

Trident

Mr. Keetch: To ask the Secretary of State for Defence pursuant to the answer of 16 June 2004, *Official Report*, column 939W on Trident replacement, if he will list the design studies which have been undertaken to date; how much each has cost; what the (a) start date and (b) expected end date of each study is; and if he will make a statement. [180518]

Mr. Hoon: As stated in my previous answer, decisions on whether to replace Trident are likely to be needed in the next Parliament. We have also made clear that appropriate steps to keep options open will continue to be taken, and that we routinely undertake studies into the optimum operational life of key defence capabilities, including the Trident system. These included concept studies on options for platforms to carry the Trident missile in the longer term, which began in May 2002 and finished in May 2003, and involved extra-mural costs of around £560,000.

- hansard 30 June 2004

Nuclear Weapons

Adam Price: To ask the Secretary of State for Defence if he will make a statement on research and development of low yield nuclear weapons in the UK. [170211]

Mr. Ingram: No such research or development is being undertaken.

Mr. Keetch: To ask the Secretary of State for Defence what the estimated cost is of (a) designing and (b) manufacturing a new nuclear warhead; and if he will make a statement. [170337]

Mr. Hoon: The December 2003 Defence White Paper clearly stated the Government's position that decisions on whether to replace Trident are likely to be required in the next Parliament. The costs of the design and manufacture of any nuclear warhead would depend on a range of factors, and these will be considered as part of any such decision.

Mr. Keetch: To ask the Secretary of State for Defence what the age profile is of the staff of (a) his Department's Chief Scientific Advisor and (b) the maintenance contractor SERCO who possess the qualifications necessary to (i) maintain the design intent of the current nuclear warheads and (ii) design the next generation of warheads; and if he will make a statement. [170338]

Mr. Ingram: There are several staff working in the Chief Scientific Adviser's area in support of, and providing advice on the nuclear weapons programme, a number of whom have previously worked at AWE. However, with the exception of one AWE secondee, they are not "qualified" to conduct nuclear warhead design work, since only AWE plc, the design authority under the contract, can "qualify" people to undertake such work.

MOD's contract for the management and operation of AWE sites is with AWE Management Limited (AWE ML), a consortium of three equal partners, including SERCO. Responsibility for the day-to-day management of AWE sites is delegated to a separate company, AWE plc, which is owned by AWE ML.

It is not possible to categorise the capabilities of qualified AWE plc personnel in the way requested. However, the following table provides data on those AWE plc employees engaged in maintaining the relevant research and development capabilities who are formally qualified to degree level and above.

Age range	Percentage age of total formally qualified and employed in R and D	Numbers employed in R and D who are qualified to degree level and above
20 to 30	26	212
31 to 40	34	282
41 to 50	23	194
51 to 60	15	121
60 plus	2	21
Total	100	830

-Hansard 10 May 2004

Nuclear Weapons

Alan Simpson: To ask the Secretary of State for Defence what the estimated costs of plans to upgrade nuclear weapons design and production facilities at Aldermaston are; how much has been allocated for this upgrade; and what the timetable is for its completion. [154079]

Mr. Hoon: The refurbishment and replacement of older facilities, and the decommissioning of those no longer required, is a continuing programme of work at AWE to meet safety, regulatory and operational requirements. We made clear in paragraph 3.11 of the Defence White Paper published in December (CM 6041-1) that we will take appropriate steps to ensure that the range of options for maintaining a nuclear deterrent capability is kept open until we need to take decisions on whether to replace Trident.

The costs of the continuing programme are included in the overall incentivised price of the 25-year AWE Management and Operation contract. The precise timing, scope and cost of all the investments required over the 25 year period have yet to be finalised with the AWE contractor. The total cost of operating AWE for the current financial year is expected to be of the order of £310 million.

- Hansard 24 Feb 2004 : Column 363W

Trident

Dr. Julian Lewis: To ask the Secretary of State for Defence what has been the cost, in real terms, of the Trident submarine fleet, including missiles and warheads, for each year since its initial deployment; and what the overall cost was of acquiring (a) the submarines and (b) the missiles and warheads. [154106]

Mr. Hoon: The cost, in real terms, of the Trident submarine fleet, including missiles and warheads, for each year since its initial deployment has ranged between 2 per cent. and 4 per cent. of the annual defence budget.

The overall cost of acquiring (a) the submarines is £5.481 billion and (b) the missiles and warheads is £3.727 billion.

- Hansard 10 Feb 2004 : Column 1331W

Trident Submarines

Angus Robertson: To ask the Secretary of State for Defence what the running costs of the Trident programme have been since it came into service; what the running costs of the Trident programme are in this financial year; and what the total lifetime running costs of the Trident programme are expected to be at the end of its service period. [151703]

Mr. Hoon: The combined capital and running costs of Trident, since it was declared operational in 1994, has ranged between 2 per cent. and 4 per cent. of the annual defence budget. The total cost of Trident for financial year 2003–04 is not yet available.

Based on current planning assumptions the costs for its remaining period in service are expected to be between 2 per cent. and 3 per cent. of the expected annual defence budget.

Angus Robertson: To ask the Secretary of State for Defence how many Trident submarines are on active service; and how many are being repaired. [151595]

Mr. Ingram: Three Trident submarines are rotating through the operational cycle. The fourth is undergoing a period of pre-planned long maintenance and refuelling.

Angus Robertson: To ask the Secretary of State for Defence how many (a) missiles and (b) warheads are deployed on Trident submarines; and what the approximate yield of the nuclear warheads deployed is. [151596]

Mr. Hoon: The UK's Trident submarines can carry up to 16 missiles but normally carry fewer; I am withholding further information under Exemption 1 (Defence, Security and International Relations) of the Code of Practice on Access to Government Information for reasons of national security. The submarine on patrol carries 48 warheads. As for warhead yields, I am withholding the information requested under Exemption 1 (Defence, Security and International Relations) of the Code of Practice on Access to Government Information for reasons of national security.

- Hansard 2 Feb 2004

Nuclear Weapons

Llew Smith: To ask the Secretary of State for Defence what the cost of procuring Trident missiles from the United States has been in each year since the procurement contract was initiated. [73558]

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Dr. Moonie: The cost of procuring the Trident II (unarmed) missiles from the US under the Polaris Sales Agreement (as amended for Trident) has been as follows:

<i>Financial Year</i>	<i>Amount #M</i>
1980-81	0.023
1981-82	4.012
1982-83	8.471
1983-84	2.164
1984-85	2.009
1985-86	2.015
1986-87	0.308
1987-88	5.083
1988-89	7.368
1989-90	16.885
1990-91	28.800
1991-92	71.936
1992-93	108.132
1993-94	279.714
1994-95	188.299
1995-96	68.781
1996-97	48.140
1997-98	86.647
1998-99	79.264
1999-2000	71.524
2000-2001	53.223

Notes:

1. The final figure for 2001-2002 is not yet available.
2. Figures given are gross payments and do not take account of the credits due to the UK under the 1998 MOU to reduce the overall missile buy in accordance with SDR. These affect 2000-2001 onwards.
3. The costs cover only production costs as the UK paid no development costs for the missiles.

Llew Smith: To ask the Secretary of State for Defence, pursuant to his answer to the hon. Member for Richmond Park (Dr Tonge) of 8 July, *Official Report*, column 714W, on nuclear missile defence, whether the collaborative research and information exchange will involve nuclear-based technology. [73699]

Mr. Hoon: There are no plans for this work to involve nuclear-based technologies.

Llew Smith: To ask the Secretary of State for Defence what the total cost of deploying British personnel in the United States as a result of (a) the United Kingdom purchase of nuclear weapons from the United States, (b) the United Kingdom testing of nuclear weapons in the United States and (c) other logistical requirements, including C3 expertise, of procuring nuclear weapons from the United States has been since 1972. [73559]

Mr. Ingram: The United Kingdom does not purchase nuclear weapons from the United States. Article 1 of the Treaty on the Non-Proliferation of Nuclear Weapons forbids all nuclear weapon states from supplying nuclear weapons to any other state.

The remainder of the information requested could only be provided at disproportionate cost.

Llew Smith: To ask the Secretary of State for Defence under which budget headings the projected expenditure on (a) the Trident programme, (b) Nuclear Warhead Stability Review, (c) nuclear waste disposal, (d) nuclear site security and (e) remediation of radioactively contaminated land and buildings on

15 Oct 2002 : Column 550W

defence nuclear sites, as listed in tables 1 to 6 of CM 5412, Ministry of Defence Expenditure Plans 2002–04, published on 9 July, will be placed. [73569]

Mr. Ingram: Projected expenditure on items (a)–(e) falls under "Provision of Defence Capability" for the Ministry of Defence Resource Budget (of which part is counted against the MOD's Departmental Expenditure Limit and part against non-cash items in Annually Managed Expenditure). Projected expenditure on items (a), (c), (d) and (e) also falls under "Provision of Defence Capability" for the MOD Capital Budget.

The majority of this projected expenditure (both Resource and Capital) falls within three of our Top Level Budgets; Commander-in-Chief Fleet, Chief of Defence Logistics and Defence Procurement Agency. However additional projected Resource expenditure also falls within Land Command, RAF Strike Command and the Central Top Level Budget for item (d).

A wide range of assets is also employed in support of these activities, covering most of the categories in Table 4.

- Hansard 15 Oct 02

Trident Acquisition Programme

Mr. Beard: To ask the Secretary of State for Defence what the latest estimate is of the cost of the Trident Acquisition Programme; and if he will make a statement. [67206]

Mr. Hoon: The current estimate of the total acquisition cost of the Trident programme, with payments already made expressed at the prices and exchange rates actually incurred and future spend at the current financial year rate (the hybrid) estimate, is now £9,800 million. Since the 2001 estimate and leaving aside the effects of price inflation and exchange rate variation (+£11 million), there has been a real cost increase of £25 million. This increase derives principally from additional costs associated with dockyard projects and with missiles and related equipment, offset by a reduced acquisition cost for the four submarines. Expenditure on the Trident acquisition programme to 30 September 2001 represented over 98 per cent. of the total estimate. If all expenditure, past and projected, is brought up to this current year's economic conditions (the non-hybrid estimate) the estimate is £14,376 million.

The programme continues to show an overall reduction in real terms on its original 1982 estimate. This reduction, including the savings resulting from the decision to process missiles at the United States facility at Kings Bay, Georgia, now stands at over £3.7 billion at current prices.

The proportion of the estimate for work undertaken in the United Kingdom continues to be around 70 per cent.

Three in-service Vanguard class submarines are successfully maintained for continuous at-sea deterrence, with the fourth, HMS Vanguard, now undergoing a planned major overhaul.

Estimate table	US	UK	Total
£ million			
<i>Hybrid</i>			
Previous estimate (2001) at 2000–01 economic conditions (£1:\$1.6086)	2,859	6,904	9,764
Real changes	+18	+8	+25
Price inflation on unspent balance	0	+3	+3
Exchange rate variation on unspent balance	+8	n/a	+8
Revised estimate at 2001–02 economic conditions (£1:\$1.46)	2,884	6,916	9,800
<i>Non-hybrid</i>			
Previous estimate (2001) at 2000–01 economic conditions (£1:\$1.6806)	3,604	10,058	13,662
Real changes	+18	+8	+25
Price inflation	+62	+252	+313
Exchange rate variation	+375	n/a	+375
Revised estimate at 2001–02 economic conditions (£1:\$1.46)	4,059	10,318	14,376

Note:

Figures rounded to nearest £1 million hence any apparent imbalances.

- Hansard 3 July 02

Nuclear Deterrents

David Hamilton: To ask the Secretary of State for Defence how many people working in the armed forces are directly employed in the area of nuclear deterrent. [60284]

Dr. Moonie: There are currently some 1,509 full-time armed forces posts in the Ministry of Defence and its agencies for tasks directly related to the nuclear deterrent,

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though not all posts are filled at any given time. In addition, a number of other service personnel spend some of their time directly or indirectly on such tasks but comprehensive data are not held centrally and could be provided only at disproportionate cost.

David Hamilton: To ask the Secretary of State for Defence if he will estimate the cost (a) of retaining the nuclear deterrent by the UK in each year since 1990 and (b) of being a part of NATO and the percentage this was of the defence budget in each year since 1997. [60283]

Mr. Hoon: The estimated total acquisition cost of the Trident programme is £9,764 million. As described in the Strategic Defence Review Supporting Essay 5 of July 1998, a copy of which is in the Library of the House, the average annual operating cost of the Trident force is expected to be around £280 million. As a percentage of the defence budget, the capital and running costs for retaining the United Kingdom's nuclear deterrent for each year since 1990 were as follows:

<i>Financial year</i>	<i>Capital costs</i>	<i>Running costs</i>
1990-91	4	1
1991-92	5	1
1992-93	4	1
1993-94	4	1
1994-95	3	1
1995-96	2	1
1996-97	2	1
1997-98	1	1
1998-99	1	1
1999-2000	1	1
2000-01	1	2

These figures do not include the costs of the WE177 free-fall nuclear bomb and Lance nuclear artillery system that went out of service in 1997-98 and 1992-1993 respectively.

The United Kingdom's contributions to NATO's Security Investment Programme and Military Budget are funded by the Defence budget. For each year since 1997, these were as follows:

<i>Financial year</i>	<i>£ million</i>	<i>Percentage</i>
1997-98	102.032	0.459
1998-99	110.477	0.471
1999-2000	103.812	0.436
2000-01	101.411	0.408

Final figures for 2001-02 are not yet available.

- Hansard 11 June 02

Nuclear Weapons

Lynne Jones: To ask the Secretary of State for Defence (1) what discussions his Department has had with its US counterparts concerning Sandia National Laboratory's refurbishment programme for the W76 nuclear package and its arming, fusing and firing mechanism; [32711]

(2) what discussions his Department has had with its counterparts in the US concerning development of the W76-1 warhead; and if he will make a statement. [32710]

Dr. Moonie: Staff from the Defence Procurement Agency's Nuclear Weapons Team hold discussions with their US counterparts as a matter of routine. Conducted under the auspices of the

1958 Mutual Defence Agreement and the 1963 Polaris Sales Agreement, as amended for Trident, the discussions cover all issues of mutual interest, including work on the US W76 warhead, relevant to the safety and reliability of the UK's Trident warhead.

Lynne Jones: To ask the Secretary of State for Defence what the expected service life is for the Mk-4 re-entry vehicle for the Trident D5 missile; and if his Department has plans to extend it. [32713]

Mr. Ingram: The service life for the UK's Re-entry Assembly (RBA) has been assessed as sufficient, with periodic refurbishment as necessary, to satisfy the needs of the Trident programme as defined in the Strategic Defence Review. As with other key military capabilities, studies into options for obtaining the optimum service life and value for money are undertaken as a matter of routine.

Mr. Frank Cook: To ask the Secretary of State for Defence what the cost is of work conducted for the UK Trident programme in the past year by (a) Lawrence Livermore National Laboratory, (b) Los Alamos National Laboratory and (c) Sandia National Laboratory. [29956]

Mr. Ingram: The Ministry of Defence contracts with the Department of Energy (DoE) and the Department of Defense rather than direct with the US national laboratories and, as a result, the costs associated with the individual laboratories are not held by the MOD. However, the DoE has provided the following figures for expenditure on the UK Trident programme in US fiscal year 2001, which runs from 1 October 2000 to 30 September 2001:

	\$	£
Lawrence Livermore National Laboratory	0	0
Los Alamos National Laboratory	401,586	249,649
Sandia National Laboratory	2,343,384	1,456,785

Note:

Average rate of \$1.6086/£1 used for conversion

Lynne Jones: To ask the Secretary of State for Defence how many Trident D5A missiles his Department intends to purchase. [32712]

Mr. Ingram: None. We have purchased 58 Trident II (D5) missiles and have no plans to purchase any more.

- 6 Feb 2002 : Column 998W

Devonport

Mr. Breed: To ask the Secretary of State for Defence what the latest estimated costs of construction for the Trident refit complex at Devonport Dockyard are; and if he will make a statement. [28808]

Mr. Ingram [*holding answer 21 January 2002*]: The Trident refit complex forms part of the overall Project D154 works at Devonport, which will provide new and upgraded facilities for the refitting of the Royal Navy's SSNBs and SSNs. A revised incentivised cost-sharing arrangement has recently been agreed with the dockyard owner, DML, for the overall project. The Ministry of Defence's share of costs to completion are estimated to be in the region of £638 million to £659 million excluding VAT.

Mr. Breed: To ask the Secretary of State for Defence if the Trident refit complex at Devonport will be completely finished and certificated for use before the arrival of HMS Vanguard; and if he will make a statement. [28807]

Mr. Ingram [*holding answer 21 January 2002*]: Not all the facilities within the Trident refit complex at Devonport are required to be available for the arrival of HMS Vanguard. There is an agreed programme in place to ensure that facilities will be brought on line as required within the overall Vanguard Class (Trident) submarine refitting programme. Each facility will be commissioned and the necessary approval obtained from the nuclear regulatory authorities to meet this programme. There is no question of a particular facility being used without the appropriate regulatory approval.

- 31 Jan 2002 : Column 499W

