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NOTE BY THE SECRETARY OF STATE FOR TRADE AND INDUSTRY

AIRBUS A330/340

... Last October British Aerospace applied for £750m support for their participation in the proposed Airbus A330/340 projects. These projects are essentially two variants of a substantially common specification. My Department has carried out a detailed assessment of the application, assisted by Morgan Grenfell and the Ministry of Defence. To do this it was necessary to ask BAe for supplementary information, some of which was not delivered until late January. A summary assessment by DTI officials is attached.

2 On 13 February Rolls-Royce requested launch aid of up to £75m for their participation in one of the engines to be offered for the A340. No detailed application has yet been received.

TIMING

3 Airbus Industrie are pressing for a firm decision to launch the project by the time of their Board meeting on 13 March. This is for marketing reasons, particularly in relation to the A340. This aircraft is a direct competitor to the McDonnell Douglas MD11, which was launched last December. Airbus are most anxious to achieve launch by the end of March as key airlines like Lufthansa and Swissair might otherwise decide in favour of the MD11. As the MD11

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will be in service by 1990, Airbus (notably Herr Strauss, the President of its Supervisory Board) think it essential to launch the A340 now and not repeat the experience on the A320, which has lost orders to the Boeing 737 because of the delay of its launch.

4 Present indications are that neither the French nor German Governments are ready to respond by Airbus Industrie's 13 March deadline. However, the German Government is expected to give a formal go ahead (with launch aid of up to 90 per cent for MBB) at a Cabinet meeting scheduled for 28 April. The French Government, we believe, have their eyes on a formal launch announcement not later than the Paris Air Show (11-21 June). They are likely to advance launch aid to Aerospatiale of around 65-70 per cent.

CURRENT ASSESSMENT

5 On 'base case' assumptions, the A330/340 projects offer an estimated monetary return of 9.4 per cent. There are, however, a number of significant risk factors at this stage. Our two principal current concerns are:

- (i) Although the launch order book for the A340 is quite encouraging, (Airbus are confident of shortly having five airline commitments to the A340 for a total of 57 orders and options), no launch orders have yet been obtained for the A330. While we still consider there is a good market for this aircraft, there is little prospect of significant early orders.
- (ii) The engine situation for the A340 is less well established than it should be. The aircraft

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specification has grown in size in response to market demand, and this has made the engines originally offered inadequate. International Aero Engines (IAE) in which Rolls-Royce has a 30 per cent share, is studying a possible Superfan version of the V2500. They are expected to decide in early April whether to commit to full development subject, in Rolls-Royce's case, to the outcome of their launch aid application.

The rival consortium CFM (GE/SNECMA) is similarly studying an improved version of the CFM 56-5 engine to be offered for the A340. Until the engine companies have completed these studies, and the results have been assessed, it will be difficult to assess the prospects of the A340 with a satisfactory degree of confidence.

6 Our French and German partners recognize these concerns to some extent, but appear to regard what they perceive as the wider potential benefits of going ahead as over-riding.

ROLLS-ROYCE APPLICATION

7 My Department and the MOD will subject Rolls-Royce's launch aid application to a detailed assessment as soon as it is received. It appears this may not be for some weeks. Unfortunately, the assessment is likely to take longer than usual because of the Rolls-Royce privatisation. It is important that during the period of the offer for sale (early April to mid-May) the Government should not carry forward any policy consideration which might result in decisions being taken which purchasers of the shares could claim would have altered their choice had they been publicly disclosed. This

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may constrain our consideration of the Rolls-Royce launch aid application during the April/May period.

8 It may well be, therefore, that we shall not have completed our assessment of the Rolls-Royce application by the time our French and German partners start to press us for a decision on the A330/340.

9 Provided we are satisfied on other elements (including the availability of an alternative engine for the A340) we need not necessarily hold up reaching an agreement with BAe, which would enable them to join with their partners in launching the A330/340, while we complete our assessment of the Rolls-Royce application. On the other hand, once the aircraft are launched, there will be pressure on us to ensure that Rolls-Royce can play its part in offering one of the engine options. Domestically there will also be some pressure to reinforce what will by then, I believe, have been a successful privatisation.

10 The Superfan engine is being developed specially for the A340, although it may be used for Boeing's 7J7 rival to the A320, which is scheduled for service in 1992. It would theoretically be possible to approve launch aid for the Superfan but not for the A330/A340, but this would be a very surprising decision to take as the economics of the engine depend on its use in the A340.

BRITISH AEROSPACE APPLICATION

11 In my view, if the A330/340 go ahead, it is in the national interest that BAe should participate in the projects. The relatively low rate of return is, I believe, outweighed by wider factors. Airbus Industrie has become

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the most conspicuous example of European industrial co-operation in competition against the industrial conglomerates of the USA. With the A300, A310, and A320 Airbus is now established as a recognized force in world civil aviation. After a faltering start in the 1970's, the UK is now accepted as a full partner in the enterprise.

12 This does not mean we should not continue to express our current concerns to our partners and hope to influence their decisions. But in the end, I believe, we must accept the responsibilities of partnership.

13 BAe have based their application for support not on the economics of the projects in isolation but also on the impact estimated non-recurring launch costs of £840m (at outturn prices) plus interest charges would have on the company's overall financial health. In BAe's submission, the company already has £1bn of assets tied up in civil aircraft compared to shareholders' funds of £1.2bn. In BAe's view the additional risks if they undertook the A330/340 would carry their exposure beyond the level the Board could responsibly accept.

EFFECTS OF WITHDRAWING FROM A330/A340

14 On European Partners: The UK's major partners are France and Germany. Our minor partners are Spain, the Netherlands and Belgium. National commitment to, and pride in, Airbus is very strong in all these countries. You will recall the strong support in principle for the A330/A340 projects expressed by Chancellor Kohl, President Mitterrand and Mr Chirac at the summit meetings last year. They would regard it as unthinkable for the UK to withdraw from the A330/A340, thus letting down the other partners, a few weeks

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before the launching of the projects. BAe's withdrawal would probably set back the projects by at least a year, and greatly weaken the consortium in world markets. It would be seen as running counter to the Principles of Co-operation agreed between the Airbus Partner Governments in 1978 under which HMG fully support BAe's participation in AI.

15 The German Cabinet are likely to decide formally to give launch aid to their industry on 28 April. The French decision may be later, but could be taken sooner following the close personal interest of M. Chirac, who was present at the roll-out of the A320 on 14 February. President Mitterrand's brother is in charge of Aerospatiale, the French partner in Airbus.

16 On British Aerospace and UK Equipment Suppliers:
Total employment on the A330/A340 programme is expected to reach a peak around 1994/95 with about 6,500 jobs at BAe and an estimated 3,500 at UK equipment suppliers.

17 Non-participation in the programme would lead to some 5,000 job losses within BAe. These job losses would begin in 1987 and reach a peak in 1992. In the event of non-participation, BAe would not be able to replace this work with contracts for US aircraft manufacturers on competing aircraft because of contractual commitments to Airbus.

18 BAe would have to close one major manufacturing site. This would probably be either Broughton (North Wales) or Hatfield or Manchester. In addition, there would be a reduction of 750 jobs among design staff, and the closure (probably in 1987) of one of the Company's three Design Centres at Filton (near Bristol), Hatfield or Manchester.

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The effect of non-participation on employment at UK equipment suppliers is speculative, but the likelihood is that only a small proportion of the estimated 3,500 jobs at UK suppliers would be saved through contracts with other AI partners.

PRIVATE SECTOR FINANCE

19 BAe and Kleinwort Benson have made exhaustive efforts to find private sector institutions willing to provide some genuine risk finance for A330/A340, but have failed. DTI and Treasury (advised by Morgan Grenfell) are satisfied that the search has been thorough. Banks are only willing to lend against guarantees.

20 The German Government is expected to provide 90 per cent of the necessary development finance for their industry to participate, with the rest of the finance guaranteed. They are trying this time to avoid giving guarantees for production work, which HMG has never contemplated. The French Government are likely to provide launch aid of around 65-70 per cent for their industry, and to provide guarantees for the rest of the finance.

21 As a way of spreading the risk (and also to obtain other potential benefits) we have explored the possibility of a collaboration between Airbus Industrie and McDonnell Douglas, but this has not proved practicable.

GOVERNMENT SUPPORT

22 I have therefore reluctantly concluded that if BAe are to participate effectively in the A330/340, it will be necessary for the Government to share the risk with the company to a certain extent. BAe have said they are

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prepared to take the risk on the production finance required (some £280m up to 1993), and on £90m out of the development costs of £840m (a little over 10 per cent). This leaves £750m (nearly 90 per cent of estimated development costs) on which, in BAe's view, the Government should take the risk.

23 I do not believe such a substantial Government involvement would be justified. However, on the basis of detailed advice, including the advice of Morgan Grenfell, I have concluded that it would be reasonable to offer to BAe that the Government would share the risk up to a figure within the range £336-420m. This range represents 40-50 per cent of BAe's estimated development costs. My advisers consider 50 per cent would be justified, but I would envisage an "opening bid" of 40 per cent.

24 BAe have formally said they cannot accept less than 90 per cent. Informally, however, there have been certain indications that they would be prepared to consider 65-70 per cent, and I would hope to persuade them to move further.

MECHANISM OF SUPPORT

25 We have explored two possible mechanisms. The first is a traditional launch aid scheme, under which any support offered would be a charge on public expenditure. The second is a guarantee and interest support scheme. Under this, the Government would guarantee BAe's commercial borrowing up to the agreed figure, and would also advance the finance costs on this borrowing. Only the latter would be a charge on public expenditure in the early years. However, there would be a contingent liability under the guarantee to repay BAe's commercial borrowing should sales fall short.

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26 The cost to HMG of providing launch aid of 40 per cent to British Aerospace would be £336 million, spread over the years 1987-88 to 1991-92. The cost of the alternative method of providing Government guarantees and interest support would be some £203 million in the period 1987-88 to 1996-97. A table showing the comparative expenditure and receipts under these two methods up to the year 2006-2007 is at Annex 1.

27 Under both schemes the Government would receive its return via a mixture of fixed repayments and levies on sales. Under a launch aid scheme, I would aim to provide for equal rates of return of 9.4 per cent to the Government and BAe (compared to the 7 per cent target rate of return to the Government on the A320). On a similar levy profile, the return to the Government under the guarantee scheme would be less (about 8 per cent) because of the need to remunerate the financial intermediaries.

28 I would hope also to negotiate a provision for accelerated returns to the Government should BAe's profits exceed predetermined levels.

29 The guarantee route has advantages in cash flow terms in the early years. However it has the usual disadvantages associated with contingent liabilities and interest support schemes. It could also cause greater offence to the Americans in the context of the GATT than launch aid, although I would contend that neither scheme is inconsistent with our GATT obligations.

30 If colleagues decided in principle that some support should be given to BAe, I would wish to consult Nigel Lawson about the balance of advantage between these two mechanisms.

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I would also need to consult the Law Officers about the guarantee scheme, although my provisional legal advice is that it is within existing statutory powers. On balance my own preference at this stage would be against the guarantee and interest support scheme.

A320

31 The Airbus A320, in which BAe is already participating with launch aid of £250 million, is proving a tremendous success, and 439 had been sold by the time of the first flight on 22 February. HMG is confidently expected to achieve over the first ~~600~~ sales the 7 per cent monetary rate of return which was agreed with BAe in 1984. This sort of success has never previously been achieved with civil aircraft projects. At Annex 2 is a table showing projected Government receipts over the next five years from the A320, alongside the cost of giving 40 per cent support for the A330/340. In terms of year-to-year cash flow, receipts from the A320 would begin to outweigh expenditure on support for the A330/340 by 1991/1992 (or earlier if we adopted the interest support route).

US OPPOSITION

32 The US Government have tried to apply political pressure to hinder the launch of the A330/A340, but European Governments and the EC Commission have united strongly to resist this pressure. It can be expected to intensify if the A340 (the direct competitor of the MD11) is launched. The US have requested a special session of the GATT Aircraft Committee in mid-March. In preparation for this, Airbus partner countries and the Commission will be co-ordinating their position. It is hoped that the US will not take any

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unilateral action against Airbus such as anti-dumping or countervailing duties, as it would be difficult for European countries to retaliate in kind because of their dependence on the Boeing 747. However, the scope for retaliation will be considered.

IMPLICATIONS FOR JAPAN

33 Japan has been trying in recent years to break into the world aerospace market as a manufacturer, but so far with little success. If the A330/A340 were launched, with British participation, this might be a factor in causing Japan to collaborate in future with Airbus rather than with Boeing. Japan is already involved in the International Aero Engines V2500 engine, and would similarly be involved in the V2500 Superfan.

PUBLIC EXPENDITURE

34 Although the A330/340 projects have been under discussion for some years, in accordance with established Treasury procedures no budgetary provision has been made for them in my Department's PES projections. In these circumstances it would be quite impossible for my Department to accommodate any agreed support within its PES baselines. Indeed I made clear to John MacGregor some months ago that this would simply not be possible within the financial constraints applied to the DTI's budget. This contrasts with the situation in France and Germany, where provisions have been made and it is now simply a question of deciding the conditions for their release.

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CONCLUSION

35 My conclusions are:

- (i) that I should be given negotiating authority to offer to BAe that the Government would share their risks on the A330/340 up to a figure within the £336-420m (40-50 per cent) range, subject to tactical considerations. I would consult Nigel Lawson about the mechanism of support, and would of course keep him in close touch with the progress of discussions with BAe;
- (ii) that I should make clear that this offer is conditional on our current concerns about the projects being clarified. In particular, we should press BAe strongly to agree to a full range of monitoring arrangements for the project (see paragraphs 62-3 of the attached assessment);
- (iii) that my Department and MOD(PE) should process the application by Rolls-Royce for launch aid as quickly as possible after it is received; but that we should recognize this process may not be complete before June.

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DEPARTMENT OF TRADE AND INDUSTRY

24 February 1987

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ANNEX 1

EXPENDITURE AND RECEIPTS ON
40% FINANCIAL ASSISTANCE (£M)

FINANCIAL YEARS	LAUNCH AID	INTEREST SUPPORT
1987-88	(45)	(2)
1988-89	(80)	(9)
1989-90	(78)	(16)
1990-91	(75)	(24)
1991-92	(58)	(31)
1992-93	Nil	(34)
1993-94	29	(32)
1994-95	101	(26)
1995-96	62	(18)
1996-97	71	(11)
1997-98	77	0
1998-99	73	73
1999-2000	60	60
2000-01	49	49
2001-02	51	51
2002-03	50	50
2003-04	43	43
2004-05	42	42
2005-06	33	33
2006-07	7	7
Total Gross Govt. Expenditure	(336)	(203)
Total receipts to Government	748	408
Net return to Government:	412	205

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ANNEX 2

ILLUSTRATIVE COMPARISON OF PUBLIC EXPENDITURE POSITION
1987/88 - 1991/92

Each column assumes support provided on £336m

Column (1) assumes launch aid payable against design and development costs only.

Column (2) assumes £336m of commercial borrowing by BAe is guaranteed, and the related finance charges are advanced by HMG.

Column (3) shows the launch aid payments for the A320 and in later years, expected receipts under the launch aid contract.

	£M		
	Launch Aid for A330/A340	Interest Support	A320 Payments/(Receipts)
1987/88	45	2	44
1988/89	80	9	-
1989/90	78	16	(12)
1990/91	75	24	(50)
1991/92	58	31	(72)
	336	82	(90)

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Airbus A330/340

REQUEST BY BRITISH AEROSPACE AND ROLLS-ROYCE

1 British Aerospace (BAe) have asked for £750m support, in the form of either launch aid or guarantee and interest support, for their participation in the proposed A330 and A340 projects. This request has been assessed by the DTI, assisted by Morgan Grenfell, and the Ministry of Defence.

2 Rolls-Royce (RR) have requested launch aid up to £75m to support their participation in the V2500 Superfan project to power the A340. However, no details have been received and this paper deals only with BAe's request.

Timing

3 Airbus Industrie have asked their four partner companies (BAe, Aerospatiale (France), MBB (Germany) and CASA (Spain)) to be ready to agree formal launch of the projects on 13 March. BAe are accordingly requesting a decision on their application for support before that date.

THE PROJECTS

4 BAe is a partner in Airbus Industrie which produces the A300 and A310 wide-bodied airliners, and is developing the A320 which has already achieved some 450 orders and options. The A320 was "rolled out" in Toulouse on 14 February in the presence of the Prince and Princess of Wales. Its first flight will take place within a few days and it is due to enter service in 1988.



Overall Strategy

5 Airbus Industrie's strategy is:

- i to maintain their position in the large capacity, medium haul market sector.
- ii to extend their market penetration into the long haul sector and attack the present Boeing monopoly in this sector.
- iii to achieve this by developing and producing a single basic design of aircraft in two variants, thus achieving substantial economies.

A330 and A340

6 The A330 and A340 would have substantially common airframes (including wings supplied by BAe) and equipments, but different engines.

7 The A330 is a wide-bodied, twin engined airliner, seating some 300 (or up to 400 depending on configuration) with a range of up to 5000 nautical miles. It is basically the successor to the original A300 Airbus which has achieved considerable success in terms of market share but is now subject to fierce competition from newer US aircraft. The engines for the A330 will be the largest available civil turbofans, the Pratt and Whitney 4000 or the General Electric CF680C2. The Rolls-Royce RB211 is too small in its present versions.



8 The A340 is a wide-bodied four-engined aircraft, seating up to 290 and with a very long range (7000 nautical miles plus). Whereas the A330 is aimed at a traditional market for Airbus, the A340 is a new departure aimed at capturing a market for long-haul operation on routes where the traffic is insufficiently dense to justify a Boeing 747. The A340 is thus aimed at attacking the B747's current monopoly position in its class. The financial implications of subjecting Boeing to this competition are an important part of the business case for the project.

9 The engines originally proposed for the A340 were either the American/French CFM56 or the IAE V2500, in which Rolls-Royce have a 30% share. The V2500 is the engine currently under development (with launch aid) for the A320. Because of growth in size of the aircraft design, these engines are now inadequate. Recently Rolls-Royce and Pratt and Whitney (the other major partner in IAE) have announced that they are studying a Superfan version of the V2500. This is the project for which Rolls-Royce are applying for launch aid. They are likely to decide whether to commit to development of the project in the first half of April, subject to the outcome of their launch aid application.

10 The CFM consortium is similarly working on an improved version of the CFM 56-5.

The Market

11 The DTI considers the total market for aircraft of the A330 and A340 types over the period 1992-2005 lies in the following ranges, which take account of a range of assumptions on world GDP growth:

A330	A340
1075-1350	125-550



The considerable width of the total market range for the A340 type is due, in this case, to alternative assumptions also being taken about the extent to which such aircraft will match the operating costs of the B747. This factor is seen as critical to the success of any project in this sector of the market.

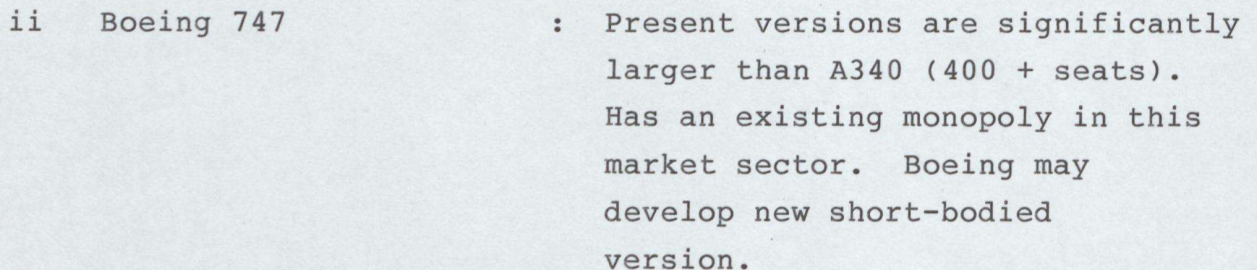
The Competition

12 Competition to the A330 would come principally from:

- i McDonnell Douglas MD11 : A tri-jet derivative of the DC-10, in full development since December 1986. In its medium range version would compete against A330.
- ii Boeing 767 : In service since 1983. Smaller than A330 but capable of further development.

13 The competitors to the A340 would principally be:

- i MD11 : Long range version will have similar capacity and range to latest proposed version of A340. Passenger cabin of MD11 will be wider than A340. But operating economics of A340 should be superior.



A330 : The DTI considers a market penetration of 410 aircraft has a 75% probability of being exceeded. Most likely figure perhaps around 500.

Aggregate : In DTI view, a figure of 550 has a 75%
Sales probability of being exceeded. Most likely
figure perhaps 675. But Airbus Industrie say
over 1000, including 450 A.340's.

15 Airbus Industrie have obtained, or are highly confident of obtaining very shortly, five airline commitments to the A340, covering 36 firm orders plus 21 options. No commitments have yet been obtained for the A330.



16 Airbus Industrie are engaged in a market battle to obtain orders for the A340 against competition from the MD11, which was launched in December 1986, and is claimed by McDonnell Douglas (almost certainly with some exaggeration) to have obtained some 90 orders and options. Airbus Industrie consider it essential to launch the A340 by mid-March in order to match this competition. Specifically, Airbus Industrie hope that a formal launch would capture a prestigious order from Swissair, who are currently examining rival bids and are expected to take a decision on 17 March.

Cost

17 The total estimated development cost (excluding engines) of the A330/340 combined is some \$3½ bn at 1986 prices. This compares to an estimated development cost of either project on its own of over \$2½ bn.

18 BAe's share is estimated at £840m at outturn prices. In addition BAe would need to finance their share of production. BAe estimate their exposure would rise to a maximum of around £1120 m in 1994 in the absence of risk sharing with any other party. BAe's request for £750 m support represents 67% of their total exposure or just under 90% of their development costs.

19 Rolls-Royce estimate their development cost on the V2500 Superfan at £150 m. They are requesting support up to 50% (£75 m).

Selling Price

20 The target selling price for the A330 and 340 will be in the \$60-70 m range (1986 prices), according to version.



Rate of Return

21 Assuming 610 aggregate sales of the two projects up to 2006, (a figure half way between the DTI "most likely" figure of 675 and the "75% confidence" figure of 550) and an average exchange rate of £1 = \$1.30, BAe estimate the rate of return on the project to be 9.4% in monetary terms. Assuming inflation of 4%, this represents a real rate of return marginally above the 5% Treasury criterion applied to low risk public sector projects.

RISKS

22 These projects, however, are undoubtedly high risk in certain respects. DTI officials assess the effect on the rate of return of a 10% increase in key assumptions to be as follows:

10% increase in:	Change in outturn rate of return pa from 9.4%
Sales volume	+ 1.0
Airframe price	+ 4.6
Production man-hours	- 1.6
Non-recurring cost	- 0.6
Exchange rate	- 3.6

Sales

23 The most likely combined sales figure of 675 for the two projects is consistent with Airbus Industrie's historic market



penetration and DTI officials consider it to be reasonably robust, provided the target performance of the aircraft can be achieved. In the large capacity sector of the market, which both A330 and A340 would address, there does not appear to be an unacceptable risk that a major technological development in aero-engines would kill the projects in the market place. (The new so called "propfan" engines now under development are targetted at smaller aircraft).

24 The division of sales between the two projects is more difficult to predict. To some extent a shortfall on one may be compensated by an improvement on the other. We believe the greater sales will be on the A330. This will be the largest twin offered in the market and should have substantial operating cost advantages over its competitors. However, while we consider the overall sales prospects of the A330 are good, it is inevitably a matter of concern that no significant orders are immediately in prospect.

25 The A340 will be operating in a more limited and more competitive market sector. In DTI officials' view success will depend critically on how near the aircraft can get to matching the operating costs of the Boeing 747.

Price

26 The above table shows the return on the project to be more sensitive to the selling price than any other single factor. Boeing and McDonnell Douglas can be expected to compete very aggressively on price. It is critical to the achievement of target operating costs on the A340 that the price should undercut the Boeing 747-200 by \$10M, and the -300 by \$20m. On present projections this looks achievable and the rate of return



calculations build in a substantial margin (the 747's are currently selling in the \$95-106m range). It is nevertheless possible we have underestimated Boeing's ability to cut the 747 price. But:

- i Boeing's resources are not unlimited. To maintain a price cut of, say, \$40m on 747's would seriously dent Boeing's profitability.
- ii To the extent that Boeing reduce the 747 price, they will lessen their ability to cross-subsidise other products in competition with Airbus (eg the 737 and 757). This could help Airbus achieve better prices on the A320.
- iii There would also be a benefit to European airlines (including BA) who might be considering further 747 orders.

Production Costs and Non-Recurring Costs

27 In general, MOD/DTI officials consider BAe's cost estimates are well-founded and subject to acceptable levels of risk. BAe's record on the A320 has been good in this respect.

Exchange Risk

28 The table shows the relatively high sensitivity of the rate of return to exchange rate changes. This is a perennial feature of the aircraft industry, where prices are generally dollar based. Even the US manufacturers are not wholly shielded from these risks as their own programmes become increasingly internationalised.



The Engine Situation

29 For the A330 the engine situation appears satisfactory. The requirement is within the capability of the PW4000 or the GE CF680C2 with relatively minor development. It is unfortunate that the RB211-524 does not look like meeting the thrust requirement. Rolls-Royce, however, are hopeful of persuading McDonnell Douglas to offer the engine as an option on the MD11.

30 For the A340, the present position is considerably less satisfactory. This project has a history of growth in size to meet perceived market demand. At the A.340's proposed size and weight, MOD/DTI officials judged the existing versions of the V2500 and CFM56-5 engines to be at best marginal, and to offer an unacceptably small growth margin: The existing V.2500 has now in fact been withdrawn from offer by the manufacturers International Aero Engines (IAE), makers of the V2500, have instead conditionally offered to Airbus Industrie to develop a V2500 Superfan engine which would give substantially improved performance. IAE (in which Rolls-Royce have a 30% stake) are also hopeful that Boeing will select this engine for the proposed 7J7 aircraft, although at present it is only one of a number of possibilities under consideration by Boeing.

31 This is the project for which Rolls-Royce intend to apply for launch aid. At this stage, discussions are still going on between the IAE partners (principally Pratt and Whitney and Rolls-Royce) to define the proposed engine, in the light of which they will decide whether to proceed with the programme. Until this process is complete (the current target is early April) it will be impossible to carry out a detailed assessment of the programme. DTI/MOD officials are, however, in close contact with Rolls-Royce and we are already aware of at least three areas of potential



technical risk. In addition we are concerned at the level of guarantees, both on performance and delivery date, that have been conditionally offered to Airbus Industrie.

32 The rival consortium CFM (GE/SNECMA) is known to be working on a competitive project to the V2500 superfan. Very little hard information is available on this project. It is a fair assumption that it is at a similar preliminary study stage to the V2500 Superfan project.

33 There is some concern that, with the continued growth in size and weight of the A340, even these new engines would not offer sufficient growth potential. In that event, it may be possible to persuade Airbus Industrie to look more seriously than they have so far been prepared to do at using the RB211-535 (and possibly the rival Pratt and Whitney 2037). These are larger, heavier engines, but should cope easily with the thrust requirement.

34 It is not unusual for there to be some uncertainties surrounding the engines for a new aircraft at this stage. But in case of the V2500 Superfan the degree of uncertainty, the tightness of the timetable, and the extent of the proposed guarantees, give rise to considerable concern at official level in the MOD/DTI.

US Retaliation

35 In recent months another risk has arisen in the form of US threats to take retaliatory trade measures against Airbus if the projects go ahead with Governmental support which, in the American view, may contravene the GATT. This threat is directed particularly at the A340 because of the direct competition between this aircraft and the MD11. If the Americans were to apply



countervailing duties, the competitive position of Airbus in the US would be seriously damaged.

36 The situation on this is somewhat fluid. At recent meetings in European capitals, the Americans met with a robust response at the political level. They are now considering their position. Preliminary indications are they do not intend to seek an immediate confrontation. However if the Airbus projects are launched with government support, we expect renewed pressure from the US.

Airbus Industrie

37 In 1985 considerable changes were made to the top management at Airbus Industrie, including the introduction of a new (British) Finance Director. The new management has proved more cost-conscious and professional than the old. While the structure of Airbus Industrie (a partnership under French law) still leaves much to be desired, we assess the risks of associating with this body to be less than previously. It is encouraging that the French Government has recently signalled a willingness to examine further improvements.

NATIONAL INTEREST

38 Notwithstanding the relatively low rate of return, there are reasons why Ministers might consider that it is in the national interest that BAe should participate in these projects, provided finance can be arranged on an acceptable basis.

39 We believe the projects will go ahead in any event, with financial support from the French and German Governments. It is conceivable that, if BAe refused to participate on a risk-sharing



basis (because HMG had refused support) the company would be contracted by the consortium on a non-risk-sharing basis to develop and provide wings for the projects. This was what happened in 1969 when a previous British Government declined to give launch aid for the A.300. However, we believe BAe's chances of achieving such a position again are virtually nil. The industrial situation has changed since 1969, and there are now other companies (eg MBB of Germany) who would be willing and able to take on the work. The "political/industrial" situation has also changed. Since 1979 BAe have again been full risk-sharing partners in Airbus, with Governmental support. The Airbus enterprise has developed from a single project collaboration into the most conspicuous example of European civil industrial cooperation. The A320 has already achieved considerable sales success. Airbus is seen by the French and German governments as a continuing enterprise embracing a growing family of products. If the UK now tried to withdraw from its full partnership position, there is little doubt that at Governmental as well as industrial level, our partners would seek means to exclude BAe from participation altogether. We think, therefore, that the possibility of pulling off the 1969 trick a second time must be dismissed from consideration.

Wider Considerations

40 The developments in the "political/industrial" scene in the past 15 years also provide positive reasons for concluding that it is in the national interest that BAe should participate in the projects as full partners. Although Airbus is not strictly an EC venture, it has come to be regarded as a major European industrial partnership and a manifestation of the growing ability of European industry to compete with America. As such (and despite current US complaints about specific trading practices), Airbus is firmly



within the principles underlying NATO and the fundamental philosophies of the Western alliance.

41 British participation in Airbus is therefore, we believe, a matter of some political importance to HMG both in relation to our European partners and more widely. Conversely, non-participation would entail certain penalties in terms of some of HMG's basic political tenets.

42 There are contrary arguments. The main one is that it does the UK no good to be seen to be continuing to put resources into prestige projects with a poor rate of return. This can be seen as the UK further delaying the painful process of adjustment to its appropriate world position.

Industrial Implications

43 For BAe itself, non-participation in the projects would almost certainly make it impossible for the company to participate in any future Airbus project. BAe's prospects of continuing to be in the large civil transport business would then depend on their ability to negotiate collaborative arrangements with US companies. The company would be in a weak negotiating position (and would be debarred by contractual obligations to Airbus from collaborating on any direct competitor to an existing Airbus project). There is therefore a risk that non-participation in the projects could signal the permanent withdrawal of BAe from the large civil transport business. The implications of this for BAe's remaining business are uncertain:

- i) It is not clear how BAe's position on existing Airbus projects (including the A.320) would be affected. We believe there is a reasonable chance that for practical reasons BAe's existing contracts would not be affected.



But the company's influence within the consortium would probably diminish. This would be a matter of concern, because BAe would remain risk-sharing partners and the plain fact is the French and Germans have a different attitude to risk than we do.

- ii) The effect on BAe's other civil business (146, ATP, Jetstream etc) is also uncertain. BAe consider it would be adverse, because their overall marketing effort depends on the ability to offer a complete range. There is probably some truth in this, but we would not put much weight on it.
- iii) The effect on the company as a whole would be significant. On present trends, the value of business placed with BAe by the MoD is likely to diminish in coming years, irrespective of the decision on the EFA. All the major aerospace companies aim to take advantage of alternating cycles in their military and civil businesses. BAe's present corporate forecasts assume a relative expansion of their civil business over the next two decades. Withdrawal from Airbus would require a major adjustment to this strategy. Essentially BAe would begin to face a similar problem to Westland though, fortunately, with greater resources to meet it.

Plant Closure

44 BAe have said non-participation in the projects would lead to the closure of either the Filton or Chester sites (the latter is in fact in N. Wales). There is no reason to doubt that this would be the case.



Equipment Companies

45 There is no doubt that if BAe do not participate in the projects as risk-sharing partners, UK equipment companies will be at a severe disadvantage in winning contracts on the projects. The value of equipments on each production aircraft can be expected to be around \$12-15M at 1986 prices. With BAe participation, UK equipment companies would expect to pick up \$1½-2½M of that: without, probably around a quarter of those figures. Since Airbus is increasingly regarded as the domestic launch base for the civil products of European equipment companies, the exports of our firms would also be damaged.

Rolls-Royce

46 By contrast, Rolls-Royce's position is unlikely to be much affected by BAe non-participation in the projects. There is a risk that, if the UK withdraws from Airbus, the French would try to exclude the V.2500 engine from consideration for the A.340 in favour of their own (in part) CFM 56. We would judge, however, that they would not do this in the overall commercial interests of the project, although they might in various ways give more favourable treatment to the CFM engine if we were not there to protect RR's interests.

FINANCE

47 BAe have proposed to provide at their own risk all the production finance required (some £280M.) plus somewhat over 10% of the development finance (£90M.), a total of £370M. While BAe would also be content to raise the rest of the required development finance (£750M.) from their own or commercial sources,



they have stated that they cannot accept the risk attached to this sum consistently with their responsibilities to shareholders. They have proposed that the Government should assume this risk by means of one of two routes:

- i) launch aid; or
- ii) a guarantee of commercial borrowing, coupled with direct Government financing of the interest costs of such borrowing.

Private Sector Risk Funding

48 Working through BAe and our advisers, Morgan Grenfell, we have explored further whether private sector risk capital could be made available to fund any part of the required £750M. A number of banks, including overseas banks, have been approached, but with negative result. All the banks insisted that the projects were too long term and high risk for them to contemplate involving themselves in except under fully guaranteed conditions. Our reluctant conclusion is that this route is not available.

Ways of Reducing BAe's development costs

49 We have explored three main ways in which BAe's costs might be reduced:

- i) Bring in another partner: Exploratory talks have been held with McDonnell Douglas at the UK's initiative. Unfortunately it has proved impossible to work out a deal, and MDD have now launched the MD11.



- ii) Drop the A.340. Because of the substantial commonality of the wing, the saving of development cost to BAe would be comparatively small, though there would be a saving on provision of flight test wing sets, tooling and related items. Total cash flow savings probably up to £120M (this figure would be subject to confirmation by BAe although it is based on earlier discussion with them).

Unless the need to find such a cashflow saving became critical, we would not recommend this course.

BAe consider the A.330 a non-viable project on its own. Although the A.340 is the more controversial project of the two, we believe it will do well to achieve more than 200 sales in a very competitive market. But it is those additional sales, achieved at comparatively low additional cost, that lift the aggregate rate of return, if not to attractive levels, at least to viability. In addition the A.340, by attacking the B.747 monopoly, is expected to bring financial benefit to Airbus beyond its own sales revenues.

- iii) Reduce BAe's workshare: BAe are bidding for a workshare of around 25% on the project airframes. The company could reduce this bid and give some work away, probably to the Germans.

For technical reasons, there are only limited practical options available without imposing unacceptable cost penalties on the whole project. But BAe's costs could be reduced by perhaps around £30-40M by accepting a lower work-share (this figure also subject to confirmation by BAe). Again, we would



not recommend this unless the need to find such a saving in the financing burden became critical.

Views of DTI and Morgan Grenfell

50 Both DTI officials and Morgan Grenfell consider BAe are unjustified in insisting that they can only take the risk on £370M and not on any of the £750M remaining cost. In the DTI's view, agreement with BAe ought to be feasible on the basis of launch aid of £336M (40% of BAe's development cost) provided the support is allocated against design and development cost. Levies and fixed returns would be designed to equalise the return to HMG and BAe at 9.4%. (But note this leaves out of consideration any subsidy element in official support for A.330/340 export finance in future years). Such a level of support would appear likely to protect BAe's future profits against unreasonable deterioration during the development phase of the projects. However, because of the impact of this level of support on gearing, the Department considers that support up to £420M (50% of development costs) could be justified, payable in respect of all launch costs. In this event, the Department considers that a faster and more risk-free schedule of repayments by BAe should be requested.

51 Morgan Grenfell also take the view that the £420M (50%) level would be justified.

Launch Aid Route

52 Under this route, the full amount of whatever support might be agreed would be a charge on public expenditure. The return would be via levies on sales, except that we would hope to negotiate that at least 20% of the advance to BAe was repayable on a fixed schedule, irrespective of sales, thus very substantially



reducing the Government's risk on that element. Subject to negotiation with BAe, the launch aid would be payable over the period 1987/88 to 1991/2, assuming launch aid of £336M payable against design and development costs.

Guarantee Route

53 Under this route, the agreed level of finance would be raised commercially and would not be a charge on public expenditure. However the agreed amount would be guaranteed and, if sales fell short of the level necessary to provide sufficient levies to repay the commercial borrowing, or the project were unexpectedly cancelled, the resulting payments under the guarantee would be a public expenditure charge. In addition the interest costs of the borrowed finance would, under the scheme proposed, be paid by HMG and would be a charge on public expenditure. In consideration for the guarantee and interest support, the Government would receive a fixed repayment and levies on sales as under the launch aid route. The Government's cash outflow under this route might, subject to negotiation with BAe, be restricted to £82M over the period 1987/8 to 1991/92, and might peak at £203M in 1997. However the Government's return on the project would be reduced under this route because of the need to remunerate the financial intermediary.

Tables

54 The table at Annex A sets out a comparison of the Government's possible cash position over the period 1987/8 to 1991/92 under the launch aid and guarantee routes, on the assumption that support to the value of £336M is given either by launch aid or by guarantee. The figures must be taken as



illustrative only, since the exact figures would depend on the detailed negotiation with BAe of a large number of variables.

55 The figures assume a degree of front-end loading of support, though not to the same extent as was done for the A.320. There is likely to be some room for trade-off between amount and timing of support.

56 For convenience, the Government's position on the A.320 is also shown on the table. 1987/8 will see the final launch aid payment on the A.320 out of the agreed £250M commitment. By 1991/92 £90M cash inflow will have been received from fixed repayments and levies on sales. A high level of confidence can be placed on these figures; indeed they have been calculated on a conservative basis for 1990/91 and 1991/92 and may well be exceeded.

57 Taking the A.320 into account, there would be a substantial net cash inflow on the Government's overall Airbus account in 1990/1 and 1991/2 if the interest support route were used for the A.330/340. If the launch aid route were used, the Government's overall cash position would approximately break even in 1991/92.

58 Annex B shows a more detailed scheme of how a support scheme for £336M might be applied. Again, these figures should be taken as illustrative only.

Comparison of Launch Aid and Guarantee Routes

59 The Government's risk would be the same under either route. But the guarantee and interest support route has the advantage over the launch aid route that the the cash outflow from the Exchequer is substantially less in the earlier years.



60 The disadvantages of the guarantee and interest support route are:

- i) As a general policy, the Government tries to avoid undertaking contingent liabilities (although in this case they would be precisely quantified).
- ii) To the extent that the commercial interest rate charged by the guaranteed lenders exceeded the rate at which the Government itself could borrow to finance launch aid, there would be a financial penalty to the Government to be set against the cash flow benefit.
- iii) Since the interest rate might vary, the Government's forward public expenditure commitment would be less certain than under a launch aid scheme expressed as fixed amounts (not a strong point, since the Government's borrowing rate to finance launch aid would also be subject to variation). However, BAe should be able to fix a substantial part of interest costs through financial facilities now available.
- iv) More important, if the programme were subject to delay and interest charges increased, the Government would, under the scheme as proposed, have to meet the increased charges. This is not the case under a launch aid scheme expressed as fixed amounts. BAe may be prepared to introduce a cap on the level of interest supported under the scheme.



- v) The guarantee and the fact that the commercial interest payments were being officially funded would need to be disclosed. Although we would contend such funding is not inconsistent with the GATT such disclosure would be unhelpful in the context of the current discussions with the Americans. This point is one of some concern.

61 The choice between the two routes is a fine one, and the Treasury will have a view as well as the DTI.

PROVISION OF FINANCIAL INFORMATION ON AIRBUS

62. There has been criticism in some quarters that Airbus Industrie does not publish an annual report and accounts. This is true. However, Airbus Industrie does produce annual profit and loss accounts, and these are properly audited. In addition, Airbus partner governments receive copies of these accounts as well as other information from Airbus Industrie on its financial results. As a Groupement d'Interet Economique established under French law Airbus is not required to publish accounts, and this situation cannot be changed. Moreover, it would not be in the interests of AI or BAe to have detailed information published which would be of great value to their international competitors, who do not publish financial information about programmes of theirs which compete with Airbus.

63. The financial consequences for British Aerospace of their participation in the Airbus programmes and partnership are, of course, reflected in the Company's published annual accounts. The same is true of BAe's partners in the other countries. In the course of appraising BAe's launch aid application, officials have obtained detailed forecasts of BAe's profits



on the A320 and A330/A340 programmes up to the year 2000, and the financial assessment of the project has taken account of these. However, officials have recommended that DTI Ministers should seek, as a condition of launch aid, a strong monitoring package which, among other things, would require BAe to provide the Department annually with a breakdown of their Airbus results, programme by programme. This information would have to remain confidential, but it would enable the Government to monitor the programmes, and BAe's financial health, very closely. In addition, Airbus Industrie last year promised governments that it would produce a 10 year strategic financial plan, giving information about individual programmes. This plan is expected to be available later this year, and should facilitate monitoring of Airbus's progress at the global level.

VIEWS OF FRENCH AND GERMAN GOVERNMENTS

64 The German Government has already taken a decision in principle to give support to the A.330/340. Our German colleagues have told us that a formal Cabinet decision is expected on 28 April.

65 The German Government is expected to finance up to 90% of MBB's development costs (though excluding education costs) on terms which require the company to return only the capital invested in monetary terms. In contrast to their arrangements on the A.320, the German Government will aim to avoid providing additional finance for A.330/340 production. This is likely to lead to some political controversy.

66 The French Government appears also to have decided in principle to support the projects. They are trying to reduce Aerospatiale's direct dependence on the state and will probably



try to negotiate the level of support down to 65-70% of Aerospatiale's development costs. So long as Aerospatiale remains nationalised the concept of the company contributing risk finance is somewhat fictional.

AIR DIVISION

DTI



ANNEX A

ILLUSTRATIVE COMPARISON OF PUBLIC EXPENDITURE POSITION 1987/8 -
1991/2

Each column assumes support provided on £336M.

Column (1) assumes launch aid payable against design and development costs only.

Column (2) assumes £336M of commercial borrowing by BAe is guaranteed, and the related finance charges are advanced by HMG.

Column (3) shows the launch aid payments for the A.320 and in later years, expected receipts under the launch aid contract.

	£M		
	Launch Aid for A.330/340	Interest Support	A.320 Payments/(Receipts)
1987/8	45	2	44
1988/9	80	9	-
1989/90	78	16	(12)
1990/91	75	24	(50)
1991/92	58	31	(72)
	336	82	(90)

Notes to the Table

- i) The launch aid is assumed to be front-loaded and payable against design and development costs. If paid against



all non-recurring costs, the total would be the same but the payments would be accelerated.

ii) The interest support figures assume a 10% rate.

Although the cash flow would only reach £109M by the end of 1992, under this route cash outflow would continue and might peak at over £200M by 1997.

iii) Under the interest support route, the rate of return to HMG is less (8%) than under the launch aid route (9.4%) on similar assumptions about the levy profile, because of the need to remunerate the financial intermediaries.

iv) Under the interest support route, the expenditures may increase if the project is delayed or interest rates increase (unless BAe agree to incorporate safeguards against this).

v) If the guarantee associated with the interest support route were called, additional public expenditure would result in later years.

vi) The receipts on the A.320 include £50M on a fixed repayment schedule over 1990-92. The remainder are estimated levies on sales which are considered robust in the light of the present order book. Levies are likely to continue until the end of the 1990's.



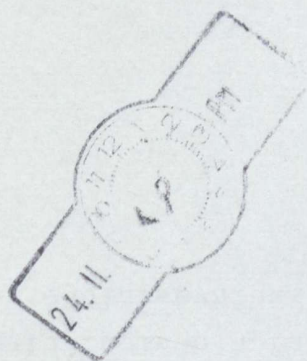
ANNEX B

Possible Support Scheme for BAe

- i) Total support £336M.
- ii) Fixed repayment of £75M in 1994.
- iii) The balance to be repaid by means of levies on sales of first 550 aircraft.
- iv) Levies to be calculated so that, when aggregated with the fixed £75M. return, HMG would achieve a 9.4% monetary return (cf 7% on the A.320) over 550 sales on a launch aid scheme, or 8% on an interest support scheme.
- v) Further levies to be payable if sales exceed 610.
- vi) Repayment to HMG to be accelerated if BAe profits exceed pre-determined projections by 10% or more.

All these terms would be subject to negotiation with BAe and there is no certainty they can be achieved.

The scheme would be embodied in a contract between BAe and MoD(PE) and would include a full range of monitoring arrangements to enable regular evaluation of progress.



condemned