

COMMERCIAL IN CONFIDENCE



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Treasury Chambers, Parliament Street, SW1P 3AG

Rt Hon Douglas Hurd Esq MP
 Secretary of State
 Northern Ireland Office
 Whitehall
 London SW1P 3AL

7 June 1985

SHORT BROTHERS PLC

Thank you for your letter of 17 May.

In view of the problems you described I accept the need to increase Short's EFL to £107 million as an interim measure until we set the full year limit on the basis of the corporate plan. In the meantime I note that the company will continue to operate within the strategy agreed last year. I welcome Touche Ross' report that the technical problems have now been resolved so that deliveries and revenue should be restored to corporate plan levels by the autumn. So I would wish to stipulate that the full year EFL should be no higher than it would have been had the problem not occurred.

However we can view this as a short term cash problem only if we assume that there is no impact on sales and if we are confident that it is not symptomatic of wider management problems. We shall need to address these issues in the corporate plan discussions when the ramifications will be clearer.

I note also that Touche Ross report that the company should make the savings needed to claw back the £8 million increase in borrowing approved last November. We shall need to confirm this when we take decisions on the corporate plan.

I understand the reasons for your wish to provide greater flexibility in the EFL control regime but I shall want to be satisfied that we can establish workable arrangements which do not undermine the effectiveness of the EFL control discipline.

I am copying this to the Prime Minister, E(A) colleagues, Michael Heseltine and Sir Robert Armstrong.

PETER REES

Ind. Tol : Short Bros 11/80



SECRETARY OF STATE
FOR
NORTHERN IRELAND

NBIM
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NORTHERN IRELAND OFFICE
WHITEHALL
LONDON SW1A 2AZ

Rt Hon Peter Rees QC MP
Chief Secretary to
the Treasury
Parliament Street
LONDON

17 May 1985

Dear Peter,

SHORT BROTHERS PLC

We have not yet set Shorts an EFL for 1985-86 as officials are engaged in assessing the new corporate plan and merchant bankers are just completing their report on the prospects for privatisation. I wish to inform you and other colleagues immediately, however, of recent developments affecting Shorts' short-term cash requirements and to set in place realistic interim funding arrangements until we meet to address the company's corporate plan.

In anticipation of colleagues considering both the plan and privatisation prospects in the summer, our officials set a temporary limit which held the company to its 31 March 1985 cash limit plus a £3m allowance for temporary business fluctuations (ie a cumulative £98m, against a corporate plan forecast of £15m - cumulative £110m - for the full year to March 1986), although my officials registered that this temporary limit could well prove too severe.

The company recently informed my officials of a production problem concerning the mounting of electrical components in SD360 aircraft. This effectively stopped SD360 sales in the course of April, with serious consequences for income in the early part of 1985-86.

I was most disturbed to learn of this development and I therefore asked management consultants, Touche Ross, as a matter of urgency to investigate the cause of the overshoot and the validity of Shorts' claim that both aircraft deliveries and income would be recovered within this financial year, so that the company could get back on the financial track set out in this year's corporate plan.

I have arranged for my private secretary to circulate their report to your and colleagues' offices. It makes clear that production difficulties had been building up for some time but that Shorts' engineers persisted in the belief that a solution would be found before deliveries, and therefore finance would not be affected.

It seems that the undue optimism of this judgement was not identified until it was too late to prevent damage to both sales and production, and that warning signals for my Department were not raised early enough - not indeed until the financial problem became a reality. I am satisfied that the problem lay within the company and not in our arrangements for monitoring it and I intend to take action to prevent a recurrence.

Touche Ross believe that the technical problem has now been overcome and that the company will require to raise in the near future a total of £12m (cumulative £107m) over the limit which we had set for 31 March 1985. More important, they confirm that both deliveries and finances should be recovered by the coming autumn to those forecast in the corporate plan. They further confirm that the company should also achieve the savings this year on which we agreed last winter.

I have not of course approved this de facto increase over the temporary limits set by officials. I believe however that we should now approve an interim cumulative increase to £107m, particularly as prospects look good for recovery within this year back to corporate plan forecasts and as we shall have an opportunity collectively to review the company's full-year funding requirements in the course of the summer. In the meantime this interim limit will not permit the company to undertake activities outside the strategy we approved last year.

In proposing this I intend that the extra direct costs generated by production failures (estimated at £1.3m) and the cost of raising additional bank borrowings should be borne without change to Shorts' longer-term cash forecasts. I shall meet Sir Philip Foreman to impress upon him the difficulties which late notification of the company's problems has caused. We shall also be pursuing further measures which the company might take to ensure as far as possible that we are given early notice of any such problems in future, and also to ensure that proper controls exist over arrangements for sub-contracting.

This development also underlines the need for us to put in place more realistic arrangements to cope with temporary fluctuations in the company's business - Touche Ross themselves point to the company's exposure to even relatively minor fluctuations. If we do not do so we shall undoubtedly be confronted with the need to handle short-term difficulties which are not uncommon in the industrial world again in the future and I cannot believe that this is desirable or businesslike even for us or for the company. I propose therefore to bring forward, in the context of the corporate plan, suggestions for substantially increased flexibility which do not jeopardise our control over the company.

I should be grateful to know that you are willing to accept my proposal to approve an interim cumulative external financing limit of £107m pending our fuller review of the company's

/outlook

outlook in the summer and subject to the conditions set out above. The increase would be funded by bank borrowings and have no PES implications.

I am copying this letter to the Prime Minister, other E(A) colleagues, Michael Heseltine and to Sir Robert Armstrong.

Yours,

Doyl →.

From: THE PRIVATE SECRETARY



NORTHERN IRELAND OFFICE
WHITEHALL
LONDON SW1A 2AZ

R J Broadbent Esq
Private Secretary to the
Chief Secretary to the Treasury
Parliament Street
LONDON SW1

17th May 1985

Dear Richard,

SHORT BROTHERS PLC

As indicated in my Secretary of State's letter dated 17 May 1985 to the Chief Secretary I attach a copy of the report by Touche Ross on production problems encountered by Shorts.

I am copying this letter to the Private Secretaries to the Prime Minister, members of E(A), the Secretary of State for Defence and to Sir Robert Armstrong.

*Yours Sincerely
Neil Ward,*

N D WARD

SHORT BROTHERS LIMITED

REPORT ON PRODUCTION PROBLEMS

May 1985

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1. BACKGROUND

The electrical circuits in the SD 360 were originally wired and connected individually. This is a slow and time consuming process. Since the summer of 1983, therefore, the company has been planning the introduction of electrical looms, where the installation of wiring can be completed much more quickly using pre-bundled wires in the correct lengths. The move to looms is a sensible step in the continual process of reducing manhours on the production line.

2. ELECTRICAL FITTING CAPACITY PROBLEMS

Quite separate from the introduction of looms, in mid-1984 the company began to experience a production bottleneck with regard to electrical fitters.

In the summer of 1984 the then gloomy sales record led the company to revise its production plans for 1984/85. SD 360 sales targets were reduced from 36 to 30 and the company requested, and was eventually granted, an increase in its EFL. As one of the economy measures associated with this cutback, recruitment plans were shelved and a limit put upon shopfloor numbers.

Although sensible as an overall measure, the imposition of a recruitment ban failed to recognise a shortage of skilled electrical fitters. This shortage was exacerbated by the introduction of the EDSA SD 330 variant. The EDSA aircraft contains a complex avionics package specified by USAF. This package was new to Shorts and was more sophisticated than any fitted previously. It therefore required extra resources in the form of more electrical fitting man hours - already a key constraint.

3. THE INTRODUCTION OF LOOMS

By programming looms into purchasing and production planning Shorts were committed to their introduction in early 1985. They did not attempt to run the old and new methods in parallel. This was not unusual; they had undertaken changes of a similar complexity in the past without needing this sort of safety measure.

Shorts had decided from the outset to sub-contract both the design and the production engineering for the looms. They commonly also sub-contract the manufacture of the first few sets of items treated in this way to the firm which does the production engineering, and it was decided to sub-contract the manufacture of looms in the spring of 1984.

The sub-contractors chosen by Shorts were as follows :

- for detailed design work, Giltspur, a company experienced in this work. Shorts had worked with Giltspur before;
- for production engineering and manufacture, Avimo, a Taunton based company with whom Shorts had worked before.

4. INSTALLATION

By the time the looms were ready for installation, the company was still faced with a shortage of fitters and they determined that the only way to eliminate bottlenecks and still meet 1984/85 revised production targets, i.e. 30 SD 360s, was to sub-contract installation. As Avimo had already gained experience of the looms through their work on the project they were asked to provide labour for installation purposes.

The use of sub-contract labour was only accepted by the unions at Shorts on condition that Avimo workers were not allowed on the shopfloor and therefore loom installation had to take place at a remote and separate hanger on the Queen's Island site. These restrictions added to the company's difficulties, but did not pose insurmountable problems.

5. PROBLEMS WITH THE LOOMS

The first loom from Avimo arrived at Shorts in early December 1984 and was installed by early February 1985. As aircraft with looms installed started to have electrical equipment fitted to them, and as such installations began to be tested, problems emerged. Shorts have told us that there were over a hundred of these such as wires which were :

- too short;
- fitted incorrectly;
- of the wrong quality for the relevant function.

Each fault individually did not necessarily present a major problem. The volume of faults, however, when combined with the logistical problem of tracking each corrective action through each aircraft, put the aircraft assembly administration under significant stress.

6. RESOLVING THE PROBLEMS

When the problems on looms were encountered Shorts were unable to divert sufficient electrical fitters to solve them. This lack of resource in the aircraft division was exacerbated by :

- the overtime ban imposed by the unions as a result of their dissatisfaction with the 1984 wage round proposals put forward by the company;
- the fact that, unlike certain other skilled trades, no "transfers" were available from the Aerostructures or Missiles Divisions. Such skills do not exist in Aerostructures (which has few electrical components in the items it manufactures) and were fully committed in Missiles.

Initially, therefore, the company assigned its best fitters to ensuring that the first production aircraft with the new loom installed could be made to work. This was done and the aircraft delivered during early March. It then became apparent that the pressure on the limited resources available had meant that not all post-installation amendments had been fully documented. Although the problem had been solved for one aircraft, Shorts still did not have at that time a complete solution for the production line.

7. REALISING THE SCOPE OF THE DIFFICULTIES

Between the 25th March and 5th April 1985, Shorts production management came to the realisation that not only would they fail to deliver the two SD 360s in March required to meet the new 1984/85 target of 28, but that no deliveries would be made in April. The reason why this change of view occurred has been difficult to identify. We are informed that the Shorts Board were unaware of the change until April 5th. It seems probable that a combination of over-optimism and lack of understanding of the real nature of the looming problem contributed. The successful completion of one aircraft fitted with the new loom no doubt reinforced this optimism.

Once the Board became aware of the scope of the problem they instructed the production management to assess requirements and produce a new production schedule which recognised the extent of catching up required. This was done during the first two working weeks of April (the week after Easter being a company holiday). Finance then prepared revised cash flow forecasts based on this production schedule and forwarded them to DED on 30th April.

8. CURRENT POSITION

Shorts inform us that the adaptations to the looming installations are now largely documented. The two most recent looms delivered by Avimo have been checked and found to be free of query. The company believes that the position is now under control and that progress towards getting back on schedule can ensue. They point out that two aircraft have been delivered with looms in them, two are undergoing flight testing and three are nearly complete.

9. ISSUES ARISING

A number of issues arise. These, together with our views, are as follows :

9.1 Is the Problem Really Solved?

The company have put forward a revised schedule showing a recovery to programme by September 1985. It appears that this schedule is achievable as four aircraft carrying the new looms are actually flying. The problem seems to have been resolved, at least technically.

This view is subject to a number of provisos, however :

- (i) we have not conducted a detailed technical or financial audit of the information given to us by Shorts.
- (ii) we have not reviewed the company's ability to achieve the revised output schedules necessary to recover production. We have asked MOD(PE) to comment, however, and in the very limited time available to them, they have indicated that the revised programme is by no means impossible.

9.2 Why Was Government Not Told Until Mid April?

DED and ourselves received various statements as to cash requirements, delivery schedules and production levels throughout the first part of 1985. In particular, cash requirements for the first four periods of 1985/86 were set out in a letter from Shorts to the Department dated 15 March 1985. These cash requirements were significantly less than the company now predicts.

Following the board becoming aware of the possible extent of the problem on April 5th and the Company's Easter holiday week ending April 12th, DED were notified on April 18th that the situation, as yet unquantified as to cash flow implications, existed. Full cash flow projections were not presented to the department until 30th April. Among the possible reasons for delay in informing DED are :

- (i) The production staff at Shorts were working on the problem from January onwards. With hindsight, they were clearly over-optimistic with regard to their ability to identify and resolve the problem.
- (ii) Individuals within aircraft production management may have failed to recognise the seriousness of the situation until too late.
- (iii) We have not been able to ascertain how quickly the internal information systems at Shorts alerted management outside the production function to the difficulties that were building up.
- (iv) Financial forecasts produced until the end of March 1985 did not anticipate any failures to deliver aircraft in April. This is consistent with the facts outlined earlier in this report and the company did stay within the 1984/85 EFL, notwithstanding its failure to deliver aircraft in March.

Whilst the company might have considered that aircraft would be delivered in April, nevertheless we believe that they must have known by mid March that this could occur only if several favourable events were to occur. At the very least, therefore, the letter of 15 March should have recognised the possibility of these events not occurring.

9.3 Why Was the Problem Not Revealed by Existing Monitoring Procedures?

The only impact which the looming problem could have upon existing monitoring returns would be when deliveries were restricted. This did not happen until March 1985. As the monitoring return for March is not due until early May the returns system would not serve to provide information during March or April. No system exists to review production difficulties as and when they occur. It is possible that if we had had access to internal management accounts that some indication of the problem may have been revealed but this is not certain. MOD(PE)'s review of Shorts' activities is not of a nature which would reveal such information.

Weekly updated three month cash flow forecasts are provided by Shorts to DED. That dated 5 April showed no indication of the disruptive effect of looming. Not until the forecast dated 26 April was the cash flow revised. This reflects the activity within the company during the period.

9.4 Shorts' Sensitivity

Shorts cash requirements are very sensitive to upheavals of the sort brought about by the looming problem. We do not say that all companies with such problems are able to absorb them. In Shorts' case, however, a relatively minor production interruption can have an unduly dramatic effect upon cash flow.

9.5 Shorts Control Over Sub-Contractors

The reasons for the many problems encountered by Shorts during the introduction of the looms are almost certainly to be found in the long chain of working relationships between Shorts, Giltspur and Avimo. The company has not yet spent time attempting to analyse how errors occurred, being more concerned with putting them right. Among the errors that could have occurred are :

- Shorts giving incorrect requirements to Giltspur;
- Giltspur designing looms that did not meet Shorts' requirements;
- Shorts not noticing errors by Giltspur;

- Avimo failing to produce looms in accordance with Giltspur designs.

These errors are symptomatic of a loss of control over the sub-contracting process. We have no indication of which type of mistake if any predominated, but the volume of faults discovered in the looms would suggest a significant failure by Shorts to manage the process.

As we have noted in earlier reports, the use of sub-contractors poses problems of control for Shorts. These are exacerbated in situations where design and production are both sub-contracted, to separate companies.

From the evidence available Shorts' ability to control the sub-contracting process must be held to be in question. This is particularly relevant in the light of their intention to expand the sub-contracting of both design and production engineering functions.

At this stage it is not possible to tell whether Shorts have a valid legal case against either of its sub-contractors.

10. FINANCIAL IMPLICATIONS

10.1 Cost Penalties

We have asked Shorts to estimate the cost of the looming problem. They have replied that the additional direct costs are likely to amount to about £1.3 million to which should be added interest on the adverse cash flow. The costs of disruption to other activities or the loss of reputation for reliability are not quantifiable.

10.2 Loss of Sales

There remains a possibility that by failing to meet delivery schedules Shorts may lose customers. In particular it could be thought that the exercising by China of the options it holds for a further seven SD 360 aircraft could be affected. Shorts have stated, however, that even if they had been able to meet the delivery schedule for the Chinese, their customer would not have been able to use the aircraft. For US customers needing aircraft Shorts have been able to supply second hand aircraft on short term leases.

10.3 Cash Flow Implications

Shorts have estimated the cash effect to be as follows :

<u>Period</u>	<u>Funding Forecast 15 March</u> £m	<u>Funding Now Forecast</u> £m	<u>Variance</u> £m
1	99	101	(2)
2	99	104	(5)
3	99	107	(8)
4	99	105	(6)

The 15 March forecast put forward by the company covered only the four periods of 1985/86 pending approval of the 1984 Update. Expenditure plans were such that a significant increase in cash requirements would occur in period 5. The funding now forecast shows variances rising to £8 million - these are accounted for by the reduced cash flow arising from the looming problem. The latest estimates also assume that creditors are not squeezed to the same extent as in the 15 March forecast. The anticipated increase in cash requirements in period 5 is now offset by the receipt of delayed SD 360 sales income and the company should be back within its internal cash forecasts by September/October.

10.4 The 1985/86 EFL

Shorts have told us that they will still be able to meet their 1985/86 EFR as contained in their 1984 Corporate Plan Update. The company's 1985/86 EFL has not yet been set, but the proposal by the company for £110 million on a cumulative basis is £20 million more than the corresponding figure given in the 1983 Update. The main reasons for this difference are as follows :

	<u>£m</u>
Additional New Work	15 Adverse
Reduction in Missile Margins	3 Adverse
Effect of Capital Restructure	5 Favourable
Reduction in Aircraft Margins	8 Adverse
Reduction in Working Capital	7 Favourable

The company were told when approval was given for an increase in 1984/85 EFL that the loss of margin implied in the reduced sales forecasts had to be recovered through other cash savings in 1985/86. It is the company's contention that an aggressive stance on working capital requirements will generate more than sufficient funds to cover the loss of SD 360 margin.

To maintain previous commitments, we suggest that the company be asked to ensure that costs of the looming problem are absorbed in cash terms in 1985/86.

11. CONCLUSIONS

We have reviewed financial and production information submitted to us by Short Brothers in relation to the problems with electrical looms. We have not had the time, nor the access to a wide range of company officials or detailed working papers to check such information back to source documents. We have checked, however, that the changes from the figures given in the 1984 Update are consistent.

Subject to the limited information that we have received we conclude :

- (i) that the company at Board level did not realise for some considerable time the seriousness of the problems which they faced;
- (ii) that if aircraft fitted with the new looms are now flying, the problem has been resolved technically;
- (iii) that the plans put forward by the company appear reasonable and consistent and indicate that production will be recovered by the third quarter of 1985/86;
- (iv) that the cost overruns in relation to the looming problem will be contained within the 1985/86 EFR as defined in the 1984 Corporate Plan Update.

Shorsts Tucano

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And

Final Choice-
for Britain



File

SHORTS

*I have never
seen Jay. 12/2
Kay?*

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15 February 1985

Dear Miss Robilliard

Over a period of weeks before Christmas we mailed a number of brochures and leaflets to every MP seven in all. These presented our case for the selection of the Shorts Tucano as the new basic training aircraft for the Royal Air Force.

On 18th December, Adam Butler, the Minister for Defence Procurement announced that the short-list had been reduced to two and that Shorts and British Aerospace, with clear-cut cost and performance advantages, were being asked to submit best and final offers.

We shall shortly be in touch again with many Members to ensure that our case is understood and still being vigorously promoted. In the meantime here is a folder, and a spare file sticker, so that you can keep all the Shorts Tucano material readily to hand!

If you think you are missing any of our brochures (the two key ones are entitled "The case for the Shorts Tucano" and "UK Jobs and Exports") please let me know or ring Maxine Perry in our London office, 01-629-9541.

Yours sincerely

Richard Gordon

Richard J Gordon