



SUBJECT cc MASTER

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From the Private Secretary

10 February 1988

Dear Rosalind,

SPACE

The Prime Minister yesterday had a meeting with Lords Caldecote and Bessborough, Sir Peter Emery and Sir Ian Lloyd to discuss Government policy towards and spending on space. She was most grateful for the briefing provided with your letter of 8 February.

The main points raised by the Parliamentary delegation were:

- (i) more enthusiastic participation by the UK in the European Space Agency and projects like Columbus would generate additional jobs in the UK. The spin-off was potentially very large with perhaps 90 per cent of Government funding being returned in the form of contracts for UK companies. This also helped to keep key scientific personnel in this country;
- (ii) the UK was now at a crucial break point in its attitude towards the ESA. If we did not participate in projects like Ariane and Columbus it would not be possible to join later on and we would be effectively handing the ESA on a plate to the Franco-German axis;
- (iii) United States experience had demonstrated the spin-off gains from space research for example in improving the reliability of the manufacture of components;
- (iv) the private sector was willing to put up substantial funding of space research but was looking for a clear sign of Government commitment before offers would be forthcoming. Industrial interest in communication satellites might also be increased if there was scope to obtain a share of revenue operations as well as manufacturing contracts;
- (v) there was a major danger of losing the benefits of earlier large expenditure if modest further additional amounts of finance were withheld. For example total spending on ESRI over the last ten

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years had been some £42 million. But finance was being withheld for a ground station needed to receive and process data from ESRI;

- (vi) if the UK Government decided not to support the ESA optional programmes this would raise the question of whether it made sense to continue to incur the basic expenditure of £80 million - it might be better to get out of the ESA altogether.

Responding to these points the Prime Minister stressed the very large sums Government was putting into scientific research. One of her main concerns was that the heavy costs incurred in supporting big "diplomatic" projects pre-empted funds that could be more profitably deployed in other areas. Projects like Ariane and Columbus would increase this problem. The Government had considered them very carefully but concluded that there was no realistic prospect of private sector involvement. The Government was however looking further at Aramis where there was a prospect of a 25 per cent private sector contribution.

I am copying this letter to Jonathan Taylor (H.M. Treasury), Lyn Parker (Foreign and Commonwealth Office), Tom Jeffery (Department of Education and Science) and Trevor Woolley (Cabinet Office).

*Yours sincerely,
Paul Gray*

(PAUL GRAY)

Ms. Rosalind Cole,
Chancellor of the Duchy of Lancaster's Office.

LORD BESSBOROUGH'S INTRODUCTORY REMARKS
AT THE MEETING WITH THE PRIME MINISTER
ABOUT UK SPACE FUNDING
HOUSE OF COMMONS, 9TH FEB. 1988

Prime Minister, I saw Lord Shackleton yesterday and he particularly asked me to say how good you had been to him in various ways, especially in supporting the funding of the Antarctic survey. He also asked me to say he did his utmost in his Report on UK Space Policy to make it as moderate as possible and not ask for too much.

I gather some members of the Sub-Committee were more critical of Government funding than he was. I was not myself a member of the Sub-Committee but at Lord Shackleton's invitation I did attend the meeting at which Roy Gibson gave evidence. I was also a member of the previous Sub-Committee on Remote Sensing and Digital Mapping which this present Report overlaps. I did of course initiate the first full debate on space research in the Lords in 1961 and have been following the developments ever since, not only in the United States and the Soviet Union but also earlier on at Woomera in Australia and more recently in China.

May I say that although not a member of this last Sub-Committee I do agree with its conclusions and recommendations. I will not detail these - they are on page 63 of the Report - since I am sure you have read them. The main point I would like to make is that greater Government participation in the European Space Agency and indeed in the Columbus space station would certainly lead to further UK contracts both in Europe and in the USA.

Before asking my colleagues Robin Caldecote, Peter Emery and Ian Lloyd to say a few words I could not help being struck by the letter in The Times of 3rd February from the Headmistress of Ashford School stressing the importance of a space programme which would kindle scientific and academic interest at a grassroots level. That was of course the school which won a competition in 1985 to build and put an experiment into space - albeit the American shuttle. This was of course the kind of thing that gave a fillip to the cause of "girls into science" everywhere.

SPACE

(A) The following decisions have to be taken now

1. (By 10 Feb) Participation in Columbus
 - a) APM
 - b) MTFF
 - c) Polar Platform
 - d) Eureca

Participation in Ariane 5

These are optional programmes with which ESA has decided to go ahead; the UK has so far declined to join any of them. Without a positive decision to join, the UK will be excluded.

2. Participation with Canada in RADARSAT

The Committee have argued for participation in APM
Polar
Platform
(subject
to
review)
Ariane 5
RADARSAT

- (B) The door is closed on participation in Hermes

(C) The United Kingdom participates in ESA's mandatory science programme (Horizon 2000) and the ERS-1 satellite (but not ERS-2). No decision has to be taken yet on a Data Relay Satellite. These apart, the United Kingdom would exclude itself from all ESA's major long-term activity at present levels of funding - each new programme would involve extra expense because the total United Kingdom Space budget is already committed for 2 years or so ahead.

(D) For a decade the United Kingdom has subscribed to the ERS-1 remote sensing satellite, now due for launch in 1990. Total United Kingdom expenditure on ERS-1 to March 1988 will have been about £42 m at constant 1987/88 prices. The satellite's orientation towards oceanography has been championed by the United Kingdom which has contributed instruments to the payload. But there is no money to build a United Kingdom ground station to process ERS-1 data. Without this the data from ERS-1 will not be useable in the United Kingdom.

(The target cost of the ERS Data Centre was £20 m. With the launch only 2 years away it is already too late to spend that much money in time, even if it became available now.)



ESA Subscriptions

The percentage of ESA's mandatory costs payable by a Member State is calculated according to the size of its national GNP. The percentage fluctuates from year to year as national GNPs rise or fall. The United Kingdom's contribution is now about 16%.

Payment for optional programmes is calculated on the same basis but may be, and regularly is, varied. When mandatory and optional programmes are taken together, the percentage of ESA costs paid by the United Kingdom falls to about 12%.

The Government's present policy, if unaltered, will lead to the United Kingdom's contribution falling to about 5% after 1990, because the Government are not entering any of the new optional programmes.

Committee's Menu and Annual Costs

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|----|---|---------------|-----------------|
| 1. | Existing ESA programmes | £80m | |
| | Columbus (APM) | } £50m | |
| | (Polar Platform) | | |
| | Preparation for ERS 2 | | |
| | Ariane 5 | | |
| | Total via ESA | <u>£130m</u> | (after 5 years) |
| 2. | Existing national programme | £32m | |
| | ERS Data Centre | } £30-40m | |
| | Radarsat | | |
| | National technology programme | | |
| | Total (excl defence)
outside ESA | <u>c£70m</u> | (after 5 years) |
| 3. | Total public and private
spending on space (excl defence
c£100m) | <u>c£200m</u> | (after 5 years) |
| 4. | After 10 years the balance between ESA and national
spending should shift from 2:1 to 1:1. This
presupposes a large growth in spending outside ESA. | | |

UK SPACE ACTIVITIES POSSIBLE AT DIFFERENT INVOLVEMENT LEVELS

SUBJECT ELEMENT (includes National, International and ESA programmes)	AT PRESENT £116M/YEAR	BUILDING TO £200M/YEAR OVER 5 YEARS
ESA Mandatory Programme	included	included but increasing core ESA costs will lead to greater funding requirements unless UK "share" renegotiated
Space Science Programme	static level	rational increase possible
Microgravity Science Programme	minimal level	constructive support possible
Telecommunications	included	change focus to Data Relay Satellite and Aramis?
European Data Relay Satellite and/or Aramis	no prospect of inclusion unless reorientation of telecomm vote	
ERS-1 Satellite	included	funding needs declining
ERS-1 Satellite Data Centre and ground segment elements	inhibited at present minimal level	possible
Preparing national users to effectively utilise the data (in a UK National User Programme)	Presently at non-effective level	possible
ERS-2 Satellite	@@@decision not taken	*** See below
Radarsat	@@@decision not taken	*** See below
Participation in Space Segment of Columbus - Attached Pressurised Module - Polar Platform - Man Tended Free Flyer	@@@decision not taken	*** See below
Effective ground segment to utilise Columbus Data	@@@decision not taken	through ERS-1 Satellite Data Centre and National User Programme (items above)
West Freugh receiving station	MoD funds	MoD funds
Infrastructure to process/disseminate/archive (i.e. utilise) West Freugh data for civil programme	excluded	integrate with ERS-1 Satellite Data Centre plans i.e. possible
Ariane 4	minimal level	moves to Ariane 5 support?
Ariane 5	@@@decision not taken	minimum level possible (i.e. non-influential vote level)
HOTOL	minimal level	further development possible to pursue
Technology development programmes e.g. Robotics	minimal	reasoned development possible
Guidance computers/systems	minimal	reasoned development possible
Precision low power gas space thrusters	minimal	reasoned development possible
Ion thrusters	minimal	reasoned development possible
Self checking microchips	minimal	reasoned development possible
Geographic Information Systems	minimal	reasoned development possible
Advanced Satellite-based Navigation Systems e.g. ESA Navsat	nil	reasoned development possible
Instrument development programmes e.g. Synthetic Aperture Radar	minimal	some staged development possible but would have to be in collaboration, not by UK alone
Passive Microwave Scanners/Sounders		
Visible Infra Red Imagers/Sounders		

@@@ "decision not taken" indicates that as current situation. Inclusion with present budget level would only be possible by specifically including the item and deleting some existent activities.

*** Participation in all of Columbus, ERS-2 and Radarsat will not be possible under rising £200M/year over 5 year budget line. Participation in one of the three would be possible - decision on long term returns that are possible against expenditure etc needs careful re-evaluation of studies/briefing papers that have been prepared.

Revised: 8 February, 1988.

page in the OBR about 1990

The pull of space

From the Headmistress of Ashford School

Sir, I should like to endorse most strongly the views expressed in today's leader (January 27) on the importance of a national space programme, particularly for the kindling of scientific and technological interest at the grassroots level of school education.

THE
TIMES
The imaginative pull of space flight has been demonstrated dramatically in Ashford School since it won an ITN competition in 1985 to build and put an experiment into space, albeit on the American shuttle. Even the unforeseen delay to its flight has not daunted the astonishingly rapid increase since then in the school in the choosing of scientific subjects at GCSE, A-level and university courses and has given a fillip to the cause of "girls into science" everywhere.

The possibility of such direct involvement would certainly be enhanced by the existence of a national space programme; would act as a spur to the imagination as well as to the intellect; and might help to attract the leaven of visionaries that true progress demands in any field.

Yours faithfully,

TATIANA MACAIRE,
Headmistress, Ashford School,
East Hill,
Ashford, Kent.
January 27.