PREM 19/944

PART 1

SECRET

M-T

40/11 Pt 1

42.17 CONFIDENTIAL FILING

Procurement of Weapon Systems

(HARM/ALARM anti-aircraft missiles)

OFFICIALS Report on areas of defence technology in which national capability must be maintained

DEFENCE

MARCH 1983

PREM 19/974

Referred to	Date	Referred to	Date	Referred to	Date	Referred to	Date
~~15.4.83~~		~~17.4.83~~					
~~17.5.83~~		~~16.9.83~~					
~~15.5.83~~		~~22.9.83~~					
~~18.5.83~~		~~4.10.83~~					
~~25.5.83~~		~~5.10.83~~					
~~13.6.83~~		~~17.10.83~~					
~~16.6.83~~		~~26.10.83~~					
~~21.6.83~~		~~11.11.83~~					
~~23.6.83~~		~~14.11.83~~					
~~24.6.83~~		~~17.11.83~~					
~~29.6.83~~		14.11.83					
~~30.6.83~~							
~~1.7.83~~		- Pt Ends -					
~~13.7.83~~							
~~18.7.83~~							
~~20.7.83~~							

PART 1 ends:-

23/11

ASC to RTA 14/12

PART 2 begins:-

D. Pascall to ASC 13/12

TO BE RETAINED AS TOP ENCLOSURE

Cabinet / Cabinet Committee Documents

Reference	Date
CC(83) 26th Meeting, item 4	28/07/1983
CC(83) 25th Meeting, item 2	26/07/1983
C(83) 28	21/07/1983
C(83) 22	13/07/1983
OD(83) 6th Meeting, Limited Circulation Annex	01/07/1983
OD(83) 6th Meeting, only item	01/07/1983
OD(83) 5th Meeting, only item	17/06/1983

The documents listed above, which were enclosed on this file, have been removed and destroyed. Such documents are the responsibility of the Cabinet Office. When released they are available in the appropriate **CAB** (CABINET OFFICE) CLASSES

Signed J. Gray Date 7/3/2013

PREM Records Team

14 14

Copy to:

US of S(DP)	DGDC
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CDP	MGO
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	Head of IP1

MO 26/2

Minister(DP)

COMPETITION IN DEFENCE PROCUREMENT

I have been reflecting on various points arising from the presentation in your office on 20th September and the issues evident in some recent cases. Clearly major constraints arise from the nature of the industrial base and the strongly held views of the Department that it is in our own interests to allow the development contractor to carry the project forward at least to the completion of initial production. Nevertheless there remains considerable scope for the application of competition, and I regard it as a major objective to have competition applied wherever it is practicable and sensible to do so. I recognise that the Department has been giving increasing attention to this and that staff were reminded last year about the importance of competition. I should however like further instructions to be issued embodying the following:

a. it should be made clear to a selected contractor that we expect him to exercise competition to the maximum extent possible not only in negotiating his sub-contracts but also in determining whether work should be done in-house by himself or by a specialist outside contractor. We should expect prime contractors as a matter of course to set out for us the steps they have taken to secure competitive prices for sub-components of the main contract. In this connection I have indicated that

I am attracted by the use of open tender procedures both by our own contracts staff and by our contractors for their sub-contractors. I shall wish to pursue this further;

b. having regard always to value for money, we should use competition as much as possible at the early stages of projects to ensure that we have the best available choice of concepts to consider, and to stimulate innovative ideas for meeting our requirements;

c. the arguments for giving the development contractor the initial tranche of production requirements should be carefully assessed at an appropriately senior level before any such commitment is accepted in the development contract. The objective is to secure a competitive situation wherever possible. In cases where such a commitment is accepted, the aim should be to have an incentive contract covering both full development and initial production and the contractual commitment, particularly in cases likely to involve extensive further requirements, should relate to initial production only and not be as open-ended as in the present Defcon 15. As for second and subsequent production orders the <u>presumption</u> will be that these will in all cases be the subject of competition. There may be realistic limits to this in particular fields eg. aero-engines, but here the point at a. about sub-contracting should again be brought to bear;

d. for existing contracts with the present Defcon 15 terms, it follows from c. above that we should be rigorous in exercising our rights to consider alternative production sources;

e. the staff levels at which authority is given to proceed on a non-competitive basis should be raised in the contracts area (where I understand formal approval levels already exist)

and formal levels should also be instituted in the project areas. Files should record the reasons for not going to competition, including any reasons arising from industrial base limitations. This should ensure that automatic allocation to a previous contractor does not take place.

f. In 1982/83, some 15% of equipment expenditure was spent on proprietary items. Competition should not be dispensed with in favour of one contractor's proprietary items until the contracts/project branches have satisfied themselves that there are no competing proprietary equipments that could fulfil the same requirement or that the benefits of continuing with the existing product are demonstrably more cost effective than the prospective benefits of competition. Even then every effort should be made to negotiate lower cash prices;

g. with the fall in inflation, we should avoid VOP clauses in new contracts wherever possible. As a minimum, VOP clauses should not be included in contracts of less than 2 years duration (compared with the present threshold of 1 year);

h. finally it is important that we get the contract conditions right at the outset and enforce them (including the withholding of interim payments if performance is not satisfactory). In this connection I fully endorse the previous CDP's minute of 21st June. Even if negotiation at the outset takes a little longer and delays the programme, we must ensure the soundest possible contractual terms from the start.

2. I should be grateful if CDP would ensure that instructions are issued to staff at all levels to convey the above approach. I also wish progress in increasing the use of competition monitored and would like you to set up a regular statistical/descriptive system

for this purpose. In particular I should like to see a monthly statistical return showing the number of contracts let with and without competition. I also believe that we must make a determined effort to reduce further the percentage (16% in 1982/83) of equipment expenditure which is subject to cost plus percentage fee terms.

3. Action should proceed case by case forthwith; but we should let the NDIC know - at a meeting early in the New Year for which a paper based on this minute should be circulated. Thereafter, I would wish the phraseology of Defcon 15 formally amended as indicated in paragraph 1c. above so that our standard conditions more clearly reflect our policies.

4. Finally, all the above relates to the UK contractors. I do not want to rule out overseas suppliers who might offer better value for money, but it is important that where the involvement of an overseas contractor is contemplated, the implications are carefully assessed (and for significant or potentially sensitive cases, Ministers consulted) to establish that the ensuing competition will be handled on the basis of normal criteria for assessing tenders, and within our international commitments.

23rd November 1983

COMPETITION IN DEFENCE PROCUREMENT

Note by the Ministry of Defence

1. The Ministry of Defence needs to obtain maximum value for money in satisfying the equipment needs of the Armed Forces. Our approach to this has been set out most recently in the Defence Open Government Document, 83/01 - 'Value for Money in Defence Equipment Procurement' - which emphasises the importance the Ministry attached to competition, not only to achieve keenness in pricing but also to stimulate innovation and enterprise, and the encouragement of new ideas for the solution of defence problems. It stated our determination to secure competition whenever practicable and reasonable.

2. The feasibility of competition is constrained by two factors. First, the UK defence industrial base has evolved to the point where in several areas (for example aircraft, aero-engines and guided missiles), there is effectively only one UK supplier for advanced weapons systems. In other areas however (radar and communications for example), there are several competing UK suppliers. Secondly, the specialised nature of defence equipment often requires a succession of studies to assess feasibility, technical risks and costs, followed by a substantial development programme before production can be embarked upon. The cumulative costs of these phases, which often involve heavy investment in know-how and facilities are generally too high to justify paying competing suppliers to bring equipment to the point of production.

3. There are often significant advantages of cost and timescale in allotting the first tranche of production to the development contractor. Furthermore, to encourage contractors to incur the heavy investment required for the development of defence equipment, MOD practice in placing further production contracts, since the late 1950s and as endorsed in the Rayner Report (Cmnd 4641) of 1971, has been to have regard to the reasonable needs of the development contractor for maintaining his manufacturing and design capacity, providing that he offers fair and reasonable prices. Many current contracts give both suppliers and MOD enforceable rights in this regard.

4. Competitive tendering in conformity with Government purchasing policy already plays an important role in our procurement practice. Where the constraints outlined above have compelled us to deal with a single supplier, our objective is to seek taut contractual terms offering the maximum incentive to contractors to supply the right equipment, at the right time, and at the lowest possible price. Annex A summarises the proportion by value of contracts let in 1982/83 on 'competitive', 'incentive' and 'cost plus' terms (this latter being the method of last resort when the work and costs involved are inherently too ill-defined to allow any other approach). All contracts other than 'cost plus' have some degree of pressure on the contractor.

5. Nevertheless there remains in our view considerable scope for the further application of competition, and Defence Ministers regard it as a major objective to exploit this to the full. The Defence

Secretary has recently issued instructions on the following lines in order to secure maximum competition within its procurement budget.

The Early Stages of a Project

6. Having regard always to value for money, competition will be sought as much as possible at the early stages of projects, to ensure the best available choice of concepts to consider, and to stimulate innovative ideas for meeting our requirements.

The Development Stage and the Interface of Development with Production

7. The objective here will be to secure a competitive situation wherever possible. For new projects, the arguments for giving the development contractor the initial tranche of production requirements will be subjected to increasingly careful scrutiny before any such commitment is accepted in the development contract.

8. In cases where, after such consideration, a commitment to production is accepted in a development contract, the aim will be to have an incentive contract covering both full development and initial production, with the contractual commitment related to initial production only, particularly in cases likely to involve extensive further requirements. Negotiations will shortly be opened with industry on the amendments necessary to standard contractual conditions to bring them into line with this objective. Meanwhile, as necessary, individual cases will be dealt with ad hoc.

9. As for second and subsequent production orders, the presumption will be that these will be the subject of competition. It is recognised that there are realistic limits to this in particular fields eg aero-engines: in such cases we shall be looking to prime contractors to exercise the responsibilities set out in paragraph 10 below.

Competition Below Prime Contractor Level

10. Our policy is to place increasing reliance, wherever it is sensible and cost effective, on a prime contractor for the overall industrial management and final testing of the product. The objectives of competition policy therefore will be achieved only if the approach set out above is fully reflected in the relationship between prime and sub-contractors. We shall accordingly be making clear to contractors that they are expected to exercise effective competition to the maximum extent possible; and that this should apply not only in negotiating sub-contracts, but also in determining whether work should be done in-house by themselves or by a specialist outside contractor. Prime contractors will be required as a matter of course, to report to our purchasing staff the steps they intend to take to secure competitive prices for sub-elements of the main contract.

Further Orders for Existing Products

11. For existing projects to which the present contractual conditions apply we shall, in line with the approach in paragraph 8 above, be

rigorous in exercising our rights to consider alternative production sources for products whatever their value. In the last few years, significant price reductions have been secured by introducing competition in this way for later production orders.

12. In 1982/83, some 15% by value of contracts placed was spent on proprietary items. This is a significant sum of money where a degree of automaticity has inevitably developed. In future, competition in favour of one contractor's proprietary items will not be dispensed with until we have satisfied ourselves that there are no competing proprietary equipments that could fulfil the same requirement or that the benefits of continuing with the existing product are demonstrably more cost effective than the prospective benefits of competition. Even then we shall continue to make every effort to negotiate keen prices.

Monitoring the Policy

13. Arrangements are being set up for Ministers to monitor progress in increasing the use of competition. Decisions to place non-competitive contracts and the reasons for so doing will be scrutinised to ensure, inter alia, that procedures to ensure that automatic allocation to a previous contractor does not take place, are being respected. A monthly descriptive/statistical system is being set up to check implementation.

Contracts Practice

14. In addition, increased emphasis is being placed on 2 further aspects; first, getting the contract terms right at the outset and, second, ensuring that performance is in accordance with them. The achievement of taut contract terms is a significant objective in its own right; and considerations such as technical state and customer timescale will not be regarded, without examination, as more important than the time needed to secure the right contract conditions. Project and contracts staff together will seek to ensure first that this approach will not result in undue delay, and secondly that the contract terms can and will be effectively enforced. In considering projects at high level within the Ministry increasing attention will be paid to the contracts strategy being adopted.

15. The intention is that wherever possible, not only should contracts be let on a taut fixed price or other incentive basis but also, within that broad framework, that appropriate incentives should be attached to discrete activities within the contract so that above average performance should be rewarded and below average performance should incur sanctions. In this way it is hoped to reduce further the percentage (16% in 1982/83) of equipment expenditure subject to cost plus percentage fee terms. Variation of Price (VOP) clauses will be avoided in new contracts wherever possible, and such clauses will not be included in any contracts of less than two years duration (compared with the threshold of 1 year that applied until recently).

General

16. The foregoing summarises the Ministry's approach. Appropriate instructions have been issued to staff to secure effective implementation. Consideration is also being given to the adoption of an 'open tendering' approach at both prime (if it can be shown to be cost effective) and sub-contract level, particularly the latter.

ANNEX A

VALUE OF CONTRACTS (including amendments) PLACED IN 1982/83

	Value £M	% of Total
Contracts placed by competitive tender ie priced at the outset (typically such contracts are for the production of equipment where several sources of supply are available)	1,439	21
Contracts placed on a single source basis but priced at the outset by some reference to market forces (typically for proprietary items or for stock items where commercial price lists are available)	1,065	15
Contracts placed on a single source basis and priced by reference to estimates of costs either at the outset or as soon thereafter as practicable (typically for production of aircraft, aero-engines, weapons etc)	3,049	45
Contracts placed on a single source basis where the contractor's cost containment is incentivised eg by establishing a maximum price limit or a target cost arrangement under which cost over or under runs are shared (typically where the work specification cannot be defined precisely enough to fix prices on estimates of costs but nevertheless is capable of adequate definition for a target and/or top limit to be agreed).	145	3
Contracts placed on a single source basis where costs are reimbursed together with a percentage fee for profit (typically "cost plus" contracts are used for the design and early stages of development of equipments when the work to be done cannot be defined with any reasonable accuracy)	1,132	16
TOTAL	6,830	100

(3) if he will take steps to publish each January, a full by force area of the number of people stopped and athalysed by the police during the Christmas holiday d New Year period, and the number of breath tests ich proved positive.

Mr. Hurd: Police forces submit throughout the year urns to the Home Office on breath tests but the returns e some time to compile and process and all police forces e not yet compiled their figures covering the Christmas d New Year period. Considerable disruption and ense would be involved in asking them to alter the nding arrangements for submitting these returns now d bringing forward the normal schedule for processing m. When all the returns for 1983 have been received s planned to publish, probably in April or May, a istical bulletin on the use of breath tests in 1983, luding a special analysis of the figures for the Christmas iod.

Humberside Police

Mr. McNamara asked the Secretary of State for the me Department whether he will call for a report from Chief Constable of Humberside police on the stionnaire compiled for Humberside police for the pose of conducting a public opinion poll on the attitude the public on Humberside to the police with a view to cing a copy in the Library.

Mr. Hurd: No. It is not the practice to make available blicly reports by chief officers of police to the Home cretary.

Canvey Island (Fire Cover)

Dr. McDonald asked the Secretary of State for the me Department what reports he has received about the equacy of fire cover especially in the Thurrock/Canvey nd area of Essex; and if he will make a statement.

Mr. Mellor: There is no reason to believe on the basis available information that the fire authority has not de adequate arrangements to discharge its statutory igations.

Essex Police

Dr. McDonald asked the Secretary of State for the me Department if he is satisfied with Essex police nbers, bearing in mind the dualling of the A13 and the mpletion of the M25 with their consequent demands on police force; and if he will make a statement.

Mr. Hurd: It is the responsibility of the police hority to maintain an adequate and efficient police force its area, and to fix the establishment, subject to the proval of my right hon. and learned Friend. Police force ablishments are kept under review by chief officers, ice authorities and Her Majesty's Inspectors of nstabulary.

Ten additional posts were approved for the Essex police August 1983 for the financial year 1983-84, bringing the ablishment of the force to 2,653. A total of 128 ditional posts have been approved since May 1979. We l consider carefully, in the light of advice from Her jesty's Inspector of Constabulary, any further plication which the police authority may make.

Drink-driving (Police Guidance)

Mr. Norris asked the Secretary of State for the Home Department if he will call for a report from each chief constable as to the operational guidance given to individual officers as to whether, and in what circumstances, to stop and breathalyse motorists; and if he will take steps to secure the development of a consistent practice amongst all forces.

Mr. Hurd: Within the framework of the Road Traffic Act 1972, as amended, operational guidance to individual officers is a matter for chief officers of police. They already review road traffic law enforcement practice among police forces regularly.

DEFENCE

MCV80 and AT105 Vehicles

Mr. Hawksley asked the Secretary of State for Defence whether a decision has been taken on the production arrangements for MCV80 and AT105 vehicles.

Mr. Pattie: The MCV80 is a programme to provide the Army with a highly mobile armoured personnel carrier and combat vehicle to replace the aging FV430 series fleet. A very successful development phase for the basic vehicle, for which GKN Sankey is the prime contractor, is nearing completion and detailed planning for production is now being undertaken.

Negotiations with GKN Sankey for an initial production order are well advanced, but further orders for the Army's MCV80 requirements will be open to competitive tendering by both GKN Sankey and other interested and qualified manufacturers. In addition, agreement has been reached with GKN Sankey on means by which competitive pressures will be exercised on the prices of the initial batch of vehicles which MOD intends to order from the firm.

These arrangements, which allow competitive pressure to be brought to bear on the whole of the production programme, reflect in a major defence project the particular emphasis which the Government place on securing as much competition as feasible in public purchasing, as a means of securing value for money in terms of lower costs, tighter time scales and sound products.

In parallel with preparations for production, the Ministry will be contracting with GKN Sankey for full development of variant and derivative vehicles, subject to the satisfactory completion of preliminary studies. In due course, these vehicles will be embraced in the production arrangements mentioned above.

Separately, GKN Sankey will be awarded an order for the SAXON (AT105) wheeled armoured personnel carrier which was designed and developed as a private venture by it. The order will be broken into batches to allow for the kind of flexibility we would expect in an order of this size.

Falkland Islands

Mr. Dalyell asked the Secretary of State for Defence of he will take steps to safeguard wrecks of ocean-going sailing ships in the Falklands.

Mr. Whitney: I have been asked to reply.

The protection from unauthorised interference of wrecks and the sites on which they lie in Falklands

Défence PT 2

Hann / Alann

Procurent

CONFIDENTIAL

10 DOWNING STREET

From the Private Secretary

SIR ROBERT ARMSTRONG

Thank you for your minute of 11 November about the approach you have received from Lucas Industries about the choice between Harpoon and Sea Eagle. The Prime Minister has noted the contents of your minute.

A.J. COLES

14 November, 1983

CONFIDENTIAL

CONFIDENTIAL

Prime Minister.

(2)

MR

Ref.A083/3217

MR COLES A.S.C. 11/11

I received a visit the other day from Mr Godfrey Messervy and Dr Alan Watkins of Lucas Industries who wished to brief me on certain aspects of the choice between Harpoon and Sea Eagle.

2. Briefly, they said that Lucas had been trying to develop the same sort of relationship with McDonnell Douglas over Harpoon as they had had with Texas Instruments over HARM. They thought that it would be advantageous to Lucas, and therefore to Britain, both from the point of view of technology and from the point of view of production, if they had "a slice of the action on Harpoon". They said that McDonnell Douglas had decided not to go into partnership with them mainly because they thought that they did not need to do so in order to have a reasonable chance of getting a British order for Harpoon. But the decision had not been a unanimous one, and a number of members of the Board of McDonnell Douglas had wanted to enter into an arrangement with Lucas. Mr Messervy and Dr Watkins believed that, if the British Government asked or pressed McDonnell Douglas to enter into an association with Lucas in connection with a British order for Harpoon, McDonnell Douglas would agree. That would be useful in terms of employment as well as in other ways.

3. I am sending a copy of this minute to Sir Clive Whitmore.

RTA

ROBERT ARMSTRONG

11 November 1983

CONFIDENTIAL

10 DOWNING STREET

Dafydd

Eventually – no hurry –

we should rearrange the

meeting.

A.J.C. 25/10

1) John A.J.C. 26/10

2) CF

11.30 am on Weds 14 Dec.

DMB

26/10

MR COLES

24 October 1983

THE RISING COSTS OF DEFENCE PROCUREMENT

The Prime Minister will be discussing this subject with the Secretary of State for Defence tomorrow.

Since my note to you of 3 October 1983 the interdepartmental group on essential defence technologies has been making good progress and our final report will be available shortly. We shall be making a clear statement on technologies which require an indigenous capability. This will be an important development for future procurement decisions.

This outcome and the fact that the list will be extremely short reinforces our view that the Group should be able to make an important contribution to the additional questions suggested in my earlier minute

- would a more open system of defence procurement lead to better value for money for the defence equipment budget?

- how can greater collaboration and standardisation be achieved within NATO?

despite the Secretary of State's likely response that this is well-trodden ground.

Further study of the Secretary of State's paper indicates that more analysis of the Warsaw Pact's experiences with cost growth and their approach to defence procurement could help to answer these questions. For example, the paper compares the Soviet Union's defence burden (14-16% of GDP) with the NATO average of about 5%. But if, as I understand, defence spending in NATO is roughly equal to that in the Warsaw Pact why is the military balance so much in their favour? How much is this due to greater value for money through long production runs, to cheaper manpower or to a different trade-off between quantity and quality?

In view of these comments, I enclose a revised version of my earlier minute together with a copy of the original in preparation for tomorrow's meeting.

DLP.

DAVID PASCALL

MR COLES

24 October 1983

THE RISING COSTS OF DEFENCE PROCUREMENT

The paper from the Secretary of State for Defence on Real Cost Growth in Equipment puts forward no new thinking on how to tackle the rising costs of defence procurement. It fails to acknowledge that:

- Advances in technology reduce unit costs in defence as elsewhere. Guided weapons achieve more hits at less cost than the systems they replaced. The real problem in defence is the growth of the threat, not the 'cost' of technology.

- Real rises in the cost of items of equipment are not peculiar to defence. They occur in industry, in the health service and in the utilities. Why should this argument make defence a special case?

- Of course, the Warsaw Pact has been spending a higher proportion of its GDP on defence. They have had to because their GDP lagged behind that of NATO. But if defence spending in NATO is now roughly equal to that in the Warsaw Pact, why is the military balance so much in their favour?

- The Warsaw Pact appear to get more equipment for their money than we do, through standardisation. Paragraph 7 refers to the fact that the Warsaw Pact achieve economies of scale and long production runs. Why don't we? It is ironic that the UK in particular and NATO in general fail to exploit the benefits of competition in the one area where our market philosophy should assist us most in our defence against the Soviet threat.

- Foreign competition is excluded from serious consideration in the paper (Paragraph 14). Similarly can we resolve some of the problems which prevent the potential benefits of collaborative projects being realised? Even though a collaborative project may be cheaper than a national project,

a foreign purchase may be cheaper still. Tornado probably cost twice as much as an F16, even allowing for hidden R&D costs and differences in capability.

It was in response to our apparent inability to contain the seemingly inexorable rise in the costs of defence equipment that our earlier papers to the Prime Minister suggested that more radical options need to be considered. This need will be reinforced by any decision to contain the growth in defence expenditure below 3% per annum in real terms after 1985/86.

Following the HARM v ALARM decision, an interdepartmental group with No 10 representation has been identifying those technologies in which an indigenous capability is essential for defence purposes. Our final report will be an important development for future procurement decisions. This outcome suggests that the Group could make an important contribution to some wider issues raised by the Defence Secretary's paper. We suggest that following completion of the current remit, the Group should be asked to consider two further questions:

- would a more open system of defence procurement lead to better value for money for the defence equipment budget?

- how can greater collaboration and standardisation be achieved within NATO?

We anticipate that the Secretary of State for Defence will advise that these questions are not new and are under continuous review. However, by assessing them together, by comparing the experiences of the Warsaw Pact and by looking at future prospects over a reasonably long time horizon, it should be possible to form a clearer idea of where Britain's best interests lie and how value for money in the defence equipment budget could be improved.

The covering note to the Secretary of State's paper also refers to the question of the co-ordination of Ministerial decisions on defence procurement. We suggest that it would be helpful for No 10 to receive copies of the Defence Equipment Policy Committee (DEPC) review of business expected in the following three months, and for the Policy Unit to attend DEPC as appropriate.

DAVID PASCALL

CONFIDENTIAL

HL

17 October 1983

ALARM

The Prime Minister has noted your Secretary of State's minute of 6 October and its enclosure which related to the monitoring system which he has agreed with British Aerospace in connection with the ALARM project.

JOHN COLES

Richard Mottram, Esq.,
Ministry of Defence.

CONFIDENTIAL

(2)

30

Prime Minister

cc FM

To note.

MO 26/7

PRIME MINISTER

ALARM

I thought you might be interested to see the practical outcome of the monitoring system I have agreed with British Aerospace in connection with the ALARM Project.

Every month a report - latest version attached - is placed on the desks of the Chairman and Managing Director of British Aerospace, Lord Weinstock, and myself. You will see that the report is signed by the responsible Manager in the Prime Contractor and agreed by our own Project Manager: it reports progress against the target timetable to achieve the planned in-service data.

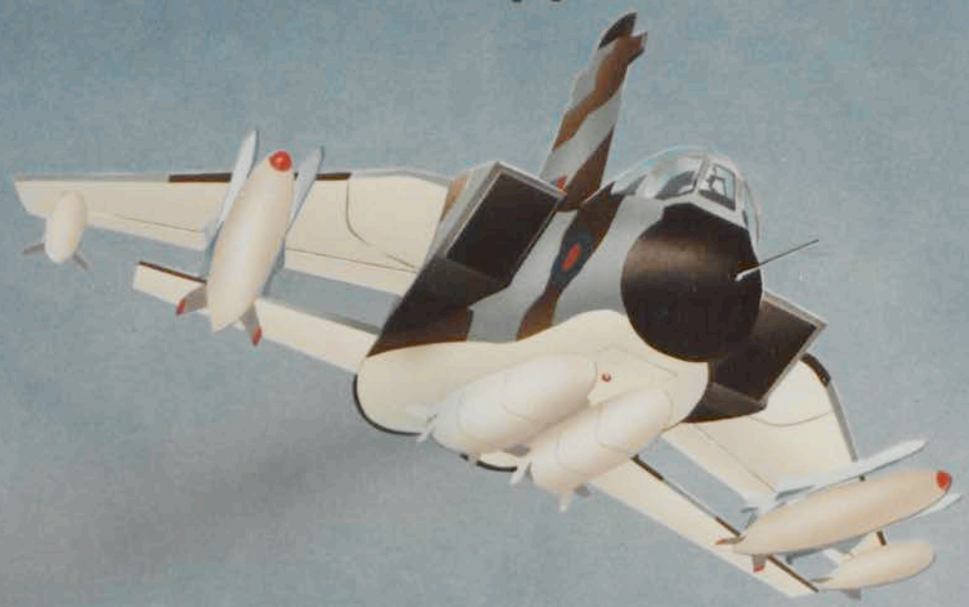
Ministry of Defence
6th October 1983

SECRET

BRITISH AEROSPACE DYNAMICS GROUP

ALARM

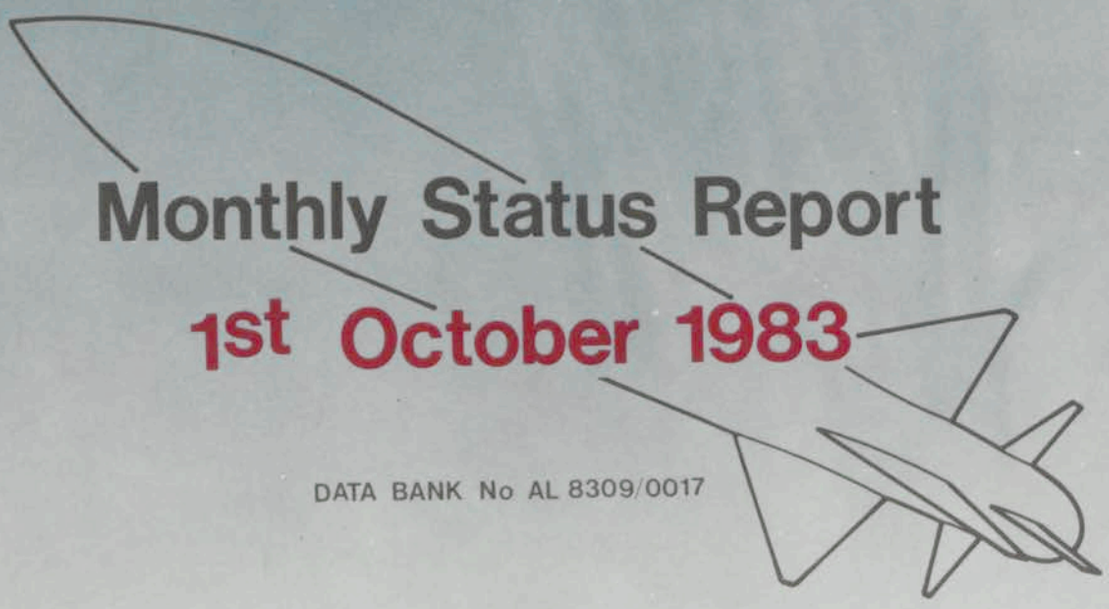
defence suppression



Monthly Status Report

1st October 1983

DATA BANK No AL 8309/0017



SECRET

SECRET

AL 8309-0017
Copy No. 1

British Aerospace Public Limited Company
Dynamics Group, Hatfield Division
Manor Road, Hatfield, Hertfordshire

ALARM

MONTHLY STATUS REPORT

1st October 1983

Report Number 2

Authorised by D.R.Howarth Date 27-9-83.

D.R.Howarth M.B.E.
Divisional Manager Defence Suppression

On Behalf Of The Prime Contractor
British Aerospace PLC

Agreed by D.W.Hazell Date 27-9-83.

D.W.Hazell
AD/AGW4
(MOD Project Manager ALARM)

SECRET

The cover illustration shows the installation of ALARM on the Tornado stub pylons.

AL 8309-0017

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	Mr T.G. Kent	22
	Mr K. Dixon	23
	Mr B.J. Rosser	24
	Mr D.R. Howarth	25-35

SUMMARY

1. The Build up of the Project teams within BAe and the sub-contractors has continued in line with programme requirements. Work on finalising the sub-system specification to arrive at the agreed contractual requirements with sub-contractors also continues.

2. The early development programme remains on schedule.

3. Formal confirmation has been received from MOD(PE) that the Tornado Data Bus interface to ALARM will be to the MIL STD 1553(b) standard, Event Number 3 This enables work on the Missile System to continue on programme.

4. The detailed design trade-off studies with PERME are progressing to establish design parameters for the motor case which will permit low risk in the development and manufacture cycle, Event Number 6.

5. A recently received RAE research report concludes from trials results that cruciform parachutes can provide weapon systems with acceptable low speed descents at low altitude. This confirmation of the ALARM design is expected to be further demonstrated by the IRVIN Parachute Trials scheduled in October. (Event Number 5.)

6. BAeDG have made a prototype wing with quick fix mechanism to substantiate the request from MOD(PE) for detachable/quick fix wings and fins.

7. MBB have commenced trials to check the warhead fragment penetration and shatter performance.

AL 8309-0017

ALARM - OBJECTIVE PROGRAMME

EVENT NO	EVENT	RESPONSIBILITY	PLANNED DATE	ACHIEVED DATE	COMMENTS
1.	Selection of ALARM	HMG		28th July	COMPLETE
2.	Contract agreed	MOD/PE & BAeDG	Aug. 1983	15th Aug.	COMPLETE
3.	Directive on Tornado Data Bus required	MOD/PE	Sept.1983	2nd Sept.	COMPLETE
4.	Commence testing of prototype Seeker Sub-units	BAeDG & MSDS	Oct. 1983		Forecast end of October 1983
5.	Commence parachute trials from balloon at Cardington	BAeDG & Irvin (GB)	Oct. 1983		Parachute manufacture in hand
6.	Confirmation of Flight Standard Rocket Motor Case Design	BAeDG & PERME	Nov. 1983		Critical Area
7.	All missile Ground Equipment Technical Specs issued	BAeDG	Jan. 1984		BAeDG commencing work leading to Service agreement
8.	Detailed development and production program available with critical path	BAeDG	Jan. 1984		BAeDG actively engaged on the activities required to achieve this event
9.	Tornado/ALARM weapon system interface Specification issued	BAeDG & BAe/W	Jan. 1984		Initial BAeDG draft proposal exists

NOTE The planned dates indicated are subject to programme adjustments within the overall project timescale.

AL 8309-0017

ALARM - OBJECTIVE PROGRAMME

EVENT NO	EVENT	RESPONSIBILITY	PLANNED DATE	ACHIEVED DATE	COMMENTS
10.	First Rocket Motor charge proof firing	BAeDG & PERME	Mar. 1984		
11.	Demonstrator seeker commences air carry trials on helicopter	BAeDG & MSDS	June 1984		
12.	First hieght sensor engineered to size available for test	BAeDG & Thorn - EMI	June 1984		
13.	First seeker engineered to size available for test	BAeDG & MSDS	Aug. 1984		
14.	First mission control unit engineered for size available for test	BAeDG	Oct. 1984		
15.	First firing of Flight Standard Rocket Motor	BAeDG & PERME	Dec. 1984		
16.	Clearance trials started on Tornado	BAe/W	Jan. 1985		
17.	First missile available for compatability testing	BAeDG	Jan. 1985		
18.	MCU software debugged & available for proving sub-system with seeker	BAeDG	Feb. 1985		
19.	Seeker software debugged & avaliable for proving sub-system interfacing with MCU	BAeDG & MSDS	Mar. 1985		

NOTE The planned dates indicated are subject to programme adjustments within the overall project timescale.

AL 8309-0017

ALARM - OBJECTIVE PROGRAMME

EVENT NO	EVENT	RESPONSIBILITY	PLANNED DATE	ACHIEVED DATE	COMMENTS
20.	Tornado trials aircraft available for missile development trials	MOD/PE & BAe/W	Mar. 1985		
21.	First engineered warhead available	BAeDG & MBB	Apr.1985		
22.	Release of boost only Rocket Motor for flight trials	BAeDG & PERME	Apr. 1985		
23.	Completion of parachute trials from Tornado	BAeDG & Irvin (GB)	May 1985		
24.	Radar targets available for trials	MOD/PE	June 1985		
25.	Engineered seeker commences air carry trials on helicopter	BAeDG & MSDS	July 1985		
26.	Missile development firings started in UK	BAeDG	Sept.1985		
27.	Completion of warhead firing trials	BAeDG & MBB	Dec. 1985		
28.	Acceptance of evaluation standard seeker	BAeDG & MSDS	Feb. 1986		
29.	Acceptance of evaluation standard height sensor	BAeDG & Thorn - EMI	Feb. 1986		
30.	Acceptance of evaluation standard parachute system	BAeDG & Irvin (GB)	Mar. 1986		
31.	Commencement of Ordnance Board Trials	MOD/PE & OB	Apr. 1986		

NOTE The planned dates indicated are subject to programme adjustments within the overall project timescale.

ALARM - OBJECTIVE PROGRAMME

EVENT NO	EVENT	RESPONSIBILITY	PLANNED DATE	ACHIEVED DATE	COMMENTS
32.	Missile development trials started in USA	BAeDG	Apr. 1986		
33.	Ground support equipment delivered for MOD/PE evaluation trials	BAeDG	May 1986		
34.	Acceptance of evaluation standard rocket motor	BAeDG & PERME	May 1986		
35.	Evaluation standard mission control unit qualified	BAeDG	June 1986		
36.	Completion of missile development trials	BAeDG	Aug. 1986		
37.	Acceptance of evaluation missiles for trials	MOD/PE	Aug. 1986		
38.	Start evaluation missile reliability growth testing	BAeDG	Aug. 1986		
39.	First evaluation missile available for trials	BAeDG	Sept. 1986		
40.	Acceptance of in service Rocket Motor Design	BAeDG & PERME	Sept. 1986		
41.	Evaluation standard warhead accepted	BAeDG & MBB	Oct. 1986		
42.	Start of evaluation trials in USA	MOD/PE	Oct. 1986		
43.	Completion of Ordnance Board trials	MOD/PE & OB	Feb. 1987		

NOTE The planned dates indicated are subject to programme adjustments within the overall project timescale.

AL 8309-0017

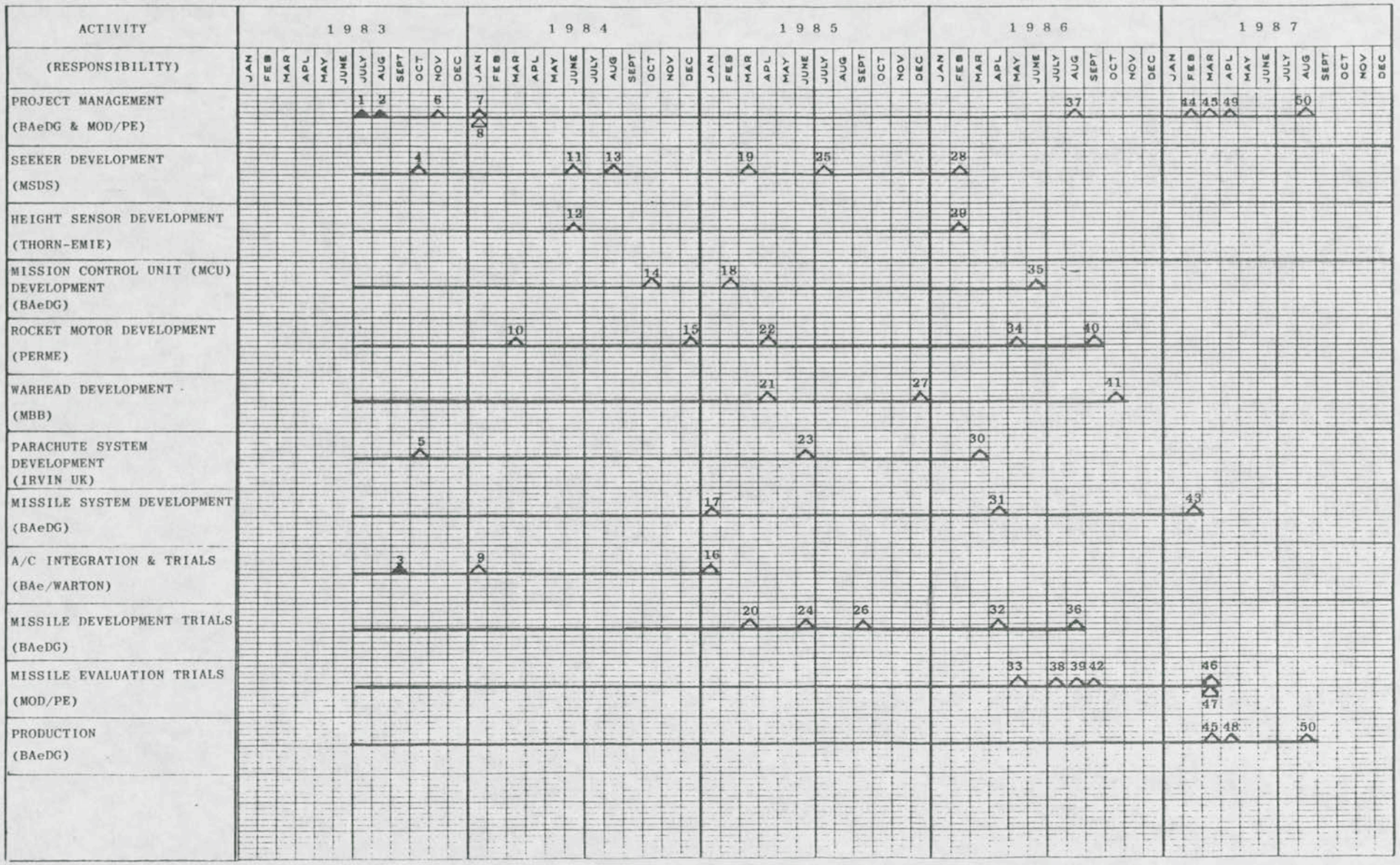
ALARM - OBJECTIVE PROGRAMME

EVENT NO	EVENT	RESPONSIBILITY	PLANNED DATE	ACHIEVED DATE	COMMENTS
44.	MOD/PE proposes service acceptance of Tornado/ALARM weapon system	MOD/PE	Feb. 1987		
45.	Acceptance of production missiles for delivery to services	MOD/PE	Mar. 1987		
46.	Completion of reliability growth testing	BAeDG	Mar. 1987		
47.	Completion of evaluation trials in USA	MOD/PE	Mar. 1987		
48.	First production delivery made to Service	BAeDG	Apr. 1987		
49.	MOD/PE proposes Service acceptance of ALARM missile system	MOD/PE	Apr. 1987		
50.	Delivery of all equipment to support the In-service Date (ISD)	BAeDG;BAe/W; MOD/PE	Aug. 1987		

NOTE The planned dates indicated are subject to programme adjustments within the overall project timescale.

SECRET

ALARM - OBJECTIVE PROGRAMME



SECRET

CONFIDENTIAL
COMMERCIAL IN CONFIDENCE

c/ D. Pascall cy/ FM DP

MINISTRY OF DEFENCE
MAIN BUILDING WHITEHALL LONDON SW1A 2HB
Telephone 01-~~218~~ 218 2111/3

MO 26/3

6th October 1983

N.B. D.R.

DR 7/10.

Dear Steve

SURFACE TO SURFACE GUIDED WEAPONS FOR THE ROYAL NAVY

We spoke this morning about my Secretary of State's letter of 22nd September to Mr Parkinson, on the subject of Surface to Surface Guided Weapons for the Royal Navy. I mentioned that there had been a further development.

British Aerospace, who are offering Surface Launched Sea Eagle as a solution to the Navy's requirement, made a revised bid on 30th September which could involve a substantial improvement on the terms we have been offered so far. Ministers have asked officials to hold urgent discussions with BAe about the details of the bid. When assessing the new bid, we will also, of course, have to consider the position of the other competitors.

In these circumstances we agreed that it would be better if your Secretary of State did not reply to Mr Heseltine's letter for the moment. We will, of course, keep you in touch.

I am copying this to the Private Secretaries of the members of OD and to Richard Hatfield at the Cabinet Office.

Yours

A H Lowe

(S H LOWE)
Private Secretary

S Nicklen Esq

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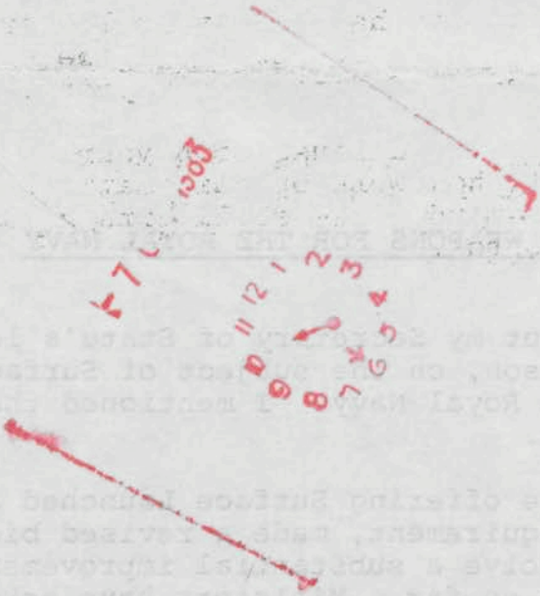
Defence
March 83
Harm/Alarm



CONFIDENTIAL

MR FLESHER?

bc FM

10 DOWNING STREET

From the Private Secretary

5 October 1983

AJC NDR 5/10.
Meeting arranged
for 1700 on 25/10.

The Prime Minister has seen your letter of 22 September and the accompanying paper about the rising cost of defence equipment.

She would like to discuss with your Secretary of State how work on this matter can be carried forward. We shall arrange a meeting in due course.

A. J. COLES

N.H.R. Evans, Esq.,
Ministry of Defence.

(1) · 35.

PRIME MINISTER

RISING COST OF DEFENCE EQUIPMENT

Before the holidays you asked the Defence Secretary to let you have a paper on this subject.

I now attach a letter from his Office and an accompanying paper.

The MOD ask how you would now wish to proceed.

I attach a minute by the Policy Unit which contains some ideas:-

(a) that No. 10 should receive copies of the Defence Equipment Policy Committee papers;

(b) that the Policy Unit should attend this Committee;

(c) that the Group which was set up after the HARM/ALARM decision (on which No. 10 are represented) to identify technologies in which an indigenous capability is essential for defence purposes should, when they have finished this work, consider two questions:

(i) would a more open system of defence procurement lead to better value for money for the defence equipment budget;

(ii) how can greater collaboration and standardisation be achieved within NATO?

I can see no objection to (a) and (b) above. As to (c), my impression is that Mr. Heseltine already has some fairly radical ideas about opening up the present rather cosy system of defence procurement - and I doubt whether another Committee is going to do much of value about the problem of NATO standardisation.

Would you like to discuss these ideas with the Defence Secretary when we can find a spare moment? There is no hurry.

Yes please

A.J.C.

4 October 1983

MR COLES

3 October 1983

THE RISING COSTS OF DEFENCE PROCUREMENT

The paper from the Secretary of State for Defence on Real Cost Growth in Equipment puts forward no new thinking on how to tackle the rising costs of defence procurement. It fails to acknowledge that:

- Advances in technology reduce unit costs in defence as elsewhere. Guided weapons achieve more hits at less cost than the systems they replaced. The real problem in defence is the growth of the threat, not the 'cost' of technology.

- Real rises in the cost of items of equipment are not peculiar to defence. They occur in industry, in the health service and in the utilities. Why should this argument make defence a special case?

- Of course, the Warsaw Pact has been spending a higher proportion of its GDP on defence. They have had to because their GDP lagged behind that of NATO. However, they get more equipment for their money than we do, through standardisation. Paragraph 7 refers to the fact that the Warsaw Pact achieve economies of scale and long production runs. Why don't we? It is ironic that the UK in particular and NATO in general fail to exploit the benefits of competition in the one area where our market philosophy should assist us most in our defence against the Soviet threat.

- Foreign competition is excluded from consideration in the draft (eg Paragraph 14). The benefits of collaboration are also understated. A collaboration project may be cheaper than a national project but a foreign purchase may be cheaper still. Tornado cost twice as much as an F16, even excluding the hidden R&D costs.

It was in response to our apparent inability to contain the seemingly inexorable rise in the costs of defence equipment that our earlier papers to the Prime Minister suggested that more radical options need to be considered. This need will be reinforced by any decision to contain the growth in defence expenditure below 3% per annum in real terms after 1985/86.

Following the HARM v ALARM decision, an interdepartmental group with No 10 representation has been set up to identify those technologies in which an indigenous capability is essential for defence purposes. We suggest that, following completion of this remit, the Group should be asked to consider two questions:

- would a more open system of defence procurement lead to better value for money for the defence equipment budget?

- how can greater collaboration and standardisation be achieved within NATO?

We anticipate that the Secretary of State for Defence will advise that these questions are not new and are under continuous review. However, by assessing them together and looking at future prospects over a reasonably long time horizon, it should be possible to form a clearer idea of where Britain's best interests lie and how value for money in the defence equipment budget could be improved.

The covering note to the Secretary of State's paper also refers to the question of the co-ordination of Ministerial decisions on defence procurement. We suggest that it would be helpful for No 10 to receive copies of the Defence Equipment Policy Committee (DEPC) business expected in the following three months, and for the Policy Unit to attend DEPC as appropriate.

DLP.

DAVID PASCALL

seen by ASL
MLWR
LS 19.

MR COLES

SURFACE-TO-SURFACE GUIDED WEAPONS FOR THE ROYAL NAVY 29

We continue to support the proposal to purchase the McDonnell Douglas Harpoon system which is clearly superior to the Sea Eagle development put forward by British Aerospace.

The recent correspondence does not alter the strength of the Secretary of State for Defence's original proposal. What it does illustrate is that a lack of co-ordination between the MoD and the DTI leads to avoidable delays in procurement decisions.

DLP

DAVID PASCALL

MINISTRY OF DEFENCE
MAIN BUILDING WHITEHALL LONDON SW1A 2HB
Telephone 01 218 2111/3

MO 26/2

22nd September 1983

Dear John,

attached.

In your letter of 25th July you said that, in discussion with my Secretary of State, the Prime Minister had expressed her concern at the rising cost of defence equipment and asked for a paper taking a preliminary view on this issue. A paper on real cost growth in defence equipment is attached.

You also mentioned the question of the co-ordination of Ministerial decisions on defence procurement. Every 6 months or so, Defence Ministers receive a forecast of those equipment decisions needing their approval which are likely to come forward in the following 12 months. These decision points cover the endorsement of Staff Requirements and the start of Project Definition (PD); the start of Full Development (FD); approval of initial and follow-on production orders of £50M or more; and the signature of key MOUs. The last such forecast contained over 50 items.

Apart from the necessary Treasury approvals, the majority of these decisions do not give rise to issues requiring inter-departmental discussion at Ministerial level. Those few that do will normally be discussed by the Defence Equipment Policy Committee (DEPC), which the Treasury, DTI and FCO attend. Representatives of other government departments with other members, receive forecasts every 4 - 6 weeks of DEPC business in the following three months. Therefore, when Defence Ministers take decisions, they will be aware of related projects coming forward for consideration and, when they seek the agreement of the Chancellor and other colleagues concerned, officials of those Departments will have received the DEPC forecast of business. Perhaps you would let us know how the Prime Minister would wish to proceed.

I am copying this letter to John Kerr (HM Treasury), Roger Bone (FCO), Caroline Varley (Trade and Industry) and Richard Hatfield (Cabinet Office).

Yours ever
Mich Evans

(N H R EVANS)

A J Coles Esq

REAL COST GROWTH IN EQUIPMENT

"The great change introduced into the art of war by the invention of fire-arms, has enhanced still further both the expence of exercising and disciplining any particular number of soldiers in time of peace, and that of employing them in time of war. Both their arms and their ammunition are become more expensive. A musquet is a more expensive machine than a javelin or a bow and arrows; a cannon or a mortar than a balista or a catapulta. The powder, which is spent in a modern review, is lost irrecoverably, and occasions a very considerable expence. .....

The cannon and the mortar are, not only much dearer, but much heavier machines than the balista or catapulta, and require a greater expense, not only to prepare them for the field, but to carry them to it. As the superiority of the modern artillery too, over that of the ancients is very great; it has become much more difficult, and consequently much more expensive, to fortify a town so as to resist even for a few weeks the attack of that superior artillery. In modern times many different causes contribute to render the defence of the society more expensive. ....."

Adam Smith: "An inquiry into the natur
and causes of the wealth of Nations"

1776

REAL COST GROWTH IN EQUIPMENT

1. There has been concern for some time over the rise in unit costs between successive generations of defence equipment. This was one of the main reasons for the 1981 review of the Defence Programme which resulted in the White Paper on The Way Forward (Cmnd 8288). The problem and how to mitigate its effects were further discussed in SDE 1982 Chapter 4 (Cmnd 8529).

2. The growth in the real cost of defence equipment is not a new phenomenon. In 1776 Adam Smith had identified most of the factors involved; the impact of a major advance in technology, the increased cost not only of procurement but also of training and support costs and the increased cost of defence against an enhanced threat. However, the problem has become more marked since World War II, with both the Warsaw Pact and NATO countries striving to exploit developments in advanced technology. Recent studies suggest that some 60% of the equipment programme may be susceptible to significant real cost growth. Examples of the increases in costs between generations of equipment are shown in Annex A. The real unit cost of British aircraft has increased at an average rate of 8% a year since World War II.

3. A study in the USA showed that the real cost of their weapon systems had also been rising rapidly since World War II. Examples included annual real growth rates in unit costs of 13% for an infantry anti-tank weapon, 11% for tanks, 9% for destroyers, 8% for aircraft and 6% for aircraft carriers. This means that, for the same amount in real terms, 9½ times as many tanks and 30½ times as many fighter-aircraft could be purchased in 1950 compared with 1983. The French have recently told us that they believed their equipment programme was subject to a real cost growth of 5% a year.

4. We concluded some years ago that a growth rate in equipment and associated expenditure in the region of 6-8% annually, in real terms, would be needed to maintain our role and commitment to NATO and to meet the threat if it kept pace with technological advance. The problem is a major one.

5. Advances in technology consist of three main components:-

- the introduction of entirely new technology into warfare. Post World War II examples include guided weapons, computers, thermal imaging, satellites, laser weapons and nuclear propulsion and weapons.
- major new twists in existing technology. Examples include vertical take-off flight capability for aircraft and developing torpedoes into true guided weapons.
- straight forward cost growth as each mark or generation of equipment is improved to achieve greater effectiveness.

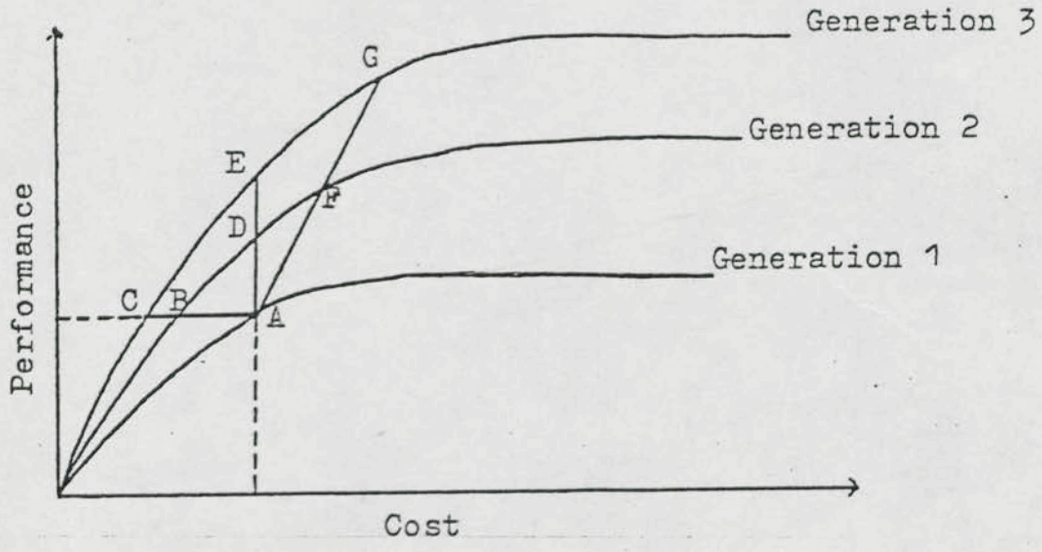
6. So far as perceived developments of the threat are concerned, the facts of Warsaw Pact numbers are well known but the qualitative advantages on which NATO has depended to counterbalance the quantitative disparity have been diminishing. There is some evidence to suggest that the Russians themselves have been affected by the problem of real cost growth. In 1975, the previous Soviet Minister of Defence said:

> "In just the last 10-15 years, both here and abroad, there has been a replacement of 2-3 generations of missiles; a significant portion of the inventory of combat aircraft, surface ships and submarines have been replaced. This trend is becoming more distinct, in spite of the fact that with the creation of new prototypes of weapons there is a continuous increase in the technical complexity of military-industrial items and of the economic expenditures for that production."
>
> Marshal Grechko: "The Armed Forces of the Soviet State"

. The Soviet Union is prepared to accept a very high defence burden in order to meet its military requirements (14-16% of GDP is devoted to defence compared with the NATO average of about 5%). In addition, the fact that the Soviet Union relies on a large and poorly paid force of conscripts means that a relatively large proportion of military expenditure is available for weapons procurement (60% including R&D compared with 37% for the UK and 31% for the USA - see Annex B). In addition, their very large and continuous production runs and commonality of equipment throughout the Warsaw Pact ensures that they obtain maximum economies of scale.

8. NATO has little choice but to counter the Warsaw Pact's improvements. For example, increases in the effectiveness of armour on new generation Warsaw Pact tanks have required enhancements to every form of armour attack; at sea, the increased threat from low altitude, high speed missile attack has demanded improved responses from anti-missile systems, improved electronic counter measures and extended surveillance. Such improvements are expensive.

9. The phenomenon is illustrated in the following graph.



This shows illustrative performance curves for succeeding generations of equipment. Each generation offers an improvement in performance over the one before; each shows the last few per cent of performance achievable at progressively higher marginal cost.

10. Advances in technology make the same performance available at a lower cost (A-B-C) or an increased performance available at the same cost (A-D-E). The need to respond to the threat however tends to push the requirement for performance up the curve (A-F-G) and real cost growth is the result.

Present Position

11. The trend in frontline numbers for major equipments during the period from 1950 is shown in Annex C. Between 1950 and 1970, the decline was rapid with the wasting out of World War II and Korean War equipment. Frontline numbers in the 1970s continued to decline in many areas, reflecting the pressure of cost growth against a largely static budget. But the trend has not been universal and there have been significant enhancements in our capabilities in some areas. For example, the SSN fleet, has increased in size and the infantry has become more mechanised. Nor should it be overlooked that each equipment is more capable and, therefore, may be more cost effective than its predecessor.

Solutions

12. The aim must be to constrain or accommodate real cost growth. One obvious way is to increase the resources available for equipment expenditure. As the graph at Annex D shows, the trend of the UK Defence Budget in real terms since the mid-1960s was downwards or at least stable until the end of the 1970s. Since 1978/79, however, the defence budget has grown by nearly 14%; this reflects the UK's commitment to the NATO aim of a 3% a year growth in real terms and the additional provision for the Falkalnds. Annex E

shows that, within the defence budget, the proportion allocated to overall equipment costs has increased from a minimum of 30% in 1971/72 to over 46% this year. This reflects a number of measures to constrain personnel costs; particularly, since 1979, by cutting civilian numbers, which has helped to reduce the proportion of the defence budget spent on civilian pay by a third since 1975/76. Annex F shows equipment expenditure in real terms.

13. Real cost increases within budgetary constraints have also brought about more fundamental changes in our defence picture over the past 30 years. These include the reduction of overseas commitments, the abandoning of (or not proceeding with) some equipments which were beyond our means (such as Inter-Continental Ballistic Missiles, and aircraft carriers), keeping equipment in service longer and the squeezing of support to release money for the front line; in sum, real cost escalation has driven changes in national defence policy. In the last few years, however, more determined efforts have been made to ensure that equipment is more affordable.

14. Areas on which effort is now being concentrated are:-

(a) Competition

MOD policy is to secure competitive proposals wherever this is practicable and reasonable, both during development and production phases. This is not only the surest way to ensure the lowest costs, it also stimulates innovation and enterprise from which Defence can benefit. Even more in the UK than in the United States, however, there are practical constraints on competition such as monopoly and proprietary suppliers. The scope for alleviating the effect of these constraints is rigorously examined and the value of direct purchase by competitive tendering has risen from 15-16% in the late 1970s to 20%. For instance, although in many areas (such as guided weapons or aero-engines) there is only one possible prime contractor in the UK, competition can be introduced for sub-systems. Inclusion of foreign purchases in competitions also offer cost advantages.

(b) Incentive Pricing

In addition, the MOD aims to make the maximum practical use of fixed prices or other incentive arrangements; especially where the competition has not proved possible. Some 75% to 80% by value of the contracts placed in recent years have been on this basis. A cost-plus-percentage method of contracting is only used as a method of last resort. However, getting the right terms and the right specifications -

so as to minimise the risk later of avoidable charges, abortive work and cost growth - must mean that development work on some projects will have to start later than either industry or the Services would wish.

(c) Closer consultation with Industry

Government purchasing policy requires the use of purchasing power to help develop the design, technology and competitiveness of suppliers. Accordingly, MOD consults industry at a very early stage to discuss the most cost-effective method to meet a specific threat and may adjust operational requirements and technical specifications where necessary to enhance sales potential. Existing commercial products may meet the needs of the Services with comparatively little modification; this is cheaper in terms of development costs and allows the MOD to utilise the civilian support system which saves infrastructure and personnel costs as well. It also reinforces the marketability of these products and reduces a firm's dependence on the MOD for its markets and profits.

(d) Avoidance of over-elaboration of Requirements

As the design approaches the limits of available technology a stage is reached in each generation where additional performance can only be achieved at a high marginal cost. Our aim is to maximise force effectiveness by balancing quantity and quality rather than seeking to exploit all the benefits of new technology through maximising, at a higher unit cost at greater risk to development and reliability, the performance of individual equipments.

(e) Sales

At the moment, the UK is estimated to hold nearly 6% of the market for sales. The sale of defence equipment can offer a number of benefits. Not only can it reduce unit costs by increasing the length of production runs, but it also reduces industry's dependence on the MOD for contributions to overheads, provides a return in the form of levies on sales and opens up the prospect of contributions to development by industry in joint venture projects, such as the EH101 helicopter. Consultation with industry, is essential to ensure that export considerations play a more significant part in the development of new equipment.

(f) Collaboration

Like sales, collaboration can offer each partner savings from shared development costs and from economies of scale in production when compared with a national project. The possibilities of collaboration are explored for all major projects; although there are intrinsic problems in harmonising the interests of the relevant governments, industries and operational staffs, which can increase costs, timescales, complexity and management problems.

15. In addition effort is devoted to reducing the "through life costs" of equipment i.e. its running and maintenance costs. Improving the design, reliability and maintainability of an equipment is a crucial part of development and the trade-off between capital and support costs is considered from an early stage. Where alternative methods of meeting a requirement are considered through life costs will be a major factor in the final decision.

16. Following discussions as necessary with industry, a number of internal instructions on the implementation of these principles have been issued in the last year or so and will shortly be supplemented by an Open Government Document on defence procurement policy. These instructions emphasise the need for early dialogue with industry, the statement of requirements in broad terms and the avoidance of over-elaboration, encouragement of industry to offer their own solutions (sometimes involving PV funding) and, above all, competition. Experience so far indicates that both MOD and industry are securing the benefits in terms of affordable equipment in realistic timescales, which is more readily marketable overseas.

17. Examples of equipment where real costs have been held or reduced are shown "below the line" in Annex A. The SSN programme is one where, despite complexity and the absence of competition, substantial improvements in performance have been achieved without real cost increases through a sustained programme of product improvement, the radars have benefitted from technological advance, UAF (1) shows the benefits of competition and the Type 23 frigate has been subject to the imposition of a cost ceiling. Savings will also be achieved in running costs. The Type 23 is planned to have a crew of 145 compared with 280 in the Type 22 and the Martello Air Defence radar will require little more than a third of the men to service and maintain them as the previous system.

Conclusions

18. The problems for the defence budget created by the tendency for real cost growth to occur between succeeding generations of defence equipment are well recognised. In the last decade, progress has been made towards mitigating its effects. The share of the defence budget devoted to equipment costs has risen from 30% to 46%. Various policies to reduce costs are being

implemented. Competition, improved contractual arrangements, closer consultation with industry, simplification of requirements, increased exports, and collaboration all have a part to play.

19. If the Alliance is to continue, despite being outnumbered, to offer a credible deterrent, it must maintain a high quality front line. The US are urging on their allies the adoption of emerging technooogies, to acquire targets and strike them at greater depth. They should improve NATO's conventional stance; they will certainly be expensive. NATO continues to support the commitment to 3% a year real growth. SACEUR would like 4% to ensure adequate numbers of high quality systems in the Alliance inventory. Despite the progress that has been made in checking real cost growth and accommodating it within the defence budget, the pressures will continue. As the recently endorsed NATO Ministerial Guidance concluded:-

> "Optimal use of resources has always been the aim of planners and decisions makers and though new ideas may offer new opportunities, it would already be a great success if through these initiatives it would become possible to reduce the rate of real cost growth in the defence field. The need for real increases in defence expenditure as a pre-requisite for real increases in defence capabilities is, however, not likely to disappear."

EXAMPLES OF REAL COST INCREASES IN THE PRODUCTION COSTS OF EQUIPMENT

Harrier GR 1	-	4 x Hunter F6
Sea Wolf	-	3½ x Sea Cat
MCV 80	-	3½ x FV 432
Type 22 Frigate	-	3 x Leander
Lynx Mk 2	-	2½ x Wasp Mk 1
Searchwater Radar	-	2½ x ASV 21
LI5 HE Shell	-	2 x 5.5" HE Shell
Hawk Mk 1	-	1½ x Gnat Mk 1
Puma Mk 1	-	1½ x Wessex Mk 2

Trafalgar SSN	-	1 x Valiant SSN
Tornado A1 Radar	-	1 x Phantom AWG 11/12 Radar
Martello Radar	-	1 x Type 85
Type 23 Frigate	-	0.8 x Type 22
UAF 1 ESM Equipment	-	0.8 x UAA 1

ANNEX B

ALLOCATION OF MILITARY EXPENDITURE BY PERCENTAGE: 1981[1]

	USSR	UK	USA
MILITARY PERSONNEL COSTS	10	23	22
OPERATIONS AND MAINTENANCE	26	37	45
PROCUREMENT OF EQUIPMENT [2]	39	23	22
RESEARCH AND DEVELOPMENT	21	14	9
CONSTRUCTION OF MILITARY FACILITIES	4	3	2

(1) Defence budget estimated on a calendar year basis and using the NATO definition of defence expenditure (see Table 2.3 in SDE 83, Vol 2).

(2) Based on NATO definition of "major equipment". R & D costs are identified separately; minor equipment and other items (particularly ammunition, explosives and general support costs) are excluded; whereas both these classes of expenditure are included in the UK definition for equipment costs in Annexes E and F.

ANNEX C

EXAMPLES OF TRENDS IN EQUIPMENT NUMBERS

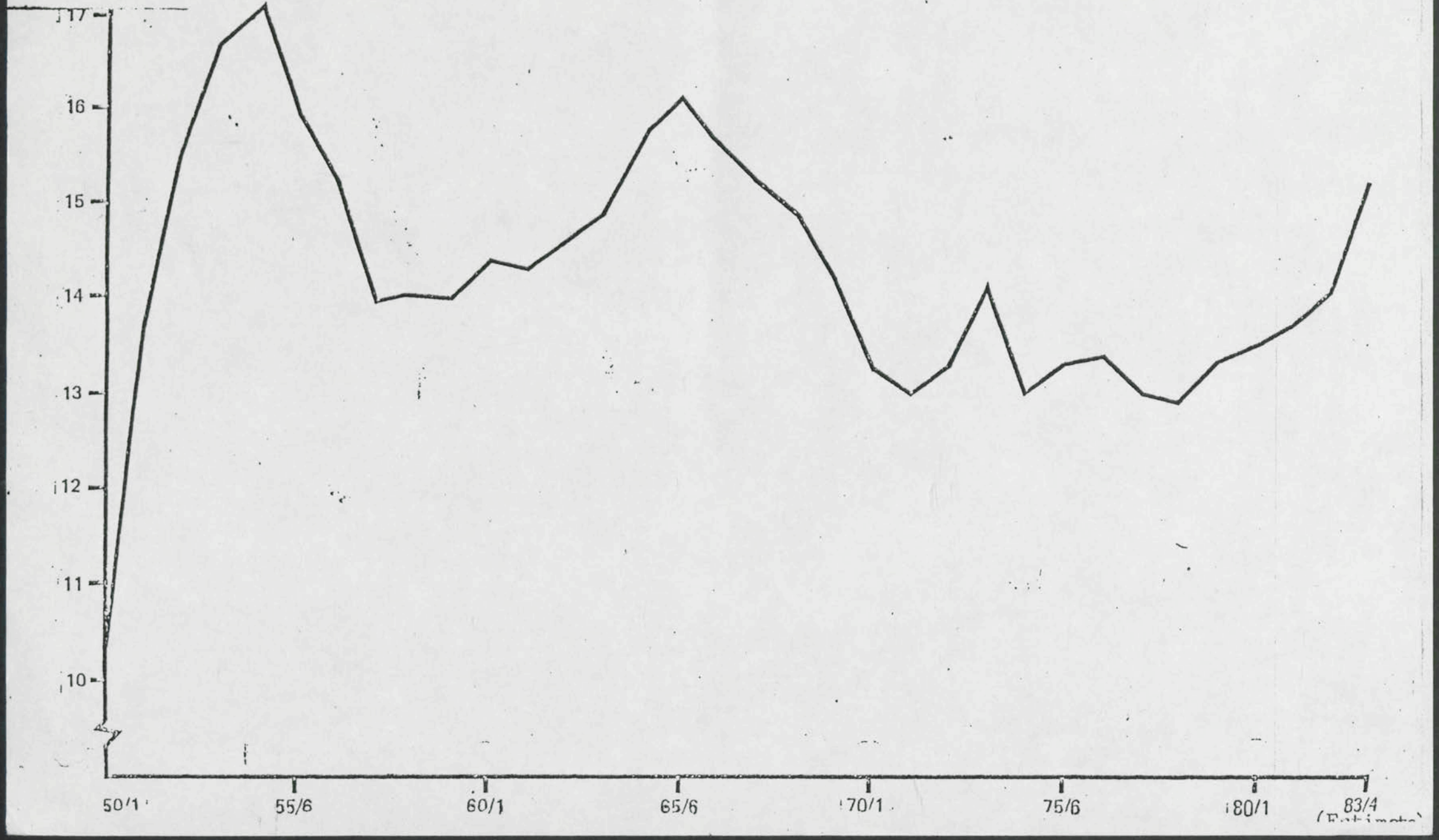
	1950	1960	1970	1980
DD/FF, Cruisers, Carriers etc	4.6	2.5	1.3	1
DD/FF, Cruisers, Carriers etc (active only)	2.4	1.7	1.4	1
Submarines	3.9	3.3	1.7	1
Submarines (active only)	2.9	3.1	1.9	1
Nuclear (Fleet) Submarines	-	-	0.3	1
Bombers and Strike Attack Aircraft	1.4	2.0	0.9	1
Fighter, Ground Attack, etc	5.1	2.1	1.1	1
Tanks	1.5	1.0	1.0	1
Armoured Cars, APCs, etc(1)	0.6	0.5	0.6	1
Army Helicopters	-	0.2	1.2	1

(1) Increasing mechanisation of infantry battalions.

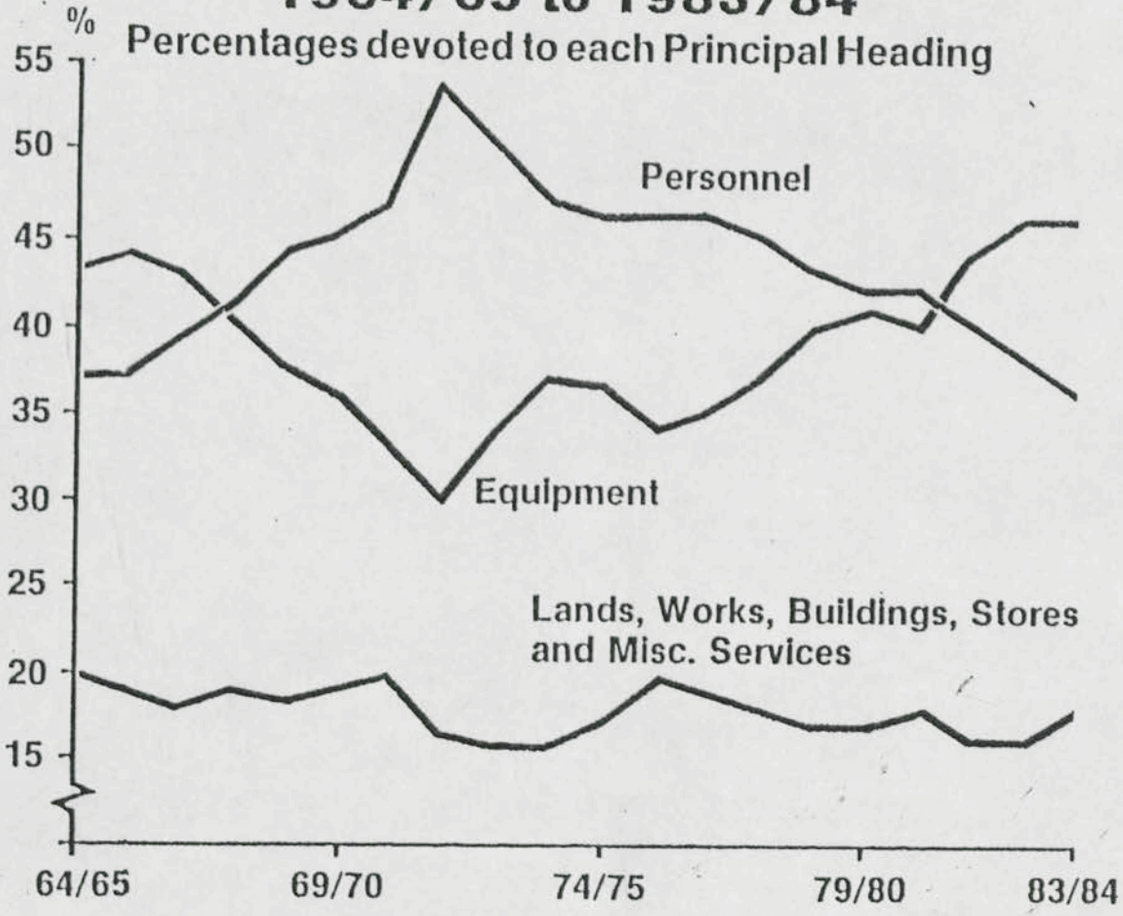
ANNEX D

THE DEFENCE BUDGET 1950/51 to 1983/84

At LTC 1983 Prices

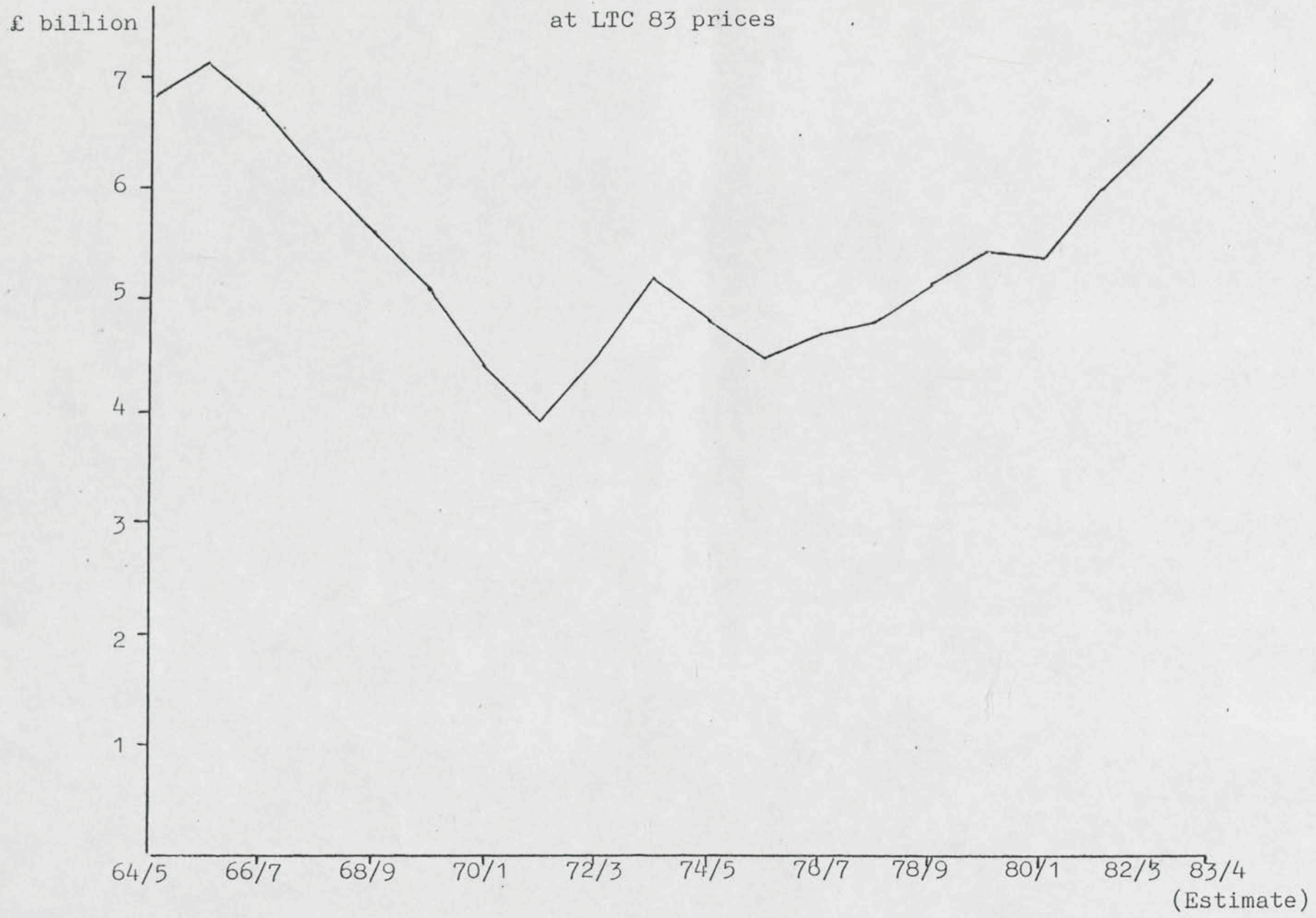


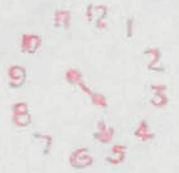
THE DEFENCE ESTIMATES
1964/65 to 1983/84
Percentages devoted to each Principal Heading



DEFENCE EQUIPMENT EXPENDITURE

at LTC 83 prices





Prime Minister.

cc FM
AP.

Mr Heseltine sets out in more detail his reasons for buying Harpoon rather than Sea Eagle. You will recall Sir Robert Armstrong's minute (attached) which sets out the background.

28

MINISTRY OF DEFENCE WHITEHALL LONDON SW1A 2HB

TELEPHONE 01-218 9000
DIRECT DIALLING 01-218 2111/3

MO 26/3

22nd September 1983

Dear Cecil

SURFACE TO SURFACE GUIDED WEAPONS FOR THE ROYAL NAVY

In your minute of 8th September, you raised a number of points on the proposals in my minute of 1st September, following a presentation made by British Aerospace (BAe) to Norman Lamont also on 1st September. BAe and Marconi Space and Defence Systems (MSDS) had earlier made similar points in letters to Geoffrey Pattie in parallel with the submission of a revised tender. My minute took account of the significant features of BAe's latest offer, notably a reduction in price of about £10 million.

Costs

2. You asked for a reconciliation of the assessed cost of SEA EAGLE at £258.5 million with the current BAe offer of £185 million before VAT. I attach a table which explains this and gives the corresponding details for HARPOON. It will be seen that the £185 million now quoted by BAe and SEA EAGLE does not (as they recognise) allow for the cost of items associated with the proposed purchase but not included in the tender (Serial 3); for a general contingency allowance appropriate to the uncertainties or risks attaching to each proposal; or for VAT. Allowing also for the adverse movement in the £/$ exchange rate since the original bids were compiled, HARPOON still comes out £40 million cheaper than SEA EAGLE. It is worth mentioning too that the costings for HARPOON assume that we will pay an R & D levy amounting to some £10 million; in practice we shall seek a waiver of this levy, as we are entitled to do, as each year's order is placed.

The Rt Hon Cecil Parkinson MP

3. BAe have also confirmed an earlier offer to charge less for follow-on air-launched SEA EAGLE missiles if the ship-launched version is bought for the Royal Navy. We do not yet have a firm price quote for follow-on air-launched missiles so this offer needs to be taken with a pinch of salt. It would be worth between £3 and £4 million depending on the number of missiles bought.

4. I confirm that HARPOON would be purchased on US Foreign Military Sales (FMS) terms. Each year the US Department of Defense would let fixed price contracts to meet the requirements of US forces and overseas customers. We would pay the same as the US forces plus allowable charges. The pros and cons of this indirect method of contracting depend on the circumstances of the case. The basic HARPOON missile has been in production for many years and is at present being bought, at known prices, for Royal Navy submarines. The allowance in the HARPOON costings for enhancements (attached table, Serial 2) incorporates a generous contingency. The general contingency (Serial 4) provides for unforeseen modifications, for the possibility that the total volume of HARPOON production may be lower than expected, and for cost overruns of up to 20% on the ship system. I believe that we can be satisfied that the uncertainties over the cost of a HARPOON purchase have been fully reflected in the costings. There are also uncertainties in the cost of a SEA EAGLE purchase; the missile has yet to enter service and the ship system has yet to be developed, and so there is a strong possibility that substantial modifications would be required before the weapon system reached a satisfactory level of effectiveness. A contingency margin has also therefore been included in the SEA EAGLE costings.

Programme Timescale

5. BAe earlier claimed that they would need an order by 1st April 1983 if they were to meet the Type 22 frigate ship-fitting timetable. To have a chance of doing so they would have had to carry out work to a value of £8 million in the current financial year. No evidence of

this has been produced. It remains likely that the SEA EAGLE ship-system would be 9-15 months late for the Type 22.

Technology Base

6. You also raised the question of whether a purchase of HARPOON would deprive UK industry of the ability to compete in future for a third generation SSGW system. The way ahead on third generation systems is not yet clear. Seekers could be active or passive, or a combination of the two. The ALARM decision brings us into the development of passive seeker technology; and the continuation of the air-launched SEA EAGLE programme will give us a basic capability in active seeker technology which would benefit from any upgrading of the air-launched missile seeker that may in due course prove necessary. But, in any case, SEA EAGLE would not be capable of being improved to the point of being a third generation SSGW which is likely to involve the options either of stealth technology or supersonic flight. Separate decisions will be needed in due course on this. In my view, the financial premium for maintaining a fuller capability in the active seeker field through a purchase of ship-launched SEA EAGLE is too heavy.

Sales Offset

7. The position on potential sales of ship-launched SEA EAGLE was, I believe, correctly stated in paragraph 9 of the note attached to my minute of 1st September. Although the potential receipts from R & D levy on overseas sales are quite large, achievement of the total of £25 million given in the note would depend both on the volume of sales and on the achievement of a healthy level of profit in what, as I have said, is a highly competitive market, where a number of countries have a headstart. A purchase of HARPOON properly handled ought not to affect the sales prospects of air-launched SEA EAGLE.

8. Finally, on offset, I would refer you to my Private Secretary's minute of 7th September. McDonnell Douglas have signed an agreement

to the effect that 100% offset will be provided for a purchase of ship-launched HARPOON; the firm have also undertaken to ensure that at least 50% of the offset work is in high technology areas.

9. I hope that these additional details meet the points you raised, and that I may have your early agreement to announce a decision in favour of HARPOON.

10. I am sending copies of this letter to our OD colleagues and to Sir Robert Armstrong.

Yours ever

Michael Heseltine

ANNEX

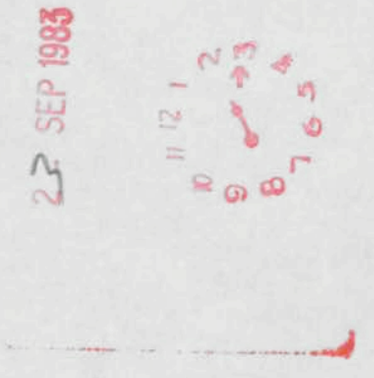
BREAKDOWN OF COST ESTIMATES FOR HARPOON AND SEA EAGLE

(£M July 1982 economic conditions)

Serial		HARPOON	SEA EAGLE
1.	Tendered equipment (basic)	126.1	185.0
2.	Improvements to 1	15.8	
3.	Non-tendered costs	21.4	22.7
4.	Contingency	6.8	17.1
	Total (VAT exclusive)	170.1	224.8
5.	VAT	25.4	33.7
	Total (VAT inclusive)	195.5	258.5
6.	Exchange rate variations	+22.8	NIL
	Total (at current exchange rates, July 1982 prices)	218.3	258.5

.....

Defence 3/83 Procurement of weapons systems



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PRIME MINISTER

Surface to Surface Guided Weapons for the Royal Navy

With PM

You may find it helpful to have a note on the Secretary of State for Trade and Industry's minute dated 8 September to the Secretary of State for Defence.

2. Other Ministers have supported the Defence Secretary's proposal; but the Secretary of State for Trade and Industry has asked for the Defence Secretary's views on a number of points in the Defence Secretary's proposal to purchase the Harpoon missile from the United States rather than the Sea Eagle missile from British Aerospace:

(a) He says that British Aerospace have quoted a fixed price of £185 million before VAT and asks how the Defence Secretary's estimate of cost for Sea Eagle is calculated at £258.5 million: the VAT inclusive price quoted for Harpoon is £218.3 million.

(b) Mr Parkinson draws attention to British Aerospace's ability to meet the timescale required by the Royal Navy.

(c) He expresses concern about the broader implications for British industry, in particular its ability to compete in the future for the next generation of surface to surface missiles.

(d) He draws attention to the export prospects of Sea Eagle which MOD itself estimated at £30 million a year.

3. I recommend that you should await the reply of the Defence Secretary to the Secretary of State for Trade and Industry's letter before deciding whether to comment yourself. In the light of that reply, we shall have to consider whether the issue should be discussed in OD. I believe that an OD discussion

will probably prove necessary, but a firm decision on this point need not be taken yet. I will submit further advice in the light of the responses to Mr Parkinson's minute.

Approved by
ROBERT ARMSTRONG
and signed in his absence

16 September 1983

Defence: Harm / Alarm

3/83

FROM:

THE RT. HON. LORD HAILSHAM OF ST. MARYLEBONE, C.H., F.R.S., D.C.L.

HOUSE OF LORDS,
SW1A 0PW

12th September, 1983

SECRET UK EYES AND
COMMERCIAL IN CONFIDENCE

The Right Honourable
Michael Heseltine, MP
Secretary of State for Defence,
Ministry of Defence,
Whitehall,
London,
SW1.

Dear Michael:

Surface to Surface Guided Weapons for the Royal Navy

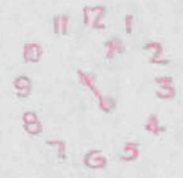
I read with interest your minute of 1st September to the Prime Minister. I am much encouraged to see that it has the support of both the Foreign Secretary and the Chief Secretary to the Treasury.

The detailed requirements and the rival bids are not strictly a matter for me, but I believe that it is imperative that operational needs should not be sacrificed for apparent economic advantage. It would be a dangerous development to give undue weight to economic arguments in the matter of defence procurement. We should always remember that the reason for defence hardware is defence in an emergency and not to repair our industrial efficiency when there is no emergency. For these reasons I should like to be confident that when the final decision is taken you will be able to accede to it with no reservations whatsoever.

I am copying this letter to other members of OD and to Sir Robert Armstrong.

Yrs.

L



2

cc Pascall

DEPARTMENT OF TRADE AND INDUSTRY
1-19 VICTORIA STREET
LONDON SW1H 0ET
TELEPHONE DIRECT LINE 01-215 5422
SWITCHBOARD 01-215 7877

26A

JF4262

Secretary of State for Trade and Industry

8 September 1983

SECRET UK EYES A
COMMERCIAL IN CONFIDENCE

The Rt Hon Michael Heseltine MP
Secretary of State for Defence
Ministry of Defence
Whitehall
LONDON
SW1

Prime Minister:
Mr Parkinson is against Mr Heseltines proposal to buy Harpoon as opposed to Sea Eagle
See now Sir Robert Armstrong's minute of 16 September.
PM's Box
8/9

Dear Michael,

Your minute of 1 September to the Prime Minister sought agreement to your proposal to procure surface to surface guided weapons for the Royal Navy from the McDonnell Douglas Astronautics Company: the Harpoon missile.

2 I have to say that, for a number of reasons, I am not satisfied that the arguments in favour of Harpoon over the BAe Sea Eagle SL missile are as compelling as you suggest. The principal arguments concern cost and timescale. On cost, you say that the Sea Eagle missile could be made comparable to Harpoon on operational grounds only with additional development, and that the cost differential, taking account of this, is some £40 million. The operational deficiencies to be made good are recorded in paragraph 4 of the note attached to your minute. However, BAe made a presentation to Norman Lamont on 1 September and expressed considerable confidence that their latest bid, made at the end of August in response to your Department's request in the light of the more demanding RN operational requirement, offered a version of Sea Eagle SL which was fully compliant with the up-graded requirement and which was for a fixed price of £185 million before VAT. This seems to compare very favourably with the VAT inclusive price you quote for Harpoon of £218.3 million. I should like to be clear about the basis on which the cost of Sea Eagle SL for the Type 23 requirement which you put at £258.5 million is derived from BAe's most recent bid. I imagine also there is some uncertainty about the Harpoon bid price, which presumably will be procured on FMS terms from USG.

3 On timescale, I note that BAe's latest bid provides for basic specification missiles to be provided at no extra cost for deployment on Type 22 frigates until those which meet the up-graded requirement can be made available. Furthermore BAe appear to be confident that the ship system for Sea Eagle could be ready for the Type 22s.

/4 I ...

SECRET UK EYES A
COMMERCIAL IN CONFIDENCE

4 I am also concerned about the broader implications for UK industry of the course you propose. On technology, you express the view that our decision to develop Alarm has already provided a sound base for future missile seeker technology and has gone a long way to provide adequate loading for British industry. I understand, however, that the technology involved in the Alarm seeker head is not directly comparable to that required for second generation SSGW missiles - the one being a 'passive' seeker, and the latter 'active'. I believe BAe and MSDS would take the view that a decision against the Sea Eagle SL could have the effect of allowing the UK's capability in the SSGW field to lapse, thus depriving UK industry of the ability to compete in the future for third generation SSGW. I can understand that SSGW technology may not be regarded as essential to the UK on defence grounds, in contrast to the position on Alarm. But if the consequences of a decision in favour of Harpoon are as I have suggested above, we should be aware of this in reaching our decision.

5 I have, finally, one or two comments on other aspects raised in your minute and attachment. On sales (paragraph 9 of the note), I believe MOD Sales advised DEPC in July that, even taking account of possible political and security constraints, export sales of Sea Eagle SL of £30 million per annum were probable, assuming a purchase by the Royal Navy, with the corresponding levy return to MOD. BAe also attach great importance to the concept of a family of Sea Eagle weapons and have already achieved, as you know, export success with a sale of the helicopter-launched version to India. There is a further aspect to the family concept in that I understand that in due course improvements to the air-launched version, already purchased for the RAF and Fleet Air Arm, may be expected. Are you satisfied that a decision against Sea Eagle SL will not impair UK industry's capability to provide an improved air-launched version when the time comes? I note also what you say about the prospects for offset in a Harpoon purchase. I know that DEPC expressed concern on this point and I should be grateful to know whether you remain confident that a suitable MOU can be negotiated. Is there any risk that early announcement of decision in favour of Harpoon could jeopardise the negotiation?

6 I think it would be helpful if colleagues could have your views on the points I have raised before we reach a decision on this project.

7 I am sending copies of this letter to the recipients of your minute.

-8 SEP 1983

Yours Ever,

MINISTRY OF DEFENCE
MAIN BUILDING WHITEHALL LONDON SW1
Telephone 01-~~930 7022~~ 218 2111/3

MO 26/3

7th September 1983

Dear John,

SURFACE-TO-SURFACE GUIDED WEAPONS FOR THE ROYAL NAVY

I understand that the Prime Minister has asked for further details of the McDonnell Douglas (MDAC) offset offer referred to in Mr Heseltine's minute of 1st September, with particular reference to the numbers and location of the jobs which would be created or preserved by orders placed under the offset agreement.

It may be helpful to explain first that MDAC's approach to offset is to provide bidding opportunities to firms wishing to compete for sub-contract work. MDAC have undertaken, in an agreement which comes into effect in the event of a decision to purchase Harpoon, to provide sufficient bidding opportunities to United Kingdom firms to achieve 100% offset over a ten year period (MDAC are well placed to do this given that their sub-contract expenditure over the next five years is expected to total $25 billion).

With a competitive bidding style of offset programme it is not possible to say with precision how many jobs will be created or preserved, and where. Since MDAC received an invitation to tender last summer, they have been canvassing United Kingdom industry to find out which firms would be best equipped to respond to bidding opportunities. 83 firms have so far expressed an interest, and their responses to a MOD questionnaire indicate that many of them stand a good chance of picking up business.

In most cases there are several United Kingdom firms interested in a particular sub-contract. The more valuable prospects are:-

a. Lucas Harpoon sub-systems with potential value of about $50 million;

A J Coles Esq

b. ROF Patricroft Harpoon sub-systems with potential value of $40 million;

c. Ferranti F18 aircraft laser target designator with potential value of about $50 million;

d. Marconi/Plessey/Ferranti F15 wide angle head-up display and remote map display with potential value of $90 million.

The timing and, as I have indicated, the incidence of orders under the offset agreement is not pre-determined. As Mr Heseltine's minute made clear, however, MDAC have an excellent record in this field. Against suggestions that the offset business, given that it would be secured competitively, would be open to United Kingdom firms in any event, it may be argued firstly that a leading US corporation is under no obligation to extend competitive opportunities abroad (and under heavy pressure not to); and secondly, that it is very much in the long-term interests of British industry to have the opportunity to become established suppliers to the United States.

I am copying this to Jonathan Spencer (DTI), John Gieve (HM Treasury) and to Richard Hatfield (Cabinet Office).

Yours ever

Nick Evans

(N H R EVANS)

SECRET

(1)

26

PRIME MINISTER

Surface-to-surface guided weapons for the Royal Navy

You saw the Defence Secretary's minute of 1 September describing his intention to authorise the procurement of the McDonnell Douglas Harpoon missile system (flag A).

You asked for further details of the 100% offset offered by McDonnell Douglas.

These details are set out in the attached letter of 7 September. C.

Both the Foreign Secretary and the Chief Secretary support the Defence Secretary's proposal.

Mr. Heseltine wishes to announce this decision before his visit to Washington on Monday in order to diffuse the criticism that he would otherwise meet over our decision on Alarm.

Are you now content that he should announce a decision, subject to the satisfactory completion of negotiations, to purchase Harpoon?

A. J. C.

N. Partridge

opposed, & would discuss

7 September 1983

SECRET

COMMERCIAL IN CONFIDENCE

SECRET UK EYES A

cc D. Pascall

25

Treasury Chambers, Parliament Street, SW1P 3AG

Rt Hon Michael Heseltine MP
Secretary of State
Ministry of Defence
Main Building
Whitehall
London SW1A 2HB

6 September 1983

Dear Secretary of State,

SURFACE TO SURFACE GUIDED WEAPONS FOR THE ROYAL NAVY

I have seen a copy of your minute of 1 September to the Prime Minister explaining the background to your decision to procure the McDonnell Douglas Harpoon missile system for new ships of the Royal Navy. I support your proposals and agree that an early announcement would be advantageous.

I am sending copies of this letter to the recipients of yours.

yours sincerely

PR

for PETER REES

(approved by the Chief Secretary and signed in his absence)

COMMERCIAL IN CONFIDENCE

SECRET UK EYES A

Defend
march '83
Harm/Alarm

24

FCS/83/168

SECRETARY OF STATE FOR DEFENCE

Surface to Surface Guided Weapons for the Royal Navy

1. Thank you for copying to me your minute of 1 September to the Prime Minister. The operational arguments in favour of Harpoon are compelling; and as you point out a decision in favour of the weapon would go a long way to defusing any criticism you may face in Washington over ALARM. You will recall my concern at the time about the implications of choosing ALARM for our wider defence sales interests in the US. I therefore have no hesitation in endorsing the action you propose to take in your letter.

2. I am glad that you intend to make arrangements to inform your French and Italian colleagues of your decision prior to any announcement. It should not be difficult to explain to them in view of the strong case for Harpoon. But, at a time when we are trying to develop our defence relationship with France and are urging the Italians to provide funds for the EH101 helicopter project, it is important that we should minimise any risk of damage to these objectives.

3. I am sending copies of this minute to our OD colleagues and to Sir Robert Armstrong.

(GEOFFREY HOWE)

Foreign and Commonwealth Office

5 September, 1983

10 DOWNING STREET

Mr. Coles - o.r.

Before the PM decides on this, could she please be given more details about how the McDonnell Douglas offset arrangements work, and more specifically what form the offset would be likely to take in this case (e.g. what jobs and where?).

FERB

3.9

23

PRIME MINISTER

2 September 1983

SURFACE-TO-SURFACE GUIDED WEAPONS FOR THE ROYAL NAVY

The Secretary of State for Defence in his minute of 1 September 1983 is seeking early agreement to the procurement of the McDonnell Douglas Harpoon missile system for new ships of the Royal Navy.

Of the six alternatives which include a ship-launched Sea Eagle to be developed by British Aerospace, Harpoon is clearly the most cost-effective proposal being superior on operational, delivery and cost grounds. McDonnell Douglas have also offered a 100% offset against a purchase of Harpoon which in employment opportunities should at least match those arising from a Royal Navy purchase of Sea Eagle.

Although the issues to be considered are similar to those raised by the HARM v ALARM case, the need to retain the basic technology in the UK is not a relevant argument in this case for preferring the UK system. This requirement is met by the current programme for the air-launched Sea Eagle system from which the ship-launched version would be developed. In addition, the decision to buy ALARM will ensure a continued UK capability in the development of seeker heads for future generation missiles.

All arguments therefore favour the Secretary of State's proposal to purchase Harpoon.

DLP.

DAVID PASCALL

22 1

Prime Minister:

Agree that Mr Heseltine may announce the purchase of the McDonnell Douglas Harpoon missile system, subject to the views of colleagues?

MO 26/3

PRIME MINISTER

SURFACE-TO-SURFACE GUIDED WEAPONS FOR THE ROYAL NAVY

2/9

My minute of 15th July foreshadowed the need to take a fairly early decision on a surface-to-surface guided weapon (SSGW) for new ships of the Royal Navy. You will wish to know that I now intend, subject to the satisfactory completion of negotiations with the US authorities and McDonnell Douglas, to authorise the procurement of the McDonnell Douglas Harpoon missile system to a value of about £220M (at current exchange rates) to be fitted on the 4 Batch III Type 22 frigates and the first 8 Type 23 frigates. I also propose to announce this decision before I depart for the United States on 12th Septmeber.

Four leading contenders have been evaluated in detail taking into account operational aspects, cost, timescale and industrial factors. They are: Sea Eagle (British Aerospace), Harpoon (McDonnell Douglas), Exocet MM40 (Aerospatiale) and Oto Mat (Oto Melara). I attach a detailed discussion of the factors taken into account in the evaluation.

The strongest candidate on operational grounds is Harpoon. It has the necessary range, carries an advanced target seeker and is part of a stable US Navy programme. SEA EAGLE would require additional development to meet the same standards, and it is extremely doubtful whether it would be available for the Type 22 Frigates on time. Allowing for the additional development SEA EAGLE would cost £258.5M against £218.3M for Harpoon, £243.5M for Oto Mat and £211.5M for Exocet MM40 (current exchange rates).

MDAC have offered 100% offset against a purchase of Harpoon. 50% of the total offset would be "High Technology", and the employment opportunities over the ten years of the offset programme would equal at least those arising directly on an RN purchase of SEA EAGLE. The record of McDonnell Douglas trade offset against the current RN Sub-Harpoon and AV8B programme is good.

Our decision to develop ALARM rather than HARM has already provided a sound base for future UK missile seeker technology, and has gone a long way to provide adequate loading for British industry.

There is bound to be a sharp reaction from British Aerospace (and MSDS, who would develop and manufacture the seeker for ship-launched SEA EAGLE) to a decision to buy foreign. But I believe that the excellent offset terms on offer provide in this case a solid basis on which to defend the choice against criticism that an overseas purchase will reduce employment opportunities in British industry. In terms of relations with the Americans, what I propose would go some way at least to defusing the criticism which I shall face in Washington over our decision to procure ALARM. It is with the latter point in mind that I believe it would be advantageous to have announced a decision in favour of Harpoon before I leave for the United States. I would also make arrangements to inform my French and Italian counterparts of our decision prior to the public announcement, in view of the involvement of their defence industries in the competition.

I should be glad to know, by Thursday 8th September, that you and our OD colleagues are content with the action I propose to take.

I am sending copies of this minute to our OD colleagues and to Sir Robert Armstrong.

(Approved by The Defence Secretary
& signed in his absence)
Ministry of Defence
1st September 1983

SECOND GENERATION SURFACE-TO-SURFACE GUIDED WEAPON FOR TYPE 23 AND TYPE 22 BATCH III FRIGATES

BACKGROUND

1. The immediate warship building programme for the RN consists of four Type 22 Batch III and subsequently eight Type 23 frigates. These ships require a Surface-to-Surface Guided Weapon (SSGW) to provide defence against the growing number of Soviet ships with an anti-ship capability. The aspects of most operational significance are range, salvo size, the ability to penetrate enemy defences, and the need to meet the tight In-Service Dates of the Frigate programme.

2. Our existing SSGW system is the Exocet MM38. To meet our future needs, a more advanced system is required and, as several are available, an international competition has been held to select the most cost-effective equipment. Six solutions were offered:-

a. HARPOON - McDonnell Douglas Astronautics Company

b. SEA EAGLE - British Aerospace plc

c. OTOMAT (FR) - Matra SA

d. OTOMAT (IT) - OTO Melara

e. OTOMAT (UK) - Melara/MSDS

f. EXOCET MM40 - SNIAS

The options at c and d were not evaluated in detail for reasons of cost and performance when compared to option e.

EVALUATION

3. An in-depth evaluation of the four remaining options against a number of key aspects was conducted by MOD staff. The options were evaluated both as offered by the firms and on the basis of improvements thought necessary to meet the RN's requirement. In the latter case, account was also taken of the USN's plans to improve the existing HARPOON missile before the end of the decade.

4. Operational Factors. This evaluation resulted in the identification of the following main points:-

a. Range. The MM40 missile could not provide the 140 km range now required by the RN and, because it has a solid fuel motor, improvements would be impracticable. HARPOON and OTOMAT (UK) have the required range and ship launched SEA EAGLE (SEA EAGLE(SL)) could be improved to provide it.

b. Salvo-Size. A Salvo of 4 missiles is needed to penetrate sophisticated defences; thus 8 missiles provide a 2-target capability. 8 missiles of all types can be fitted in the Type 23, and 8 HARPOON and MM40 in the Type 22 Batch III. Ship fitting constraints make it impossible to fit more than 6 of the longer OTOMAT(UK) missiles, as currently configured, in the Type 22,Batch III frigates. 6 SEA EAGLE missiles can be fitted to the Type 22, Batch III frigates and it may be possible to fit 8, in the light of British Aerospace's latest proposals.

c. Penetration against Countermeasures. Harpoon and MM40 both provide good performance against the postulated electronic countermeasures threat and possess the maximum survivability against hard kill weapons available from second generation weapons. SEA EAGLE (SL) and Oto Mat (UK) would both require considerable development of the associated MSDS target seeker and some improvements in missile performance to counter hard kill weapons.

d. Timescale. Harpoon and MM40 have no difficulty in meeting the timescale for the Type 22 Batch III vessels. The seeker improvements required for Oto Mat and SEA EAGLE could be ready in time for the Type 23 only, though British Aerospace have undertaken to retrofit the advanced seeker to earlier missiles at no extra cost. The ship system for SEA EAGLE would almost certainly be late for the Type 22 Batch III ships. To meet the shipbuilding programme it would be necessary to fit an alternative weapon to these ships with the corresponding penalties in cost and further diversification of RN anti-ship missile types.

5. In summary, from an operational point of view, Harpoon is a clear first choice, SEA EAGLE (SL) and OTOMAT (UK) could provide a similar capability at additional cost, and SEA EAGLE (SL) would probably not be available in time for the Type 22 Batch III ships.

6. Technology Factors. Anti-ship guided weapons is a field where international competition is particularly fierce. The production of the air launched SEA EAGLE missile provides within the UK the basic technology to enable air-launched anti-ship missiles and their supporting equipment to be designed and developed in the UK. The high technology area of 2nd generation missiles is the seeker head: however, given the decision to buy ALARM the technological and industrial position on future seekers has essentially been protected.

7. Industrial and Employment Implications

a. SEA EAGLE. Based on information supplied by BAe it is estimated that some 5,500 man years of work would be created by the selection of SEA EAGLE improved to meet the RN requirement. BAe, MSDS, Ames Industry, ROF Patricroft and IMI Summerfield would be the principal beneficiaries.

b. HARPOON. A MDAC offer to offset to the value of 100% will be included in a separate Memorandum of Agreement between MOD and MDAC. This will generate a similar number of jobs to SEA EAGLE and 50% of the offset would be in "high technology" areas. MDAC's record on SUB-HARPOON has been good and there is every expectation that this level of offset will be achieved. Lucas and ROF Patricroft are likely to obtain a significant amount of work.

c. OTOMAT(UK). OTO Melara have offered offset at 100% of the contract price. MSDS would expect up to 1600 man years work associated with the seeker, as well as being invited to tender for electronic units (1800 man years), and launch containers, propulsion unit shells and fuel tanks (180 man years). Plessey could expect some ship system equipment and ROF Patricroft warhead production.

d. EXOCET MM40. Offset valued at 70% has been offered by SNIAS. The exact location is uncertain but SNIAS have offered to have the seeker produced in the UK by either Ferranti or MSDS. This could amount to 1150 man years work.

8. Costs and Financial Provision. The cost of the various options at current exchange rates (£1 = $1.53 = FF12.11) are:

MM40 - £211.5M, Harpoon - £218.3M, Otomat - £243.5M,
Sea Eagle - £258.5M

Although Exocet MM40 has the cheapest prime cost, investment appraisal shows Harpoon to be the cheapest option in discounted terms. Harpoon is £40M cheaper than Sea Eagle, a differential which increases to £53M if Sea Eagle is chosen and MM40 adopted for Type 22 Batch III in consequence.

9. Sales. Taking into account political/security constraints Ship Launched SEA EAGLE sales might reach £30M p.a. The potential recovery through R & D levy amounts to some £25M, over a 10 year period, but SEA EAGLE would be competing in a highly competitive market against by then well established in-service systems. Current potential sales of Air Launched SEA EAGLE are not thought to be seriously endangered by an RN decision against SEA EAGLE (SL).

DISCUSSION

10. With regard to both its operational capabilities and its cost advantage, HARPOON is the clear first choice to meet the RN's requirement for a second generation SSGW system for the 4 Type 22 Batch III ships and 8 Type 23 ships. The main disadvantage of the EXOCET MM40 system is a lack of range. The capability of SEA EAGLE (SL) could be improved, but it is by far the most expensive solution. In any case, even the basic option could not be available in time to meet the Type 22, Batch III ships. OTOMAT(UK) suffers from many of the same drawbacks as SEA EAGLE. In addition, the RN would have HARPOON, SEA EAGLE(AL) and EXOCET MM38 in service: OTOMAT(UK) has no strong advantage to justify a further proliferation of types.

11. A choice of HARPOON would not have adverse implications for the technology base given that ALARM has been chosen to meet ASR 1228, neither would it adversely affect total employment opportunities. A decision not to procure HARPOON would open the UK to the sort of criticism on the international front which has been well aired in the consideration of a choice between HARM and ALARM for ASR 1228; and could adversely affect the UK's credibility as an organiser of international competitions as part of the procurement process, as well as affect the UK's ability to sell equipment to USA.

12. To overcome the timescale problems with SEA EAGLE it would be possible to fit EXOCET MM40 to the Type 22, Batch III ships (to provide a degree of commonality with the existing fleet) and introduce SEA EAGLE on the Type 23s. This would entail a total cost premium of £53M or 25%. The only other viable option to keep the purchase within Europe would be to purchase Oto Mat, with its attractive offset package, and to accept the cost premium and the disadvantages of introducing a fourth surface-to-surface missile variant with our forces.

CONCLUSION

13. The operational and financial arguments lead to the conclusion that the most cost-effective option for an SSGW to equip 8 Type 23 and the 4 Type 22, Batch III Frigates is to purchase Harpoon at an estimated cost of £218.3M (July 1982 prices, current exchange rates, VAT inclusive). This would cover 12 ship systems and 215 missiles together with associated shore based equipment and support.

Defence: Harm/Alarm
3/85

cf NO

MINISTRY OF DEFENCE
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MO 26/1

22nd August 1983

T. M. Rickett - to see
2. File

Dear Robin, (Mr)

Thank you for your letter of 29th July in which you told us that the Prime Minister would like Mr Nicholas Owen from her Policy Unit to take part in the study on the areas of defence technology in which a national capability should be maintained. Mr Heseltine has now seen your letter and I can confirm that he would have no objection to Mr Owen participating in the study. The MOD official who is leading the study is Dr Geoffrey Pope, the Deputy Controller and Adviser (Research and Technology) and I will ensure that his office makes contact with Mr Owen in order to make detailed arrangements.

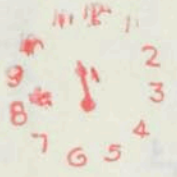
Yours ever

Nick Evans

(N H R EVANS)
Private Secretary

F E R Butler Esq

32 AUG 1983



Defence '83, Munich
Procurement Systems
& Weapons

CONFIDENTIAL

Mr. Rickett

WM 3/8

W.0495

3 August 1983

Sir Robert Armstrong

NATIONAL CAPABILITY IN DEFENCE TECHNOLOGY

I saw the Prime Minister's decision following the Cabinet discussion on the defence suppression weapon to ask for a group of officials to produce a report on those areas of defence technology where national capability should be maintained, and that such a group should be inter-Departmental involving DTI and the Treasury. The involvement of DTI suggests that this group will need to take account of the potential benefits in civil industry of different areas of defence technology, and this brings it very close to matters which currently interest ACARD and the Science and Technology Secretariat in the Cabinet Office.

2. I therefore phoned Professor Norman, Chief Scientific Adviser in the Ministry of Defence, to ask whether I could be a member of the group, since I believe it is necessary to follow through the working of the group if I am to give satisfactory advice subsequently when the matter comes to Cabinet or is raised in the context of other decisions - for example in DTI.

3. I gather that MoD have no objection to this request and that the Permanent Secretary will be writing to you to ask if you wish to nominate anyone from the Cabinet Office to serve on the group. I request that you nominate me and I recognise that you may also wish to nominate a member of the OD Secretariat, but we would serve separate functions on the group.

4. I have also seen a copy of Willie Rickett's letter to Richard Mottram dated 29 July, asking that Nicholas Owen from the No 10 Policy Unit serves on the group. Again, I do not believe there is

any overlap between his function and mine.

RBN

ROBIN B NICHOLSON
Chief Scientific Adviser

cc: Mr Goodall
Mr Rickett

DEFENCE : Harm / Alarm

March 1983

10 DOWNING STREET

Willie Rickett

I agree.

FERR

1.8.

This seems the best way of dealing with the Policy Unit's request.

1/8

10 DOWNING STREET

From the Principal Private Secretary

29 July 1983

As you know, Cabinet decided on 28 July that your Secretary of State should arrange for officials to produce a report on those areas of defence technology on which a national capability should be maintained. The Prime Minister indicated in her summing up of the discussion that officials from the Treasury and the Department of Trade and Industry should be involved in preparing this report.

The Prime Minister has asked me to say that she would like an official from her Policy Unit to be added to the Group producing the report, and hopes that your Secretary of State will have no difficulties with this. The official from our Policy Unit whom the Prime Minister would like to join your Group is Nicholas Owen. Perhaps the relevant official in your Department could get in touch with him.

I am copying this letter to Richard Hatfield (Cabinet Office).

WR

Richard Mottram, Esq.,
Ministry of Defence.

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10 DOWNING STREET

Mr Coles

Defence Technology

Would it be possible, do you think, to secure a place for the Policy Unit on the Study of defence technologies essential to retain in the UK?

Mich Ohler

29/7

Defence – Harm/Alarm

Royal Air Force (Defence Suppression Weapon)

3.58 pm

The Secretary of State for Defence (Mr. Michael Heseltine): With your permission, Mr. Speaker, I shall make a statement on the Government's decision about a defence suppression weapon for the Royal Air Force.

The Government have been examining options for a missile to meet the requirement of the Royal Air Force for a defence suppression weapon to arm Tornado GR1 aircraft. The choice has been between the new British Aerospace air launched anti-radar missile, ALARM, and the American-developed high speed anti-radiation missile, HARM, either produced partly in this country by Lucas Aerospace or supplied direct by the United States.

This has not been an easy decision. There has been a wide range of complex factors to weigh, including operational performance, technical merit, technological promise, employment and industrial issues, costs and availability.

We have decided that, subject to satisfactory completion of contract negotiations, we shall place an order for the development and production of ALARM with British Aerospace Dynamics Group.

This will provide significant work at British Aerospace Dynamics Group factories at Hatfield, Stevenage and Bracknell in the short term and at Lostock, near Bolton, in the later part of the decade. Marconi Space and Defence Systems will be a major subcontractor for the missile seeker head, with consequential employment at Stanmore and Portsmouth. Technology relevant to a range of future military missile requirements will thus be maintained and advanced in this country. At its peak the order is expected to sustain over 3,000 jobs in the United Kingdom companies concerned, of which about half will be with British Aerospace Dynamics and Marconi Space and Defence Systems.

Dr. Oonagh McDonald (Thurrock): I welcome the Government's decision to choose the ALARM project rather than the HARM project. The right hon. Gentleman will know that ALARM has the support of the Confederation of Shipbuilding and Engineering Unions as well as of British industry. After all, those people will be involved in its development and production. Therefore, their support and commitment to the project is important. We are glad to see an entirely defensive weapon being developed.

Does the fact that the Ministry of Defence has decided to choose a British project mean that it will now resist the allurements of much vaunted United States technology, which all too often disintegrates, as we saw with Pershing 2 off Cape Canaveral yesterday? Does it mean a change in the climate of opinion in the Ministry of Defence so that it will consider the needs of British industry and give preference to British technology in other projects that are under consideration, such as the P146? Will the Secretary of State say whether this is a fixed-price contract with penalty clauses for late delivery, which was offered at the beginning? If so, does that mean that the Ministry of Defence will go for fixed-price contracts with other firms to prevent the alarming cost over-run that we have seen in other Ministry of Defence contracts? Finally, may I ask about employment prospects at Lucas Aerospace? The

right hon. Gentleman will know that if British Aerospace had been the prime contractor—I take it that he means that it is not—it would have been prepared to offer work to Lucas Aerospace workers, who would have worked on the HARM project. Have the Government taken into account employment prospects at Lucas? If so, can the right hon. Gentleman tell us about them?

Mr. Heseltine: I do not take the same insular view of United States technology as the hon. Lady. My view is that we have a great deal to gain from an advanced North Atlantic Alliance. There will be many occasions when we shall wish to buy United States technology. I shall do all that I can to persuade the United States that it would be to their advantage to buy British technology quite often. It is a fact that about 95 per cent.—if I remember the figure correctly—of my budget is spent with British industry. That is a very high percentage.

I am in favour of fixed-price contracts, whenever they can practicably and rationally be entered into. I shall seek to continue that practice and perhaps extend it. In her question about employment, the hon. Lady may have misunderstood the position. British Aerospace is the prime contractor in the project. It must follow that I cannot place work with both British Aerospace and Texas Instruments, when I have only one option in front of me. There are consequences for Lucas, which is in partnership with Texas Instruments and not with British Aerospace. However, I do not want to answer specific questions about employment in Lucas.

Mr. Robert Atkins (South Ribble): Does my right hon. Friend recognise that the decision was difficult and that the consideration that he and his hon. Friend the Minister of State for Defence Procurement gave to it is a tribute to the Procurement Executive? Does he recognise that he has made the right decision and that it is a tribute to British industry that it has won an important contract with enormous export potential, which will benefit those who work in the industry as well as the subcontractors? Will my right hon. Friend pay special attention to the problems of Lucas Aerospace, bearing in mind that it is a major contractor in defence aerospace? Anything that can be done to ensure its participation in the contract should be done.

Mr. Heseltine: I thank my hon. Friend for his fulsome tribute to the Procurement Executive. I shall do my best to pass on his message as appropriately as possible. My hon. Friend is absolutely right. It was a difficult, complex and balanced decision. There was not an easy answer, but I believe that the Government have taken the right decision. There must be consequences for companies that did not win. I appreciate that, but I have no doubt that Lucas will win many other contracts with my Department, with which it is a prime contractor.

Mr. Russell Johnston: (Inverness, Nairn and Lochaber): In what was a balanced decision, how important were the employment consequences, with whom nearly half the right hon. Gentleman's statement was concerned? Given that other matters of a similar character, such as the ordering of the Airbus for British Airways have defence relevance, why are the Government taking a different line there?

Mr. Heseltine: In fairness, I think that the hon. Gentleman will realise that employment is consequential upon the main announcement that I made. I would not want to tell the House that the employment consequences were a decisive element in the argument, because there were other ingredients in the decision. Perhaps the technology base is a prime consideration, but again, that was not a decisive factor. There were many factors, all of which have to be balanced, one with the other. In no context in defence can one put at the forefront of influences on a decision anything other than the defence interests of the country. However, many other things influence the decision if the matter is in balance. I would not want to pretend that the situation was other than that.

Sir Geoffrey Johnson Smith (Wealden): While I accept that my right hon. Friend had a difficult decision to make and came down on what appeared to be the right side, certainly in the view of the House, we all recognise that there may be occasions in the future when my right hon. Friend has to make a decision that is not quite so popular. Does not that underline the fact that there is far too much senseless duplication in military technology in the western world?

Mr. Heseltine: My hon. Friend has made an absolutely critical point, but the problem is that someone has to make a decision if we are to change the assumptions and practices of various allies. If we are to break out of the present practice, the first decision invariably means that we have to forgo either employment or technological opportunities in our country. That is bound to be at least a risk—perhaps a justifiable risk—but we cannot take it often. I am sympathetic to the feeling behind my hon. Friend's question, but the House will remember that we buy twice as much from the United States as it buys from us, which shows our acceptance that there are technologies overseas that we cannot produce ourselves.

Mr. David Young (Bolton, South-East): I welcome the Secretary of State's decision, but I am concerned about how long it took him to make it, particularly because Ministers in his Department were saying to delegations of Members of Parliament, of which I was one, that the decision would be arrived at at the beginning of April. How much of the delay was due to pressure on his Department from the United States Government? In future, will the right hon. Gentleman say that under the Government's "buy british" policy, when there is a balance, that balance will go in favour of British workers?

Mr. Heseltine: I understand why the hon. Gentleman asks me that question, but it would be wrong to suggest for a moment that pressure was put on the British Government by the United States Government. I mentioned the matter to Mr. Weinberger when he was over here. We discussed the issue. It is right that we should do so. I would expect him to do the same on a reciprocal basis. I do not run from the hon. Gentleman's point. It took a long time to make the decision, perhaps longer than one would have liked, although the general election played a critical part in extending the time. The Government had to decide whether to try to take a slightly quicker decision than they would have liked in the run-up to the general election or to wait and take a fuller view after the general election. We took the latter view. That added about six weeks to the decision-making process.

Mr. Bill Walker (Tayside, North): How long will it be before the equipment becomes operational on RAF

[Mr. Bill Walker]

aircraft? I am sure that the RAF is pleased at the decision that has been taken, but one aspect that concerns the RAF is when it will be available.

Mr. Heseltine: I should like to help my hon. Friend, but I know that he will understand if I do not. When there is a certain delay before the introduction into service of a specific weapon system, it is normal practice not to announce in advance when the date of introduction will be. I believe that to be the right practice.

Mr. John Cartwright (Woolwich): Is the Secretary of State aware that his decision will be very widely welcomed, not just because of the number of jobs that it will protect, important though that is in the current industrial climate, but because it provides positive encouragement for the future of an independent British missile technology, which may be extremely important in the defence of this country?

Mr. Heseltine: I go along with what the hon. Gentleman has said. The issue is not just missile technology but seek-ahead — the smart generation of weapon systems, which depend on their capacity to strike enemy targets as a result of the characteristics of the targets. That technique of warfare will undoubtedly become more prevalent as the century advances.

Mr. Tom Sackville (Bolton, West): I welcome the excellent news on behalf of the work force of British Aerospace, Lostock. Does my right hon. Friend agree that it is highly desirable for future defence procurement policy that we keep control of as much of the technology of our advanced weaponry as possible?

Mr. Heseltine: I know that my hon. Friend, who was interested in this subject before the election and has continued his interest, is fully apprised of the value of this technology. Having regard to the potential development of this technology, it is important that Britain should remain in the forefront. Marconi undoubtedly has particular expertise in this. Nevertheless, we must understand what the priorities are and that it is not possible to pursue them all.

Mr. Peter Pike (Burnley): I am sure that the Secretary of State recognises the difficulties that the decision will cause to Lucas, especially Lucas Aerospace at Burnley. Will he give an assurance that he will do everything possible to ensure that no unemployment is caused at Lucas Aerospace, Burnley as a result of the decision?

Mr. Heseltine: I should like to help the hon. Member, but that is not my responsibility. Lucas made a valiant and coherent attempt to win the contract. It was unsuccessful, but this is no different from any other of the large number of contracts that it does or does not win. It must be a matter for the commercial judgment of the company.

Mr. Cranley Onslow (Woking): Welcome though the decison is, can my right hon. Friend assure us that it does not carry any danger that the Americans will not buy equipment from us such as Searchwater, about which they have been taking a long time to reach a decision?

Mr. Heseltine: The House will not be surprised to know that American politicians are no different from politicians anywhere else in the world. They have the same pressures upon them as we do, but they will be aware that British technology is often ahead of American technology. They have purchased significant quantities of technology from us, a classic example being the head-up display on the F16. The overall balance, however, is substantially in favour of the United States, and we purchase about twice as much from the Americans as they do from us.

Mr. Kenneth Warren (Hastings and Rye): If my right hon. Friend does not wish to give the in-service date will he give an assurance that, whatever the delays were in the Ministry of Defence Procurement Executive, they will be recaptured in the development programmes so that the Royal Air Force, which should have the weapons now, will not go undefended longer than is absolutely necessary?

Will he also give an assurance that the Ministry of Defence will monitor most carefully the management ability of the supplier to ensure that no delays occur that will leave our pilots unprotected, as they are now?

Mr. Heseltine: My hon. Friend is absolutely right to raise that question. I assure him that significant steps have been taken in this context to give particular defence capability to Tornado pilots, and we believe that those steps are effective, in part, in meeting the threat that exists. It is important that effective monitoring should take place. I believe that the prime contractor, British Aerospace, will regard the contract as a significant challenge to its capability to deliver what it has promised within the agreed time scale.

Mr. John Wilkinson (Ruislip-Northwood): Does my right hon. Friend agree that his decision is important for two reasons? First, ALARM is a relatively lighter weapons system than HARM and can be fitted to a wider range of aircraft. It is thus potentially more applicable to the Hawk, Harrier, Jaguar and so on. Secondly, although defence suppression is important, a stand-off capability for interdiction aircraft to penetrate today's complicated air defences will be important in the not too distant future.

Mr. Heseltine: My hon. Friend has great knowledge of these subjects. In the first instance, I rely upon the judgment of the RAF as to the operational requirements that it seeks for this weapon system and I shall consider carefully any matters that it puts to me.

Mr. Jonathan Sayeed (Bristol, East): Following today's most welcome statement, does not my right hon. Friend deplore the reported decision of British Airways to buy American aircraft rather than the Airbus Industrie A320 and the consequent loss of jobs, expertise and technology——

Mr. Speaker: Order. I do not think that that has much to do with the statement.

Mr. D. N. Campbell-Savours (Workington): What constraints do the Government intend to impose on the producers of the equipment to prevent them selling it abroad in countries that may be unable to pay for it in the future?

Mr. Heseltine: That is an important question, but it is wider than the financial penalties involved in selling to countries that could not pay. There are, rightly, the tightest constraints on the export of armaments. We do not consider just the financial ability of the country to pay but the political desirability of selling weapons systems to

individual countries. That was the position under the Labour Government and it remains so under the present Government.

Mr. Hugh Dykes (Harrow, East): Is my right hon. Friend aware that his decision will be particularly well received in Stanmore, the headquarters of Marconi Space and Defence Systems as it will help to keep together a brilliant scientific and technical team? Does my right hon. Friend think that the ALARM system, apart from satisfying our domestic Air Force systems in the future, is capable of export promotion and development with other European air forces?

Mr. Heseltine: My hon. Friend is right to draw attention to the excellence of the MSDS team and its capability. It was an important factor in reaching a judgment that that team should be kept in existence, not only with demonstrator projects but with the capability of taking a project through to full development. The export potential of the ALARM system must be a matter for the contractors involved. The leading contractor, British Aerospace, considers that there is significant export potential for the system, but that is for the company to fulfil.

Mr. Dennis Skinner (Bolsover): Is the Secretary of State aware that it would make much more sense if the Government made a statement urging industries operating at a low ebb to manufacture kidney machines on a massive scale for the National Health Service——

Mr. Speaker: Order. I must stop the hon. Gentleman. That question has nothing to do with the statement.

Mr. Skinner: Yes it has. [HON. MEMBERS: "Order."]

Mr. Speaker: Order. I said no.

Mr. Skinner: On a point of order, Mr. Speaker.

Mr. Speaker: Order. I shall take the point of order at the end of the statements.

Mr. Skinner: On a point of order, Mr. Speaker. The National Health Service under this Government——

Mr. Speaker: Order. Mr. MacKay——

Mr. Skinner: It is a scandal.

Mr. Andrew MacKay (Berkshire, East): Is my right hon. Friend aware that his statement will be most welcome in my constituency, especially in Bracknell, and that my constituents will believe that the decision was taken not for sentimental or emotional reasons but because we have the best weapons system available anywhere in the world to offer to this country?

Mr. Heseltine: I had not fully appreciated what a large number of my right hon. and hon. Friends had constituencies interested in this project.

Mr. Robert Hughes (Aberdeen, North): Pure coincidence.

Mr. John Home Robertson (East Lothian): Even in Scotland.

Mr. Heseltine: I welcome the enthusiastic support of my hon. Friend the Member for Berkshire, East (Mr. MacKay) for his constituency interests, but it is important to recognise that this weapon system does not yet exist. It has to be developed to a cost, to work and to be on time.

Mr. Michael Colvin (Romsey and Waterside): I welcome the decision. Although my right hon. Friend cannot disclose any in-service date, can the prime contractor, British Aerospace, be persuaded to improve upon the date that has been disclosed to my right hon. Friend? In view of the need to improve the two-way street of defence sales and procurement between Britain and the United States, the export potential of the project and the decision by some United States forces that HARM is not exactly what they require, is there any potential for the sale of the equipment to the United States?

Mr. Heseltine: I would be satisfied with the in-service date that was envisaged in our discussions. I admire my hon. Friend's early attempt to export the missile to the United States. I should be only too happy to encourage that. It would be more appropriate in this case, however, to concentrate on the general arguments for the two-way street which are well understood on both sides of the Atlantic.

Mr. Christopher Murphy (Welwyn Hatfield): Is my right hon. Friend's statement not a vote of confidence in the excellence of design and workmanship in Hatfield and in the aerospace skills in Hertfordshire? Will those skills be considered when he makes a decision on ASRAAM and the A320 Airbus?

Mr. Skinner: What has that got to do with the subject?

Mr. Heseltine: I assure my hon. Friend that all these matters will be carefully borne in mind when we make decisions, but I cannot undertake to make the same decision for the same reasons.

Mr. Graham Bright (Luton, South): Although my right hon. Friend's announcement is good news for British Aerospace, it is not such good news for Lucas, which would have built about 50 per cent. of the HARM missile. Is my right hon. Friend aware that I have constituents in both companies? Will he use his good offices to persuade British Aerospace to give Lucas the opportunity to participate in the ALARM missile?

Mr. Robert Hughes: In a cartel, do you mean?

Mr. Heseltine: I extend my sympathies to my hon. Friend if he has constituents on both sides of the argument. That must make his decision almost as difficult as that which faced the Government. It would be unrealistic to suggest that there could be a further spread of the work-sharing arrangements in view of the tight competitive decisions so far.

Mr. Neil Thorne (Ilford, South): I welcome my right hon. Friend's decision and I am aware that it was made after a good deal of deliberation. Will he assure the House that the two-way street that he mentioned, which, he will remember, I have strongly supported for the past four years, should be extended in this regard because the House and the country feel that arms producers in the United States tend to string our industry along for far too long and then suddenly let us down, as they will choose only their own industries, which are in competition with ours? Does he agree that that might be one of the reasons for the enormous discrepancy in the two-way street? Will he please ensure that the ALARM system is properly and adequately promoted in the United States?

Mr. Heseltine: I am grateful to my hon. Friend. We must understand that there are bound to be political

[Mr. Heseltine]

pressures on decisions such as these on defence or any other industry. It is wrong to cast a general description against one of our allies in this context.

I must pay tribute to the United States for ensuring that the two-way street has reached a point at which the Americans buy half as much from us as we buy from them, whereas not so long ago the trade was four to one in their favour. It is not possible to make narrow national issues out of this. The Americans have made considerable strides towards a better balance. However, they will always be subjected to the same constituency and industrial pressures as right hon. and hon. Members here.

Mr. Skinner: On a point of order, Mr. Speaker. I wonder whether you can tell me under what Standing Order it is possible for you to draw the attention of an hon. Member to the fact that he is not allowed to draw an analogy between the Government's priorities on weapons of war as opposed to the National Health Service and the disabled.

I well recall, as do many other right hon. and hon. Members, comparisons between the spending of taxpayers' money and other moneys being made when statements are made, when questions are asked and during speeches. I find it quite remarkable that, on this occasion, I was not allowed to make the vivid comparison between the massive amount of money spent on defence and the need for money to be spent in the National Health Service and for the disabled.

Mr. Speaker: Yes, I can answer the hon. Gentleman. I stopped the hon. Member for Bristol, East (Mr. Sayeed) because his question did not directly relate to the statement. I stopped the hon. Member for Bolsover (Mr. Skinner) for exactly the same reason.

Fisheries Council

4.24 pm

The Minister of Agriculture, Fisheries and Food (Mr. Michael Jopling): With permisssion Mr. Speaker, I wish to make a statement on the meeting of the Council of Fisheries Ministers on July 25 and 26.

With the Minister of State at the Scottish Office and my hon. Friend the Minister of State in my Department, I represented the United Kingdom.

Once again the Council could not agree about the allocation of quotas for North sea herring and I greatly regret that it proved to be impossible to settle other parts of the package, including the proposed arrangements on structures, in the absence of agreement on herring. The methods of determining quotas for herring will be discussed further by officials before the next meeting of the Council on 3 October.

The Council also refused to confirm the Community's fishing agreement with Norway but the Council did agree, by a qualified majority, to permit the Norwegians to extend their interim fishing for North sea herring to two thirds of their proposed allocation of 31,000 tonnes. I voted against this proposal. The considerations were finely balanced. I attach great importance to our fishing relations with Norway and would certainly not wish in any way to harm them. There are also very important advantages for our fishing fleet in the maintenance of the agreement with Norway. I nevertheless conclude that I should not support an arrangement which permitted Norwegian fishermen to fish for North sea herring when United Kingdom fishermen were not able to do so.

Finally, in my statement on the previous Council meeting I was asked about the possibility of extending controls over foreign klondikers. I am glad to say that my right hon. Friends and I are laying an order before Parliament today which will extend to foreign vessels the arrangements which currently apply to British pelagic vessels transshipping their catch to klondikers within our fishery limits.

Mr. Norman Buchan (Paisley, South): The Minister has held his present position for about one month and, because of his predecessors's actions, has been forced to accept two humiliating experiences. He is now beginning to call it Canossa rather than Brussels.

Has not this deal angered British fishermen, especially Scottish and Shields fishermen, more than any previous one? The original deal, which was made in January, was supported by the fishermen and they assured me today that they supported it on the basis that the Government promised them they would fight like hell to get a good agreement. The Government have failed.

The Minister said that he did not support the proposition but did not use his veto. Some opposition that is. The Danes, who will benefit from it, used the veto three times in the two sets of discussions. We, who will suffer most, learn that our representative did not use the veto. It is a humiliating capitulation. The anger in the north-east of Scotland, Shields and Shetland reflects that.

In the mid-1960s we were fishing 1 million tonnes of herring in the North sea. It was industrial over-fishing, most notably by the Danes and purse-net fishing by the Norwegians which slaughtered the stocks and brought about the introduction of a ban. We, who honour the

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PQ 7558C

28th July 1983

Dear Willie

I enclose a copy of a Statement to be made in the House this afternoon by Mr Michael Heseltine, the Secretary of State for Defence.

Yours ever

Harry Kentish

(H KENTISH)
Parliamentary Clerk

W F S Rickett Esq
No 10
Downing Street

Mr Speaker,

With your permission I will make a Statement on the Government's decision concerning a defence suppression weapon for the Royal Air Force.

The Government has been examining options for a missile to meet the requirement of the Royal Air Force for a defence suppression weapon to arm Tornado GR1 aircraft. The choice has been between the new British Aerospace Air Launched Anti-Radar missile, ALARM, and the American-developed High Speed Anti-Radiation Missile, HARM, either produced partly in this country by Lucas Aerospace or supplied direct by the United States.

This has not been an easy decision. There has been a wide range of complex factors to weigh including operational performance, technical merit, technological promise, employment and industrial issues, costs and availability.

I am able to tell the House that we have decided that, subject to satisfactory completion of contract negotiations, we shall place an order for the development and production of ALARM with British Aerospace Dynamics Group.

This will provide significant employment at British Aerospace Dynamics' factories at Hatfield, Stevenage and Bracknell in the near term and at Lostock, near Bolton, in the later part of the decade. Marconi Space and Defence Systems will be a major sub-contractor for the missile seeker head, with consequential employment at Stanmore and Portsmouth. Technology relevant to a range of future military missile requirements will thus be maintained and advanced in this country. In all the order is expected to sustain over 3000 jobs in the UK, of which about half will be with British Aerospace Dynamics and Marconi Space and Defence Systems.

Ref.A083/2265

PRIME MINISTER

Cabinet: A Defence Suppression Weapon for the Royal Air Force

flag A

There is nothing of substance to add to my brief for the discussion in Cabinet on 26 July.

2. On handling, you may like to invite comments from those members of the Cabinet who did not have time to give their views on Tuesday, particularly the Foreign and Commonwealth Secretary and the Secretary of State for Trade and Industry.

3. If a final decision is reached, the Secretary of State for Defence has in mind to announce it by means of an oral statement after Questions the same afternoon, 28 July. As I suggested in my earlier brief, he might be invited to agree a statement with you, the Foreign and Commonwealth Secretary, the Chancellor of the Exchequer and the Secretary of State for Trade and Industry; and it will of course be necessary for an urgent telegram to be sent to Washington to give our Ambassador instructions to inform the United States Administration. I understand that letters have been prepared from Mr Heseltine to Mr Weinberger and from Mr Pattie to Senator Tower (the Senator from Texas and Chairman of the Senate Armed Services Committee).

RtA

ROBERT ARMSTRONG

27 July 1983

SECRET

21

Caxton House Tothill Street London SW1H 9NF
Telephone Direct Line 01-213 6400
Switchboard 01-213 3000

Prime Minister

A. J. C. 25/7.

Rt Hon Michael Heseltine MP
Secretary of State
Ministry of Defence
Whitehall
LONDON
SW1

25th July 1983

Dear Michael,

HARM/ALARM

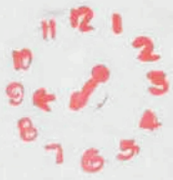
I read with interest the paper C(83)28) which Cabinet is to discuss tomorrow. As I will not be able to take part in these discussions, I am writing to let you and colleagues know my views.

On balance I favour purchasing ALARM. I believe it important that we have the technological capability to produce our own weapon, and I suspect that if we did not have this potential, Texas Instrument would be unlikely to offer HARM (or its successor) to us at a reasonable price.

I am sending copies of this letter to Cabinet colleagues and to Sir Robert Armstrong.

Yours Norman

SECRET



CONFIDENTIAL

FCE SH

cc: MC. Mount

cc MASTER

10 DOWNING STREET

From the Private Secretary

25 July, 1983

Defence Procurement

When your Secretary of State called on the Prime Minister today to discuss another matter, the Prime Minister raised the general question of future defence procurement. She expressed some concern in respect both of the rising cost of defence equipment and the fact that Ministers from time to time have to take major decisions on defence procurement without being fully aware of other decisions which might arise in the foreseeable future.

It was agreed that the Defence Secretary would let the Prime Minister have a paper which would take a preliminary view of this problem. The Prime Minister would then consider how to proceed.

A. J. COLES

Richard Mottram, Esq.,
Ministry of Defence

CONFIDENTIAL

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SECRET

Qa 06424

To: PRIME MINISTER

22 July 1983

From: JOHN SPARROW

HARM v. ALARM

1. The revised proposal by British Aerospace to reduce the fixed price contract for 750 ALARM missiles by £97m. appears at first sight to simplify the choice confronting the Cabinet on Tuesday. However, this new offer depends upon British Aerospace being able to absorb development and initial production costs of £97m. through additional sales to the RAF and through export orders.

2. The RAF requirement remains at 750 missiles with the possibility of an additional order of 250 missiles if funds are available. The ability of British Aerospace to recoup the £97m. therefore depends critically upon the export potential of ALARM. The paper for Cabinet indicates that export prospects are extremely uncertain, particularly as the revised offer presumably implies a higher unit price for export orders.

3. The likelihood of British Aerospace meeting current budget and delivery targets is remote and, even if the Government keeps British Aerospace to the original fixed price offer, the financial pressures upon the Company are likely to be considerable. If additional RAF sales and significant export orders do not materialise, it is likely that the Government will be forced to meet the £97m. of development and production costs in one form or another.

4. The possibilities include

- consequential effects on other MoD contracts, despite current assurances from British Aerospace;

- launch aid for civilian projects which will be related to the Company's financial situation;

- loss of dividends to the shareholders with HMG holding 48 per cent of shares;

- loss of cash proceeds from future share disposals.

5. The CPRS believes therefore that the new offer by British Aerospace has wider implications for the Company which the Government as customer, as shareholder, and as Government needs to take into account in making its choice between HARM and ALARM.

6. I am sending a copy of this minute to Sir Robert Armstrong.

JS.

Prime Minister A 19

Ref. A083/2199

PRIME MINISTER

A Defence Suppression Weapon for the Royal Air Force

(C(83) 28)

BACKGROUND

The Defence and Oversea Policy Committee, at its meeting on 30 June, instructed me to prepare a note of the facts and issues on the choice of a Defence Suppression Weapon for the Royal Air Force. I have circulated this as C(83) 28, which replaces the earlier paper C(83) 22.

2. The issue of the choice between the two missiles, the American HARM and the British ALARM, has been transformed by British Aerospace's new offer, mentioned in the Defence Secretary's minute of 15 July, cutting £97 million off the price for 750 ALARM missiles. In return, British Aerospace would charge more for any missiles purchased above the origianl 750. As a result, for 750 missiles, HARM is now only £37 million (15 per cent) cheaper than ALARM, on the basis of the Lucas proposals for co-production. The Chancellor of the Exchequer has written to the Secretary of State for Industry on 21 July to draw attention to the need to discuss also the effect of the new British Aerospace offer on the company's financial position.

3. Nevertheless, there are still areas of uncertainty and differences between Departments on:

(a) the risks involved in the ALARM programme, particularly the risk of delay (paragraphs 10);

(b) the final cost (paragraphs 11 and 12);

(c) the effect of the new offer on the finances of British Aerospace (paragraphs 14 and 15);

(d) the importance of ALARM to the United Kingdom's homing-head and guided missile technological base (paragraphs 16-20).

4. Although the price of ALARM has now been brought closer to HARM, the cost of ALARM will still exceed the cost of HARM by £98 million in the Public Expenditure Survey years 1984-85 to 1986-87 (paragraph 22).

5. My paper deals only in passing (paragraph 20) with the proposal made by the Foreign and Commonwealth Secretary in his minute of 19 July to the Defence Secretary that a team should be sent to Washington to pursue with the Americans the scope for collaboration with Texas Instruments on the HARM programme. Ministry of Defence officials have advised Mr Heseltine that they see no merit in this proposal and the Defence Secretary is likely to have replied by the time of the Cabinet discussion.

6. The Defence Secretary has also circulated a minute dated 15 July informing the Cabinet that a decision will have to be taken in the fairly near future on the choice of a new surface-to-surface guided weapon for the Royal Navy, in which many of the same issues will arise as in the choice between HARM and ALARM. But he does not want the HARM/ALARM decision to be held up on that account.

7. The Chief Scientist, Dr Nicholson, sent you a note on 8 July drawing your attention to the point that developing advanced defence equipment can draw away key people in industry from activities which offer the greatest opportunities for economic expansion, and doubting the value of the fixed price offered by British Aerospace for ALARM.

HANDLING

8. I suggest that you might introduce the subject by saying that it has been discussed twice by the Defence and Oversea Policy Committee, where views were divided. Since then fresh offers have been made by both British Aerospace and Lucas/Texas Instruments. The paper circulated to the Cabinet presents the facts and issues in a neutral way and indicated where Departments have differing views. You should then invite the Defence Secretary to introduce the subject and give his recommendations: you should then ask the Chancellor of the Exchequer, the Foreign and Commonwealth Secretary and the

Secretary of State for Trade and Industry to give their views before inviting a general discussion.

9. Discussion should focus on the following issues:

(a) are the risks involved in a choice of ALARM acceptable? ALARM must be something of a gamble because if things went wrong there could be a gap in the RAF's operational capability and a hole in British Aerospace finances;

(b) should the Government, before taking a decision, ask British Aerospace for a financial appraisal, as the Treasury suggest, or rely on the company's commercial judgment, as the Department of Trade and Industry recommend?

(c) how important are the technological factors? The Ministry of Defence judge it essential on defence grounds to retain a technological base in this country in the area of homing-heads and guided missiles generally. Are there wider national grounds? Would this have spin-off for the civil sector and lead to the creation of real jobs? How important in any case is ALARM to this? Could the same - or possibly better - benefits be secured by collaborating with the Americans on HARM? And are we in danger of devoting too much of our skilled management to defence projects which have poor export prospects at the expense of other projects which could be sold worldwide?

10. Whichever missile the Cabinet prefer, they will wish to give some thought to presentation.

(a) HARM: a decision to buy HARM could clearly not be presented as having been taken because the Government did not believe the delivery promises made by industry and backed by industry's own money. Nor could it be easy for the Government to say that, as a major shareholder in British Aerospace, it was concerned for the effects on the company's finances if ALARM were chosen. The case for HARM would therefore rest on the lower cost, especially

in the years 1984-85 to 1986-87, the industrial participation offered by the Americans, and the more favourable export prospects (sharing in the American and third country markets for HARM).

(b) ALARM: a decision to buy ALARM could be presented as reflecting the importance attached to support for British technology in a field essential to our future defence needs. But very careful explanations in Washington, both to the Administration and Congress, would be required.

CONCLUSION

11. If the balance of opinion in the Cabinet favours HARM, you will wish to consider whether it would be sensible, before taking a final decision, to send a team to Washington to pursue the scope for greater collaboration with Texas Instruments on the programme, and on the enhancement of HARM: there may be more here, and it would not do any harm (sorry!) to try.

12. If the balance of option in the Cabinet is in favour of ALARM, you might seek to guide the Cabinet to the following conclusions:

(a) Although the development of ALARM represents a risk, it is a risk which is backed by the commercial judgment of British industry. The Government should not appear to be trying to "second guess" that judgment.

(b) Equally, there can be no question of the Government rescuing industry from the consequences of their judgment if it turns out to be optimistic.

(c) On the basis that the Defence Secretary is prepared to absorb the extra cost of ALARM, whatever the outcome of this autumn's PESC discussions, a decision should be taken in favour of ALARM on the grounds that it provides support for a technology which is essential on defence grounds to retain in this country.

(d) An immediate approach should be made to the US Government to explain the reasons for our decision.

13. In either case, careful thought will need to be given to public presentation. The Secretary of State for Defence might be invited to agree a draft statement, with you, the Foreign and Commonwealth Secretary, the Chancellor of the Exchequer and the Secretary of State for Trade and Industry.

RA

Approved by
ROBERT ARMSTRONG
and signed in his absence

22 July 1983

Pl. put in the PM's Cabinet folder

Ministry of Agriculture, Fisheries and Food
Whitehall Place London SW1A 2HH

From the Minister's
Private Office

CONFIDENTIAL

F E R Butler Esq
Prime Minister's Office
10 Downing Street
London SW1

25 July 1983

Dear Robin

My Minister has already notified the Prime Minister that he has to be in Brussels to attend a Council of Fisheries Ministers today and tomorrow. He cannot therefore attend Cabinet tomorrow, 26 July, but he asks if you would kindly remind the Prime Minister that he supports ALARM.

Yours ever
Robert Lowson

ROBERT LOWSON
Private Secretary

SECRET

10 DOWNING STREET

From the Private Secretary

22 July 1983

Dear Richard,

PURCHASE OF SUPER ADAC HOMING HEAD FOR EXOCET

The Prime Minister has seen your Secretary of State's minute of 19 July.

Subject to the views of her colleagues, she agrees that the Defence Secretary should authorise the purchase of the improved homing head from France and should further authorise the necessary negotiations to secure the French assurances to which he refers in his paragraph 4.

I am copying this letter to the Private Secretaries of other members of OD and to Richard Hatfield (Cabinet Office).

Yours ever

John Coles.

Richard Mottram, Esq.,
Ministry of Defence

SECRET

SECRET

178 (2)

Treasury Chambers, Parliament Street, SW1P 3AG
01-233 3000

21 July 1983

The Rt Hon Cecil Parkinson MP
Secretary of State for Trade
and Industry

Dear Secretary of State

A.J.C. 22/7

HARM/ALARM

Michael Heseltine's minute of 15 July describes the revised British Aerospace ALARM bid which we shall be discussing on 26 July.

One of the worrying aspects of the original BAe offer was that, as C(83)22 pointed out, their ability to develop ALARM to an acceptable standard in the four years which they had allowed was very doubtful; that they would be liable for all delays, at up to £3 million a month; and that they could therefore be expected "to exploit every opportunity to overturn the fixed price contract." Their new offer is clearly a loss leader: they apparently stand to lose at least £85 million on the contract and, if it slips as expected, perhaps as much as £150 million. Michael Heseltine says that he has been assured that there will be no consequential effects on the prices paid for other MOD purchases, and we shall no doubt explore that on 26 July. But, assuming such assurances prove watertight, I think that we shall also need to bear in mind the possible effects on BAe as a whole (and on the claims for launch aid which they may have in mind). I hope that we can look to you to cover this in Tuesday's discussion.

I am not of course suggesting that the new BAe bid is unwelcome. My point is that we shall need to be clear about its possible implications for them, and thus indirectly for us, not least because we remain their major shareholder.

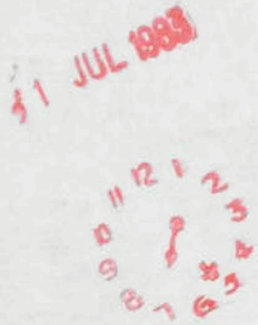
Copies of this letter go to our Cabinet colleagues and to Sir Robert Armstrong.

Yours ever
Nigel

NIGEL LAWSON

SECRET

Defence,
Mem 83,
Harm/Alarm



da
Defence

20 July 1983

I write to thank you for your letter of 15 July conveying the views of your Executive Council on the choice to be made with regard to the purchase of a defence suppression weapon (HARM versus ALARM). Your letter will be placed before the Prime Minister.

A. J. COLES

Roy Grantham, Esq.

lo

SECRET

Prime Minister 17

The operational argument at X seems conclusive.

Agree, subject to colleagues, that the Home Security should authorise the purchase of the improved homing head from France, subject to the French assurances which he describes in para. 4.

A.J.C. 20/7.

MO 26/3

PRIME MINISTER

PURCHASE OF SUPER ADAC HOMING HEAD FOR EXOCET

You will wish to know of the need, subject to the negotiation of certain assurances from the French Government, to place an order worth about £27 million with the French firm SNIAS for an improved homing head (known as 'Super ADAC') for the Royal Navy's Exocet missiles.

2. The operational case for Super ADAC is summarised at Annex. In brief Exocet is fitted to over 20 RN ships and is the Royal Navy's main anti-surface ship weapon. Most of the original homing heads have already been improved to a standard known as ADAC 16 (at present confined to NATO). Although superior to the basic ADAC which Argentina has, the ADAC 16 is itself increasingly vulnerable to countermeasures. If we are to maintain the effectiveness of the Exocet systems we already have there is no practical alternative to a purchase of Super ADAC. I am advised that a British substitute could only be developed at something like double the cost and after several years of delay.

3. The operational and procurement case is clear. But there could be presentational and political difficulties over this purchase if it becomes public knowledge, as it is likely to do. In particular it could re-open the topic of sales to Argentina of foreign armaments containing British components.

4. So far as the actual missiles themselves are concerned I understand that the French are prepared to assure us in secret that no Super ADAC will be sold outside NATO and to agree that we may say in public, if news of our Super ADAC purchase leaks, that we are buying Exocet

improvements to a unique British specification. We could thus meet any suggestion that we are assisting an improvement in Argentine capabilities.

5. So far as components are concerned certain parts of Super ADAC will be manufactured by British firms, as is the case with existing types of Exocet. There remains no prospect of securing an assurance from the French that British components supplied for Super ADAC will not under any circumstances reach Argentina. This stems from the terms of the original (1971) Memorandum of Understanding on Exocet which specifically commits us not to take steps to influence the eventual destination of British-made components incorporated in the missile. To date, as you know, the supply of British components in foreign arms sales to Argentina has been based on contracts entered into before the Falklands conflict. In the case of Exocet most of the pre-Falklands French contracts for supply to Argentina have now been completed and we can have some confidence that the British components supplied for Super ADAC would not be diverted to other purposes and hence find their way to Argentina.

6. But there can be no absolute guarantee. Neither will the French Government bind themselves to formally allowing no new contracts to Argentina in the long term, although in March the Elysee did inform the British Embassy in Paris in confidence that President Mitterand had decided to put off until after the Argentine elections (planned for October) a decision on whether to authorise new arms contracts.

7. There is some urgency attached to this purchase: first because we are hoping to negotiate it before a 1½% price increase comes into effect - this would cost an extra £350,000. Second, and more important, because delay would jeopardise our participation in a French trial programme in October this year which is intended to compare the performance of ADAC (which is what the Argentines have) and Super ADAC against electronic countermeasures. The results of these trials would be invaluable to us in the South Atlantic context.

8. Given that our ability to counter the Argentine missile threat has been substantially improved since the Falklands campaign and that there are strong operational grounds for improving the RN's capability in this area, my own inclination would be to go ahead with the purchase on as low-key a basis as possible, and to ride out any political fuss as best we can. But since this has been such a highly charged topic I though it best to inform you and other OD colleagues, to whom I am copying this minute, before doing so. If there are no objections I would like to be able to authorise the purchase, and the necessary negotiations to secure the secret French assurances I have referred to by the end of this week.

Ministry of Defence
19th July 1983

EXOCET MM38 HOMING HEAD IMPROVEMENT (SUPER ADAC) - OPERATIONAL CASE

1. EXOCET MM38, our first generation of surface-to-surface guided weapon (SSGW), is widely fitted and provides the first line of anti-ship capability for units and groups operating away from air support. Because of its very low sea-skimming approach, EXOCET gives us a potent and reliable capability which has been a good return for our money since its introduction 12 years ago. The system, comprising 4 ready-to-fire missiles, is fitted in over 20 ships and this population will rise as more Type 22 Batch IIs come into service. The other ship classes fitted with this system are Type 22 Batch I, Type 21, the Leander Batch II and III Frigates after modernisation refit and three County Class Guided Missile Destroyers.

2. Since the introduction of EXOCET, our improvements programme has featured one principal advance, the updating of the majority of the original homing heads (ADAC) to an improved standard (ADAC 16), achieved by straightforward modification of the original heads. The chief feature of ADAC 16 is its ability to reject chaff decoys, taking up to 6 seconds for each chaff bloom in its field of view. By comparison, SUPER ADAC is able to reject all chaff decoys in the whole of its search area in less than 1 second. In addition, the wholly new SUPER ADAC head has other sophisticated ECCM features and the facilities to present its target selection criteria and logic. SUPER ADAC is therefore a great advance over the ADAC 16 head and incomparably better than the original head.

3. In the out-of-area context, it should be noted that we have currently with ADAC 16, a lead over third-world EXOCETs which all have the older ADAC head. For the present, ADAC 16 is confined to NATO Navies. Failure to grasp the SUPER ADAC opportunity would allow potential third-world adversaries to equal our capability in future, when the ADAC 16 modification is sold outside NATO, possibily within 2 years, a timescale very close to our acquisition of SUPER ADAC. The French have a well-established policy, partly through self-interest, for the sanitisation of equipments for third-world sales. Equipment in their own service and offered to NATO is of a higher standard than that sold elsewhere. Improvements are not offered for sale to the third world until a further step has been made available inside NATO.

4. In the Soviet context, there is clear evidence that our SSGW effectiveness is being eroded by the Soviets' increasingly capable ECM outfits. The purchase of SUPER ADAC would quickly redress this balance and preserve in the near term the capability of our existing SSGW on which so much depends. Delay will place our forces at risk for an unnecessarily long period.

5. Though the intention is to procure a second-generation SSGW system for new classes of major surface warship (Batch 3 Type 22 and Type 23 Frigates), the foregoing military arguments show that it is also necessary to take early measures to

maintain the viability of the existing SSGW in an increasingly difficult operational environment, without incurring the substantial cost of replacing the complete system.

FCS/83/134

SECRETARY OF STATE FOR DEFENCE

Defence Suppression Weapon for the Royal Air Force

1. Thank you for sending me a copy of your minute of 15 July to the Prime Minister. I understand that Cabinet discussion has now been postponed until 26 July in order to give Sir Robert Armstrong the opportunity to update his note of 13 July (C(83)22) to take account of the points in your minute.

2. Meanwhile, you may have seen a copy of Washington telegram No 2009 of 15 July (attached for ease of reference). This suggests that we need to decide quickly whether to ask the Embassy to confirm with the Pentagon the US Administration's approval of the technological aspects of Texas Instruments' additional offer; and whether a UK team with industrial participation should go to Washington to explore the scope for collaboration with Texas Instruments on the HARM programme.

3. I understand that on the first point you are already content with the assurances given orally by the US Administration. It seems to me that the second point is of some importance for two reasons. First, the decision of both Texas Instruments and the US Administration to extend the scope of their offer

/on HARM

on HARM to include some British participation in the Seeker Head may indicate readiness to go further in this direction. I note your conclusion that the additional Lucas/Texas Instruments options, as at present offered, do not appear particularly attractive. But perhaps we should not exclude the possibility of being able to negotiate further concessions which might meet a subtantial amount of our requirements on technology, although I acknowledge that this would represent a major change of position on the Americans' part. My second point is a presentational one. By taking the steps which the Embassy recommend, we would be putting the onus on the Americans. If they then fail to come up with the goods, we should then be better placed to justify a decision favouring ALARM.

4. I hope therefore that you can agree to send a UK team on the lines suggested in the Washington telegram to pursue these points with the Americans. It would be a pity if we lost this opportunity of exercising leverage on both the US companies and the Administration. I appreciate that time is short, but I think if possible we should aim to do this in time to report the results to Cabinet on 26 July. I should be grateful for your views as soon as possible.

5. I am sending copies of this minute to the Prime Minister, to other members of the Cabinet and to Sir Robert Armstrong.

(GEOFFREY HOWE)

Foreign and Commonwealth Office

19 July 1983

GPS 250

CONFIDENTIAL
FM WASHINGTON 151655Z
TO IMMEDIATE F C O
TELNO 2009 OF 15 JULY 1983,
AND TO MODUK (FOR PS/S OF S: PS/MR PATTIE: PS/PUS: CDP, CA AND COSSEC).

MY TELS NO 1876, 1920 AND 1966: HARM/ALARM

1. IN VIEW OF THE APPROACH FROM TEXAS INSTRUMENTS REPORTED IN MY TELEGRAM 1966 WE NEED TO DECIDE QUICKLY:
(A) WHETHER YOU WISH US NOW TO CONFIRM WITH THE PENTAGON US APPROVAL OF TEXAS INSTRUMENTS' OFFER TO PASS TO US FULL SPECIFICATIONS OF THE SEEKER HEAD TECHNOLOGY TO PERMIT THE QUALIFICATION OF A BRITISH SOURCE FOR THEIR MANUFACTURE. VERBAL AUTHORITY FROM THE ASSISTANT SECRETARY (NAVY) FOR THE RELEASE TO US OF THIS TECHNOLOGY HAS ALREADY BEEN OBTAINED BY TI AND NOTIFIED TO CONTROLLER (AIR).
(B) WHETHER YOU WISH TO SEND A UK TEAM WITH INDUSTRIAL PARTICIPATION TO EXPLORE WITH DOD AND TEXAS INSTRUMENTS HOW MUCH BUSINESS A UK SOURCE, EG MARCONI, MIGHT HOPE TO DERIVE FROM COLLABORATION WITH TEXAS INSTRUMENTS ON THE HARM PROGRAMME.

2. TEXAS INSTRUMENTS ARE OF COURSE MAKING THIS OFFER IN AN ATTEMPT TO HEAD OFF A DECISION IN FAVOUR OF ALARM. BUT THE OFFERS NOW RECEIVED SEEM WORTH EXPLORING BEFORE FINAL DECISIONS ARE TAKEN, THE MORE SO AS THE AMERICANS SEEM CONFIDENT THAT ~~H~~ARM IS FAR MORE LIKELY THAN ~~A~~ARM TO BE ACQUIRED BY OTHER NATO COUNTRIES. IF EXPLORATORY TALKS SHOULD INDICATE THAT TEXAS INSTRUMENTS AND THE US GOVERNMENT WOULD TRY TO STRIKE AN UNDULY HARD BARGAIN, WE SHOULD THEN BE WELL PLACED TO TAKE AND JUSTIFY A DECISION IN FAVOUR OF ALARM. THE LIKELIHOOD THAT WE MAY DECIDE IN FAVOUR OF ALARM, HOWEVER, HAS GIVEN US SOME LEVERAGE BOTH WITH US COMPANIES AND THE ADMINISTRATION. IN MY VIEW, WE SHOULD USE IT.

WRIGHT

MINIMAL
DEF D
NAD

Defence: Harm / Alarm

March '83

SECRET

15

PRIME MINISTER

HARM AND ALARM

You need not study these papers in detail because they will all come back to you in connection with next week's Cabinet meeting. But you should be aware that:-

a) The Defence Secretary has minuted to you about additional proposals, both from British Aerospace on the terms of purchase of ALARM and from Texas Instruments and Lucas on the terms of purchase of HARM (these figures will be incorporated in a revised Cabinet paper).

b) The Defence Secretary has also minuted to warn you that in the fairly near future we shall have to make a decision on another weapon, namely a surface to surface guided weapon for the Royal Navy. He just thinks that you should be aware of this though he does not wish to defer a decision on HARM or ALARM.

c) The Foreign Secretary has suggested to the Defence Secretary that we should send a UK team to Washington now, firstly to see whether we can obtain any further concessions from the Americans which might help to meet our requirements on technology, secondly, to put us in a better position to justify a decision favouring ALARM if by then the Americans have failed to offer more favourable terms for HARM.

A.J.C.

19 July 1983

SECRET

CONFIDENTIAL

10 DOWNING STREET

From the Principal Private Secretary

SIR ROBERT ARMSTRONG

DEFENCE SUPPRESSION WEAPON

In view of the revised proposals put forward by British Aerospace and Lucas, the Prime Minister has asked that the paper prepared by the Cabinet Office should be revised to take account of the latest developments. The meeting of the Cabinet scheduled for this Wednesday should be deferred until next Tuesday, 26 July, and a revised paper should be circulated as a basis for the Cabinet's discussion.

I am copying this letter to Brian Fall (Foreign and Commonwealth Office), John Kerr (HM Treasury) and Richard Mottram (Ministry of Defence).

E. E. R. BUTLER

18 July 1983

CONFIDENTIAL

CF file

APEX

ASSOCIATION OF PROFESSIONAL, EXECUTIVE, CLERICAL & COMPUTER STAFF

Our Ref: A/15/33

Your Ref:

15th July 1983

The Rt Hon Margaret Thatcher MP
Prime Minister
10 Downing Street
London SW1A 2AL

R 20/7

Pl h/w paper by next week's Cabinet meeting.
A.J.C. 20/7.

HARM Versus ALARM Missile Programme

I have been asked by my Executive Council to write to you and express their hope and desire that you should continue to resolutely support the ALARM programme in the discussions in the Cabinet.

On the general issue of the balance of military purchases between the USA and Britain the balance has always been to the advantage of America. When the missile comes into service in the period 1986 to 1990 Britain will be committed by the present Government to very large purchases based on the Trident programme from the USA. Moreover by that time all estimates of the relative value of sterling in relation to foreign currencies show that it will have declined and therefore the real cost of purchasing overseas missiles like the HARM missile will be appreciably greater.

The high technology Seeker on the ALARM will help develop the UK micro-chip industry. This technology is fundamental to the development of missiles over the next twenty years and will provide the basis for four more missile programmes, so that if we buy the American HARM missile we shall eliminate British systems' capability in this field for the next twenty years.

The experience of British missile production is that this is an area where we export a substantial proportion of the product, and British Aerospace expect to export at least twice as many ALARM missiles as it produces for the Ministry of Defence. This clearly will assist in maintaining employment in the UK, employment in the ALARM programme will be twice that of the HARM programme in the UK, and in generating wealth to enable the country to maintain its defence programme.

/The.....

22 WORPLE ROAD, LONDON SW19 4DF

Telephone: 01-947 3131

The ALARM missile is half the weight of the HARM missile and aircraft like the Harrier and the Tornado can therefore carry twice as many. In addition it is light enough to be carried on light aircraft like the Hawk and helicopters which can be used to suppress short-range defences leaving the missiles on the Harries and Tornados to be used on defences near the target. On any reasonable calculation the use of the ALARM compared with the HARM will substantially reduce the loss rate among Harrier and Tornado aircraft and this means that the indirect savings from the programme are so great as to be fundamental.

Finally British Aerospace is in the course of a further redundancy programme at the present time. Should the ALARM programme not be activated there will be further redundancies and its ability to finance civil programmes which is already severely affected by the failure to provide any continuing launch-aid on civil programmes since privatisation will be further hampered with a consequential further loss of sales and employment.

My Executive Council believes that the stand that you have taken on this matter is a principled one, is in the interest of the defence of the country and the protection of the RAF strike force, and will generate the greatest possible wealth from the investment concerned to the advantage of the country in maintaining employment and strengthening our technological capacity for the future.

Yours sincerely

Roy Grantham

Roy A Grantham
General Secretary

RAG/BR

Reference
March 83
Herm / Alarm

MO 26/7

PRIME MINISTER

DEFENCE SUPPRESSION WEAPON FOR THE ROYAL AIR FORCE

You should know, as background to our discussion next Wednesday, that the Ministry of Defence has in the last few days received additional proposals from TI and Lucas on the terms of purchase of HARM, and from BAeD on the terms of purchase of ALARM. As you know the details of the competition have been widely reported in the press and in these circumstances it is not surprising that revised offers are coming forward.

ALARM

2. BAeD have offered to absorb development and initial production costs equivalent to £97M, provided that missiles beyond an initial 750 and up to 2000 are paid for by the Ministry of Defence at a unit price significantly higher than that in the original offer. The new proposal is self-contained and I am assured there will be no consequential effects on the prices paid for other Ministry of Defence purchases from British Aerospace Dynamics.

3. The effect of this offer is that the total costs of ALARM become £291M for 750 missiles and 360M for 1000 missiles. The cost differential between HARM and ALARM reduces to £37M from £134M. The extra cost margin reduces to 15% from 55%. The new arrangement remains cheaper than the original offer up to a total purchase of 1620 missiles. On the other hand the new arrangement would mean that the extra cost differential between ALARM and HARM will diverge and not converge as under the original offer.

4. As propriety demands Lucas Aerospace have been told that British Aerospace Dynamics have submitted a revised bid and been given the opportunity of putting in a further revised offer of their own.

Having consulted Texas Instruments, Lucas have said that if the order is for 750 missiles, they do not want to change their offer, although they would want to reconsider if a larger order were to be placed now.

HARM

5. Before they had been notified of the BAe offer, TI/Lucas had offered two further options, both of which now have the necessary US Navy approval. The first is an invitation to UK firms to compete for the production of high technology microwave sub-assemblies worth about 20% by value (£10M) of the seeker. This would cost us an extra £5.5M to establish and qualify the UK industrial facilities and work force. In return we would stand to gain 400 man years additional work at the UK firms concerned who could include Ferranti, Plessey, MSDS and perhaps others as well as Lucas.

6. The second proposal is to set up a UK HARM seeker repair depot at TI Ltd at Bedford (where repair facilities for other TI supplied UK equipment eixst). This would cost us an extra £20M, to create some 750 man years work over 15 years.

7. Both options are unattractive in financial/employment terms. The premium per extra man year is three times as great for the sub-assembly work as for the original UK HARM offer; the premium for the repair facility would be seven times as great.

8. So far as the more important matter of technological benefit is concerned, neither option would add significantly to the UK national radar technology base. The sub-assemblies perform functions to be found in many UK designed equipments. The UK depot repair facility would give the UK nationals employed a very detailed knowledge of the seeker head; but they would be employed by the subsidiary of a US firm, and one which would be very reluctant to countenance departures from common standards of seeker head configuration. It is therefore very unlikely that we would gain a national capability to improve

missile performance in the light of evolving threats or in a crisis. Indeed, if for any reason UK/US technology transfer relations deteriorated, we could find that modifications could be withheld from us.

9. In summary, these additional Lucas/TI options do not appear particularly attractive and any decisions on taking up either could follow an initial decision to buy HARM, rather than influence the decision directly.

10. I am sending a copy of this minute to other members of the Cabinet and to Sir Robert Armstrong.

Michael Heseltine

[Draft approved by the Defence Secretary and signed in his absence]

Ministry of Defence
15th July 1983

MO 26/7

PRIME MINISTER

SURFACE-TO-SURFACE GUIDED WEAPONS FOR THE ROYAL NAVY

We are due to consider the choice of anti-radar missile for the Royal Air Force on Wednesday 20th July. The purpose of this minute is to let you know, by way of background to next week's discussion, that we shall have to make a decision in the fairly near future on a surface-to-surface guided weapon (SSGW) for ships of the Royal Navy.

2. The main contenders are:

a. The McDonnell-Douglas Harpoon, with a Texas Instruments seeker head. Submarine-launched and air-launched versions of this American weapon are already in service with the Royal Navy and RAF respectively.

b. A sea-launched version of British Aerospace's Sea Eagle, with a Marconi Space and Defence Systems (MSDS) seeker head. Sea Eagle is already under development in an air-launched version for RAF and Royal Navy aircraft.

c. The French Exocet MM40, an improved version of the missile currently in service in Royal Navy surface ships.

d. The Franco-Italian Otomat missile, with the same MSDS seeker head as Sea Eagle.

3. The choice involves many of the same issues as face us in deciding between HARM and ALARM. There are complex and possibly conflicting arguments about cost, operational effectiveness, the extent to which improved versions of the weapons are operationally acceptable, the dates when they can be introduced into service, and the industrial, employment, sales and international issues that arise.

4. It will be a little time before I can complete a definitive assessment of the four options I have listed above. When I have done so and when I am satisfied that all the considerations have been fully explored and weighed, I shall be putting a recommendation to my colleagues. In the meanwhile I do not wish to defer a decision on the anti-radar missile for the RAF; and I am sending you this minute now only so that you are aware that a decision on a surface-to-surface guided weapon for the Royal Navy will be needed in the not too distant future.

5. I am sending a copy of this minute to other members of the Cabinet and to Sir Robert Armstrong.

Ministry of Defence
15th July 1983

5 JUL

CONFIDENTIAL

10 DOWNING STREET

From the Private Secretary

Sir Robert Armstrong

Defence Suppression Weapon

Thank you for your minute of 11 July. The Prime Minister agrees that the paper which you attached may be circulated to Cabinet for discussion on Tuesday, 19 July.

A.J. COLES

13 July, 1983.

CONFIDENTIAL

CONFIDENTIAL

10 DOWNING STREET

From the Private Secretary

Dr. Nicholson

Defence Suppression Weapon

The Prime Minister has noted the contents of your minute of 8 July.

A. J. COLES

13 July, 1983.

CONFIDENTIAL

SECRET

Prime Minister 13

Agree that the attached paper by officials should now be circulated to Cabinet for discussion on 19 July?

Yes

A J.C. 12/7.

Ref. A083/2034

PRIME MINISTER

Defence Suppression Weapon

At the meeting of OD on 30 June, I was instructed to prepare a note of the facts and issues, to be agreed so far as possible with the Departments concerned and to state differences of view where those needed to be exposed, which would serve as a basis for a discussion by the Cabinet.

--- 2. I attach the note, the terms of which have been agreed with officials in the Ministry of Defence, Treasury, Foreign and Commonwealth Office and the Department of Trade and Industry. If you agree, I propose to circulate it to the Cabinet early in the week beginning 11 July for discussion probably on Tuesday 19 July (since the Foreign and Commonwealth Secretary will be abroad on 14 July).

3. The paper does not cover the wider issues involved in decisions to develop British weapons rather than to purchase them from abroad, but confines itself to the specific question of the choice of a defence suppression weapon. But you should be aware that the HARM/ALARM decision is only one of a number of defence equipment decisions which Ministers are likely to be asked to take in future months. There is, for example, the question of a replacement for the Exocet ship-to-ship missile (which would of course require the application of homing head technology). I understand that the Ministry of Defence are not yet ready to put any recommendations on this question to the Secretary of State for Defence, and I do not think that a decision on the defence suppression weapon should be held up on that account. It is widely known that Ministers are considering the choice between HARM and ALARM, and the wrong impression might be given if a decision were further delayed.

RobA

ROBERT ARMSTRONG

11 July 1983

SECRET

A DEFENCE SUPPRESSION WEAPON FOR THE ROYAL AIR FORCE

Note by Officials

Requirement

The Royal Air Force have a requirement for a missile capable of suppressing the radars and electronic components of missile defences. Without such a missile the new Tornado aircraft, which from 1985 will be equipped with the airfield attack weapon JP233, will be unable to penetrate the air defences which the Warsaw Pact is expected to deploy without suffering very high attrition rates.

2. The requirement is for 750 missiles, possibly increasing to over 1,000 if funds are available.

3. The United States also plans to deploy aircraft equipped with modern defence suppression weapons. Other NATO countries have expressed interest in such weapons, but none has yet taken a decision.

Options

4. The choice is between two missiles -

a. HARM is a missile already developed in the United States which will be produced for the US Forces by Texas Instruments. Proposals have been made under which an element of final development and a substantial part of production to meet a British order would be carried out in the United Kingdom by British firms under the leadership of Lucas Aerospace, though

the high technology homing head would be supplied entirely from the United States. The cost of 750 missiles would be £254m (all figures in 1982/83 prices); of this 53% would be on a fixed price basis, and the final price paid for the remaining 47% would be the same as the US Forces would pay. The cost for 1,000 missiles would be £309m. These estimates assume an exchange rate of £1 - $1.59. Under the original offer which assumed a firm order being placed by 1 April 1983, sufficient missiles for an initial operational capability could have been delivered by September 1986 - the In Service Date (ISD) - with the full 750 order being completed by January 1991. Texas Instruments have advised that these dates now have to be slipped in step with the delay in signing the contract, which would mean an ISD of January 1987. It would be possible to purchase HARM entirely from the United States at a slightly lower cost, estimated at £235m for 750 missiles or £292m for 1,000 missiles, though with a fixed price element of only 10%; but since the cost saving would be small and there would be no involvement of British industry, this option is not considered further.

b. ALARM is a missile which would be developed by British Aerospace Dynamics in conjunction with Marconi Space and Defence Systems (part of GEC), Thorn-EMI and other firms. Some early development work has been done at both the firms' and Government expense and British Aerospace have offered a fixed price development and production contract at a total cost of £388m for 750 missiles and £426m for 1,000 missiles. The contract would provide for the first 100 missiles to be delivered by August 1987 and for deliveries to be complete by September 1989. Failure to deliver the first 100 missiles on time would render British Aerospace liable to liquidated damages of up to £0.5m (a similar premium would be payable by the Ministry of Defence for early delivery).

Uncertainties

5. The choice of missile is complicated by a number of uncertainties. These affect delivery and operational capability, final cost and export potential.

6. Sharing the order between HARM and ALARM would be the most expensive course of all, and we have not considered it further in this paper.

Delivery and Operational Capability

7. The Americans have demonstrated that HARM works, but the missile will not necessarily be capable of dealing with improvements in Warsaw pact defences in the 1990s without itself being improved. ALARM is as yet undeveloped, but the concept is more advanced than HARM: it incorporates the latest technology, particularly in software, and would therefore be more readily capable of being enhanced to deal with improvements in Warsaw Pact defences in the 1990s (although there must also be some uncertainty as to how the threat develops and what will be needed to meet it). We should be able to develop it to meet our own requirements and should not be dependent on improvements which the Americans might decide to introduce in HARM.

8. But there must be a question mark over the ability of British Aerospace and its sub-contractors to develop ALARM to an acceptable standard in the four years which they have allowed. Past experience of weapon developments, both in the United Kingdom and the United States, suggest that a six-year development programme would be more realistic. The contractor's development plan is based on optimistic assumptions and allows virtually no time for the solution of any serious problems that arise. There is a risk of

some slippage in deliveries. This has to be weighed against the financial incentive on the firms to deliver on time and the need to supply the RAF with an operationally fully acceptable weapon. If nevertheless delays occurred and the RAF had to face a conflict without an adequate weapon, it would take between 6 and 12 months, assuming full US co-operation, to adapt the RAF Tornado to operate HARM.

9. On final cost the ALARM programme on the face of it has a greater degree of certainty than HARM, since 97% of the work would be on a fixed price basis subject only to increases due to inflation. As is usual under such arrangements, it is the contractor who would be liable for all increases in cost caused by delays or failures on his part to meet the agreed programme; this could cost him up to £3m for every month overrun. British Aerospace could be expected to exploit every opportunity to overturn the fixed price contract, but the Ministry of Defence would be obliged to meet additional costs if, and only if, delays arose from Government failure to provide trials or other facilities. If the total number of missiles ordered by the RAF were increased, the cost differential would fall: for example, if 2,000 missiles were bought the extra cost of ALARM over HARM would fall from £134m to £70m.

10. The final price of HARM is not within our control, since we should have to pay the same price for the seeker head, which would be manufactured in the United States, as would be paid by the United States Forces themselves. The cost could therefore increase if improvements were introduced to meet the requirements of the US Forces, or be reduced if the US Department of Defence secure savings in the price. The cost differential between HARM and ALARM is also subject to fluctuations in the real exchange rate of the £ against the dollar. For a 5 per cent change in the rate the cost differential on 750 missiles would change by about £10m.

11. Export prospects are also unclear. If the UK purchased HARM, Lucas would have an excellent opportunity to export the components which they would be making in Britain to the United States for incorporation in missiles which would be assembled there for delivery to US Forces and to export customers for HARM. They would have the right to compete with US suppliers for US domestic and export sales expected to total 25,000 missiles. Their share of the work, providing they were competitive, has been estimated at about 10 per cent equivalent to 1,550 missiles. Prospects for exports of ALARM are uncertain. HARM will be a powerful rival, particularly for those countries who already have United States aircraft and missiles: and the UK's past success rate in selling British weaponry against direct US competition is not encouraging. The Ministry of Defence believe that British Aerospace could at best hope to win some 25-30 per cent of the third country market, ie some 1,250-1,500 missiles. The Treasury judge it more likely that there would be no export business for ALARM, particularly if it proves to be uncompetitive on time and price.

Technological factors

12. The development of ALARM would be one way to retain in the United Kingdom a capability in homing-head technology. Marconi is the only British firm with this capability. They have successfully developed a number of missiles and are at present engaged in completing the homing-head for the airborn anti-ship missile Sea Eagle. The ALARM programme would provide continuity and keep the present development team together.

13. Homing-head technology will be of great and increasing importance in modern weapon systems as the emphasis switches to "fire and forget" missiles. Their value was demonstrated in the Falklands conflict (Exocet is such a missile) but will be even more vital in the sophisticated electronic environment in which NATO would have to fight any future battle against the Warsaw Pact.

14. There is no real risk in the foreseeable future that the United States will either cease developing weapons of this sort or would refuse to supply them to a major NATO ally such as the United Kingdom. The Ministry of Defence nevertheless judge it essential on defence grounds to retain in this country a homing-head and guided missile technological base. Moreover, if British industry loses such a capability it will become progressively less able to compete in the market for modern weapon systems both for our own forces and for export.

15. The Ministry of Defence considers that much the most effective way to maintain this capability would be to develop and manufacture ALARM. No other programme using anti-radar technology is ready to go into development: in the absence, therefore, of an order for ALARM the expertise in British industry would be endangered and perhaps lost. The Treasury, on the other hand, believe that it would be possible to preserve the capability in British industry for relatively modest expenditure, much less than the extra cost of ALARM over HARM, by bringing forward national work on other future missile projects and by financing a supporting programme in key aspects of missile technology. The Department of Trade and Industry consider that a decision in favour of ALARM would be an excellent example of a public purchaser supporting important technology and would be consistent with the Government's policy of buying British when British industry is competitive in terms of price, performance and technology.

16. Another possibility would be to seek British participation in an American programme to develop an improved homing-head for HARM. But prospects are highly uncertain. Much depends on the nature and timing of the improvements which the US Forces will want. We cannot therefore know whether the programme could provide development work for which Marconi would be suitable. There could be technical problems in integrating a British homing-head into an American missile, particularly as there would probably be commercial and political obstances to overcome in this highly competitive and sensitive area of defence technology. In order to protect their technology, the US Government have already stipulated that we may only have the existing HARM homing-head through Government channels and that we would have to return it to the United States for repair. The judgement of HM Embassy in Washington is that the chances of Marconi attaining any significant share in an American homing-head development programme are doubtful.

Industrial considerations

17. The ALARM programme would generate some 9,400 man years of work over 7 years in British industry. The employment would be mainly in the London area, the South of England and Lancashire. HARM would generate some 3,500 man years of work over 8 years, mainly in Lancashire and the West Midlands. In both cases, the value of export potential in job terms is assessed as about 5,000 man years, but the calculation is difficult and cannot be stated with any great precision. In the context purely of employment considerations, the Treasury point out that, leaving aside the uncertain export prospects, each additional man-year bought by purchasing ALARM would cost approximately £25,000 (about 10 times the cost per man-year of the Government's special employment measures).

18. The Treasury also point out that the saving of £134m if HARM were preferred to ALARM would remain available to the defence budget for purchases of other defence equipment, and orders could be expected to go primarily to British industry (over 90 per cent of defence procurement is placed in the UK).

Budgetary considerations

19. On the basis of present estimates the ALARM programme would cost £134m more than HARM, a margin of some 55 per cent. The extra cost of ALARM falls primarily in the PES years 1984-85 to 1986-87. To accommodate the extra costs would require programme changes in other areas. Nevertheless, on the basis of the Government's existing commitment to 3 per cent growth in defence expenditure up to and including 1985-86, the Ministry of Defence believe that they can absorb the extra costs, amounting to £40m a year, without substantial detriment to the rest of the programme.

International aspects

20. We have argued firmly with the Americans - in pursuit of a better balance of trade in defence equipment between the UK and the US - that each side should be willing to buy from the other when a competitive product exists, on which research and development has been completed, and which meets the military requirement. Our efforts have had considerable success. Since 1975 defence sales to the US have doubled in real value and the adverse trade imbalance has improved from 3.1:1 in 1976 and 4.4:1 in 1978 to 1.5:1 in 1980 and about 2:1 in 1982 (this contrasts with a balance between the US and Europe of about 8:1). Notable successes during that period have been the sale

of Rapier (£153m), combat support boats (£20m), medium girder bridge (£70m), head-up displays for combat aircraft (£113m), ship stabilisers (£16m), AV8B (the British Aerospace/McDonnell Douglas development of the Harrier - at least £500m). There are good prospects of maintaining the balance at current levels at least over the next 2 years or so.

21. In these circumstances a decision not to buy HARM, which is known to be available soon and more cheaply and to be operationally acceptable, could expose us to criticism in the United States and could undermine the efforts which our friends in the Administration and Congress have been making to secure a change in American attitudes to purchases of defence equipment from Britain. Our Embassy in Washington advise that a decision to buy ALARM would undercut the arguments we have been using with the Administration and with Congress and would not be understood even by those in the Department of Defense who are sympathetic to our cause.

22. A decision to purchase HARM would not of course guarantee favourable treatment for other prospective sales of UK defence equipment to the US; the protectionist tides in Congress are strong. But for this very reason a decision in favour of ALARM despite its higher cost could have a negative impact on our prospects elsewhere. The possibility of retaliation against other British sales interests - by Congress, if not by the Administration - cannot be ruled out, although explicit linkage between this decision and specific UK sales is perhaps unlikely. Prospective British sales to the US include the Hawk trainer (£750m) on which a decision in principle has been taken, additional Rapier (£50m), addditional combat support boats (£22m), 81mm mortar (£250m), Searchwater radar (£50m), and ICS3 (a naval

communications system - (£50m)) - figures in brackets are approximate. Crucial decisions on some of these items - eg Searchwater and perhaps Hawk - could be made before the end of this year.

Conclusion

23. The choice to be made turns on four key factors, and a judgement has to be made about the weight to be attached to them individually and in the round. They are:

(a) operational capability (in the short and in the longer term);

(b) cost and budgetary aspects;

(c) importance of indigenous technological capability;

(d) the international dimension.

24. On operational capability the main questions are:

(a) in the long term ALARM can be more readily enhanced to deal with improvements on Warsaw Pact defences: decisions on improvements to HARM will be in the hands of the Americans (paragraph 7);

(b) in the short term the risks involved in the development of ALARM could lead to a period when the RAF's ability to penetrate Warsaw Pact defences would be reduced (paragraph 8).

25. The cost and budgetary aspects can be summarised as follows -

(a) at present prices, HARM costs £134m less than ALARM: the final cost difference could be less or more depending on relative inflation in te USA and UK, exchange rate movements and changes in the requirement (paragraphs 9-10);

(b) purchasing ALARM would put some extra pressure on the defence budget in the PES years and could involve defence programme changes in other areas (paragraph 19).

26. The importance of indigenous technological capability, together with the related question whether the ALARM programme is the best way of retaining it, is a matter on which Departments differ. The important area is the homing-head. Departments agree that homing-head and guidance technology will be of increasing importance in modern weapon systems. They disagree on whether the ALARM programme represents the only effective way of preserving the technology and the weight to be attached to the economic and industrial factors (paragraphs 12-16).

27. The international dimension consists primarily in the negative effects which a decision to buy ALARM might have on prospective sales of British defence equipment to the United States (paragraphs 20-22).

SECRET

COPY NO 1 of 8

W.0419

PRIME MINISTER

DEFENCE SUPPRESSION WEAPON

There is a strategic issue in the HARM/ALARM decision which I should draw to your attention.

2. While Cabinet will be concerned at the additional cash cost of ALARM, it should also consider the skilled manpower implications.

3. The country's manpower resources in the critically important skills in this programme are under strain and even the start of the Alvey programme has shown that some areas of work, eg expert systems, will be manpower-limited rather than cash-limited.

4. Of course a substantial increase in our production of appropriately skilled scientists and engineers is a part of the Alvey programme and of the Government's earlier IT initiative. But this resource will not become available overnight. In the meantime the Government must make sure that its own decisions do not impede the most effective deployment of what we have got.

5. It is a fact that members of the research, design and development team who will be working on ALARM are precisely the sort of people needed for the teams working on micro computers, educational software, consumer electronics and all the new products of Advanced Information Technology. Their deployment on ALARM will not produce any significant spin-off of relevance to these areas.

6. A central objective of the Government is to ensure that obstacles to economic expansion are removed so that resources can flow to the new areas of expansion eg the new technologies and the large civil markets

SECRET

that lie open for their products. Unfortunately industry will always tend to plead for "keeping the team together" and "maintaining indigenous technology in defence." The markets offered by domestic defence procurement (however small) have always been attractive to industry because they offer a captive customer and a certain profit in contrast to what is available in the tougher and more competitive civil world market place. Although I do not pretend that a decision on a single weapons system is critical, repeated yielding to such pleas from industry is hardly consistent with policies designed to remove Government distortions and protection and to encourage industry to put its efforts and its resources into the activities which offer the greatest opportunities for economic expansion.

7. On a subsidiary matter, I should also make a comment on the so-called 'fixed price' of ALARM. The ALARM programme is in its early stages. BAeD and GEC scientists and engineers will come up with improvements which the customer, having chosen the system partly because of technological leapfrogging, will find irresistible. The specification will change resulting in an increased cost to HMG. This is one of the mechanisms of 'technological inflation' which is so prevalent in defence procurement. Thus the 'fixed price' is, in part, illusory and should not, in my opinion, influence the decision.

I am sending a copy of this minute to Sir Robert Armstrong.

ROBIN B NICHOLSON
Chief Scientist

Cabinet Office
8 July 1983

Defence Procurement & Weapon Systems Mai 83

HARTE/ALARTT

CFor GR?

Kay

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Kay

Thanks

PS)

10 DOWNING STREET

From the Private Secretary

1 July 1983

The Prime Minister has read and noted the contents of your letter of 28 June, for which she has asked me to thank you.

A. J. COLES

The Rt. Hon. John Peyton

1 of 10

11

A DEFENCE SUPPRESSION WEAPON FOR THE RAF

1. This paper seeks to analyse the key criteria on the basis of which a decision will have to be taken by Ministers on the purchase of a defence suppression weapon for the RAF. The competitors are:

a) HARM (High Speed Anti-Radiation Missile): a US missile manufactured by Texas Instruments, which is available either;

i) by direct government-to-government purchase on Foreign Military Sales (FMS) terms (ie at the price paid by the US Government, plus administrative costs); or

ii) by purchase from a combination of Texas Instruments and a group of British companies led by Lucas Aerospace, who have concluded coproduction arrangements providing for a roughly equal share in the UK and the US of manufacture of a British buy of HARM.

b) ALARM (Air Launched Anti-Radar Missile): this is offered by British Aerospace Dynamics Group (BAe), with Marconi (MSDS) the major subcontractors. Nobody appears now to be arguing for option (a)(i). Effectively, the choice is between (a)(ii) and (b).

2. The principal criteria on which a decision will have to be based and the relative performance against these criteria of the competing missiles are described below.

a) Technical Considerations and Operational Requirement

3. The RAF would be prepared to accept that either missile would meet the operational requirement. ALARM is judged to have

greater potential to operate in the more complex environment expected after 1990; however, there is some uncertainty about what that environment will comprise, and we would expect HARM technology to have advanced by that time (although we would of course have to purchase new equipment to upgrade the performance of HARM if we bought it now). Both systems have operating deficiencies. In the case of ALARM these were serious enough to require modifications to be made to BAe's initial proposals and the cost shown below provides for almost all of these in the fixed price. Moreover, while HARM already exists (the US Government has already decided to launch full production), ALARM is still on the drawing board. This is particularly important in the context of the RAF's need for an early in-service date. Pending procurement of a defence suppression weapon, RAF Tornados will have no direct capability to destroy Warsaw Pact radars (£6 and a half billion have been invested in the strike version of the aircraft). HARM can be in-service by September 1986, with little risk of slippage. BAe claim that ALARM can meet an in-service date of August 1987, but given the complexity of the development programme, MOD consider August 1989 as more realistic.

b) Costs

4. Comparative costs of 750 missiles (the RAF requirement) are as follows (at 1982/83 prices):

HARM (FMS)	HARM (Coproduction)	ALARM
£235m	£254m	£388m

The HARM price is approximate. It is subject to the price finally accepted by the US Government and to the exchange rate. There is a chance that the FMS price might be less than the above estimate because of pressure by the US Government on Texas Instruments which has required the latter to suggest modifications which could significantly reduce unit price. BAe have proposed a fixed price contract. But there are grounds for believing

/that

that BAe may be unable to stick to this. The expected 2-year slippage in the programme could cost BAe some £60-70 million. MOD would expect BAe to seek every opportunity to slip out of their obligation to maintain a fixed price. In practice BAe might well succeed.

c) Employment

5. The following figures showing the relative employment benefits to the UK of the ALARM and HARM (coproduction) options are based on production of 750 missiles and exclude potential overseas sales:

ALARM - 8950 man years over 7 years

including	BAe Hatfield	2500 man years
	BAe Bracknell	950 man years
	*BAe Lostock	2000 man years
	MSDS Stanmore	600 man years
	MSDS Portsmouth	750 man years
	Thorn-EMI Feltham and Hayes	500 man years

* Even with ALARM, the underloading at BAe Lostock (situated between Bolton and Blackburn) will be 20% in 1986 and 35% in 1987. Thus the factory may well have to close whichever weapon is selected.

HARM Co-Production - 3450 man years over 8 years

including	Lucas, Hall Green Birmingham	900 man years
	Lucas Burnley and Bradford	1600 man years
	ROF Bridgewater, Chorley and Patricroft (nr Eccles)	900 man years

NOTE: MOD(PE) accept the figures quoted for ALARM, but consider that those for HARM Co-Production may be too high.

The HARM coproduction jobs are concentrated in areas of already high unemployment, whereas the majority of BAe jobs are in the south of England. The substantial sum saved by the purchase of

HARM would be available to enhance defence capability elsewhere and could in the process generate new jobs.

d) Technology

6. Acceptance of the BAe bid would enable the UK (primarily Marconi) to maintain a significant capability in guided weapon technology through Marconi's work on the seeker head for ALARM. Purchase of the coproduction versions of HARM would offer us only limited access to US technology in this area, since the seeker head would be sold complete on a government-to-government basis. There are differences of view on the importance of the UK maintaining a foothold in this technology; the MOD view now is that this is vital, but this is questioned by the Treasury. Moreover, it is argued by some that MOD should be able to fund development and supporting technology programmes to maintain UK companies' technological capability in this field for far less than the extra cost (£134m) of purchasing ALARM; arguably this would leave the UK in a much stronger position to compete in the world market for second generation defence suppression weapons. MOD, however, consider that full-scale project development work is essential to maintain a competitive position in this technology.

e) Sales

7. There are substantial differences of view on both the size of the world market and of the likely UK share. BAe identify a total world market (excluding US, UK and the communist world) of some 20,790 missiles, of which they claim a reasonable prospect of selling between 4000 and 6000. MOD (Defence Sales) regard these figures as far too optimistic. Their survey identifies a world market up to the year 2000 of some 4000 missiles of which ALARM would not capture more than about 1250.

8. Not surprisingly, Lucas Aerospace claim that BAe would have virtually no success with overseas sales. They base this on the argument (which is not unconvincing) that virtually all the

/potential

potential purchasers of anti-radar missiles operate US aircraft, that the UK's past success-rate in selling British weaponry for operation with US aircraft is virtually nil and that owners of American aircraft can therefore be expected to purchase HARM. They therefore argue that the UK's best chance of entering the world market is through coproduction arrangements on HARM, which would also provide an opportunity to supply components for the US market (of some 14000-21000 missiles in total). There is, however, no guarantee that Lucas Aerospace would gain a share of the HARM production for either the US or the world market. They would have to compete with other companies, most of whom would be American, for subcontracts with Texas Instruments. They claim, however, that both their track record in the US market and their current competitiveness should place them in a strong position in competition for subcontracts for a substantial share of US production of HARM. But without a British purchase of the coproduced HARM, Lucas would be unable to compete for a share of the action in the US, since only the UK purchase would provide them with the funds they require to set up a production line.

9. However, Defence Sales judge the relative saleability of the two missiles as roughly balanced: while HARM is more complex to instal it has greater range and speed, and is available earlier, and Defence Sales agree that it would tend to follow aircraft sales. BAe claim that ALARM, as offered, should be cheaper (because the price, unlike that on offer to the MOD, will not have to take full account of development costs) and relatively easy to instal, although it is slower and has a shorter range.

Ref: B06812

PRIME MINISTER

c Sir Robert Armstrong

OD: A Defence Suppression Weapon for the Royal Air Force

BACKGROUND

The Committee discussed on 16th June the choice of a defence suppression weapon for the Royal Air Force but took no final decision as between HARM and ALARM. They invited the Defence Secretary to give a presentation on the ALARM programme and the Foreign and Commonwealth Secretary to obtain the advice of our Ambassador in Washington on how best to explore the possibilities of improved terms for a purchase of HARM.

2. The presentation will be given in the Cabinet Office Briefing Room (Conference Room F) by Air Chief Marshal Sir John Rogers, who is Controller (Air) in the Procurement Executive of the Ministry of Defence: he will be supported by his deputy, Dr Pope, and by Air Vice Marshal Harcourt-Smith (Assistant Chief of the Air Staff), Air Commodore Brown and Mr Hazel. It will last about 30 minutes; there will then be an opportunity for questions, after which Ministers will return to the Cabinet Room for further discussion. The Chief of the Defence Staff has been invited.

3. The key facts are -

a. ALARM has still to be developed. British Aerospace would be the contractors, in association with Marconi, Thorn-EMI and others. They have offered a fixed price contract (subject to inflation) at a total cost of £388 million and promised an in-service date of August 1987. The project would generate 9,400 man years of work for British industry, and ensure that Britain retains a capability in this area of missile technology.

b. HARM has been developed by Texas Instruments in the United States but production would be shared with Lucas and the Royal Ordnance Factories, at a total cost of £254 million with an in-service date of September 1986. The homing head would be produced in the

United States and would have to be returned there for repair. The project would save 2,500 jobs in the West Midlands which Lucas would otherwise have to shed.

4. The key uncertainties can be summarised as follows.

a. HARM is already developed; any necessary improvements will be done by the Americans who will buy some 20,000 missiles. ALARM is not yet developed; it may slip by two years, or possibly longer, leaving the RAF without an effective missile for the Tornado aircraft.

b. ALARM will enable British industry to keep up with advanced homing head technology. It is unlikely that the Americans will allow us any share in the high technology aspects of HARM; nor is it clear whether British industry could be kept in the forefront of this technology in other ways, such as by the Ministry of Defence financing a research and development programme for a future missile.

c. Export prospects: if we buy HARM, Lucas will be well placed to export components to the United States. The Chairman of Lucas believes that it could obtain 25 per cent of the value of the total United States HARM programme, apart from the guidance section. But there can be no absolute guarantee of exports. Export prospects for ALARM are highly uncertain, given the strong competittion from HARM.

d. Jobs: it is at least possible that HARM will in the end produce as many jobs for British industry as ALARM, but at this stage nobody knows.

HANDLING

5. The main purpose of the presentation is to equip Ministers to judge whether the ALARM programme is likely to provide the RAF with an effective missile in reasonable time. If there is a serious risk that the programme will suffer the sort of delays and cost increases which affected the Stingray torpedo, then it would be prudent to go for HARM, which is already developed. The worst of all worlds would be if delays in ALARM forced us later on to make an interim purchase of HARM missiles in order to give the Tornado

aircraft an adequate weapon. The most important factors therefore are the degree of technical risk in the ALARM programme and the quality of the management teams in British Aerospace Dynamics, Marconi and the Ministry of Defence.

6. The other key question is whether ALARM offers the only real opportunity of retaining a capability in homing head technology in the United Kingdom. Does our Ambassador at Washington see any future in trying to get the Americans to offer better terms for a purchase of HARM? On this point, could the United States Administration deliver the Congress and American industry even if they wanted to? What plans have the Ministry of Defence for developing the Short Range Anti-Air Missile (SRAAM), which itself could keep British industry in the forefront of this technology? Will ALARM really give us a competitive lead over the Americans in the 1990s?

CONCLUSION

7. If the decision is in favour of ALARM, you will wish to stress the vital importance of ensuring that

a. the contractors give the programme their maximum management effort in order to ensure that its keeps to time and specification;

and b. the Ministry of Defence do not alter the specification in such a way that the contractors are given an excuse for delay and increased costs.

It will also be important to make it clear both to the Americans and to British industry that the decision does not mean that defence orders will always go to British rather than foreign industry: the decisive factors in each case will be the extent to which British industry can meet the technical specifications in time and at a reasonable price, the importance of the technology in terms of our overall defence and national interests, and the value of the order to the health and international competitiveness of the industry concerned.

David Goodall

29th June 1983

A D S GOODALL

$1.5 9

Reference "Brochu"

Lucas. 53 | 97 Cost — Vacancy of U.S. jobs
less than 1 year Time — 2 years more time required (36 to 40-years delay)
Technology

How
defied
(cost for 2 years.
New Leader
1990's)

10

Foreign and Commonwealth Office

London SW1A 2AH

29 June, 1983

Prime Minister

Dear Tony,

A Defence Suppression Weapon for the RAF

At their last meeting to consider this question on 16 June, Ministers invited the Foreign and Commonwealth Secretary to obtain the advice of our Ambassador in Washington on how best to explore the possibility of improved terms for a purchase of HARM, including Marconi's participation in an American advanced homing-head programme. We have accordingly been in touch with the Embassy in Washington, in terms agreed with MOD officials. I enclose a copy of our telegram, and of Washington's reply. Ministers will no doubt wish to have these documents before them when they meet in OD on Thursday 30 June for further consideration of this subject.

I am sending copies of this letter and enclosures to the Private Offices of members of OD, and to PS/Sir Robert Armstrong.

Yours ever

Roger Bone

(R B Bone)
Private Secretary

A J Coles Esq
Private Secretary
10 Downing Street

From Chairman:
The Rt. Hon. John Peyton, ~~MP~~
6 Temple West Mews,
West Square,
London, S.E.11.
Telephone 01-582 3611

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TELEPHONE: BEDFORD 67466 · CABLES: TEXINLIM BEDFORD TELEX: 82178

Mr John Coles
Private Secretary to The Prime Minister
10 Downing Street
LONDON SW1

28 June 1983

done.

Dear John

Here is the letter about which we spoke on the telephone this morning.

I would be very grateful if you would be kind enough to put it in front of the Prime Minister.

Yours sincerely

Thank you very much.

(2)

From Chairman:
The Rt. Hon. John Peyton, MP
6 Temple West Mews,
West Square,
London, S.E.11.
Telephone 01-582 3611

TEXAS INSTRUMENTS LIMITED
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The Rt Hon Margaret Thatcher MP
Prime Minister
10 Downing Street
LONDON SW1

28 June 1983

Prime Minister
If you agree I will thank him for his useful letter and say that we hope it will be possible to arrive at an early decision.
A.J.C. 29/7.

Dear Prime Minister

Now that we are nearing the end of the HARM/ALARM argument, Godfrey Messervy, Chairman of Lucas and I are satisfied that we have enjoyed some success. We also feel anxiety lest we have failed to eliminate some fairly deep rooted misconceptions.

We are reasonably confident that so far as the merits of the two missiles are concerned we have had the better of the argument; HARM exists and works; moreover the RAF need it and want it. It also enjoys a considerable price advantage.

At the same time, we fear that we may not have succeeded in convincing Ministers of the considerable worldwide market opportunities which would open up to Lucas, if the Government decided to buy British HARM. Both Lucas and Texas Instruments are convinced that this would be of the order of £200m.

We also fear that somehow or other the impression has grown that the jobs argument favours ALARM. We believe that while there is not much in it in the short term, the market which Lucas would be entering with HARM would endure for 20 years or more - as would the jobs.

From Chairman:
The Rt. Hon. John Peyton, ~~MP~~
6 Temple West Mews,
West Square,
London, S.E.11.
Telephone 01-582 3611

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We understand the inclination of Ministers to use, if at all possible, this opportunity to establish a UK based microwave technology; we believe however, there are other and better opportunities for doing so in the anti-radar missile field. Had it been clear from the outset that this consideration would be decisive, neither Texas Instruments nor Lucas could have taken part in the contest.

Yours Sincerely

John Peyton

CONFIDENTIAL

Prime Minister.

Ref. A083/1885

MR COLES

HARM/ALARM

--- The Prime Minister may like to see the attached copy of a letter which I have received from the Chairman of Lucas about the export prospects for HARM.

2. I should also say that Mr John Peyton rang up this morning, indicating that he might seek a meeting with the Prime Minister on this subject. I suggested that he should approach you.

I asked him to send a letter instead — submitted to Prime Minister last night. A.J.C. 29/6.

RDA

ROBERT ARMSTRONG

28 June 1983

CONFIDENTIAL

Lucas

Chairman

Lucas Industries plc
Great King Street
Birmingham B19 2XF

Telephone: 021-554 5252
Telex: 338681

Sir Robert Armstrong GCB CVO
Secretary of the Cabinet
Cabinet Office
70 Whitehall
London SW1A 2AS

27 June 1983
GM / DT

Dear Robert, cc- Mr Goodall
Mr Facer

In a meeting last week the Chief Secretary to the Treasury put the following question to John Peyton - "how copper bottomed is the assurance that Lucas will get its share of future sales of HARM to 3rd countries and to the USA?". I thought a note from me to clarify the position might be helpful.

Disputed by DAe MR 29/6

Worldwide HARM sales are likely to be around 25,000 of which up to 20,000 will be in the USA. Apart from the United Kingdom it is expected that almost all the remainder will be exported as Foreign Military Sales by the United States. Thus the major opportunity to gain a share of the overall market is through the US programme.

Given that the UK buys HARM, Lucas Aerospace has an unrivalled opportunity to export weapon sub-assemblies back to the United States of America. The US Government has just confirmed its decision to increase the production rate of HARM from 25 per month to 250 per month. Texas Instruments purchases around 70% of the weapon by value and have stated that they will need to increase the number of suppliers on every bought out item to cope with this increased requirement. Any new suppliers will need extra programme funding to qualify them as HARM component manufacturers. The UK team comprising in particular Lucas Aerospace and the Royal Ordnance Factories will, however, have the advantage of being already qualified as a consequence of the British HARM programme. In other words, save for existing US suppliers we shall be in a better position than any other company worldwide to capture HARM business. Other potential suppliers must go through an expensive and time consuming vendor qualifying process. They will, in consequence be at a severe competitive disadvantage, requiring additional expense on their own part or that of TI and the US Government. Taking into account the UK cost level on British HARM,

An important qualification MR 29/6

Continued/.....

Lucas and, more significantly, Texas Instruments believe our team will obtain 25% of the value of the total US HARM programme, apart from the guidance section.

Indeed, Lucas have already obtained a production order for actuators and three qualifying contracts for roll motors and rocket motor cases on the US HARM programme. The UK decision to buy British HARM would enable us quickly to turn these initial contracts into bulk orders, both for these few items and the complete range of components comprising the British share of the weapon.

Our confidence in this is founded on our considerable experience over many years in the US missile market. In 1983 alone Lucas Aerospace will sell over three times as much by value to various US missile programmes as to the total UK missile industry. The real copper bottomed guarantee that we can obtain this share of the total HARM programme must ultimately lie in our continuing ability to deliver the goods competitively; this we are doing in the overall US missile area right now. The size of the unrivalled opportunity presented by this programme provides us with the best chance possible to sustain our existing international competitiveness in this market long term.

Our experience with Texas Instruments makes me very confident that we will get a fair deal.

Yours sincerely

Godfrey

GODFREY MESSERVY

CONFIDENTIAL

Treasury Chambers, Parliament Street, SW1P 3AG

Richard Mottram Esq
Private Secretary to the
Secretary of State
Ministry of Defence
Main Building
Whitehall
London SW1A 2HB

28 June 1983

Dear Richard

HARM AND ALARM

Following OD on 16 June, the Chief Secretary was contacted by Michael Colvin MP who seemed remarkably well informed about the discussion and pressed the British Aerospace's case for ALARM. I attach a copy of a note that BAC sent to follow up the discussion. The Chief Secretary was contacted also by the Rt Hon John Peyton, Chairman of the Texas Instruments, (who seemed rather less well informed) and raised with him the question of the security of Lucas's position as sub-contractor. I attach a copy of the letter that he subsequently received.

The Chief Secretary will reply simply to thank those concerned for sending him the submissions and assuring him that their points will be taken into account. Although you may have seen this material before, he has asked me to send copies to you and other members of OD.

Yours sincerely

J.J. Gieve

JOHN GIEVE
Private Secretary

CONFIDENTIAL

From Chairman:
The Rt. Hon. John Peyton, MP
6 Temple West Mews,
West Square,
London, S.E.11.
Telephone 01-582 3611

CHIEF SECRETARY
REC. 24 JUN 83
ACTION Mr I-P Wilson
COPIES TO PPS FST
Mr Middleton
Mr Bailey
Mr Byatt
Mr Pitcairn

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TELEPHONE BEDFORD 67466 CABLES TEXINLIM BEDFORD TELEX 82178

23rd June 1983

Dear Peter

You mentioned to me the other day that there is concern amongst your colleagues as to whether Lucas would have a full opportunity to participate in world-wide sales of HARM by the way of sales of material back to the U.S. I should explain that all sales of HARM to countries other than the U.K. are likely to be handled by the U.S. Government on a F.M.S. (foreign military sales) basis.

U.S. Defence Acquisition Regulations, which govern all such transactions, require that main contractors should satisfy the Department of Defence that their suppliers are competitive. Bearing in mind the level of the company's current bid, I would not expect this to be a source of difficulty.

It is the intention of Texas Instruments to use Lucas Aerospace and its sub-contractors as a second source of supply for HARM components and sub-assemblies. It is our belief that Lucas will be in a position to secure a share in the market of around 25% of the total missile value, excluding the seeker.

I know that those who have worked with Lucas on this project have, like myself, formed a very favourable impression; we shall be doing all we can to help and encourage them.

Yours ever

Tom

The Rt. Hon. Peter Rees, Q.C., M.P.

British Aerospace Memo.

ALARM

Introduction

BAe and its sub-contractors in designing and developing ALARM have met all the requirements laid down by successive Defence Ministers that the missile system should meet the RAF requirements, be competitively priced and should also be exportable. Feasibility studies were completed in 1979 and since then development has continued at a low key with about £5M of company money.

Export

The production to research and development ratio and the total benefit to the UK economy depends to a large extent on overseas sales. The ALARM missile will be substantially cheaper in the overseas market than HARM; £160k to £320k respectively. The £320k figure for HARM being obtained by FRG sources. In addition, ALARM is lighter and can be fitted easily to small aircraft and helicopters. BAe is convinced that ALARM will become a major export earner similar to RAPIER. Irrespective of US claims for the overseas sales of HARM, the majority of defence suppression weapon sales will be achieved by the most competitively priced missile which is ALARM.

The Governments of Germany, Switzerland, Italy and Sweden which have a known requirement for a defence suppression system are awaiting the decision of HMG on whether they procure ALARM before finalising their own procurement. The development and availability of ALARM can enhance exports of British military aircraft such as Tornado and Hawk. In addition, major aircraft manufacturers are already recognising the advantages of ALARM in their own export programmes, eg General Dynamics want to integrate ALARM on export F-16's.

Cost of Purchase

BAe have quoted a fixed price of £276M for the development, production and spares for 750 missiles and have accepted liquidated damages on the delivery of the first 100 missiles. BAe will require no more financial assistance in order to meet the contract and no contingencies should be added to the BAe price. The BAe price per missile to the UK Government is approximately £108k.

Looking at the HARM programme and costs, it is difficult to foresee what price HMG may eventually have to pay for the HARM missile. John Lehman, Secretary of UN Navy, in his letter of 1 December 1982 to

continued . . 2

Chairman, House of Representatives Armed Services Committee, quoted an estimated 1983 price of $439k (£289k) for HARM if he achieved cost cutting exercises and the competition of a second source. As yet, neither has been achieved and the Air Force were told by Defence Secretary, Caspar Weinberger, on 20 April to forget second sourcing and concentrate on developing a new "low cost" seeker head. In addition, the expected US buy of HARM has already been reduced from 21000 to 14000 missiles because of an Air Force cut-back and the Navy are now considering a cut-back which could reduce the total to 9000. It is difficult to see other than escalating costs for HARM with a continuing cut-back in demand and with work already starting on a lower cost alternative. If the UK Government had faith in ALARM and UK technology the US alternative requirement could be met by ALARM.

BAe believe that the eventual price paid for HARM by the UK Government even for 750 missiles will be substantially higher than forecast and the difference in price between the HARM and ALARM buy will be substantially reduced. Also the latest RAF AST 1238 for an anti-armour weapon requires the support of defence suppression weapons in the battlefield. Thus, the eventual RAF missile buy will be much larger than the 750 need for counter-air strikes thus further reducing the price differential if not reversing it.

A financial balance sheet concentrating on overseas sales is shown in Appendix A. The advantage in UK employment and exports is overwhelming in favour of ALARM without any consideration of an increased RAF buy.

The Two-way Street

The ALARM system, in being pitted against the US HARM has uncovered further controversy on the 1975 US/Europe Two-way Street agreement. European companies, including those in the UK are perpetually worried about the apparent imbalance of defence equipment sales and the difficulty of selling high technology equipment against politically entrenched US companies.

Imports deny BAe and other aerospace companies the opportunity to re-invest their profits in product developments, research or capital facilities that will enable them to compete more effectively in the next generation weapon systems. Indeed, they compound the problem by offering the overseas manufacturers the opportunity to improve their research and capital facilities. Technological developments emanating from the defence industry have a considerable impact on industry generally. Anything that restricts technological advancement must

continued . . 3

have an adverse effect on industry as a whole. It is understood that the United Kingdom is procuring some £5-6 billion worth of advanced equipment from the United States over the next 5 years. This includes Trident, Chinook helicopters, Phantom aircraft and HARPOON missiles with other equipment being considered. Offset for British industry is always difficult to achieve and we are already facing major resistance from the United States on Trident. In addition, a member of the House Banking, Finance and Urban Affairs Committee is seeking to initiate legislation restricting the use of offsets.

The initiatives of the US Under Secretary of State for Defence, Dr DeLauer, on industrial co-operation between the United States and other NATO countries are recognised. However, it should be pointed out that the programmes proposed either contain no high technology or missile programmes and would probably provide more technology to the United States than would be available to Europe. This is re-enforced by the proposed MoU between the Federal Republic of Germany, United Kingdom and the United States concerning the long range stand-off missile system. This MoU categorically states that no high technology will be transferred by the United States or United States industry to other participating governments.

In the particular case of ALARM versus HARM, it is believed that one of the reasons for pressure being applied from the US is due to their planned domination of the world market for defence suppression weapons. The emergence of ALARM with its potentially wider fit capability and of course its lower price, means that HARM, whose production numbers have already been reduced, could be further restricted. This would have the effect of increasing the price of HARM beyond that already anticipated.

HARM, should it be purchased by HMG, will not result in any high technology development or production offsets in this country and those parts which are offset are those which would be offered to other countries to support sales.

As far as other possible deals with the USA are concerned, BAe and GEC do not want ALARM to be offset against any possible US purchase. They wish each case to be considered separately and fought on its own merits. ALARM must not be used as a "sweetener" to the USA.

Conclusion

The missile price of ALARM is fixed and in the out-turn will be substantially less than that of HARM. Also the number of missiles that the RAF will eventually have to buy will more than offset the cost of developing ALARM. In addition the competitively priced missile ALARM will capture a very large slice of the world market for defence suppression and prove a major export earner.

GW/JMP 22 June 1983

Appendix A

THE HARM/ALARM BALANCE

FINANCIAL

A. HARM

1. UK Buy of 750 HARM at £170k per missile = £128M
   Lucas Aerospace Share = 50% x £128M = £64M
2. Lucas expect 10% of US Market
   ie 14,000 x 10% = 1400 missiles = £238M
3. For HARM export other than UK assume that Lucas get 10% of 4000 missiles
   = 400 missiles = £68M
4. Total Lucas revenue = £370M
5. Excess revenue (less UK buy) = £242M

NB HARM missile price assumed £170k

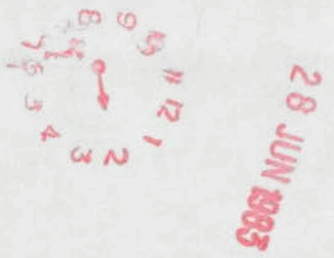
B. ALARM

1. UK buy of ALARM (750) (includes R & D etc) = £276M
2. 4000 ALARM export
   (ALARM export price £160k) = £640M
3. BAe revenue = £916M
   and excess revenue (less UK buy) = £640M

Therefore ALARM and HARM on the same basis, ALARM advantage is £640M-£242M

= £398M

DEFENCE : Norm / Atom March 83



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SECRET

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9A

YOUR TELNO 1013: ANTI-RADAR MISSILE.

1. OUR ASSESSMENT OF THE POINTS IN PARA 3 OF YOUR TELEGRAM UNDER REFERENCE (BASED IN PART ON DISCUSSION WITH THE OFFICE OF THE UNDER SECRETARY OF DEFENCE FOR RESEARCH AND ENGINEERING) IS AS FOLLOWS:-

(A) OUSDR AND E ARE STRONGLY IN FAVOUR OF DEVELOPING A CHEAPER, SMALLER, AND MORE EFFECTIVE SEEKER HEAD. THIS VIEW IS NOT UNIVERSALLY SHARED, HOWEVER, AND THE NAVY ARE OPPOSED TO THE PROJECT. EVEN IF IT WERE AGREED THAT THERE WAS A REQUIREMENT FOR AN IMPROVED SEEKER HEAD, NO REQUEST FOR PROPOSALS WOULD BE ISSUED IN LESS THAN THREE TO SIX MONTHS:

(B) OUSDR AND E INSIST THAT ONLY AN IMPROVED SEEKER HEAD IS BEING CONSIDERED. THERE ARE NO PLANS AT PRESENT TO DESIGN A NEXT GENERATION OF WEAPONS:

(C) IF WE DID NOT BUY HARM, THERE WOULD BE VIRTUALLY NO CHANCE OF MARCONI PARTICIPATING IN THE PROGRAMME:

(D) IF WE DID BUY HARM, THERE WOULD BE SOME PROSPECT OF A ROLE FOR MARCONI BUT ONLY IF THEY HAD SOMETHING SIGNIFICANT TO OFFER. OUSDR AND E WOULD BE LIKELY TO LOOK MORE FAVOURABLY ON MARCONI'S INVOLVEMENT THAN THE US NAVY. WE JUDGE IT HIGHLY UNLIKELY THAT MARCONI WOULD BE ABLE TO BID FOR THE DEVELOPMENT PROGRAMME THOUGH THEY MIGHT BE ABLE TO OBTAIN A SUPPORTING ROLE:

(E) THE NATURE OF THE SYSTEM HERE AND THE STRENGTH OF CONFLICTING INTERESTS AND PRESSURES MAKE IT VIRTUALLY IMPOSSIBLE TO OBTAIN THIS TYPE OF ASSURANCE.

2. AS REGARDS IMPROVED TERMS FOR HARM, OUSDR AND E SAID THAT WE SHOULD BE ABLE TO HAVE ALL THE INFORMATION WE NEED FOR OPERATIONAL PURPOSES BUT WE WOULD NOT GET SUFFICIENT INFORMATION TO ENABLE US TO MANUFACTURE THE SYSTEM OURSELVES.

3. OUSDR AND E SAID THAT IT WAS UNLIKELY THAT THE UK COULD BECOME A SECOND SOURCE FOR HARM. (THE PRESENT DOD POSITION IS THAT THERE WILL BE NO SECOND SOURCE, THOUGH CONGRESS IS ARGUING THAT THERE SHOULD BE). THEY DID SAY THAT THERE WOULD BE NO OBJECTION TO UK FIRMS BEING SUB-CONTRACTORS TO TI FOR THE US HARM PROGRAMME. THEY ALSO ASKED IF THERE WAS ANY CHANCE OF CO-OPERATION BETWEEN TI AND MARCONI: OR OF HMG BUYING HARM AND FUNDING R AND D WORK WITH MARCONI SEPARATELY.

SECRET

IN

4. IN THE CONTEXT OF WORKING WITH MARCONI WE ASKED ABOUT MARCONI HAVING ACCESS TO SUCH BASIC THREAT DATA AS WERE ESSENTIAL FOR SEEKER HEAD WORK. OUSDR AND E WERE EQUIVOCAL THAT THERE WOULD BE SOME DIFFICULTIES, UNLESS MARCONI HAVE SOMETHING OUTSTANDING TO OFFER.

5. IN ESSENCE, THEREFORE, YOUR VIEW OF THE DIFFICULTIES WE FACE IS CORRECT. THEY MIGHT NOT BE INSUPERABLE IF THE ADMINISTRATION WISHED TO OVERCOME THEM. ALTHOUGH WE HAVE NOT SPOKEN TO THEM, TI MIGHT TAKE A MORE POSITIVE VIEW. THE SALE OF HARM TO THE UK WOULD BE AN IMPORTANT BREAKTHROUGH INTO THE EUROPEAN MARKET AND SHOULD HELP THEIR SALES EFFORT IN GERMANY AND ELSEWHERE.

6. OUR ASSESSMENT OF THE BROADER IMPACT OF A DECISION TO BUY ALARM REMAINS AS IN OUR TELNO 1346. SUCH A DECISION WOULD UNDERCUT THE ARGUMENTS WE ARE USING HERE IN OUR ATTEMPTS TO DEVELOP THE TWO WAY STREET. IT WOULD BE EXPLOITED BY LOBBYISTS FOR US FIRMS COMPETING AGAINST THE UK AND MAKE AN IMPACT ON PROTECTIONIST INTERESTS IN CONGRESS. IT WOULD ALSO BE DIFFICULT FOR OUR FRIENDS IN DOD TO ACCEPT. DE LAUER HAS BEEN REPORTTED TO US AS SAYING THAT HE WOULD FIND IT INCOMPREHENSIBLE IF WE WERE TO GO FOR ALARM.

7. AGAINST THIS BACKGROUND WE BELIEVE THAT THE BEST WAY OF EXPLORING THE POSSIBILITY FOR IMPROVED TERMS FOR A PURCHASE OF HARM WOULD BE THROUGH AN APPROACH TO THAYER SETTING OUT PRECISELY WHAT OUR REQUIREMENTS ARE AND ASKING FOR AN EARLY ANSWER. IF THESE REQUIREMENTS INCLUDE DEVELOPMENT WORK FOR MARCONI, THEN WE SHOULD SUGGEST THAT THEY SHOULD COME OUT AND DEMONSTRATE WHAT THEY HAVE TO OFFER. THEY WILL BE FACED WITH A SCEPTICAL AUDIENCE BECAUSE MUCH WORK HAS ALREADY BEEN DONE IN THE US ON THIS AREA OF TECHNOLOGY BY A VARIETY OF INSTITUTIONS AND FIRMS.

8. IF OUR EVENTUAL DECISION SHOULD BE TO GO FOR ALARM, THE PRESENTATION WOULD BE EASED IF WE COULD DEMONSTRATE:-

A) ADEQUATE COST AND TECHNICAL CONSIDERATIONS JUSTIFYING SUCH A DECISION:

B) THAT A SERIOUS ATTEMPT HAD BEEN MADE BY MARCONI TO PARTICIPATE IN THE HARM PROGRAMME.

THIS WOULD ESTABLISH HOW SERIOUS A PROBLEM POSSIBLE US UNWILLINGNESS TO RELEASE TECHNICAL INFORMATION MAY TURN OUT TO BE.

WRIGHT

LIMITED

DEF D
NAD
MAED
ESSD
PS
PS/MR LUCE
PS/PUS

SIR J BULLARD
MR WRIGHT
MR GILLMORE

[REPEATED AS REQUESTED]

SECRET

TOP copy returned to NO. 9

PRIME MINISTER

24 June 1983

cc Mr Mount
Mr Coles
Mr Jackling

HARM/ALARM

I hesitate to offer advice on this technical subject and do so because of the immediate and longer-term expenditure implications of a decision to buy ALARM.

Expenditure on defence equipment could cost around £8 billion in 1984-85: 80% of this is likely to be spent on British equipment, 15% on collaborative projects, 5% on imported equipment. The increasing cost of each generation of equipment threatens to push this expenditure up rapidly - fast enough by itself to threaten our longer-term objectives on expenditure and taxation, given our pledges in respect of other major categories of public expenditure.

Our defence equipment industry which includes some of our most successful businesses. But a committed buy-British approach is not always consistent with value for money and is in effect an industrial support system without a coherent strategy. We need to distinguish, more clearly than we have up till now, those items of equipment which we are especially good at producing, in terms of total development times and cost, from those with less promising prospects. If we are to contain, let alone reduce, the real growth in defence procurement costs over the next five to ten years, we need to adhere to a discriminating approach to procurement, and to pursue it in a more competitive framework (fewer cost-plus contracts, more competitive tendering).

A decision to buy ALARM would be a departure from such an approach:

- it would expose our very valuable ground-attack Tornados (worth over £6 billion) for an extra 2 years;

- ALARM would cost at least £150 million, or 60%, more than HARM;

- there is a likelihood of cost escalation by a further £60-70 million (Marconi has slipped badly on two recent contracts with MoD); this would raise the premium to over £200m;

- Seeker head technology is not one of those judged by a recent MoD review of defence technologies to be strategic for this country: this was the reason competitive bids were invited.

The preservation of jobs argument looks attractive at first blush, as many do, but it doesn't bear analysis. ALARM would provide 6,000 more man-years of work than co-producing HARM, at an extra cost of £25,000 a man year - roughly double the average wage of those concerned. This ranks with the most expensive proposals for job maintenance which in other contexts we rightly resist, eg the Invergordon smelter. There are more efficient ways of securing jobs within the defence industries eg by developing other advanced missile projects (SRARM) where we have better prospects of export orders. It is doubtful whether third countries would prefer ALARM to the much cheaper HARM alternative. Defence industries involve high-technology, of the kind our industrial future depends upon but this does not mean that we can expect to succeed in <u>all</u> of them, particularly in competition with our major ally, the United States.

We can and do succeed in producing equipment which is better than the Americans', and in persuading the Americans to buy or co-produce it (Harrier and Hawk aircraft). Those in Congress and the Administration (such as Mr Weinberger) who support buying our equipment on its merits have a tremendous uphill struggle. A choice of ALARM could well set these efforts back and damage our exports of other equipment (of the Hawk especially).

A discriminating approach to procurement, guided by competitive considerations, would actually do more to improve the performance of this important industry and provide us more defence for our money. Departing from this policy could have substantial hidden costs. A decision in favour of ALARM, even though the cost penalty (up to £200m) and operational disadvantage (2 years additional exposure) weigh strongly in favour of HARM, would be the clear signal to many other British equipment suppliers that the MoD is a soft touch. This would condition their bidding and increase procurement costs considerably.

NICHOLAS OWEN

CONFIDENTIAL

VC

MISS WILKINSON
CABINET OFFICE

Defence Suppression Weapon

Thank you for your minute of 21 June.

The Prime Minister agrees with the arrangements which you propose for the presentation on the ALARM programme at the meetinf of OD following Cabinet on Thursday 30 June.

AJC

23 June 1983

P.S. 8A

GRS 750

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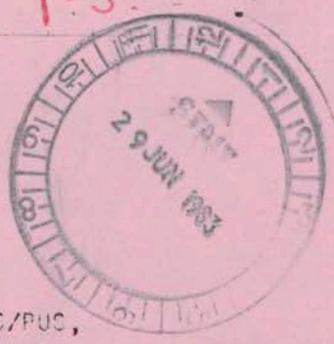

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YOUR TELNO 1346: ANTI-RADAR MISSILE

1. MINISTERS MET AGAIN ON 16 JUNE TO DISCUSS THE CHOICE OF A DEFENCE SUPPRESSION WEAPON FOR THE RAF. THEY CONCLUDED THAT THEY WERE NOT READY TO TAKE A DECISION WHETHER TO PURCHASE HARM OR ALARM. MINISTERS ARE EXPECTED TO CONSIDER THE SUBJECT AGAIN ON 30 JUNE. IT IS CLEAR THAT A KEY FACTOR IN THE DECISION WILL BE THE PROSPECT OF RETAINING A TECHNOLOGICAL CAPABILITY IN THIS AREA IN THE UK: IN THE ABSENCE OF ALARM MARCONI WOULD LACK THE LEVEL AND QUALITY OF DEVELOPMENT WORK NEEDED NOW TO ADVANCE OUR CAPABILITIES. IN ORDER TO ASSIST THEM IN THEIR CHOICE, MINISTERS WISH TO HAVE A MORE AUTHORITATIVE ASSESSMENT OF THE PROSPECTS OF OBTAINING BETTER TERMS FROM THE US FOR A PURCHASE OF HARM, INCLUDING PARTICIPATION BY MARCONI IN A US ADVANCED HOMING HEAD PROGRAMME. MINISTERS THEREFORE DECIDED TO SEEK YOUR ADVICE ON HOW BEST TO EXPLORE THE POSSIBILITY OF IMPROVED TERMS FOR A PURCHASE OF HARM.

2. MINISTERS HAD BEFORE THEM ON 16 JUNE AN ASSESSMENT FROM MR HESELTINE OF THE SUGGESTION IN PARAGRAPH 6 OF YOUR TUR. THE MAIN CONCLUSIONS OF THIS ASSESSMENT WERE AS FOLLOWS. WHILE MOD UNDERSTOOD THAT THE US HAD DECIDED IN PRINCIPLE TO DEVELOP AN IMPROVED SEEKER HEAD, MUCH DEPENDED ON THE PRECISE NATURE AND TIMING OF THE IMPROVEMENTS WHICH THE USAF AND USN WOULD WANT. CLOSER DEFINITION WOULD BE NECESSARY BEFORE WE COULD BE CERTAIN THAT THIS PROGRAMME COULD PROVIDE DEVELOPMENT WORK OF A TYPE AND SCALE WHICH WOULD SUIT MARCONI'S NEEDS. MORE SIGNIFICANTLY, TECHNICAL PROBLEMS COULD BE EXPECTED TO ARISE IN ANY ATTEMPT TO INTEGRATE A BRITISH SEEKER HEAD INTO A US MISSILE. THESE PROBLEMS MIGHT NOT PROVE INSUPERABLE PROVIDED THERE WERE NO MAJOR COMMERCIAL AND POLITICAL OBSTACLES IN THIS HIGHLY COMPETITIVE AND SENSITIVE AREA OF ADVANCED TECHNOLOGY. UNFORTUNATELY, SUCH OBSTACLES WERE ALREADY EVIDENT, FOR EXAMPLE IN THE US GOVERNMENT STIPULATION THAT, WHETHER WE PROCURED HARM ON FMS TERMS OR THROUGH COPRODUCTION, WE WOULD BE ALLOWED TO OBTAIN THE SEEKER HEAD ONLY THROUGH GOVERNMENT CHANNELS AND WITH A MINIMUM KNOWLEDGE OF ITS INTERNAL WORKINGS (US MANUFACTURE MEANS US REPAIR). MR HESELTINE CONCLUDED THAT IT WAS OPEN TO QUESTION WHETHER A UK PURCHASE OF HARM WOULD BE SO IMPORTANT FOR THE US GOVERNMENT OR FOR TEXAS INSTRUMENTS AS TO INDUCE THE US TO ADOPT A MORE ENCOURAGING STANCE. GIVEN THE IMPORTANCE OF THE TECHNOLOGY

TO THEM AS MUCH AS TO US, WE WOULD NEED TO EXERT CONSIDERABLE PRESSURE TO GET THEM TO CONSIDER THE POSSIBILITY OF A UK SOURCE FOR AN IMPROVED HARM SEEKER HEAD. EVEN THEN WE COULD NOT EXPECT MARCONI TO BE GIVEN MORE THAN THE OPPORTUNITY TO COMPETE WITH US FIRMS: THERE COULD BE NO GUARANTEE THAT THEY WOULD SUCCEED IN SUCH A COMPETITION. MEANWHILE, WE WOULD HAVE TO CONSIDER HOW MUCH FINANCIAL AS WELL AS DIPLOMATIC SUPPORT MARCONI MIGHT NEED IN THEIR COMPETITIVE EFFORTS, INCLUDING SUPPORT BETWEEN NOW AND SUCH TIME AS THERE WAS A US COMPETITION FOR THEM TO ENTER. UNLESS THESE EFFORTS WERE SUCCESSFUL WE WOULD STILL FACE VERY SERIOUS DIFFICULTIES OVER MAINTAINING MARCONI'S SEEKER HEAD AND GUIDANCE CAPABILITY.

3. YOUR ADVICE MIGHT USEFULLY INCLUDE AN ASSESSMENT OF THE FOLLOW ING POINTS:

(A) THE LATEST POSITION ON THE PRESENT US HARM PROGRAMME PARTICULARLY AS REGARDS PROPOSALS TO DEVELOP AN IMPROVED SEEKER HEAD (WHICH WE BELIEVE THE USN MAY WANT):

(B) THE NATURE, SCALE AND TIMESCALE OF AN IMPROVEMENTS PROGRAMME FOR THE NEXT GENERATION OF WEAPONS (FOR USN AND/ OR USAF):

(C) THE SCOPE FOR MARCONI PARTICIPATION IN AN IMPROVEMENT PROGRAMME, ((A) AND/OR (B) ABOVE) EVEN IF WE DO NOT BUY HARM:

(D) WHETHER AND TO WHAT EXTENT A UK DECISION TO PURCHASE HARM WOULD ENABLE US TO PRESS FOR GREATER MARCONI PARTICIPATION THAN THEY COULD OTHERWISE OBTAIN, AND IF SO, ON WHAT BASIS. WE WOULD REQUIRE USG ASSURANCES THAT MARCONI WOULD BE GUARAN- TEED THE OPPORTUNITY TO COMPETE ON A FAIR BASIS, INCLUDING THE PROVISION TO THEM OF SUFFICIENT TECHNICAL INFORMATION TO ENABLE THEM TO MAKE A REALISTIC BID. THIS WOULD NEED TO INCLUDE INFORMATION ON US OPERATIONAL REQUIREMENTS IN THE LIGHT OF THE PERFORMANCE OF HARM, AS WELL AS ON CHARACTERIS- TICS OF THE MISSILE(S) WITH WHICH A MARCONI PROPOSED HEAD WOULD NEED TO BE INTEGRATED. IS THERE A REALISTIC PROSPECT OF A COLLABORATIVE PROJECT UNDER WHICH THE UK (MARCONI) WOULD BE ALLOCATED THE HEAD AS PART OF A GOVERNMENT WORK SHAR ING DEAL?

(E) THE PROSPECTS OF OBTAINING SUITABLE AND FIRM ASSURANCES FROM THE USG, TAKING ACCOUNT OF ANY DIFFICULTIES WHICH COULD BE MADE IN CONGRESS OR BY US INDUSTRY:

(F) IF YOUR ANSWERS TO (D) AND (E) ARE POSITIVE, HOW LONG DO YOU BELIEVE IT MIGHT TAKE TO SET UP SUCH ARRANGEMENTS?

4. IF YOU THINK IT WOULD BE HELPFUL, WE WOULD SEE NO OBJECTION TO YOUR APPROACHING US GOVERNMENT AND OTHER SOURCES FOR ASSISTANCE IN ANSWERING THESE POINTS BUT YOU SHOULD OF COURSE EMPHASISE THAT NO DECISION HAS YET BEEN TAKEN.

5. WE SHOULD ALSO WELCOME ANY POINTS YOU MAY WISH TO ADD TO THE ADVICE IN YOUR TUR ABOUT THE LIKELY IMPACT OF A DECISION TO BUY ALARM ON OUR WIDER DEFENCE SALES AND OTHER DEFENCE INTERESTS IN

THE US. IN THE EVENT THAT THE DECISION SHOULD GO THAT WAY, WE SHOULD ALSO VALUE YOUR FURTHER ADVICE ON PRESENTATION. WE PRESUME THAT, WHILE WE MAY BE ABLE TO EXPLAIN TO THE US ADMINISTRATION THE REASONS FOR A DECISION IN FAVOUR OF ALARM, THE REAL PROBLEM WILL BE WITH CONGRESS, WHOSE INFLUENCE ON DECISIONS AFFECTING THE PROCUREMENT OF BRITISH EQUIPMENT MAY BE EVERY BIT AS IMPORTANT AS THAT OF THE US ADMINISTRATION.

6. WE SHOULD BE GRATEFUL FOR YOURREPLY BY 0900Z ON MONDAY, 27 JUNE.

HOWE

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DEFENCE D

NAD

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PS

PS/MR LUCE

PS/PUS

SIR J BULLARD

MR WRIGHT

MR GILLMORE

(1)

Prime Minister

Ref. A083/1775

Agree to have presentation on Alarm on 30 June?

A.J.L. 21/6

MR COLES

Defence Suppression Weapon

At the meeting of OD on 16 June the Secretary of State for Defence was invited to arrange for the Committee to be given a presentation on the ALARM programme.

2. The earliest date on which the Committee can be assembled for this purpose is Thursday, 30 June, following Cabinet. There is at present only a light Agenda for Cabinet then, and we would hope to start the presentation around 11.00 am. Provisional arrangements have been made with the Ministry of Defence for the presentation to be given in the Cabinet Office Briefing Room, which is convenient for the visual aids, and where the MOD hope to have an inert ALARM missile on display. The presentation will be given by Air Chief Marshal Rogers, Controller (Air) in the Procurement Executive of the Ministry of Defence, and we have suggested that it should last not more than 30 minutes. The remainder of the morning would then be free for questions and discussion, and for the Committee to take a decision on the choice of weapon if they felt able to do so. The Secretary of State for Defence is naturally keen to take and announce a decision as soon as possible.

3. I should be grateful to know whether these arrangements are acceptable to the Prime Minister.

Lindsay Wilkinson

LINDSAY WILKINSON

21 June 1983

Ref. AO83/1702

MR COLES

HARM/ALARM

Mr Godfrey Messervy rang me at 9.30 am this morning, aware that a decision was about to be taken on the choice between the HARM and ALARM. Mr Messervy is, of course, the Chairman of Lucas, and an extremely interested party.

2. He was anxious to be sure that sufficient weight would be given to four points:

(i) the concern of the Royal Air Force to have early availability of a proven missile.

(ii) The fact that HARM would provide entry for United Kingdom manufacturers into a world market, which could be large. The world export potential for ALARM is much less certain, and perhaps negligible, since we have never succeeded in fitting British missiles to United States aircraft, and 80 per cent of the free world's fighting aircraft are United States made.

(iii) The strong reaction that there would be in the United States if HARM were to be rejected on political grounds.

(iv) The substantial cost differential in favour of HARM as compared with ALARM.

RP.

Approved by
ROBERT ARMSTRONG
and signed in his absence.

16 June 1983

Ref: B06797

7

PRIME MINISTER

c Sir Robert Armstrong

OD: A Defence Suppression Weapon for the Royal Air Force

BACKGROUND

FLAG A

The Committee is to discuss the proposal by the Secretary of State for Defence in his minute of 10th May to meet the requirement for an anti-radar missile for the RAF with the British missile ALARM instead of the American HARM. The choice of missile lies between three options, all of which are basically acceptable tothe RAF on operational grounds (though the RAF are believed to prefer HARM).

a. HARM, bought directly from the United States, to be in service in September 1986 at a total cost (for the likely requirement of 750 missiles) of £235 million, of which 86 per cent would be spent in dollars.

b. Coproduction of HARM in the United Kingdom by Lucas at a total cost of £254 million (54 per cent of which would be in dollars) generating a minimum of 3,500 man years of work for British industry.

c. To develop and produce ALARM, on a fixed price contract with British Aerospace in conjunction with MSDS (part of GEC), Thorn-EMI and others, with an in-service date of August 1987 at a total cost of £388 million, generating some 9,400 man years of work for British industry.

2. The Treasury dispute some of the assessments on which the Defence Secretary's recommendation is based: the then Chief Secretary drew attention to the fact that the Ministry of Defence had themselves assessed that the ALARM programme was likely to slip by perhaps two years, making the in-service date three years later than HARM and risking an increase in cost of some £60-70 million.

3. The Chairman of Lucas, Mr Messervy, is actively lobbying on this subject. He is well aware that coproduction of HARM in the United Kingdom by Lucas would be technologically satisfactory, would be cheaper, and would produce a usable weapon substantially earlier than the British Aerospace-GEC ALARM. A

decision to go for coproduction of HARM would also save 2,500 jobs in the West Midlands which Lucas would otherwise have to shed. The British Aerospace-GEC project would for the most part be done at Stanmore.

4. The Defence Secretary originally wished to announce a decision on ALARM on 16th May, but the then Chief Secretary, Treasury, in his letter of 11th May, said that he could not agree to this without further discussion. On 12th May the Minister of State for Industry and Information Technology wrote to the then Chief Secretary to say that he and the Secretary of State for Industry warmly endorsed the Defence Secretary's choice of ALARM. On 16th May the then Foreign and Commonwealth Secretary wrote to the Defence Secretary expressing his concern that the implications of a choice of ALARM for our relations with the United States should be taken fully into account in reaching a decision. On 17th May the private secretary to the then Secretary of State for Trade wrote to Mr Coles saying that Lord Cockfield shared the concern expressed about the effect on United States opinion, and would like to see a more detailed analysis of the export potential for HARM under the coproduction programme.

5. On 17th May you held a meeting with the Ministers principally concerned to discuss the question. The meeting concluded that it would be right to postpone a decision until after the Election. The then Chief Secretary maintained his opposition to ALARM on grounds of cost and timescale, and argued for coproduction of HARM, with the United Kingdom's homing-head technology being preserved by means of feasibility studies and a demonstrator programme. The Secretary of State for Industry supported the purchase of ALARM, and the Foreign and Commonwealth Secretary maintained his reservations as to the potential effect of a purchase of ALARM on our defence trading relationship with the United States. The meeting agreed that Sir Oliver Wright's suggestion (Washington telegram no. 1346) that we might seek to persuade the Americans to offer Marconi an opportunity to participate in the development of an improved seeker head in return for purchase of HARM should be studied. The meeting also agreed that further work should be done to establish whether British Aerospace and the other companies involved would be able to meet their stated in-service date for ALARM at the agreed price, and that a more detailed analysis should be carried out of the export potential both of ALARM and of HARM under the coproduction programme.

6. The Defence Secretary will be providing further information on these points in a minute to you this afternoon. I understand that the advice on Marconi's participation in the American programme to develop an advanced seeker head is likely to be pessimistic; the United States Government's stipulation that we should only be able to obtain the HARM seeker head through Government channels and with a minimum knowledge of its internal workings, shows the sensitivity with which they regard this area of advanced technology. We should need to exert considerable pressure to get them to consider the possibility of a British source for an improved HARM seeker head. Even then we could not expect Marconi to be given more than the opportunity to compete for the work with American firms; there could be no guarantee that they would succeed.

7. On cost and timescale of ALARM, the Defence Secretary is likely to acknowledge the risk of a slippage of up to two years in the ALARM programme, but to argue that a delayed in-service date of 1989 is as credible as the 1986 in-service date for HARM. He will also point out that the fixed price contract would provide a strong incentive for British Aerospace to minimise any slippage.

8. As to export potential, the Ministry of Defence's assessment has increased to a world-wide market of some 5,000 missiles (as compared with British Aerospace's estimate of 20,000). They believe that ALARM might at best capture 25-30 per cent of this, that is some 1,250-1,500 missiles. On HARM, the assessment is that coproduction would give Lucas the equivalent of some 1,550 missiles, when the United States own requirements are taken into account. If these assessments are right, there is little to choose between the two on export grounds: but assessments of the export potential of British defence systems have in the past been consistently over optimistic.

9. In the light of this further work, the Defence Secretary is expected to confirm that his support for ALARM remains unchanged. He continues to attach great importance to the maintenance of an indigenous seeker head and guidance capability, and believes that, given their own attitude to protecting their capability in this area, the United States Government will readily understand a decision in favour of ALARM.

HANDLING

10. You will wish to invite the Defence Secretary to open the resumed discussion of his proposal and the Chief Secretary, Treasury, and the Secretary of State for Trade and Industry to comment. In the light of the full discussion on the question on 17th May, you could guide the Committee to concentrate on the further information provided by the Defence Secretary. In particular -

a. Does the Committee agree that the issue of exports is likely to be neutral as between the two systems? A 25-30 per cent market share for ALARM will require aggressive marketing: can British Aerospace realistically be expected to achieve it?

b. Is it agreed that the prospects for Marconi's participation in the American advanced seeker head programme are slim? Was Sir Oliver Wright consulted further in the formulation of the advice?

c. Could the fixed price contract for ALARM on British Aerospace be made watertight enough to prevent them evading its provisions?

d. Is ALARM the only system in prospect for development by BAe/Marconi which will enable them to retain and develop a sophisticated seeker and guidance technology?

e. Is a three year delay in the in-service date (1989 for ALARM instead of 1986 for HARM) militarily acceptable?

CONCLUSION

11. It is accepted that in order to maintain a sound defence industry in Britain, we should undertake the development of a number of weapons systems rather than buy them from abroad. In this case the question is whether this particular area of technology is important enough to make it essential for the United Kingdom to remain in it. A judgement on this depends firstly on the view taken about the longer term military importance of seeker and guidance technology, and secondly on the relative export potential of ALARM and ensuing generations of weapons as against HARM. The Committee will wish to decide upon ALARM if they judge that these and other considerations outweigh the political, cost and timing arguments for choosing the Lucas coproduction option.

David Goodall

15th June 1983

A D S GOODALL

cc R.J
6

MO 26/7

PRIME MINISTER

A DEFENCE SUPPRESSION WEAPON FOR THE RAF

At our meeting on 17th May, you asked that a further study be made of the possibility of persuading the Americans to offer Marconi an opportunity to participate in the development of an improved seeker head for HARM, the export potential of ALARM and of HARM COPRODUCTION and the credibility of the in service date and Fixed Price which BAeD have offered for ALARM. This minute reports the outcome of this further work and assesses its significance for my proposal to buy ALARM.

Participation in Development of an Improved Seeker Head

2. While we understand that the US have decided in principle to develop an improved head, much depends on the precise nature and timing of the improvements which the USAF and USN will want. Closer definition will be necessary before we could be certain that this programme could provide development work of a type and scale which would suit MSDS' needs. More significantly, technical problems can be expected to arise in any attempt to integrate a British seeker head into a US missile. These problems might not prove insuperable provided there are no major commercial and political obstacles in this highly competitive and sensitive area of advanced technology. Unfortunately, such obstacles are already evident, for example in the US Government stipulation that, whether we procured HARM on FMS terms or through COPRODUCTION, we would be allowed to obtain the seeker head only through Government channels and with a minimum knowledge of its internal workings (US manufacture = US repair).

3. It is open to question whether our purchase of HARM would be so important for the US Government or for TI to induce the US to adopt a more encouraging stance. Given the importance of the technology to them as much as to us, we would need to exert considerable pressure to get them to consider the possibility of a UK source for an improved HARM seeker head. Even then we could not expect MSDS to be given more than the opportunity to compete with US firms; there can be no guarantee that they would succeed in such a competition. Meanwhile, we would have to consider how much financial as well as diplomatic support MSDS might need in their competitive efforts, including support between now and such time as there was a US competition for them to enter. Unless these efforts were successful we would still face very serious difficulties over maintaining MSDS' seeker head and guidance capability.

Export potential

4. We have carefully re-examined the position, since firm estimates are hard to make with any confidence in the absence of an established market for this type of weapon. In January we put the market size for sales outside the UK, USA and France up to about the year 2000 at 4000 missiles. Some countries are showing a stronger interest, and we now think 5000 nearer the mark. This is still well below BAeD's estimate of 20,000 which assumes buyer countries would fit all their suitable front line aircraft to the full - compared with our assumptions of 20%, in line with RAF plans. Texas Instruments and Lucas estimate the potential market outside UK and US at 4,000 which is consistent with our revised figure of 5,000 when allowance is made for countries the US would veto. Because missile sales tend to follow aircraft sales, in which the US (and to a lesser extent, France) are dominant, we believe BAeD, perhaps helped in some cases by the fact that ALARM is the smaller missile, can at best hope to win some 25-30% of this market - i.e. some 1250-1500 missiles, equivalent to at least 6000 additional project man years in the UK. (BAeD also hope to get a 30% market share). The

HARM COPRODUCTION agreement with TI would give Lucas up to 8.5% of any US export work, equivalent to about 340 missiles, to which should be added up to 11% of the US domestic market, equivalent to about 1210 missiles. The total of some 1550 missiles equates to about 5000 additional project man years in the UK.

5. If one discounts - as I believe we should - BAeD's views, there is thus little to choose between HARM and ALARM. But each Company faces a major hurdle. Lucas would have to acquire qualified status as supplier to TI for US Government and US export business, and then compete with US suppliers for subcontracts. There is no reason to suppose that Lucas, who have a good record in the US, could not both qualify and stand to win subcontracts, and we could propose that the opportunity for Lucas to bid should be a condition of any HARM COPRODUCTION contract, but there can be no guarantee of their success. On the other hand, BAeD face stiff US competition in the world market and ALARM would have to be energetically marketed to get as much as a 25-30% share; but we would be marketing a total system, all under our own control, and strengthening our industrial base for the future.

Credibility of ALARM programme

6. I expressed reservations on BAeD's ability to meet their in service date of August 1987 in my earlier paper. The position has not changed. Since the proposed ALARM programme contains several areas of risk but makes insufficient allowance for setbacks, and since BAeD have accepted additional work within their timescale to provide capabilities necessary to make ALARM fully acceptable to the RAF, an in service date some two years later would command greater confidence. Consequently, choice of ALARM with an ISD of 1987 and on a Fixed Price contract involves the risk that if slippage occurred or seemed likely, BAeD might try to cut corners in meeting contractual specifications: we would have to resist pressure from them to sacrifice quality in order to save them extra costs. They could also be expected to exploit any

opportunity to escape from the Fixed Price. We would have to deny them any such opportunity by adhering to the agreed specification and meeting our obligations to supply them with equipment and facilities on time. Nonetheless, the Fixed Price would remain a strong incentive on them to minimise any slippage beyond August 1987. If however the programme did slip, BAeD's net loss (for which they have no doubt themselves made some contingent financial provision) would not, I believe, be too large for British Aerospace as a whole to sustain whilst remaining a viable enterprise.

7. On the basis of the later in service date the ALARM programme is judged to have broadly similar credibility to that of the HARM programme, in terms of technical risk. This means, first, that while the missiles differ in design philosophy and operating characteristics, ALARM (with the modifications to the bid which have already been provided for in the price quoted in my previous paper) is assessed as capable of meeting the RAF's operational requirement, especially against the more demanding threat postulated for the 1990's. Second, ALARM has advanced beyond the conceptual stage. Some development work has been done, at BAeD's expense (some £5M). They have ground laboratory hardware - 2 guidance development models and a navigation unit. It should be possible to enter Full Development before the middle of next year, given an immediate decision.

8. On the other hand, the poor prospects for MSDS participation in an improved head for HARM, stemming as this does from manifest US determination to maintain control over their own technology base, only serves to reinforce the importance of maintaining our indigenous seeker head and guidance capability. This is an increasingly significant area of technology. The whole emphasis of modern weapons is to the use of precision electronic guidance and on-board intelligence. Experience of facing EXOCET in Operation Corporate confirmed this, as do new initiatives in NATO ("Emerging Technology") and no country wishing to maintain a viable defence activity can afford to be without industrial capability in this area. This

applies especially to defence suppression weapons, which need to be modified quickly to match the changing electronic characteristics of their targets. Besides, the UK firms concerned have a low level of committed development work and in the absence of ALARM they lack the prospect of the level and quality of alternative work necessary to advance our capabilities, with a view to future requirements.

Conclusion

9. To sum up, I remain convinced that, all things considered, ALARM is to be preferred. I will not repeat all the points in my earlier paper but I would remind colleagues that, leaving aside export sales, ALARM will give rise to UK employment of 9,400 project man years as against some 3,500 man years for HARM co-production. In the last analysis the fundamental balance to be struck lies between the urgency of the RAF's operational requirement, where HARM has the advantage, and the importance of maintaining our indigenous seeker head and guidance capability, where the advantage lies with ALARM. This last point is underlined by the importance which the US clearly attach to protecting their own capability in this area, and by the absence of any certainty that choice of either HARM option would give UK firms a definite place in the US programme. For this reason, I also remain convinced, notwithstanding the possible risks to our sales to the US to which Sir Oliver Wright has drawn attention, that the US Government and others in the US will readily understand a decision in favour of ALARM, once the reasoning behind such a decision is explained to them. I shall write myself in very frank terms to Mr Weinberger.

10. I am copying this minute to our OD colleagues and to Sir Robert Armstrong.

Ministry of Defence
15th June 1983

Defence: Harm / Alarm
3/83

VE

13 June 1983

Thank you for your letter of 9 June about ALARM. I have reminded the Prime Minister of her wish to take a very early decision on this matter and plans have been made for a very early Ministerial meeting.

AJC

The Rt. Hon. The Lord Carrington, KCMG, MC.

THE GENERAL ELECTRIC COMPANY, p.l.c.
1 STANHOPE GATE · LONDON W1A 1EH
01-493 8484

FROM THE CHAIRMAN

9th June, 1983

Dear Robin

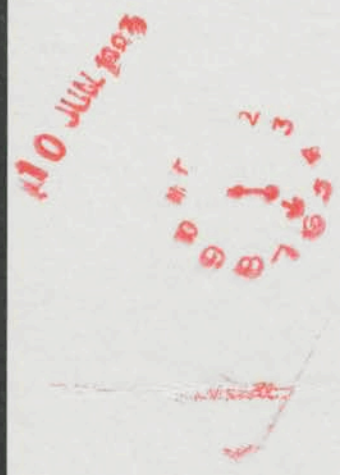
You will remember that the Prime Minister gave an undertaking that she would take the question of ALARM, as one of the very first decisions of the new administration.

There is a considerable need for urgency, for the reasons I set out in my letter of the 20th May, 1983. I would be grateful if you could remind the Prime Minister of the undertaking she gave.

Yours

F. E. R. Butler, Esq.,
Principal Private Secretary
to the Prime Minister,
Prime Minister's Office,
10, Downing Street,
LONDON. SW1

Defence: Procurement of Weapon Systems (Harm/Alarm air launched missiles)



DH

CMOD

10 DOWNING STREET

THE PRIME MINISTER

25 May 1983

Dear Peter.

Thank you for your letter of 20 May.

I know how important the decision on a defence suppression weapon is to British Aerospace and G.E.C. but the analysis of all the issues involved has been a lengthy and complex task. Assuming we win, the question will come forward as one of the first for decision by the new Administration.

I am afraid that it follows that publicity for ALARM at the Paris Air Show must rest on the acknowledged merits of the missile itself. I am sorry I cannot be more helpful, but I am sure it is right for us to come back to this after the Election.

Yours ever

Margaret

The Rt. Hon. The Lord Carrington, K.C.M.G., M.C.

VR

10 DOWNING STREET

Prime Minister

Harm | Alarm

You may care to read the attached 2 letters from the NOI and DOI before signing the attached letter to Lord Carrington.

I would expect the government's postponement of the decision to become public in the next day or two (see DOI letter). You may be questioned about it.

A.J.C. 23/5.

MINISTRY OF DEFENCE
MAIN BUILDING WHITEHALL LONDON SW1
Telephone 01-~~930 7822~~ 218 2111/3

MO 26/7

23rd May 1983

Dear John,

HARM/ALARM

You wrote today asking for advice and a suggested draft reply to a letter which the Prime Minister had received from Lord Carrington.

The Paris Air Show runs from 26th May (Press Day) to 5th June, the last two days being public days. Bearing in mind the Foreign Secretary's reminder in his minute of 16th May of the importance of not making an announcement before the Williamsburg Summit, it might have been possible to announce a decision in favour of ALARM at the Paris Show if Ministers had so decided. In the event they took a clear decision at the Prime Minister's meeting last week to defer a decision until after the Election while further work, as set out in the Prime Minister's summing-up of the discussion, was carried out. It follows that it would be difficult for the Government to assist BAe and GEC "holding the position" as Lord Carrington suggests as he is clearly implying that some indication should be given that Ministers have already decided in favour of ALARM and are only awaiting the right moment to make the announcement. The attached draft therefore takes an entirely straightforward and neutral line. You mentioned that you felt that the Prime Minister might get drawn on this subject in her Press Conference. In that event we would suggest that the line set out in paragraph 2 of the draft letter is the one which the Prime Minister should take.

In view of Lord Carrington's references to the possibility of overseas sales, the Prime Minister will wish to be aware that presentations of ALARM have been given to the German, US and Swiss Governments. We have no knowledge of ALARM's sales prospects in France, Italy or Sweden. Defence Sales estimate of the sales prospect for ALARM (1250 missiles) is more pessimistic than BAe's (upward of 2000, possibly as high as 4000-6000).

Yours ever
Nick Evans

(N H R EVANS)

A J Coles Esq

JH 794

COMMERCIAL IN CONFIDENCE

DEPARTMENT OF INDUSTRY
ASHDOWN HOUSE
123 VICTORIA STREET
LONDON SW1E 6RB
TELEPHONE DIRECT LINE 01-212 3301
SWITCHBOARD 01-212 7676

Secretary of State for Industry

23 May 1983

John Coles Esq
Private Secretary to the
Prime Minister
10 Downing Street
London SW1

Dear John,

HARM/ALARM

The Chairman of British Aerospace has warned this Department of possible political repercussions from the postponement of decisions on this issue. He fears his shop stewards will spread the view that a decision which threatens jobs has simply and deliberately been deferred until after the Election. He is also concerned about possible adverse comments (on HMG's apparent lack of confidence in ALARM) at the Paris Air Show, which the manufacturers of HARM will aim to exploit. He will take the line that ALARM is an excellent missile in which BAe are fully confident; but that decisions on the choice of missile are for the Government, and that the Government does not intend to reach a decision before the Election.

2 I understand that the Ministry of Defence are providing advice on the appropriate line for Ministers and Departments to take on this issue.

3 I am sending copies of this letter to Brian Fall (FCO), Jane Ridley (MoD), John Grieve (Treasury), John Rhodes (Trade) and Richard Hatfield (Cabinet Office).

Yours sincerely,

Jonathan Spencer

J P SPENCER
Private Secretary

D R A F T

From: Prime Minister

To: Lord Carrington

Thank you for your letter of 20 May.

I know how important the decision on a defence export weapon is to Britain, Aerospace and G.E.C but

The ~~choice between ALARM and HARM has proved to be a difficult one. Analysis of the contending bids~~ has been a all the issues involved lengthier and more complex task ~~than expected, with a wide range of issues needing to be considered and related to each other. These include international ramifications which you are well placed to appreciate~~. It was therefore not until last week that I was able to chair a meeting of Ministers to consider the final choice. We decided then that the proper course was to follow the normal conventions and postpone a decision of such major importance until after the Election. If we win the question will come forward as one of the first for decision by the new Administration; meanwhile the choice between the two missiles must remains open.

I am afraid that it follows that publicity for ALARM at the Paris Air Show must rest on the acknowledged merits of the missile itself. I am sorry I cannot be more helpful, but I am sure it is right for us to come back to this after the Election.

25/3

10 DOWNING STREET

From the Private Secretary

23 May, 1983

HARM and ALARM

I enclose a copy of a letter which the Prime Minister has received from Lord Carrington. He asks whether, particularly having regard to the opening of the Paris Airshow on 26 May, an immediate decision can be taken on the equipment to be purchased by the Ministry of Defence - and failing that, whether we have any suggestion which would help British Aerospace and GEC to hold the position regarding prospective export customers for ALARM.

I should be grateful for advice and a suggested draft reply as early as possible today.

A. J. COLES

R. Mottram, Esq.,
Ministry of Defence

CONFIDENTIAL

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Prime Minister

We will let you have a draft reply.

MCS 20/5

THE GENERAL ELECTRIC COMPANY, p.l.c.
1 STANHOPE GATE · LONDON W1A 1EH
01-493 8484

20th May, 1983.

FROM THE CHAIRMAN

Dear Margaret

In normal times, I would have asked to see you about this, but I know what enormous strains you are under in the Election Campaign and how important it is for you and for us that we win. But I hope you will find time to read this letter as I believe the issue is of considerable national importance.

British Aerospace and GEC have bid for a defence suppression weapon (ALARM); they submitted a fixed price offer last December. The US firm, Texas Instruments, are in competition, with their HARM system, and they bid on the usual US basis of the out-turn cost at the time of delivery.

The Ministry of Defence, with the support of the Department of Industry, last week chose ALARM. In view of the considerable interest in this question, the M.O.D's choice of ALARM was not surprisingly quite widely reported in the press. An official announcement was confidently expected before the end of last week; unfortunately, it was not forthcoming. On the contrary, we were subsequently asked to keep our fixed price bid open until the end of June.

British Aerospace and GEC have spent heavily on the development of ALARM; had they not done so, the early delivery required would not have been achievable. This is of some importance because the Falklands campaign clearly confirmed the urgent need for such a system; delay is not acceptable to the M.O.D. or to other prospective users.

Unless there is some new doubt about the ultimate decision, the companies would obviously fund the project for a few weeks more. But there is a problem. BAe and GEC have been making strenuous efforts to sell ALARM overseas. They have secured good prospects in France, Germany, Italy, Sweden and Switzerland; even in the United States, General Dynamics have announced their interest in fitting ALARM to the F.16.

cf. Stepney!

cont'd..

 20th May, 1983.

Everyone in the aerospace world will go to the Paris Air Show which opens on 26th May. Both ALARM and HARM will be exhibited, fitted on aircraft, and all the prospective export customers will be expecting HMG's choice of ALARM to have been formally confirmed.

Since all these export prospects depend on the choice of ALARM by HMG, British Aerospace and ourselves believe that failure to make an announcement will have a most damaging effect upon something like £750 million of potential export orders. There can be no doubt too that the US HARM system will have a field-day over our failure to announce a decision.

I very well understand the problems which face the Government in this situation. But I do hope it will be possible, even in these circumstances, to make a decision; if that is impossible, we would be grateful for any suggestion which might help us hold the position - although that could only effectively be done for a short time.

The Rt.Hon.Mrs. Margaret Thatcher, MP.,
Prime Minister's Office,
10 Downing Street,
LONDON SW.1.

010

cc NIO
14/7/83

CABINET OFFICE

With the compliments of

B. L. L. FACER

A. J. C. 19/5

70 Whitehall, London SW1A 2AS
Telephone 01 233

SECRET

LECRJ

Record of a meeting held at 10 Downing Street on Tuesday 17 May 1983 at 2.45 pm to discuss the choice of a Defence Suppression Weapon for the Royal Air Force

The Prime Minister held a meeting with the Foreign and Commonwealth Secretary, the Secretary of State for Defence, the Secretary of State for Industry and the Chief Secretary, Treasury to discuss the choice of missile to meet the requirements for a Defence Suppression Weapon for the RAF. Sir Robert Armstrong was also present.

2. The meeting had before them a minute dated 10 May from the Defence Secretary to the Chief Secretary, Treasury; a letter dated 11 May from the Chief Secretary, Treasury; a letter dated 12 May from the Minister of State for Industry and Information Technology; a minute dated 16 May from the Foreign and Commonwealth Secretary; and a letter dated 17 May from the Private Secretary to the Secretary of State for Trade.

3. The Defence Secretary said the choice was between two missiles, HARM and ALARM, both of which were basically acceptable to the RAF on operational grounds. HARM was a United States missile which would be available sooner and would be significantly cheaper. The total estimated cost for the RAF's initial requirement of 750 missiles would be £235m at August 1982 prices or £254m if an element of final development and a substantial part of production were carried out in the United Kingdom. ALARM was a British missile which would not be available until a year after HARM and would cost £388m for 750 missiles. The difference in cost reflected the fact that HARM had already been developed at American expense, whereas the Government would have to meet the full cost of developing ALARM. As the number of missiles increased the cost differential would narrow: the break-even point was estimated at 2,700 missiles. The additional cost of the ALARM programme amounted in any one year to only a very small proportion of the defence budget and could be contained within it without serious consequences for the defence programme, although it was of course true that a decision in favour of ALARM rather than HARM would reduce the amount available for other purchases from British industry. The main reason for preferring ALARM was that it would enable the United Kingdom to maintain and develop homing-head and guided missile technology. This area of technology would be of crucial importance to the defence programme in the coming decades. ALARM also had greater potential to counter expected developments in Warsaw Pact air defences, and the development of the system would be under British control. The missile would be developed and produced under a fixed price

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contract with appropriate penalty clauses. On balance he was in favour of choosing ALARM.

4. The Chief Secretary, Treasury said that the investment of some £6½bn in the Tornado aircraft would be wasted if it were not equipped with a defence suppression weapon as soon as possible. He understood that the Ministry of Defence's own experts assessed that British Aerospace's programme for ALARM was too compressed and should be extended by perhaps two years to have the same credibility as the HARM programme. Such a delay would put the in-service date back to three years later than HARM, and this slippage would be likely to cost British Aerospace some £60-70m. The company could be expected to seek every possible opportunity to overturn the fixed price, and past experience suggested that they would be successful. To go ahead with ALARM could result in the RAF being deprived of funds to develop other important missiles for the 1990s such as the short-range anti-radar missile. It would be possible to preserve the homing-head technology by financing feasibility studies and a demonstrator programme. He understood in any case that the Ministry of Defence had not included this technology in the list of those capabilities which it was essential to preserve in the United Kingdom. The alternative of co-production of HARM in the United Kingdom would also provide jobs in the aerospace industry. Furthermore the choice of ALARM would have adverse effects on our ability to secure contracts for defence equipment from the United States. It would damage the credibility of those in Washington who were arguing the case for opening American defence contracts to foreign competition and put at risk prospective British exports including the Hawk trainer for the United States Navy and the Pegasus engine for the advanced AV8B/Harrier. It would be particularly unfortunate to announce a decision in favour of ALARM immediately before the Williamsburg Summit.

5. The Secretary of State for Industry said that the key question was the value to the defence programme of sustaining a technology capability in this area. He saw no reason to take issue with the Defence Secretary's judgement on this point. The willingness of British Aerospace to offer a fixed price contract suggested that ALARM, although high technology, was not a high risk programme. It would also provide a far larger number of job opportunities and have considerable export prospects. British Aerospace believed that the Ministry of Defence's estimate of sales overseas was too low. It was wrong to buy United States equipment simply in the hope that the Americans would buy British in return. We should adopt the same robust

attitude of self-interest as they did. It was relevant that the argument about transfer of technology to the Allies was still active in Washington. It would be possible to defend the choice of ALARM on the grounds that the United Kingdom could not be certain that similar technology would be made available in future.

6. The Foreign and Commonwealth Secretary said that if the principle of technological independence in this field were so important, it was surprising that tenders from the United States had been sought. It was not possible for the United Kingdom to be independent in every field of defence technology. We had succeeded in bringing trade in defence equipment with the United States nearer to balance and we had a better ratio than other European countries. The British Ambassador in Washington had set out, in his telegram No.1346, the effect on United States opinion of a decision in favour of ALARM: it would give a fillip to the protectionists in Congress and weaken the hands of those who were advocating a balanced two-way street in defence equipment. Sir Oliver Wright had drawn attention to the important role played in this by Senator Tower who represented Texas where HARM was manufactured. He wondered if it might be possible to strike a bargain with the Americans under which, in return for the purchase of HARM, the United Kingdom would be given participation in a high technology American programme. In any case it would be important not to announce a decision in favour of ALARM before the Williamsburg Summit.

7. In the discussion it was noted that the Air Staff considered that ALARM had serious operational deficiencies. Although an allowance for their correction had been included in the cost estimates the technical problems still had to be overcome. It was estimated that in the absence of an effective defence suppression weapon the attrition rate of the Tornado would at least double between 1985 and 1990. The choice of ALARM involved a judgement being made about the chances of a European conflict occurring before the weapon was available. ALARM would be a more advanced weapon than HARM, but the Americans would develop HARM and offer to the United Kingdom a developed version at the same price as it was being sold to United States forces: to that extent the final price was not within our control. With ALARM, it would be the Ministry of Defence's job to resist any attempt by the contractor to evade the terms of the fixed price contract. It was in any case likely that the RAF's requirement for missiles would increase from the initial 750 to nearer 2,000. It was by no means clear that financing a demonstrator project to keep the vital technology alive in

this country would be enough to place British industry in the position of being able to compete on equal terms with the Americans for future systems. Nor was it likely that the Americans would allow British firms to participate in the development of advanced technology to meet United States requirements in return for the purchase of HARM.

8. The Prime Minister, summing up the discussion, said that no decision on the choice of system should be made at present. Sir Oliver Wright's suggestion that we might seek to persuade the Americans to offer Marconi an opportunity to participate in the development of improved seeker head in return for the purchase of HARM should be studied. While it was preferable to buy British defence equipment and to keep the technological capability in this country, it was essential to know whether British Aerospace and the other companies involved would be able to meet their stated in-service date for ALARM at the agreed price; a more detailed analysis should also be carried out of the export potential both of ALARM and of HARM under the co-production programme. Ministers should consider the matter again after the Election, taking account of the points raised in the discussion.

Distribution: those present and
Secretary of State for Trade

Cabinet Office

18 May 1983

DEPARTMENT OF TRADE 1 VICTORIA STREET LONDON SW1H 0ET Telephone 01-215 7877 4

Copy no 1 of 18

√ RJ

From the Secretary of State

SECRET

COMMERCIAL IN CONFIDENCE

See record of meeting.

A.J.C. 19/5.

John Coles Esq
Private Secretary
10 Downing Street
London
SW1

17 May 1983

Dear John,

My Secretary of State has seen the correspondence about a Defence Suppression Weapon for the RAF. He considers two points in particular should not be overlooked.

First, the Secretary of State shares the concern expressed by the Chief Secretary about the effect on US opinion. A decision to reject the co-production proposal presents US industry and certain Congressmen with exactly the sort of opportunity they must be looking for to prevent the purchase from the UK of major items of defence equipment, the value of which Mr Heseltine himself has put at £1 billion. Despite the unfortunate developments in the case of the Martin Baker ejection seats, the Administration is on the whole managing to stand out against many protectionist pressures. A decision on our part against the American options would undoubtedly strengthen the Hand of the protectionist lobbies particularly in the defense field.

Secondly, the Secretary of State would also like to see a more detailed analysis of the export potential for HARM under the co-production programme. There is considerable British involvement in HARM and prospects for overseas sales are much higher than for ALARM. We really ought to assess properly the employment prospects of the two systems. The Secretary of State recognises that he cannot comment on the strength of the case for maintaining British technological capability in this area. But he hopes that the effect on our industries' exports both to the USA and elsewhere can be studied carefully before a final decision is taken.

SECRET

COMMERCIAL IN CONFIDENCE

From the Secretary of State

SECRET

COMMERCIAL IN CONFIDENCE

I am copying this letter to OD Private Secretaries, Jonathan Spencer (DoI), John Gieve (Chief Secretary) and Richard Hatfied (Cabinet Office).

Yours sincerely

JOHN RHODES
Private Secretary

SECRET

COMMERCIAL IN CONFIDENCE

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CONFIDENTIAL
ECLIPSE
DESKBY 160900Z
FM WASHINGTON 152020Z
TO IMMEDIATE F C O
TEL NO 1346 OF 15 MAY 1983,
INFO IMMEDIATE MODUK, CABINET OFFICE.

ANTI-RADAR MISSILE HARM / ALARM.

1. I UNDERSTAND THAT A DECISION IS SOON TO BE TAKEN ON THE PURCHASE OF ANTI-RADAR MISSILES, WITH THE CHOICE LYING BETWEEN AN EXISITING AMERICAN SYSTEM (HARM) TO BE MANUFACTURED LARGELY IN THE UK, AND A BRITISH AEROSPACE SYSTEM (ALARM) WHICH HAS YET TO BE DEVELOPED. YOU MAY LIKE TO HAVE A VIEW FROM HERE ABOUT THE AMERICAN DIMENSION.

2. WE HAVE AN EXTREMELY BROAD AND COOPERATIVE RELATIONSHIP WITH THE AMERICANS IN THE DEFENCE FIELD, AND HAVE INVESTED A GREAT DEAL OF CAPITAL IN LOBBYING WITHIN THE ADMINISTRATION AND CONGRESS FOR THE TWO-WAY STREET. WE HAVE ARGUED FIRMLY THAT EACH SIDE SHOULD BE WILLING TO BUY FROM THE OTHER WHEN THE R AND D HAS BEEN SPENT, AND A PRODUCT EXISTS WHICH MEETS THE MILITARY REQUIREMENT. ON THE UK SIDE WE HAVE MOST RECENTLY PUT THIS FORWARD IN PROMOTING THE SALE OF SEARCHWATER RADAR AND THE ICS3 NAVAL COMMUNICATIONS SYSTEM. OVER THE YEARS WE HAVE SUCCEEDED IN BRINGING THE WIDE IMBALANCE IN PURCHASES DOWN TO A MUCH MORE RESPECTABLE RATIO OF 2:1, WITH THE GAP LIKELY TO NARROW FURTHER WITH THE IMPACT OF AV8B AND HAWK. IN RECENT YEARS, THANKS TO A HARD AND CONTINUING SLOG BY MEMBERS OF THIS EMBASSY AND BY VISITING MINISTERS AND OFFICIALS, WE HAVE BEEN ABLE TO TURN ROUND A NUMBER OF DECISIONS IN OUR FAVOUR, SUCH AS THE MARTIN BAKER EJECTION SEAT AND THE THREAT OF RESTRICTIONS ON IMPORTS CONTAINING SPECIALTY METALS. THERE IS A GREAT DEAL AT STAKE FOR US HERE.

3. IN THE CASE OF HARM, THE MANUFACTURERS, TEXAS INSTRUMENTS, HAVE RECOGNISED THE EMPLOYMENT IMPLICATIONS FOR HMG BY TEAMING WITH LUCAS AEROSPACE TO ENABLE THE COMPLETE MISSILE, EXCEPT THE SEEKER, TO BE MADE IN THE UK, A MOVE WHICH HAS BEEN WELL PUBLICISED.

4. IN THE LIGHT OF ALL THIS, A DECISION TO OPT FOR THE ALARM SYSTEM WOULD CERTAINLY NOT PASS UNNOTICED HERE. IT WOULD GIVE A DISPROPORTIONATE AMOUNT OF GRIST TO THOSE IN THE CONGRESSIONAL APPROPRIATIONS COMMITTEES WHO REGULARLY PRESS PROTECTIONIST DECISIONS ON THE ADMINISTRATION AND WOULD WEAKEN THE HANDS OF OUR FRIENDS IN CONGRESSIONAL ARMED SERVICES COMMITTEES WHO FIGHT FOR THE TWO-WAY STREET. WE WOULD NEED TO BE ABLE TO DEFEND SUCH A DECISION ON ITS MERITS AND WE SHOULD NEED VERY CONVINCING TECHNICAL AND COST ARGUMENTS, AS WELL AS TIME, TO TRY TO PREPARE THE GROUND WITH PEOPLE IN THE PENTAGON AND ON THE HILL.

5. THERE IS A PARTICULAR POINT AS REGARDS OPINION ON THE HILL. SENATOR TOWER, IN WHOSE BASKET WE HAVE MANY EGGS, IS FROM TEXAS, WHERE HARM IS MANUFACTURED. AN ADVERSE DECISION BY US COULD PLACE HIS LOYALTY TO THE TWO WAY STREET UNDER CONSIDERABLE STRAIN AND PUT HIM IN A DIFFICULT POSITION IN HIS OWN STATE, WHERE HE FACES A DIFFICULT, RE-ELECTION NEXT YEAR.

6. THESE FACTORS POINT CLEARLY TOWARDS A DEICISION TO OPT FOR THE EXISTING US SYSTEM. BUT I RECOGNISE THAT THERE WILL BE STRONG ARGUMENTS POINTING IN THE OTHER DIRECTION. ONE POSSIBLE WAY OF GETTING OVER THIS MIGHT BE TO TRY TO DEVISE A PACKAGE TO BE PUT TO THE PENTAGON. WE COULD DISCUSS OUR PROBLEM FAIRLY FRANKLY WITH THEM, AND INDICATE A READINESS, FOR REASONS OF INTEROPERABILITY, COST-EFFECTIVENESS, NRATIONALISATION OF R AND D EXPENDITURE ETC TO SEEK TO PURCHASE HARM, PROVIDED FOR EXAMPLE MARCONI WERE GIVEN A FAIR OPPORTUNITY TO PARTICIPATE IN DEVELOPMENT OF THE IMPROVED SEEKER HEAD FOR THE US NAVY. IF SUCH AN OFFER WERE REFUSED, WE SHOULD OBVIOUSLY BE ON STRONGER GROUND FOR DEVELOPING A NATIONAL PRODUCT.

WRIGHT

[COPIES SENT TO NO 10 DOWNING STREET]

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DEFENCE D
ACDD
NAD
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PS/PUS
MR WRIGHT
MR GIFFARD
MR GILLMORE
MR URE
CABINET OFFICE

DEPARTMENT OF TRADE 1 VICTORIA STREET LONDON SW1H 0ET Telephone 01-215 7877

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Copy no 1 of 18

RJ

Blup.

From the Secretary of State

SECRET

COMMERCIAL IN CONFIDENCE

John Coles Esq
Private Secretary
10 Downing Street
London
SW1

17 May 1983

Dear John,

My Secretary of State has seen the correspondence about a Defence Suppression Weapon for the RAF. He considers two points in particular should not be overlooked.

First, the Secretary of State shares the concern expressed by the Chief Secretary about the effect on US opinion. A decision to reject the co-production proposal presents US industry and certain Congressmen with exactly the sort of opportunity they must be looking for to prevent the purchase from the UK of major items of defence equipment, the value of which Mr Heseltine himself has put at £1 billion. Despite the unfortunate developments in the case of the Martin Baker ejection seats, the Administration is on the whole managing to stand out against many protectionist pressures. A decision on our part against the American options would undoubtedly strengthen the hand of the protectionist lobbies particularly in the defense field.

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SECRET

COMMERCIAL IN CONFIDENCE

From the Secretary of State

SECRET

COMMERCIAL IN CONFIDENCE

I am copying this letter to OD Private Secretaries, Jonathan Spencer (DoI), John Gieve (Chief Secretary) and Richard Hatfied (Cabinet Office).

Yours sincerely

JOHN RHODES
Private Secretary

SECRET

COMMERCIAL IN CONFIDENCE

ZP

Covering SECRET

Qa 06366

To: MR COLES

From: JOHN SPARROW

16 May 1983

HARM or ALARM?

I attach a copy of a CPRS collective brief for the Prime Minister's meeting tomorrow. If the Prime Minister approves, you might wish to supply copies to the other participants in the meeting. None has been circulated from here other than to Sir Robert Armstrong.

Att

HARM OR ALARM?

Note by the Central Policy Review Staff

---

1. The Secretary of State for Defence supported by the Minister of State for Industry wishes to purchase the UK missile ALARM in preference to the US HARM as a defence suppression weapon for the RAF. The Chief Secretary does not agree that the balance of argument favours ALARM.

2. HARM is offered in two forms, but HARM CoProduction is clearly better than HARM FMS. For an additional cost of £19 million, HARM CoProduction would provide at least 3,500 UK project man-years over eight years - a cost per job per annum of £700. As there is no difference in in-service dates between HARM FMS and HARM CoProduction, the choice for Ministers is between HARM CoProduction and ALARM.

3. In making their choice, Ministers will wish to consider -

(a) The Military Implications - the Secretary of State for Defence states that the latest studies predict that Tornado attrition rates in the Central Front will at least double between 1985 and 1990 without defence suppression weapons. The Chief Secretary suggests that the most likely in-service-date for ALARM could be August 1989 compared with September 1986 for HARM. If a three year delay is a real possibility, are the military risks acceptable, both for deterrence and in a potential conflict, particularly as the cheaper option of HARM would close this gap?

(b) The Technological Implications - the Secretary of State for Defence considers that it is vital to retain our indigenous homing and guidance expertise and that this justifies the extra cost of ALARM. The Chief Secretary queries whether a decision to purchase HARM, coupled with a combination of work on the short range anti-radiation missile and supporting technology, may not be a more cost-effective option. Could the £134 million cost saving in buying HARM be more effectively spent on alternative technology or would the UK be unwise to rely on US technology for defence suppression systems for use against the Warsaw Pact?

(c) Employment and US Reaction - in considering employment prospects, what impact would alternative spending of the £134 million ALARM premium have on UK jobs as well as the UK employment provided by the HARM CoProduction option? What are the prospects for UK defence sales in the US if ALARM is chosen?

(d) Timing - Does a decision need to be taken now or is more information required on the US approach to a second generation HARM for the 1990s and on UK access to this technology? Is UK/US collaboration on a future system following an initial purchase of HARM an option for further consideration?

Cabinet Office
16 May 1983

SECRET

2c

PRIME MINISTER

HARM and ALARM

Your meeting on Tuesday is to discuss:-

a) Whether we buy HARM or ALARM.

b) When an announcement should be made.

The Defence Secretary favours ALARM, as does the Industry Secretary (Mr. Baker will be representing him). The Chief Secretary is not disposed to agree and has asked for a meeting.

Some of the points at issue are brought out in the attached CPRS brief.

+ a brief from Sir R Armstrong

You are also aware of the points made to me by John Peyton.

I attach a telegram from Sir Oliver Wright which deals with the likely repercussions in the United States of a decision to opt for ALARM. In paragraph 6 he suggests that we try to devise a package deal to put to the Pentagon - if they turned it down, we should have stronger grounds for buying British.

On the timing of any announcement, the Defence Secretary favours an early statement. The Foreign Secretary is against an announcement before Williamsburg and the Chief Secretary supports him on this point.

A.J.C.

16 May 1983

SECRET

PRIME MINISTER

HARM and ALARM

Your meeting on Tuesday needs to discuss:

(a) whether we buy HARM or ALARM

(b) when an announcement should be made.

On the two competing equipments, the Defence Secretary favours ALARM, as does the Industry Secretary (Mr. Baker will be representing him at your meeting). The Chief Secretary is not disposed to agree and asked for a meeting.

You are also aware of the points made to me by John Peyton.

On the timing of any announcement, the Defence Secretary favours an early statement. The Chief Secretary wants to avoid an adverse reaction in the United States just before Williamsburg. The Foreign Secretary is against an announcement before Williamsburg.

16 May 1983

2B

Ref. A083/1395

PRIME MINISTER

A Defence Suppression Weapon for the RAF

BACKGROUND

You are holding a meeting at 2.45 pm on Tuesday 17 May to discuss the proposal by the Secretary of State for Defence in his minute of 10 May to meet the requirement for an anti-radar missile for the RAF with the British missile ALARM instead of the American HARM.

2. Mr Heseltine originally wished to announce a decision in favour of ALARM today, but the Chief Secretary, Treasury, in his letter of 11 May, said that he could not agree to this without further discussion. On 12 May the Minister of State for Industry and Information Technology wrote to the Chief Secretary to say that he and the Secretary of State for Industry warmly endorsed the Secretary of State for Defence's choice of ALARM.

3. Factors governing the choice of missile are set out in a paper by Ministry of Defence officials attached to the Secretary of State for Defence's minute. One important factor is that improvements in Russian surface-to-air missiles are likely to have the effect of doubling the attrition rate of the Tornado aircraft between 1985 and 1990. The RAF believe that this growing threat to Tornado must be countered urgently by acquiring an anti-radiation missile with the earliest possible in-service date. The choice of missile lies between three options, all of which are basically acceptable to the RAF on operational grounds (though the RAF are believed to prefer HARM):

(a) HARM, bought directly from the United States, to be in service in September 1986 at a total cost (for the likely requirement of 750 missiles) of £235 million, of which 86 per cent would be spent in dollars.

(b) Co-production of HARM in the United Kingdom by Lucas at a total cost of £254 million (54 per cent of which would be in dollars) generating a minimum of 3,500 man years of work for British industry.

2

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2

(c) To develop and produce ALARM, on a fixed price contract with British Aerospace in conjunction with MSDS (part of GEC), Thorn-EMI and others, with an in-service date of August 1987 at a total cost of £388 million, generating some 9,400 man years of work for British industry.

All the calculations have been done at an exchange rate of $1.59-£1: the fixed price contract offered by British Aerospace is subject to a variation of price clause (ie the price goes up roughly in line with inflation in the economy generally).

4. The Treasury dispute some of the assessments on which the Secretary of State for Defence's recommendation is based: the Chief Secretary has drawn attention to the fact that the Ministry of Defence have themselves assessed that the ALARM programme is likely to slip by perhaps two years, making the in-service date three years later than HARM and risking an increase in cost of some £60-70 million.

5. You should know that the Chairman of Lucas, Mr Messervy, is actively lobbying on this subject. He is well aware that co-production of HARM in the United Kingdom by Lucas would be technologically satisfactory, would be cheaper, and would produce a usable weapon substantially earlier than the British Aerospace-GEC ALARM. A decision to go for co-production of HARM would also save 2,500 jobs in the West Midlands which Lucas would otherwise have to shed. The British Aerospace-GEC project would for the most part be done at Stanmore.

HANDLING

6. You will wish to invite the Secretary of State for Defence to speak to his proposal, and the Chief Secretary, Treasury and the Secretary of State for Industry to comment upon it. In the discussion it will be important to consider and weigh these factors in particular:

(a) The importance of the in-service date, not only to the RAF but to the prospects of ALARM being successfully exported (eg to the Germans and the Italians who also have the Tornado aircraft).

(b) The consequences of the extra cost of ALARM for the rest of the defence programme, particularly as the extra costs will occur primarily in the years 1984-85 to 1986-87. You might like to ask the Secretary of State for Defence whether the choice of ALARM would mean that other orders with British industry would have to be postponed. Is there a risk that the political advantages in the short term of choosing ALARM might be offset later by cutbacks elsewhere?

(c) The importance of the ALARM programme for the defence industries and their technological base. If ALARM were not chosen, what would we have to do to keep alive the important homing-head technology to which the Ministry of Defence attach importance?

(d) The relevance of the choice to exports and therefore employment. The Government's declared policy is not to allow the public sector to pay a substantial premium in order to buy British. But if the development of a British piece of equipment is likely to strengthen the ability of industry to compete in overseas markets, then a premium can be justified. The export prospects of ALARM have to be weighed against two opposing factors: there are prospects of production export orders for HARM if we go for co-production and set up a production line at Lucas, and a decision to go for the more expensive ALARM could damage our prospects for persuading the United States Administration and Congress to open up the United States defence market to competition from the United Kingdom. The Chief Secretary maintains that the choice of ALARM would cut the ground from under the feet of those in the United States who have warned Congress that their restrictive attitude to foreign purchases has been damaging American relations with Europe and he suggests that the consequences of choosing ALARM might include the loss of major prospects in the United States such as the Hawk trainer aircraft and the

use of Rolls-Royce engines in the advanced Harrier/AV8B. Sir Oliver Wright has also warned (Washington telegram No 1346 - copy attached) of what is at stake in the United States. The Secretary of State for Defence should be asked how he proposes to deal with this problem: is there a real risk of lost American orders for British equipment or is the main point that the credibility of our advocacy of a genuine "two-way street" in defence equipment will be irreparably damaged?

CONCLUSION

7. The basic reason for the differences in cost is that the Americans have already paid the cost of developing HARM, while we would have to meet the whole cost of developing ALARM ourselves. This is not an unfamiliar situation: it is nearly always cheaper to buy American equipment off the shelf rather than develop our own, and the economic balance becomes favourable only if we succeed in exporting a considerable proportion of the results of our investment. Lucas believe that British Aerospace-GEC, whose tender is already substantially above that of Texas Instruments - Lucas, have made over-optimistic estimates of both the cost and the time required to develop ALARM in this country. A balance clearly has to be struck: the Government has generally preferred to buy British rather than American defence equipment, with the notable exception of Trident. The Chief Secretary's points are perfectly valid, but the Secretary of State for Defence's choice of ALARM appears to be dictated primarily by political considerations, since he is prepared to accept the financial and operational consequences for the defence programme of choosing ALARM rather than HARM. Do these considerations outweigh the political, cost and timing arguments for choosing the Lucas co-production option? If the meeting decides in favour of British Aerospace-GEC, you may wish, in summing up, to stress the importance of keeping British Aerospace firmly to their fixed price quotation.

8. There remains the question of the timing of an announcement. A decision has been long awaited by industry and by the Press, and there seems little risk of the Government being accused of rushing to announce it before the Election. The "Financial Times" has the attached front-page report today that you are to take a decision this week. On the other hand the greatest care will need to be taken to avoid an adverse reaction from the Americans just before Williamsburg: to minimise this it will be important to stress the technological factors which affect the choice and as far as possible to minimise the cost differences.

Approved by
ROBERT ARMSTRONG
and signed in his absence.

16 May 1983

FOCAB00315

00 CABINET OFFICE

GPS 620

CONFIDENTIAL
ECLIPSE
DESKBY 160900Z
FM WASHINGTON 152020Z
TO IMMEDIATE F C O
TEL NO 1346 OF 15 MAY 1983,
INFO IMMEDIATE MODUK, CABINET OFFICE.

ANTI-RADAR MISSILE

1. I UNDERSTAND THAT A DECISION IS SOON TO BE TAKEN ON THE PURCHASE OF ANTI-RADAR MISSILES, WITH THE CHOICE LYING BETWEEN AN EXISITING AMERICAN SYSTEM (HARM) TO BE MANUFACTURED LARGELY IN THE UK, AND A BRITISH AEROSPACE SYSTEM (ALARM) WHICH HAS YET TO BE DEVELOPED. YOU MAY LIKE TO HAVE A VIEW FROM HERE ABOUT THE AMERICAN DIMENSION.

2. WE HAVE AN EXTREMELY BROAD AND COOPERATIVE RELATIONSHIP WITH THE AMERICANS IN THE DEFENCE FIELD, AND HAVE INVESTED A GREAT DEAL OF CAPITAL IN LOBBYING WITHIN THE ADMINISTRATION AND CONGRESS FOR THE TWO-WAY STREET. WE HAVE ARGUED FIRMLY THAT EACH SIDE SHOULD BE WILLING TO BUY FROM THE OTHER WHEN THE R AND D HAS BEEN SPENT, AND A PRODUCT EXISTS WHICH MEETS THE MILITARY REQUIREMENT. ON THE UK SIDE WE HAVE MOST RECENTLY PUT THIS FORWARD IN PROMOTING THE SALE OF SEARCHWATER RADAR AND THE ICS3 NAVAL COMMUNICATIONS SYSTEM. OVER THE YEARS WE HAVE SUCCEEDED IN BRINGING THE WIDE IMBALANCE IN PURCHASES DOWN TO A MUCH MORE RESPECTABLE RATIO OF 2:1, WITH THE GAP LIKELY TO NARROW FURTHER WITH THE IMPACT OF AVSB AND HAWK. IN RECENT YEARS, THANKS TO A HARD AND CONTINUING SLOG BY MEMBERS OF THIS EMBASSY AND BY VISITING MINISTERS AND OFFICIALS, WE HAVE BEEN ABLE TO TURN ROUND A NUMBER OF DECISIONS IN OUR FAVOUR, SUCH AS THE MARTIN BAKER EJECTION SEAT AND THE THREAT OF RESTRICTIONS ON IMPORTS CONTAINING SPECIALTY METALS. THERE IS A GREAT DEAL AT STAKE FOR US HERE.

3. IN THE CASE OF HARM, THE MANUFACTURERS, TEXAS INSTRUMENTS, HAVE RECOGNISED THE EMPLOYMENT IMPLICATIONS FOR HMG BY TEAMING WITH LUCAS AEROSPACE TO ENABLE THE COMPLETE MISSILE, EXCEPT THE SEEKER, TO BE MADE IN THE UK, A MOVE WHICH HAS BEEN WELL PUBLICISED.

4. IN THE LIGHT OF ALL THIS, A DECISION TO OPT FOR THE ALARM SYSTEM WOULD CERTAINLY NOT PASS UNNOTICED HERE. IT WOULD GIVE A DISPROPORTIONATE AMOUNT OF GRIST TO THOSE IN THE CONGRESSIONAL APPROPRIATIONS COMMITTEES WHO REGULARLY PRESS PROTECTIONIST DECISIONS ON THE ADMINISTRATION AND WOULD WEAKEN THE HANDS OF OUR FRIENDS IN CONGRESSIONAL ARMED SERVICES COMMITTEES WHO FIGHT FOR THE TWO-WAY STREET. WE WOULD NEED TO BE ABLE TO DEFEND SUCH A DECISION ON ITS MERITS AND WE SHOULD NEED VERY CONVINCING TECHNICAL AND COST ARGUMENTS, AS WELL AS TIME, TO TRY TO PREPARE THE GROUND WITH PEOPLE IN THE PENTAGON AND ON THE HILL.

5. THERE IS A PARTICULAR POINT AS REGARDS OPINION ON THE HILL. SENATOR TOWER, IN WHOSE BASKET WE HAVE MANY EGGS, IS FROM TEXAS, WHERE HARM IS MANUFACTURED. AN ADVERSE DECISION BY US COULD PLACE HIS LOYALTY TO THE TWO WAY STREET UNDER CONSIDERABLE STRAIN AND PUT HIM IN A DIFFICULT POSITION IN HIS OWN STATE, WHERE HE FACES A DIFFICULT, RE-ELECTION NEXT YEAR.

6. THESE FACTORS POINT CLEARLY TOWARDS A DEICISION TO OPT FOR THE EXISTING US SYSTEM. BUT I RECOGNISE THAT THERE WILL BE STRONG ARGUMENTS POINTING IN THE OTHER DIRECTION. ONE POSSIBLE WAY OF GETTING OVER THIS MIGHT BE TO TRY TO DEVISE A PACKAGE TO BE PUT TO THE PENTAGON. WE COULD DISCUSS OUR PROBLEM FAIRLY FRANKLY WITH THEM, AND INDICATE A READINESS, FOR REASONS OF INTEROPERABILITY, COST-EFFECTIVENESS, NRATIONALISATION OF R AND D EXPENDITURE ETC TO SEEK TO PURCHASE HARM, PROVIDED FOR EXAMPLE MARCONI WERE GIVEN A FAIR OPPORTUNITY TO PARTICIPATE IN DEVELOPMENT OF THE IMPROVED SEEKER HEAD FOR THE US NAVY. IF SUCH AN OFFER WERE REFUSED, WE SHOULD OBVIOUSLY BE ON STRONGER GROUND FOR DEVELOPING A NATIONAL PRODUCT.

WRIGHT

NNNN

SENT AT 15/2226Z RD

RECD AT 15/2226Z PJ

FILE

channel blasted on Mt Etna, ...cily, to control a lava flow ...s worked partly but needs to ... deeper, scientists said.

...enya meeting

...llegations by Kenyan Presi... ...nt Daniel arap Moi of a plot ...gainst his Government may be ...arified at a party meeting to... ...orrow. Page 2

...rash kills pilot

...ot Mike Watkins died when ... plane, a replica of a U.S. ...stang, crashed during an ...obatic display at Eccles, ...eater Manchester.

...it by lightning

... 17-year-old Grimsby youth ... "very poorly" in hospital ...r being struck by lightning ...sunny weather.

...-am audience

...am's audience could be ...ple the current estimate of ...,000, said Barclays Merchant ...k managing director Lord ...noys. Page 6

...ar clamps

...don police today begin fit... ... wheel clamps to illegally ...ked cars. The scheme may ...extended to other parts of ... country if successful.

...oad signs

...dals sprayed football ...ns in blue paint on five of ... monoliths at Stonehenge.

...efly . . .

...lfo Gucci, a founder of the ...ion house, died at 71.

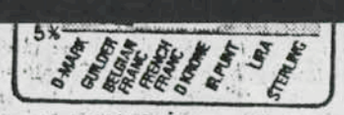
...g quakes hit west Greece; ...damage was reported.

...chi dock strike ended after ...ays.

...wi will hold a general ...ion on June 9.

... Rosberg (Finland) won ... Monaco Grand Prix in a ...ams.

... Grace Harrison of Lincoln ...d 105.



The chart shows the two constraints on European Monetary System exchange rates. The upper grid based on the weakest currency in the system defines the cross rates from which no currency (except the lira) may move more than 2¼ per cent. The lower chart gives each currency's divergence from the "central rate" against the European Currency Unit (ECU) itself a basket of European currencies.

● **POLAND'S** industrial production dropped 7.2 per cent last month compared with March, but showed a 10 per cent growth rate in the first four months of the year compared with 1982.

● **SYRIA** is awarding a series of contracts to Soviet and east European countries which Western groups thought they were going to win before the Israeli invasion of Lebanon. Page 3

● **LEFT-WINGERS** consolidated their control of the governing executive council of the National Union of Public Employees. Page 7

● **BRAZIL'S** car production will be ahead of output in the UK by 1985, according to forecasts by DRI Europe. Page 3

● **INSURANCE** payments for crimes committed by employees in commerce and industry rose 40 per cent last year, the Guarantee Society, a General Accident subsidiary, said.

● **INDUSTRY** Department's Small Firms Service and the Council for Small Industries in Rural Areas are to remain separate. Page 4

● **UNION EXPLOSIVOS Rio Tinto**, Spanish chemical group, is near agreement on negotiations on almost $1bn (£638m) of foreign and local currency debt. Back Page

● **DAINICHI KIKO**, Japanese industrial robot maker, has signed an agreement on joint technical development and marketing with Thomson-Brandt of France and Dainichi-Sykes of the UK. Back Page

CONTENTS

castle they laid ground for detailed negotiations in Brussels on May 24-25 on the size of the rebate to be repaid to the UK on its net contributions to Brussels this year.

Mr Francis Pym, Britain's Foreign Secretary, said the weekend had been a constructive and hopeful step towards a solution of the rebate issue.

He said that the imminent election far from making his negotiating task more difficult was making it even considerably easier. Everything now depended on "how far our partners are prepared to go on May 24-25."

The task facing Mr Pym, however, is to decide how much position was fortified by West Germany's hostility to the idea and by an unexpected reluctance to give it immediate support on the part of Belgium and The Netherlands.

His confidence also seemed to be strengthened by the extent to which British and West German demands for a quick clampdown on the surging costs of the Common Agricultural Policy are also gaining ground in other member-states.

As a result Herr Hans Werner Lautenschlager, a West German Foreign Ministry senior official, with a representative of the European Commission, will tour

would be submitted for endorsement by the Community heads of Government summit in Stuttgart on June 6-7.

The Community ministers' discussion on foreign policy topics at the weekend ranged far and wide over Afghanistan, the Middle East, Poland, and the Conference on European Security and Co-operation.

Herr Hans-Dietrich Genscher, West Germany's Foreign Minister, was authorised to make a significant statement on Central America. This pointed to deepening European anxieties about U.S. policies there.

Bid to end EEC farm price deadlock, Page 2

figures for the U.S., Britain and Germany were 35, 22 and 21 per cent respectively. In Japan it was 33 per cent.

Concern about "excessive government spen[illegible]" is highest in German[illegible] and the U.S.—34 and 33 per cent respectively.

The poll, called Industrial Democracies and World Economic Tensions, was sponsored by the Atlantic Institute for International Affairs in Paris and conducted by the Louis Harris organisation last month. It was backed by the Financial Times, among other media groups, and some additional funding came from the OECD.

Feature, Page 15

FINANCIAL TIMES - 18TH MAY 1983

PM to settle choice of missile

BY BRIDGET BLOOM, DEFENCE CORRESPONDENT

MRS MARGARET THATCHER is to decide this week whether Britain should buy a new British missile which is still on the drawing board in preference to an existing U.S. weapon favoured by the Royal Air Force.

The Prime Minister has been called on to resolve what is being described in Whitehall as a considerable difference of opinion between the Ministry of Defence and the Treasury over a £200m to £300m contract.

It is understood that Mr Michael Heseltine, the Defence Secretary, decided last week that the RAF should buy the air launched anti-radar missile —Alarm, for short—which is being developed by the British Aerospace Dynamics Group.

His decision came after months of a bitter contest between BAe and a partnership of Texas Instruments and Lucas Aerospace to provide the RAF with new missiles capable of supressing the Warsaw Pact's increasingly sophisticated radar-based air defences.

However, it is understood that the Treasury has told the MoD it thinks that Texas Instruments' Harm the acronym for high speed anti-radar missile—could provide a better bargain for the RAF, both in terms of cost, and delivery dates.

At the heart of the argument over the new missiles, officials say, is the question of whether or not Britain should develop or retain key defence technologies within the UK. It is said that the vital radar-seeking technology would not be transferable to Britain if the U.S. Harm system were bought for the RAF.

However also at issue are the broader questions of "buying British," and of retaining or creating as many jobs as possible in Britain.

The proposals for the rival weapons systems were submitted to the MoD late last year. The U.S. weapon, subject to heavy cost overruns but now ordered by the U.S., was promised for delivery to Britain in 1986. The RAF is believed to have favoured Harm principally because of its early delivery. It considers the need for an anti-radar missile to be urgent.

It is suggested that Harm has been offered to the Government at some £100m less than Alarm, though last night this could not be confirmed.

BAe says that in spite of the early stage of Alarm's development, the company has still been able to offer the Government a fixed-price contract.

The RAF's initial requirement is said to be for 750 missiles, out of a total of 2,000.

Anti-radar missiles are relatively new weapons in the world's armouries. The U.S. produced the first and rather crude version in the Shrike, which was used in Vietnam.

INF talks reopen, Page 2

Leave bid decision to board, Fitch says

BY WILLIAM DAWKINS

AFTER A weekend of hectic bid activity, Fitch Lovell, the food manufacturer and retailer, has asked shareholders to give the board discretion to [illegible] chairman, has made clear that he will not bid for Fitch if Key Markets is sold. The chain is [illegible] to Linfood because accept the Safeway bid, despite Linfood's increased offer, "because there can be no assurance that Linfood Hold-

D.

WCRS

2A

FCS/83/98

SECRETARY OF STATE FOR DEFENCE

A Defence Suppression Weapon for the RAF

1. Thank you for sending me a copy of your minute of 10 May to the Chief Secretary. I have also seen Leon Brittan's reply of 11 May, and I understand that the Prime Minister is to hold a meeting on 17 May.

2. My main concern is that in the process of reaching a decision we should take full account of the implications for our relations with the United States, and in particular the possible repercussions on the sale of British defence equipment to the Americans. I note the concern on this point expressed by Leon Brittan; it is also touched on in paragraph 3(f) of the paper enclosed with your minute. You will be well aware of the strong protectionist currents in Congress. There must be a risk that a decision to purchase British equipment which is substantially more expensive than its American competitor will make these currents stronger and prompt retaliation against us.

3. In the event that we do go ahead with the decision to purchase ALARM, we shall need to consider carefully how - and when - best to present it in Washington. I should wish to be consulted over this. Apart from the technical and employment arguments, we might also consider

/making

making the point to the Americans that European procurement decisions of this kind are bound to be affected by protectionist attitudes in Congress, which increasingly run the risk of rebounding on US industrial interests. On timing, it will be important to avoid making an announcement before the Williamsburg Summit.

4. I am copying this letter to the Prime Minister, all other OD colleagues, Patrick Jenkin and Sir Robert Armstrong.

It A
235 390
1
KLO,

(FRANCIS PYM)

Foreign and Commonwealth Office

16 May 1983

(2).

PRIME MINISTER

Harm and Alarm

I think you should know that I receive daily telephone calls from John Peyton about this subject. He is of course a lobbyist for Harm and especially for Lucas who hope to be associated with one arrangement involving the purchase of Harm.

John Peyton recently wrote to Michael Heseltine setting out his case. He is considerably annoyed with the reply that Geoffrey Pattie has sent him in Michael Heseltine's absence in Perth yesterday - he regards this as a brush off.

John Peyton told me yesterday that the Chairman of Lucas believed that of the 24 marginal seats in the West Midlands and the North West in the forthcoming election, 13 could be favourably influenced by a decision to purchase Harm but only 2 by a decision to purchase Alarm.

I promised to bring this view to your attention.

Surely we can have a meeting on

A.J.C.

13 May 1983

SECRET - COMMERCIAL IN CONFIDENCE

COPY NO 2 OF 23

DEPARTMENT OF INDUSTRY
ASHDOWN HOUSE
123 VICTORIA STREET
LONDON SW1E 6RB
TELEPHONE DIRECT LINE 01-212 6401
SWITCHBOARD 01-212 7676

FROM THE
MINISTER OF STATE
FOR INDUSTRY AND
INFORMATION TECHNOLOGY

KENNETH BAKER MP

please B/F for the meeting next Tuesday.

A.J.C. 13/5.

Rt Hon Leon Brittan QC
Chief Secretary to the Treasury
HM Treasury
WHITEHALL
London SW1

12 May 1983

Dear Chief Secretary,

A DEFENCE SUPPRESSION WEAPON FOR THE RAF

I have seen Michael Heseltine's minute to you of 10 May.

Patrick Jenkin and I warmly endorse his decision to buy ALARM. In my view the crucial factors are:

(i) the need, on defence grounds, to preserve the relevant technological capability in the UK;

(ii) the greater contribution which the ALARM programme can make to the maintenance of the UK's defence industrial base;

(iii) the greater stretch potential of the ALARM missile.

I fully agree with Michael Heseltine's view that the initial extra cost (and development risk) of the British Aerospace bid is outweighed by the greater value for money that ALARM will offer in the longer term. This is in my view an excellent example of the enlightened approach we are seeking to encourage through our public purchasing initiative and one I welcome. The importance which MoD attach to the retention of our indigenous homing and guidance expertise is crucial to the industrial choice. If ALARM were not selected, there would be inevitable expenditure implications in sustaining the technology at the necessary level by other means. I also note that MoD are not convinced that satisfactory alternative means could be found. ALARM also offers the prospect of significant overseas sales, which will serve to reduce the cost differential vis-a-vis HARM.

M91/M91ABV

SECRET - COMMERCIAL IN CONFIDENCE

Finally, it is worth emphasising that British Aerospace's bid is on a fixed cost basis, including all but one of the specification changes sought by the RAF, whilst the costs of the HARM bids are subject to the uncertainties of the US programme. British Aerospace have staked both their money and their reputation on ALARM and their willingness to submit to the discipline of a fixed cost contract must count in their favour.

I am copying this minute to the recipients of yours.

Yours sincerely

Neil McCallum

for KENNETH BAKER

approved by the Minister & signed in his absence.

12 MAY 1983

M12/M12AES

CHIEF SECRETARY TO THE TREASURY

JS.

I attach the meat of the CST's briefing as we agreed for your information.

JG.

1E

remainder of this brief, I note the main points to make, and add some defensive points meeting some of Mr Heseltine's specific arguments.

MAIN POINTS TO MAKE

Operational Requirement

(i) MOD's Operational Requirements Committee attached great importance to earliest possible in-service date.

(ii) Considerable risk of slippage in ALARM. MOD's Defence Equipment Policy Committee endorsed MOD experts' assessment that BAe programme too compressed; and should be extended by perhaps 2 years to have some credibility as HARM (ie in-service date of ALARM August 1989, compared with September 1986 for HARM).

Cost Comparison

(i) Risks unsymmetrical. BAe fixed price bid in principle secures our position against cost increases. But slippage would cost BAe some £60-70 million. Likely to seek every possible opportunity to overturn the fixed price, and would use any minor modification as excuse to do so. MOD officials believe that BAe would be successful in this, not least because inevitable that RAF's requirement will change as threat develops.

(ii) Fixed price contract most unusual for such risky work. We would be paying BAe independently of their achievement. What happens if product is unsatisfactory? PAC bound to take an interest. (Example: MOD paper attached to Mr Heseltine's letter mentions that a fixed price for one of the specification changes has yet to be agreed. ALARM cannot engage radars operating in low frequency ranges. Modification may be expensive, and will certainly be technologically demanding. A fixed price for this element risks either our being charged too much (BAe's risk premium) or inevitable pressure in due course to reopen the contract.)

(iii) HARM price may not be certain (since depends on US Government's price and exchange rate). But good chance that it will be less than MOD's estimates (since pressure on TI in US have caused them to suggest modifications that could reduce unit price by 20%).

/ (iv)

(iv) Summary: Expected cost of 750 missiles:
HARM: £235 million or less
ALARM: £389 million minimum, possibly £460 million

Defence Programme

(i). Both missiles exceed RAF's LTC provision (Table 2, Annex A of MOD's paper). But ALARM exceeds it much more. Moreover, extra costs of ALARM fall in early years (£21m, 61 million, 57 million, 50 million in 4 years 1983-84 to 1986-87 respectively; because of contract arrangements, payments profile independent of achievement).

(ii) Extra costs mean less for other projects, ie less defence capability. RAF will be starved of funds for other defence suppression projects (they are most concerned about the short range anti-radiation missile, SRARM, which could be more important to them in the 1990s than the larger HARM/ALARM).

Cost-Effectiveness

(i) Extra cost of ALARM is not only waste of resources and damaging to defence capability in itself. It leaves Tornados without effective defences for extra 3 years. Why invest £6½ billion in Tornado (GRI only, figure excludes air defence variant) if we do not then protect it? Similarly its weapon systems (eg nearly £0.7 billion on JP233, the runway cratering weapon).

Jobs

(i) Damaging effect on long term competitiveness of protecting British firms. Jobs created or saved in aerospace offset sooner or later by losses elsewhere.

(ii) But HARM Co-production could also mean substantial jobs at modest premium, and in relatively depressed areas. (Details in Annex B to brief; Co-production jobs concentrated in Birmingham and North West.)

(iii) Money saved (£200 million or so) would be spent on other defence projects which would directly or indirectly help jobs elsewhere.

Technology

(i) We acknowledge the need to maintain some technological expertise in homing head and guided missile technology. But this could be achieved by feasibility and technology demonstrator work on other

/ projects.

projects. The precise 1990's threat is unknown. By keeping our options open now we would be in a much better position to exploit the opportunities (eg world wide market for SRARM likely to be much greater than HARM/ALARM).

(ii) This programme would be much cheaper (even £5 million a year could go a long way, although we do not have any precise feel for the figures). Mr Heseltine's reference, picked up by Mr Baker, to alternative means of sustaining the technology being expensive, is misleading.

(iii) We are sceptical of MOD's claim that these technologies are "essential". Last year an MOD review concluded that only a handful of industrial capabilities were essential to retain on militaro-strategic grounds (nuclear warheads and propulsion; internal security, crytographic and electronic intelligence equipment).

(iv) If these technologies are essential, why did we invite competitive bids? We should be looking for some division of labour within the Western Alliance (Mr Pym quote).

The US Reaction

(i) There is certain to be an adverse reaction in the US. An excuse that "this was not a normal competition" would hold little water. We have heard that this project is being seen as a test case. TI are themselves a powerful lobby.

(ii) We would risk undermining the efforts of Ministers (eg Mr Pattie) the Embassy and our US supporters (including Casper Weinburger and General Bernard Rogers) who have warned Congress that its attitude is damaging relations with Europe.

(iii) There are other major UK projects at risk from a more protectionist Congress attitude. Perhaps most important is the choice of the BAe Hawk for the USN's VTX advanced trainer programme (decision on development due in the Autumn). Also at risk are the Rolls Royce Pegasus engine for the advanced Harrier/AV8B (many in Congress and the USAF have always opposed the project) and a wide range of UK equipment suppliers (Martin Baker, Marconi, Ferranti, Lucas, Smiths Industries, Dowty).

(iv) Timing particularly awkward in view of imminence of Williamsburg. How could PM defend choice of ALARM?

/ DEFENSIVE POINTS

CHIEF SECRETARY TO THE TREASURY

Treasury Chambers, Parliament Street, SW1P 3AG

Rt Hon Michael Heseltine MP
Secretary of State
Ministry of Defence
Main Building
Whitehall
London SW1A 2HB

11 May 1983

Dear Secretary of State,

A DEFENCE SUPPRESSION WEAPON FOR THE RAF

Thank you for your letter of 10 May. I agree that the choice of DS weapon is important. For that reason I do not think that a choice between HARM and ALARM should be made without full consideration, in particular of the possible impact on our defence exports to the US (see below).

I am not convinced by the arguments that you advance in favour of ALARM. You refer to some of my concerns in your letter and its attached paper, but to my mind the balance of argument points the other way:

i) I understand that MOD's Operational Requirements Committee, and not only the RAF, attached great importance to the earliest possible in-service date. Indeed it makes a nonsense of our massive investment in Tornado and associated weapon systems such as JP233 if they are not to be given a DS weapon as soon as possible.

ii) There is considerable risk of slippage in the ALARM programme. Indeed MOD's Defence Equipment Policy Committee endorsed your experts' assessment that BAe's programme for ALARM was much too compressed, and that it had to be extended by perhaps 2 years to have the same credibility as the HARM programme. Such a delay would put the in-service date back to August 1989 (compared with September 1986 for HARM).

iii) The risks of cost escalation are also unsymmetrical. Although BAe's fixed price should in principle secure your position against cost increases, the expected slippage would, I understand, cost BAe some £60-70 million. It could be anticipated that the company would seek every possible opportunity to overturn the fixed price; an exercise

in which they would almost certainly be successful. Indeed, I am somewhat concerned about the proposed contract arrangements with BAe; in normal circumstances it would be thought highly inadvisable to have a fixed price contract for such a risky programme.

iv) The cost differential between HARM and ALARM, however high it turned out to be, would be a direct charge on the defence budget. Our defence capability in other areas would inevitably suffer; as you note, the RAF could be starved of funds for other crucial defence suppression projects.

v) You make something of the direct employment effect in the UK of a purchase of ALARM. However, leaving aside the longer term effect on jobs of paying a substantial premium to British firms, a purchase of HARM under the Co-Production option with Lucas would also mean jobs in the aerospace industry; and your spending the £200 million or so that would be saved by this option would have a further direct impact on jobs

vi) I note the emphasis you put on maintaining our technology base. But I am surprised by the importance suddenly attached to the particular capabilities that you mention; neither have in the past been put forward as essential. If nevertheless we regard homing head and guided missile technology as essential, why did we ever invite competitive bids? But, as your paper implies, there would anyway be a way forward were HARM selected. A combination of work on the short range anti radiation missile, and supporting technology may be less satisfactory in some respects; but it would be much cheaper and perhaps do more to keep open our options for the 1990s. Moreover, as Francis Pym pointed out earlier this month, there must be some scope for avoiding wasteful duplication of defence capabilities in the Western Alliance.

In view of these arguments, I cannot agree to your announcing a decision in favour of ALARM next Monday without further discussion. I would be willing to attend a meeting of OD if one could be arranged in the remainder of this week; that would give an opportunity to address the points above and also explore the RAF's operational needs.

But I am also concerned about the timing of an announcement for ALARM. Not only might it look a little odd so close to an election. It could produce an adverse reaction in the US at a most damaging time, just before Williamsburg. This must be a real risk. I understand that US officials and companies regard our decision on a DS weapon as something of a test case for our attitude to the two way street. The choice of ALARM would cut the ground from under the feet of those in the US (who include Casper Weinberger

and General Bernard Rogers) who have warned Congress that its attitude has been damaging US relations with Europe. If we act to confirm Congress in its attitude we must expect damage to our own sales and collaborative prospects; this could well extend beyond Martin Baker ejector seats to major projects such as the BAe Hawk and the use of Rolls Royce engines in the advanced Harrier/AV8B. I am sure we need to weigh these risks very carefully before reaching any decision.

I am copying this letter to the Prime Minister, other OD colleagues, Patrick Jenkin and Sir Robert Armstrong.

yours sincerely

LEON BRITTAN

(approved by the Chief Secretary and signed in his absence)

A

John Cope

From Chairman:
The Rt. Hon. John Peyton, MP
6 Temple West Mews,
West Square,
London, S.E.11.
Telephone 01-582 3611

TEXAS INSTRUMENTS
LIMITED
A WHOLLY OWNED SUBSIDIARY OF TEXAS INSTRUMENTS INCORPORATED OF DALLAS, TEXAS, U.S.A.
MANTON LANE BEDFORD MK41 7PA ENGLAND
TELEPHONE BEDFORD 67466 CABLES TEXINCO BEDFORD TELEX 82178

11th May 1983

Dear Michael

I was informed by telephone from Dallas early this morning that a decision either had been made or was about to be made to choose ALARM.

I was at first inclined to disbelieve this, and would still like to do so, for the following reasons. First, according to our information, HARM has had much the better of the operational argument. Secondly, it is currently available and not merely in the conceptual and design stage. Thirdly, the export potential, which would emerge for Lucas from the choice of HARM, would be a powerful argument in its favour. Fourthly, if election considerations were to influence the decision, then Lucas' substantial presence in sensitive constituencies would at least match anything which could be said for ALARM on this score.

I must make clear to you my view that a decision to choose a missile, which does not yet exist and to reject one, which does and is proven, would involve an unacceptable risk in an area for which you have great and personal responsibility.

Godfrey Messervy, Chairman of Lucas asks me to say that he agrees with all that I have said. A copy goes to the P.M.

The Rt. Hon. Michael Heseltine, M.P.

Yours ever John

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PRIME MINISTER

HARM AND ALARM

I attach a minute from the Defence Secretary to the Chief Secretary which conveys his decision to buy ALARM and his intention, unless he hears to the contrary before then, to announce his decision to the press next Monday, 16 May.

I also attach a minute from the Chief Secretary who disagrees with Mr. Heseltine. A further minute by Roger Jackling is attached.

You should know that John Peyton rang me and Ian Gow this morning to express concern that, according to his information, a decision had been made to choose ALARM. I attach at Flag A a copy of his letter to Mr. Heseltine which sets out his arguments. John Peyton asked whether he and the Chairman of Lucas could call on you to discuss this matter. Ian Gow told him that it would be better if he could put his views on paper. I think it would be difficult for you to receive him but not the supporters of ALARM - and you hardly have time to do this.

This is a major decision which will have important defence implications for many years. I am impressed by the fact that the RAF prefer HARM. I wonder whether it is wise to rush this decision through in time for a press announcement on Monday. Would you like to consider the issue over the weekend and perhaps discuss it either at a special meeting early next week or at Cabinet on Tuesday if you have a Cabinet?

A.J.C.

9.40.

11 May 1983

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cc Sir Anthony Parsons

MR. COLES

A DEFENCE SUPPRESSION WEAPON FOR THE RAF

I have now seen Mr. Heseltine's minute of 10 May, and the attached paper setting out the considerations affecting the choice between HARM and ALARM.

A defence suppression weapon will be crucial to the effectiveness of the RAF's Tornado GR1 aircraft in attacks particularly against enemy airfields for which it will be equipped from 1985 with the runway cratering weapon JP233. The HARM and ALARM missiles are designed to destroy the radar installations upon which enemy defences depend to detect and acquire attacking aircraft. They will represent a great improvement over the US SHRIKE missile which the Prime Minister will recall we procured from the US during the Falklands conflict and employed - with mixed results - against Argentine radars around Port Stanley.

The Defence Secretary's paper makes clear that the choice between HARM and ALARM has been a difficult one. The considerations which will have influenced the RAF's preference for HARM are:-

a. cost - it would be up to 70% cheaper than ALARM;

b. availability - it could enter service in 1986, whereas ALARM could enter service a year later, and might slip a further two years;

c. operational characteristics - HARM flies faster to the target thus reducing the vulnerability of the delivering aircraft;

d. stage of development - HARM exists and is more of a known quantity than ALARM which exists only on paper.

Of these the first two are the important considerations, and I believe (b) has weighed most heavily with the RAF. If they have to wait for

/ALARM

SECRET

ALARM there could be a period of two or three years when Tornado will be extremely vulnerable in one of its major roles to the increasing sophistication of Warsaw Pact air defences.

There are, of course, attractions in buying British. ALARM certainly represents the best and most immediate opportunity for MSDS to maintain its expertise in this field, although I understand that other opportunities may arise later. The US Congress is making it increasingly difficult for British defence equipment to penetrate the US market, even without the excuse, which this decision might seem to provide, that we ourselves are unwilling to consider US systems objectively and equally in competition with British. Furthermore, ALARM does hold out the possibility of a more sophisticated capability against certain possible refinements of Warsaw Pact air defence, although the US are likely, I should have thought, to make the necessary improvements to HARM or a successor, if these refinements materialise.

I have not, of course, been privy to the discussions in MoD which have resulted in the Defence Secretary's decision, but I have no doubt that it has been difficult to weigh the various factors. I am bound to say, however, that 70% seems a very large premium to pay for buying a British system which suffers from other important disadvantages. It seems to me relevant that 95% of the British Armed Forces' current equipment is either home produced or produced in collaboration with allies. The purchase of HARM would not, therefore, bring import penetration in this field to disturbing levels.

R.T. JACKLING
11 May 1983

MO 26/7

CHIEF SECRETARY

A DEFENCE SUPPRESSION WEAPON FOR THE RAF

We need to take an important decision on how best to meet a major part of the RAF's operational requirement for Defence Suppression (DS) weapons. I attach a paper which sets out the relevant considerations.

2. The choice to be made is between two missiles, HARM and ALARM, both of which are basically acceptable to the RAF on operational grounds. HARM is a US missile which can confidently be expected to be available sooner (the US government has taken, but not announced, a decision on launching full production) and which will be significantly cheaper, at a total estimated cost for 750 missiles of £235M as against £388M for ALARM (VAT inclusive at August 82 prices). These figures however do not tell the full story. The extra cost of ALARM is largely attributable to the need to meet the sizeable research and development costs inherent in projects of this degree of technological complexity. Consequently for any extra orders, the relative differential moves in favour of ALARM. Moreover a purchase of HARM might oblige us in due course to pay additional costs for an updated capability to meet developments in the threat.

3. ALARM is a UK missile (to be produced by British Aerospace Dynamics Group in conjunction with MSDS, Thorn-EMI and others), which is judged to have greater potential to deal with expected developments in Warsaw Pact air defences. Equally important, it affords a key opportunity for us to maintain and develop our homing head and guided missile technological base, which is essential to us on defence grounds and which also enjoys a considerable international reputation.

4. I have decided to buy ALARM. In my judgement it is vital to retain our indigenous homing and guidance expertise. The extra cost of ALARM is justifiable for this reason, given that alternative means of sustaining the technology will be both expensive and less satisfactory. The employment offered in the UK and the stretch potential of the missile itself for the future also favour ALARM.

5. Unless I hear from you to the contrary before then, I propose to announce my decision next Monday, 16th May, by means of a low-key press statement.

6. As the paper indicates, a decision against HARM is likely to produce adverse reaction in the US, unless the decision is very carefully presented. I am arranging for our people in Washington to be suitably briefed in advance of an announcement of the decision.

7. I am copying this minute to the Prime Minister, all other OD colleagues, Patrick Jenkin and Sir Robert Armstrong.

Ministry of Defence
10th May 1983

A DEFENCE SUPPRESSION WEAPON FOR THE RAF

Note by the Secretary of State for Defence

Introduction

1. The principal roles of the RAF in the Central Region are offensive counter air against Warsaw Pact airfields and the interdiction of Warsaw Pact (WP) reinforcement and front-line forces. For these roles the RAF already possesses powerful forces in the Tornado GR1, in service now, and which from 1985 will be equipped with the airfield attack weapon JP 233. Studies have consistently shown that attrition levels will increase dramatically as the WP deploys the latest types of surface-to-air missiles (SAM) and their associated radars to protect airfields and concentrations of forces. The RAF has responded to this threat by ultra low level flying tactics, combined with the introduction of both passive and active ECM. However, the latest studies predict that, these measures notwithstanding, attrition rates will at least double between 1985 and 1990 without destructive Defence Suppression (DS) weapons. The RAF is therefore convinced that this rapidly growing threat to Tornado must be countered urgently by the acquisition of an anti-radiation missile (ARM) with earliest possible in-service date (ISD).

/2.

2. Following some preliminary studies it was decided to give industry the opportunity to be involved in saying how the requirement should be met; it was hoped at the same time that this process would provide an adequate basis for cost effectiveness comparison and hence bid selection. Both British Aerospace and Texas Instruments were asked whether they were prepared to accept the unusual feature, compared with more normal Government competitive bidding, of being invited to offer whatever solution they thought best instead of being asked for directly comparable proposals which aimed to meet a common specification written by MOD. They were warned, and formally accepted, that bid selection would be more open to the exercise of customer judgement of which system was preferred. We received three proposals:-

(a) HARM FMS: Procurement of the High Speed ARM (HARM) from the US Government on Foreign Military Sales (FMS) terms, with some supporting work by Texas Instruments (TI), the contractor;

(b) HARM COPRODUCTION: Procurement of HARM in which an element of final development and a substantial part of production would be carried out in the UK by Lucas and its sub-contractors, under the overall direction of TI, with certain key components such as the seeker-head and fuze being supplied on a government-to-government basis;

(c) ALARM: Procurement of the Air Launched ARM (ALARM) from BAeDG and its sub-contractors, including MSDS (seeker and guidance) and Thorn-EMI (fuze).

/Discussion

Discussion

3. These proposals have now been evaluated in detail. This has not been a simple task: it has not yielded a straightforward solution. However the following key points have been established:-

(a) Technical Aspects: HARM and ALARM are both technically capable of operating in the radar scenario envisaged for the 1980s, but ALARM promises to be better able to operate in the more demanding scenario postulated for the 1990s: in its present form HARM lacks stretch potential.

(b) Operational Aspects: HARM and ALARM both afford an acceptable basic DS capability although both proposals as bid suffer operational deficiencies; in the case of ALARM, the Air Staff regard these as serious and requiring correction. An allowance for this purpose has been included, therefore, in the costs presented at (g) below.

(c) The Programme: HARM is offered with an In-Service Date (ISD) of September 1986, ALARM with an ISD of August 1987. The US Government has now taken (but not announced) a decision on launching HARM full production, whereas ALARM has yet to be fully developed, and we judge that there is a

/much

much greater risk of programme slippage than with HARM. ALARM as offered would have a faster maximum production rate than HARM so that if 750 missiles were purchased (the minimum essential buy on operational grounds), ALARM deliveries would be complete by September 1989 whereas HARM deliveries would not end until January 1991 - but only if BAeDG could adhere to the timescale of their programme.

(d) Technology Base: If HARM FMS were purchased, there would be no technology transfer to the UK; HARM COPRODUCTION would bring little work of technological benefit to the UK. ALARM is the only current proposal which would provide sufficient work to maintain MSDS' highly regarded homing head expertise necessary for future applications to other missile systems, not only of the DS type. ALARM also offers valuable work on guidance systems to BAeDG, gives Thorn-EMI an opportunity to develop laser fuzing, and provides the UK rocket motor industry with one of two much needed opportunities for new development work, the other being at risk to the outcome of work-sharing on a collaborative project.

(e) Employment and Sales: HARM FMS provides no UK employment; HARM COPRODUCTION would generate some 3500 project man-years over 8 years mainly

/at Lucas

at Lucas and the ROFs (mostly on production), and more (perhaps as much as another 5000) if Lucas were then selected (but this is by no means guaranteed) to participate in the HARM programme for the US or for sales to third countries. ALARM would require some 9400 project man-years over 7 years mainly at BAeDG, MSDS and Thorn-EMI. Some additional 6000 man-years would be generated if ALARM overseas sales reached the 1250 missiles which we regard as a realistic upper limit. BAeDG hope to sell substantially more than this.

(f) US Attitude: Our decision on HARM/ALARM will receive close attention in the Congress and in the Administration, whose attitudes are critical if we are to maintain our sales of weapon systems and components to the US Services. Since 1975, our sales have doubled in real value, and the adverse trade imbalance has halved, to 1.5:1; but there is currently £1000M worth of business to be settled. We have pressed the DOD and Congress to give UK companies the same fair deal as US companies get here, and to avoid protectionist and restrictionist measures. A decision against a US system, HARM, which is available earlier, is cheaper and operationally acceptable could well expose us to similar criticism, even although we can rightly say we warned firms, and they accepted, that this was not a normal competition and the outcome would

be more than usually subject to customer judgement.

(g) Costs: The cost of the options, for different numbers of missiles, is shown at Annex A, Table 1. Table 2 shows the cost and cash flow for a purchase of 750 missiles. For a purchase of this size, there is a premium of some £19M (8%) for buying HARM COPRODUCTION but of some £153M (65%) for buying ALARM. On a discounted cash flow basis as indicated at Annex B, the premiums are £17.1M (8%) and £141.7M (70%) respectively. The price quotations received from the firms are all valid until the end of May. Under standard Foreign Military Sales (FMS) terms, the entire HARM FMS price and the FMS element of the HARM COPRODUCTION price (50% of the total price in the case of a buy of 750 missiles) are determined by the price the US government pays, which in turn depends on any engineering changes they may require, and on the size of their order, and any economies secured in the US programme. This has yet to be decided. The ALARM bid is Fixed Price and we have Fixed Price bids to cover all except one of the changes in the specification which the RAF regard as essential and for which provision has been made in the cost estimates at Annex A.

/4.

4. We therefore face a difficult choice. On the one hand, HARM will we believe enter service significantly earlier than ALARM: this is a major advantage and one to which the Air Staff attach very great importance because of the need to give Tornado GR 1 the maximum available protection from the earliest possible date against WP defences whose effectiveness is considerable, and improving rapidly. HARM is also preferred on operational grounds by the Air Staff. Moreover, for a buy of 750 missiles, the present HARM price (either FMS or COPRODUCTION) is very considerably cheaper than ALARM.

5. On the other hand, ALARM because of its more advanced technology promises to be generally more effective than the existing version of HARM against the more potent and complex air defence systems and tactics the WP is expected to deploy in the 1990s. Moreover, the ALARM programme would sustain workload at BAeDG, provide significant development work for Thorn-EMI and in the UK rocket motor industry, and make a critical contribution to maintaining the only UK indigenous radar homing head capabilities at MSDS, where the only major existing assured development work is on Sea Eagle, and that is reducing. It is also important that the field of anti-radar homing, like electronic counter measures (ECM) technology, is one in which it is essential to possess the fullest possible technical understanding (which only indigenous development and production affords) of the equipment we use in order that in the event of war it can be employed, adapted, and modified to achieve maximum operational and tactical effect.

/6.

6. It is necessary also to address the longer term implications of either choice. Selection of HARM would leave within present allocations funds available for development of future options to meet any advanced threats that may emerge. Relevant here is a proposal for a Short Range Anti-Radiation Missile (SRARM) shortly to be considered under NATO Feasibility Studies, and early national work on this project could put the UK in a strong (but not certain) position to get the NATO missile head with significant benefits to the UK technology base. However, neither work on this project, nor a technology demonstrator programme (nor some combination of the two) is considered sufficient for the maintenance of our indigenous homing head and guidance capability. Development work on a specific project is needed for this. Selection of ALARM, while absorbing the entire AFD budget currently allocated to DS projects overall, would provide an assured future for our indigenous capability as well as providing the RAF with a weapon of high performance and with stretch potential.

Conclusions

7. The choice between HARM and ALARM depends on the weight to be placed on cost and ISD on the one hand and long term potential and technology base considerations on the other. We conclude that on balance the arguments favour ALARM, as offering extra capability in the 1990s, meeting concern about the industrial base, particularly the indigenous homing head and guidance technology, and guaranteeing the ability to react swiftly in war to enemy countermeasures; the extra cost of ALARM is regarded as acceptable to secure these benefits.

ANNEX A

TABLE 1: COMPARATIVE COST OF OPTIONS FOR VARIOUS NUMBERS OF MISSILES

£M

No. of Missiles	500	750	1000	1500	2000
HARM FMS	179.1	234.8	291.8	388.1	482.6
HARM CO-PROD	200.3	253.8	308.9	409.3	510.3
ALARM	349.4	387.9	426.3	503.1	579.9

TABLE 2: COMPARATIVE COST OF OPTIONS FOR 750 MISSILES

	83/84 £M	84/85 £M	85/86 £M	86/87 £M	87/88 £M	REMAIN-ING YRS £M	10 YR TOTAL £M
HARM FMS	26	23	41	41	52	52	235
HARM CO-PRODUCTION	27	24	34	35	41	93	254
ALARM	47	84	98	91	50	18	388
DRAFT LTC 83 (excludes IM)	8	15	21	44	66	82	236

NOTE: Costs are estimated total costs in £M @ Aug 82, VAT incl, excluding sunk costs and running costs. The Tables are reproduced from DEP 5/83 and OR 7/83 respectively. Exchange rate of £1 = 1 dollar 596.

SECRET: COMMERCIAL IN CONFIDENCE

1

letter approved by CST. Typed version to follow.

Draft letter from: Chief Secretary

to: Secretary of State for Defence

copies to: Prime Minister
OD
Secretary of State for Industry
Sir Robert Armstrong

A DEFENCE SUPPRESSION WEAPON FOR THE RAF

Thank you for your letter of 10 May. I agree that the choice of DS weapon is important. For that reason I do not think that a choice between HARM and ALARM should be made without full consideration, in particular of DS options input on our defence capability to US (Sec Def).

I am not convinced by the arguments that you advance in favour of ALARM. You refer to some of my concerns in your letter and its attached paper, but to my mind the balance of argument points the other way:

i) I understand that MOD's Operational Requirements Committee, and not only the RAF, attached great importance to the earliest possible in-service date. Indeed it makes a nonsense of our massive investment in Tornado and associated weapon systems such as JP233 if they are not to be given a DS weapon as soon as possible.

ii) There is considerable risk of slippage in the ALARM programme. Indeed MOD's Defence Equipment Policy Committee endorsed your experts' assessment that BAe's programme for ALARM was much too compressed, and that it had to be extended by perhaps 2 years to have the same credibility as the HARM programme. Such a delay would put the in-service date back to August 1989 (compared with September 1986 for HARM).

ANNEX B

SECRET

TOTAL COST OF HARM/ALARM OPTIONS PRESENTED ON A DISCOUNTED CASH FLOW BASIS

(includes running costs and intramural costs but excluding sunk costs)

Option (a)	Total Programme Cost (£M) @ Aug 82 EC	Total Programme Cost (£M) NPV at 5% discount (b) factor	Cost Sensitivities (c)	Other Cost Factors (d)
750 HARM (FMS)	252.4	202.7	a. Dollar expenditure represents 86% of the total spend. A movement of ± 5%* in exchange rates would vary the NPV between £194M-£211M. b. A successful application for waiver of levies could reduce FMS costs.	a. Costs are subject to prices eventually agreed between the US Government and the contractor. b. Cost could be affected by USG second sourcing.
750 HARM (COPROD)	282.5	219.8	a. Dollar expenditure represents 54% of the total spend. A movement of ± 5%* in exchange rates would vary the NPV between £211M-£227M. b. A successful application for waiver of levies could reduce cost. c. The majority of the TI/Lucas offer is fixed price and there is unlikely to be a wide disparity from the costs quoted in the offer.	a. FMS part of offer is subject to prices eventually agreed between USG and the contractor. b. Cost could be affected by USG second sourcing.
750 ALARM	411.1	344.4	As the majority of the BAeDG offer is fixed price there is unlikely to be a wide disparity from the costs quoted in the offer.	a. Potential delay in the programme assessed by MOD could affect costs other than those in fixed price offer.

* A constant real exchange rate over the whole period of ± 5% of the central assumption is broadly equivalent to a gradual change in the real exchange rate of 10% over a 10 year period.

SECRET

iii) The risks of cost escalation are also unsymmetrical. Although BAe's fixed price should in principle secure your position against cost increases, the expected slippage would, I understand, cost BAe some £60-70 million. It could be anticipated that the company would seek every possible opportunity to overturn the fixed price; an exercise in which they would almost certainly be successful. indeed, I am somewhat concerned about the proposed contract arrangements with BAe; in normal circumstances it would be thought highly inadvisable to have a fixed price contract for such a risky programme.

iv) The cost differential between HARM and ALARM, however high it turned out to be, would be a direct charge on the defence budget. Our defence capability in other areas would inevitably suffer; as you note, the RAF could be starved of funds for other crucial defence suppression projects.

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implies, there would anyway be a way forward were HARM selected. A combination of work on the short range anti radiation missile, and supporting technology may be less satisfactory in some respects; but it would be much cheaper and perhaps do more to keep open our options for the 1990s. Moreover, as Francis Pym pointed out earlier this month, there must be some scope for avoiding wasteful duplication of defence capabilities in the Western Alliance.

In view of these arguments, I cannot agree to your announcing a decision in favour of ALARM next Monday without further discussion. I would be willing to attend a meeting of OD if one could be arranged in the remainder of this week; that would give an opportunity to address the points above and also explore the RAF's operational needs.

But I am also concerned about the timing of an announcement for ALARM. Not only might it look a little odd so close to an election, it could produce an adverse reaction in the US at a most ~~inappropriate~~ time, just before Williamsburg. ~~There must indeed be a risk of an extremely damaging reaction.~~ I understand that US officials and companies regard our decision on a DS weapon as something of a test case for our attitude to the two way street. The choice of ALARM would cut the ground from under the feet of those in the US (who include Casper Weinberger and General Bernard Rogers) who have warned Congress that its attitude has been damaging US relations with Europe. If we act to confirm Congress in its attitude we must expect damage to our own sales and collaborative prospects; this could well extend beyond Martin Baker ejector seats to major projects such as the BAe Hawk and the use of Rolls Royce engines in the advanced Harrier/AV8B.

I am copying this letter to the Prime Minister, other OD colleagues, Patrick Jenkin and Sir Robert Armstrong.

Alan - for you? MoD letter is classified
Kay
15/4.

cc IG
file MoD

10 DOWNING STREET

THE PRIME MINISTER

15 April 1983

Dear Richard

Thank you for your letter of 29 March about HARM and ALARM. As you say, the Government are now approaching the point of decision between the competing systems, though no decision has been taken yet. Your comments on behalf of the Aviation Committee are therefore timely, and will be taken into account when the decision is made.

I am sure you will understand that, at this sensitive stage, it would be wrong for me to comment on the Committee's preference for ALARM. However, in fairness I should point out that some of the factual statements in your letter are open to question.

Yours ever

Margaret

Michael Colvin, Esq, MP.

CONFIDENTIAL

COMMERCIAL IN CONFIDENCE

MINISTRY OF DEFENCE
MAIN BUILDING WHITEHALL LONDON SW1
Telephone 01-~~230 7022~~ 218 6169

D/S of S/PS/10

14th April 1983

cc IG

Dear Willie,

With your letter of 30th March you enclosed a letter to the Prime Minister from Michael Colvin MP on the question of HARM versus ALARM, and you asked for a draft reply for the Prime Minister to send.

HARM and ALARM are competing weapon systems to meet the RAF's requirement for an air-launched anti-radiation homing missile, to be carried on the Tornado and used to destroy hostile radar defences en route to the target area. HARM, an American system manufactured by Texas Instruments, is already fully developed and a decision is about to be taken on the launching of full production; ALARM, from British Aerospace, is still at the design stage. There are in effect three proposals, since HARM has been offered to us either as a straight purchase from the USA or on a co-production basis with Lucas undertaking a substantial share of the work in Britain.

A good deal of money and work is at stake, and the Parliamentary lobbying, mainly on behalf of ALARM but by no means entirely so because of the Lucas interest, has been intense. My Secretary of State is currently considering how to proceed, but there is no reason why Mr Colvin should not be told that the Aviation Committee's views will be taken into account in the decision. However, while it would be wrong at this stage to give any substantive reaction to the Aviation Committee's preference for ALARM, it would equally be wrong to leave Mr Colvin with the impression that his statement of facts is accepted. For example, his statement that ALARM beats HARM on price by a wide margin is incorrect; the opposite is true. And although British Aerospace claim that ALARM will be ready in 1987, this Ministry's assessment is that a date of 1989 is more realistic. While it would be premature to make these points in the reply to Mr Colvin, the attached draft registers the point that not all the statements in the letter are factually accurate.

Yours ever,

Barry Neale

(B P NEALE)

W F S Rickett Esq

COMMERCIAL IN CONFIDENCE

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D R A F T

From: Prime Minister

To: Michael Colvin MP

Thank you for your letter of 29 March about HARM and ALARM. As you say, the Government are now approaching the point of decision between the competing systems, though no decision has been taken yet. Your comments on behalf of the Aviation Committee are therefore timely, and will be taken into account when the decision is made.

2. I am sure you will understand that, at this sensitive stage, it would be wrong for me to comment on the Committee's preference for ALARM. However, in fairness I should point out that some of the factual statements in your letter are open to question.

13/4
Michael COLVIN, MP
File

10 DOWNING STREET

From the Private Secretary

30 March 1983

I enclose a copy of a letter to the Prime Minister from Michael Colvin, M.P.

I should be grateful for a draft reply for the Prime Minister to send to Mr. Colvin by 13 April please.

W. F. S. RICKETT

Barry Neale, Esq.,
Ministry of Defence

From: Michael Colvin. M.P.

Ack - ed 30/3
cc IGC

HOUSE OF COMMONS
LONDON SW1A 0AA

29th March, 1983

Rt. Hon. Margaret Thatcher, MP,
Prime Minister,
No.10 Downing Street,
London SW1.

Dear Prime Minister

HARM v ALARM

As you are probably aware, the HARM versus ALARM debate is coming to a climax. Statements have been made in both Houses on several occasions, and we are given to understand that the decision on which to purchase is likely to be made by the end of this month.

I am writing as Chairman of our Aviation Committee to say that we have had a very close look at the relative merits of the British Aerospace product, ALARM, and the Texas Instruments/Lucas Aerospace HARM competitor, and there has been intensive lobbying by both consortia. All things being equal - which they are not - I come down in favour of ALARM for the following reasons:-

ALARM meets the RAF operational requirements, is affordable and has technical and operational growth potential. It also meets the frequently stated ministerial requirement in that it is a highly exportable product, thus generating long-term production as well as valuable foreign exchange.

ALARM maintains high level anti-radar and seeker technology and design teams in the UK, and has a recognisable technological spin-off for downstream missile and commercial projects. It will also provide jobs for 3,000 in short-term and about 1,800 in the longer term production phase.

ALARM is a 97% British product, with sufficient overseas content to promote its use in Europe as a standard NATO weapon. It is also a fixed price bid, with British Aerospace willing to accept penalties - and beats HARM on price by a wide margin.

ALARM enjoys a weight advantage also, but HARM will be ready one year earlier - 1986 - and that could be crucial from the defence point of view, because there is growing anxiety about Warsaw Pact ground defences, particularly the new generation of SAMs, and the radar-controlled gun dish.

I would hope that if they got the order, British Aerospace and their sub-contractors could narrow the delivery date.

On balance, therefore, I feel ALARM has the edge over its competitor, and of course, it is all British.

Yours Sincerely

Terence Lewis

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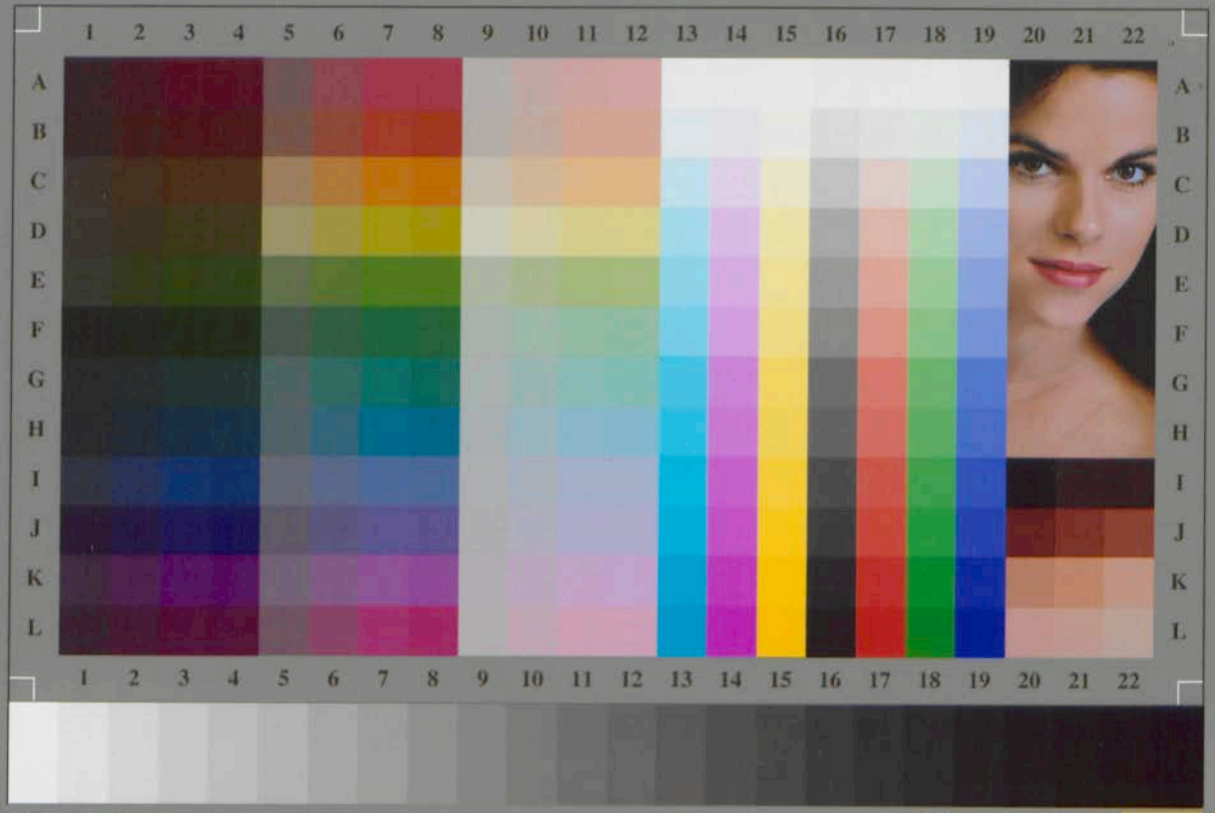

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