 11% (excluding USSR).

It is impossible at present to tell whether or not this recovery will be a lasting one.

The AEA(**), for its part, reports increases of 12% in intra-European traffic and 9% in intercontinental traffic for 1976 compared to 1975.

(*) Excluding People's Republic of China

(1) Numbers in brackets refer to footnotes given at the end of the document. The first of them gives a table for converting national currency units into European units of account (u.a.).

(**) Association of European Airlines

The distribution of total scheduled traffic (*) in 1974 and 1975 was as follows (3):

Table 2 +

Passenger-km x 10^9	1974	%	1975(**)	%
Total AEA (+)	117.912	18.0	123.953	17.9
US airlines	262.188	40.1	262.014	37.9
Rest of the world	274.394	41.9	305.233	44.2
World:	654.494	100.0	691.200	100.0

Whereas the international passenger traffic of the AEA airlines showed increases of 3.8% in 1974 and 5.1% in 1975, that of the US airlines decreased for the second year running: 6.9% in 1974 and 6.3% in 1975. The international traffic of other operators increased by 13.4%.

Table 3

Scheduled international traffic ('000 million passenger-km)				
	1974	%	1975	%
AEA	107.502	43.1	113.032	42.9
US airlines	53.407	21.4	50.020	19.0
Rest of the world	88.656	35.5	100.348(**)	38.1
World:	249.565	100.0	263.400(**)	100.0

(*) Aer Lingus, Air-France, Alitalia, Austrian Airlines, British Airways, BCAL, Finnair, Iberia, Icelandair, JAT, KLM, Lufthansa, Olympic, Sabena, SAS, Swissair, TAP, THY and UTA.

(**) Provisional figures

In the case of scheduled domestic traffic, two countries account for 77% of the total, namely the USA with 50% and the USSR with 17%*:

Table 4

(1000 million passenger-km)	1974	%	1975	%
AEA	10,408	2,6	10,922	2,6
USA	208,781	51,6	211,993	49,5
Rest of the world	185,740	45,8	204,885	47,9
World :	404,929	100,0	427,800	100,0

Trend in business for AEA airlines grouped by routes

AEA intra-European services

Figures for the AEA airlines showed some degree of improvement in 1975 (+ 8%), due mainly to an increase in traffic to the Middle East. The US trunk airlines showed a slight growth (1.6%), as in 1974 (2.0%):

Table 5

(1000 million passenger-km)	AEA intra-European	US trunk
1974	31 855	189 282
1975	34 442	192 224

AEA intercontinental services

For the second year running, the traffic of the US airlines decreased while that of the AEA airlines increased:

Table 6

(1000 million passenger-km)	AEA intercontinental	US international traffic
1974	75 647	53 407
1975	78 588	50 020

AEA domestic traffic

AEA domestic traffic increased slightly; it should be noted that some airlines which operate solely (such as AIR-INTER in France) or mainly on domestic traffic are not members of the AEA. The traffic of the US "local" airlines decreased slightly:

Table 7

('000 millions of passenger-km)	AEA domestic traffic	US "local" traffic
1974	10.408	17.393
1975	10.921	17.281

Traffic over the North Atlantic

From 1974 to 1975, passenger traffic decreased by 6.1%, ie by slightly less than between 1973 and 1974 (- 6.6%). During the first five months of 1976, on the other hand, traffic increased by 13%. The distribution of passengers carried ('000 millions) was as follows:

Table 8

	1974	%	1975	%
AEA	5074.7	54.3	4859.7	55.4
PANAM + TWA	2975.9	31.8	2713.7	30.9
Other airlines	1294.6	13.9	1202.6	13.7
	9345.2	100.0	8775.8	100.0

Traffic on intercontinental routes other than the North Atlantic

This traffic was the least affected by the economic recession: it increased by 12.3% during 1975, following a growth of 11.4% in the previous year.

Non-scheduled traffic

According to various sources, global trends in this traffic were as follows:

('000 million passenger-km)

1970	1973	1974	1975
80.4	111.0	92.7	92.0

Non-scheduled traffic represented 25.9% of total ICAO international traffic in 1974, and 27.1% in 1975.

The breakdown of this non-scheduled traffic is reported to be as follows:

- non-American airlines (USA)	66.5%
- US domestic traffic	10.0
- US airlines international traffic	23.5
	100.0

2. The civil transport market

a) Trends in the numbers of aircraft ordered and delivered in recent years have been as follows:

Table 9

	On the date shown (4)		Ordered (5)		
	ordered	delivered	in 1974	in 1975	in 1976
Concorde (XII.76)	9	8	-	-	-
Boeing 707-720 (XI.76)	920	907	14	3	4
Boeing 747 (VIII.76)	304	287	29	19	16
D.C.8 (76)	556	556	-	-	-
D.C. 10.30/40 (I.77)	157	143	20	7	15
A 300 B (VIII.76)(*)	34	21	9	16	3
Caravelle (76)	278	278	-	-	-
BAC 111 (XII.76)	222	215	9	5	2
Boeing 727 (X.76)	1.345	1.213	97	49	113
Boeing 737 (5.77)	508	482	47	33	36
Fokker F 27 (II.77)	654(6)	n.d.	15	23	3
Fokker F 28 (II.77)	120	n.d.	22	26	6
H.S. Trident (1976)	117	106	-	-	-
Mercure 100 (1976)	10	10	-	-	-
D.C. 9 (IX.76)	897	832	42	30	26
D.C.10.10 (I.77)	96	91	-	-	1
Lockheed Tristar (IV.76)	161	129	19	-	5
V F W 614 (IX.76)	16	6	10	1	3
H.S. 748 (VI.76)	312	294	11	1	11

Total sales of the above-mentioned aircraft (7) by category were as follows:

Table 10

	US aircraft		European aircraft		Total	
	1975	1976-77	1975	1976-77	1975	1976-77
Long-range	1982	2020	95	95	2077	2,115
Short/medium-range	2818	3007	1733	1763	4551	4,770
	4800	5027	1828	1858	6628	6,885

As in previous years, a slow increase in the percentage representation of short - and medium-range aircraft can be observed.

(*) On 8 June 1977 the position was as follows: 44 firms orders, 4 aircraft reserved and 23 options.

b) Numbers of aircraft in service and on order

An accurate picture of the fleet position is given by the numbers of aircraft in service and on order at a given date. The following table gives a comparison of the position as at 31 October 1974 with that as at 10 June 1976 (8):

Table 11

	Number		Value (m.u.a.)	
	1974	1976	1974	1976
Long-range	1886	1838	17,686,1	22,127,2
Short/medium-range	4348	4375	16,559,0	23,156,0
Total	6234	6213	34,245,1	45,283,2

The trend in mean aircraft value (m.u.a.) was as follows:

	1974	1976
Long-range	9.377	12.038
Short/medium-range	3.808	5.292

It should be noted that there are now very few long-range non-turbojets, whereas there are over a thousand short- and medium-range turboprops.

The trend in breakdown by value between long-range aircraft and short- and medium-range aircraft was as follows:

Table 12

	1970	1971	1973	1974	1976
Long-range	55,2	51,1	51,1	51,6	48,9
Short/medium-range	44,8	48,9	48,9	48,4	51,1

This slow but steady upward trend in the proportion of short- and medium-range aircraft is likely to continue in future years; a market study covering the period 1976/85 allocates 55% of the total market to short- and medium-range aircraft, while another study relating to the period 1976/90 allocates 2/3 of the value of purchased aircraft to them.

In June 1976, the value of aircraft in service and on order in individual fleets was as follows (m.u.a.):

Table 13

Value of aircraft in service and on order in June 1976 (m.u.a.)

Origin / Fleet	Long-range			Short/medium-range			Total	%	%
	USA	Eur.	Other	USA	Eur.	Other			
Fed. Rep. of Germany	722,7	-	-	421,4	163,0	-	1 307,1		15,2
Belgium	269,0	-	-	145,1	35,0	-	449,1		5,2
Denmark	26,1	-	-	62,2	32,2	-	120,5		1,4
France	1.174,3	256,0	-	206,8	420,3	-	2.057,4		23,9
Ireland	78,1	-	-	56,7	2,8	-	137,6		1,6
Italy	427,1	-	-	364,0	31,9	-	823,0		9,6
Luxembourg	32,0	-	3,0	-	6,0	-	41,0		0,5
Netherlands	562,7	-	-	422,7	49,1	-	1.034,5		12,0
UK	1.185,2	273,8	18,0	598,3	554,2	-	2.629,5		30,6
EEC	4.477,2	529,8	21,0	2.277,2	1 294,5	-	8.599,7	19,0	100,0
Other countries in Europe (9)	1.905,3	-	1,5	1.336,5	124,8	9,1	3.377,2	7,4	
Europe	6.382,5	529,8	22,5	3.613,7	1.419,3	9,1	11.976,9	26,4	
USA	7.346,8	-	-	12.202,9	18,2	29,1	19.597,8	43,3	
Rest of the world	7.819,9	6,2	19,5	4.191,2	1.549,5	122,2	13.708,5	30,3	
World	21.549,2	536,0	42,0	20.007,8	2.987,0	161,2	45.283,2	100,0	

There has been little change in the breakdown of fleet value between Member States. On the other hand, there has been a further decrease in the relative value of the US fleet and a further increase in that of the "Rest of the world" fleet:

Table 14

Breakdown of civil fleet value	1970 (10)	1973	1974	1976
EEC	14,7	18,2	18,0	19,0
Other European countries	6,3	8,1	8,0	7,4
Europe	(21,0)	(26,3)	(26,0)	(26,4)
USA	63,9	53,0	45,4	43,3
"Rest of the world"	15,1	20,7	28,6	30,3
	100,0	100,0	100,0	100,0

The trends noted earlier are continuing, viz a slow increase in Europe's share, mainly due to an increase in that of the EEC, doubling of the "Rest of the world" share within six years, and a marked decrease in the US share.

According to a US study, the breakdown of aircraft purchases for the period 1976/85 will be as follows:

Europe : 30.6%, USA : 32.4%, "Rest of the world" : 37.0%.

As regards aircraft origin, those built in countries other than the EEC and the USA represent only 0.4% of the total value. The following table compares trends in fleet value and in the market share won by aircraft built in the European Economic Community (the balance being almost entirely attributable to the US industry).

Table 15

	Size of market				Market share won by aircraft built in the EEC (%)			
Market	1970	1974	1976	trend 1970-76 (10)	1970	1974	1976	trend 1970-76
EEC	14,7	18,0	19,0	+ 4,3	33,0	21,4	21,2	- 11,8
Other countries in Europe	6,3	8,0	7,4	+ 1,1	23,1	7,7	3,7	- 19,4
EUROPE	(21,0)	(26,0)	(26,4)	+ 5,4	30,1	17,2	16,3	- 13,8
USA	63,9	45,4	43,3	-20,6	2,1	0,4	0,1	- 2,0
Rest of the world	15,1	28,6	30,3	+ 15,2	12,2	12,6	11,3	- 0,9
	100,0	100,0	100,0		9,5	8,2	7,8	- 1,7

Compared with 1974, the imbalance to the detriment of the European industry has increased further; however, the figures given above in the "1976" column relate to the second survey made for that year, and the imbalance did not worsen between the two surveys. It is too early to say whether this marks the start of a recovery, which would begin by making itself felt on the EEC market through, for instance, Airbus sales.

In addition, the continued growth of the relative sizes of the European and "Rest of the world" markets can be observed, to the detriment of the US market.

c) Long-range aircraft

If the analysis is extended to aircraft type, the results are as follows (aircraft in service and on order in June 1976) (8):

Table 16

	EEC	Other countries in Europe	Europe	USA	Rest of the world	WORLD
707-720	1.215,3	563,9	1.779,2	1.813;4	2.395,8	5.988,4
747	2.080,0	357,5	2.437,5	3.607,5	3.347,5	9.392,5
DC6-7	3,3	10,4	13,7	4,0	38,1	55,8
DC8	271,4	391,5	662,9	1.014,9	775,3	2.453,1
DC10-30/40	907,2	579,6	1.486,8	798,8	1.189,2	3.474,8
Lockheed 100	-	-	-	106,6	73,8	180,4
Convair 880-990	-	2,4	2,4	1,6	0,2	4,2
US aircraft	4.477,2	1.905,3	6.382,5	7.346,8	7.819,9	21.549,2
Britannia	0,6	-	0,6	-	2,6	3,2
V.C. 10	13,2	-	13,2	-	3,6	16,8
Comet	4,0	-	4,0	-	-	4,0
Concorde	512,0	-	512,0	-	-	512,0
European aircraft	529,8	-	529,8	-	6,2	536,0
C L 44	21,0	1,5	22,5	-	19,5	42,0
Total	5.028,0	1.906,8	6.934,8	7.346,8	7.845,6	22.127,2

Trends in relative market sizes and in the market share won by European long-range aircraft were as follows:

Table 17

	Size of market			Market share won by aircraft built in the EEC (%)		
Markets	1974	1976	trend 1974-76	1974	1976	trend 1974-76
EEC	22,0	22,7	+ 0,7	8,6	10,5	+ 1,9
Other countries in Europe	7,0	8,6	+ 1,6	-	-	-
Europe	(29,0)	(31,3)	+ 2,3	6,5	7,6	+ 1,1
USA	38,9	33,2	- 5,7	-	-	-
Rest of the world	32,1	35,5	+ 3,4	3,0	0,1	- 2,9
World	100,0	100,0		2,9	2,4	- 0,5

The trend in relative market size between October 1974 and June 1976 forms part of a fairly long-term trend: a study of prospects for the period 1975/85 (11) predicts that the "Rest of the world" market will represent 41% of the total, the European market 30% and the US market 29%.

The breakdown (by value) of long-range aircraft in June 1976 was as follows:

Table 18

"Standard" aircraft	:	39,6%	100,0
"wide bodies"	:	58,1%	
Supersonics	:	2,3%	
Boeing	:	69,5	100,0
McD. Douglas	:	27,1%	
Other US aircraft	:	0,8%	
European	:	2,4	
Other	:	0,2	

There has been no significant change since 1974 in the breakdown of long-range aircraft by manufacturer.

d) Short- and medium-range aircraft

Analysis by aircraft type gives the following results (aircraft in service and on order in June 1976) (m.u.a.) (8):

Table 19

	E E C	Other countries in Europe	EUROPE	U S A	Rest of the world	WORLD
Boeing 727	626,4	462,0	1.088,4	5.316,0	1.344,0	7.748,4
Boeing 737	408,4	69,3	477,7	1.020,5	1.130,6	2.628,8
D.C. 3-4	1,4	...	1,4	0,4	29,0	30,8
D.C. 9	693,6	756,3	1.149,9	1.686,8	735,0	3.871,7
D.C. 10-10	68,4	45,6	114,0	2.188,8	-	2.302,8
Electra	-	2,4	2,4	29,6	40,0	72,0
Lochkeed 1011	478,8	-	478,8	1.960,8	912,0	3.351,6
Convair	0,2	0,9	1,1	-	0,6	1,7
US aircraft	2.277,2	1.336,5	3.613,7	12202,9	4.191,2	20007,8
Caravelle	36,4	19,2	55,6	-	16,0	71,6
A 300	374,9	-	374,9	-	211,9	586,8
Mercure	65,0	-	65,0	-	-	65,0
Vauguard	14,0	-	14,0	-	2,1	16,1
Viscunt	5,5	0,1	5,6	-	6,3	11,9
BAC 111	238,9	36,9	275,8	18,2	174,4	468,4
Herald	4,2	-	4,2	-	1,0	5,2
Trident	279,7	1,8	281,5	-	229,9	511,4
H S 748	48,0	7,2	55,2	-	213,6	268,8
F 27-28	166,8	59,6	226,4	-	694,3	920,7
V F W 614	61,1	-	61,1	-	-	61,1
European airvraft	1.294,5	124,8	1.419,3	18,2	1.549,5	2.987,0
Y S 11	-	9,1	9,1	29,9	122,2	161,2
Total	3.571,7	1.470,4	5.042,1	12251,0	5.862,9	23156,0

Trends in relative market sizes and in the market share won by European short- and medium-range aircraft were as follows:

Table 20

Markets	Size of market			Market share won by aircraft built in the EEC (%)		
	1974	1976	trend 1974/76	1974	1976	trend 1974/76
EEC	13,8	15,4	+ 1,6	42,9	36,2	- 13,0
Other countries in Europe	9,1	6,4	- 2,7	14,1	8,5	- 5,6
Europe	(22,9)	(21,8)	(- 1,1)	31,5	28,2	- 3,3
USA	52,3	52,9	+ 0,6	0,7	0,2	- 0,5
Rest of the world	24,8	25,3	+ 0,5	25,7	26,4	+ 0,7
World	100,0	100,0		13,9	13,0	- 0,9

Relative sizes of the markets for short- and medium-range aircraft have remained the same since 1974. The European industry suffered further losses on all markets except the "Rest of the world" market.

The decrease in the market share held by European aircraft since 1971, ie over five years, has been as follows:

EEC market = -17.6 points, "Western" market = -2.8 points.

Since 1974, the breakdown between "wide bodies" and "standard" aircraft has altered slightly in favour of the former, which represent 6.5% of the market and 27% of the value of short- and medium-range aircraft.

The trend in value breakdown by manufacturer was as follows:

Table 21

	1974	1976
Boeing	40,3	44,8
McD. Douglas	30,4	26,8
Lockheed	14,2	14,7
European manufacturers	13,9	13,0
Others	1,2	0,7
	100,0	100,0

Massive Boeing 727 sales in 1976 and 1977, mainly in the USA, will increase Boeing's share still further.

e) The European-built civil aircraft market

For the European aircraft listed in the table below, which was compiled on the basis of figures relating to the position as at 10 June 1976, the breakdown of aircraft in service and on order was as follows in the airlines and countries mentioned in footnote (8), (aircraft built under European transnational co-operation are included in the "EEC market" column):

Table 22

	National market	EEC market	Other countries in Europe	Europe	USA	Rest of the world	World
Britannia	3	3	-	3	-	13	16
Comet	20	20	-	20	-	-	20
V.C. 10.	22	22	-	22	-	6	28
Concorde	-	10	-	10	-	-	10
Caravelle	62	103	28	131	-	52	183
Mercure	-	10	-	10	-	-	10
A 300	-	23	-	23	-	13	36
Vanguard	6	20	-	20	-	3	23
Viscount	39	39	1	40	-	63	103
BAC 111	64	77	11	88	26	46	160
Herald	19	21	-	21	-	5	26
Trident	63	63	3	66	-	39	105
H S 748	18	20	3	23	-	89	112
F 27	6	66	12	78	-	225	303
V F W 614	-	13	-	13	-	-	13
F 28	-	9	8	17	-	58	75

For all these programmes together, the breakdown of sales by value (aircraft in service and on order in June 1976) is as follows (%):

Table 23

- National markets (national programmes):		16.5	
- Markets of other Member States (national programmes):		5.3	
- Transnational aircraft sold within the EEC:		29.9	
	EEC:		51.7
- Other European countries:		3.6	
	EUROPE:		55.3
- USA		0.5	
- Rest of Western world		44.2	
		100.0	

Sales within the EEC have increased in comparison with the position as at October 1974, owing to a growth in the sale of transnational aircraft.

B. The helicopter market

Most of the helicopters built are intended for the military market, since the civil market is as yet relatively undeveloped.

1. Military helicopter market

The numbers of helicopters sold in Europe over the ten-year period 1966/1975 were as follows (11):

Table 24

Origin: \ Country	France	Italy	FRG	UK	Other countries in Europe	Total	%
- European-designed	1000	25	340	770	465	2 600	44
- Manufactured in Europe under licence	235	580	500	970	235	2.520	43
Subtotal	1235	605	840	1740	700	5.120	87
- Imported from USA	245	15	190	20	275	745	13
TOTAL	1480	620	1030	1760	975	5.865	100

Of the total number (5865), approximately 1500 helicopters have been destroyed or withdrawn from service.

During the same ten-year period, the American helicopter manufacturers sold 15 000 helicopters for military purposes.

At the end of 1975, the world fleet totalled some 24 000 military helicopters, and the European fleet (EEC + other European countries), which represented 78.5% of the total European helicopter fleet, amounted to approximately 4000 military helicopters.

Figures on the market share of European-designed military helicopters are given below in Section D, which deals with the military aviation market in general.

The value breakdown of the European fleet by helicopter type is as follows:

Table 25

Lightweight helicopters (less than 3500 kg)	60
Medium-weight helicopters (from 3500 to 10 000 kg)	32
Heavy-duty helicopters (more than 10 000 kg)	8
	100

2. Civil helicopter market

- Europe: Over the same ten-year period (1966/1975), some 1300 civil helicopters were sold in Europe.

As at 31 December 1975, the numbers in service were as follows:

Table 26

France	Italy	FRG	UK	Other Member States	EEC	Other European countries	TOTAL
181	128	170	375	72	926	254	1180

- USA and Canada: At the same date, these two countries possessed a civil fleet of some 5670 helicopters.

- Rest of the world: At the end of December 1975, the civil helicopter fleet in the "Rest of the world" amounted to approximately 2150 helicopters.

Thus, at the end of 1975 the world ("Western" world) fleet totalled approximately 9000 civil helicopters. The trend in the numbers in service over the last few years has been as follows:

Table 27

	1973	%	1974	%	1975	%	Increase 1973/75
USA and Canada	4.968	62,5	5.206	62,1	5.670	63,0	6,5%
Europe	1.000	12,5	1.090	12,0	1.180	13,1	8,6%
"Rest of the world"	1.990	25,0	2.090	24,9	2.150	23,9	3,9%
Total	7.958	100,0	8.386	100,0	9.000	100,0	6,3%
of which Europe of the Nine					926	16,0	

In 1975, the breakdown in numbers of this civil fleet by helicopter type was as follows:

- lightweight helicopters (up to 3500 kg) : 75%
- medium-weight helicopters (from 3500 to 10 000 kg) : 23%
- heavy-duty helicopters (more than 10 000 kg) : 2%

Overall, since 1966 the world civil helicopter fleet has been growing at a mean annual rate of 9%. A tailing off in this mean growth rate can be observed in the years 1973/1975. It may be noted that the growth rate is highest in Europe.

3. Market distribution

The breakdown in numbers of the world fleet (civil plus military) between helicopters of European design and American design is estimated at around 20% and 80% respectively.

C. The general and executive aircraft market

The figures given in the May 1976 report on "Trading position and figures" cover the year 1975 and will be updated in the 1978 report.

D. The military aviation market

Analysis of the numbers of military aircraft and helicopters in service in 1975 (excluding the socialist countries) on the basis of the D.M.S. study (11) demonstrates the relative proportions of those designed by the EEC industry and those of American design. It was decided to use this classification rather than one based on place of manufacture, which would not have covered production under licence.

Table 28

1975 m.u.a. EEC military fleet : Breakdown of the EEC market between aircraft designed by the EEC industry and aircraft of American (US) design

	European-designed aircraft				American-designed aircraft				Total fixed wing	Total helicopters	TOTAL
	Fixed wing	Helicopters	Total	%	Fixed wing	helicopters	Total	%			
Fed. Rep. of Germany	931,2	110,0	1.041,2	34,8	1.782,8	169,6	1.952,4	65,2	2.714,0	279,6	2.993,6
Belgium	126,7	6,9	133,6	38,3	212,9	2,1	215,0	61,7	339,6	9,0	348,6
Denmark	-	1,2	1,2	1,6	65,8	6,1	71,9	98,4	65,8	7,3	73,1
France	2.287,2	279,7	2.566,9	93,1	188,9	2,5	191,4	6,9	2.476,1	282,2	2.758,3
Ireland	1,2	1,2	2,4	100,0	-	-	-	0,0	1,2	1,2	2,4
Italy	1.046,3	241,7	1.288,0	90,3	98,4	39,4	137,8	9,7	1.144,7	281,1	1.425,8
Netherlands	60,3	16,6	76,9	25,1	229,6	-	229,6	74,9	289,9	16,6	306,5
UK	1.606,1	309,7	1.915,8	74,3	662,4	0,8	663,2	25,7	2.268,5	310,5	2.579,0
EEC	6.059,0	967,0	7.026,0	67,0	3.240,8	220,5	3.461,3	33,0	9.299,8	1187,5	10487,3

The breakdown of the value of the EEC military fleet by Member State, and the representation of European aircraft in this fleet are as follows:

Table 29

	Breakdown of fleet value	Representation of European aircraft in the total
FRG	28,55	34,8
Belgium	3,32	38,3
Denmark	0,70	1,6
France	26,30	93,1
Ireland	0,02	100,0
Italy	13,60	90,3
Netherlands	2,92	25,1
UK	24,59	74,3
EEC	100,0	67,0

The contribution made by the European industry to covering market requirements with aircraft of its own design is much larger here than in the civil sector. If production under licence is taken into account, its contribution to the military fleets is higher than the percentages shown above in Table 29. It should, however, be noted that the contribution made by the European industry with aircraft of its own design varies very widely between different Member State markets (100% to 74% for Ireland, France, Italy and the UK, and 38% or less for the others).

Lastly, the contribution made by the European industry is larger in the case of helicopters (81% of the total) than in that of fixed-wing aircraft (65% of the total).

As regards exports of military aircraft outside the EEC, the American industry holds 93.5% of the market, with a share exceeding or approaching 75% in the USA, Canada, Latin America, the Middle East and North Africa, and Asia, Australia and Oceania. It is only in Europe outside the EEC and in Africa south of the Sahara and South Africa that the European industry holds a sizeable share.

The breakdown of European exports is as follows:

USA	: 7.80%	Africa south of the Sahara	: 4.09%
Canada	: 0.42%	South Africa	: 11.71%
Latin America	: 9.23%	Asia	: 7.08%
Europe outside the EEC	: 23.08%	Australia	: 5.22%
Middle East and North Africa	: 30.56%	Oceania	: 0.82%

Table 30

1975 m.u.a. **Military fleet outside the EEC** : Breakdown of the world market outside the EEC for aircraft designed by the European industry

	European-designed aircraft				American-designed aircraft				Total fixed wing	Total heli-copters	TOTAL
	Fixed wing	helicop ters	Total	%	Fixed wing	helicop-ters	Total	%			
USA	281,1	-	281,1	0,6	39.265,6	4.728,6	43.994,2	99,4	39.546,7	4.728,6	44.275,3
Canada	15,3	-	15,3	4,5	267,5	58,6	326,1	95,5	282,8	58,6	341,4
Latin America	302,6	30,2	332,8	25,3	891,4	92,9	984,3	74,7	1.194,0	123,1	1.317,1
Europe outside the EEC *	634,6	197,1	831,7	42,9	1.024,0	84,1	1.108,1	57,1	1.658,6	281,2	1.939,8
Middle East and North Africa	775,6	325,7	1.101,3	24,2	3.295,1	150,3	3.445,4	75,8	4.070,7	476,0	4.546,7
Africa south of the Sahara & Malagasy Republic	101,2	46,1	147,3	63,8	79,1	4,4	83,5	36,2	180,3	50,5	230,8
South Africa and Rhodesia	345,1	76,8	421,9	93,8	27,9	-	27,9	6,2	373,0	76,8	449,8
Asia	214,0	41,1	255,1	16,5	1.219,8	67,3	1.287,1	83,5	1.433,8	108,4	1.542,2
Australia	165,1	23,0	188,1	24,8	516,6	52,5	569,1	75,2	681,7	75,5	757,2
Oceania	29,1	0,3	29,4	16,4	137,8	12,3	150,1	83,6	166,9	12,6	179,5
World excluding EEC	2.863,7	740,3	3.604,0	6,5	46.724,8	5.251,0	51.975,8	93,5	49.588,5	5.991,3	55.579,8

* Plus 1484.2 m.u.a. originating from the Swedish company SAAB (98.8% of xhich forms part of the Swedish fleet)

E. International trade in civil aircraft

a) Trade between Member States

Figures on trading between Member States for "helicopters, light aircraft, airliners and parts and spares" and for "engines for aerodynes, turbojets and turboprops and parts and spares" are given in footnotes (12) and (13) respectively.

Intra-Community trade balances by Member States are as follows (1976):

Table 31

m.u.a.	Helicopters, light aircraft, airliners and parts and spares	Engines for aerodynes, turbojets and turboprops and parts and spares
FRG	- 330,9	+ 45,9
Belgium/Luxembourg	- 55,7	- 54,7
Denmark	- 2,5	+ 0,7
France	+ 296,8	+ 45,9
Italy	+ 14,6	- 13,3
Ireland	- 2,1	+ 0,7
Netherlands	+ 11,3	- 34,9
UK	+ 68,5 (14)	+ 9,7

It can be seen that, for helicopters, light aircraft and airliners and parts and spares, France is the main supplier and the Federal Republic of Germany is the main customer; it should, however, be borne in mind that, as indicated in footnote (14), the UK statistics relate only to parts and spares, since information on the other items is regarded as secret.

In the case of engines for aerodynes, turbojets and turboprops and parts and spares, those Member States which have a large-scale engine industry supply the other Member States. The positive balance for the UK might be expected to be larger.

Total intra-Community trade amounts to 954.2 m.u.a. for helicopters, light aircraft and airliners and parts and spares, and 430.7 m.u.a. for engines, etc.

These statistics on 1976 trading are provisional; they are based on national statistics. Also, exports and imports of new aircraft and engines can not be calculated precisely from them since they include parts and spares and secondhand aircraft.

The figures are, on the other hand, of value in identifying the commercial interests of Member States as being principally exporters or importers.

b) Trade between Member States and other countries

The commercial trade balances of Member States with respect to the world and to the USA are as follows:

Table 32

m.u.a.	Helicopters, light aircraft, airliners and parts and spares		Engines for aerodynes, turbojets and turboprops and parts and spares	
	with respect to the world	with respect to the USA	with respect to the world	with respect to the USA
FRG	- 285,7	- 214,4	+ 50,6	- 21,6
Belgium/Luxembourg	- 49,7	- 23,2	- 67,9	- 2,8
Denmark	- 31,4	- 26,6	- 14,4	- 11,4
France	+ 319,4	- 157,5	- 20,0	- 112,6
Italy	- 159,2	- 139,1	- 36,3	- 34,6
Ireland	+ 1,0	- 1,9	+	- 0,7
UK	- 31,3 (14)	- 26,6	+ 162,4	+ 84,2

It can be seen that, for helicopters, light aircraft, etc, all Member States have a deficit with respect to the USA; with respect to the world, France alone has a significant positive balance.

For engines, etc, the UK alone has a sizeable positive balance, even with respect to the USA; the other Member States have negative balances, although smaller than in the case of helicopters, light aircraft, etc.

II. MANUFACTURING BASE

A. Sector and subsectors

1. Turnover

The salient feature of the general position of the sector in the Western world (15) is the dominant role played by the US industry.

Although decreasing, the US share still represents 65.4% of the total for the Western world. According to the data available, the turnovers achieved are as follows:

Table 33

(m. current u.a. for aerospace products and services only)

	1971	%	1972	%	1973	%	1974 (R)	%	1975	%
USA (16)	19.663	77,2	18.676	73,3	17.172	70,2	17.838	68,8	17.649	65,4
Canada (17)	596	2,4	581	2,3	532	2,2	589	2,3	595	2,2
EEC (18)	4.307	16,9	5.274	20,7	5.744	23,5	6.259	24,2	7.434	27,5
Other European countries (19)	204	0,8	235	0,9	305	1,2	360	1,4	360	1,3
Europe	(4.511)	(17,7)	(5.509)	(21,6)	(6.049)	(24,7)	(6.619)	(25,6)	(7.794)	(28,8)
Japan (20)	309	1,2	405	1,6	394	1,6	546	2,1	579	2,1
Other "Western" countries (21)	382	1,5	316	1,2	320	1,3	326	1,2	388	1,5
	25.461	1000	25.487	1000	24.467	1000	25.918	1000	27.005	100

Figures given in the above table are revised figures, in that those given in the documents dated March 1972, December 1973, April 1975 and May 1976 have been updated in the light of the information available. An increase in total value in current u.a. can be observed; this is mainly attributable to the EEC industry, which now holds a 27.5% share of the total.

R : revised

The table below shows the trends followed since 1970 by the final turnovers of individual Member States, the sum of these (EEC), and the final turnover of the US industry (m. current u.a., revised series: cf. footnote for each country).

Table 34

	(22) F R G	(23) Belg.	(24) France (52)	(25)(49) Italy	(26) Netherl.	(27) UK (52)	(28) EEC	(16) USA
1970	787	40	1.339	232	115	1.611	4.124	22.286
1971	842	54	1.418	224	122	1.647	4.307	19.663
1972	929	67	1.564	367	173	2.174	5.274	18.676
1973	1.119	60	1.960	347	157	2.101	5.744	17.172
1974	1.159	71	2.161	345	135	2.388	6.259	17.838
1975	1.201	93	2.746	464	213	2.717	7.434	17.649

For all Member States, the figures given above for 1972 onwards are those provided by the national professional associations. The values shown are expressed in m. of u.a. at the rate prevailing for the year concerned (current u.a.). In the table below, these results have been corrected to allow for real currency values. Price indices for GDP at market prices (1970 = 100) have been applied to the amounts in current national currencies, and the results converted into u.a. at the 1970 rates of exchange.

Thus, the trend in turnover at fixed 1970 prices is as follows (cf. footnote (29)):

Table 35

	F R G	Belg.	France (52)	Italy (49)	Netherl.	UK (52)	EEC	USA
1970	787	40	1.339	232	115	1.611	4.124	22.286
1971	781	51	1.339	210	112	1.512	4.005	18.727
1972	778	59	1.389	326	142	1.940	4.634	18.454
1973	841	49	1.615	320	118	2.032	4.975	18.568
1974	788	51	1.727	302	90	2.127	5.085	17.529
1975	762	60	1.818	366	128	2.117	5.251	16.748

It is clear that the increase in EEC turnover at a mean annual compound rate of 5% (as against 4.3% for the period 1969/74) has reduced the lead held by the USA : in 1970 EEC turnover represented 18.5 % of that of the US industry, whereas in 1975 this percentage reached 31.3%

It is also useful to compare the trend in aerospace industry turnover with the trend in GDP at fixed prices and 1970 rates of exchange over the period 1970/1975:

Table 36

%	FRG	Belgium	France	Italy	Netherlands	UK	EEC*	USA
Aerospace industry	- 3,1	50,0	35,8	57,7	11,3	31,4	27,3	- 24,8
GDP	9,9	18,7	18,9	11,4	16,5	10,3	13,0	10,9
Mean annual compound rate								
Aerospace industry	negat.	8,4	6,3	9,5	2,9	5,6	4,9	neg.
GDP	1,9	3,4	3,5	2,1	3,0	1,9	2,4	2,1

Growth in the aerospace industry has been greater than growth in GDP in the EEC as a whole and in all individual Member States with the exception of the Federal Republic of Germany and the Netherlands. This trend resulted in a slight increase in the share of the aerospace industry in Community GDP, whereas its share in the US GDP decreased considerably, although the sector still holds a larger relative share in the USA than in the EEC:

Table 37

	EEC		USA	
	1970	1975	1970	1975
Aerospace turnover as a % of GDP	0.667	0.752	2.264	1.535

Within the EEC, the relative share of the aerospace industry is largest in the UK (1.577) and France (1.085).

The action taken to improve the statistics has made further progress, and the latest figures available relate to 1975. These make it possible to analyse overall and final turnovers at sector and subsector level.

For each country, it is useful to distinguish between:

- <u>overall turnover</u>, which includes transactions (sales of aerospace goods and services) between companies in the aerospace sector of the country concerned;

- <u>final turnover</u> (output of the aerospace sector), which does not include transactions between companies in the aerospace sector of the country concerned.

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* 9 Member States

The difference between overall and final turnover represents sales of aerospace goods and services between companies in the subsectors (aircraft, engines, instrumentation, and space) and between companies in the same subsectors (eg subcontracting for certain subassemblies between airframe manufacturers) in the same country (30).

The overall turnovers of the Member States in 1975 were as follows (in m. current u.a.):

Table 38

	FRG	Belgium	France	Italy	Netherlands	UK	EEC
	1415.4	94.7	3412.7	562.3	213.2	3152.0	8850.3

The breakdown by subsector is as follows*:

	FRG	Belgium	France	Italy	Netherlands	UK	EEC
Aircraft	64,7	55,0	58,4	58,1	91,4	34,1	51,5
Engines	12,4	19,3	19,2	17,1	-	35,9	23,4
Instrumentation	16,5	15,9	20,0	20,8	5,7	29,2	22,4
Space	6,4	9,8	2,4	4,0	2,9	0,8	2,7
	100,0	100,0	100,0	100,0	100,0	100,0	100,0

The "aircraft" subsector occupies a dominant position in the Netherlands and a very important one in the other Member States; the most equal balance between the three main subsectors, viz aircraft, engines and instrumentation, exists in the UK.

If the amounts (cf. footnote (30)) corresponding to transactions between manufacturers within the sector of a given country are subtracted, the national final turnover is obtained; this represents the actual level of activity of each country (already given in Table 34).

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* This breakdown is better than a breakdown of final turnovers, since sales between one subsector and another are not excluded. The turnover of the "aircraft" subsector includes the value of instrumentation and engines purchased by the airframe manufacturers, and this causes the relative contribution of these two subsectors to total aerospace turnover to be underestimated.

According to the information obtained, these final turnovers are as follows:

Table 39

(m. current u.a.)

	Aircraft	Engines	Instrumentation	Space	Total
FRG	752,4	165,1	206,7	76,3	1.200,5
Belgium	51,2	18,1	14,9	9,2	93,4
France	1856,9	574,5	232,4	81,9	2.745,7
Italy	281,7	82,1	81,9	18,7	464,4
Netherlands	194,8	-	12,3	6,1	213,2
UK	1057,2	951,7	682,2	25,9	2.717,0
Total	4194,2	1791,5	1230,4	218,1	7.434,2

The figures under the "Total" heading represent the sum of the national final turnovers.

The final turnover of each Member State includes sales of aerospace goods and services between the manufacturers of each Member State and those of the other Member States; these amounts are given in footnote (31).

It is useful to examine the percentage trend in these amounts, as being a measure of the scale of intra-Community industrial co-operation in relation to the final turnover of each Member State:

Table 40

	% 1972	% 1973	% 1974	% 1975
FRG	7,0	4,8	14,7	12,1
Belgium	45,6	42,0	56,9	60,3
France	9,3	10,7	9,3	10,8
Italy	11,0	14,6	11,0	15,0
Netherlands	1,0	2,3	5,6	6,3
UK	7,8	13,0	13,6	15,4
Total	8,6	11,3	12,5	13,5

Thus, a slow but steady increase can be observed in the percentage of final turnovers involving intra-Community industrial co-operation.

In 1973, 1974 and 1975 the amounts relating to intra-Community co-operation exceeded 70% of the value of industrial transactions at the national level, whereas the proportion of the volume of national transactions represented by sales of aerospace goods and services to aerospace companies in non-EEC countries was approximately 38% in 1973, 31% in 1974 and 26% in 1975.

If transactions between manufacturers belonging to different Member States are subtracted from the sum of the national final turnovers (Table 39), we obtain the final EEC turnover, which breaks down as follows:

Table 41

(1975: m. current u.a.)

Aircraft	Engines	Instrumentation	Space	EEC final turnover
3716.2	1482.6	1065.5	165.8	6430.1

Since 1972 the trends in final turnover for the EEC and the USA respectively have been as follows:

Table 42

(m. current u.a.)

	EEC	USA
1972	4850	18 676
1973	5126	17 172
1974	5475	17 838
1975	6430	17 649

As the table shows, final turnover has increased by 32.5% in the EEC and decreased by 5.5% in the USA.

The breakdown of the final EEC turnover is as follows, with figures given separately for the civil and military sectors (the breakdown by subsector is given in footnotes (32) to (36)):

Table 43

m. 1975 u.a.	Civil	Military
I. State		
a) Research and development		
FRG	47,7	462,9
Belgium	1,8	0,1
France	148,4	359,6
Italy	1,6	21,2
Netherlands	0,9	1,8
UK	119,5	305,6
	319,9	1.151,2
b) Modifications, repairs and maintenance		
FRG	5,3	175,7
Belgium	0,4	23,2
France	6,7	92,4
Italy	8,6	36,1
Netherlands	-	7,1
UK	12,5	138,2
	33,5	472,7
c) Sales		
FRG	17,2	224,0
Belgium	1,5	0,8
France	14,8	624,7
Italy	2,0	118,6
Netherlands	-	-
UK	21,2	533,2
	56,7	1.501,3
Subtotal I : 410,1		3.125,2

Table 43 (cont.)

	Civil	Military
II. Aerospace companies in non-EEC countries		
FRG	18,5	26,7
Belgium	1,0	0,3
France	34,7	-
Italy	49,6	-
Netherlands	0,5	-
UK	143,9	97,9
Subtotal II :	248,2	124,9
III. End users		
a) National	17,1	-
FRG	0,2	-
Belgium	220,6	-
France	4,1	-
Italy	11,7	-
Netherlands	157,7	-
UK	411,4	
b) EEC	7,5	10,3
FRG	1,6	3,8
Belgium	45,8	59,8
France	6,4	-
Italy	-	6,7
Netherlands	56,5	21,8
UK	117,8	102,4
c) Non-EEC countries		
FRG	30,7	11,3
Belgium	2,3	-
France	148,1	691,9
Italy	5,4	140,8
Netherlands	166,9	4,1
UK	252,3	436,3
Subtotal III 1.134,9	605,7	1.284,4
		1.386,8

Table 43 (cont.)

		Civil		Military		
Subtotal	I	410,1		3.125,2		
	II	248,2		124,9		
	III	1.134,9		1.386,8		
Final turnover for the EEC		1.793,2	+	4.636,9	=	6.430,1
Percentages :		27,9%	+	72,1%	=	100,0%

Thus, there has been a slight increase in the military sector share compared with 1974.

If allowance is made for the fact that military sales to end users in the EEC are sales to the "public authority" (State), we arrive at the following breakdown of the final EEC turnover by major headings taken from the preceding table:

Table 44

(percentages)

	1974		1975	
	Civil	Military	Civil	Military
I. State	7,2	16,0	5,0	17,9
Research and development	1,5	32,2	1,4	30,7
Repairs, maintenance and sales				
Governments of other Member States	-	1,9	-	1,6
II. Aerospace companies in non-EEC countries	3,7	2,5	3,9	1,9
III. End users				
- national	7,6	-	6,4	
- EEC	1,3	-	1,8	
- non-EEC countries	8,6	17,5	9,4	20,0
	29,9	70,1	27,9	72,1

It can be seen that the breakdown of the final EEC turnover has been extremely stable.

In the USA, the military sector represented 65% of the total in 1974 and 67% of the total in 1975.

Although we have stated that the best possible calculation of the breakdown by subsector is that made on the basis of overall national turnover, a comparison between the EEC and the USA can be made only on the basis of final turnover, which has shown little variation since 1972/73.

Table 45

In % : Breakdown of final turnover by subsector

	Aircraft		Engines		Instrumentation		Space	
	EEC	USA	EEC	USA	EEC	USA	EEC	USA
1972/73	54,2	43,5	25,1	13,0	17,5	15,3	3,2	28,2
1974	56,1	45,8	23,4	13,6	17,0	14,9	3,5	25,7
1975	57,8	46,1	23,0	12,5	16,6	15,1	2,6	26,3

The proportion represented by "Space" (again relating only to sales of goods and provision of services by the industry) is still small in the EEC compared with the corresponding percentage in the USA, and this means that the relative contribution of the "aeronautics" subsectors is higher here than in the breakdown for the USA.

It is also useful to compare the breakdown of final turnover for the EEC and for the USA between the State, the domestic civil market and exports, at the following different levels:

- "aerospace activities"
- "aeronautics activities"
- subsectors: "aircraft", "engines" and "instrumentation"

Table 46

Percentage of final turnover represented by major customer categories

	EEC			USA		
	1972/73	1974	1975	1972/73	1974	1975
"Aerospace" activities						
State	59,7	58,9	56,6	77,1	68,2	68,5
Domestic civil market	11,0	8,8	8,2	9,9	9,7	7,2
Exports	29,3	32,3	35,2	13,0	22,1	24,3
	100,0	100,0	100,0	100,0	100,0	100,0
"Aeronautics" activities						
State	58,3	58,2	56,3	51,5	48,5	48,3
Domestic civil market	11,4	8,5	7,6	20,9	15,7	11,7
Exports	30,3	33,3	36,1	27,6	35,8	40,0
	100,0	100,0	100,0	100,0	100,0	100,0

Table 46 (cont.)

	EEC			USA		
	1972/73	1974	1975	1972/73	1974	1975
Subsectors :						
Aircraft						
State	57,7	54,8	52,5	45,6	43,8	46,8
Domestic civil market	8,4	7,6	6,8	19,4	9,9	10,2
Exports	33,9	37,6	40,7	35,0	46,3	43,0
	100,0	100,0	100,0	100,0	100,0	100,0
Engines						
State	61,3	59,4	60,4	52,3	48,6	44,7
Domestic civil market	9,0	9,5	7,9	23,1	23,1	22,6
Exports	29,7	31,1	31,7	24,6	28,2	32,7
	100,0	100,0	100,0	100,0	100,0	100,0
Instrumentation						
State	56,1	67,9	63,8	67,4	62,7	55,8
Domestic civil market	24,0	10,3	10,3	23,5	26,4	36,9
Exports	19,9	21,8	25,9	9,0	10,9	7,3
	100,0	100,0	100,0	100,0	100,0	100,0

The breakdown by subsector and by Member State is given in footnotes (32) to (36).

Before we examine in detail how State intervention is structured, a certain number of general observations can be made:

- although appreciably reduced in comparison with 1972/73, State backing for the industry is still much higher in relative terms in the USA (68.5%) than in the EEC (56.6%), and this is due solely to the scale of government space contracts; in "aeronautics" activities, State intervention is in fact relatively smaller in the USA (48.3%) than in the EEC (56.3%);

- for aeronautics considered separately, the State contribution to turnover is following a downward trend, as is also the relative proportion of the domestic civil market, particularly in the USA; on the other hand, the proportion of exports is on the increase, particularly in the USA, where between 1972/73 and 1975 their volume rose from 27.6% to 40% of the total (+ 12.4 points);

- in the "Aircraft" subsector, the contribution of the State is much larger in the EEC than in the USA, and to some extent this offsets the smallness of the domestic civil market.

US aircraft exports rose from 35% of the total in 1972/73 to 43% in 1975, whereas there was no increase on this scale in EEC aircraft exports.

During the crisis period for sales, particularly civil sales, the US industry succeeded in strengthening its already dominant position still further by increasing its exports.

The trend in US aircraft exports has been as follows:

Table 47

Civil aircraft	Number	Value in m. current u.a.
Aircraft weighing 33 000 lbs or more (ie mainly airliners)		
1970	165	1.276
1971	148	1.542
1972	105	1.036
1973	128	1.331
1974 R	227	2.124
1975	182	1.837
The value for the last three years represents 137% of the value for the first three years.		
Military aircraft		
1970	639	467
1971	788	633
1972	561	355
1973	608	633
1974	736	881
1975	951	990
The value for the last three years represents 172% of the value for the first three years.		

In the engines and instrumentation subsectors, the domestic civil market makes a larger contribution in the USA than in the EEC. Whereas the contribution made by engine exports is of the same order in the USA and in the EEC, instrumentation exports make a relatively larger contribution in the EEC than in the USA; furthermore, on both sides of the Atlantic the contribution made by the State is higher for this subsector than for the other two aeronautics subsectors.

The structure of State contributions

Within the EEC, governments make a contribution in both the civil and military sectors in the form of maintenance and purchase contracts which are concluded with the industry, as well as research and development contracts.

In the USA, federal funding of aeronautics research and development over the last few years has been as follows:

Table 48

(m.u.a.)	NASA	Defense Department	Department of Transportation
1972	219	1.819	88
1973	250	1.439	60
1974	222	1.342	59
1975	238	1.233	57
1976 (E)	254	1.528	65
1977 (E)	287	1.791	74

Total State backing for the aerospace industry (in absolute values) is of the order of 11 000 m.u.a. for the USA and 3600 m.u.a. in the EEC, with the following breakdown by contract type:

Table 49

(percentages)	EEC		USA
Purchase and maintenance contracts :			
civil	2.5)	59.6	71.7
military	57.1)		
Research and development contracts :			
civil	8.8)	40.4	28.3
military	31.6)		

This breakdown is stable in relation to that observed in 1972/73 and 1974, but in the EEC the proportion represented by civil research and development was 12.2% in 1974, while that represented by military research and development amounted to only 27.2%.

In the USA, the industry receives part of the funds made available to the NASA and the Department of Transportation for civil aeronautics research programmes. In addition, it should be noted that military research and development contracts also benefit civil aircraft construction, for many civil programmes derive from military projects which were backed by federal funds.

(E) = estimate

In the EEC, the breakdown of the State contribution to the industry's turnover in the three aeronautics subsectors is as follows:

Table 50

		1972/73	1974	1975
AIRCRAFT				
Purchase and maintenance contracts				
civil	:	1,6	1,3	1,4
military	:	55,0	53,6	54,1
Research and development contracts				
civil	:	9,8	9,7	6,2
military	:	33,6	35,4	38,3
		100,0	100,0	100,0
ENGINES				
Purchase and maintenance contracts				
civil	:	1,5	4,0	4,3
military	:	54,1	64,0	58,7
Research and development contracts				
civil	:	17,7	13,4	9,4
military	:	26,7	18,6	27,6
		100,0	100,0	100,0
INSTRUMENTATION				
Purchase and maintenance contracts				
civil	:	7,8	4,9	3,5
military	:	69,4	73,0	72,5
Research and development contracts				
civil	:	3,5	0,6	1,5
military	:	19,3	21,5	22,5
		100,0	100,0	100,0

A decrease in the relative share represented by civil research and development contracts can be observed in all three subsectors.

Military purchase and maintenance contracts occupy a dominant position in all three subsectors, but first and foremost in the instrumentation subsector,

followed by engines and aircraft in that order; military research and development contracts, on the other hand, represent a larger share in the aircraft subsector than they do in the instrumentation subsector.

It is only in the engines subsector that civil contracts (purchase, maintenance and research and development) account for any more than 10% of total State expenditure in the industry.

2. Work-force

a) At sector level

Recent trends in the total work-force of the aerospace industry have been as follows:

Table 51

		1970	1971	1972	1973	1974	1975	1976
FRG (37)(22)		56.206	55.173	52.455	52.985	52.982	51.914	
Belgium	(23)	4.700	4.849	4.941	4.380	4.422	4.025	
France	(24)	103.364	108.646	108.525	106.132	106.769	108.915	
Italy	(25)	29.500	28.000	28.500	30.000	30.000	30.768	
Netherlands	(26)	8.000	8.000	6.600	7.000	6.555	7.682	
UK	(27)	235.100	217.800	207.500	201.700	210.100	233.792	
EEC		436.870	422.468	408.521	402.197	410.828	437.096	
USA	(16)	1116.000	951.000	922.000	948.000	965.000	942.000	
Canada	(17)	36.510	28.700	28.800	31.600	28.400	26.753	25.105
Japan	(20)	25.600	26.500	26.000	26.026	25.550	26.746	26.000

At EEC level, it can be seen that, after decreasing until 1973 because of the decrease in the British work-force, the work-force has increased again because of an increase in the work-force mainly in the UK and to some extent in France.

In the USA, the work-force has been slowly rising again after reaching its lowest level in 1972.

The figures given for the work-forces of Member States are those obtaining on 31 December 1975 (June 1975 in the case of the UK). They were obtained from a survey which was launched under the auspices of the Commission and conducted with the collaboration of the various national aeronautics and space industry associations. This is the first time that information has been made available on categories of staff and their principal activity in the various subsectors.

A certain degree of caution has to be exercised in using the figures, since it is extremely difficult to establish common definitions for the various professional qualifications.

The results of this survey constitute an important first step in the direction of a comparison of the employment situation in the various countries, but there is no doubt that they need further improvement in the light of certain questions which arise in the analysis of the tables given below.

Certain comparisons have also been made difficult by the fact that not all countries were able to give full answers to the survey questionnaire.

b) At subsector level, the results are as follows:

AIRCRAFT : The breakdown by country and professional grading is as follows:

Table 52

	FRG	Belgium	France (38)	Italy	NL	UK	EEC
Engineers and managerial staff	344	143	8.792	211	214	16.395	26.099
Executive staff:	8.637	204	20.314	4.687	734	10.630	45.206
- technical	5.067	267	8.914	1.771	1.107	14.929	32.055
- administrative	7.076	1.668	21.224	9.635	2.809	34.039	76.451
Skilled workers	1.899	51	1.396	2.634	401	8.795	15.176
Non-skilled workers							
Unspecified	8.506	-	-	-	-	-	8.506
	31.529	2.333	60.640	18.938	5.265	84.788	203.493

Thus, the aircraft subsector employs 46.5% of the total work-force.

If we examine the percentage breakdown of staff in the aircraft subsector by professional grading, we obtain the following results:

Table 53

	FRG	Belgium	France	Italy	NL	UK	EEC
Engineers and managerial staff	1	6	14	1	4	19	13
Executive staff:	38	9	34	25	14	13	23
- technical	22	12	15	9	21	18	17
- administrative	31	71	35	51	53	40	39
Skilled workers	8	2	2	14	8	10	8
Non-skilled workers	100	100	100	100	100	100	100

It will be seen that:

- for engineers and managerial staff, the proportion is much higher in the UK and France. In the case of the UK, the reason may be a problem of

differentiation between this category and that of technical executive staff. In the case of France, the fact that space activities are included in this subsector probably contributes to the high percentage of engineers and managerial staff;

- there are equally large differences between countries for technical executive staff.

An examination of the breakdown by principal activity indicates the following situation for those Member States for which data are available:

Table 54

Principal activity		Belgium	France	Italy	Netherlands	5 countries
- research and development	5.830	27	16.616	721	840	24.034
- production	13.350	2.108	32.139	16041	4.162	67.800
- marketing and management of the company	3.843	198	11.885	2176	263	18.365
	23.023	2.333	60.640	18938	5.265	110.199
and so, in percentages:						
- research and development	25	1	27	4	16	22
- production	58	90	53	85	79	61
- marketing and management of the company	17	9	20	11	5	17
	100	100	100	100	100	100

It will be seen that research and development activities employ 25% of the work-force in the aircraft subsector, which confirms information obtained elsewhere. Footnote (32) gives figures which make it possible to calculate that research and development constitutes 24.3% of the final turnover of the five countries mentioned above (still for the aircraft subsector). It can also be seen that the functions of research and development and marketing and company management employ a higher proportion of the work-force in those countries which have sole responsibility for programmes (or principal responsibility in cases of co-operation).

ENGINES : The breakdown by country and professional grading is as follows:

Table 55

	FRG	Belgium	France	Italy	UK	EEC
Engineers and managerial staff	914	76	2.822	69	11.980	15.861
Executive staff:						
- technical	1.163	102	6.343	811	6.377	14.796
- administrative	920	106	3.544	615	9.516	14.701
Skilled workers	2.470	432	8.646	2.301	34.153	48.002
Non-skilled workers	1.283	226	1.219	1.441	6.663	10.832
Unspecified	33	-	-	-	-	33
	6.783	942	22.574	5.237	68.689	104.225

Thus, the engines subsector employs 23.8% of the total work-force.

If we examine the breakdown of staff in the engines subsector by professional grading (in percentages), we obtain the following results:

Table 56

	FRG	Belgium	France	Italy	UK	EEC
Engineers and managerial staff	13	8	13	1	17	15
Executive staff:						
- technical	17	11	28	15	9	14
- administrative	14	11	16	12	14	14
Skilled workers	37	46	38	44	50	46
Non-skilled workers	19	24	5	28	10	10
	100	100	100	100	100	100

The entry for engineers and managerial staff is, naturally, highest in those countries which have the strongest engine industries, viz the UK, France and the Federal Republic of Germany.

In the aircraft and engines sectors, the sum of the three professional gradings engineers and managerial staff, technical executive staff and skilled workers represents the same proportion of the total, viz 75%.

In the aircraft subsector at Community level, however, the intermediate grading (technical executive staff) represents 23% of the total as against 14% of the total in the engines subsector.

On the other hand, the two categories engineers and managerial staff and skilled workers are relatively larger in the engines subsector than in the aircraft subsector (15% as against 13% and 46% as against 39% respectively).

An examination of the breakdown by principal activity indicates the following situation for those Member States for which data are available:

Table 57

Principal activity	FRG	Belgium	France	Italy	4 countries
- research and development	925	40	6.184	546	7.695
- production	4.521	878	11.715	3.984	21.098
- marketing and management of the company	1.304	24	4.675	707	6.710
	6.750	942	22.574	5.237	35.503
and so, in percentages:					
- research and development	14	4	27	10	22
- production	67	93	52	76	59
- marketing and management of the company	19	3	21	14	19
	100	100	100	100	100

The breakdown by activity is very similar to that of the aircraft subsector, the proportions attributable to research and development and to marketing and company management being, naturally, highest in those countries which hold principal responsibility for major programmes.

Footnote (33) gives figures which make it possible to calculate that research and development represents 30.0% of turnover in the engines subsector in the four countries listed in Table 57.

INSTRUMENTATION : The breakdown by country and professional grading is as follows:

Table 58

	FRG	Belgium	France	Italy	NL	UK	EEC
Engineers and managerial staff	939	46	3.071	109	138	13.675	17.978
Executive staff:							
- technical	1.729	143	8.576	1.441	165	11.268	23.322
- administrative	1.091	98	2.511	770	964	15.058	20.492
Skilled workers	2.612	245	8.923	3.114	616	27.575	43.085
Non-skilled workers	676	12	2.620	568	346	10.748	14.970
Unspecified	2.674	-	-	-	-	-	2.674
	9.721	544	25.701	6.002	2229	78.324	122.521

Thus, the instrumentation subsector employs 28.0% of the total work-force. The breakdown by percentage is as follows:

Table 59

	FRG	Belgium	France	Italy	NL	UK	EEC
Engineers and managerial staff	13	9	12	2	6	18	15
Executive staff:							
- technical	25	26	33	24	7	14	19
- administrative	15	18	10	13	43	19	17
Skilled workers	37	45	35	52	28	35	36
Non-skilled workers	10	2	10	9	16	14	13
	100	100	100	100	100	100	100

The proportion of engineers and managerial staff is comparable in all three subsectors examined so far. There are proportionally fewer skilled workers here (36%) than in the aircraft subsector (39%) and the engines subsector.

(46%). On the other hand, the technical executive staff category is larger here than in the engines subsector. The breakdown by principal activity is as follows for those countries which provided data on this aspect:

Table 60

	FRG	Belgium	France	Italy	Netherlands	5 countries
Research and development	1.555	18	7.760	606	40	9.979
Production	4.460	453	13.022	4.619	1.025	23.579
Marketing and management of the company	1.032	73	4.919	777	1.164	7.965
	7.047	544	25.701	6.002	2.229	41.523
and so, in percentages:						
Research and development	22	3	30	10	2	24
Production	63	83	51	77	46	57
Marketing and management of the company	15	14	19	13	52	19
	100	100	100	100	100	100

In these five countries, the numbers of staff engaged in research and development represent 24% of the total, whereas research and development accounts for only 9.9% of turnover.

SPACE:

The numbers of staff allocated to space activities are as follows (in France the work-force engaged in these activities are counted in the aircraft subsector (38)).

The breakdown by country and professional grading is as follows:

Table 61

	FRG	Belgium	Italy	Netherlands	UK	5 countries
Engineers and managerial staff	156	81	22	62	459	780
Executive staff:						
- technical	1.557	58	244	59	284	2.202
- administrative	549	6	153	-	370	1.078
Skilled workers	199	61	167	49	734	1.210
Non-skilled workers	63	-	5	18	144	230
Unspecified	40	-	-	-	-	40
	2.564	206	591	188	1.991	5.540

In these five countries, space activities employ 2% of the total aerospace work-force.

The breakdown by percentage is as follows:

Table 62

	FRG	Belgium	Italy	Netherlands	UK	5 countries
Engineers and managerial staff	6	39	4	33	23	14
Executive staff:						
- technical	62	28	41	31	14	40
- administrative	22	3	26	-	19	20
Skilled workers	8	30	28	26	37	22
Non-skilled workers	2	-	1	10	7	4
	100	100	100	100	100	100

As might be expected, space is the subsector in which the proportion of technical executive staff is the highest.

The breakdown by major activity is as follows:

Table 63

	FRG	Belgium	Italy	Netherlands	4 countries
Research and development	2.205	78	198	95	2.576
Production	-	117	353	48	518
Marketing and management of the company	319	11	40	45	415
	2.524	206	591	188	3.509

In these four countries, research and development functions employ 73% of the work-force, production employs 15% and marketing and company management 12%.

c) At EEC level, the work-forces represent the following percentages of the US work-forces:

Table 64

		EEC	%
Aircraft (37) (38)		204.810	47
Engines		104.225	24
Instrumentation		122.521	28
Space	(38)	5.540	1
		437.096	100

The US statistics are presented in a form which makes comparisons difficult:

Table 65

- aeronautics	(39) 514.000	(aircraft	275.000
- missiles and space	90.000	(engines	139.600
- communications equipment	136.000	(instrumentation	99.800
- other	202.000		514.400
	942.400		

persons employed in the aerospace industry.

B. COMPANIES

1. Turnover, work-force and value added of the major companies

The following table shows the trend in turnover (expressed in m. current u.a.) for the major European and US aerospace companies, listed in descending order on the basis of figures for 1975:

Table 66

m.u.a.

Country	Company	1972	1973	1974	1975
USA	(40) Boeing	2.194	2.668	2.985	2.817
USA	(41) Lockheed	2.290	2.205	2.623	2.568
USA	(42) Mc.Donnell Douglas	2.524	2.402	2.460	2.467
USA	(43) Pratt & Whitney	1.353	1.358	1.552	1.653
USA	General Dynamics	1.425	1.313	1.574	1.642
USA	General Electric	1.402	1.289	1.533	1.494
USA	Rockwell Int.	631	761	1.006	1 .111
USA	Grumman	632	870	890	1.023
France	Aerospatiale	613	641	781	1.271
UK	Rolls-Royce	858	845	878	1.008
France	Dassault-Breguet	391	624	608	750
UK	B.A.C.	351	341	509	514
FRG/NL	(44) VFW-Fokker	347	420	422	496
FRG	M.B.B.	331	366	463	473
UK	Hawker-Siddeley Av.	419	395	352	407
France	S.N.E.C.M.A.	286	313	295	338
UK	(44a) Westland	141	135	154	182
France	Turbomeca	73	86	107	146
FRG	M.T.U. (Munich)	121	167	164	140
Italy	Aeritalia	128	115	99	134
FRG	Dornier	134	147	162	117
Italy	Augusta	-	79	89	111
Italy	(45) Fiat Aviazione	39	41	41	67
UK	Short Brothers	56	54	46	
Belgium	S.A.B.C.A.	28	25	27	33
Belgium	Fabrique Nationale (engines)	-		19	-
Belgium	Fairey	11	9	18	-

Table 67 shows the trend in size of work-force for the same companies

Table 67

Country	Company	1972	1973	1974	1975
USA	Boeing	58.600	63.200	75.400	72.600
USA	Lockheed	69.600	66.900	62.100	57.567
USA	Mc.Donnell Douglas	86.713	78.799	70.739	62.830
USA	General Dynamics	60.900	62.400	63.600	63.800
USA	Pratt & Whitney	n.d.	33.000	33.500	43.000
USA	General Electric	23.000	23.000	23.000	n.d.
USA	Grumman	25.400	27.000	30.000	28.000
UK	Rolls-Royce	61.865	59.988	60.515	60.941
France	Aerospatiale	42.701	41.399	40.242	36.000
UK	B.A.C.	33.955	34.124	34.994	35.000
France	Dassault-Bréguet	14.963	14.855	15.161	15.000
FRG	M.B.B.	18.128	18.697	19.978	20.030
FRG/Netherlands	VFW/Fokker	17.200	17.120	17.978	18.565
UK	Hawker-Siddeley Av	35.000	35.000	35.000	32.000
France	S.N.E.C.M.A.	14.668	14.160	14.225	13.850
FRG	M.T.U. (Munich)	6.000	6.118	5.711	5.514
FRG	Dornier	7.603	7.136	7.000	6.723
UK	Westland	12.247	11.414	11.904	12.599
Italy	Aeritalia	8.740	9.100	9.283	9.000
France	Turbomeca	4.329	4.436	4.558	4.700
Italy	Augusta	2.877	3.097	3.392	3.700
UK	Short Brothers	n.d.	6.500	6.000	n.d.
Italy (45)	Fiat Aviazione	2.400	2.400	2.460	2.500
Belgium	S.A.B.C.A.	1.850	1.800	1.750	1.750
Belgium	Fairey	930	960	1.150	n.d.
Belgium	Fabrique Nationale (motors)	n.d.	n.d.	1.500	1.700

The average size of the major European companies, calculated on the basis of turnover, has increased from approximately 30% of that of the major US companies in 1972 to approximately 36%.

None the less, there are still three US companies which have a turnover in the region of or more than 2.5 thousand m.u.a. and eight US companies which have a turnover of more than one thousand m.u.a., whereas in Europe only two companies have a turnover of more than one thousand m.u.a.

The following table shows the contribution made to total turnover by the major companies:

Table 68

Percentage of final turnover	EEC		USA	
	1972	1975	1972	1975
- largest company	17,6	19,8	13,5	15,9
- two largest companies	30,3	35,4	25,7	30,5
- three largest companies	38,9	47,5	37,5	44,4
- four largest companies	47,0	55,1	45,1	53,8
- five largest companies	54,4	62,8	52,6	63,1
- six largest companies	61,6	70,2	59,9	71,6
- seven largest companies	68,4	76,5	63,2	77,9
- eight largest companies	71,8	81,8	66,6	83,7

In the EEC, there has been a general increase in concentration since 1972 which is pronounced at the level of the three largest companies (+ 8.2 points) and continues up to the level of the sixth largest company (+ 8.6 points), but starts to drop at the level of the eight largest companies (+ 7.5 points).

In the USA, there has also been a general increase in concentration; in this case it does not become significant until the level of the four largest companies (+ 8.7 points), but continues to rise until it reaches + 17.1 points at the level of the eight largest companies.

Thus, the degree of concentration, which in 1972 was lower in the USA than

in the EEC, is now higher in the USA, mainly owing to the growth of the "medium-sized" companies (4th to 8th position).

However, these considerations of company size and their degree of concentration are not a true indication of the competitive position of the European industry in relation to the American industry. In particular, there are two major factors which do not emerge from these figures:

- the turnover of a company is not an accurate reflection of the nature of its activities, such as the volume of subcontracting, manufacture under licence and research and development;

- a classification of companies on the basis of turnover takes no account of a phenomenon which is of capital importance, namely, programmes carried out under a co-operation arrangement. For instance, if AIRBUS INDUSTRIE were ranked among the world aerospace companies by adding together the turnovers of all the companies which co-operate in it, the total would be of an order of magnitude comparable to the turnover of the US airframe manufacturers.

Consequently, the only method which seems valid consists in analysing the position of companies from the standpoint of their mean annual value added, calculated over a reasonably long period and extracted from published company accounts.

An analysis (46) based on the balance-sheets for the period 1971-1975 of the major European and US companies yields several ratios which make it possible to compare the industrial bases of Europe and the USA on the financial level.

Table 69

Mean annual value for the period	US companies	European companies	Ratio
- Value added/turnover net of tax	0,43	0,47	-
- Value added/wages bill	1,19	1,23	-
- Value added/numbers employed	14.283 EUR	7.602 EUR	1,88
- Wages bill/numbers employed	11.956 EUR	6.170 EUR	1,94
- Gross trading returns/numbers employed	2.327 EUR	1.431 EUR	1,63
- Turnover/numbers employed	33.192 EUR	16.345 EUR	2,03

The following indications emerge from a comparison of this kind:

- on average, the degree of vertical integration, and hence the volume of subcontracting activities, is less than 50% and of the same order of magnitude in Europe and the USA;

- gross trading returns are larger in Europe in relation to the value added which is achieved, but lower when they are related to the numbers employed;

- the difference between the value added/numbers employed ratios is mainly due to the size of the wage bill per employee in the US industry in comparison with the European industry.

Overall, it can be concluded that, during the period in question, although the European industry has displayed structures comparable to those of the US industry as regards the degree of integration of its activities, it has nevertheless remained at a much lower level of general productivity, owing

mainly to substantial structural differences and to the fact that its production runs are shorter. This handicap is, however, compensated to some extent by smaller wage bills, which mean that the industry is still able to release a relatively large cash flow.

2. Helicopter manufacturers

Four companies together account for the bulk of helicopter production in Europe:

- Aérospatiale(Helicopter Division), in France
- Agusta Costruzione Aeronautiche (47), in Italy
- MBB (Helikopter Technik, Munich), in the Federal Republic of Germany
- Westland (Helicopter Division), in the UK.

In addition to these four companies or divisions, there are the following helicopter constructic activities:

- in Italy, SIAI Marchetti and Elicotteri Meridionali, which belong to the Agusta group (47);
- in the Federal Republic of Germany, Dornier and VFW-Fokker.

The recent trend in turnover and numbers employed for the first four companies or divisions mentioned above has been as follows (m.u.a.):

Table 70

		Turnover			Numbers employed
		1973	1974	1975	
Aérospatiale		200,7	222,1	264,7	8.200
Agusta group	(47)	78,7	88,9	111,2	5.516
MBB		66,3	77,9	62,1	1.500
Westland	(48)	93,2	100,2	125,6	7.461
		438,9	489,1	563,6	22.677

In the USA, the total work-force engaged in helicopter manufacture numbers some 27 000, of whom approximately 9600 are employed by Bell Helicopters, 6500 by Sikorsky, 5000 by Boeing-Vertol, 3000 by Hughes and 2500 by Kaman.

Recent sales figures for the US helicopter companies have been as follows (m.u.a.):

Table 71

Helicopters:	1973	1974	1975
for civil use	96,8	151,2	207,5
for military use	244,8	159,8	271,9
	341,6	311,0	479,4

The figures given in the table above do not include the value of helicopters manufactured under licence outside the USA (mainly in Europe), or the value of parts and spares.

The latter probably amounts to some 30% of the value of new helicopters produced. Thus, the value of US helicopter production can be estimated at approximately 623 m.u.a. for 1975 (compared to an estimated 564 m.u.a. for European helicopter production).

3. Manufacturers of light and executive aircraft

In some Member States, the branch of the aeronautics industry which manufactures light and executive aircraft carries on highly diversified activities and is by no means concerned exclusively with designing and building aircraft for the general aviation market.

Furthermore, in defining general aviation (ie light and executive aircraft) it is difficult to:

a) draw a distinction and establish limits on a weight basis, since this type of definition derives solely from the customs sector;

b) distinguish between companies on the basis of the applications for which their aircraft are intended, since these are frequently both civil (commercial or private)* and military;

c) make a distinction on the basis of which companies actually build such aircraft, since there are examples of companies whose activities are divided between:
   - designing, developing and building light aircraft for civil or military use;
   - manufacturing helicopter fuselages as subcontractors;
   - manufacturing assemblies for large aircraft as subcontractors;
   - manufacturing light aircraft engines under licence;
   - maintaining and repairing aircraft and helicopters of all types.

Total turnover for companies which engage in aeronautics construction operations for the general aviation market as either a major or a subsidiary activity is as follows:

Table 72

	1973	1974	1975
Turnover (m.u.a.)	216.5	223.0	429.5

The turnover (particularly the figure for 1975) shown in Table 72 covers not only the production of civil light and executive aircraft but also the production of aircraft for military applications, subcontracting activities, manufacture under licence, and maintenance and repair activities.

* Among commercial applications, a distinction has to be made between third-level scheduled airlines or charter companies as opposed to general aviation uses such as, for example, air taxis.

The numbers employed in companies within the EEC which are engaged, as either a major or a subsidiary activity, in the production of light and executive aircraft amount to approximately 27 000.

There are nineteen of these companies, six of which are in France, eight in Italy, two in the UK, two in the Federal Republic of Germany and one in Belgium.

Table 73 gives the estimated numbers of light and executive aircraft produced by companies in the EEC in the period 1973/1975:

Table 73

	1973	1974	1975
Light aircraft	1500	1200	800
Executive aircraft	100	70	70
	1600	1270	870

In 1975, slightly less than half of the light aircraft produced within the EEC were manufactured by Reims Aviation, operating under CESSNA licence.

In the USA, the recent trend in the number of aircraft produced and their value has been as follows:

Table 74

	1973	1974	1975
Total number	13 645	14 165	14 057
- single-engined aircraft included in this	10 633	11 000	11 798
Total value (m.u.a.)	661.1	726.2	782.5
- value of single-engined aircraft	188.9	198.4	219.1

If the figures in Tables 73 and 74 are compared, it can be seen that Community production decreased from 12% of US production in 1973 to 6.2% in 1975.

In 1975, American-designed light and executive aircraft and/or aircraft imported directly from the USA covered 50% of the Community market, having made a 2% advance over 1974.

An analysis of the figures leads to the conclusion that the boom in light and executive aircraft is continuing for the US industry, whilst the European industry has lost ground.

4. Manufacturers of on-board instrumentation

The Commission has not received any new statistics since those given in the report on "Trading position and figures" dated May 1976 (SEC(76)2657).

C. Public financing of research and development

In section II.A.1, which deals with an analysis of turnover, the scale of State contributions to the research and development activities of companies was examined. The figures for this, however, represent only a part of the contribution made by the State in this field, since substantial funds are allocated to national research centres, universities, etc.

An overall view of the funding of aeronautics research and space research is provided by the Statistical Office of the European Communities in its report entitled "Public financing of research and development in the countries of the Community" (Summary Report 1974/1976 - CREST/47/76-EUROSTAT 1445/76). The first financial year for which these figures are available is 1975; it is clear that it will be very useful to see the trends developing as further statistics become available.

Table 75 shows that the UK allocates a much higher percentage of the total funds expended on industrial technology to the aeronautics sector than the other Member States, demonstrating a policy of according priority to this sector. In absolute values, however, the difference between the UK and France is not as large as it is on a percentage basis, since the total sum allocated to industrial technology is much greater in France than in the UK.

Table 75

Public financing of research and development in civil aeronautics construction in 1975

(u.a. x 1000)

	FRG	France	Italy	NL	Belgium	UK	EEC
unding of research and evelopment in aeronautics onstruction	65.532,4	151.707,4	16,2	5.657,4	2.354,3	175.167,2	400.434,8
s % of funding of research nd development in product-vity and industrial echnology	22,535	35,675	0,030	20,001	5,184	70,826	35,975
s % of total funding	1,656	5,106	0003	0,962	0,691	8,770	3,787
s % of GDP	0,020	0,060	0000	0,009	0,005	0,102	0,039

In the case of space exploration and exploitation (Table 76), Italy in particular and to a lesser extent the Federal Republic of Germany and the Netherlands allocate to space research and development very high percentages of the total expended on industrial technology.

It will be noted here that Italy spends almost as much as the UK on these activities; since the total sum allocated to industrial technology is much smaller, this represents a heavy commitment to space techniques on the part of Italy, whereas civil aeronautics funding is very low. In absolute volume, the Federal Republic of Germany and France are far in the lead. Attention should be drawn to the role of Denmark in these activities.

Table 76

(cf. page 53)

At Community level, the funds allocated to research and development for space exploration are larger than those allocated to aeronautics. Thus, space appears to be the element which is responsible for the fact that, when public financing of research and development in aeronautics and space construction taken together is calculated as a ratio of the total expended on industrial technology, the percentages turn out to be fairly similar in most Member States (Table 77).

Table 77

(cf. page 54)

In the four large Member States and the Netherlands, the percentage varies between 71 and 89% of the total. By comparison, in the case of Belgium the percentage is very low.

Table 76

Public financing of research and development in space exploration and exploitation in 1975

(u.a. x 1000)

	FRG	France	Italy	NL	Belgium	UK	Denmark	EEC
Funding of research and development in space exploration and exploitation	167.679,6	165.879,9	44.821,6	14.580,6	2.174,4	45.164,1	6.138,	456.438,1
as % of funding of research and development in productivity and industrial technology	57,662	39,008	82,685	51,550	4,788	18,221	38,569	41,007
as % of total funding	4,238	5,583	8,535	2,480	0,639	2,261	3,654	4,317
as % of GDP	0,052	0,065	0,034	0,024	0,005	0,026	0,023	0,045

Table 77

Public financing of research and development in aeronautics construction and space exploration and exploitation in 1975

(u.a. x 1000)

	FRG	France	Italy	NL	Belgium	UK	Denmark	EEC
Funding of research and development in aeronautics construction and space exploration and exploitation	233.212,0	317.587,3	44.837,8	20.237,6	4.528,7	220.331,3	6.138,0	856.872,9
as % of funding of research and development in productivity and industrial technology	80,197	74,683	82,715	71,548	9,972	89,088	38,569	76,982
as % of total funding	5,895	10,690	8,538	3,442	1,330	11,030	3,654	8,104
as % of GDP	0,073	0,126	0,034	0,033	0,010	0,123	0,023	0,084

Footnotes

(1) The parities used in this document to convert national currencies into European units of account (u.a.) are those adopted by the Statistical Office of the European Communities, as follows (mean value for the year):

	1969	1970	1971	1972	1973	1974	1975	1976
Deutschmark	3,93	3,66	3,65	3,49	3,32	3,21	3,21	3,20
French franc	5,17	5,55	5,55	5,55	5,55	6,01	5,68	6,06
Italian lira	625	625	625	631	729	813	863	1054
Dutch guilder	3,62	3,62	3,61	3,52	3,47	3,35	3,35	3,35
Belgian/Luxembour franc	50,0	50,0	49,9	48,6	48,6	48,6	48,6	48,6
£ sterling	0,416	0,416	0,416	0,437	0,511	0,534	0,597	0,706
Danish krone	7,50	7,50	7,50	7,57	7,57	7,57	7,57	7,64
US $	1,00	1,00	1,00	1,08	1,25	1,25	1,32	1,27
Yen	360	360	359	334	339	363	389	378

Values are expressed in u.a., the unit of account used for statistical purposes by the European Communities (1 u.a. = 0.888671 g of fine gold). The conversion into u.a. of values expressed in floating national currencies is calculated by the Statistical Office of the European Communities on the basis of market rates between floating currencies and currencies linked by the European Agreement on the narrowing of margins (cf. explanatory note in General Statistics 9/76, p.167).

(2) Source : ICAO Bulletin, January 1977

(3) Source : AEA (Association of European Airlines) : Traffic and Operating Data of AEA Airlines 1973/1975

(4) Source : DMS (Defense Marketing Service), Greenwich, Connecticut

(5) Source : Flight

(6) Of which 205 were built under licence by Fairchild in the USA

(7) Also including 51 Comets, 35 VC10s and 83 Convairs 880 and 990

(8) Analysis of numbers of civil aircraft in service and on order in October 1974 and June 1976

Source : Aérospatiale (figures analysed by the Commission).

a) The analysis covers the following countries:

- the Nine Member States of the Community;
- the other European countries : Austria, Cyprus, Finland, Greece, Iceland, Malta, Norway, Portugal, Spain, Sweden, Switzerland, Turkey and Yugoslavia;
- the USA;
- the rest of the world : in October 1974, 104 countries including the USSR and the People's Republic of China;
  in June 1976, 129 countries including the USSR and the People's Republic of China.

b) The analysis covers only the 400 major airlines in October 1974 and the 429 major airlines in 1976.

c) The analysis covers the following Western aircraft only:

Long-range

US aircraft

- Boeing 707-720, subdivided for calculating the value of aircraft in service and on order into:
  707-120-220-420
  707-720
  707-320
- Boeing 747
- DC6
- DC7
- DC8 series 20-30-40
  50
  60
  63
- DC10-30
  40
- Lockheed 100
- Convair series 880-990

European aircraft

Britannia

VC10

Comet

Concorde

Aircraft from other Western countries

CL44

Short- and medium-range

US aircraft	European aircraft
Boeing 727-100	Caravelle 3 and 6
727-200	Caravelle 10 and 11
Boeing 737-100	Caravelle 12
737-200	A 300
	Mercure
DC3	Vanguard
DC4	Viscount 700 and 800

(continued)

DC9-10 and 20	BAC 111-200 and 300
DC9-30 and 40	BAC 111-400 and 475
DC9-50	BAC 111-500
DC10-10	Herald
	Trident 1 and 2
Lockheed Electra	Trident 3
Lockheed 1011	HS 748
Convair 440	F 27
	F 28
	VFW 614

Aircraft from other Western countries

YS 11

(9) The SAS fleet is included under Sweden

(10) Six original Member States + the UK. Accurate comparisons can be made at Europe level for 1970/76 and at EEC level for 1974/76.

(11) DMS, Greenwich, Connecticut : World Aircraft Forecast to 1985

(12) Intra-Community trade ('000 u.a.)

Helicopters, light aircraft, airliners, and parts and spares

Importing country	France	Belgium/ Luxembourg	Nether- lands	FRG	Italy	UK*	Ireland	Denmark
Country of origin								
FRANCE	-	26.465,4	9.412,6	327159,5	7.726,6	107427,8	1468,1	793,0
BELGIUM/LUXEMBOURG	16690,4	-	4.639,2	2985,5	681,1	827,2	27,1	4,8
NETHERLANDS	16246,2	3.158,2	-	32618,7	454,0	21070,7	12,3	66,1
FRG	45336,0	38.073,4	28636,9	-	4.010,5	8604,8	48,4	3613,6
ITALY	13526,6	4.862,0	776,7	8324,4	-	4682,7	7,1	252,6
UK	91303,5	7.921,1	18397,2	87872,4	4.882,1	-	657,2	112,5
IRELAND	2,5	21,3	7,1	44,9	-	29,5	-	-
DENMARK	522,8	1.037,4	488,5	200,2	48,9	18,7	0,1	-
EEC	183628,0	81.538,8	62358,2	459205,6	17803,2	142661,4	2220,3	4842,6

(13) Intra-Community trade ('000 u.a.)

Engines for aerodynes, turbojets and turboprops and parts and spares

Importing country	France	Belgium/ Luxembourg	Nether- lands	FRG	Italy	UK	Irel.	DK
Country of origin								
FRANCE	-	36112,3	5440,0	10489,0	5830,6	75732,5	91,9	41,0
BELGIUM/LUXEMBOURG	5213,7	-	389,5	6828,2	41,9	1604,9	0,5	425,2
NETHERLANDS	1403,0	1589,9	-	2612,6	61,7	243,2	3,7	91,9
FRG	10524,9	23415,4	5277,0	-	11319,2	52435,0	35,4	134,6
ITALY	894,0	335,2	727,8	2443,2	-	11580,6	0,1	12,1
UK	69414,4	4895,0	28966,0	33942,4	12047,7	-	103,7	3014,6
IRELAND	-	7,6	-	2,5	-	908,6	-	-
DENMARK	334,7	2851,4	133,7	951,3	1,4	145,9	-	-
EEC	87784,7	69206,8	40934,0	57269,2	29302,5	142650,7	235,3	3719,4

(14)* The figures relate only to parts and spares for helicopters, light aircraft and airliners, since information on the actual aircraft is treated as "secret" in British national statistics.

(15) This section relates only to the "Western" world, ie excluding the USSR, the East European countries and China. It should, however, be borne in mind that the USSR in particular has a very strong aerospace industry.

(16) USA : Aerospace Industries Association of America
Aerospace facts and figures 1976/77
1974 : revised figures
Aerospace products and services only

(17) Canada : Canadian Mission to the European Communities
Provisional turnover for 1975. Estimate for 1976: 606 million u.a.

The breakdown by subsector is estimated as follows:

aircraft and spares	29.9% in 1975	34.0% in 1976
engines	48.0% in 1975	45.0% in 1976
avionics	22.1% in 1975	21.0% in 1976

(18) EEC : sum of final turnovers of the Member States (cf. Table 34)

(19) Other European countries : estimated turnover of Spain, Sweden and Switzerland

(20) Japan : source : GIFAS report

(21) Other "Western" countries : estimated turnover of Israel, India and Brazil. The other countries which have an aerospace industry are, for example, Australia, Argentina, New Zealand, South Africa, Romania, Czechoslovakia, etc.

(22) Federal Republic of Germany

Sources: 1970 and 1971, Bundesministerium für Wirtschaft

subsequent years, BDLI (Bundesverband des Deutschen Luft- und Raumfahrtindustrie)

(23) Belgium : GEBECOMA (Groupement Belge des Constructeurs de Matériel Aérospatial)

(24) France : GIFAS (Groupement des Industries françaises aéronautiques et spatiales)

(25) Italy : Source : 1970 and 1971, Italian Government

subsequent years, AIA (Associazione Industrie Aerospaziali)

(26) Netherlands : professional source

(27) UK : 1970 and 1971, Department of Industry, Business Statistics Office: Survey of the United Kingdom Aerospace Industry, 1975, page 27, Table 23 : Total + launching aid:

subsequent years, SBAC (Society of British Aerospace Companies

(28) EEC : sum of the turnovers of the Member States

(29) Table 35 : Conversion of national turnovers expressed in current u.a. (Table 34) into national turnovers expressed in u.a. at fixed 1970 values : the national turnovers obtained from sources (16) and (22) to (28) in national currencies at current values were converted into national currencies at fixed 1970 values by applying the price index for GDP at market prices (Statistical Office of the European Communities : National Accounts, Aggregate 1960/1975, Yearbook 1976).

The results were converted into u.a. at 1970 rates of exchange.

(18) Communauté : addition des chiffres d'affaires finals des Etats membres voir Tableau 34

(19) "Autres pays européens" : estimation des chiffres d'affaires de l'Espagne, de la Suède et de la Suisse

(20) Japon : source : rapport du G.I.F.A.S.

(21) "Autres pays occidentaux" : estimation des chiffres d'affaires d'Israël, de l'Inde et du Brésil. Les autres pays ayant une industrie aérospatiale sont notamment les suivants : l'Australie, l'Argentine, la Nouvelle-Zélande, l'Afrique du Sud, la Roumanie, la Tchékoslovaquie, etc...

(22) République Fédérale d'Allemagne

sources : 1970 et 1971 : Ministère Fédéral de l'Economie
années suivantes : B.D.L.I. (Bundesverband des Deutschen Luft und Raumfahrtindustrie)

(23) Belgique : GEBECOMA (Groupement Belge des Constructeurs de matériel Aérospatial).

(24) France : G.I.F.A.S. (Groupement des Industries françaises aéronautiques et spatiales)

(25) Italie : source : 1970 et 1971 : Administration italienne,
années suivantes : A.I.A. : Associazione Industrie Aerospaziali

(26) Pays-Bas : source professionnelle

(27) Royaume-Uni : 1970 et 1971 : Department of Industry, Business statistics office - Survey of the United Kingdom,
Aerospace Industry 1975, page 27, Tableau 23 : Total + "launching aid".
années suivantes : S.B.A.C. : Society of British Aerospace Companies

(28) C.E.E. : simple addition des chiffres d'affaires des Etats membres.

(29) Tableau 35 : Transformation des C.A. nationaux en EUR courants (Tableau 34) en C.A. nationaux en EUR de valeur constante de 1970 : les montants des C.A. nationaux selon les sources (16) et (22) à (28) en monnaies nationales courantes ont été transformés en monnaies nationales de valeur constante 1970 par l'intermédiaire de l'indice de prix du Produit intérieur brut aux prix du marché (Office Statistique des Communautés Européennes - comptes nationaux, agrégas 1960-1975, annuaire 1976).

Les résultats ont été transformés en EUR au taux de change de 1970.

(30) Sales of goods and services between aerospace manufacturers in each of the Member States amount to (m. current u.a.):

1975	Aircraft	Engines	Instrumentation	Space	Total
	163,7	10,7	26,9	13,6	214,9
Belgium	1,0	0,2	0,1	-	1,3
France	137,8	80,2	449,0	-	667,0
Italy	45,0	14,0	34,6	4,3	97,9
NL	-	-	-	-	-
UK	17,2	179,3	237,9	0,6	435,0

(31) Sales of aerospace goods and services from the manufacturers of each Member State to the manufacturers in the sector of other Member States were as follows in 1975 (m. current u.a.):

1975	Aircraft	Engines	Instrumentation	Space	Total
"D"	86,2	8,8	20,2	30,4	145,6
Belgium	30,9	11,9	5,5	8,1	56,4
France	168,2	96,9	33,1	-	298,2
Italy	20,9	15,5	20,8	12,8	70,0
NL	13,5	-	-	-	13,5
UK	158,3	175,8	85,3	1,0	420,4
Total	478,0	308,9	164,9	52,3	1004,1

(32) Final EEC turnover (m. current u.a.)
Aircraft subsector

State		FRG	Belgium	France	Italy	NL	UK	EEC
Research and development		6,2	1,6	72,5	0,9	0,4	39,6	121,2
- civil		384,2	-	219,5	-	-	143,3	747,0
- military								
Repairs, maintenance and sales	C	7,9	0,2	14,1	1,5	-	4,0	27,7
	M	194,6	15,5	470,1	84,2	7,1	221,0	992,5
Governments of other Member States		0,2	2,5	52,8		1,3	7,6	64,4
Aerospace companies in non-EEC countries		25,6	0,3	-	34,1	0,2	40,8	101,0
End users:								
- national		7,3	0,2	153,2	3,2	5,5	41,5	210,9
- EEC (civil activities)		4,2	-	18,1	2,4	-	16,3	41,0
- non-EEC countries		36,0	-	688,4	134,5	166,3	384,8	1410,5
		666,2	20,3	1688,7	260,8	181,3	898,9	3716,2

C = civil; M = milita:

Breakdown at EEC level:

State	1.952,8	52,5 %
domestic civil market	251,9	6,8 %
exports	1.511,5	40,7 %
	3.716,2	100,0 %

Breakdown of the "State" heading:

purchases and maintenance :			
- civil	27,7	27,7	1,4 %
- military	992,5 + 64,4 =	1.056,9	54,1 %
research and development :			
- civil		121,2	6,2 %
- military		747,0	38,3 %
	State :	1.952,8	100,0 %

(33) Final EEC turnover (m. current u.a.)

Engines subsector

	FRG	Belgium	France	Italy	Netherlands	UK	EEC
State							
Research and development							
- civil	0,2	-	16,7	-	-	67,3	84,2
- military	48,3	-	134,5	12,5	-	51,5	246,8
Repairs, maintenance) C	1,0	-	6,5	7,7	-	23,7	38,9
and sales) M	93,6	6,0	141,2	36,5	-	235,0	512,3
Governments of other Member States	2,6	-	7,0	-	-	3,0	12,6
Aerospace companies in non-EEC countries	7,1	0,2	-	8,0	-	151,2	166,5
End users:							
- national	1,0	-	32,2	-	-	72,9	106,1
- EEC (civil activities)	0,7	-	0,4	-	-	10,4	11,5
- non-EEC countries	1,8	-	139,1	1,9	-	160,9	303,7
	156,3	6,2	477,6	66,6		775,9	1482,6

Breakdown at EEC level:

State :	894,8	60,4
domestic civil market :	117,6	7,9
exports :	470,2	31,7
	1.482,6	100,0

Breakdown of the "State" heading

purchases and maintenance			
- civil :	38,9		4,3
- military :	524,9 - 512,3 = 12,6		58,7
research and development			
- civil :	84,2		9,4
- military :	246,8		27,6
	894,8		100,0

C : civil M : military

(34) Final EEC turnover (m. current u.a.)

Instrumentation subsector

	FRG	Belgium	France	Italy	Netherlands	UK	EEC
State							
Research and development - civil	1,0	0,1	0,4	-	-	8,4	9,9
- military	28,8	0,1	5,6	8,7	1,8	108,1	153,1
Repairs, maintenance) C	13,5	1,7	0,9	1,4	-	6,0	23,5
and sales) M	110,4	2,5	105,8	33,9	-	215,1	467,7
Governments of other Member States	7,5	1,3	-	-	5,4	11,2	25,4
Aerospace companies in non-EEC countries	11,6	-	34,7	6,9	0,3	47,4	100,9
End users:	8,4	-	35,2	-	0,6	43,3	87,5
- national	1,3	1,4	4,2	0,4	-	14,5	21,8
- EEC (civil activities)	4,0	2,3	12,5	9,8	4,2	142,9	175,7
- non-EEC countries							
Total:	186,5	9,4	199,3	61,1	12,3	596,9	1065,5

Breakdown at EEC level:

State	679,6	63,8 %
domestic civil market	109,3	10,3 %
exports	276,6	25,9 %
	1065,5	100,0 %

Breakdown of the "State" heading:

purchases and maintenance		
- civil	23,5	3,5 %
- military	493,1 = 467,7 + 25,4	72,5 %
research and development	9,9	1,5 %
- civil	153,1	22,5 %
- military	679,6	100,0 %

(35) Final EEC turnover (m. current u.a.)

Space subsector

	FRG	Belgium	France	Italy			
State							
Research and development - civil	40,3	0,1	58,8	0,7	0,5	4,2	104,6
- military	1,6	-	-	-	-	2,7	4,3
Repairs, maintenance) C	1,2	-	-	-	-	-	1,2
and sales) M	-	-	-	0,1	-	0,3	0,4

Governments of other Member States	-	-	-	-	-	-	-
Aerospace companies in non-EEC countries	0,9	0,8	-	0,6	-	2,4	4,7
End users:							
- national	0,4	-	-	0,9	5,6	-	6,9
- EEC (civil activities)	1,3	0,2	23,1	3,6	-	15,3	43,5
- non-EEC countries	0,2	-	-	-	-	-	0,2
	45,9	1,1	81,9	5,9	6,1	24,9	165,8

Breakdown at EEC level:

State	110,5	66,6 %
domestic civil market	50,4	30,4 %
exports	4,9	3,0 %
	165,8	100,0 %

C : civil, M : military

(36) Final EEC turnover (m. current u.a.)

	Aerospace total				
	Aircraft	Engines	Instrumentation	Space	Total
State					
Research and development					
- civil	121,2	84,2	9,9	104,6	319,9
- military	747,0	246,8	153,1	4,3	1151,2
Repairs, maintenance) C	27,7	38,9	23,5	1,2	91,3
and sales) M	992,5	512,3	467,7	0,4	1972,9
Governments of other Member States	64,4	12,6	25,4	-	102,4
Aerospace companies in non-EEC countries	101,0	166,5	100,9	4,7	373,1
End users:	210,9	106,1	87,5	6,9	411,4
- national					
- EEC (civil activities)	41,0	11,5	21,8	43,5	117,8
- non-EEC countries	1410,5	303,7	175,7	0,2	1890,1
	3716,2	1482,6	1065.5	165,8	6430,1

	Aerospace total	%
State	3.637,7	56,6
domestic civil market	529,2	8,2
exports	2.263,2	35,2
	6.430,1	100,0

	Aeronautics total (ie total less space)					%
State	3.637,7	-	110,5	=	3.527,2	56,3
domestic civil market	529,2	-	50,4		478,8	7,6
exports	2.263,2	-	4,9	=	2.258,3	36,1
					6.264,3	100,0

(37) The BDLI distinguishes between the four subsectors (aircraft, engines, instrumentation and space) and an "accessories and fuel" branch employing 1317 persons in 1975.

(38) In France, airframes, engines and space are together under "aircraft"

(39) Aerospace Facts and Figures 1976/77 : The figures given for aeronautics include the work-force for missiles and space in recent years. They do not, however, represent the entire aerospace work-force, which is estimated at 942 400.

C = civil, M = military

(40) In 1976 : 3085 m.u.a.

(41) In 1976 : 2520 m.u.a.

(42) In 1976 : 2791 m.u.a.

(43) Source : Assemblée Nationale de la République Française :
Report made in the name of the Parliamentary Investigating Committee on the use of funds allocated to private and public aeronautics construction companies (No. 2815)

(44) In 1976 : DM 1767.4 million, ie 552.3 m.u.a.

(44a) Westland Group : in 1976 : 185.8 m.u.a.

(45) Fiat Aviazione : aircraft engines

(46) The analysis was based on the balance-sheets (after DAFSA processing) of fourteen European companies and six US companies, whose figures were aggregated for the whole of the period in question.

(47) The Agusta group (aeronautics activity) comprises:

Agusta Costruzioni Aeronautiche :	3703 persons
Elicotteri Meridionali	713 persons
SIAI Marchetti	1100 persons (approx.)
	5516 persons

(48) Westland Helicopters

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(49) The 1972, 1973, 1974 data refer only to the companies employing respectively 67,79 and 83 % of the total manpower.

(50) Read 0,80 instead of 1,6

(51) Read : civil : 6,0; military : 0,4

(52) It is to be noticed, that the U.K. turnover in constant value of 1970 is still higher than the turnover of the French industry.