THE FOUNDATION FOR SCIENCE AND TECHNOLOGY

LECTURE AND DINNER DISCUSSION SUMMARY SHEET

Can a European space policy be self-sufficient, and is one necessary?

Held in the rooms of the Royal Society on 25 January 2000
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In the Chair:
The Rt Hon the Lord Jenkin of Roding

Speakers:
Mme Claudie Andre-Deshays, European Space Agency Astronaut;
Dr Alain Bensoussan, President, CNEs, Chairman of ESA Council;
Dr Colin Hicks, Director General, British National Space Centre.

Dr Bensoussan's lecture provoked envy of the generous funding of the Centre Nationale d'Etudes Spatiales as compared with the British National Space Centre. In the early 1960s General de Gaulle had set the target of making France a technologically advanced nation, and investment in space was part of the plan. Resources were now rather tighter than in the past, but there was still political support for a strong space programme. The investment had paid off, in terms of a very robust French aerospace industry and the commercial success of the Ariane launcher.

It had been clear that the budget for space research in this country would be limited and unable to support projects with high entry costs, and so the UK had decided some years ago not to invest in launchers or to participate in the International Space Station. Some contributors to the discussion defended this decision. In future we should focus on areas such as robotics and data handling systems where the investment would yield a sensible return. There were plenty of good arguments for spending more on space research in the UK, but not on big launchers or manned space flight. The UK could not hope to compete with the US in manned space flight but might aim to be the world leader in unmanned space technology.

Against this it was argued that dependence on robotics imposed limitations on the scientific exploitation of space. The biological experiments carried out on Mir by Mme Andre-Deshays had been more successful than earlier work using an automatic module, because it was easier to intervene when changes took place. It was also questioned whether simply staying out of

manned flight would enable the UK to compete with the US in unmanned technology, since the American programme used both. NASA used robotic missions, such as that planned for Mars in 2005/2006, to prepare the ground for manned flight. One speaker deprecated an inward-looking preoccupation with cost-effectiveness, describing it as like optimising the deck chairs on the Titanic.

In France a major effort went into education and promoting public understanding of the space programme. The video of her Mir mission shown by Mme Andre-Deshays had tremendous selling value. The question was posed whether the UK space programme could use such images to raise funds when in fact it was not in that line of business. In response it was suggested that unmanned flight could produce equally exciting results: perhaps the message might be "The Beagle has landed"!

Against this it was argued that it was the idea of people in space that inspired young people. At one time every small boy had wanted to be a train driver; for the generation growing up after the Second World War the dream had been to fly Spitfires. In the present day most young people did not seriously expect to become astronauts, but the idea of space flight could lead them into science and technology. A contrary view was that, 30 years after men had reached the Moon, people in orbit round the Earth were not exciting. Another speaker thought this a sterile debate, on the ground that film of manned flight or pictures from the Hubble telescope could equally catch the imagination of young people. What mattered was to communicate a vision, to the public at large and to the sources of funding. One contributor to the discussion asked why - other than for reasons of Community politics - there should be a Europe-based space effort. Development in this field seemed to be more pushed by technology than pulled by user demand. In the UK there was evidence of user-pull, for instance in relation to weather forecasting and environmental observation. Across Europe, by contrast, technology-push predominated, and the pull-factors seemed to be global rather than European.

In response one speaker agreed that the strategic direction should be global. Different countries had different interests, but these could add up to a worldwide pattern. In the short term, however, each country had to find willing partners. The UK might want to offer systems to the US, but if that did not work the alternative might be a European partnership. It was also observed that access to European launchers and other facilities was needed if European astronomy were to be competitive. There were collaborations with the US and Japan, but the European Space Agency offered the best standard.

One speaker observed that the Agency had committed itself to producing a strategy by the end of the year, when three decades of European collaboration had failed to produce a coherent policy. One comment was that decisions had been easier in the

past because the focus was on programmes with straightforward objectives. Thus the development of the Ariane launcher started from the simple idea of obtaining access to space, which was not available at the time. Now, by contrast, the object was to pursue programmes with foreseeable applications, and it was very hard to forecast the purposes which a particular line of research or development might serve. In the early days of the Global Positioning System and the Internet, for example, no-one predicted their eventual impact or the range of purposes for which they would be used.

It was suggested that science and technology in the US benefited from an approach to public funding which did not concern itself with forecasting benefits. When a public need, for example in national defence, was identified a solution would be paid for by the taxpayer in the confident expectation that it would serve to create wealth. Thus the American Government made Earth observation technology available free, unlike European Governments which looked for a return on their investment. In the US the intellectual property created by publicly-funded research was made available for all to exploit, and the American economy thrived on the readiness of entrepreneurs to identify profitable niches. In the UK, by contrast, companies carrying out research with public money would generally retain title to the intellectual property.

A speaker wondered whether private finance was being used in the funding of public projects in the European space programme, with risk being genuinely transferred to the private sector. Public/private partnerships entailed more than token commercial sponsorship. There had, however, been some success in weaning researchers from a traditional dependency on public funds and getting them to pursue mixed funding, with benefits in the form of better collaboration between producers and users.

There was also much to be gained from technology transfer. The oil and gas industry had brought about a revolution in ways of working underwater, in particular using robotics, and some of the techniques might be applicable in space. Space technology still dealt in small numbers and could benefit from the results of mass production in other fields. Conversely, the methods of deep space exploration were being applied to the development of an automated submarine which it was hoped would enable oceanographers to do their job without getting seasick. The Department of Trade and Industry and the Natural Environment Research Council had both tried to encourage the lateral transfer of technology, for example bringing together scientists who made particular kinds of observation regardless of the fields in which they made them. Jeff Gill The discussion was held under the Chatham House Rule. None of the opinions stated are those of the Foundation, since by its nature and constitution, the Foundation is unable to have an opinion.

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