

P 02417

PRIME MINISTER

The UK National Space Plan
E(A)(86)60 and 61

CONCLUSIONS

You will wish the Sub-Committee to reach conclusions on:

- a. to what extent to endorse the UK National Space Plan and the specific actions recommended in paragraph 22 of E(A)(86)60;
- b. how the cost should be accommodated;
- c. any further work to be done.

2. The Secretary of State for Trade and Industry is bidding for substantial new resources; this is a complex issue and several Departments are involved. The Sub-Committee may well be unable to reach final conclusions at its first meeting.

BACKGROUND

3. Current UK Government expenditure on civil space is around £110 million a year, of which some £75 million represents the UK contribution to the space programme of the European Space Agency (ESA). Military expenditure on satellite communications is running at about £130 million a year, £78 million of which is attributable to Skynet satellites. In January 1985, the ESA Council of Ministers decided that the Agency's programmes had to be enlarged within a long-term European Space Plan; and that this would require substantial extra spending between 1985 and 1990 (the official communique is at Annex B to this brief). The ESA envisages a 70 per cent real increase in its budget by 1990; we

are not committed to this - our commitment so far is a mandatory contribution (GDP related) to the ESA's general budget and scientific programme, amounting to £24 million of our ESA contributions in 1986/87.

4. The next ESA Ministerial meeting is due next June. The British National Space Centre (BNSC) will need to know soon how they should approach negotiations leading up to this meeting. Meanwhile a decision is urgently needed on the question of UK participation in the preparatory programme for the French-led Hermes space vehicle.

British National Space Centre (BNSC)

5. In January 1985, E(A) agreed (E(A)(86)2nd Meeting) that the UK should finance an increase in the ESA's mandatory science programme; and that the BNSC should be established to coordinate the UK's approach to space technology. The BNSC Management Board includes representatives from a number of interested Departments (Department of Trade and Industry, Ministry of Defence, the Science and Engineering Research Council (SERC), and the Natural Environment Research Council (NERC). But their endorsement of the Plan does not imply any Departmental commitment to meeting resultant expenditure.

6. It has not therefore been easy to reach decisions on the content of the programme or on how to finance it. The Cabinet Office arranged informal discussions in order to clarify the issues, and to some extent Mr Channon's paper reflects those discussions. But the underlying difficulties remain: the returns from space R & D activities are so speculative and long-term that it is impossible to construct a firm economic case for any given level of expenditure; and treating space as 'separate' - which is implicit in the establishment of BNSC - leaves it outside any larger programme from which funds could be diverted if Ministers decided space warranted a higher priority.

THE ISSUES

(a) Size and content of the programme

7. The overall shape of the Plan reflects the different programme areas covered by ESA (set out in Annex B to E(A)(86)-60), but BNSC are selective in proposing that the UK takes less than its GNP share of the microgravity and launch systems programmes and more than its share of satellite communications (where UK industrial capability is relatively strong). Some reduction in the UK's GNP share of the mandatory ESA programmes (General Budget and Science) is to be expected in any event as a reflection of the recent depreciation of the £ sterling against other European currencies, but this only accrues after an extended time lag.

8. The main elements of the Plan are:

- Satellite communications;
- Earth Observstion;
- Space Station;
- Launch systems.

It may be worth considering briefly for each of these the economic and industrial case, the balance between ESA and national expenditure, and the scope for cost sharing with industry. Annex A assesses them from these standpoints.

(b) Cost

9. Mr Channon sees the full plan (excluding HOTOL but allowing for some slippage) as requiring an extra £75, £125 and £170 million for the three Survey years. In his separate minute to you Mr Fairclough suggests a figure of £250 million in 1989-90, (an increase on present provision of some £130 million). This is inevitably an arbitrary judgment; but clearly Government-funded space activity must 'hang together'; there is no point in

contributing heavily to an ESA programme if there are no national facilities to use the results, and there is no point in preparing equipment to be used in space if the UK has no means of getting it there.

10. It is probably too soon to decide any figure now. You could ask BNSC to consider how far the UK contribution to ESA could be reduced without sacrifice of major UK interests, taking into account the prospective impact of the fall in the UK share of European GNP, and the possibility of a higher contribution from UK industry. A possible objective (subject to the question of financing discussed below) might be to reduce the additional bid in 1989-90 from Mr Channon's £170 million to, say, £80-90 million, with at least part of the national programme expenditure conditional on substantial industrial participation. In the earlier years the additional bids might be held to, say, £40 million and £70 million.

(c) Finding the Money

11. An additional bid of even £90 million in 1989-90 presents great difficulty. The contributor Departments are not willing to give space a higher priority than it has now. For whatever reason no additional bid was considered in the recent public expenditure round, and the Chief Secretary, Treasury naturally argues that there should now be no claim on the Reserve. The original argument for establishing a separate Space Centre was to make it possible to take account of wider interests and benefits accruing from space activities; but it also seems to have relieved the contributor Departments of responsibility for ensuring that UK space activities are successful.

12. Neither the DTI programme nor the Science Budget could realistically accommodate the extra funds sought. Insistence on offsetting savings would therefore probably result in gradual UK disengagement from space. There is arguably a bit more flexibility within the defence budget, although the AWACS decision decision will put it under greater pressure in the years immediately ahead. On the other hand, there is a case for redeploying to space activities some of the resources released by

the E(A) decision to constrain future defence expenditure on R & D, and this possibility might be further explored, although the Defence Secretary's minute of today strongly resists any notion of raiding the defence budget.

(d) Status of BNSC

13. At present BNSC is essentially a coordinating body. The contributor Departments remain accountable for their shares of space expenditure (for 1986-87 these are DTI £60 million, DES/Research Councils £29 million, MOD/Meteorological Office £13 million). If it is to be made more effective by being given a corporate identity, the effective choice is between:

(a) a subordinate department responsible to DTI Ministers;
and

(b) a non-departmental public body (NDPB).

Specific models of each were considered by a working group of officials. DES and Research Council representatives favoured (b); representatives from DTI, BNSC, MPO, the Treasury and the Cabinet Office preferred (a).

14. There are arguments for both these options and you may wish to hear the Committee's view. The consensus so far seems to favour (a) (subordinate department), which would not require legislation. But decisions on machinery of Government questions are for you to take, and you may wish to reserve this issue for further consideration in consultation with the Ministers most directly concerned. If, of course, the decision were against any increase in the size of the space programme, there would be less need to establish an independent new body to manage it.

HOTOL

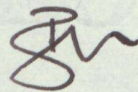
15. The paper says little about this, other than that no major decisions are required at present and no substantial expenditure is expected until 1989-90. But, as paragraph 4 of Annex A shows, it could assume enormous proportions, dwarfing expenditure on

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Concorde. You may therefore wish to ask Mr Channon to let you have a fuller assessment in the New Year.

HANDLING

16. You will wish to invite the Secretary of State for Trade and Industry to introduce his proposals. You might care to invite the Chief Scientific Adviser to give a scientific assessment of what is proposed. Other Ministers - the Secretaries of State for Defence, and for Education and Science in particular - will wish to comment. The Chief Secretary, Treasury will have views on the financial implications. The Secretary of State for Foreign and Commonwealth Affairs will wish to comment on international aspects.



J B UNWIN

Cabinet Office
17 December 1986

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ANNEX A

1. Satellite communications

This is the area of the UK's main industrial strength, at any rate as prime contractor, and the area where there are the most immediate prospects of economic benefits. But the 'space race' is tending to drive technology forward faster than is consistent with the recovery of R & D costs through the subsequent use in the market place of the facilities so created, and to produce a situation of excess capacity. It may be that continuing UK (and NATO) military expenditure will be sufficient to sustain the economically worthwhile elements in the present UK capability consistently with an ESA share less than the 31 per cent proposed by BNSC. On this basis greater priority might be attached to the national programme to strengthen UK satellite technology, although this should be conditional on industry meeting a substantial share of the costs, possibly under the LINK umbrella. The case for expenditure on satellite test facilities as part of the Plan looks weaker; either these should be provided collaboratively through ESA (as some are at present), or they should be financed by users if defence/security implications are thought to make reliance on ESA or foreign facilities inappropriate.

2. Earth Observation

The proposal is ESA financing at broadly the UK's GNP share, with particular concentration on the polar platform; meanwhile considerable national expenditure would be incurred on ground facilities to receive and make use of the information secured. This is the next most promising area from an economic standpoint, and it is clearly essential to have sufficient ground equipment to exploit information from space. But it may be possible to shade down the overall ESA contribution, while further consideration could be given to collaborative rather than national provision of ground facilities. There may also be scope for a more aggressive approach to user charges.

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3. Space Station

15 per cent ESA participation is proposed in the European share of the US programme. The argument is that this is essential (alongside participation in launchers) to maintain UK access to future space infrastructure. Large expenditure is contemplated, however, and it is doubtful whether the UK share need be so high (particularly given the fall which has already taken place in the UK share of current European GNP).

4. Launch Systems

The arguments for UK participation are the need to guarantee UK access to the infrastructure (following the Shuttle disaster this is no longer assured by competition between the US and France) the benefits to the UK of securing the flight control system for Hermes if that project goes ahead, and the importance of maintaining the goodwill of ESA partners who might eventually join in the UK-led HOTOL project. This is relevant to the immediate decision on the Hermes preparatory programme where the Chief Secretary, Treasury has so far declined to agree to UK participation funded from the Department of Trade and Industry's support for innovation programme. No decision will be needed for 2 years or so on whether HOTOL should go ahead, and UK industry is currently funding half the expenditure on 'proof of concept'; if the project eventually went ahead the expenditure on the 1990s would be enormous (dwarfing that on Concorde), and the UK would inevitably have to bear more than our proportionate GNP share if we remained project leaders. For the time being healthy scepticism is indicated; but if the concept were proved it could greatly facilitate space activities, and probably reduce their cost. There is even a prospect that Hermes might prove unnecessary.



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ANNEX B

ESA Ministerial Council: 30-31 January 1985: Communique

"The Council of the European Space Agency, meeting at Ministerial level in Rome on 30 and 31 January 1985, under the Chairmanship of Mr G M V Van Aardenne, Vice Prime Minister, Minister of Economic Affairs of the Netherlands, reviewed the development of Europe's space activities within the framework of a long-term space plan and set new directions, building on the achievements of the first two decades of European space cooperation, and expanding Europe's autonomous capability and Europe's competitiveness in all sectors of space activity.

The Ministers, representing 13 European states and Canada noted the impressive achievements made by Europe in the space field during the last 20 years, and in particular after the impetus given in 1973 by the European Ministers at the European Space Conference in Brussels. Besides carrying out successfully a large number of scientific and applications satellites programmes, Europe has acquired, through the Ariane Programme, an independent and competitive launch capability, and now has access to manned-flight technology through the construction and flight spacelab.

They also noted that during the same period the exploration and utilisation of space had taken on a substantial economic dimension and that by the end of the century, space activities as a whole would constitute an important factor in the political, economic and social life of all countries.

Considering also that the large programmes decided in 1973 have now come to a successful completion, that a new long-term plan for space activities in Europe has been proposed and that the President of the United States has invited Europe to participate in the space station programme, the Ministers recognise that the present scope of the agency's programmes had to be enlarged within

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a coherent, complete and balanced long-term European space plan to cope with the challenges of the next decade and beyond.

On this basis, the Ministers agreed:

- to a balanced long-term European space plan for the next decade along the line: proposed by the Director General leading to a comprehensive autonomous European capability in space.
- to welcome and accept the offer by the President of the United States of America to participate in the Space Station, with a view to continuing and strengthening a genuine partnership in the space field, subject to the achievement of satisfactory agreement.
- to reinforce and expand the Scientific Programme.
- to build on existing achievements by pursuing vigorously the Agency's activities in the field of Earth observation, Space Telecommunications, Microgravity and Technology.
- to initiate the Columbus Programme as a significant part of an international space station.
- to take note with interest of the French decision to undertake the Hermes manned spaceplane programme and the proposal by France to associate in the detailed studies her European partners within ESA interested in this programme.
- to welcome the proposal to bring forward and incorporate in the Agency's optional programmes, in due time, the additional elements of a European autonomous capability in automatic and manned orbital operations.



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The Ministers also noted that the above decisions would require a substantial increase, between 1985 and 1990, in the Agency's financial resources.

The Ministers recorded their determination to achieve an early and effective implementation of the measures they approved to strengthen the industrial policy and practices of the Agency.

In summary, the Council of the Agency meeting at Ministerial level has shown that the European states share a common vision of Europe's future in space and that the political will exists which will enable Europe to improve its already strong position among the world space powers."