



file 16

10 DOWNING STREET

From the Private Secretary

30 July 1984

MAINTAINING THE STRENGTH OF THE SCIENCE BASE

The Prime Minister was grateful for the notes from your Secretary of State and the Secretary of State for Education and Science in response to my letter to you of 23 May.

The Prime Minister has noted your Secretary of State's view that the expenditure of an additional £20 million per annum in universities and Research Councils would mean that no "basic" research was carried out within research establishments and acknowledges that establishments, if they are to maintain high scientific standards, need to include some work of a longer-term nature in their programmes. She would, however, expect there to be a spectrum of work in the establishments ranging from the "basic" and long-term to the highly applied and short-term. While accepting that most research potentially suitable for university and Research Council laboratories will be found at the "basic" end, she considers that other work, some of which may in turn stimulate a need for more fundamental studies, will be found elsewhere in that spectrum.

The Prime Minister has further noted that there is reasonable overlap between the list put forward by your Secretary of State of subject areas where MOD could in principle make greater use of external expertise and the subjects that the Secretary of State for Education and Science considers would most interest the Research Councils.

The Prime Minister takes the view that the response from the Secretary of State for Education and Science has demonstrated that there could be some advantages in transferring £20 million per annum to the Science Vote. But she recognises that there could also be disadvantages. Accordingly, the Prime Minister has asked that Dr. Nicholson, with the aid of the Chief Scientific Adviser, MOD and the Chairman of the ABRC, should examine the proposal more closely with a view to clarifying the way in which such a transfer of responsibility for research could be carried out, the methods which could be used to maximise the advantages

/and minimise

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and minimise the disadvantages, and the likely outcome in terms of the strength of the scientific base of the country as a whole and the MOD'S ability to use this base to fulfil its responsibilities for the defence of the country.

I am sending copies of this letter to Elizabeth Hodgkinson (Department of Education and Science), and to Richard Hatfield and Robin Nicholson (Cabinet Office).

(DAVID BARCLAY)

Richard Mottram Esq.,
Ministry of Defence.

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Prime Minister (4)
Agree attached letter?

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25 July 1984

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MR BARCLAY, NO 10

MAINTAINING THE STRENGTH OF THE SCIENCE BASE

Yes no

You asked for advice on the responses of Mr Heseltine and Sir Keith Joseph to the questions posed in your letter of 23 May on a hypothetical transfer of £20 million pa from MoD intra-mural establishments to universities and Research Councils.

2. An analysis of certain aspects of the responses is given in the Annex. My own conclusions, which are inevitably coloured as much by my general views of the relative performance of MoD laboratories and University/Research Council laboratories as by the responses themselves, are as follows:

(a) Mr Heseltine has propounded a case based on minimal overlap between MoD and DES funded work using the definitional and organisational peculiarities of MoD to substantiate this. The argument is fallacious and Sir Keith Joseph's proposition that there is a substantial slice of MoD work which could be done in universities and Research Council laboratories is persuasive. I would estimate the size of the slice at £100 m pa so a £20 m pa transfer seems a sensible level to look at.

(b) Mr Heseltine has ignored the deteriorating situation in MoD laboratories and the very real possibility that without an injection of vigour and scientific competition from universities and Research Councils they are likely to be unable to deliver the scientific goods to the Services in the future.

(c) Sir Keith Joseph has made clear that if MoD funds were to be transferred to the Science Vote, he has ideas on how to ensure that a closer relationship between MoD and University and Research Council scientists would follow.

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(d) The hypothesis that a transfer of funds would lead to an improved quality of research is supported by the comments in Sir Keith Joseph's response and by the absence of effective counter-arguments in Mr Heseltine's. The same can be said for the hypothesis that a transfer would also lead to broader application of research results.

3. Thus the correspondence has supported the view that a transfer of funds would be beneficial on a national basis. But MoD clearly do not yet accept this.

4. The way forward could be through a meeting between the Prime Minister and the two Secretaries of State but I am not satisfied that we yet have enough effective ammunition to offer the Prime Minister for such a meeting. Sir Keith Joseph proposes a meeting of officials with my 'help and oversight'. The danger here is that MoD would simply stonewall. My preference would be that the official group should meet with a strong steer from the Prime Minister to flesh out the method of transfer and its consequences, leaving open whether or not the transfer will be made.

- 5. In case this way forward appeals, I enclose a draft Private Secretary's letter.

6. I am copying this minute to Sir Robert Armstrong.

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ROBIN B NICHOLSON
Chief Scientific Adviser

DRAFT LETTER FROM THE PRIVATE SECRETARY TO THE PRIME MINISTER TO THE PRIVATE SECRETARY, SECRETARY OF STATE FOR DEFENCE.

MAINTAINING THE STRENGTH OF THE SCIENCE BASE

The Prime Minister was grateful for the notes from your Secretary of State and the Secretary of State for Education and Science in response to my letter to Richard Mottram of 23 May.

The Prime Minister has noted your Secretary of State's view that the expenditure of an additional £20 million pa in universities and Research Councils would mean that no "basic" research was carried out within research establishments and acknowledges that establishments, if they are to maintain high scientific standards, need to include some work of a longer-term nature in their programmes. She would, however, expect there to be a spectrum of work in the establishments ranging from the "basic" and long-term to the highly applied and short-term. While accepting that most research potentially suitable for university and Research Council laboratories will be found at the "basic" end, she considers that other work, some of which ^{may} in turn stimulate a need for more fundamental studies, will be found elsewhere in that spectrum.

The Prime Minister has further noted that there is reasonable overlap between the list put forward by your Secretary of State of subject areas where MoD could in principle make greater use of external expertise and the subjects that the Secretary of State for Education and Science considers would most interest the Research Councils.

The Prime Minister takes the view that the response from the Secretary of State for Education and Science has demonstrated that there ^{is} would be some advantages in transferring £20 m pa to the Science Vote, but she recognises that there ^{could be} are also disadvantages. Accordingly ^{the Prime Minister} she has asked that Dr Nicholson, with the aid of the Chief Scientific Adviser, MoD and the Chairman of the ABRC, should examine the proposal more closely with a view to clarifying the way in which such a transfer of responsibility for research could be carried out, the methods which could be used to maximise the advantages and minimise the disadvantages, and the likely outcome in terms of the strength of the scientific base of the country as a whole and the MoD's ability to use this base to fulfil its responsibilities for the defence of the country.

I am sending copies of this letter to Elizabeth Hodgkinson (DfES) and to Richard Hatfield and Robin Nicholson (Cabinet Office).

Agreed
 [Signature]

1. The first point to make is that the need for the Annual Review of R&D, with its common definitions of different types of research, is amply demonstrated by the inconsistent and selective use of expenditure data in both minutes. Mr Heseltine's minute is particularly loosely worded, since he refers to MoD spending £20 m on "basic" research, split 50:50 between the establishments and universities, whereas the MoD's own submission to the Annual Review showed MoD spending nothing on basic research. I imagine that Mr Heseltine is actually referring to work with a long time to application, but not undertaken purely with the aim of adding to knowledge - eg, strategic research. Such work is extensively supported in the university and Research Council system; further, it blurs imperceptibly with the more applied research carried out in the establishments.

2. Mr Heseltine sets out in his third paragraph sound criteria for deciding where work should be carried out. In particular, the closer the foreseen application, the more need there will be for close contact with Service staff and, probably, the greater the security constraints. However, for the reason set out above, I cannot believe that the pool of available work for universities is confined only to the £10 million that he claims is at present spent on long-term work. I am convinced that there is a considerable segment of the £200 million spectrum of intramural expenditure which parallels university and Research Council work. Thus the transfer of the £20 million pa would not therefore mean the end of all the long-term, intellectually stimulating work which Mr Heseltine sees, correctly, as an important factor in maintaining the vigour of research establishments.

3. Moreover, I think he glosses over some of the problems that are currently affecting the establishments and which impair their ability both to maintain high scientific standards and to assist the translation of their work into civil fields. They have been considerably affected by the constraints on Civil Service recruitment and as a result have found it difficult to deploy staff in new fields. Universities are also affected by the same problems but through the use of short-term

contracts, the natural flow of post-graduate students and the "new blood" posts, they can more easily inject some flexibility into their research efforts. MoD establishments, furthermore, are not competitive in pay when seeking to attract high quality recruits in high technology areas for the few posts that are on offer. Again, universities have problems of a similar nature but their high quality staff can supplement academic salaries by industrial consultancies. All this suggests to me that, unless policies on the staffing of MoD research establishments are to change markedly in the near future, which seems unlikely, MoD will have great difficulty in maintaining the quality of their science and would be well advised to seek to strengthen outside centres of expertise.

4. The same difficulties affect the translation of MoD scientific work to civil fields. The establishments are only now taking tentative steps towards taking their developments forward in non-military directions; a university unit would have more flexibility. MoD have been very slow in announcing further measures to improve civil take-up of ideas originating in the research establishments following the Maddock report and the Lancaster House statement by Mr Heseltine. ACARD have commented on this delay in the context of the Annual Review.

5. Mr Heseltine, unlike Sir Keith Joseph, deals with the question of maintaining scientific standards. There is some first-class work in some defence establishments (notably RSRE), but the problems I have referred to will make it more difficult to sustain and inevitably open publication of research results in refereed journals, which is the main mechanism for maintaining standards elsewhere, is not as available to defence workers. The grant-awarding committees of Research Councils, coupled with refereed publication, are effective mechanisms for ensuring high scientific standards; the MoD procedures are probably the best that can be arranged in their circumstances, but must suffer from the need to retain permanent staff at the establishments even when expertise has become outdated.

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25 JUL 1984