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PERSONAL



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From the Secretary of the Cabinet

Prime Minister

Mr Powell

Two very
interesting
minutes cop. 18/2

The Prime Minister may
find it interesting to
glance at the attached
note by Dr F. H. Pantin,
who has taken Dr Röss's
place as our (Cabinet
Office) consultant on the
scientific aspects of
defence nuclear matters.

RTA

18. ii. 55

Mr Powell

I attach a supplementary note
from Dr Pantin, which Sir Robert Amshay
has not yet seen. I would be
grateful if both notes could be returned in
due course. 18. 2. 55.

SIR ROBERT ARMSTRONG

CABINET OFFICE

A 1247

13 FEB 1985

FILING INSTRUCTIONS

FILE No.

SDI RESEARCH PROGRAMME

It is not necessary to have faith in the ultimate success of SDI in fielding in space an effective ballistic missile defence system in order to identify advantages to the UK and to the West in general in taking up current American invitations to cooperate actively with the US in the SDI research programme.

Even if we believe that cooperation, for lack of success or other reasons, will not lead to "turnkey" sharing of systems (if any) ultimately deployed, more immediate possible benefits may be argued in favour of cooperation now. First, active cooperation might enable the UK to gain a better insight than would otherwise have been possible into the progress or otherwise of the SDI programme. Second, and perhaps as important, the SDI programme may produce, as "spin off", concepts which may be applicable to the present nuclear strategic confrontation, and may therefore have to be taken into account in our strategic defence plans on a more immediate timescale than the 21st century. Third, standing aside from SDI is not likely to increase the weight of whatever advice the UK may wish to offer to the US in future on the progress of arms control talks.

Fourth, while the prospects for UK firms gaining contracts within the SDI programme will always be small, they are likely to be that much smaller in the absence of active research cooperation.

A major disadvantage to cooperation is obvious. Active cooperation in the SDI research programme is likely to lend credence and life to the "Star Wars" concept, which is highly controversial even in the US, and which, at best, is very doubtful of realistic achievement of its objectives in whole or in part, and at worst is held to be destabilising. Active cooperation in SDI research could be held to be consistent with the agreed Camp David press statement of 22 December 1984, but it would be difficult to maintain a distinction between cooperation in SDI research on the one hand, and support for "Star Wars" on the other. However, refusal of research cooperation will not make the SDI programme go away. The President has invested sufficient political capital in the "Star Wars" concept to make it likely that a substantial SDI programme of some type will be around for the next four years.

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It would be idle to try to weigh up these advantages and disadvantages if the UK cannot in any event make a useful contribution to SDI research. An across the board in depth contribution, or anything approaching to it, is for a variety of reasons, impossible for the UK. It is, however, possible that the MOD may have research capabilities on a few selected topics such as sensors, lasers, data reduction and handling, and damage mechanisms, which could be made relevant to SDI objectives. To do so would probably entail reassessment of existing priorities, and some high priority topics already under way might have to suffer. At the most, no more than a dozen or so scientists might be involved. Such a contribution would obviously be very modest when seen against the broad sweep of the US SDI programme. Nevertheless, as in other fields, the US may welcome even this degree of support in specific areas and be quite generous in information exchanges resulting from the cooperation.

If the inclination is to consider this matter further I suggest the next step is to get the MOD to say what cooperation in SDI research on what selected topics from among its present capabilities and resources might be usefully offered to the US, at what damage to other programmes. It might then be possible to take an overall view on how to proceed.

F. H. Panton

F. H. PANTON

12 February 1985
D/06

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CABINET OFFICE

A 1365

18 FEB 1985

FILING INSTRUCTIONS

FILE No.

SIR ROBERT ARMSTRONG

SDI RESEARCH PROGRAMME

Further to my minute of 12th February (D/06).

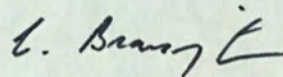
2. In the continuing discussion of the SDI research programme and "Star Wars", there is an important point which tends to get buried.
3. The programme clearly envisages staged timescales on which technological issues may be demonstrated by research as feasible and therefore candidates for development and deployment. Technological problems connected with the boost, post boost and mid course phases, with survivability of space based components and with overall battle management (particularly software design), may be in the research phase from 10 to 20 years, while logistics problems such as a launch vehicle to lift 100 metric tons in space and a multimegawatt power source for space applications, may be in research for 5-10 years. However, on a shorter time scale, within this decade, feasibility demonstrations may have been for instance made of a high power ground based laser, an airborne optical platform to assist in discrimination in the time just before re-entry, and of an endoatmospheric non-nuclear interceptor.
4. In other words, feasibility of difficult and new technologies in the boost phase, post boost phase, midcourse phase, and concerned with overall battle management is unlikely to be demonstrated until the mid to late 1990s, and, allowing for the study's optimism, somewhat later than that. On the other hand technologies associated essentially with ground based terminal defence may be proved by the end of this decade, and be available for deployment in the 1990s. Ground based terminal defence technology research has of course formed part of the US research programme before SDI came along and has been subsumed in the SDI programme.
5. In effect the SDI programme may lead to the possible development by the early 1990s of a ground based ABM system, up dated, but of a type generically similar to that permitted under the ABM treaty, but not so far deployed by the US. It could be argued perhaps that the ground based laser and an airborne optical adjunct are additions not specified as ABM components in the Treaty. In addition, of course, limitation to one site and 100 launchers would apply. Whether the US would want to deploy an ABM system of this type on its own, and if so where, must be a matter for conjecture, but it might for instance, be seen to give some protection to one of the US ICBM complexes. The rest of the objectives of the SDI research programme in the mid course, post boost and boost phases, whose deployment would contravene

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the ABM Treaty, will still be in research well into the late 1990s.

6. There are two conclusions I would draw from this. First, it will be well into the late 1990s before the SDI programme begins to run foul of the ABM Treaty in any substantial fashion. Second, the early products of SDI research, within the next five or so years, will largely concern ground based ABM systems in the terminal phase, and hence may have a bearing on the present strategic confrontation within the timescale of the UK Trident procurement programme. This underlines the argument for some UK participation in SDI research, in order to keep abreast of developments possibly having a bearing on the UK's own programme.



P. F. H. PANTON

15 February 1985

D/08

Dictated by Dr. Panton, but signed in his absence.