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Prime Minister
Agree that ACARD
should continue as
proposed and to write
to Sir James
Tombs?

Ref. A086/1010

PRIME MINISTER

Advisory Council for Applied Research and Development (ACARD) ^{DN 2/4}

ACARD was last reviewed in 1981 when you agreed that it should continue in being. At that time you thought it unnecessary to conduct a further review after two years, and no review was undertaken in 1983.

2. A further review of ACARD was, however, undertaken in 1985-86, in line with the Government policy for keeping the work of non-departmental Public Bodies under review.

3. This review has been completed and a report is attached. All the Departments concerned with the work of ACARD (Trade and Industry, Education and Science, Defence, Energy, Environment, Health, Agriculture and Food, as well as Treasury and the Foreign and Commonwealth Office) endorse the view that a body such as ACARD is needed. Although some Departments are critical of some of the advice given by ACARD (which has sometimes, of course, been critical of Departments' programmes), all recognise the impact that advice has had, for example, in leading to the MISC 119 assessment of priorities for Government R and D.

4. We are making no recommendations to change the composition, method of work or terms of reference of ACARD. Neither do we recommend amalgamation with ABRC. We are, however, recommending that the Information Technology Advisory Panel (ITAP) be subsumed within ACARD and I am submitting a separate report to you about this.

5. We are recommending that over the next two years, ACARD should give priority to:



i. considering how private sector investment in R and D could be increased and finance for innovation improved;

ii. considering how international collaboration in the fields of applied research and development might be more effectively pursued;

iii. consider (together with ABRC) how basic science can be more effectively harnessed to the creation of national wealth.

6. I therefore recommend that ACARD should continue but that ACARD should also continue to be reviewed on the same basis as other NDPBs, every three years. I also recommend that you recognise the value of ACARD's advice to the Government and endorse the priority activities listed above. A draft letter to the Chairman of ACARD is attached.

RA

ROBERT ARMSTRONG

2 April 1986

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REVIEW OF THE ADVISORY COUNCIL FOR APPLIED RESEARCH AND DEVELOPMENT (ACARD) REPORT FOR THE PERIOD 1982-1986

GENERAL BACKGROUND

1. ACARD was established in 1976 and met for the first time in January 1977. It was last reviewed in 1981. That Review recommended that ACARD should continue, with a further review in two years time. However, the Prime Minister expressed herself as fully satisfied with the review and said that it was unnecessary to carry out a further review in two years.
2. In July 1982, in Cmnd 8591, the Government published its response to the Report by the Select Committee of the House of Lords on Science and Technology entitled "Science and Government". This Report reviewed the arrangements for scientific advice to Government. In its response the Government set out extended terms of reference for ACARD (Annex I) to enable it to cover the fields of applied research, design and development and the application of research and technology, together with the co-ordination of these activities with basic research. This co-ordination was to be achieved by working with the Advisory Board for the Research Councils. The Chairmen of ACARD and ABRC were asked to present joint periodic reports to the Government which would review scientific opportunities and their implications, on a selective basis. The reports would not necessarily be confined to activity in the public sector. The Government also decided to introduce a system of Annual Reviews of Research presenting information on Departments research programmes and budgets which would be reviewed interdepartmentally, with independent advice from ACARD.
3. There are sixteen members of ACARD, including the Chairman. Members are appointed for 3 year terms and there is a turnover of 5 members each year. (The current membership is at Annex II). The present chairman, Sir Francis Tombs, took office in succession to Sir Henry Chilver on 1 November 1985. The Chairman of ABRC, Sir David Phillips, is an ex-officio member. Although a balance of membership across industrial sectors, and including academics and a Trade Unionist, is maintained members are there not in a representative capacity but as individuals of some distinction in their own field able to give independent advice. Meetings are attended by the Chief Scientific Adviser, Cabinet Office, and by Chief Scientists from the Departments of Energy, of Environment and Transport, of Defence, and of Trade and Industry. The Council's Secretariat is

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provided by members of the Science and Technology Secretariat, Cabinet Office, and there is a joint secretariat arrangement with the ABRC.

4. The Council has increased the number of full meetings a year from 4 in 1982 to 7 and would expect to maintain this level given the volume of work. The increase has been largely due to the development of the Annual Review of Research and Development and the requirement on ACARD to provide informed comment and advice on what is revealed by the Annual Review of the Government programmes. (More is said of this in a later section). Much of the more detailed work of ACARD is carried out by small working groups set up to report on particular issues. Typically a working group will meet monthly for 6 to 18 months depending on the complexity and the state of knowledge of the subject under study. Both written and oral evidence is taken and visits are often made to companies, laboratories etc. The resulting ACARD reports are submitted to the Prime Minister with a request for permission to publish. This has never been refused. On occasions a report will not be the outcome but advice will still go forward to the Prime Minister in the form of a letter from the Chairman of ACARD. Publication of a report is not seen as the end product of a study. By convention it is usual for Government to provide a written response and work will usually continue either through the working group, the Chairman or the Chief Scientific Adviser and Secretariat, to disseminate the findings to targetted groups and to begin to implement some of the recommendations. Not all recommendations will require Government action, many are directed at industry and therefore their implementation may require considerable promotional work with industrialists. The high regard in which ACARD members are held is of considerable assistance in this process.

COSTS

5. The costs of ACARD are met from the Cabinet Office vote and are set out in detail in Annex III. ACARD members and members of working groups are unpaid but their expenses are reimbursed when claimed. It is important to note, first, that the figures given take no account of the substantial contribution from members. Many are senior industrialists who not only, for example, do not claim travel and subsistence costs but also devote a lot of their time outside formal ACARD meetings to working groups and often provide hospitality for meetings and other facilities at their companies' expense. Secondly, in its earlier years ACARD was able to draw substantially on inputs from the Central Policy Review Staff. With the disbandment of the Central Policy Review Staff (CPRS) and the further development of ACARD work the configuration of staff support has altered and the use of outside consultants increased.

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6. The activities of ACARD have been reviewed in line with the guidance given by the Machinery of Government Division for the Review Programme of Cabinet Office Advisory Bodies. There has been consultation with those Departments principally concerned with ACARD's work, namely Energy, Education and Science, Environment and Transport, Agriculture and Food, Treasury, Foreign and Commonwealth Office, Defence, Health and Social Security. The conclusions form the basis of the following paragraphs:-

Is there a continuing need for outside advice in the field covered by ACARD?

7. The need for outside and independent advice on applied research and development is, if anything, greater now than it was when ACARD was last reviewed. Immediately following that Review the House of Lords Report "Science and Government" was published and in its response Government accepted the main thrust of the Report; "that the Government has a responsibility to secure an adequate scientific and technological input to policy making". The response went on to say that "excellence in the development and exploitation of science and its applications is essential if the economic prosperity of the country is to be advanced in the coming decades, and if companies based on science and technology are to play their part in providing new employment opportunities". The response went on to extend the terms of reference of ACARD and establish the Annual Review in the way set out in para 2 above. Since then three Annual Reviews have been published and Central Government expenditure on R & D has risen from £3506.4m in 1981/82 to an anticipated £4530.1m in 1985/86. At the same time the ability to compete in world markets and, indeed, in the home market has become increasingly dependent on the ability to maintain a leading edge on scientific development and to apply the scientific and technological knowledge produced more effectively. The question of how better to do this in order to improve the competitive position of the UK is central to all the work undertaken by ACARD.

It is cost-effective to maintain a special and formal body for the purpose, or could the need be met equally well by informal, ad hoc methods?

8. Whilst recognising the need, and establishing the machinery for, central co-ordination of science and technology the Government has not accepted the case for a co-ordinating Minister. Where issues arise which straddle the responsibility of several Ministers the Prime Minister plays a co-ordinating

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role on broad scientific and technological issues involving several Departments. ACARD forms one part of the support to the Prime Minister in her co-ordinating role. The increasing importance of science and technology to the economic health of this country, the increasing pace of technological change and scientific development throughout the world lead to the conclusion that ad hoc arrangements would be wholly insufficient and that the cumulative process of formulating advice, to which ACARD contributes an independent voice, is necessary. However, as noted earlier, ACARD's advice is not only made available at the centre of Government. It also has a catalytic effect across Departments and between Government and industry. Its advice is not merely interpretive but is directed at the implementation and better management of change. To be credible in this role ACARD has had to establish its reputation for sound, independent advice and this could not be done under any ad hoc arrangements. ACARD's use of working groups with a finite life limited to the task to be done provides for informal, flexible methods of working whilst maintaining with ACARD's formal structure the sustained effort necessary to provide the quality and level of advice required.

Is ACARD doing a good job, judged by its terms of reference and the practical usefulness of its advice?

9. In contrast to the last period reported on from 1977-81 ACARD's main output has been less one of special reports and more its commentary on the Annual Review. Comments by Departments, which are summarised in Annex IV, stress the development of this part of ACARD's role although not all Departments are uncritical of this aspect of its work. It has to be said that ACARD's comments on the Annual Review have led to a very critical examination by Ministers of some Departmental programmes, and some reallocation of resources.

10. The first Annual Review, produced in 1983, although only partial in coverage, was welcomed by ACARD in its advice as an important advance in Government's ability to take a broad informed view of its R & D efforts. A similar reception was given by the press and the scientific community. The 1984 Annual Review provided the first comprehensive and coherent database of all

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Government R & D expenditure, together with summary totals, commentary, and statements by each Department (and Research Council) of its objectives in R & D. It was well received by the press and informed opinion as an improved vehicle for the consideration of R & D across Government. The Council set up a special Sub-Group of its members, including the Chairman of the Advisory Board for the Research Councils and the Chief Scientific Adviser, as well as independent members drawn from a wider circle, to help prepare its detailed confidential advice to Government. In its comments ACARD drew attention, in particular, to the high proportion of the total Government R & D effort devoted to defence in comparison to most of the UK's competitor nations and the apparent mismatch between R & D resources devoted on the one hand to agriculture and on the other to manufacturing industry in relation to the economic significance of the two sectors. On both these points, Government responded by the institution of official groups to examine the issues in greater depth. In the case of defence R & D the issue is still under review by Ministers in the broader context initiated by the 1985 Annual Review.

11. The 1985 Review continued the format introduced in 1984 but broadened the coverage and detail, including, for example, more detailed international comparisons, data on the nationalised industries, and a consideration of strategic research. ACARD's commentary on the 1985 Review (again prepared with the help of a Sub-Group) reinforced its earlier advice, but centred on its firmly held view that, in comparison with competitor nations, the totality of national support for civil R & D, both public and private, as a percentage of GDP, was no longer sufficient. It urged Government to review critically its R & D expenditure, against a set of criteria based on the contribution which R & D could make to wealth creation. Government has considered these views at Cabinet level. It has caused further work to be undertaken within the Cabinet Office and can be expected to implement important changes in the distribution and use of R & D funding across Departments in order to enhance the contribution of research and development, undertaken for whatever primary purpose, to improving the efficiency, competitiveness and innovative capacity of the UK economy. Without the preparation and publication of the Annual Review ACARD could not have supported its comments with detailed analysis. Equally, without ACARD's informed and independent commentary the impact of the Annual Review exercise would have been lessened.

12. Since 1981 ACARD has published four Special Reports. These are listed in

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Annex V and the response to these reports is summarised. In addition to the four published Reports ACARD currently has under preparation Reports on "Exploitable Areas of Science", "Software Engineering" and the "Medical Equipment Industry". The first has been seen and publication approved by the Prime Minister. This report makes recommendations for better identification of scientific developments together with market opportunities for their exploitation. If the recommendations are successfully implemented the UK will be in a better position to enter new markets early rather than being in the forefront of scientific discovery but late in its application. The other two reports will be completed before the end of May this year. Working Groups, for whose reports publication was not sought, were on "Financial Aspects of Innovation" and "Control and Instrumentation Technology". On the former a letter of advice was sent by Sir Henry Chilver to the Prime Minister and on the latter a decision has still to be made about the best use of the advice generated. ACARD are currently considering new studies of areas which include "Opto-electronics", "Space" and "Digital Cellular Radio". They are also considering how best to return to the subject of private sector R & D, the availability of investment for innovation and the interplay between the various Government support schemes and private industry.

13. As part of the work in follow-up to its Reports and the advice it gives on the Annual Review ACARD has held a number of meetings with Ministers, these are listed in Annex VI.

14. ACARD has not yet given any special attention to international collaboration (Item 4 of its terms of reference). It has, however, commented on this aspect of the Annual Review and in view of its increasing importance, will give priority to the subject during 1986. A detailed paper is to be considered at the April meeting.

Should changes be made to the composition and operation of ACARD which would streamline its work or reduce costs?

15. ACARD's method of work has not altered substantially since it was last reviewed but the volume of work it undertakes has increased (numbers of meetings are shown in Annex VI). It now meets 7 times a year, usually for only half a day, in full session. Meetings with Ministers are usually informal and with only a small group of members. The detailed work of preparing commentary on the Annual Review is carried out by a special Sub-Group which involves some non-ACARD members with special expertise. Similarly the working groups which

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prepare the special reports draw on a wide range of experts. This combination of a distinguished group of 16 core members, with a third replaced each year, and the use of small working groups, with a wider membership set up for short periods to undertake specific tasks, works well and no changes are recommended.

Is there scope for amalgamating the body with another one?

16. It has recently been suggested by the House of Commons Education Science and Arts Committee that a Council on Science and Technology be established (in line with the House of Lords Select Committee on Science and Technology recommendation in 1981) which would be based on ABRC and would subsume both ACARD and ABRC and the functions of both bodies. Government has yet to give a formal response to this report. However, it is hard to see how such amalgamation could take place since the two bodies have different, albeit complementary, roles. The DTI's comment on ACARD's work put this succinctly:

- "- ABRC advises a single Department and controls a budget;
- ACARD advises Government (with a truly independent voice) and controls no budget."

The DTI comment goes on to say "few would doubt the value of Council's commentary, but that role could be jeopardised by a possible constraint in independence brought about by closer links with ABRC."

17. ACARD and ABRC do seek to work together on issues of common interest as, for example, on the report "Improving Research Links between Higher Education and Industry". The first joint report by the Chairmen was published in July 1983 and the second will be published during 1986. However, neither the Cabinet Office, nor DES have been satisfied with the co-ordination achieved and steps have been taken at both Secretariat and Chairman level to improve this.

18. Consideration is presently being given to subsuming the role of the Information Technology Advisory Panel (ITAP) within that of ACARD. This is the subject of a separate report.

Conclusion

19. The work of ACARD, particularly in commenting on the Annual Review, has

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stimulated discussion of Government priorities for R & D at Ministerial level and has led to an agreement that such discussions should form a permanent part of the consideration given by Government to R & D. ACARD's comments have focussed on the need to ensure the effective contribution of all Government R & D to improving the competitive position of the UK economy as well as satisfying other Departmental requirements such as procurement and regulation. If these discussions are to lead to improvements the informed, independent voice of ACARD will continue to have value.

20. In summary it is agreed that:

- i. the aims of ACARD, as set out in its terms of reference, are still valid
- ii. the work of ACARD in the four years under review has contributed substantially to an increased awareness by Government, industry and the higher education sector of the strategic importance of R & D for the economic health of the country
- iii. although the number of meetings and costs of ACARD's work have risen this has been justified by its increased input to inform debate and decision making on R & D.
- iv. its composition and method of working are appropriate to its task
- v. it would not be appropriate to amalgamate ACARD with ABRC but consideration is being given to incorporating ITAP into ACARD.

21. It is further agreed that ACARD should give priority over the next two years to:

- i. considering how private sector investment in R & D could be increased and finance for innovation improved
- ii. considering how international collaboration in the fields of applied research, design and development might be more effectively pursued
- iii. considering (together with ABRC) how basic science can be more effectively harnessed to the creation of national wealth.

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List of Annexes

- Annex I ACARD Terms of Reference
- Annex II ACARD Current membership and members who have served since January 1982
- Annex III ACARD costs
- Annex IV Departments comments on ACARD
- Annex V Government response to ACARD reports
- Annex VI ACARD Meetings

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Annex I

ACARD Terms of Reference

"To advise the Government and publish reports as necessary on -

- i. applied research, design and development in the United Kingdom;
- ii. the application of research and technology, developed in the United Kingdom and elsewhere, for the benefit of both the public and private sectors in accordance with national economic needs;
- iii. the co-ordination, in collaboration with the Advisory Board for Research Councils, of these activities, with research supported through the Department of Education and Science;
- iv. the role of the United Kingdom in international collaboration in the fields of applied research, design and development related to technology".

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Annex II

ACARD: Current Membership

Sir Francis Tombs F Eng (Chairman)	Chairman, Rolls Royce Ltd
Mr M Bullock	Corporate Finance Director, Barclays Bank plc
Mr J F Coplin F Eng	Director of Design, Rolls Royce Ltd
Sir Kenneth Durham	Chairman, Unilever plc
Mr J W Fairclough	Director of Manufacturing & Development, IBM (UK Ltd, Chairman IBM (UK) Laboratories
Mr A K Gill	Group Managing Director, Lucas Industries plc
Mr E Hammond	General Secretary, Electrical, Electronic, Telecommunications, and Plumbing Union
Dr B C Lindley CBE	Director of Technology, BICC Ltd
Mr G J Lomer CBE	Technical Director, Racal Electronics plc
Mr R Malpas CBE F Eng	Managing Director, British Petroleum Company plc
Professor J S Metcalfe	Professor of Economics, Manchester University
Professor Sir David Phillips FRS	Professor of Molecular Biophysics University of Oxford: Chairman of the Advisory Board for the Research Councils
Dr C H Reece	Director of Research and Technology, Imperial Chemical Industries plc
Sir Rex Richards FRS	Director, Leverhulme Trust
Professor S D Smith FRS FRSE	Professor of Physics, Heriot Watt University; Chairman, Edinburgh Instruments Ltd

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Annex II (Contd)

FORMER MEMBERS OF ACARD (SINCE JANUARY 1982)

Sir Henry Chilver F Eng FRS (Chairman)	Vice-Chairman, Cranfield Institute of Technology
Dr D V Atterton CBE F Eng	Chairman, Foseco Minsep Ltd
Viscount Caldecote F Eng	Chairman, Delta Group plc
Sir Kenneth Corfield F Eng	Chairman and Chief Executive, Standard Telephones and Cables Ltd
Dr D L Georgala	Head of Laboratory, Unilever Research
Professor W B Heginbotham	Director-General, Production Engineering Research Association
Mr C S King CBE	Deputy Chairman, BL Technology Ltd
Sir Alec Merrison FRS	Vice-Chancellor, University of Bristol, Chairman of the Advisory Board for the Research Councils
Sir Alan Muir Wood F Eng	Senior Partner, Sir William Halcrow and Partners
Mr D H Roberts F Eng FRS	Director of Research, The General Electric Company plc
Mr J L van der Post F Eng	Chief Executive, Water Research Centre
Professor Sir Hans Kornberg	Professor of Biochemistry, University of Cambridge
Mr P C Michael	Chairman and Managing Director, Micro Consultant Ltd
Lord Scanlon	Formally Chairman, Engineering Industries Training Board
Professor J M Thomas FRS	Professor of Physical Chemistry, University of Cambridge

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Annex III

ACARD COSTS (Current Prices)

	1982/83		1983/84		1984/85	
	Time	£	Time	£	Time	£
Chief Scientific Adviser	1/5	10,810	1/5	11,264	1/5	12,307
Grade 5	1/4	10,556	1/4	10,984	vacant	-
Grade 6						
Adviser	1/3	13,900	1/3	14,566		
Grade 7	1.5	43,709	1.5	46,047	2	65,152
Misc (inc T & S)	---	9,002	---	4,750	---	7,337
Consultants	---	1,500	---	17,821	---	19,358
Totals (out turn)		89,477		105,435		104,154

	1985/86		1986/87	
	Time	£	Time	£
Chief Scientific Adviser	1/10 9mths	5,600	1/10x12mths	7,467
Grade 5	1/5 6mths	4,426	1/5x12mths	8,852
Grade 6	1/10 7mths	2,313	1/10x12mths	3,965
Grade 7	2x12mths	61,032	2x12mths	64,604
Statistician (Grade 7)	3x4mths	3,597	1/3x12mths	10,791
HEO	1/2x3mths	2,805	1/5x12mths	11,220
Misc (incl T & S)	1x12mths	14,900	1x12mths	18,325
Consultants		40,000		65,000
TOTALS (Estimated)		134,673		200,224

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ANNEX IV

ACARD REVIEW
DEPARTMENTAL COMMENTS: SUMMARY

Department	General	Annual Review	Reports
DTI	ACARD probably stimulated more discussion in DTI than any other Department - underlines need for good communication between both. Against amalgamation of ACARD & ABRC because: ABRC advises a Department & controls a budget; ACARD advises Government (with a truly independent voice) & controls no budget. Not fulfilled remit regarding international collaboration. Staffing of Secretariat may not be correct balance - need for more administrative staff.	Role as independent adviser to Government has grown particularly regarding commentary on Annual Review.	Recent reports seem to have had less impact perhaps because more in-depth longer studies.
DEn		Has been most significant in commentary on Annual Review.	ACARD reports little direct impact on Department but contribute to general debate which impinges on energy. ACARD should produce more frequent & snappier reports (shorter & more closely targetted).
DES	Disappointed that ACARD & ABRC have not succeeded in working effectively together - particularly on Exploitable Areas On balance should continue but needs greater competence, more visible independence, greater accountability & closer collaboration with ABRC.	ACARD's comments on the Annual Review a significant development since 1982 but room for improvement in quality of its evaluation and comments should be published.	

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MOD	Terms of reference still very relevant to issues of generating the right kind of direction and investment levels in R&D to increase wealth generation.	Comments on Annual Review appear to misunderstand the wide range of MOD activities within definition of R&D & its conclusions therefore based on false premises.	ACARD reports usually peripheral to MOD interests but expect software engineering to be very relevant.
MAFF	ACARD has a distinguished membership & has done some valuable work. Question whether it is appropriate to attempt an across the board approach to applied R&D on whether ACARD has the support to do this.		
DOE	Most ACARD work of marginal interest to DOE - partly because ACARD concentrates on issues related to industrial success, partly because DOE has not been sufficiently industry-oriented in its R&D.		Reports valuable but often not very exciting or innovative. Should get into wider economic fields and challenge fundamental national policies more deeply.
DHSS	ACARD built up a high reputation, a useful & effective body. Would welcome closer attention from ACARD on service related fields with which Department concerned.	Understand value of their independent advice and would not wish to encourage any change which reduced the profile of R&D in Central Government.	Particularly interested in reports on Facing International Competition and Improving Research Links between Higher Education & Industry.
HMT	Moderately useful, especially in highlighting particular areas.	Comments on the Annual Review have focussed attention on important issues, eg need for better objective setting and evaluation of level and balance between different Departments' programmes.	Analysis underlying specific recommendations not always sufficiently rigorous. Would be better to concentrate on focused recommendation on specific areas, perhaps in response to commissions from Ministers.

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ANNEX V

ACARD REPORTS

Title	Publication date	Comments
1. Facing International Competition - The Impact on Product Design of Standards, Regulations, Certification & Approvals	July '82	(October 1983) Shortly after publication of the ACARD report the Government published a White Paper "Standards, Quality & International Competitiveness" (Cmnd 8621). The report & White Paper have resulted in a number of positive actions by Government eg Quality Assurance Advisory Scheme, DTI's National Quality Campaign, the National Accreditation Council for Certification Bodies, NEDC 'Task Force' on Standards and Quality Assurance, Financial Assistance for the Development of Certification Schemes.
2. The Food Industry and Technology	Sept '82	(July 1984) Government accepted most of the recommendations in the report and developed an action plan to implement them. Actions so far are an increased food mission in and change of title of the Agricultural Research Council to include Food, establishment of a Priorities Board in Food & Agriculture R&D by MAFF, increasing "real" expenditure on food R&D. Other actions are continuing.
3. Improving Research Links between Education & Industry	June '83	(Formal response awaited). This study carried out in collaboration with the Advisory Board for the Research Councils (ABRC) was set up by invitation of the Prime Minister. Although some of the minor recommendations have been implemented the Government has found difficulty in responding to the two main recommendations because of problems over funding. The two recommendations related to (a) an 'industrial seedcorn fund' equal to 25 % of the money earned by higher education institutes (HEIs) from contracts, consultancy and services (b) pump-priming suggest for HEI infrastructure for academic-industrial cooperation. The report has been influential in Government thinking & the Council will continue to press for a response.

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ACARD REPORTS (Continued)

Title	Publication date	Comments
4. New Opportunities in Manufacturing - The Management of Technology	Oct '83	(September 1984) The Council considered that the Government action following this report was disappointing in view of the importance which ACARD, and the Government in their response, said they attached to the use of advance manufacturing technologies. ACARD express concern that the main recommendation on technology transfer has not been adequately addressed by Government. However, it should be noted that technology transfer will be dealt with in some detail in the 1986 Annual Review of R&D.

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Annex VI

MEETINGS OF MAIN ACARD COUNCIL AND SUB-COMMITTEES - 1 JAN 82 TO 31 MAR 86

(Financial years)	82/83	83/84	84/85	85/86
Main ACARD Council	5	6	7	7
Annual Review	-	-	8	7
Facing International Competition	2	-	-	-
Control systems and Instrumentation	-	3	7	-
Software Engineering	-	-	4	7
University-Industry Links	2	4	-	-
Promising areas of Science	-	6	7	3
Food technology	5	-	-	-
Advanced Manufacturing Technology	7	6	2	-
Medical Equipment	-	-	-	6

Meetings with Ministers

The Council has held meetings with the following Ministers

- i. 11 December 1981 - Minister of State for Industry and Information Technology, Mr Kenneth Baker MP.
- ii. 20 June 1984 - Secretary of State for Trade and Industry, the Rt Hon Norman Tebbit MP.
- iii. 2 October 1984 - Secretary of State for Education and Science, the Rt Hon Sir Keith Joseph Bt MP.
- iv. 9 May 1985 - Minister of State for Industry and Information Technology, Mr Geoffrey Pattie MP.
- v. 14 June 1985 - Chief Secretary to the Treasury, the Rt Hon Peter Rees QC MP.
- vi. 12 March 1986 - Minister of State for Industry and Information Technology, Mr Geoffrey Pattie MP.

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Review of the Advisory Council on Applied Research and Development (ACARD)

Summary Report

1. ACARD was established in 1976 and met for the first time in January 1977. It was last reviewed in 1981. That review recommended that ACARD should continue, with a further review in two years' time. However, the Prime Minister expressed herself as fully satisfied with the review and said that it was unnecessary to carry out a further review in two years.
2. In July 1982, in Cmnd 8591, Government set out extended terms of reference for ACARD to enable it to cover the fields of applied research, design and development and the application of research and technology, together with the co-ordination of these activities with basic research. Government also introduced a system of Annual Reviews of Research to review Departments research programmes and budgets interdepartmentally, with independent advice from ACARD.
3. Largely because of this requirement to comment and advise on the Annual Review the volume of work of ACARD has increased. The Annual Review has been published in 1983, '84 and '85. ACARD's comments have led to a very critical examination of Departments' programmes and some reallocation of resources. They have, most recently, prompted the establishment of permanent Ministerial machinery to review Government priorities for R & D with a view to improving the contribution of Departmental programmes to the efficiency, innovation and competitiveness of the UK economy.
4. ACARD has also published four reports on
 - Facing International Competition
 - The Food Industry and Technology
 - Improving Research Links between Higher Education and Industry (jointly with ABRC)
 - New Opportunities in Manufacturing.

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It will shortly published a fifth on

- Exploitable Areas of Science

and two others are nearing completion on

- Software Engineering
- The Medical Equipment Industry

5. The main thrust of all of these reports centres on the recognition that the ability of the UK to compete in world markets and in the home market has become increasingly dependent on the ability to maintain a leading edge on scientific development and to apply the scientific and technological knowledge produced effectively. The question of how better to do this in order to improve the competitive position of the UK is central to all the work undertaken by ACARD.

6. Members of ACARD are drawn from a wide range of industries, from the universities and Trades Unions but they are not there as representatives of their organisations. They are there as individuals of some distinction in their own field to provide wholly independent advice to Government. At the same time they are able to act as a catalyst across Departments and between Government and industry. They are assisted in their work by a wide range of similar individuals and members recruited to serve on working groups. These groups have a finite life and advise on specific issues. The Chief Scientific Adviser, Cabinet Office, through whom they relate to the Committee of Departmental Chief Scientists, also assists the work of ACARD.

7. The cumulative experience allowed for by the formal ACARD structure with the ad hoc working group arrangements works well and no change is recommended.

8. In order to co-ordinate its activities with basic research the Chairman of ACARD and the Advisory Board for the Research Councils (ABRC) are ex-officio members of the other body and there is a joint secretariat. The first joint report to Government of the two Chairmen was published in July 1983 and the second will be published in 1986.

9. The roles of ACARD and ABRC differ. ACARD has the responsibility of providing independent advice to central Government across all Departments,

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whilst ABRC is advisory to the Department of Education and Science on the allocation of the Science Budget. It is therefore not recommended that they be amalgamated.

10. Consideration is being given to the incorporation of the Information Technology Advisory Group into ACARD. (This is the subject of a separate report).

11. In summary it is agreed that:

- i. the aims of ACARD, as set out in its terms of reference, are still valid
- ii. the work of ACARD in the four years under review has contributed substantially to an increased awareness by Government, industry and the higher education sector of the strategic importance of R & D for the economic health of the country
- iii. although the number of meetings and costs of ACARD's work have risen this has been justified by its increased input to inform debate and decision making on R & D.
- iv. its composition and method of working are appropriate to its task
- v. it would not be appropriate to amalgamate ACARD with ABRC but consideration is being given to incorporating ITAP into ACARD.

12. It is further agreed that ACARD should give priority over the next two years to:

- i. considering how private sector investment in R & D could be increased and finance for innovation improved
- ii. considering how international collaboration in the fields of applied research, design and development might be more effectively pursued.
- iii. considering (together with ABRC) how basic science can be more effectively harnessed to the creation of national wealth.

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