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APPOINTMENTS IN CONFIDENCE
NORTHERN IRELAND OFFICE

cc. PW
E(A) folder next
week

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Andrew Turnbull Esq
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19th July 1985

Dear Andrew,

SHORTS : 1984 CORPORATE PLAN UPDATE

At the E(A) meeting scheduled for 29 July consideration will be given to the Shorts' 1984 Corporate Plan Update and prospects for privatisation.

.....
The Secretary of State will be tabling a memorandum summarising the main issues arising from the Company's plan and discussing the way forward on privatisation. You will however wish to see the attached Note by Officials which has been agreed with interested Departments and which provides an in-depth analysis of the Corporate Plan issues.

Copies of this letter plus enclosure go to the Private Secretaries to E(A) members and to Sir Robert Armstrong.

Yours Sincerely
Neil Ward.

N D WARD

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ssd

SHORT BROTHERS PLC

REVIEW OF 1984 CORPORATE PLAN UPDATE

July 1985

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BACKGROUND

1. Short Brothers PLC is a Company wholly owned by the Government and operating in the aerospace industry. It has historically analysed its activities into three divisions as follows:

Aircraft : manufacturing small commuter aircraft
Aerostructures : manufacturing parts built on a subcontract basis for major aircraft manufacturers
Missiles : manufacturing Blowpipe, Javelin and Seacat missiles.
2. Control of the Company is the responsibility of the Secretary of State for Northern Ireland acting through the Department of Economic Development (DED) who hold 90.5 per cent of the issued shares, the balance being held by the Department of Trade and Industry. DED has retained management consultants Touche Ross (TR) to assist in the appraisal of Shorts' Corporate Plan.
3. Shorts remains the largest manufacturing employer in Northern Ireland, with a current workforce of some 6,700, approximately seven per cent of total manufacturing employment. Its turnover in the financial year to March 1985 was about £197 million of which about £130 million was exported.

PERFORMANCE IN RECENT YEARS

4. Shorts has received substantial cash support and in 1985 made its first overall profit since 1974. Summary statistics in recent years are:

	1979/80	1980/81	1981/82	* 1982/83	1983/84	+ 1984/85
	£m	£m	£m	£m	£m	£m
<u>Profitability</u>						
Turnover	91	111	122	139	163	199
Profit/(Loss) after tax	(9)	(13)	(15)	(7)	(2)	1
<u>Cashflow</u>						
EFR Cumulative	6	32	65	74	89	95#
EFR Annualised	6	26	33	9	15	6

* adjusted to reflect change in accounting year end to 31 March

+ Subject to audit

This total consists of £30.6 million in DED funding and £64.4 million in bank borrowings

PROGRESS SINCE LAST PLAN SUBMISSION

5. Ministers have endorsed Shorts' plans in recent years subject to specific conditions on issues such as cost savings and stock reductions. The strategy behind the 1983 Corporate Plan Update broadly continued that agreed in earlier years and anticipated a period of substantial growth. This strategy was approved subject to the Company:

- continuing to improve stock ratios;

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- providing to DED more information in areas such as non-recurring expenditure, capital expenditure, new work and progress in overhead reduction plans.

The Company has made progress in these areas as outlined in Annex I.

6. Since approval of the 1983 Update, Shorts has succeeded in securing significant new business, some of which was anticipated in that Update. The specific major contracts, which in total could provide turnover of up to £593m over the next ten years, are described in more detail in Annex II.
7. The 1983 Corporate Plan Update directed that the company achieve an operating profit of £13 million for the year to March 1985 and an overall profit of £5 million for that period. Cumulative EFL at March 1985 was to be within £87 million. Due primarily to a downturn in SD 360 sales estimated for 1984/85, these figures were revised in late 1984 with Ministers' approval to £2.5 million overall profit and an EFL of £95 million subject to certain conditions which Shorts are able to meet (Annex III).
8. For a variety of reasons the company failed to meet the revised profit target although it did stay within its revised EFL. Performance in 1984/85 was as follows:

1984/5 Performance (unaudited figures)

	Original Plan	Estimated Actual	Variance
	£m	£m	£m
Gross Margin			
- Aircraft	13.5	7.5	(6.0)
- Aerostructures	2.9	9.5	6.6
- Missiles	15.6	13.6	(2.0)
Total Gross Margin	<u>32.0</u>	<u>30.6</u>	<u>(1.4)</u>
Overheads	16.8	18.5	(1.7)

	Original Plan	Estimated Actual	Variance
	£m	£m	£m
Operating Profit	15.2	12.1	(3.1)
Interest, etc	10.0	11.1	(1.1)
Consolidated Profit/	<u>5.2</u>	<u>1.0</u>	<u>(4.2)</u>
Cumulative External Funding	<u>87.2</u>	<u>95.0</u>	<u>(7.8)</u>

9. The main reasons for variations from plan are given in Annex IV. Overall, despite achieving profit, 1984/5 was not a good year for Shorts and this point is commented upon further in paragraph 77 below.

INTRODUCTION TO THE 1984 CORPORATE PLAN UPDATE

10. The underlying strategy behind the 1984 Update is the creation of a company suitable for privatisation in the medium term. A number of

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actions are proposed to achieve this objective, in particular the broadening of the product base and a capital restructuring.

11. The product base is assumed to be expanded by the company obtaining several new contracts, achieving a breakthrough in military sales, and developing a stretched 45 seater aircraft (Annex V) together with variants of existing aircraft. Turnover is anticipated to rise by a compound rate of 8.5 per cent per year and by 1988/9 58 per cent of business is anticipated to arise from projects not obtained at the time of the 1983 Update.
12. Profitability is also anticipated to improve, despite increased development costs of over £160 million required for the above expansion programme. The most important factor improving profits, however, is a proposed capital restructuring whereby £55 million of debt would be replaced with equity.
13. The 1984 Update shows significant additional cash requirements over the period. Peak EFL is £137 million, £47 million more than the peak EFL shown in the 1983 Update.
14. To summarise the changes between the 1983 Update and the 1984 Update:

	1985/86	1986/87	1987/88	1988/89
	£m	£m	£m	£m
<u>Net Profit</u>				
1984 Update	8	10	12	16
1983 Update	11	10	13	
<u>Cumulative EFL</u>				
1984 Update	110	137	132	130
1983 Update	90	89	84	
<u>Annualised EFL</u>				
1984 Update	15	27	-5	-2
<u>Employment</u>				
1984 Update	7400	7700	7800	8200
1983 Update	7100	7700	7900	

15. The main reasons for these changes are:

- new project

The 1984 Update includes three major assumed new projects. These are calculated to require product development funds amounting to £55 million by 1988/89, and were not included in the 1983 Update, although reference to them was made in the text. Further details are to be found in paragraphs 26 to 31 and 34 below. Significant new projects and investments are of course subject to approval.

- interest charges

The 1984 Update shows a reduction in interest charges caused by an

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assumed injection of £55 million additional equity at 1 April 1985. The total effect in terms of reduced interest charges arising from this adjustment is £21 million in the three years 1985/86 to 1987/88, including reducing underlying 1985/86 cash requirements by some £6m. Offsetting this partially is an increase in interest brought about by the increase in EFR.

- lower exchange rate

The 1984 Update assumes lower average dollar/sterling exchange rates than did the 1983 Update. This results in improved profits over the period 1985/86 to 1987/88 of £13 million.

- development work written off

Higher development activity leads to a reduction in profits of £18 million in the years 1985/86 to 1987/88.

- lower missile profits;

The introduction of the more advanced Javelin missile is now anticipated to reduce sales of the Blowpipe missile significantly in export markets. The adverse effect of this adjustment amounts to £7 million in the years 1985/86 to 1987/88.

- higher costs;

The 1984 Update includes an additional £7 million in unrecovered overheads in the years 1985/86 to 1987/88, as discussed in Paragraphs 60, 61 and 67.

- development costs;

The Company made a change to the treatment of certain development costs. This is explained more fully in Annex VI.

ANALYSIS BY DIVISION

Aircraft

16. The Aircraft Division has three major products:

- Skyvan - a small military/freight aircraft
- SD 330 - originally a 30 seat commuter aircraft, now adapted principally for military use
- SD 360 - a 36 seat commuter aircraft which first entered service in 1982.

Skyvan

17. One Skyvan was sold during 1984/85 leaving roughly six aircraft still provided for in stocks, work in progress and purchase commitments. The plan assumes a further seven sales by 1989. Shorts claim that the outdated design of this aircraft will not be a restricting factor on these sales. We nevertheless believe it unlikely that, despite its attractive STOL characteristics all seven will be sold.

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The effects of reducing Skyvan estimates to say three aircraft are a cash loss of £2.4m and a reduction of £0.4m in profit over the planned period. The Company maintains that it is better to keep the Skyvan production line going as long as there are reasonable chances of selling the aircraft, rather than close the line down and face higher work-in-progress write-offs. The Department is prepared to endorse this viewpoint, although it will have to be kept under review.

SD 330 and Variants

18. The SD 330 now sells principally in military or freight variants. The variants either developed or under consideration for this type are described in Annex VII. Sales forecasts for these aircraft included in the 1984 Update compared to last year's plan are as follows:

	1984/85	1985/86	1986/87	1987/88	1988/89
<u>1984 Update</u>					
Sherpas (for USAF)	8	10			
UTTs*	4	6			
LMTs*			15	13	10
SD 330 Total	<u>12</u>	<u>16</u>	<u>15</u>	<u>13</u>	<u>10</u>
<u>1983 Update</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>8</u>	<u>10</u>

* for definition see Annex VII.

19. Compared to 1983, the 1984 Update includes higher sales of 330s following the award of the EDSA contract, and a thus more optimistic viewpoint of future sales to the USAF. It should be noted, however, that the EDSA contract has not yet led to a rush of orders for SD 330 military variants, contrary to the company's anticipation.
20. There are two distinct groups of sales prospects for the SD 330 military variants:
- (i) the Armed Forces of the United States. USAF currently hold options to purchase up to 48 further EDSA aircraft. Funds for such purchases are not yet expected to be included in relevant budgets approved by Congress before 1987. Currently, Shorts do not know whether funds will be made available and options converted to firm orders;
 - (ii) the Armed Forces of other countries, principally third world nations. A summary of potential markets is given in Annex VIII. This shows that, whilst each of three different forecasts indicates a market of between 50 and 100 aircraft, the forecasts differ widely. Taking a pessimistic view of individual country prospects reduces the total market to 30 to 40 aircraft. The SD 330 would not be the only aircraft competing for such sales.
21. Given the possible low level of demand outside the United States, officials believe that the forecasts put forward by Shorts are

achievable only if USAF exercises a significant proportion of its EDSA options. Failure to do so is likely to lead to a lower level of sales, reducing profitability by £5m in the Plan period and increasing cash requirements by a similar amount.

22. A further factor is the development of the LMT variant of the SD 330. USAF have indicated that they may be interested in obtaining this variant if they were to exercise their options. If not sold to the USAF, the above forecast indicates limited potential elsewhere and little possibility of recovering development costs if they were to be at the level quoted by Shorts, ie £5m.

Furthermore it is unlikely that the prior development of the LMT would be a critical factor in the decision by the USAF as to whether or not to exercise their EDSA options. Officials therefore believe that it would be sensible for Shorts to continue LMT development work only if USAF order this variant and pay for all development or if full amortisation could be achieved on a prudent estimate of non-USAF sales. Such an approach could save over £4m in cash over the next two years. The Shorts board, however, have not yet committed the Company to the LMT development. They have instead instructed their engineers to try to find ways of cutting the development costs to a more attractive level.

SD360

23. The SD 360 remains the main product of the Company's aircraft operations. Following a mid-year drop in demand and production problems towards the end of the year only 26 360s were delivered in 1984/85 against 36 included in the 1983 plan. The recently publicised sale of eight aircraft with options for a further seven to mainland China was, however, a significant breakthrough and may indicate that further sales to this market are possible.
24. The full sales forecast over the plan period including a comparison with last year's plan is:

SD 360 Sales Forecasts

	1984/85	1985/86	1986/87	1987/88	1988/89
SD 360 - 1984 Update	30	26	22	15	5
SD 360 - 1983 Update	36	30	28	25	

If China were to exercise its option for seven further SD 360s soon, the 1985/86 target is seen as being slightly pessimistic. It should be noted, however, that China may be considering a cut-back in imports to relieve its foreign exchange difficulties.

25. During the three years 1985/86 to 1987/88 20 SD 360s have been removed from the plan compared to the last Update. In the first two years this reflects a lower current view of the SD 360 market. In the latter years the proposed introduction of the SD 450, a stretched 360, is seen as reducing demand for the SD 360. TR's recent studies into the SD 360

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market indicate a potential demand of between 12 and 24 aircraft per annum in the free world over the period under review, with demand tending to decline over time from the top to the bottom of the range. Sales to China would be in addition to these figures. Sales of SD 360s included in the plan therefore appear reasonable, and have been endorsed by DTI.

New Aircraft Development

26. The 1984 Update foresees a gap in the company's product range in the late 1980s and early 1990s after the SD 360 becomes overtaken by technological advances and before the company is able to develop a completely new product. The 1984 Update shows the introduction of the SD 450, a 45 seat stretch of the SD 360, to fill this gap. This project was excluded from the financial forecasts in the 1983 Update. At this stage a full analysis of such a project is not available and preliminary estimates of costs and income are included in the Plan for indicative purposes only. The company board expect to make a development decision in the course of the summer. Shorts have provided some additional information on the project and this is given in Annex V.
27. The proposed introduction of the SD 450 is seen as largely replacing the SD 360. If the SD 450 were not introduced it is possible that the commercial life of the SD 360 could be extended, and sales of the SD 360 would be higher than forecast in the later years of the plan. This would, however, probably involve introducing some improvements to the SD 360.
28. Statistics of the SD 450 included in the plan are as follows:-
- | | 1985/86 | 1986/87 | 1987/88 | 1988/89 |
|-------------------|---------|---------|---------|---------|
| Sales (No.) | - | - | 10 | 15 |
| Contribution (£m) | (2) | (2) | 13 | 16 |
| Cash flow (£m) | (5) | (24) | 8 | 16 |
29. For launch in the early 1990s Shorts are contemplating the development of a third generation commuter aircraft (no impact on this plan's financings). If they are to remain in airframe production, they are undoubtedly right to postpone development until technological developments in structural materials, avionics and possibly power units might give them a significant lead over competition. It is noteworthy that similar considerations have persuaded Boeing of a similar decision, although of course the type and scale of technology and costs are entirely different.
30. Shorts aim to undertake development of a new generation aircraft in conjunction with a foreign manufacturer; possibly Embraer (Brazil) under whose licence they will manufacture the RAF's new trainer. This would continue desirable trends in the wider aerospace industry and will reinforce collaboration arrangements in aircraft/aerostructures with Fokker, Rohr and Lucas. The Department believes however that there may also be a case for Shorts to consider the principle of collaboration with

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a US manufacturer since the largest single market is likely to remain in the USA where protectionist pressures may increasingly militate against foreign aircraft.

Military

31. "Military" business in the 1984 Update is not specifically identified as being the RAF trainer; the plan was written before Shorts were awarded this contract. The figures included in the plan are, however, extracted directly from the submission upon which project approval for the trainer was given. The "best and final offer" terms upon which the contract was awarded, although calculated as generating the rate of return required by DED, do not produce the same figures as are included in the Plan. The adjustment is as follows:

	1985/86	1986/87	1987/88	1988/89
	£m	£m	£m	£m
Cash flow in Plan	(6)	(6)	(4)	3
Cash flow based on contract terms	(6)	(11)	(5)	4
*Adjustment	<u>-</u>	<u>(5)</u>	<u>(1)</u>	<u>1</u>

* caused by differences in timing of export sales.

The adjustment in years after 1988/89 is all positive and the rate of return over the full project life is maintained.

Aerostructures

32. Sales forecasts for the main aerostructures projects currently on hand or under development are as follows:

<u>Product</u>	<u>Unit</u>	1984/85	1985/86	1986/87	1987/88	1988/89
757 Wingflaps	sets	30	35	47	60	60
747 Doors	sets	19	32	24	24	24
F28 Wings	sets	13	12	-	-	-
BAE 146	Pods	72	112	92	92	92
RB211 524	Pods	18	60	-	-	-
RB211 535	Pods	28	53	52	20	10
F100 Wings	sets	-	3	19	27	32
V2500	Pods	-	-	-	-	20

33. TR have completed a study of the large jetaircraft market with particular reference to Shorts' aerostructures business. The above figures are reasonably consistent with that study, although some do appear to be at the upper end of the potential ranges of likely demand. In order to demonstrate the possible effect of any over-optimism, Shorts have calculated the effect of sales at the lower end of the TR ranges. This exercise resulted in profits reduced by £10.1 million and outflow increased by £9.0 million over the last three years of the plan period. DTI have expressed their views on possible aerostructures volumes. These are broadly compatible with those arising from the TR study and DTI reach the same conclusion, ie that Shorts' forecasts are achievable but slightly optimistic.

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34. The plan takes a bullish view of possible acquisition of new aerostructures business by Shorts. The world market for aerostructures is very competitive, and Shorts' current price advantage is largely linked to current exchange rates. The plan assumes that:

- Boeing will place a major contract with Shorts for a significant part of one of their aircraft with deliveries commencing in 1988/89.
- aerostructures business is gained at the rate of one major contract every two years. No assumptions are given as to what nature of work this would involve.

35. The plan assumes that development costs on contracts currently obtained will require £45 million, the above speculative contracts are assumed to cost a further £21 million. In particular, the figures included in the plan regarding the assumed major Boeing contract are as follows:

	1985/86	1986/87	1987/88	1988/89
Contribution	-	(1)	(3)	(1)
Cashflow	-	(1)	(4)	(9)

Boeing's announcement that they intend to delay introduction of a propfan aircraft until 1992 at the earliest may delay Shorts' expenditure on collaborative projects.

Missiles

36. The main missile product is the Javelin ground to air missile which was introduced as a development of the successful Blowpipe missile. Blowpipe sales continue, albeit at a lower level than previously, as do those of Seacat, a naval surface to air weapon.

37. Sales of Blowpipe to export markets have suffered as a result of the introduction of Javelin. Customers appear to prefer to wait until they can secure supplies of the latter. As a result forecast sales have been reduced from last year's planned levels. Volumes for missile production are shown below -

	1984/85	1985/86	1986/87	1987/88	1988/89
Blowpipe	689	120	150	-	-
Javelin	2072	2610	2580	3000	3000
Seacat	200	166	200	200	200

DED regard these volumes as being achievable, given that confirmed MOD requirements include over 4000 Javelin in the 2 years to March 1987.

38. In the short term, further export sales still need to be made by Shorts to achieve 1985/86 targets. We understand that revenue from such sales has been rescheduled so that it is still received in 1985/86, but more is now anticipated to arise nearer the year end. In addition, the

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volume of orders still to be obtained may well be higher than at the corresponding period last year. There is a risk, therefore, that missile margins and cash inflow will not be achieved due to a shortfall in export volumes. This would have a distinct effect on the company's ability to adhere to its 1985/86 EFL.

39. A key element in Shorts longer term missile strategy is the winning of the development stage of a contract for a high speed missile. This project, designated S14 within Shorts, is regarded as being crucial to the division's future as it represents the principal hope of continuing Shorts' UK leadership in close-range air defence systems beyond the early 1990s. Shorts do not have a European partner for S14 development. MOD believes that such collaboration would offer significantly enhanced sales opportunities in the medium term. DED believes that the commercial case for European collaboration remains unproven and should be considered more closely at the time of contract decisions.

SPECIFIC MAJOR ISSUES

New Work

40. The plan assumes that development costs for new work will total some £163m over the next four years. As has been noted, much of this expenditure is related to the Boeing 150 seat aircraft and the SD450 projects. The sums involved are substantial and, given the speculative nature of these projects and the lack of subdivision within an agreed EFL, officials recommend that sanction to relevant development costs should not be given in Ministerial approval of the plan. This does not imply rejection of these projects at this stage, rather that EFL funding should not be approved with such amounts included. The nature of the projects is such that both will require collective Ministerial agreement which, if given, could then also extend to sanctioning corresponding changes to the EFL. This approach is suggested as it avoids the risks of leakage from the new work element, should the relevant projects either be delayed or not obtained.

Capital Structure

41. With its current capital structure, Shorts is unlikely to improve its profitability significantly. The 1984 Update does show a sharply rising profit trend, but a key element in this is the capital restructuring assumed to take place in April 1985. Without this restructuring, profits are significantly reduced and cash outflow, in the form of higher interest payments, sharply increased:

	1985/86	1986/87	1987/88	1988/89
	£m	£m	£m	£m
<u>Profit</u>				
In 1984 Update	8	10	12	16
If current structure remains	2	3	4	7
Difference	<u>(6)</u>	<u>(7)</u>	<u>(8)</u>	<u>(9)</u>

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<u>Cashflow:</u>				
In 1984 Update	110	137	132	130
If current structure remains	<u>116</u>	<u>150</u>	<u>153</u>	<u>160</u>
Difference	<u>(6)</u>	<u>(13)</u>	<u>(21)</u>	<u>(30)</u>
Annualised EFR	21	34	3	7

42. The Company's current capital structure has arisen as a result of its financial performance in recent years. Whilst profits have improved, Shorts still find it difficult to reduce its interest burden. There are a number of reasons for this, including:

- a narrow product base;
- a low proportion of defence work;
- the high funding requirements of development work.

43. These reasons are significant in the context of privatisation. A separate issue is whether an earlier restructuring should be permitted. This would give Shorts a structure more akin to a private sector concern and would more readily allow them to earn net profits. Shorts' profits are being artificially depressed by the considerable interest rate burden inherent in the present structure. Minister's will wish to consider the question of capital restructuring in the context of privatisation.

44. It is important to note that a company in Shorts' position will tend to require cash even if it breaks even each year in profit terms. Such cash is necessary to fund the effects of inflation on working capital and to offset the fact that historic cost depreciation is often less than current capital expenditure. This problem is compounded by the need to invest considerable sums in product development over the next few years. This means that Shorts are likely to require further injections of cash even if they were to make quite significant short term profits.

Short Term Fluctuations

45. Shorts aircraft sales are not evenly spaced throughout the year - they tend to peak in spring and autumn. Furthermore the high value of each aircraft (£3m) means that minor variations from programme have significant short term cash effects. Shorts contend that, if privately owned, they would always have open the possibility of building more "whitetails" (completed aircraft for which a buyer is not identified) to take advantage of a resurgence in demand. It is clear, for example, that in mid 1984 Shorts underestimated demand for the following spring and could have sold more aircraft in February and March 1985 had they been available. Shorts defend their caution on the grounds that the risks of an EFL overshoot, even if temporary, were seen to outweigh the benefits of increased sales.

46. The EFL constraint poses particular problems for a company whose principal product:

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- has a high price, in proportion to total annual turnover and cash requirements;
- experiences a spring demand peak, ie right across the financial year end.

Shorts have reiterated in the 1984 Update the view expressed in earlier years that the existing EFL regime is too inflexible. They base this partly on the assumption that short term funding for an analagous private sector company would be available. This is by no means certain.

47. Officials consider that flexibility should be introduced if this can be done without risk to the constraining effects of the EFL regime. They suggest that a facility be set up whereby Shorts could draw short term bank borrowings up to a specified maximum, say £2.5 million, for each whitetail genuinely completed and ready for sale except for customer specified items such as livery and paintwork. This facility would be for a total of £15 million and would therefore allow for up to six aircraft. Once each aircraft under the scheme is sold, Shorts would be obliged to repay the relevant £2.5 million immediately. The facility would not be used to fund any gap between an aircraft leaving Shorts and receipt of sales funds. By identifying the facility with specific completed aircraft the possibility of Shorts using the scheme for other purposes would be significantly reduced. The facility and Shorts' sales demand would be reviewed regularly with officials to ensure that Shorts were not misusing the scheme. The principle would be that the number of whitetails and hence the funds drawn should return to nil at least once during the year whilst cash requirements were at the same time within the agreed EFL.
48. If these proposals are accepted, a number of operational details would need to be agreed. In addition, appropriate monitoring arrangements would have to be established.

Currency Hedging

49. Shorts sell dollars forward up to two years ahead so as to insulate themselves from exchange rate fluctuations. This policy introduces some extra stability into forecasts of sterling income from dollar sales - an important factor in terms of the EFL regime. It can prove costly, however. Having previously sold forward extensively when rates were around \$1.50/£1.00, Shorts forfeited approximately £10m in sales income in 1984/85 compared to the position which would have arisen if no forward sales have been made.
50. TR were invited to review Shorts' hedging policy. They concluded that they would not usually recommend a private sector company to hedge in similar circumstances. They note that such a policy might help reduce EFL exposure to exchange rate movements, but only if correctly applied. In their view, the way in which Shorts hedge could be improved. A summary of their analysis is at Annex IX. Officials agree that Shorts should continue to hedge, but only after taking technical advice as to the most appropriate method.

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Strategic Options

51. Although Shorts put forward a number of options, each has profit and cash effects far worse than the "base" case in the Plan. (A summary of these options is given in Annex X). By implication, therefore, the "central" plan put forward is seen to be the only worthwhile alternative. This is not necessarily so. Under instruction, the Company also analysed the effect of continuing with the 1983 Update strategy; not investing in the SD450 and Boeing were the main changes. This strategy is outlined in more detail in Annex X. In comparison to the case put forward by Shorts, the main differences are:

	1985/6	1986/7	1987/8	1988/9
	£m	£m	£m	£m
<u>Profit</u>				
1984 Update	8	10	12	16
Alternative	4	8	(4)	(4)
Difference	<u>(4)</u>	<u>(2)</u>	<u>(16)</u>	<u>(20)</u>
<u>Cash</u>				
1984 Update	110	137	132	130
Alternative	111	118	123	133
Difference	<u>(1)</u>	<u>19</u>	<u>9</u>	<u>(3)</u>

This table should be interpreted with caution in that it assumes no development of the SD360 to maintain Shorts' market presence in the absence of the SD450, whereas the company would almost certainly be obliged to develop the SD360 further. This development would have the effect of increasing cash requirement and also profitability.

52. The main factors affecting profits and cashflow are the reductions in SD 450 income and expenditure and the increase in interest costs consequent to a continuation of the current capital structure. Cashflow benefits substantially in 1986/87 as the high initial development costs of the SD 450 are avoided, but by 1988/89 the position is broadly neutral as subsequent SD 450 income would not then be received. Profits are reduced somewhat in 1985/86 and 1986/87 - the reduction in SD450 expenditure written off is outweighed by the increased interest charge - but in later years the position is significantly adverse.

MAJOR RISKS AND SENSITIVITIES

Aircraft Sales

53. Shorts face a wide range of possible aircraft production requirements over the next few years. While we regard the median levels included in the plan as being reasonable, the possibility remains that actual demand could be significantly higher or lower.

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We believe it to be important to retain as much flexibility as possible to allow the Company to respond to changes in perceived demand and the proposed arrangements for whitetails would permit this (Paragraphs 45-48).

54. Even if total volumes should approximate to the levels in the plan, individual products could vary widely from their forecasts within that total. There is, therefore, an additional risk that the consequent change of mix might cause production problems.
55. One major short term risk in the aircraft division is that the USAF will not exercise their option for further Sherpa aircraft, or that they will so delay or minimise any resulting orders as to have the same short term effect.

Capacity

56. Shorts accept that they may face capacity constraints in all areas, including management and have stated that they anticipate sub-contracting appropriate elements of the work programme. There is a limit to which sub-contracting can be used without losing essential control and Shorts may now be approaching that limit. This was suggested by the recent problems, of which Ministers are aware, experienced with electrical looms, although these have now been resolved.

Aeros tructures

57. Any major changes in aircraft manufacturers' future production rates would affect Shorts' aerostructures output. In addition the plan includes significant new aerostructures volume. The availability of such volume is unproven.

If it were to arise, Shorts would face significant competitive challenge to obtain it. Whilst they have been successful recently in a number of major bids, such success at profitable prices cannot be guaranteed.

Missile Systems

58. By Shorts' own evaluation the securing of the S14 missile development is a key element in their future strategy in this division. The possibility remains strong, however, that even if they secure this development, they may only be awarded it jointly with a European partner, although European companies appear to have shown little interest so far.

Working Capital

59. The plan assumes a significant drop in the level of working capital required to support the business. The effect of this is to generate £22m in cash terms, and to bring the value of working capital down to £97m, by the end of 1988/89. The Company has succeeded in reducing

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stocks and work in progress cover over recent years. To achieve the further reductions in working capital included in the plan would involve significant improvements in production planning, stockholding and purchasing techniques. We recommend that the Company be asked to demonstrate clearly their plans for instituting such improvements.

Costs

60. Shorts have made assumptions on costs which may prove optimistic. In particular they have assumed that:
- learning curves on new projects average 80 per cent;
 - learning curves on existing projects improve substantially in those cases where poor performance has been experienced recently;
 - productivity improves by 2.5 per cent per annum;
 - indirect material costs reduce by one per cent per annum.
61. On recent experience the assumptions on learning curves and productivity are considered optimistic. The Company have not demonstrated their ability to meet similar assumptions whilst running a multi-product aircraft line. We recommend that the Company be asked to report separately on these problems, and that a programme of corrective measures be commenced which should be monitored in the normal way by DED.

Exchange Rates

62. Shorts remain highly sensitive to exchange rate movements. We asked Shorts to calculate at what exchange rates their aircraft would break even allowing for full overheads. The answers were as follows:

SD 360	\$1.47 to £1.0	
EDSA - Current Order	\$1.30 to £1.0) The EDSA submission
Options	\$1.69 to £1.0) suggested \$1.65 break-even on the overall contract

It is clear that at rates above \$1.50 Shorts aircraft sales would not be profitable. Long term forecasts of exchange rates vary widely. Short term fluctuations caused by differences in interest rates and the effects of speculative activity can also have significant impact upon the Company's results.

Sales Financing and Leasing

63. Shorts are exposed to risk under the arrangements by which aircraft customers are offered finance. A description of these arrangements is included in Annex XI. Shorts are liable for losses incurred from

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customer defaults and such losses can be substantial (as was the case in 1984/85). In addition some leases recently entered into are breakable at the customer's option. A risk therefore exists that Shorts may incur losses caused by the exercising of such options.

Key Sensitivities

64. A table of key sensitivities is included in Annex XII. To demonstrate the effect of a combination of sensitivities upon Shorts results, we have calculated a "realistic worst case" scenario on the following assumptions :

- exchange rates between \$1.60 and \$1.65 to £1.0 over the plan period;
- inflation between 5 per cent and 7 per cent;
- aircraft programmes 20 per cent lower;
- aerostructures at the pessimistic levels suggested by TR;
- missiles programmes 20 per cent lower;
- no capital reconstruction.

65. This worst case scenario produces the following effect on EFL;

	1985/86	1986/87	1987/88	1988/89
	£m	£m	£m	£m
1984 Update	110	137	132	130
"Realistic worse case"	126	169	188	211
	—	—	—	—
<u>Movement</u>	<u>(16)</u>	<u>(32)</u>	<u>(56)</u>	<u>(81)</u>

EXTERNAL FUNDING REQUIREMENTS

The EFR at 31st March 1985

66. It might seem that as Shorts failed to meet aircraft delivery forecasts by a significant degree in 1984/85, and yet still met the revised EFL of £95 million at March 1985, there must be a benefit arising in 1985/86 from additional sales in that year. Shorts have stated that they met the EFR only by delaying payment to suppliers to an unprecedented degree. This means that the additional aircraft sales now expected to fall in 1985/86 will not improve the anticipated EFR at March 1986.

Proposed Financing Requirement For 1985/86

67. The 1983 Update forecast an EFL for 1985/86 of £90m. This was increased to £110m in the 1984 Update and a detailed analysis of relevant changes is given in Annex III. This Note has indicated a number of areas where changes to the EFL should be considered. These are as follows:

- (i) Capital Structure. No restructuring before April 1986 at the earliest.

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(ii) SD450. No allowance for development costs in 1985/86.

(iii) Overheads. Whilst the Company forecasts an overhead recovery rate of 330 per cent by the end of the plan period, it had previously in its V2500 submission indicated a rate of 325 per cent. Officials recommend that this lower overhead rate be used.

68. Revised profit and cash targets would therefore be:

	Profit £m	EFL £m
As proposed in 1984 Update	8	(110)
Capital structure	(6)	(6)
SD450 (inc. launch aid)	2	5
	<hr/>	<hr/>
Revised Targets	4	(111)*
	<hr/>	<hr/>

*Equivalent to annual EFL of £16m.

69. Shorts are intending to recover from Fokker additional development costs on the F100 wing. At the end of March 1985 these amounted to about £3.5m and by the end of March 1986 are anticipated to amount to about £9m. The 1984 Update assumes that Shorts will not recover these amounts from Fokker until the 1986/87 financial year. If Shorts in fact recover them before March 1986 this year's EFL could be further adjusted downwards.

LAUNCH AID REPAYMENTS

70. Shorts are making repayments of Launch Aid on the SD 360 and have informed us that the following schedule is anticipated:

Repayments of launch aid are calculated upon the basis of an equal share of profitability. Therefore if gross margins change for any reason from those set out in the Plan repayments will also change.

The above schedule assumes 137 aircraft sold by 1989. Original forecasts of the numbers of aircraft required to be sold to repay launch aid in full were 100 aircraft by Shorts and 113 aircraft by MOD. DTI's market assessment at the time showed 130 SD 360s sold by 1990 and launch aid was expected to be repaid fully by around 1987. It now looks as if it will not be repaid before 1990. It should be noted however that the SD360 is one of only very few civil aircraft launch aid contracts since WWII on which any repayment has been achieved.

Shorts have made no repayments of launch aid on the SD 330 and do not expect to do so as accumulated losses on this aircraft are unlikely to be eliminated.

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		£ Million
Total Aid Paid or committed		16
Repaid or anticipated to be repaid		
1984/85	1	
1985/86	1	
1986/87	2	
1987/88	3	
1988/89	<u>3</u>	<u>10</u>
Un-repaid at end of plan period		<u>6</u>

PUBLIC EXPENDITURE CONTRIBUTION

71. The Plan assumes receipt of discretionary grants from DED. The figures are given on a net basis after deducting anticipated SD360 launch aid repayments, as shown below:-

	1985/86	1986/87	1987/88	1988/89	£m
Grant assumed	10	12	11	11	
Less Launch Aid Repayment	<u>1</u>	<u>2</u>	<u>3</u>	<u>3</u>	
TOTAL	9	10	8	8	

72. The £10.3m assumed for 1985/86 includes £4.4m already committed to approved projects (SD360 launch aid, F100, V2500, Tucano, Boeing 737 and West Belfast), £2.5m launch aid for the SD450, £0.6m on the LMT, £0.3m for unspecified projects plus training and R & D grant yet to be negotiated. In view of the uncertainty about the SD450, LMT and other unspecified projects, if these are deducted from Shorts' anticipated grant levels, together with certain minor readjustments to the approved projects (as a result of rephasing of work to be done since the Plan was drawn up), assistance would reduce to £6.5m. This compares with a DED PES provision of £6.44m, and it is recommended that Ministers approve the provision of £6.44m discretionary grant by DED to Shorts in 1985/86. This assistance would count towards EFL as would any assistance Shorts might receive from DTI for R & D work undertaken in conjunction with Rolls Royce on a carbon fibre nose cowl. If in due course Ministers approve new projects such as the SD450, it may be necessary to adjust upwards across the Plan period the levels of Government assistance to the Company.

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73. EC Aspect

Ministers agreed last year that, in line with standing UK policy, the launch aid element of the 1984/85 public expenditure contribution to Shorts need not be notified to the European Commission. Officials are agreed that there is no reason to modify this stance in respect of the launch aid to be provided as part of the 1985/86 public expenditure contribution to Shorts. The balance of the 1985/86 contribution, including assistance assumed in the Plan by way of standard capital grant, is also not notifiable to the EC on the grounds that it falls within the limit of aid for Northern Ireland under the Commission's Communication on Regional Aid Systems (February 1979) and as such within the discretion of HMG.

PROPOSED STRATEGY

74. The problems inherent in Shorts' small size and narrow product range remain of great significance in markets in which high initial development costs and intense competition are endemic. The 1984 Update proposes to overcome these problems in much the same way as the 1983 Update, by expanding the product base. The most significant difference in treatment between the two plans is that whereas the 1983 plan mentioned the SD 450 and the Boeing project only in the text, the 1984 plan includes both in its financial projections. Principal differences between the two Updates reflect this change in treatment. In fact the strategy remains broadly the same.
75. When analysing alternatives to the broad strategy contained in the plan it becomes evident that major diversions from the central path do not offer significant savings in the short to medium term. The plan appears to maximise the opportunities both for maintaining employment and generating profits. The basic long term problems of the Company remain as follows:-
- the Company's principal products have a limited market life;
 - the costs of developing new products are very high;
 - the competition for these products is intense;
 - Shorts is relatively small for the aerospace industry and what would be a minor setback for a larger company can be a major crisis in Shorts;
 - Shorts have a relatively low proportion of their turnover in defence work which is traditionally both more stable and more profitable.
76. The strategy put forward by the Company continues to be to attempt to minimise the impact of these problems by widening the product base, particularly into more military business and in aerostructures subcontracting. The more time the Company has to continue this process,

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which has been generally successful over the last two years, the better the chance that the Company would be able to survive a major upheaval, and indeed, that it would make an attractive privatisation prospect. In general, therefore, this approach is endorsed.

77. Clearly 1984/85 was not a particularly good year for Shorts. In particular, the failure to achieve the planned learning curve on the SD360, the reduction in sales volume, the inability to take account of exchange rate movements and the under-recovery of overheads all contributed to results worse than plan. Whilst approving the Company's general approach, therefore, we nevertheless recommend that remedial measures be undertaken, especially:

- a review of hedging policy (Para 50);
- an update on the position with regard to overheads (Para 61 and Annex 1).

78. In the short term the possibilities of replacing those products approaching obsolescence should continue to receive priority attention. The key questions which will arise over the plan period are:

- should Shorts develop the SD450 and if so when?
- how long could the SD330 and SD360 justify continued aircraft production without the SD450?
- should Shorts develop a third generation commuter and if so with whom?
- can Shorts obtain the S14 missile and if so alone or in partnership?

RECOMMENDATIONS

79. Officials recommend that the broad strategy outlined in the 1984 Corporate Strategy Update be approved. This approval is subject to a number of provisos, in particular that the Company accepts the revised profit and EFL targets given above in paragraph 68 including discretionary grants of £6.44m. It is also proposed that a controlled flexibility arrangement of up to £15m be introduced to assist the Company in meeting short-term fluctuations (Paras 47-48). In addition, it is recommended that the Company be advised to:

- (i) note that development costs for major work such as the SD450 or a Boeing project are not included in the proposed EFL (paragraph 40).
- (ii) drop plans for developing the LMT variant unless USAF agree to pay for such development, or costs can be amortised on a prudent estimate of non USAF sales (paragraph 22);

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- (iii) seek a European partner for collaborative development of the S14, or state clearly why such a partner is not desirable (paragraph 39);
- (iv) take technical advice on appropriate exchange rate hedging policy (paragraph 50);
- (v) demonstrate clearly their plans for achieving the reductions in working capital shown in the plan especially in 1985/86 (paragraph 59);
- (vi) institute corrective measures to bring production costs more in line with estimates (paragraph 61);
- (vii) review progress on implementation of previous recommendation with regard to savings in overheads (paragraph 61 and Annex I).

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ANNEX IPROGRESS ON STOCK RATIOS, OVERHEADS AND MONITORING REQUIREMENTSStock Ratios

The ratio of sales to stocks and work in progress in recent years has been:

1982	1.12	
1983	1.14	
1984	1.83	
1985	2.29	(Estimated by Shorts)

These figures show that Shorts have achieved significant improvements to stock levels over the period. The Company recognises, however, that further reductions in the investment in working capital are both possible and desirable and state that they are continuing this programme. Long term reductions will only be achieved by continued investment in plant and equipment and in manufacturing control systems. This sort of expenditure has been the victim of internal cut-backs to meet EFLs in recent years. The long term plans of the Company remain highly sensitive to failures to achieve working capital reductions. It is therefore recommended that the capital expenditure programme be followed without interruption.

Overheads

The Company has stated that the savings made from the Binder, Hamlyn Fry study of Shorts' overheads are difficult to quantify at this early stage. Since the exercise was carried out the Company has continued to implement the BHF recommendations and to reduce overheads as follows:

- (1) The use of ratio analyses has been extended in the preparation of departmental budgets and also when recruitment takes place.
- (2) Recruitment is more closely monitored.
- (3) Cost Reports for Supervisors have been developed.

The following table shows the overheads rates projected for the plan period:

<u>Actual</u>	<u>Estimated</u>				
1983/84	1984/85	1985/86	1986/87	1987/88	1988/89
347%	343%	338%	332%	330%	330%

Recent project approvals have assumed rates of 325 per cent. Unless the Company achieves this lower rate, returns on new projects will be reduced.

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Monitoring Requirements

In accordance with requests made to the Company, certain improvements in monitoring information have been introduced in particular relating to the costs of new work development.

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RECENTLY GAINED NEW BUSINESS1. F100 Wing

This project, referred to as P332 in the 1983 Update, is for the development and production of the wing for the Fokker F100 jet airliner which is anticipated to replace the existing F28 model in 1986. Shorts are optimistic about the potential market for the F100 which will be competing in the same 100 seat sector as the BAE 146. The project has been estimated to provide turnover of £123m by 1994/95.

Customer changes have added significant sums to the development costs of the F100 wing. By March 1986 over £9 million will have been expended in excess of that authorised. Shorts are currently negotiating with Fokker on methods of financing this over-run, but the plan assumes that it will not be repaid until after March 1986.

2. EDSA

Shorts were awarded a contract by the USAF for the supply of 18 Sherpa aircraft for servicing European USAF bases. A further 48 options are held by the USAF, and were originally due to be exercised by December 1984. Shorts have extended these options and will probably continue to do so in the hope of obtaining further orders. Six of the Sherpas had been delivered by March 1985, the remaining twelve are due for delivery by October 1985. The project has been estimated to provide turnover (including all options and spares and service) of £170m by 1988/89.

3. V2500 Engine Nacelle

Shorts, in association with Rohr International, a major US nacelle manufacturer, were awarded a contract for the production of the engine nacelles for the V2500 engine. This engine is being developed by International Aero Engines (IAE), an international consortium which includes Rolls Royce and Pratt and Whitney. The engine will be designed to cater for the new range of 150 seat aircraft expected to figure strongly in the jet airliner market by the early 1990s, of which the Airbus A320 is the first announced. The nacelle contract has been estimated to provide turnover for Shorts of £94m by 1995/96.

4. RAF Trainer

Shorts have been awarded the contract for the supply of the RAF's replacement for its Jet Provost trainers. The Shorts' aircraft is based on the Brazilian Embraer Tucano adapted to meet RAF specifications. Shorts' price to the MOD is set at a level which

would not under normal circumstances be regarded as commercially satisfactory. The export potential of the Shorts Tucano is regarded, however, as being substantial; overall profitability of the project is entirely dependent on achieving sufficient export sales. Shorts' studies made during 1984 indicated that the level of export sales required to provide an adequate return was possibly conservative. Our view is that the export sales level required is feasible, but is probably sensitive to price, currency exchange rate and political considerations.

M This project including export sales but excluding spares has been estimated to provide turnover of £192m by 1992/93.

5. Boeing 737 Rudder

Shorts have been awarded a contract for production of the rudder for the Boeing 737-200 and 737-300. Estimated turnover of this contract is £18m by 1988/89. The rudder will be made from composite materials which will increase Shorts' reputation as a leader in this field. The turnover, contribution and cash effect of this project is not significant in the context of the overall plan and no specific allowance has been made for it.

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ANNEX III

1985/86 EFL

The EFL at March 1986 as forecast by the 1984 Corporate Plan Update can be reconciled with that contained in the 1983 Update as follows:-

		£m	
<u>March 1986 EFL in 1983 Update</u>		(90)	
<u>Major Changes</u>			
<u>New Work</u> - increased expenditure on F100 wing	(9)		
- reduced expenditure on other projects firm in the 1984 Update	2		
- expenditure on notional projects			
SD450 (5)			
Tucano (2)			
Others (1)	(8)		
Total Major New Work Movement	—	(15)	
<u>Aircraft Margins</u> - reduced SD 360 Margins (10 aircraft)	(4)		
Increased costs (including sales finance and leasing losses curve problems)	(4)		
Total Major Aircraft Margin Movement	—	(8)	+ learning
<u>Missile Margins</u> reduced contribution caused by drop in volumes and change of mix		(3)	
<u>Interest</u> - reduced charge due to recapitalisation		6	
<u>Discretionary Grants</u> related to F100		(2)	
<u>Capital Expenditure</u> increase		(2)	
<u>Unrecovered Overheads</u> caused by volume fall		(2)	
Working Capital Reduction through improvement in stock ratios		7	
<u>Rounding</u>		(1)	
<u>March 1986 EFL in 1984 Update</u>		(110)	

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The 1984/85 EFL

The increase in the 1984/85 EFL from £87 million to £95 million was agreed subject to two provisos:

- that the increase relating to work-in progress should be recovered through adjustments in the manufacturing programme and thus not affect the EFL at 31 March 1986;
- that the lost margins on the six SD 360s removed from the 1984/85 programme be recovered in cash terms by March 1986.

The above reconciliation is between the 1985/86 EFR as reported in the 1983 Update and the 1984 Update. Shorts point out that the figure for working capital in the 1983 Update clearly excluded any effects from the subsequent reduction in aircraft volumes; the fact that the corresponding figure in the 1984 Update is lower shows that working capital requirements have been reduced in overall terms. This implies that the cash effects of the 1984/85 reduction in volumes will be recovered by the end of 1985/86.

The reconciliation also includes an adverse movement of £4 million resulting from loss of aircraft margin. This is made up of:

- 6 aircraft in 1984/85;
- 4 aircraft in 1985/86;

as shown in paragraph 24 of the main report. Although the lost margins from 1984/85 are therefore included, Shorts claim that it is more than offset by the £7 million in working capital also shown on the reconciliation.

If Shorts are able to achieve a year end reduction in stock levels of the order given in the above reconciliation, they will have more than recovered their position with regard to lost aircraft sales and at the same time offset the cash effects of lost SD 360 margins.

It should be made clear that the reduction in working capital planned in 1985/86 in the 1984 Update is from the level planned in the 1983 Update, not from actual levels at March 1985. The 1983 plan assumed improvements in stock ratios over 1984/85 and 1985/86. The reduction shown above is in addition to such improvement. When final 1984/85 figures are known, it will be important to ensure that proposed stock level reductions are carried through to 1985/86.

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ANNEX IVREASONS FOR VARIATION FROM PLAN IN 1984/85

	<u>£m</u>
Aircraft Margins	
Shortfall of SD 360 deliveries	
Budgeted productivity improvements not made	
Change in amortisation of learning costs	
Provision for aircraft financing losses	
Exchange rate losses	(6.0)
Aeros tructures	
Additional non-recurring recoveries	
Provisions no longer required	6.6
Missiles	
Shortfall on deliveries	
Change of mix towards MOD	
Lower MOD prices	(2.0)
Overheads - Less recovery on direct labour	(1.7)
Interest - Higher borrowing levels and rates	(1.3)
Other Movements	0.2
	<u>(4.2)</u>

The main reasons for the variation in plan on Aircraft margins were:

- virtual flattening of the learning curve during 1984/85;
- the need to recognise losses arising from the collapse of three customers who had obtained aircraft under the financing facilities arranged by Shorts;
- delivering fewer aircraft than originally estimated.

In Aerostructures, a provision for anticipated lower margins on the 757 contract was felt to be too high and a considerable sum of previously deferred profit was written back. Non-recurring costs were recovered at a faster rate than anticipated.

In Missiles division, there was a small shortfall on deliveries. More importantly, the mix of work shifted away from exports towards lower priced MOD contracts.

Overhead recovery was affected by direct labour employees, upon which such recovery is calculated, being below plan.

It should be noted that the above are still subject to audit and are liable to be changed.

THE SD 450

Shorts have identified a possible further development of the SD3 series of aircraft to succeed the 36 seat SD 360. Designated the SD 450 it represents a further stretch of the fuselage to provide between 42 and 49 and probably 45 seats.

The market for such an aircraft is seen as arising partly from the continuing trends in the US commuter air traffic industry. Following deregulation, passenger growth and a shortage of landing slots have combined to produce a need for larger commuter aircraft.

Shorts would face strong competition in the market particularly from the Aerospatiale/Aeritalia ATR 42 which the company regard as the best challenger. In addition, several direct competitors in the 30-40 seat sector such as Saab Fairchild and de Havilland have recently announced tentative plans for stretches to their own products. In order to succeed in this new sector, Shorts would have to offer significant savings in direct operating costs (DOCs). In addition it would be necessary to provide a more advanced aircraft than the SD 360, with improvements in range, "hot day" performance, fuel efficiency, passenger comfort, storage, galley facilities and interior noise levels.

At the present time the company is not yet convinced that it could manufacture the aircraft required at a price which would offer the savings in DOCs needed. At the same time certain key technical issues remain to be resolved. The board have therefore delayed the decision as to whether to proceed with the SD 450 pending the provision of better technical analysis of the project, the resolution of cost problems and a better understanding of potential markets.

The figures included in the plan for the SD 450 are as follows:

	1985/86	1986/87	1987/88	1988/89
	£m	£m	£m	£m
Profit and Loss Account	(2)	(2)	13	16
Cash flow effect upon EFL				
per annum	(5)	(24)	8	16
cumulative	<u>(5)</u>	<u>(29)</u>	<u>(21)</u>	<u>(5)</u>
Aircraft delivered	-	-	10	15

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ANNEX VI

CHANGES IN THE ACCOUNTING TREATMENT OF DEVELOPMENT WORK

In the 1983 Update Shorts assumed that certain development costs on aerostructures projects would be charged against aerostructures gross margins. These costs were not necessarily specific to any one project, but were seen as being probably related to the Fokker F100 wing if the Company were to obtain that contract.

When Shorts obtained the F100 contract they negotiated full reimbursement from Fokker of the associated development costs. Accordingly these costs are not being written off against margins but are being accumulated pending reimbursement. The affect of this change in 1984/85 was to produce a favourable variation from budget of about £1.5 million.

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SD 330 VARIANTS

Sherpa. This is a 330 with a rear loading door. The entire back of the aircraft drops down and large bulky loads can then be placed in the hold. This aircraft, designated C23A by the United States Air Force, is currently being delivered to the USAF to satisfy EDSA (European Distribution System Aircraft) requirements.

UTT (Utility Tactical Transport). This is a standard 330 adapted for military use by the addition of a paratroop suitable forward door and the provision of military interior configurations. Shorts have sold four of these aircraft to Thailand and hope to achieve further sales to this market, although the LMT version may be preferred.

LMT (Light Military Transport). This concept, not yet developed, is for a 330 with a rear loading door like the Sherpa and a forward paratroop door like the UTT but with enhanced power provided by the same engines as used on the SD360. The increase in power would allow both greater range and a heavier payload.

THE MARKET FOR LIGHT MILITARY AIRCRAFT

Shorts have provided three separate assessments of the market for SD 330 military variants. These were prepared by an outside consulting firm, by the Defence Sales Organisation of the Ministry of Defence and by Shorts' own personnel. Each indicates a potential market for Shorts military variants of the SD 330 in excess of 50 aircraft if 48 EDSA options are excluded.

We have analysed these forecasts. It is noteworthy that each forecast tends to disagree on the prospects within individual countries. Taking the lowest view expressed for each country the total market excluding EDSA options could be as low as 33. This market would have to be shared between Shorts and its competitors. The details are as follows:

<u>Potential LMT Market</u>	<u>Aircraft</u>
Thailand	10
Ghana	4
Kuwait	4
Norway	3
Qatar	3
Singapore	3
Dubai	2
Malawi	2
Mauretania	1
Guyana	1
	<u>33</u>
	==

Some of these anticipated requirements are not seen as resulting in aircraft purchases until the 1990s. In the light of the lack of response to the Sherpa, it seems unlikely that the above market could support the LMT quantities included in the 1984 Update.

CURRENCY HEDGING

Shorts receive a substantial proportion of their income in foreign currency, particularly US dollars. They also pay for a significant proportion of their purchases in foreign currency, in particular engines from Pratt and Whitney Canada.

Some years ago the Company management was criticised because a major reason for an EFL breach was the adverse effect of exchange rate movements and they were instructed to ensure that such an event did not recur. They therefore commenced a policy of selling dollars forward as a hedge against currency rate movements.

Shorts now hedge up to two years forward. This means that they sell dollars for delivery in the future at a contracted sterling/dollar rate. In theory dollar income is used to settle these contracts, thus resulting in the effective rates of exchange being those at which each forward sale contract was made. In this way Shorts should be able to predict the sterling equivalent of their future dollar income, and thus predict with more accuracy their (sterling) EFR.

Only a small proportion of Shorts' business which is dollar denominated can be predetermined with any accuracy. As a result, in assessing the amount of currency hedging required, they are forced to rely on estimates of future dollar income. The nature of Shorts' markets is such that these estimates are subject to significant error.

If the dollar strengthens then, without hedging, in theory Shorts should become more profitable as its dollar income becomes more valuable. The practice of hedging meant that, during 1984/85 when the dollar strengthened to rates as low as \$1.05 to £1.0, Shorts did not in fact benefit, having previously sold all 1984/85 income at rates averaging \$1.50 to £1.0. The Company have estimated that losses arising from not being able to realise income at spot rates amounted to about £10 million in the year.

In the summer and autumn of 1984 Shorts' management became aware of the fact that the SD 360 market was becoming very slack. They began to suspect that the 1983 Corporate Plan Update upon which they had been basing their dollar hedging, may have been optimistic as to SD 360 sales levels. They therefore were concerned that they should not oversell their forward dollar position. As a result the Company made no forward sales of dollars between May 1984 and March 1985, a period during which in retrospect it may have been most beneficial to do so. The next forward dollar sales were made in early 1985/86 at around \$1.20 to £1.00. At the same time the Company found that it had oversold its position in dollars for 1984/85, and was forced to buy dollars at spot rates to settle commitments.

It can be seen that the way in which Shorts have carried out their hedging policy can actually increase risk, in that they have attempted to anticipate market movements but have difficulties in estimating future dollar income.

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TR state that they would not advise a private sector company in Shorts' position to hedge on a long term basis. They state that the risks of dollar denominated business should normally be accepted as they are. They do point out, however, that for Companies in public ownership, hedging provides a way of defining with greater certainty sterling income from dollar sales. If EFL is an over-riding constraint, this may be a necessary approach.

Shorts defend their present hedging policy on the grounds that they have previously been criticised for failing to hedge. TR feel that if conducted, hedging should be carried out as a matter of routine, rather than as a response to perceived market changes. If Shorts were not to hedge, however, TR feel that the significant level of their dollar business argues for an EFL which is capable of adjustment to reflect exchange rate movements. They therefore recommend that:

- either Shorts continue hedging but be asked to have their methods independently reviewed to eliminate risk as far as possible;
- or Shorts cease hedging and EFLs be agreed subject to adjustments for exchange rate fluctuations.

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STRATEGIC OPTIONS

The company identify a number of strategic options in the plan. They have provided summary turnover, profit, cashflow and employment figures for each option. The options all involve a significant reduction in the volume of business in one of the company's divisions.

In the description of these options which follows all comparisons in terms of cashflow and profit are with the main plan put forward by the company.

Option D - Withdrawal from Aircraft Manufacture

The company assumes in its main plan that aircraft manufacture will continue and will be profitable. Withdrawal from aircraft manufacture loses those profits and also involves adverse cash movements through the heavy write-off of spares and stocks no longer sold. By 1989 the effects are a £64 million worsening of the cash position and cumulative profits £99 million worse.

Option E - Gradual Rundown of Aircraft Activities

A withdrawal from aircraft manufacture is abrupt and has clearly unsatisfactory cash and profit effects. The company has also examined the option of gradually running down its aircraft activities, as the volume of business for existing aircraft declines. The effects are less extreme than in Option D, but lost profits and adverse cashflow are still substantial, largely because the company assumes that adopting this option would of itself decrease aircraft sales as customers became aware of the lack of further development work on existing products. Cashflow by 1989 is down £43 million and profits are down £31 million.

Option F: Rundown of Aerostructures

This option assumes the gradual rundown of aerostructures activity, on the basis that no major new contracts are obtained after the V2500. Because of the long lead times on aerostructures work and the heavy initial development expenditure, this policy produces cash savings of £27 million by 1989, with profits £7 million higher. The company point out that this analysis obscures the longer term damage to its business prospects, however, as the loss of income from many existing and planned projects arises after 1989. By 1993, they indicate that cashflow would be adversely effected by £37 million and profits in that year would be £11 million worse.

Option G: Maintain Aerostructures at Existing Levels

This option involves some new development work, but only to offset those contracts which reach the end of their lives. Again the medium term effects are beneficial with cashflow £10 million better by 1989 and profits virtually unaltered. Shorts again point to the longer term position, where the effects are to increase cash requirements by £30 million by 1993.

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Option H: No New Missile Projects

This option assumes limited further development only of the Seacat and Blowpipe/Javelin ranges, with the S14 project not being obtained. Because of the long lead times involved, this option produces a cashflow and profit profile virtually unaltered to 1989, but by 1993 cashflow is worse by £50 million and profit by £15 million.

Option J: Existing Missile Projects Plus only S14

This option assumes that the S14 project is obtained but that development work on widening the product base in the Missile Division does not proceed.

Again, as with Option H, profits and cashflow are virtually unaltered to 1989, but by 1993 cashflow is £18 million adverse and profits are down £6 million.

Each of the above options show adverse cash and profit effects in the longer term. They do not therefore offer much in the way of sensible strategic alternatives for the company. They do raise two important issues, however:

- (i) the unfavourable effects of the options are clearly dependent upon the assumptions which lay behind each. In particular, if the profits obtained from new aircraft, aerostructures or missile contracts were to be less than anticipated in the main plan, then the differences between that plan and the above options would be narrower.
- (ii) one or more options may be forced upon the company by external events, eg failure to win the S14 and/or the Boeing 7-7 work. The adverse effects of these external events are clearly indicated in the sensitivity analysis.

Option Z

Although not in the 1984 Corporate Plan Update, Shorts were asked to prepare an option which consisted essentially of following the strategy endorsed in the 1983 Update, ie no capital restructure but continuing new development work, excluding major new projects. The profit and cashflow arising from this approach are as follows:

	<u>1985/6</u>	<u>1986/7</u>	<u>1987/8</u>	<u>1988/9</u>
	£m	£m	£m	£m
<u>Profit</u>				
Annual Profit in 1984 Update	8	10	12	16
<u>Adjustments</u>				
SD 450	2	2	(13)	(16)
Boeing	-	1	3	1

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Interest	(6)	(7)	(8)	(9)
Reduction in sales costs	<u>-</u>	<u>2</u>	<u>2</u>	<u>4</u>
Revised Profit	<u>4</u>	<u>8</u>	<u>(4)</u>	<u>(4)</u>
	<u>1985/6</u>	<u>1986/7</u>	<u>1987/8</u>	<u>1988/9</u>
	£m	£m	£m	£m
<u>Cashflow</u>				
Cumulative EFR in 1984 Update	110	137	132	130
<u>Adjustments</u>				
SD 450	(5)	(29)	(21)	(5)
Boeing	-	(1)	(5)	(14)
Interest	6	13	21	30
Reduction in sales costs	<u>-</u>	<u>(2)</u>	<u>(4)</u>	<u>(8)</u>
Revised EFL	<u>111</u>	<u>118</u>	<u>123</u>	<u>133</u>

It should not be noted that the company claim that Option Z, without SD450 development, would also require them to spend £22 million over the next four years on the SD360 to enhance its appeal to customers. This expenditure is not included in the above figures.

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ANNEX XISALES FINANCING AND LEASING OPERATIONSUS SCHEME

The 1984 Update excludes mention of any possible losses incurred in either Short Brothers NV or Shorts Air Lease Inc, the subsidiaries through which US sales finance and leasing facilities are arranged. This annex describes the facilities involved and the nature of possible losses associated with them. The agreements involved are very complex and where necessary we have described the position in simplified terms.

Sales Finance

Under these arrangements (recently out of favour largely for US Tax reasons) the aircraft are sold under what amounts to a ten year credit sale agreement to the Operator. Title is transferred to the Operator but Shorts NV register a charge with the Federal Aviation Authority, stopping the operator from reselling the aircraft and allowing Shorts repossession rights in the event of default. Shorts NV may then borrow monies from a Syndicate of Banks on a "back to back" basis with the loans to the Operator. These funds, remitted to Shorts PLC, form the bulk of sales receipts. An alternative method of finance through ECGD is described below.

Leasing

Under these arrangements Shorts sell aircraft to a bank, usually Security Pacific, who are thus able to take advantage of accelerated tax allowances. The bank then leases the aircraft back to Shorts Air Leasing Inc over ten years at a rate which reflects the tax allowances thus producing a lower rate. Shorts are able to lease the aircraft to the operator at similarly low rates. Cash flow savings to Operators over the straight purchase method have recently been substantial, although this position may change.

Recourse of the Financing Parties

Where Security Pacific is the lessor it has full security provided by letters of credit drawn on the syndicate of major banks. These are drawn to the net present value of future lease payments plus any potential tax losses. The syndicate is protected by the recourse pool arrangements with Shorts described below.

The Recourse Pool

This arrangement between Shorts and the Syndicate sets out the terms under which losses should be allocated in the event of operator failures. The rules may be summarised as follows:

- the arrangements commence when the operator has failed to make all due payments for twelve months. In the interim Shorts are responsible for all costs under sale or lease agreements;

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- for all customers with 6 aircraft or less covered by the pool Shorts' responsibility is limited to the first 30 per cent of the total pool. This figure is increased to 70 per cent where aircraft exceed six per customer. The banks only accept liability if the total losses exceed these percentages;
- the pool is defined as the total outstandings under the agreement based on a "normal" amortisation of debts.

ECGD Finance

In some circumstances finance is provided by ECGD. In these cases ECGD provide up to 85 per cent of the purchase price of an aircraft repayable over seven years. The shortfall, both in terms of percentage offered and term of loan, is funded generally by the banks.

Exposure

The total exposure to Shorts at March 1985 may be estimated as follows:-

	\$m
Amounts outstanding	<u>133</u>
Recourse Pool X 30% (ignoring customers with more than 6 aircraft)	40
One year's estimated debt and lease service	<u>20</u>
Total Exposure	<u>\$60 million</u>

or £48 million (at \$1.25 to £1.0)

UK SCHEME

The UK Scheme is very similar to the US Scheme with the following major exceptions:

- the residual values of aircraft involved in leasing deals rest with sub-lessees rather than the lessor;
- recourse arrangements are different in that Shorts undertake responsibility on a sliding scale to a minimum of 30 per cent.

	£m	%
0 - 7.5		70
7.5 - 15.0		55
15.0 - 20.0		40
20.0 - 25.0		30

- loan instalments or lease payments have to be paid by Shorts for two years following default instead of one year.

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- maximum aircraft per operator is two. If more are sold recourse is increased.

LOSSES IN 1984/85

Losses arising in Sales finance and leasing activities in 1984/85 may be described under two main headings. Both arose from the defaults of three American airlines, Wright, Dash Air and Sunbelt involving a total of seven aircraft.

Operating losses in the year

Shorts were responsible for maintaining lease payments to the head lessor together with any other costs associated with the aircraft pending releasing. As this period generally exceeded six months the sums involved were substantial, exceeding £2 million.

Future losses on releasing

When Shorts eventually succeeded in finding new lessees for the aircraft the amounts payable under the Sub-leases were less than the amount payable by Shorts to the head lessor. Thus an amount of future losses became evident. The size of this amount, however, could not with accuracy be determined, as one of the new lessees could retain the right to cancel its leases, and depending on whether such right was retained or not would pay different sums in lease rental. It is understood that Shorts are discussing with their auditors the size of any provision which should be made in respect of these possible future losses.

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SUMMARY OF KEY SENSITIVITIES

(Increase)/Decrease in Cumulative Funding Requirement as a result of:

	1985/86	1986/87	1987/88	1988/89
	£m	£m	£m	£m
(i) Exchange Rate				
low (\$1.10 - \$1.15)	-	3	13	27
high (\$1.60 - \$1.6)	-	(3)	(10)	(20)
(ii) Inflation				
low (5% - 7%)	1	3	7	13
high (8%-11%)	(1)	(3)	(7)	(13)
(iii) Aircraft				
20% lower programme	(6)	(9)	(12)	(16)
(iv) Aerostructures				
Pessimistic market view -		(2)	(5)	(9)
(v) Missiles				
20% lower programme	(5)	(8)	(15)	(19)