



10 DOWNING STREET

THE PRIME MINISTER

9 December 1985

Dear Sir David.

Thank you for informing me of the progress you are making, jointly with Professor Norman, to implement the recommendations made in Sir Robin Nicholson's report on Maintaining the Strength of the Science Base.

The measures you are both taking to encourage university staff to undertake research which is relevant to the requirements of MOD and which is, at least partly, funded by MOD, are modest but useful ones in developing a greater involvement of the university research community in activities of vital national importance.

Sir Robin's recommendations were designed to bring about a growing partnership between MOD and university-based researchers. The first essential steps should result from your Joint Research Council/MOD Research Grants Scheme: it will alert external researchers to the interests of MOD, and bring relevant research programmes to the attention of MOD. From the first few years of the scheme, long-lasting collaborative research programmes should develop, and new strong centres of excellence in defence-related science and technology should emerge.

I welcome the MOD's agreement to increase their expenditure in universities from the current £10 million a year to £15 million a year over the next three years. This is a useful start. But I hope that the schemes will be a

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greater success than would be represented by the expenditure of £15 million out of a total MOD research budget of about £400 million. It is my hope that the MOD will prove able to make a much better use than this of our excellent university research base and that the universities respond intelligently and energetically to the opportunity to contribute effectively to the national defence need.

I am pleased that you are actively examining the shared use of an impressive range of facilities and that this relationship will be built into the consideration of new capital investment. This will not only provide better value for money but the facilities will be a natural meeting place for scientists in the universities and MOD to become better informed of each others work and needs. This interaction will also be well served by your Joint Service Research Fellowship Scheme.

I consider that all Sir Robin's recommendations, on which you have reported your initial plans, are of such importance that I would like my Chief Scientific Adviser to monitor progress in future and his Sub-Committee of Chief Scientists to keep these issues under review so as to be able to identify the scope for further initiatives. I should be grateful if you and Professor Norman, (to whom I am writing in similar terms) would keep my Chief Scientific Adviser and the Sub-Committee informed of progress in future.

I am also sending copies of this letter, as you did yours, to Michael Heseltine, Sir Keith Joseph, Sir Robin Nicholson and Hugh Fish.

Yours sincerely

Baroness Thatcher

Professor Sir David Phillips, F.R.S.



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I am also sending copies of this letter, as you did yours, to Michael Heseltine, Sir Keith Joseph, Sir Robin Nicholson and Hugh Fish.

Yours sincerely
Margaret Thatcher

Professor Richard Norman

PRIME MINISTER

You were unhappy about Sir Keith Joseph's first reponse to Sir Robin Nicholson's report on maintaining the strength of the science base. In particular you thought that the increase from £10 million to £15 million for the MOD expenditure in the universities was not enough. Sir Robin hopes for £20 million to £25 million in the longer run.

Some further progress since that early report in February has been made. The report from the ABRC Chairman and the MOD Chief Scientist at Flag A sets out the up to date position.

Robin Nicholson summarises the report and comments on it at Flag B.

Two draft letters for you to sign, pressing for further progress, are at Flag C.

Mark Addison

MARK ADDISON

6 December 1985

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MR ADDISON

6 December 1985

MAINTAINING THE STRENGTH OF THE SCIENCE BASE

The recommendations in my report to the Prime Minister (January 1985) were designed to encourage greater collaboration between MOD and the Universities/ Research Councils and to have a long lasting effect, since MOD would need to rely increasingly on outside researchers' expertise as their outstanding people recruited in the war and immediate post-war period retired. Rather than recommending a once-and-for-all transfer of £20M from MOD to the Science Vote I was anxious to establish mechanisms which would lead to an increasing proportion of MOD's research budget being spent at Universities and Research Council Institutes.

2. The progress report from the Chairman of ABRC and the Chief Scientific Adviser MoD, shows that MOD have plans to increase their expenditure with Universities from the current £10M a year to £15M over the next 3 years. This is a useful start but I would hope that expenditure would grow quickly after that to run at £20-25M per annum.

3. The Joint Research Council/MOD Research Grants Scheme which has just been launched will play an important role in alerting researchers to the interests of MOD and bringing relevant research programmes to the attention of MOD. It is too soon to assess the likely impact. A range of scientific areas has been identified to focus the submissions and these include many fields where the UK has strong University-based research teams (optical sensors, low power lasers, electronic materials).

4. The steps being taken to "jointly plan and fund future activities of mutual interest and to design major and specialised facilities with joint use in mind" are less well developed. Exchanges of lists of facilities and contact points is a start and will be extended to include DTI. There are plans for ABRC to review MOD and Research Council capital investment plans, along with those of DTI and DEn. It is difficult to know whether all parties will make available complete information on their plans. The joint working groups to review existing facilities and future requirements in particular scientific fields are more likely to get down to detailed discussions which should avoid expensive duplications or under-utilisation of facilities.

5. I hope that the Chief Scientific Adviser, Cabinet Office, will be kept informed of the progress of the reviews of facilities. It might be appropriate for issues to be considered by my Chief Scientists' Committee from time to time. We will need to keep pressing to ensure that MOD and Research Councils keep up the momentum on this work and get used to working together - otherwise the will just slip back to its previous moribund state.

6. Mobility of staff between MOD and Universities/Research Councils is desirable to bring about long lasting working relationships and technology transfer. We mustn't let this recommendation slip. Current scarcities of skilled researchers in aspects of electronics are naturally encouraging more contact between MOD and outside researchers. But there should be more interchange and in other fields too. Widening the exchange Fellowship Scheme to include industry would be valuable but it mustn't deteriorate into a cosy interchange between parts of MOD and industry which already focus on narrow defence development requirements.

7. Overall the progress report shows that some initial first steps are being taken to implement my recommendations but further progress will need to be monitored closely by the Cabinet Office or Chief Scientists to ensure that there is no backsliding. We need to ensure that those in the MOD (and there are some) who take an intelligent and far-sighted view of their future scientific requirements are given every encouragement to press their case against those whose eyes are firmly fixed on the past.

8. I attach a draft reply for the Prime Minister to send to Sir David Phillips and Professor Norman.

RBN

SIR ROBIN NICHOLSON
Chief Scientific Adviser



Advisory Board for the Research Councils

Elizabeth House 39 York Road London SE1 7PH

Telegrams Aristides London SE1 Telex 23171

Telephone

NEW TELEPHONE NUMBERS
From 4 March 1985

Direct line 01-934 9851

Switchboard 01-934 9000

The Rt Hon Margaret Thatcher MP
10 Downing Street
London SW1

Your reference

Our reference

Date

21 November 1985

Dear Prime Minister,

MAINTAINING THE STRENGTH OF THE SCIENCE BASE: MOD/RESEARCH COUNCIL COLLABORATION

At the beginning of this year, you received a report from Sir Robin Nicholson "Maintaining the Strength of the Science Base". The report examined the proposal that £20m per annum be transferred from defence R & D to the Science Budget. It concluded that there was an urgent need to enhance links between MOD and the Research Council/university system so that the high quality resources in the country's universities might be more fully utilised to enable the MOD to meet the technical requirements of HM Armed Forces. Sir Robin recommended some immediate measures that could be taken to achieve this end and which would also be likely to have the effect of increasing MOD's spend in the university/Research Council system, perhaps by as much as (or possibly more than) £20m.

The Secretary of State for Education and Science let you have some months ago an interim report on progress in implementing these recommended measures (his private secretary's letter of 20 February to David Barclay). We are now in a position to report more substantial progress: in particular a new MOD/Research Council collaborative grants scheme has been launched and higher education institutions are being invited to submit by 16 December their first round of applications for joint assessment and funding by the MOD and Research Councils. Further details about the new scheme are set out in the attached progress report which also describes other measures that are being taken to implement Sir Robin's recommendations as a whole.

Continuing work is of course needed to maintain the momentum that we have built up and to ensure that the new mechanisms and arrangements that have been established actually do open up lines of communication and lead to better collaboration in areas of mutual interest. Accordingly we are convening regular meetings with the several parties involved to review general progress and to further specific initiatives. We set great store by the proposed joint annual review (paragraph 2.6 of attached progress report) of capital investment plans and hope you will agree that it would be in the spirit of Sir Robin Nicholson's report to invite other Government departments responsible for managing big scientific facilities to attend. We shall very shortly be making arrangements for the first such review, to take place in February 1986.

Copies of this letter go to the Secretaries of State for Defence and for Education and Science; to Sir Robin Nicholson and to Mr Hugh Fish, Chairman of the Heads of Research Councils.

Yours sincerely,

David Phillips

DAVID PHILLIPS FRS
CHAIRMAN, ADVISORY BOARD
FOR THE RESEARCH COUNCILS

Richard Norman

PROFESSOR R O C NORMAN
CHIEF SCIENTIFIC ADVISER
MINISTRY OF DEFENCE

MAINTAINING THE STRENGTH OF THE SCIENCE BASE: MOD-RESEARCH COUNCIL COLLABORATION

Action Further to Report to the Prime Minister by Sir Robin Nicholson

Collaborative Grants Scheme

1.1 Sir Robin Nicholson **recommended** that MOD and the Research Councils should set up a collaborative research grants scheme "to jointly fund and jointly carry out programmes of strategic and applied research in universities and defence research establishments/defence industry laboratories".

Action

1.2 MOD already spends about £10m a year on commissioned research in the universities. They plan to increase the money they put into higher education over the next three years to reach a level of £15m. This will be taken up partly with MOD/University research programmes along the lines of existing arrangements, partly by a research grant scheme undertaken in collaboration with the Research Councils (mainly SERC) and partly by a scheme for higher education/industry collaborative research programmes of relevance to defence. Although a figure of £15m has been set for the MOD contribution, if enough good proposals are presented work need not necessarily be limited to this figure within the overall funding available for MOD extramural research.

1.3 A brochure giving details of the Research Council/MOD collaborative grants scheme will be circulated to the universities early in November calling for a first round of applications by 16 December 1985. The brochure (advance copy attached) will give details of the technologies in which the MOD is interested and the conditions attached to the grants. Proposals will be vetted by MOD for relevance to defence and in parallel by the Research Council concerned for scientific quality through their normal peer review channels. The MOD financial contribution will range from 10% to 50%, the balance being funded by the Research Council involved.

1.4 The detailed arrangements for the higher education/industry/MOD collaborative research programme are being worked out.

Joint planning and funding of future activities/major and specialised facilities

2.1 Sir Robin Nicholson **recommended** that MOD and SERC/NERC should "jointly plan and fund future activities of mutual interest so that one side or other has clear leadership for each activity. Major and specialised facilities should be designed with joint use in mind consideration should be given to a more equitable means of meeting the cost of current areas of research of mutual interest (eg lasers) and a review of existing facilities should be carried out".

Action

2.2 MOD have prepared a list of their major existing facilities. This will be circulated to university scientists along with publicity material about the new collaborative grants scheme (see above). It has also been circulated within the Research Councils.

2.3 The Research Councils have prepared similar lists of their facilities which have been sent to MOD for circulation within defence research establishments.

2.4 MOD and SERC and NERC have identified individuals whose names have been widely circulated as initial contact points for responding to requests for access to facilities in "their" sector.

2.5 It would be consistent with the spirit of Sir Robin Nicholson's report to invite in due course D.En (UKAEA) and the DTI laboratories to pool information about their facilities. DES is writing to the Chief Scientists concerned to invite their cooperation.

2.6 Starting in 1986, an annual meeting will be held under ABRC auspices (Sir David Phillips in the chair) to review alongside each other MOD's and the Research Councils' future capital investment plans. Other Government departments responsible for managing big scientific facilities (notably D.En and DTI) will be invited.

2.7 Under the auspices of Sir David Phillips' group (see 2.6) MOD and SERC plan to set up jointly an ad hoc working group of experts to examine the options for **laser facilities** (including their cost implications). UKAEA

will need to be brought into this group.

2.8 NERC have prepared for MOD a detailed summary of their oceanographic research and a statement about their research fleet. MOD are at present studying this.

2.9 NERC have also been in touch with the Meteorological Office and MAFF and DAFS about possible joint use of **research vessels**. DAFS might be willing to take up spare capacity on the NERC ship used by the Scottish Marine Biological Association.

2.10 NERC and MOD are considering the possibility of mutual assistance on logistics in the Antarctic.

2.11 NERC are in close contact with the Meteorological Office about research programmes relevant to **Meteorology** as a basis for discussion of areas of mutual interest. Each has provided funding for the Robert Hooke Institute at the University of Oxford.

2.12 MOD has prepared a list of the enabling technologies in which it has particular interest (see attached). This is being used to identify scope for collaboration across a broader front.

Exchanges of Personnel

3.1 Sir Robin Nicholson **recommended** that a scheme should be set up to encourage movement of staff from MOD to the Research Councils/university system and vice versa.

Action

3.2 A prestigious Joint Senior Research Fellowship Scheme is being considered (building up to 20 per annum over 3 years) for outstanding post-Doctoral researchers from any sector. The main movements will be of MOD staff into university or Research Council laboratories and vice versa: industry might also be involved.

ENABLING TECHNOLOGIES OF IMPORTANCE TO MOD

1. Sensors - optical; infra-red; mm waves; microwaves
2. Signal Processing, including modulation in active systems
3. Solid-state displays
4. Silicon and GaAs technologies
5. Lower power lasers
6. Electronic materials including epitaxy
7. Real time computing systems including distributed computing
8. Software engineering
9. Structural materials
10. Acoustics and sonar
11. Oceanography
12. Scene analysis and pattern recognition
13. Ship and submarine hydrodynamics
14. Explosion hydrodynamics, including theoretical hydrocodes
15. Gas turbines, including advanced high temperature materials and ceramics
16. Aerodynamics and aircraft structures
17. Carbons and related materials as absorbents and filters
18. Safe, high energy explosives and propellants
19. Behavioural sciences including man-machine interaction, human factors and rehabilitation
20. Space
21. Electronic devices

SCI & TECH: Budget. P. 4.

bc. RCU WARRY.

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10 DOWNING STREET

From the Private Secretary

Sir Robin Nicholson

MAINTAINING THE STRENGTH OF THE SCIENCE BASE

You should by now have received a copy of a letter from the Chairman of the Advisory Board for the Research Councils to the Prime Minister, reporting on the progress which has been made on following up your report "Maintaining the Strength of the Science Base".

You will recall that the Prime Minister was unimpressed with the interim report provided by Sir Keith Joseph in February. I should be grateful for your advice on this latest assessment before submitting it to the Prime Minister.

MEA

21 November, 1985.

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**JOINT
RESEARCH COUNCIL/MINISTRY OF DEFENCE
RESEARCH GRANTS**

Ministry of Defence (MOD)
Science and Engineering Research Council (SERC)
Natural Environment Research Council (NERC)
Medical Research Council (MRC)
Agriculture and Food Research Council (AFRC)
Economic and Social Research Council (ESRC)

October 1985

**JOINT RESEARCH COUNCIL/MINISTRY OF DEFENCE RESEARCH GRANTS FOR UNIVERSITIES
AND SIMILAR INSTITUTIONS OF HIGHER EDUCATION**

Introduction

1. This brochure sets out the arrangements for research grants jointly funded by the Research Councils and the Ministry of Defence (MOD) and provides information to prospective applicants to enable them to make appropriate proposals.
2. These research grants aim to support research in the Universities and similar institutions of higher education which is not only of high academic quality but also likely to be relevant to defence, thereby contributing to the strengthening of both the UK science base and the defence research programme. The Government's intention to make such arrangements was announced in the Statement on the Defence Estimates 1985 (paragraph 537).

The Research Grants

3. As far as possible the mechanism for application, review and granting of proposals will be the same as that used for the Research Councils' normal schemes. In pursuance of the objective outlined above, proposals for these research grants will need to be of high scientific merit in their field and also of relevance to national defence. The first will be judged by the Research Councils using Peer Review in the usual way, and the second by the MOD.
4. MOD and the Research Councils are collaborating both in judging the worth of the proposals and also, for successful applications, in their funding. MOD will fund up to 50% of the joint research grant. However, it is emphasised that the scheme is based on research grant mechanisms, not on commissions, and it will not be the intention of MOD to direct the work once an award has been made. If further general advice is needed, then it should be sought from either the appropriate Research Council or, for matters related to MOD, the Director General of Research and Technology (DGRT) (whose address is given in Annex C).

Areas of Research

5. Whilst any proposal with defence relevance falling within the areas normally supported by the Research Councils will be considered, and judged on its merits, potential applicants may find it useful to have information on areas of work of particular interest to MOD. At Annex A to this brochure is a list of topics that are currently the subject of MOD research agreements with Institutions. Whilst continuing research is needed in these areas, and is likely to continue under existing arrangements, applications for joint research grants will be particularly welcome in the following areas:

- 1 Sensors - optical
 infra-red
 mm waves
 microwaves
2. Signal Processing including modulation in active systems

3. Solid state displays
4. Silicon and GaAs technologies
5. Lower power lasers
6. Electronic materials including epitaxy
7. Real time computing systems including distributed computing
8. Software engineering
9. Structural materials
10. Acoustics and sonar
11. Oceanography
12. Scene analysis and pattern recognition
13. Ship and submarine hydrodynamics
14. Explosion hydrodynamics including theoretical hydrocodes
15. Gas turbines - including advanced high temperature materials and ceramics
16. Aerodynamics and aircraft structures
17. Carbons and related materials as absorbents and filters
18. Safe, high energy explosives and propellants
19. Behavioural sciences including man-machine interaction, human factors and rehabilitation
20. Space
21. Electronic devices.

Proposals falling within the area covered by the Alvey Directorate should continue to be submitted to that Directorate as at present. Applicants requiring guidance on whether to submit a proposal to the Alvey Directorate or for a joint Research Council/MOD research grant may consult the relevant Director at the Alvey Directorate, Millbank Tower, Millbank, London, SW1P 4QU (01 211 3000) or SERC's Information Technology Directorate, SERC, Polaris House, North Star Avenue, SWINDON, SN2 1ET (Swindon 26222 ext 2104).

6. MOD Research is categorised under 15 Major Fields the titles of which are set out in Annex B. For each Major Field there is a lead Establishment (or for Major Field P, an HQ Director) and initial discussions on the technical content of grant applications should be held either with the relevant Establishment or with DGRT staff. A list of addresses is given in Annex C: initial contact with Establishments should be with the Director and should cite this brochure. In all cases where a research grant is made, a specific point of contact will be nominated in the appropriate Establishment, providing a focus for informal discussions of progress.

Use of Facilities

7. Applications involving the use of a facility owned or managed by the Research Councils may be made in the usual way for the particular Research Council. In principle, all applications could include the use of MOD facilities. However, it must be emphasised that in general such facilities have little spare capacity over and above that needed for MOD purposes, and it will therefore be necessary for potential applicants to check on the availability of the facilities before making their proposal. This should be done by discussion with the MOD Establishment which manages the facility. Applicants are invited to request, from DGRT or the relevant Establishment Director, a current data pack in areas of their particular interest.

Terms and Conditions

8. It is intended that work for which joint RC/MOD research grants are made should be unclassified. Terms and conditions will in general follow those for the Research Councils' own research grants which are detailed in the Research Councils' booklets, available from institutions' administrative offices. Inevitably, however, there will be some differences and these are broadly described below:

(a) Exclusions

(i) Although the schemes operated by certain Research Councils allow grants to be made solely for the applicant to travel to recognised centres abroad, or to fund Fellowships for scientists of acknowledged standing to visit the applicant's institution, applications of this nature will not be considered appropriate for joint RC/MOD research grant support; nor will applications that entail the creation of major capital facilities.

(ii) It is not intended to accept applications for cooperative projects with industry for support through SERC's, MRC's or AFRC's Cooperative Research Grants.

(b) **Publication** - publication in accordance with academic practice will normally be expected and, as usual, care should be taken in the timing of publication so as not to prejudice any commercial exploitation.

(c) **Commercial Exploitation** - in accordance with the Government's aims for exploitation of inventions arising from research work funded by the Research Councils and as formally notified to institutions, the institution will normally be permitted to claim title to the IPR and exploit the rights itself. This will be subject either to its overall exploitation arrangements having been agreed by the Scrutiny Group which is currently considering institution's proposed overall arrangements, or prior to any such agreement, subject to the exploitation arrangements proposed for the results arising from a particular joint RC/MOD research grant being agreed by the appropriate Research Council, after consultation with MOD. However, if the Research Council and MOD consider that the results are not being adequately exploited they will be able to call for a report on the exploitation of the results and to make representations to the institution.

(d) **Reports** - Interim and/or final reports on the work carried out under the research grant should be addressed jointly to MOD and the appropriate Research Council.

(e) **Liaison with MOD** - MOD will appoint a Scientific Liaison Officer for each research grant made, whose primary role will be to provide a focus for informal discussions of progress.

9. The additional conditions applicable to joint research grants issued by SERC are set out in Annex D. Comparable additional conditions will apply to joint research grants issued by the other Research Councils.

How to Apply

10. **Closing Dates** - Applications for the first tranche of joint RC/MOD research grants should be submitted to the appropriate Research Council by no later than 16 December 1985 for research grants to start on or after 1 April 1986. Thereafter applications must be made to the appropriate Research Council one calendar month before that Council's normal closing dates (or, in the case of MRC, at least 6 months before the proposed start date).

11. **Forms** - A copy of the application form for a joint RC/MOD research grant is attached to this brochure. During the initial stages of the scheme photocopies will be accepted. Subsequently SERC on behalf of all Research Councils will make supplies available to institutions' administrative offices. As will be seen, the applicant is invited to set down those features of the proposal that are believed to be of interest to MOD and which therefore justify an application for a joint RC/MOD research grant; to state any involvement of MOD facilities in the proposal; and to certify that MOD funding is acceptable. This form must be attached to the appropriate Research Council's normal research grant application form.

JOINT RC/MOD RESEARCH GRANTS

ANNEX A

TOPICS CURRENTLY THE SUBJECT OF MOD RESEARCH AGREEMENTS WITH UNIVERSITIES AND SIMILAR INSTITUTIONS

1. The range of sciences and technologies covered is very wide; some idea of the scope is given by the following list. The topics are presented in no particular order and the list is not necessarily complete:

- a) Aerodynamics: includes fluid flow theory, computational methods, experimental investigations, performance.
- b) Aircraft structures: includes aero-elastic effects.
- c) Materials: ferrous and non-ferrous alloys, plastics, polymers, composites, ceramics, failure mechanisms, environmental effects, manufacturing processes, new electronics semi-conductor materials.
- d) Electronics: device applications, circuit theory, radar, communications, sensors, etc.
- e) Information Technology: computing, information theory, Intelligent Knowledge Based Systems (IKBS), software, data transmission systems, etc.
- f) Opto-electronics: sensors, fibre optics, non-linear optics effects.
- g) Space: satellite design, instrumentation, payloads, sensors, earth resources and remote sensing, space dynamics.
- h) Acoustics: theory, propagation, quietening, generation of sound.
- j) Physics: a wide range of basic topics such as fundamental behaviour of semi-conductors, electro-magnetic propagation.
- k) Chemistry: a very diverse and pervasive subject associated with most fields of defence, ranging from explosives to behaviour of adhesives.
- m) Medicine and the Behavioural Sciences: the behaviour of the human being in adverse or strange environments, the matching of equipments to the physiological and psychological characteristics of the operator - the "Human Factors" question. Also the chemistry and physiology of the human in relation to defence against chemical warfare.
- n) Biochemistry: see (m) above.
- o) Hydrodynamics: theoretical and experimental design of ships and submarines and their propulsion; ship performance.
- p) Propulsion: the technology of gas turbines for air, sea and land use. New developments in prime movers, thermal cycles. Air and marine propellers, new methods of land propulsion.
- q) Control Systems: theory and practice, robotics.

- r) Mathematics: a basic underlying discipline in all fields of research.
- s) Operations analysis: methodology and applications.
- t) Marine Technology
- u) Oceanography.
- v) Meteorology
- w) Systems design: basic theory of systems, distributed systems, redundancy, modelling techniques, etc.

JOINT RC/MOD RESEARCH GRANTS

ANNEX B

MOD MAJOR FIELDS OF RESEARCH

<u>Major Field</u>	<u>Title</u>	<u>Lead Establishment*</u>
A	Aerodynamics, aircraft structures and materials	RAE
B	Gas turbines	RAE
C	Flight systems and navigation	RAE
D	Space	RAE
E	Ships and submarines, signature reduction and human factors	ARE
F	Ships systems	ARE
G	Undersea warfare and countermeasures systems	ARE
H	Rocket propulsion, explosives and weapons materials	RARDE
J	Conventional weapons, armaments and command and control	RARDE
K	Military vehicles and Army engineering equipment	RARDE
L	Chemical and biological defence	CDE
M	Guided and air-launched weapons	RAE
N	Tri-Service electronic systems	RSRE
P	Electronic components	DCVD
Q	Electronic technology	RSRE

* For explanation of acronyms, see Annex C.

MINISTRY OF DEFENCE ADDRESSES AND TELEPHONE NUMBERS

Director General Research and Technology (DGRT) 01-218 3642
 Ministry of Defence
 Room 1213
 Main Building
 Whitehall
 LONDON
 SW1A 2HB

Director 0705 379411
 Admiralty Research Establishment (ARE) ext 2397
 Portsmouth
 Cosham
 Portsmouth
 PO6 4AA

Director 0908 610211
 Chemical Defence Establishment (CDE) ext 208
 Porton Down
 Salisbury
 SP4 0JQ

Director 0252 24461
 Royal Aircraft Establishment (RAE) ext 2000
 Farnborough
 Hampshire
 GU14 6TP

Director 0959 32222
 Royal Armament Research and Development Establishment (RARDE) ext 2008
 Fort Halstead
 Sevenoaks
 Kent
 TN14 7BP

Director 06845 2733
 Royal Signals and Radar Establishment (RSRE) ext 2345
 South Site
 St Andrew's Road
 Malvern
 Worcestershire
 WR14 3PS

Director 01-385 1244
 Components Valves and Devices (DCVD) ext 2792
 Ministry of Defence
 Empress State Building
 Lillie Road
 London
 SW6 1TR

Ministry of Defence
 October 1985

SERC GRANT ADDITIONAL CONDITIONS

SERC/MOD GAC 1 LIAISON WITH MOD

(i) This grant is being funded jointly by SERC and MOD. A MOD Scientific Liaison Officer (currently (name).....)(address) (tel no)) has been appointed with whom regular contact must be maintained on the progress of the work and plans for publication.

SERC/MOD GAC 2 REPORTS

In addition to the requirements of GC12, a copy of the final report must also be submitted direct to the MOD (DGRT).

SERC/MOD GAC 3 COMMERCIAL EXPLOITATION

This condition replaces GC13. The Institution must ensure that all those associated with the research whether staff, students, fellows or visitors are aware of and accept the requirements of this condition.

(i) The Council requires any potentially valuable results obtained in the course of the research for which resources are provided under the research grant to be exploited. The Investigator must therefore ensure that any device, material, product or process, computer software or other result which it is considered might have commercial significance, whether patentable or not, is assessed with a view to exploitation in good time before disclosure or other publication.

(ii) The prior consent of the Council and MOD must be obtained to any commitment or arrangement, with any other body or person whether or not associated with exploitation agreements, that might prejudice the rights and/or interest in the exploitation of the results.

(iii) Where results are identified as potentially valuable and capable of exploitation, the Investigator and Institution should propose arrangements for exploitation to the Council for agreement before any further action is taken. The Council will consult MOD before signifying a response.

(iv) If the Institution proposes to exploit the results itself then:

(a) the exploitation should, whenever possible, be done with UK companies. If the proposed arrangement for exploitation involves a foreign company or the subsidiary of a foreign company, the Institution should consult the Department of Trade and Industry (Dr B N Parsons, DTI, Ashdown House, 123 Victoria Street, London SW1E 6RB (01) 212 5505) and its advice should be attached to the proposal to the Council and MOD.

(b) The Council and MOD will not meet any charges incurred in respect of patenting and exploitation, nor will they expect to receive any of the income thus obtained.

(c) Any arrangements should ensure that such results can be made available on preferential terms to the Institutions eligible to receive research grants from the Council and that MOD have a royalty-free non-exclusive licence (together with the right to sub-licence) for the services of the Crown. Preferential terms may include: provision of unsupported software by the Institution, subject to a suitable confidentiality undertaking being entered into by the recipient, for the cost of replication; or provision of supported software, products or processes at a cost which excludes any element of royalty attributable to the value of the research funding by the Council and MOD.

- (v) If the Institution proposes that the MOD or the Council or its agents should undertake exploitation then:
- (a) the Council requires that the Institution and all engaged in the research for which resources are provided under the research grant cooperate with the MOD or the Council or its agents, in assessing and exploiting any potentially valuable results obtained in the course of the research and to assign their interest in such results to the MOD or the Council or its agents on the basis of a revenue sharing arrangement with the Institution or, as appropriate, the individual research workers.
 - (b) If the MOD or the Council or its agents decide that a result should be exploited, they will make the necessary arrangements (including patent or other protection) at their own expense.
 - (c) If the MOD or the Council or its agents decide against exploitation, the Institution will be notified in writing and the inventor/originator and the Institution will be free to exploit results under whatever arrangements they agree between themselves.
- (vi) Where it is agreed that the Institution may undertake exploitation, the Council and MOD reserve the right to call for a report on the exploitation of the results of this research and, if they consider that the results are not being adequately exploited, to consult with the Institution with a view to reaching agreement on alternative arrangements. If these consultations do not lead to agreement the parties will have the right to refer the question to an independent arbitrator, appointed by the President of the Law Society, whose decision shall be binding.

SERC/MOD GAC 4 PUBLICATION
This condition replaces GC14.

- (i) Subject to Additional Condition 3 and except as provided for in (ii) below, the Investigator is expected to publish the results of the research supported by the research grant in accordance with academic practice, acknowledging the support received from the Council and MOD. Copies of the published papers should be sent to the Council and MOD (DGRT). Publication expenses are not chargeable to the research grant.
- (ii) Exceptionally, if MOD have informed the Investigator that the interests of national security may be involved, MOD's consent to publication must be obtained.

Footnotes:

1. At this stage (October 1985) GAC3 in the above form cannot be used for grants to Polytechnics, Scottish Central Institutions and Colleges of Technology etc. If the new arrangements for exploitation by Universities have not been extended to these other Institutions by the time these joint research grants are announced a suitable condition based on SERC's GC13 and recognising the MOD interest will be used.
2. The other Research Councils use comparable conditions. Details may be obtained from each Research Council.

Science and Engineering Research Council
October 1985

IN CONFIDENCE

This form should be completed in typescript and black ink. It must be attached to the appropriate Research Council's normal research grant application form (RG2 for SERC, RG1 for NERC, PG5 for MRC, RG7 for AFRC or a Research Proposal Form for ESRC) and submitted to the appropriate Research Council, together with the usual number of copies required by that Council, one month before their normal closing date.

1. APPLICANT(S)	FOR RESEARCH COUNCIL USE
Names(s)	Institution(s) (incl Department(s))
	Grant Reference Number

FOR MOD USE

MOD Reference Number

2. PROJECT TITLE (As specified on research grant application form attached)

3. MOD INTEREST: State briefly those features of the proposal that are of interest to MOD

4. MOD FACILITIES: State facility and usage required (see also 5 below)

5. CERTIFICATION

We certify:

- (i) that we will accept MOD funding should this application prove successful and MOD wish to contribute some funds towards it, and
- (ii) that the Director of the appropriate MOD Establishment has confirmed the availability of the MOD facility specified at 4 above.

SIGNATURES

DATE

APPLICANT(S)

HEAD OF DEPARTMENT

ADMINISTRATIVE AUTHORITY

POSITION HELD: