



From the Minister of State
for Industry and Information Technology

DEPARTMENT OF TRADE AND INDUSTRY

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RT HON GEOFFREY PATTIE MP

Rt Hon John MacGregor OBE MP
Chief Secretary
HM Treasury
34 Parliament Street
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NBP at this stage

23 February 1987

Dear John

We are due to resume discussion on 26 February of Paul Channon's paper on the Space Plan, E(A)(86)[60].

At the last meeting colleagues asked about private sector contributions and about the evidence for believing that earth observation has future prospects for commercial and scientific benefits. I have therefore asked the British National Space Centre to prepare some background material about private sector contributions which colleagues may like to have in mind for our resumed discussion.

The attached note is the result. It shows that UK industry's involvement in the space programme compares favourably with their European competitors', and demonstrates significant commitment to those parts of the programme where there are reasonable prospects of commercial returns accruing to the participants. Where practicable, the Space Plan provides for further private sector funding, in some cases as an express condition of proceeding. Colleagues will however be aware from E(A)(86)[60] that the general rationale for expenditure on space cannot be dependent on major private sector commitments. There are two main reasons for this. For European Space Agency programmes, other Governments provide the financial support and we cannot expect our industries to be competitive if they are asked to contribute in full. Furthermore, the commercial benefits are necessarily long term and speculative. Notwithstanding these points, the Plan

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assumes that we shall achieve private sector contributions to the space effort of about £26m p.a. in the next year or two. In some cases this is 100% private sector funding, in others it will go alongside BNSC funding. I do not think it realistic to plan on our achieving more than this in the immediate future, though we remain committed to trying wherever possible to bring the private sector in. For example, the possibility of private sector funding for the Data Relay Satellite is a quite new and imaginative approach, which the BNSC will pursue vigorously.

As for remote sensing, there are three fields of user interest: commerce, science and the public sector, including defence. The Space Plan does not address the defence aspects directly but BNSC have taken into account potential defence interests. On the civil side, I recently attended a Royal Society conference to examine the results of a BNSC study on uses of the proposed Space Station. The conference attracted over 400 participants from industry, commerce and the academic sector. After a two day discussion the Conference concluded that the space station, and particularly the remote sensing from the polar platform, would offer practical benefits in meteorological and oceanographic forecasting and a wide range of commercial operations and research, and would generate a market for high technology industries such as aerospace, information technology and robotics.

I am sending copies of this letter to the Prime Minister, to Members of E(A), and to Sir Robert Armstrong and the Chief Scientific Adviser.

GEOFFREY PATTIE

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NATIONAL SPACE PLAN: PRIVATE SECTOR CONTRIBUTIONS

Note by BNSC

1 UK industry already leads Europe in funding for itself satellite production and integration facilities (eg £50m worth at BAe Stevenage, BAe Filton and GEC-Marconi Portsmouth). Examples are listed in Annex A. The Plan envisages that industry will fund programmes parallel to the space plan at a rate of some £26m a year in the first three years alone (see Annex B). Indeed, these elements of the plan will not proceed without the corresponding industrial contributions. As evidence of user expenditure on space British Telecom has already spent about £130m in contributions to international satellite communications facilities, and about £70m on ground receiving stations (eg Goonhilly and London Docklands).

2 Two important projects demonstrate the UK space industry's willingness to encourage user-relevant research and development and to accelerate the privatisation of space programmes:

- (i) a major UK space company and a UK banking consortium are both aiming to convert ESA's £200m data relay satellite development programme into a private sector risk venture with ESA the main paying customer.
- (ii) an objective in the British-led ESA Aramis mobile communications satellite demonstration mission is to get the potential customer INMARSAT to pay 50% of the cost of the ESA programme (£50m).

5 The provision for private sector funding to support the National Space Plan is already greater, relative to the size of the programme, than in any other country's space research and development programme. The BNSC's firm intention is that it will be higher still, but this can only be achieved against the background of adequate long-term policy and Government commitments.

NATIONAL SPACE PLAN: PRIVATE SECTOR FUNDING

SATELLITE COMMUNICATIONS AND NAVIGATION

ECS Series: BNSC spend of some £4m on development of the Eurostar derivative of ECS is attracting £13½m of private venture capital from BAe.

Communications Technology Programme: The 50% of the communications programme at RSRE which goes out to industry will continue to attract an equivalent amount of industrial funding, averaging about £1m a year over the period of the plan.

In-Orbit Demonstration Mission: UK industrial funding building up to about £1m a year for telecommunications trials is anticipated towards the payloads for this ESA programme.

Olympus Utilisation: Some £1m in total is expected to be spent by about 30 British firms and institutions in conducting advanced communications experimental programmes on the British-led Olympus satellite.

Olympus 20/30 GHz Equipment: Development of production antennae, transmitters and receivers following Olympus trials is expected to attract investment of £0.5m a year.

Satellite Navigation: The national programme, building to £3m a year, should attract a similar amount of funding from industry.

EARTH OBSERVATION

Columbus Utilisation Studies: £0.1m a year private contribution.

National Remote Sensing Centre: Receipts from industry total some £1m a year.

ERS-1 Data Centre: There will be an industry contribution of at least £0.2m a year.

User Utilisation Studies: 25% of total expenditure in this programme is expected to be provided by industry, building to £1m a year.

8 GHz Ground Station Development: With export potential industry will contribute the £0.8m development costs.

MICROGRAVITY

National Programme: this £1m a year programme is expected to attract a similar amount of industry funding.

Intospace GmbH: UK industry will be contributing about £50K towards the studies and promotions of this microgravity commercialisation company.

LAUNCH SYSTEMS

Ariane 5: UK industry will provide its own testing and production facilities (eg Ferranti £2.5m).

HOTOL Proof of Concept: More than 50% or £2m is being provided by industry.

GROUND FACILITIES

Satellite Test: Apart from industry's own continuing substantial funding of test facilities (£55m since 1980), the construction of new national facilities planned by the BNSC will be contingent upon a contribution of at least £10m from industry.

Satellite Control: UK industry's need for involvement in mission control could attract funding of up to £1m a year.

TECHNOLOGY

Technology Programme Enhancement: The current £1½m annual contribution from industry (SFI Scheme) is expected to increase to some £6m with the larger programme and a more imaginative range of balance between government and industry funding, tailored to individual projects.

National In-Orbit Technology Demonstration: Depending on the projects selected for this new programme, an industrial contribution building up to some £5m a year towards test payloads might be anticipated.

Company Applied Research and Product Development: The estimated aggregate for the space industry is about £7m a year.

NATIONAL SPACE PLAN: COMPLEMENTARY INDUSTRIAL FUNDING
(1987-88 to 1989-90)

£ MILLION PER ANNUM (CASH)

Eurostar satellite platform	1.6
Communications technology programme	1.0
Telecommunications trials	0.6
Olympus utilisation experiments	0.2
Olympus 20/30 GHz equipment	0.5
Satellite navigation	2.0
<u>Satellite Communications and Navigation</u>	<u>5.9</u>
Columbus utilisation studies	0.1
National Remote Sensing Centre receipts	0.5
ERS-1 Data Centre	0.2
User utilisation studies	0.4
8 GHz ground station development	0.2
<u>Earth Observation</u>	<u>1.4</u>
National microgravity programme	0.9
Intospace GmbH	0.1
<u>Microgravity</u>	<u>1.0</u>
Ariane 5 test and production facilities	1.0
HOTOL proof of concept	0.9
<u>Launch Systems</u>	<u>1.9</u>
Spacecraft test facilities	2.4
Satellite control facilities	0.2
<u>Ground Facilities</u>	<u>2.6</u>
Technology programme	4.1
National in-orbit technology demonstration	1.9
Company applied research and product development	7.0
<u>Technology</u>	<u>13.0</u>
<u>TOTAL</u>	<u>25.8</u>