



10 DOWNING STREET

From the Private Secretary

23 May, 1984

CONFIDENTIAL

MAINTAINING THE STRENGTH OF THE SCIENCE BASE

The Prime Minister held a meeting on 26 October last year to discuss the quality of the science base. It was agreed that the Chairman of the ABRC, Sir David Phillips, should discuss with your Chief Scientist the terms on which universities could secure additional defence research work. The Prime Minister has recently held a further meeting with the Secretary of State for Education and his scientific advisers to review the condition of the country's science base. I enclose a copy of the record of that meeting. The Prime Minister would be grateful if the issues raised could now be explored further.

The Prime Minister is aware, of course, that most of the R&D expenditure of MOD is connected with the development of specific weapons system or other items of defence equipment, and that your Secretary of State has recently stated his intention of obtaining the maximum commercial benefit from this expenditure. The meeting with the Education Secretary was relevant to the other part of the R&D budget, the £330 million or so devoted to research, and specifically that portion which supports longer-term work in MOD research establishments.

It has been put to the Prime Minister that some of the more basic and strategic research currently carried out in Government establishments - both civil and defence - would, security considerations permitting, be better conducted through universities and Research Councils, not only because of the high calibre of their staff but because the routes to eventual exploitation would be more numerous and effective. In view of the Government's concern to gain the maximum scientific, defence and industrial benefit from the substantial sums involved, and the clear overlap between many areas of MOD research interest and university research, the Prime Minister would like these assertions investigated. Specifically, she would be grateful for your Secretary of State's view on the effectiveness of the arrangements in his

RAMAAU

RM

Department for monitoring the scientific quality of the work undertaken at research establishments and for judging whether a particular research programme would be carried out more effectively in these or elsewhere, both in respect of the quality of the work and its exploitation.

The Prime Minister has asked me to emphasise that she has yet to be persuaded of the strength of the argument put forward on behalf of the universities and Research Councils. But she thinks it would be helpful if both your Secretary of State and the Secretary of State for Education and Science were to take a specific sum, say £20 million, presently intended for intra-mural research in MOD and consider:-

- (i) the research areas that might best be supported with such a sum in the university and Research Council system;
- (ii) the advantages and disadvantages to MOD;
- (iii) whether specific contracts or an addition to the Science Vote would produce results of the highest quality and the widest applicability; and
- (iv) how such application would be secured.

BD
The Prime Minister would be grateful for notes from your Secretary of State and from the Education Secretary by the end of June.

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)

R. Mottram, Esq.,
Ministry of Defence

RAMAAU



W.0387

23 May 1984

MR DAVID BARCLAY ✓

*nbpm
Spoke to RN and
explained that
the letter had
already gone.*

*Dms
23/5*

SCIENCE BUDGET

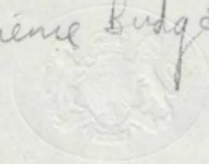
I am not sure what the position is on the minute and draft letter to Mr Heseltine which Sir Keith Joseph sent to the Prime Minister last week and which I commented on for her weekend box. In the event that she does intend to send the letter to Mr Heseltine and that it hasn't yet gone off, can I point out that there was a small ambiguity in my suggested text where in paragraph 4 it is not clear whether the figure of £20m is a total sum or a per annum sum. The latter was the intention, and if it is not too late I suggest that that is made clear.

If the minute, or something like it, has already gone, I would propose to clarify the point in discussions with the MOD Chief Scientist which I am sure would be the next stage after Mr Heseltine had received the letter.

MBN.

ROBIN B NICHOLSON

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10 DOWNING STREET

From the Private Secretary

Prime Minister ⁽¹⁾

SCIENCE BUDGET

You were minded to write to Mr Heseltine about getting better value from defence research expenditure.

Attached are two drafts: one prepared by DES (flag A), and the other by Dr Nicholson (flag B). I think Dr Nicholson's is better, since it is less likely to provoke a hostile response.

Agree draft minute at flag B?

Yes no

DMS
18/5

GR

Px type flag B
as minute for
Pm's sig.

DMS
21/5

W.0382

18 May 1984

PRIME MINISTER

SCIENCE BUDGET

I have seen a copy of Sir Keith Joseph's minute to you of 17 May and his draft letter for you to send to the Secretary of State for Defence.

2. I support Sir Keith's comments in his minute to you. In my judgement they accurately reflect the current science and technology scene in the UK.

3. I am much less happy with his draft letter for you to send Mr Heseltine. The draft fails to distinguish between the very large, mainly extramural, development expenditure in MOD which has little relevance to the science budget and the smaller (but still £330 m) mainly intramural, research budget which does have relevance. It also makes a number of unsupported allegations against MOD research which will be countered by similarly unsupported rebuttals.

4. An objection of a different sort is that I am quoted in support of the DES position in paragraph 2 and, in paragraph 4, am apparently expected to bat on behalf of the Research Councils against MOD. I hope I have shown you that I do not shrink from giving you frank, and sometimes controversial, advice on a confidential basis or from supporting this at meetings you may have with colleagues. However I do think I need to preserve an element of neutrality between Departments and Sir Keith's draft seems to me to go beyond this.

5. In the light of this assessment, I have taken the liberty of preparing a substantially revised draft for you to send to

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Mr Heseltine. It places an onus on MOD (and DES to a lesser extent) to justify their present research expenditures and their future aspirations. It calls initially for a written response although I envisage that later you will wish to have another meeting since it is virtually certain that the Departments will not agree on the right way ahead in the future.

6. By the time the meeting is held, you will have some further advice to hand on this matter. First, my Secretariat's 1984 Annual Review of Research, which takes an across-the-board view of Government R&D expenditure, will be complete, together with comments on the review from ACARD.

7. Secondly, the review which you agreed I should undertake on Government Research Capability, which takes a long-term view of Government Research Establishments, will be with you in draft form. I was, I regret to say, over-optimistic on the time needed to conduct a review on this difficult subject but I shall have completed the draft early in June. I can say now that the review will recommend that Departments should develop long-term plans for putting all their research establishments into the private sector with the sole exception of MOD establishments covering chemical and biological defence and nuclear weapons. The onus would be on Departments to produce convincing arguments against this general privatisation rather than, as at present, simply requiring them to defend the status quo.

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

RBN

ROBIN B NICHOLSON
Chief Scientific Adviser

Cabinet Office
18 May 1984

11/4/84

DRAFT MINUTE FROM PRIME MINISTER TO SECRETARY OF STATE FOR DEFENCE

MAINTAINING THE STRENGTH OF THE SCIENCE BASE

1. At our meeting to discuss the quality of the science base on 26 October last year, it was agreed that the Chairman of the ABRC, Sir David Phillips, should discuss with your Chief Scientist the terms on which universities could secure additional defence research work. I have recently held a meeting with Keith Joseph and his scientific advisers to review the condition of the country's science base. *I enclose a copy of the record of that meeting. In the light of what was said,* ~~In the light of what I heard,~~ I should now like to look into the matter further.

2. I am aware, of course, that most of the R&D expenditure of MOD is connected with the development of specific weapons system or other items of defence equipment and you have recently stated your intention of obtaining the maximum commercial benefit from this expenditure. My discussion with Keith Joseph was relevant to the other part of the R&D budget, the £330 million or so devoted to research, and specifically that portion which supports longer-term work in MOD research establishments.

3. It has been put to me that some of the more basic and strategic research currently carried out in Government establishments - both civil and defence - would, security considerations permitting, be better conducted through universities and Research

Councils, not only because of the high calibre of their staff but because the routes to eventual exploitation would be more numerous and effective. In view of our joint concern to gain the maximum scientific, defence and industrial benefit from the substantial sums involved, and the clear overlap between many areas of MOD research interest and university research, I would like these assertions to be thoroughly investigated. Specifically, I would like to have your view on the effectiveness of the arrangements that you have for monitoring the scientific quality of the work undertaken at your research establishments and for judging whether a particular research programme would be carried out more effectively in these or elsewhere, both in respect of the quality of the work and its exploitation.

4. Let me make clear that I have yet to be persuaded of the strength of the argument put forward on behalf of the universities and Research Councils. But I think it would be helpful if both you and Keith Joseph were to take a specific sum, say £20 million, presently intended for intra-mural research in MOD and consider:

- i. the research areas that might best be supported with such a sum in the university and Research Council system;
- ii. the advantages and disadvantages to MOD;
- iii. whether specific contracts or an addition to the Science Vote would produce results of the highest quality and the widest applicability; and

CONFIDENTIAL

iv. how such application would be secured.

I should be grateful for notes from you and Keith Joseph by
~~{30 June}~~ the end of June.

I am sending copies of this minute to Keith Joseph,
Sir Robert Armstrong and Dr Nicholson.

PRIME MINISTER

SCIENCE BUDGET

At our meeting on 3 May with Sir David Phillips, Professor Kingman and Dr Nicholson, you asked me to let you have a note about what might be done to get better value for money from civil and military research programmes - your Private Secretary's letter of 4 May refers.

2. My concern is that we are missing opportunities in scientific research and allowing our once exceptionally good science base to fall below the standards of our major competitors. Preserving the quality of our science base requires the Research Councils to be in a position to finance a spectrum of basic, strategic and some applied research. I am advised that the best research of this type in this country, with one or two distinguished exceptions like the Royal Signals and Radar Establishment at Malvern, is done either at universities (often with Research Council funding) or in Research Council institutions like the Laboratory of Molecular Biology at Cambridge. (Dr Nicholson would, I think, agree with this generalisation.) The Research Councils are in very close touch with industry, having industrialists as Council members and on their advisory committees; and the universities are now making real efforts (even though belatedly) to get closer to industry in the form of numerous initiatives including teaching companies, science parks and industrial professorships.

3. Leading scientists have told me of their concern about the quality and value of some of the work done in Government research establishments funded by the civil departments. They also question whether the country is getting full value from the scientific research financed by the Ministry of Defence. It has been suggested to me that, if some of this

1) Mr Cohen

2) Prime Minister (1)

Agree attached minute to the Defence Secretary?

18/5

finance were transferred to the Research Councils, there would be a gain to science and to industry without loss to the nation's defence. Another important question is whether the results of research carried out in defence establishments could be made more widely available to the rest of the scientific community and to industry. (The general flavour is illustrated by Sir Hermann Bondi's remark that the NERC's oceanographers get more help from the US Navy than from the Royal Navy! They were more helpful in the nineteenth century - HMS Beagle took Darwin round the world.)

4. At your meeting to discuss the strength of the science base on 19 October last year, Sir David Phillips was asked to pursue with the Chief Scientist at MOD the terms on which universities could secure additional defence research work. Sir David Phillips told you on 3rd May that, in his view, things were moving rather slowly. Since then he has received from the Ministry a draft paper which they intend to circulate to Universities and polytechnics to inform them about the areas of research in which the Ministry are interested. Their list of research areas includes very little which is not also on the list of research areas supported by the SERC, the NERC and the MRC. Because the ABRC are not informed about what the Ministry are doing, they cannot ensure that government research money is being spent to best effect. My Permanent Secretary has now spoken to Sir Clive Whitmore about this whole question, as you asked him to do, and the Ministry are looking into the matter.

5. I am, as you requested, sending you with this Minute (copies of which go to Sir Robert Armstrong and Dr Nicholson) a draft Minute for you to send to the Secretary of State for Defence.

KJ

17 May 1984

DRAFT MINUTE FOR THE PRIME MINISTER TO SEND TO THE SECRETARY
OF STATE FOR DEFENCE

MAINTAINING THE STRENGTH OF THE SCIENCE BASE

1. At our meeting to discuss the quality of the science base on 26 October last year, it was agreed that the Chairman of the ABRC, Sir David Phillips, should discuss with your Chief Scientist the terms on which universities could secure additional defence research work. I have recently held a meeting with Keith Joseph and his scientific advisers to review the condition of the country's science base. *I enclose a copy of the record of that meeting. In the light of what was said,* ~~In the light of what I heard,~~ I should now like to look into the matter further.

2. The Research Councils, Sir David Phillips and Dr Nicholson are concerned that government money allocated to scientific research may not ^{always} be used to best effect. Their fear is that Universities and Research Council institutes ~~are~~ ^{may be} denied funds to do potentially very high quality research (both strategic and to some extent applied) while less good work of the same sort goes ahead in Government establishments - both civil and military. It has also been put to me that there may be duplication because the rest of the scientific community and industry are not aware of the results of work done in defence establishments. It may be, for example, that our work on remote sensing would be more profitable if there were better contact, and a different balance of effort, between the Royal Aircraft Establishment and the Rutherford Appleton Laboratory. Many areas of research supported by the Ministry of Defence are also supported by the Research Councils - so that this may be a pervasive, not an isolated, problem.

3. I know that you are anxious to ensure that the results of defence research and development are widely disseminated whenever security considerations permit. But I wonder whether that really gets to the heart of the problem. Is it

true, do you think, that quite a lot of the large sums of money spent on defence r. and d. produces a low scientific and industrial return by comparison with research supported by the Research Councils? Do you believe that the similarity of interest between the Ministry of Defence and the Research Councils results in duplication?

4. I am asking my office to arrange a discussion of these questions with you and Sir Clive Whitmore, Professor Norman and Dr Nicholson.

5. I am sending copies of this minute for information to Keith Joseph, Sir Robert Armstrong and Dr Nicholson.

SCIENCE + TECH: Science Budget

Sept 83

17 MAR 1984

