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**29 November 1971**

**CABINET**

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**CONCORDE**

**Memorandum by the Head of the Central Policy  
Review Staff**

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**I attach a memorandum setting out the views of the  
Central Policy Review Staff on the Concorde project.**

**Signed ROTHSCHILD**

**Cabinet Office**

**29 November 1971**

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**CABINET****063****CONCORDE**

MEMORANDUM BY THE CENTRAL POLICY REVIEW STAFF (CPRS)

**INTRODUCTION**

1 Concorde is a commercial disaster. It should never have been started. On 30 November, 1971, it had cost the British Government an irrecoverable £350 million. If continued, development and production will cost us at least £475 million more (£392 million present value) from 1971-75. Concorde will make little money for its manufacturers and precious little, if anything, for the airlines who buy it. The total liability to the United Kingdom alone could be *about £550 million* more than £572 million excluding the written off £350 million mentioned above.\*

2 At the moment, the British Government is getting the worst of both worlds—having to pay up and getting no credit for doing so.

3 The decision whether or not to abandon Concorde must start from where we are now—much of the milk is already spilt. There are three arguments against cancellation which the CPRS reluctantly regards as conclusive. They are:

- (a) Given President Pompidou's personal commitment, cancellation would have to be precipitated by unilateral British withdrawal. This would do great harm to Anglo-French relations and, before 1 January, 1973, might imperil Ratification. British withdrawal after that date might seriously hinder co-operation with France.
- (b) Cancellation in 1972 would destroy 26,000 jobs in the United Kingdom, when unemployment and, possibly, redundancy rates will be high. Redeployment may be very difficult.
- (c) Now that the public believes Concorde is a spectacular technological success, cancellation would be a severe, almost emotional, blow to the average man and woman in the United Kingdom. The CPRS believes this is a real consideration, if only from the point of view of getting people to work and enjoy it.

\* Some of the financial figures in this memorandum may, in due course, have to be revised; but not, we think, to the extent of affecting the Recommendations.

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## THE "FUNDAMENTAL REVIEW"

4 If what is said above is accepted the Government need not and should not wait until after the "Fundamental Review", in February, March or, perhaps, April 1972, before publicly making its position clear. There are two reasons for this: first, although more information will be available about Concorde's performance in February 1972 than in December 1971 there will still be many important questions unanswered. Secondly, the main purpose of the "Fundamental Review" is to enable us to withdraw unilaterally with a minimum risk of the French persuading the International Court to award substantial damages against us. In the light of what is said in paragraph 3 this argument is irrelevant.

4.1 This is not to say that the next "Fundamental Review" and subsequent analogues are valueless. On the contrary, they provide the venue for policy discussions including bilateral cancellation, if some new blow should make this desirable.

## WHAT IS THE WORST THAT COULD HAPPEN?

5 Apart from possible defects about which nothing is at present known, Concorde noise raises the spectre of it being banned from American airports with concomitant repayment of all option money and progress payments, and cancellation of the project. The CPRS does not believe such a "sudden death" situation will arise; but if it did, bearing in mind the indemnity clauses which all airlines may insist on in their contracts, the loss to the Government would be as shown in the following table:

UNITED KINGDOM DEVELOPMENT AND PRODUCTION COSTS,  
150 CONCORDES

	1972	1973	1974	£ million 1975
Cancellation on 1 April	35	99	148	193
Cumulative ...	35	134	282	475

Present value of £475 million at 10 per cent discount, £392 million.  
Calculations from 30th November 1971.

The loss on 1 April, 1973, just after Ratification, may seem to be of special interest. But if we cancelled unilaterally, we might have to pay substantial damages to the French. If the damages amounted to one-third of the total French expenditure on the project (which is conceivable), nothing would be saved by cancelling the project as opposed to continuing it.

5.1 A further cost, not taken into account above, because it will be negotiable at the time, concerns cancellation charges paid to United Kingdom contractors which could, by 1975, amount to £40 million. In addition, the unemployment consequences of cancellation might

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cost the Exchequer £20 million net in transfer payments, while the resources lost as a result of this unemployment have been valued at about £30 million.

## WHAT IS MOST LIKELY TO HAPPEN?

6 This depends on the number of Concorde sold and at what price. So far as numbers are concerned, the CPRS believes that the British Aircraft Corporation's estimate, which at times has been as high as 250, is grossly optimistic. Cooper Brothers suggest that about 160 aircraft will be sold at ~~£12~~<sup>£11.9</sup> million each, ~~£0.4 million above~~ the figure indicated to option holders. Cooper Brothers also suggest that after 40 aircraft have been sold, the price of the aircraft could be increased without affecting sales, to restore the profit for the manufacturers, though it would be impossible to pay the R. & D. levy. The CPRS fears that the Cooper Brothers estimate of ~~£12~~<sup>£11.9</sup> million per aircraft for a run of 160 may be optimistic; and that the figure may turn out to be nearer ~~£13~~<sup>£14</sup> million. Furthermore we have doubts whether 160 Concorde will be sold: the number might be nearer 60.

6.1 On the basis of the Cooper Brothers estimates and assumptions, the cumulative revenue from the sale of spares might balance production losses by 1990, in undiscounted terms. Discounted at 10 per cent, however, there will be a considerable present value loss.

6.2 If the Government adopts the line—and can get the French to agree—that the Concorde selling price must recoup all production costs, contain a levy on R. & D, and provide a normal profit, the whole project will become an even greater commercial disaster than at present: because no airline would buy Concorde at the price that these conditions imply.

## WHEN WILL CONCORDE GO INTO SERVICE?

7 The manufacturers believe that tests on the first three production Concorde will be completed by May 1974 with certification and delivery to airlines in October 1974. The CPRS believes these estimates are optimistic and that delivery will not take place until 1975. This is taken into account in the figures given in paragraph 1.

## WHAT OTHER PROBLEMS ARE THERE?

BOAC

8 BOAC claims that the inclusion of Concorde in their fleet will involve a "loss" of £95 million from April 1975–April 1980. The validity of this claim cannot be judged until the time comes, since it rests on the untested extent of Concorde's passenger appeal. If

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BOAC is right, this loss will have to be met by the Government. The CPRS believes, however, that there is scope for a more imaginative marketing approach to Concorde on the part of BOAC, based on an incentive scheme. We hope to revert to this matter in due course. But apart from any incentive scheme, the CPRS hopes that those concerned will insist on attention being paid to special Concorde passenger amenities\* so that the message "Every Concorde passenger is a VIP in a hurry" comes through loud and clear.

**NOISE**

8.1 We have referred to the noise problem in paragraph 5. It is not certain that Concorde will conform with Heathrow or Kennedy Airport noise limits without jeopardising some other essential flying characteristic such as range. Nevertheless the very low frequency with which it will land and take off suggests that Concorde may get away with its noise. Purchase of Concordes on advantageous terms by an American airline might help to ease the noise problem at Kennedy Airport and elsewhere in the United States.

**SAFETY**

8.2 The CPRS has made a careful study of Concorde's safety and, within the limits of the information available, is satisfied with one reservation—the ability to ditch Concorde in the sea without killing all the passengers. Since this is a requirement of the British, French and American Aviation Authorities, it is, needless to say, under active study.

**POLLUTION**

8.3 Black smoke on landing and take off will not present any problems in production models; nor will ozone in the stratosphere poison the crew or passengers. Galactic radiation will be no more of a hazard, and probably less, than it is to subsonic aircraft. The CPRS commissioned a special study which showed that Concorde will not fry people on earth by interfering with the protective ozone layer in the stratosphere, as claimed by an American professor. But pollution charges, however unjustified, will damage Concorde's prospects and a campaign of public reassurance on environmental issues is essential. The International Congress on the Environment, at Stockholm in 1972, would be an excellent occasion to start the ball rolling.

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\* Some obvious examples are: Concorde Superbuses, with Customs, Immigration, refreshment and anti-bomb/hijacking arrangements on board, direct from central London to the aircraft; more passengers instead of ovens to heat up pre-cooked duck, beef, etc. (caviare and other sandwiches instead); air-ground radio service for passengers; Concorde lounge, with Customs and free drinks for arriving passengers; free Concorde ties, sample attached, for each passenger; specially selected stewardesses; and a free ticket for every 200th (?) passenger.

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**CONFIDENTIAL****5****ORDERING PATTERN**

8.4 BOAC and Air France will probably place their orders in mid-1972 and Air France will do so first unless Ministers commit themselves whole-heartedly to the project. The CPRS believes that Air France should not be allowed to beat BOAC to it. A possible and very troublesome situation would arise if about 35 Concorde were ordered between mid-1972 and end-1973, and there were then an ordering gap. It is very difficult to envisage a contingency plan to take account of this eventuality, but it is obvious that we should minimise the manufacture of Concorde and their rate of manufacture, to the extent that this is compatible with maintaining the labour force at its present level and not an increased one. This implies that authority to manufacture must to a certain extent be tied to orders received.

**STRETCHING**

9 This refers to improving Concorde, over the years, to the limit of its technical capacity. The decision to go ahead is not a formal commitment to stretch Concorde. But it would be prudent to regard it as a decision to stay in the supersonic business. If the history of subsonic jets is any guide, Concorde may be more readily sold if the airlines are confident that it will in due course be followed by improved versions. The cost of stretching is very uncertain, as is the extent to which it could be offset by price increases. But there would certainly be a large bill, running into hundreds of millions of pounds, for the Governments to pick up. The undesirability of trying to put the Stretch question under the carpet is well illustrated by the following telegram from Her Majesty's Ambassador in Paris (22.10.1971):

"When I saw M. Pompidou yesterday, he said he thought that Concorde would sell all right, but at a loss. Though Concorde 'Mark I' would turn out to be an expensive operation, he had great hopes that in due course a bigger and quieter 'Mark II' would scoop the market."

M. Pompidou is not, we believe, aware of the vast expenditure implied by his remarks.

**MANAGEMENT STRUCTURE OF THE  
CONCORDE PROJECT**

10 The chains of command have presumably been designed to meet the needs of Parliamentary accountability and the need for Anglo-French parity (see Annex A). From the point of view of commercial efficiency they are a nightmare and a farcical one at that. Any competent businessman could re-cast the organogram in Annex A to make it sensible. So a new look is necessary.

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**CONFIDENTIAL****"TECHNOLOGICAL FALL-OUT"**

**11** The CPRS does not believe that projects of this magnitude can be justified, even in part, on such grounds; and it would be wise to avoid the technological fall-out argument in any promotional activities.

**RECOMMENDATIONS**

(a) The Government should commit itself whole-heartedly and publicly to Concorde, with a professionally run sales and publicity campaign. Diplomatic and all other means available should be used and action should not be deferred until after the "Fundamental Review" in 1972.

(b) Keep the number of Concorde manufactured and their rate of manufacture at the minimum compatible with maintaining the labour force at its present level. Manufacture to be tied, so far as possible, to orders received.

(c) Concorde should be sold at a subsidised price, at any rate initially.

(d) Incentive scheme to be imposed on BOAC.

(e) Special study to be made of passenger amenities for Concorde passengers.

(f) Study possibility of selling Concorde to an American airline on advantageous terms as an insurance against noise problems in the United States.

(g) Paper on Concorde, with particular reference to absence of pollution, at International Congress on the Environment, at Stockholm in 1972.

(h) Ensure that BOAC does not order Concorde later than Air France.

(i) Concorde management structure to be revised.

**APPROXIMATE RESOURCE ALLOCATION**

One 2,000 megawatt nuclear power station

Channel Tunnel

Maintaining BAOR for two years

100,000 houses

200 multi-role combat aircraft

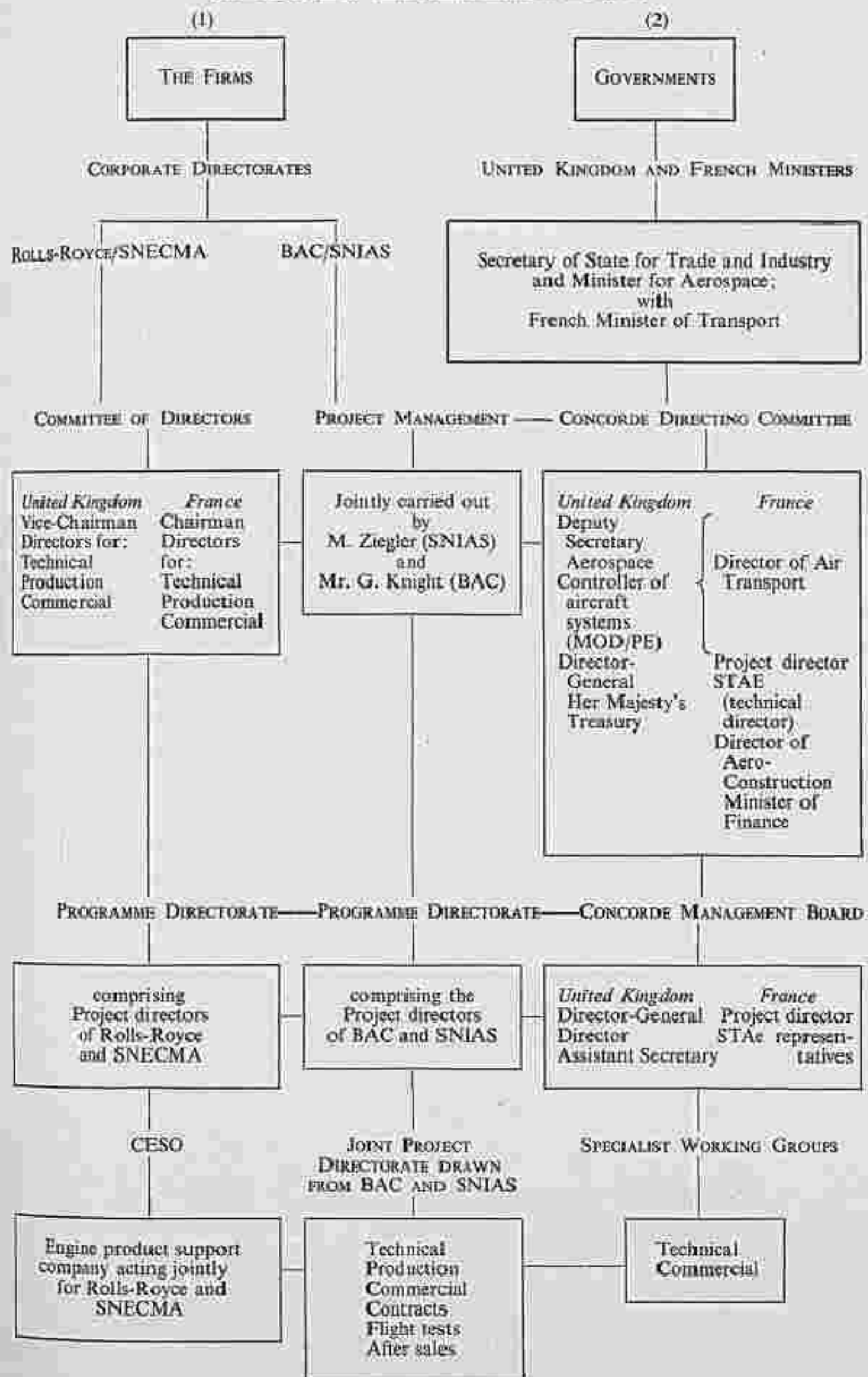
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## ANNEX A

**ORGANISATION OF THE CONCORDE PROJECT**

(showing levels at which communications are made)

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