Briefing

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THE NEXT CHEVALINE SCANDAL?

This report has been assembled by Alan Simpson, MP for Nottingham South and specialist staff (William Peden, CND Parliamentary Officer and Louise Edge, CND Press Officer) from the Campaign for Nuclear Disarmament (CND), based on research undertaken over the last five years.

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Introduction by Alan Simpson, MP for Nottingham South:

"This report summarises work currently being undertaken in the US and UK under the misnomer of •Stockpile Stewardship and Management Programmes (SSMP)• to maintain a nuclear weapons design, development, production and maintenance capability.

It concludes that **there is strong evidence that Britain is currently involved in the development of prototype designs to replace the current Trident nuclear warhead.**

There is also clear evidence that in pursuing this goal Britain has been and continues to work closely with the U.S. and France.

Most of the publicly available information about the push for a new generation of nuclear weapons, though available to the American public, still remains secret in Britain.

The bulk of the research costs for this programme are also being concealed for the public and parliament in much the same way as the Chevaline upgrading from Polaris (Trident•s predecessor) was done for almost a decade and a half.

The British public and parliament should have the same rights to know what is being done in their name as U.S. citizens have. The obsession with secrecy within the Ministry of Defence must give way to a more detailed and open scrutiny of nuclear weapons policies, programmes and costs.

There is no strategic rationale within British defence and foreign policy for Britain to be embarking on such a programme. **The government has no mandate from the British public to develop a new generation of nuclear warheads.**

Neither is there any ethical rationale, because **rather than assisting key global nuclear non proliferation and disarmament treaties which promote international stability this programme threaten to scupper them.**

For the nuclear disarmament process to succeed there is a need for greater openness and scrutiny of every nations nuclear weapons programme. It is for this reason that this report is being circulated to the international arms control community to aid this process".

In response to this report I recommend that the Government should send a memorandum to all Members of the House before the new Parliamentary Session begins providing a detailed account of:

- **what Britain has done to date under the guise of their new warhead development programme, both here and in co-operation with the US and France;**
- **how much money has already been spent on this programme and associated US/UK co-operation and how much the government intends to spend on it in the future;**
- **why the government believes it is necessary;**
- **how the government believes these initiatives are compatible with ongoing international nuclear disarmament negotiation.**

SECTION ONE:

Stockpile Stewardship And Management

Programmes (SSMP) • An Outline

Stockpile Stewardship and Management Programmes (SSMPs) is the common name given to describe the programmes underway in almost all countries that have nuclear weapons to maintain the capability to design, develop, manufacture, deploy and maintain their nuclear weapons capability well into the 21st century without the need for further nuclear testing.

When questioned about SSMP programmes governments will attempt to justify them solely in terms of terms of meeting the need to keep their existing nuclear weapons stockpiles •safe•.

This is not true.

Nuclear weapons, by the very nature of their design, are safe. They are built to very exacting safety criteria and incorporate the most modern safety features available into their design.

The type of facilities and the extent of the US/UK SSMP program extends far beyond those required solely for maintaining the safety and reliability of existing nuclear warheads.

According to Ray Kidder, a senior nuclear physicist at Lawrence Livermore nuclear Laboratory for 35 years, the currently nuclear stockpile is safe and would only become unsafe if you started tinkering with the original design.

"Nuclear weapons in the US stockpile are currently both safe and reliable• safety problems would therefore not be expected to arise unless the design of the •physics package• • the nuclear explosive part of the weapon • were to be modified• Remember that it is not necessary to improve the safety and reliability of the existing stockpile; its reliability has been demonstrated in many nuclear tests (typically seven or more) of each weapon type•"

SSMPs are primarily intended to assist in continually refining existing warhead designs - for example by doubling their life-span from 25 to 50 years. Furthermore, they enable nations to design and prototype new more advanced nuclear weapons, so that if a political decision is made to upgrade a country•s nuclear arsenal, production of new warheads can begin almost overnight.

Embarking on such programmes allows nuclear weapons states to continue developing nuclear weapons ***without*** having to conduct highly visible and politically sensitive nuclear weapons tests and without breaking the ***specific*** commitments signed up to in the Comprehensive Test Ban Treaty (CTBT) of 1996 and the Nuclear Non Proliferation Treaty, even though such programmes clearly break the spirit and intention of both treaties.

The role of SSMPs have been made clear in public comments by both France (Russia?) and India (fish them out and drop them in here).

Component parts of SSMP

Key ingredients of any SSMP include:

- Super Computers able to provide a "virtual testing" capability that will improve the ability of scientists to predict accurately the explosive behaviour of nuclear weapons;

- New means of testing real fissile material when imploded, known as "subcritical testing" (These involve 50 to 500 pounds of high explosive charge and special nuclear material such as weapon-grade plutonium and are designed to occur without self-sustaining nuclear reactions or nuclear explosions, thus the term, "subcritical.");

- New means of testing and taking pictures of simulated nuclear warhead cores after detonation, and;
- New means of producing and examining the temperatures and pressures that occur when nuclear weapons are detonated.

The U.S. SSMP • a Summary:

The largest SSMP currently underway is in the United States where the Government has embarked upon a construction and development programme at all three of their nuclear weapons laboratories (Los Alamos, Lawrence Livermore and Sandia) and at all other nuclear weapons related facilities costing in excess of $67 billion over fifteen years.

This programme has been devised to:

1. Maintain a nuclear weapons test site capable of rapidly resuming underground nuclear testing;
2. Maintain a substantial nuclear warhead manufacturing capability of sufficient flexibility and capability to meet any perceived future requirements; and,
3. Develop a whole host of high-tech, state of the art experimental facilities at the nuclear weapons laboratories to replace primarily the work previously conducted through underground nuclear testing. These include:

1. The National Ignition Facility (NIF). A 192 beam, 1.8 Megajoule glass laser facility for replicating temperatures and processes as close to actual nuclear weapons tests;
2. AdaPT - an initiative to develop the tools needed to integrate the development of weapons components with associated advanced manufacturing and materials processes;
3. AHF - an advanced hydrotest facility using new and developing accelerator technology that would provide time resolved images of the implosion of a weapon primary from several different angles;
4. DAHRT - a hydrotesting facility that, when completed, will provide two views of an imploded nuclear weapons core through the use of two electron accelerators at right angles to each other; and,
5. APT - a proposed alternative for producing tritium, a key ingredient in modern-day nuclear weapons, using an accelerator rather than a nuclear reactor.

The British SSMP • A Summary

Britain is embarking on a similar programme to that of the the U.S., although obviously on a much smaller scale. As AWE Aldermaston themselves explained to the House of Commons Defence Select Committee some four years ago:

•we have for many years employed a range of techniques such as above ground experiments, work with lasers, and computer simulation in addition to underground testing to underwrite the safety and reliability of our weapons stockpile. In the absence of testing we intend to develop our experimental techniques and facilities in such areas, and also to exploit the large quantities of data acquired from past underground testing and other work. These will be progressive developments, undertaken in continuing co-operation with the United States, which will contribute to the safe stewardship of Trident throughout its service life as well as sustaining capabilities to meet future requirements. We have also had some discussions with the French authorities on issues related to nuclear weapons stewardship, but it is too early to say how this may develop.

Are Britain and the US developing a New Warhead to replace Trident?

A key element of any *Stockpile Stewardship & Management Programme* is to maintain the necessary skills and facilities to ensure that the capability to design, develop and manufacture nuclear weapons is preserved and to ensure that the skills required to look after existing and future nuclear weapon stockpiles are also preserved.

Aldermaston is committed to this work and to working with their counterparts in the U.S and in France. As the Ministry of Defence so concisely put it almost four years ago:

These will be progressive developments, undertaken in continuing co-operation with the United States, which will contribute to the safe stewardship of Trident throughout its service life as well as sustaining capabilities to meet future requirements.

The Americans were a little more blunt some three years later:

*They are developing a stockpile stewardship plan. They have strong support from their government; including from the new Labor government... **They have not ruled out having to develop a new system in the future if deterrence requires one**•* [emphasis added]

They are beginning to implement a science-based stockpile stewardship program. We have significant exchange with the British in many research areas•

I expect the scientific dialog and co-operation between our two institutions to increase as we both face similar challenges; in fact, we are already working together on some experiments..

Twelve months later the Strategic Defence Review etched in stone this Government•s commitment to maintain "*•a minimum capability to design and produce a successor to Trident should this prove necessary•*"

Aldermaston has been embarked upon extensive co-operative programmes with their counterparts in the United States and to a lesser extent those in France to meet this Government objective.

Aldermaston is gearing up for a Trident warhead refurbishment programme scheduled to begin early in the next century.

US New Trident Warhead Project:

In order to meet the requirement, similar to that of Britain, to maintain a minimum capability to design and produce nuclear weapons the United States is embarking on two new nuclear warhead designs for their Trident system. Because of the commonality of the US and UK Trident systems these are of particular interest and will have an impact on the future of the British Trident programme.

The programme is known as the Submarine Launched Ballistic Missile Warhead Protection Program or SWPP for short.

"[SWPP] is a collaborative Navy/DOE effort to maintain the capability to jointly develop replacement nuclear warheads for the W76/Mk4 and W88/Mk5 should new warheads be needed in the future•. SWPP is concentrating on two designs, one near-term and the other long-term. Replacement warheads reflect no new weapon requirements but the desirable replacement characteristics include decreased sensitivity to ageing, increased design margins, increased ability for surveillance by above-ground testing, and the ability to be certified without an underground nuclear test. SWPP may include flight testing of design elements but does not encompass production•"

SWPP involves developing a replacement for the existing W76 and W88 Trident warheads and their re-entry systems (see further details below).

The question is not "Are the British involved?", it is "Too what extent?"

The first point to remember is that the British Trident warhead is heavily based upon the design of the US W76 warhead, almost certainly includes some features from the US W88 warhead and the British Trident warheads sit upon the US Mk4 Trident re-entry system.

Therefore, it is logical for Britain to be participating heavily in both of these programmes as they will have a direct impact on the British Trident design, particularly in light of the already existing close ties between both countries in this particular field and the similarities between the British and American Trident designs.

However, the official line of the British government is that there is currently no intention to build a replacement Trident warhead and the only British involvement as of mid-1998 in the US SWPP Program was limited to briefings.

AWE Aldermaston, however, give a different impression.

The 1998 AWE annual report states that:

"AWE participated significantly, as an independent contributor, in the United States Dual Revalidation Programme, which reviewed the status of the American Trident warhead, the W76."

It also went on to say:

"Other, more focussed exchanges, with the United States continued in support of the current Trident programme and in preparation for the refurbishment that will be required for Trident early in the next decade."

Another reference to this refurbishment programme is provided in AWE•s Strategic Plan:

"Historically all weapons systems have remained in service for longer than the originally defined service life. In addition there are pressures to lengthen the life between refurbishments. This will require us to define and execute a warhead life extension programme. We expect to begin a refurbishment and recertification programme, in association with "trickle production" of selected components, to meet the service life requirement in the near future•"

The Submarine Launched Ballistic Missile Warhead Protection Program (SWPP)

The *Submarine Launched Ballistic Missile Warhead Protection Program* or SWPP for short is intended to support the current U.S. Navy nuclear weapons stockpile and provide a variety of "*future replacement options*".

The program will focus DOE effort on the protection of the SLBM deterrent by developing potential replacement options for the W76 and W88...

This statement was made in February 1996.

Whilst the document from which this quote was obtained talks throughout in low key tones about the *'hedging of bets'* and *'keeping our options open'* in terms of SWPP and of the SWPP not being intended as a replacement for the W76 and W88 warheads a set of overhead projection sheets obtained by the Los Alamos Study Group written a little over two years ago are more blunt.

These were put together for a presentation at a SWPP Program Review Meeting in May 1997. In one of the vu-graphs (overhead projection slides) it describes the SWPP project as ***"a joint LANL/SNL design of a warhead to replace the W88/Mk5"*** and that the objectives/requirements of the project are to ***"integrate a LANL high margin Nuclear Explosive Package design into a Mk5 RB that includes enhanced surety design options; advanced AF&F "plus" functionality, and; advanced built in instrumentation and telemetry, all at reduced cost to the customer".***

In other words, the SWPP is a means of replacing the warhead currently onboard U.S. Trident missiles with one that has a higher degree of safety, has a high margin of error in terms of its design yield, has a new Arming, Fuzing & Firing Mechanism and has much improved instrumentation.

Two possible options are currently being explored.

"Weapon replacement design options that could be fielded with high confidence without additional nuclear testing will also be developed when necessary. Two candidate designs have been identified for the [Navy] Mk5 delivery system, one reusing an existing pit and one requiring new pit manufacture. These replacement designs would offer alternatives for possible replacement of existing warheads and would be prototyped, which is critical to maintaining our capability to design and fabricate new weapons as required by the Nuclear Posture Review. New experimental and computational capabilities are required to certify these designs without further nuclear testing."

"Both of the replacement design options will be prototyped and flight tested, but no final development activities will be initiated until a decision is made to proceed. The nuclear design activities of this program will be broadly based and will provide present and future weapons scientists and engineers with the opportunity to exercise the complete set of skills required to design and develop a stockpile warhead."

The 1996 declassified DOE document provides a timeline for some of the elements of the SWPP Mk5 *'Reused Pit Option'*. Between 1996 and 2002 *'experimental and computational assessment'* will take place. In 2002/2003 the phrase *'certify/prototype'* has been inserted, presumably meaning a prototype will be completed by the end of 2003.

For the SWPP Mk5 *'New Pit Option'* it is envisaged that in 1996-97 *'conceptual design'* will occur. Between 1998 and 2004 *'experimental and computational assessment'* will go ahead, with 'certify/prototype' occurring in 2005.

This timetable fits in with AWE currently gearing up for a Trident warhead "refurbishment" programme needing to be undertaken early in the next decade.

Nuclear Weapons Co-operation - On the increase?

US/UK nuclear weapons co-operation has increased markedly in the last year indicating more work being carried out by both sides in all areas of nuclear weapons design, development, manufacture and deployment.

A total of 235 visits, involving nearly 500 people, have been made to the United States under the auspices of the 1958 US/UK Mutual Defence Agreement during the last year, a two-fold increase from 1995.

From the United States there have been 110 visits, involving one or more people, to Aldermaston in the last year.

Currently, two AWE staff are on secondment to the US nuclear weapons laboratory at Los Alamos and one at Lawrence Livermore "*to assist with the technical development of facilities of mutual interest*".

Likewise, co-operation between Britain and France in this area has also increased significantly with 82 French personnel visiting Aldermaston in the last year alone.

The extent of co-operation was highlighted last year in an article written by the then Director of Los Alamos National Laboratory.

•They are beginning to implement a science-based stockpile stewardship program. We have significant exchange with the British in many research areas•

I expect the scientific dialog and co-operation between our two institutions to increase as we both face similar challenges; in fact, we are already working together on some experiments. Furthermore, two AWE members, Brian Thomas and Ian Deveraux, serve on the external review committees of our P and ESH divisions, respectively.

This co-operation consists of many elements detailed in Appendix C.

In the United States the whole manufacturing base for U.S. nuclear weapons is being restructured and downsized. In Britain the Atomic Weapons Establishments were reduced from four separate sites to just two.

In the United States new facilities such as the "*National Ignition Facility*", the world's largest laser and new methods of computer modelling and non-nuclear testing are just a few of the components of the programme.

In Britain, similar work is underway and Britain has invested in the U.S. National Ignition Facility to ensure our continued access to its unique capabilities.

Another part of the ICF programme is the development of an Advanced Hydrotest Facility.

We are working with a team of Livermore, Los Alamos, Sandia, EG&G, and AWE (Atomic Weapons Establishment, U.K.) researchers to develop plans for the Advanced Hydrotest Facility. This facility will provide multiple beams and multiple pulses of x-rays and, hence, three-dimensional CAT-scan-like movies of the interior of an imploding device.

A similar facility is intended to be constructed at Aldermaston at a cost of around £100 million.

Another Example - the Stockpile Life Extension Program (SLEP) or Dual Revalidation Program

The U.S. Stockpile Life Extension Program (SLEP) is intended to extend the life of nuclear warheads that are fast approaching the end of their natural design life and to ensure they continue to meet their design intentions into the 21st century.

The SLEP is an integrated program for sustaining all nuclear weapons in the stockpile. As such, it is the operational basis for the Stockpile Stewardship and Management Process and is the driving force for the overall Stockpile Stewardship and Management Plan because it embodies the plan's primary goals, objectives and deliverables•

The U.S. W76 Trident warhead is the first U.S. warhead to have been selected to undergo this process with work beginning in 1996.

The U.S. W76 SLEP involves replacing a number of component parts of the warhead such the Arming, Fuzing & Firing mechanism (AF&F), a new tritium supply system and a new neutron generator. It is also the intention to re-examine the high explosives, the plutonium pit and other key components to ensure they will continue to operate reliably and within the desired design limits and if not, to replace them with more modern technologies.

It should be recalled at this point that the British Trident warhead is very closely based upon the design of the U.S. W76 nuclear warhead and that Sandia National Laboratory provides the current Arming, Fuzing & Firing Mechanism in use in the British Trident warhead.

AWE "*participated significantly, as an independent contributor•*" to this US programme.

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SECTION TWO:

Parliamentary Oversight of the British Nuclear Weapons Programme

The British parliamentary system allows little scrutiny of money spent on the British nuclear weapons programme. Furthermore there is little opportunity to question the justification of any such expenditure and no realistically achievable way to change or abandon any such expenditure.

In contrast in the United States there is too much information available on their nuclear weapons programme. Every cent of expenditure has to be justified and approved by both Congress and the Senate. They can choose to increase or decrease the amount asked for initially.

In the United States copious quantities of information is available to Congress and the public about Stockpile Stewardship & Management Programme ranging from annual report on progress to date as well as details of future plans to item by item funding requests for every aspect of the US nuclear weapons programme.

In contrast British parliamentarians only happen open such information by accident or through the determined pursuit of questions to Ministers. The all pervasive cloak of secrecy that surrounds the British nuclear weapons programme suffocates any possibility of parliamentary oversight of this key area of British defence and foreign policy.

There is, therefore, far greater accountability for the nuclear weapons programmes of the United States than there is in Britain, the mother of all Parliaments.

British Expenditure Plans Approval System explained

The House of Commons approves all government expenditure by voting annually on the Departmental Estimates prepared by each individual Governmental department.

Three days are set aside for these estimates and it is up to the Liaison Committee of the House to choose which estimates are debated on which day.

This does not provide an opportunity to change or revise any individual item of expenditure it merely provides Parliamentarians with a chance to express an opinion.

Sums contained in these estimates may be amended but the Commons can only agree to expenditure not initiate as this is the prerogative of the Government.

Any amendment suggested can only be a reduction in a particular estimate or particular sub-heading not an increase and will invariably be voted down because of the standing majority of the governing party of the day.

In the winter and the spring Consolidated Fund Bills are presented and passed pro forma by the House. These simply specify the total amount of money to be taken out of the Governments bank account. In the summer the Consolidated Fund Bill presented to the House is a more complicated beast because it contains details of each of the different sub-headings of Government expenditure for each Government Department. Again this is passed without amendment.

The Winter and Spring Consolidated Fund Bills become Consolidated Fund Acts once approved and the Summer one becomes the Appropriations Act.

Concerning the Defence Estimates there are normally two days during the spillover period devoted to this subject but it is rare for any amendments to the Defence Estimates to be approved.

Departmental Annual Reports normally appear at the beginning of each year and these are subject to scrutiny by the relevant Select Committee with, for example, the Defence Select Committee examining Ministry of Defence expenditure and plans. They do not, however, have any power to amend Government plans, they can only make recommendations which the Government can choose to adopt or ignore.

Oversight of Government expenditure is carried out by the staff of the National Audit Office and the Public Accounts Committee. Their main function is to ensure propriety and to a lesser extent efficiency (making sure we are getting value for money) in spending.

House of Commons Select Committees are in place to "• examine the expenditure, administration and policy of the principal government departments• and associated public bodies•"

The House of Commons Defence Select Committee comprises 11 members, has a very small staff of clerks and can, from time to time, appoint special advisors.

"The Defence Committee is appointed under Standing Order No.152 to examine expenditure, administration and policy of the Ministry of Defence and associated public bodies•

The Committee has power:

1. *To send for persons, papers and records, to sit notwithstanding any adjournment of the House, to adjourn from place to place, and to report from time to time;*
2. *To appoint specialist advisers either to supply information which is not readily available or to elucidate matters of complexity within the Committee•s order of reference;*

3. *To communicate to any other committee appointed under the same Standing Order (and to the Committee of Public Accounts, to the Deregulation Committee and to the Environmental Audit Committee) its evidence and any other documents relating to matters of common interest;*

4. *To meet concurrently with any other such committee for the purposes of deliberating, taking evidence, or considering draft reports.*"

They may make recommendations but there is no power for the Committee to enforce any recommendations it may choose to make.

Where are the annual British nuclear weapons costs hidden?

In March of this year the Ministry of Defence published its expenditure plans for the years 1999/2000 and 2001/2002. This documents consists of thirty two pages, half of which is devoted to what the MoD intend to spend.

When asked where in this document were the nuclear weapons costs, the MoD replied:

"*Costs relating to nuclear weapons procurement are contained in vote 1 subheads K and L. Costs associated with the storage of nuclear weapons and related maintenance activities are contained in vote 1 subheads F and D; the latter costs are related to redundant naval systems. Vote 1 subhead A covers the front line operating costs of the deterrent.*"

To put this into English, Appendix 1 contains an explanation of what each of these •votes• and •subheads• contain and whether or not there is a specific breakdown of nuclear weapons costs.

Nowhere within either the Main Supply Estimate or the Spring or Winter Supplementary Estimates or detailed line by line breakdowns of how much is being spent on any one particular item.

The only figure that appears concerning the annual cost of nuclear weapons is in the Strategic Defence Review Supporting Essays and in "UK Defence Statistics 1998". In the former it states that "*the average annual operating cost of the Trident force over a planned thirty-year life is expected to be around £280M• Expenditure on our nuclear warhead programme as a whole amounted to £410M.*" This gives a total of £690 million spent in financial year 1997/98 on the British nuclear weapons programme. The latter has a subheading under the main heading •Chief of Defence Procurement• there is a subheading "Nuclear warhead programme costs" on which £434.6 million was spent in financial year 1998/99.

This is not, however, the total cost.

The Ministry of Defence has a long term habit of •guesstimating" the share of the cost of certain specific facilities that should be allocated to the nuclear programme, for example, only a percentage of the costs of the Clyde Submarine Base, Faslane are known to be allocated to the nuclear weapons programme yet this is where the four Trident submarines are based.

In order to provide an accurate estimate of the money being spent each year on the nuclear weapons programme all money, and not percentages, should be taken into account.

This is one of the reasons why a line by line estimate of expenditure is required for the Defence budget if there is to be full and proper scrutiny of their expenditure

Nuclear Weapons Support Facilities Construction Costs - where are they hidden?

Concerning defence construction projects only those projects costing over £25 million are detailed in the MoD expenditure plans. For those projects costing less than £25 million there is just one figure giving the total amount for all projects costing less than £25 million.

For example under the heading "Defence Procurement Agency Costs and Nuclear Warhead and Fissile Material programme" there is only one project listed i.e. the Procurement Executive future computer project at a cost in 1999-2000 of £7.43 million. A further £50.5 million is requested for 1999-2000 construction expenditure for a number of unspecified projects which cost less than £25 million each.

There may be other projects hidden within the below£25 million figure given which actually cost more than £25 million but these cannot be disclosed for "security or commercial reasons".

Conclusion

The costs to the taxpayer of the British nuclear weapons programme are hidden in almost £14,000 million of defence expenditure, just over half the total defence budget.

There is therefore currently no way of Parliament knowing the true cost of the British nuclear weapons programme to the taxpayer, no justification of why items of expenditure are required and therefore, there is no way in which Parliament can adequately scrutinise this programme.

contrast in the United States there is line by line scrutiny by both Congress and the Senate and each Department produces pages and pages of tification for every cent of intended expenditure. Budgets can be changed up or down, they can be amended to place more emphasis on rticular projects than others.

ıe US system of nuclear weapons expenditure scrutiny

the US Congress both House and Senate members have the right to draft legislation on any matter they feel like. They can also suggest ıendments to any matters that appears before them for consideration.

good example of this form of Government is when Senators Sam Nunn and Richard Lugar drafted a bill which got passed into law that is now own as the Co-operative Threat Reduction or Nunn-Lugar Program. It specifically authorises the US Department of Defense to provide uipment and assistance to the former Soviet Union for the purpose of safely and securely dismantling nuclear weapons. This has become the gest aid program of its kind to the former Soviet Union.

bad example is the way the budget is used as a political football by the opposition party if the President does not have a majority in the ıngress.

r example, planning for the fiscal year 2000 budget began throughout 1998 when each Government department and agency prepares and bmits its budget to the Office of Management and Budget. The President by February 1999 had to decide what went into the budget and nsmit it to Congress. From March through to September of this year Congress will be reviewing the Budget, developing its own version of the dget and approving it.

ıe first step in the Congressional budgetary oversight process is for a "budget resolution" to be approved which provides a framework within ıich Congress must work. It sets targets for total spending, total revenues, the deficit and allocations within the spending target for two types of ıding - discretionary and mandatory.

andatory funding accounts for about two-thirds of the budget and is what must be spent according to US law such as money for Food Stamps, ıcial Security, Health are etc. Of course Congress can change the law to decrease or increase this mandatory spending level.

scretionary spending accounts for the other third of the budget and this is where the political fighting really takes place because it is ultimately to Congress to decide whether a certain project or agency gets the funding they have requested.

ıey can approve or disapprove any programme or expenditure they wish.

ır example, Congress has suggested that the fiscal year 2000 Defense budget was increased by $16 billion with reductions being made in social ɔgrams such as community and regional development programs which provide funds to promote local economic development and job creation d the International Affairs budget.

ter the budget resolution is passed scores of committees kick into action examining the budget in the minutest detail in order to approve the ırteen separate appropriations bills of which Defense is one.

ıe US Congress has approximately 250 committees and subcommittees with the House and Senate having roughly comparable yet separate stems. Standing committees generally have legislative jurisdiction and most operate with subcommittee•s that handle a committee•s work in ecific areas. Select and joint committees are chiefly for oversight or housekeeping tasks.

ɔmmittees receives varying levels of funding and they hire and fire their own staff.

ıe work of congressional committees is wide and varied. It first asks relevant Government departments to comment on any measure it decides look at. It holds hearings to gather information and views, holds meetings to perfect by amendment the measure and then sends the measure ck to the chamber for approval, usually accompanied by a detailed report.

ɔmmittees also carry out hearings on the implementation and administration of particular programmes i.e. oversight and investigate allegations wrongdoing i.e. investigative.

ıch standing committee, other than those concerning appropriations and budgets, is required to review and study, on a continuous basis, the plication, administration, execution and effectiveness of any laws over which it has jurisdiction as well as any relevant federal agencies and tities.

ıe purpose of this continuous review and study is to determine whether the laws and programmes enacted by Congress are being implemented d carried out in accordance with the intent of Congress and whether those programmes should be continued, curtailed or abandoned. These ersight committees also have the responsibility of continuously reviewing conditions or circumstances that may indicate a need to enact new or ditional legislation.

The US Defense Budget is scrutinised by the House and Senate Armed Services Authorising Committees and the Defense and Military Construction Subcommittees of the Appropriations Committee. It is also subject continuous oversight by both the House and Senate Armed Services Committees.

Nuclear warhead design, development, production and maintenance expenditure and construction is the responsibility of the Department of Energy Office of Defense Programs whose budgetary oversight comes under the review of the House and Senate Energy and Water Development Appropriations Subcommittees.

Once it has gone through Committee the Defense Appropriations Bill must first pass through the House and then go on to the Senate. If the Senate decides to change something it has to go back to the House for consideration as both the House and the Senate must approve a bill before it can be passed on to the President for signature.

Normally when there is a disagreement a Conference Committee is convened with members from both Houses to resolve any differences.

The President when he receives the amended budget bill has a number of options. He can sign it into law, veto it and send it back, let it pass into law without his signature or at the end of a session, pocket-veto it

Once the President and Congress have agreed the levels of spending oversight is provided through program managers, budget officials, Departmental •Inspector Generals• i.e. internal auditors, The Office of Management and Budget (an executive agency), the innumerable Congressional Committees and the General Accounting Office, the auditing arm of Congress.

SECTION THREE:

SSMP - Undermining The International Nuclear Disarmament Process ?

The British Government through its collaboration with the United States and France on huge new nuclear weapons development programmes is pursuing a defence and foreign policy that runs counter to our international nuclear non-proliferation and nuclear disarmament moral and legal obligations.

Specifically, the programme conflicts with a key paragraph of the Comprehensive Test Ban Treaty (CTBT) which states the belief of those who sign up to it that:

"the cessation of all nuclear weapon test explosions and all other nuclear explosions, by constraining the development and qualitative improvement of nuclear weapons and ending the development of advanced new types of nuclear weapon, constitutes an effective measure of nuclear disarmament and non-proliferation in all its aspects."

Military nuclear co-operation of any type or nature is a breach of the spirit and objectives of Article I of the NPT and subverts the intentions of Article VI by assisting in the maintenance of nuclear weapons by Britain and the United States. Article I of the NPT reads:

Each Nuclear-weapon State Party to the Treaty undertakes not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosives devices directly or indirectly...

Britain, the United States and now France, have failed to explain how military nuclear co-operation can continue as it has done over the last forty years, whilst they claim to be fulfilling all of their NPT commitments.

Furthermore it conflicts with Article VI of the NPT which commits signatories *"to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control."*

"In order to retain a technological edge in the military system, one major nuclear weapon state has embarked upon a more sophisticated program to further refine its nuclear weapons designs by using techniques such as• inertial confinement fusion and computer simulations which is a conspicuous violation to the spirit of Article VI. We are very much concerned over this discouraging development, for it could also trigger a renewed nuclear arms race among the nuclear-weapon States."

"The overall impression that they [nuclear-weapon States] give is that of business as usual. The Cold War may be over and, yes, the strategic competition between the United States and the former Soviet Union shows signs of abating, but the relationship of nuclear weapons States to their own nuclear weapons has not registered the kind of basic change one might expect. They continue to rely on nuclear weapons and do not seem prepared to give them up in the foreseeable future. Quite the contrary, they are looking for ways to freeze the Non-Proliferation Treaty•s dichotomy between the nuclear haves and the nuclear have-nots. This does not bode well for the NPT or nuclear non-proliferation in general."

The programmes also break the Labour Government•s own pre-election commitment that •*Labour is committed to a nuclear weapons free world. In government, we will actively pursue further measures of mutual, balanced and verifiable reduction in nuclear weapons world-wide.*

Which has been reaffirmed continually through statements to Parliament that this Government would "*make a difference in this area, as in so many areas of Government policy• Our approach• will not be grudging and it will not be one that plays up the obstacles to progress in order to leave things as they are. We intend to be a constructive actor, using our influence to move things forward where we can•*"

Military nuclear co-operation is a commitment to maintaining the status quo and keeping a capability to enhance and improve one's own nuclear arsenal and contradicts any real commitment to nuclear disarmament. Ongoing co-operation on Stockpile Stewardship programmes and the planned programme of subcritical tests by the United States demonstrates this lack of commitment. The British government should cease all military nuclear co-operation and state publicly that any future co-operation will occur only with the express intention of ensuring the safe and efficient dismantling of the world's nuclear arsenals.

Summary of evidence that proves Britain is working on a new Trident warhead

From all the evidence outlined, it would appear that Britain is collaborating with the U.S. on a new warhead for Trident.

Military nuclear co-operation between Britain and the United States is and will remain extensive. Britain is committed, as part of its defence and foreign policy, to maintain a "minimum capability to design and produce successor" nuclear warheads should there be a need.

Britain is working, with the United States, on programmes that complement each other to design and build prototype new warheads that could replace Trident when the need arises.

In answer to a parliamentary question asking for the latest list of Joint Working Groups [see Appendix 3 of this report] the Government said:

With the exception of support to the U.K. Trident Project which is effected under the terms of the Polaris Sales Agreement, as amended for Trident, there is no joint work under way on new weapons systems. There are however regular exchanges on a wide range of research and technology areas as specified above. The involve all three U.S. National Laboratories, namely Lawrence Livermore National Laboratory, Sandia National Laboratory and Los Alamos National Laboratory. [emphasis added]

This is true, but fails to answer the question.

There is *'no joint work underway on new nuclear weapons systems'*. The work being conducted currently is on the Trident warhead and its individual components, not on the Trident nuclear weapons system itself. This is an existing warhead, not a "new" one.

The British Government also continually state that:

"There are no current plans for any replacement for Trident, and no decision on any possible successor system would be needed for several years."

Again this is also technically true in that the political go-ahead for a successor to Trident has not yet been granted.

As with the Chevaline programme worked continued for eight years before final approval to proceed to production and deployment was given in 1975 (see Appendix 2).

It does not, however, deny the fact that Aldermaston are actively engaged with the United States on a wide variety of projects which will provide a variety of options for a new Trident warhead to go into production soon after the decision is taken.

This continuous play with words does little but muddy the waters when trying to find an answer to the question "is Britain working with the U.S. on a replacement Trident warhead?"

It merely delays a scandal similar to that of the Chevaline programme (the replacement front-end for Polaris) where the Government failed to inform Parliament of over £1,000 million being spent on a new front end for Polaris for twelve and a half years.

In 1973 the direct question about the Chevaline programme was asked i.e. was Britain spending £100 million on improving Polaris and the answer back did not even attempt to answer the question but did not deny it either . In reply the Government said ""*We have no intention of abandoning our nuclear capability. It forms a valuable contribution to NATO deterrent forces.*"

There is little doubt that Britain is working with the U.S. on prototype nuclear warheads that may replace the Trident warhead if a political decision is taken to continue with a British nuclear weapons capability when Trident starts to be retired in 2020.

The Government has not denied this allegation.

AWE Aldermaston is currently gearing itself up, with the help of the United States, for a warhead "*refurbishment*" programme "*early in the next decade*".

Throughout the life of the Trident programme, Britain will be reliant on the U.S. for essential warhead and re-entry vehicle components as well as the entire missile system. As the Americans are replacing many of these components, it would be highly unlikely for them to continue supplying Britain with out-of-date parts that they are no longer producing.

According to the MoD present plans to ensure the safe maintenance of our [Britain•s] nuclear capability involve an efficient use of resources and that although Britain is developing similar resources to those of the U.S., U.K. developments complement rather than duplicate their resources.

It is beyond belief given all the discussions, Joint Working Groups and joint research projects that have already taken place and the many more that are currently underway on Stockpile Stewardship and Management as well as every other aspect of nuclear weapons technology that Britain is not actively involved in the SWPP programme, particularly as there exists a specific group to discuss the Trident re-entry system, one of the parts that the U.S. are replacing.

It would also be odd that the U.S. feel the need to perform certain tasks on their Trident warheads and key components contained within it, such as the Arming, Fuzing & Firing Mechanism, yet despite the overall similarity and in the case of key components the same ones being used, the British chose not to follow suit, choose not to get involved and choose not to implement similar programmes of upgrade/refurbishment.

It would also be highly unlikely, given that British nuclear weapons have the same shelf life as their U.S. equivalents, that we are not involved in U.S. programmes designed to extend that shelf life.

It would also be highly unusual that we were not involved given that Aldermaston is as committed as the U.S. to maintaining this technological base so it can continue to design, develop, produce, deploy and maintain nuclear weapons well into the 21st century.

The Ministry of Defence as an area of Government is renowned for its mismanagement and cost overruns on major projects. Parliament and public must be kept informed and be involved in decision making before and whilst any money is being spent.

APPENDICES:

Appendix 1

An Explanation of where British nuclear weapons costs are hidden

"Costs relating to nuclear weapons procurement are contained in vote 1 subheads K and L. Costs associated with the storage of nuclear weapons and related maintenance activities are contained in vote 1 subheads F and D; the latter costs are related to redundant naval systems. Vote 1 subhead A covers the front line operating costs of the deterrent."

It should be noted that only between five and ten percent of the nearly £14,000 million of defence expenditure detailed below is attributable to the British nuclear weapons programme.

•

•	Main Responsibilities	1999/2000 planned expenditure	What expenditure is to cover
Vote 1 subhead K Defence Procurement Agency operating costs and nuclear warhead and fissile material programme	Cost effective procurement of new military equipment for the armed forces in response to approved requirements; provision of certain other procurement related services; maintenance of the MoD•s nuclear programmes and the efficient management of the Defence Procurement Agency, its assets and resources	£667 million	Costs related to personnel, capital works, nuclear programme and general administrative expenses
Vote 1 subhead L Defence Systems Procurement	Procurement by the Defence Procurement Agency of new equipment and associated weapons, communications, information and training equipment for the three Services, including major upgrade programmes of existing equipment and systems.	£5,917 million	Costs related to the acquisition of new surface ships/ submarines and associated weapons; strategic systems; tanks; armoured vehicles; and other land based fighting and support equipment; fixed and rotary wing aircraft; weapons and electronic systems; communications; information and simulation systems; and major upgrades of existing equipment; managed by the Defence Procurement Agency.
Vote 1 subhead F Chief of Defence Logistics	Supporting the services in peace, crisis and war through the provision of logistic support, policy and plans and provision of in-service management of equipment, weapons and ammunition. Provision of capable and safe ships, submarines and aircraft to support the Fleet. Provisions of weapons and ammunition; storage and distribution; design, production and issue of clothing; postal and courier services; transport and movements; and engineering logistic resources to sustain the Army. Management of all support for RAF aircraft, communications, airborne and ground systems. In	£4,627 million	Cost relating to ship and submarine repair; aircraft repair; procurement of spares and repair of equipment; stores and distribution, clothing; contracted out operational and technical support services; food; personnel; infrastructure and estate; transportation; telecommunications; information technology; works services and property management; salvage and mooring services; plant and machinery; RAF third line aircraft and avionics repair, Central European Pipeline System, fuel, utilities and other general administrative expenses.

	addition, to provide joint service support for rationalised ranges of materiel.		
Vote 1 Subhead D Air Officer Commanding-in-Chief RAF Strike Command	Provision of operationally capable air forces for the effective defence of the UK and the protection of dependent territories, to contribute to NATO and Allied air force structures, and to support the promotion of the UK•s national and international defence interests.	£1,560 million	Costs related to personnel, stores and services, equipment, transportation, fuels and utilities, lands, buildings and works services, and general administrative expenses. Other expenditure includes support of USAF in the UK,.
Vote 1 Subhead A Commander-in-Chief Fleet	Delivery of an operationally capable fleet which comprises the Submarine Flotilla, the Surface Flotilla, the Naval Aviation Command, the Royal Marines Command, the Royal Fleet Auxiliary Command and the Headquarters and related infrastructure.	£1,058 million	Costs related to personnel, stores and services, equipment, transportation, fuels and utilities, lands, buildings and works services, and general administrative expenses.
TOTAL	•	£13,829 million	•

Appendix 2: The Chevaline Scandal

The Wilson Government gave the go ahead for a new front end for the Polaris submarine launched ballistic missile system in 1967, soon after the first Polaris submarine entered into service. This project became known as Chevaline

During Prime Ministers questions in mid June 1967 Harold Wilson, in answer to a question about replacing Polaris with the US Poseidon system stated that "*I have made it clear that we are not concerned at all with new generations of military (sic) weapons•*"

This vein of not answering questions about the top secret Chevaline programme with a straight answer continued for twelve and a half years and spanned four changes of Government.

The project was beset by technical difficulties and costs rose heavily over the next fifteen years. It increased from a 1972 estimate of £175 million to £600 million by 1976. It was estimated to have cost over £1,000 million by the time it entered into service in the early eighties and at its height involved a team of about 5,000 people spending around £2 million every week.

Despite the enormous cost Parliament did not know until the recently elected Conservative Government let it slip out during the Defence Secretaries opening remarks in debate on nuclear weapons in January 1980.

'The House will, I am sure, understand that I cannot go deep into detail, even to correct the widely mistaken assertions which have sometimes appeared in public, but I think the programme has now reached a stage where I can properly make public more information about it.

The programme, which has the codename Chevaline, is a very major and complex development of the missile front end, involving also changes to the fire control systems. The result will not be a MIRVed system, but it includes advanced penetration aids and the ability to manoeuvre the payload in space. The programme has been funded and managed entirely by the United Kingdom with the full co-operation of the United States Government, including the use of some of their facilities for tests and trials•

It has been a vital improvement. I do not think the House will be surprised that it has also been costly. The programme•s overall estimated cost totals about £1,000 million•"

The Government was heavily criticised by the House of Commons Public Accounts Committee for not keeping Parliament informed, even on a classified basis to members of the Committee only, of this particular programme.

In the case of Chevaline a major project costing £1,000 million continued for over ten years without Parliament being in our view properly informed of its existence and escalating costs• our criticism is that the costs were not disclosed and that there was no requirement that they be disclosed. Incidental and oblique references to a Polaris enhancement programme made in Parliament or to Parliamentary Committees in our view do not provide sufficient for Parliament to discharge its responsibility to scrutinise major expenditure proposals and to exercise proper financial control over supply•"

In defence of this criticism the Government stated that there were "*a whole series of questions and answers which dealt in part with this*".

In their defence they cited a perfect example of Whitehall speak from a Parliamentary Question of 5 March 1973 which fails to answer the question and deliberately muddies the waters.

Mr Allaun: Is it correct that the government have spent £100 million on updating these missiles?

which he got the answer, "We have no intention of abandoning our nuclear capability. It forms a valuable contribution to NATO deterrent rces."

ıe Public Accounts Committee concluded their report with this remark:

is not the task of this Committee to deal with policy objectives in defence matters. Nevertheless the failure to inform Parliament or this ɔmmittee until 1980 that major programme on this scale was being undertaken, or that its cost was turning out to be so far in excess of that iginally expected, is quite unacceptable. Full accountability to Parliament in future is imperative."

ɔpendix 3

S/UK Nuclear Weapons Co-operation

ɔw it all began

1946, following close collaboration throughout the Second World War on designing, developing and building nuclear weapons, the U.S. vered all nuclear links with the U.K. and decided to proceed with its nuclear weapons programme on its own. The U.S. legislative passed the cMahon Act (The Atomic Energy Act of 1946) which prohibited the exchange of any nuclear weapons information or materials with any other tion.

ıe situation changed some years later with the passing of the 1954 Atomic Energy Act. This allowed, amongst other things, co-operation on the velopment of nuclear weapons delivery systems. In 1958 this Act was further amended to permit co-operation on nuclear weapons design, velopment and manufacturing capability. It also would allow the U.S. to transfer nuclear materials for research, development, or use in nuclear :apons and nuclear-powered submarines. This amendment to the 1954 Atomic Energy Act now acts as the legal foundation upon which all clear weapons co-operation between Britain and the U.S. is based.

ɔ formalise matters Britain and the U.S. signed the *1958 U.S./U.K. Mutual Defence Agreement*. This Agreement is periodically updated to commodate new weapons developments and to permit further transfers of information and material. In almost forty years the Agreement has en amended six times, the last being May 1994.

hilst the Agreement serves as the cornerstone of all U.S./U.K. co-operation on nuclear weapons matters it has received little scrutiny from her the U.S. legislator or the U.K. parliament. Many details of what goes on under the auspices of the Agreement remain secret.

ıe Ministry of Defence considers this co-operation to be *"essential in order to implement the United Kingdom•s nuclear weapons policy• hilst the Department were not able to quantify totally the value of these exchanges to the United Kingdom• they judged the exchanges to be of ıjor political, technological and economic worth."*

ɔw Articles II and III of the 1958 Agreement work and what is transferred

order to implement the provisions of the 1958 Agreement a special office, the *Joint Atomic Information Exchange Group (JAIEG)*, was tablished in 1959. Its job was to supply written information to the U.K.. For the verbal exchange of information and ideas *Joint Working roups (JOWOGs)* were established. There are also *Exchange of Information and Visit Reports (EIVRs)* which combine verbal and written changes. To oversee the whole and to act as liaison, the British established *Atomic Co-ordinating Offices* in Washington and London.

ıe Joint Atomic Information Exchange Group (JAIEG) was established in 1959 by the U.S. Department of Energy (DoE) and the U.S. :partment of Defense (DoD). It is situated in the offices of the Defense Nuclear Agency and is staffed by at least 12 people from DOE and ɔD.

AIEG controls the release of nuclear weapons information to any country with whom the U.S. has signed an agreement for co-operation on the es of atomic energy for mutual defence purposes.

ll information intended for transfer under these agreements has to go through this office, where it is checked to ensure its transfer is legally rmissible. Any information not permissible for transfer is removed by JAIEG prior to dispatch. Copies of all documents dispatched to other tions are held at the JAIEG offices.

int Working Groups (JOWOGs) and Exchange of Information and Visit Reports (EIVRs)

ıese are the two principal fora in which British and American nuclear weapons scientists and military personnel exchange ideas on nuclear :apons issues face to face.

all major areas of research joint U.S./U.K. Working Groups and other information exchange channels have developed, through which mprehensive and detailed exchanges of defence nuclear research take place as required• The Department [Ministry of Defence] consider that ese exchanges are essential in order to implement the United Kingdom•s nuclear weapons policy.

ıe list of subject areas covered by *JOWOGs* as of January 1998 were:

- ☐ Radiation simulations and kinetics technology
- ☐ Energetic Materials
- ☐ Test Monitoring
- ☐ Nuclear Materials
- ☐ Warhead electrical components and technologies
- ☐ Non-nuclear materials
- ☐ Nuclear counter-terrorism technology
- ☐ Facilities
- ☐ Nuclear weapons engineering
- ☐ Nuclear warhead physics
- ☐ Computational technology
- ☐ Aircraft, missile and space system hardening
- ☐ Laboratory plasma physics
- ☐ Manufacturing practices
- ☐ Nuclear weapon accident response technology
- ☐ Nuclear weapon code development
- ☐ Nuclear weapon environment and damage effects

A separate working groups exists for the Trident programme, known as *the Joint Steering Tasks Group*, that is supported through the work of *the Trident Joint Re-Entry Systems Working Group* and *the Joint Systems Performance And Assessment Group*.

The Atomic Co-ordinating Office

The staff in the Atomic Co-ordinating Offices in Washington and London *"are responsible for the transmission of information, documents and material, arrangements of visits and submission of clearances as required by the 1958 U.S./U.K. Mutual Defence Agreement."* The senior staff in the Washington office *"represent U.K. interests in technical and procurement matters pertaining to the U.K. Defence Nuclear Programme by liaison with the United States Department of Defense, Department of Energy and their contractors."*

There are six and a half-staff employed in the London office costing approximately £120 - 130,000 a year. There are five people presently employed in Washington at a cost of approximately £300,000 a year.

British personnel working in the U.S.

Because of *the Polaris Sales Agreement* and *the Trident Sales Agreement* there were 17 British personnel stationed in the United States as of January 1997, providing direct liaison with U.S. personnel on all matters pertaining to technical, financial, logistics, planning and safety matters.

Crystal City, Arlington, Virginia 13

Kings Bay, Georgia 1

New London, Connecticut 1

Laurel, Maryland 1

Dahlgren, Virginia 1

This number dropped to fifteen by January 1998.

s of July 1999 there were a further four British personnel stationed in the U.S. as part of the 1958 Agreement: four in the British Embassy in Vashington' the other, from the Atomic Weapons Establishments, has been there for at least the last two years on a short-term appointment at ıe U.S. Lawrence Livermore National Laboratory.

s of 1998 there were a further three employees of the Atomic Weapons Establishments working in the U.S. on short-term appointments.

ı the U.K. there are four U.S. personnel stationed as part of the Polaris Sales Agreement, as amended for Trident.

ristol 3

arrow in Furness 1

here are at present no U.S. personnel based in the U.K. as part of the 1958 Agreement.

isits to the U.S.

etween April 1990 and May 1999 (the last date available) the following number of visits of British personnel concerning Trident and all other spects of nuclear weapons co-operation had occurred:

Financial Years	Visits
•	•
1990-91	110
1991-92	129
1992-93	127
1993-94	129
1994-95	136
1998-99	235

pecific research contracts being undertaken

here are also specific areas of research occurring between the British nuclear weapons laboratories and their American counterparts.

andia National Laboratory (SNL)

andia National Laboratory currently *provides certain services in support of the U.K. Trident programme. Sandia also provides goods and ervices to support the U.K. nuclear research programme under contracts placed on the laboratory by the U.S. Department of Energy on behalf f the U.K. Ministry of Defence.*

etails of some of these contracts can be found in *the Sandia National Laboratory Institutional Plan for Fiscal Years 1995 to 2000.*

he report admits that Sandia has provided, at the request of the U.S. Department of Energy and the U.K. government, *"engineering services"* for e *"development, evaluation, production and stockpile surveillance of the U.K.'s reentry body system."* It is estimated that this work will cost e U.K. Government between $1 and $2 million during 1998.

andia also has projects with the U.K. that include: -

- ☐ electrical system and command and control support for our warhead development project;
- ☐ helping to develop accident resistant containers and handling gear for recovery of damaged warheads in an accident;
- ☐ engineering support for U.S. supplied components and testers for the Trident re-entry system.

More detailed information on the true extent of Sandia•s support for the British nuclear weapons programme appears in *"Inside Energy / with Federal Lands"* from May 1994 by David Kramer. This reads:

"Sandia also designs the arming-fusing-firing mechanisms for all of the United Kingdom's nuclear weapons, Robinson said, and it required the overseas indemnification provision to continue maintaining those systems." [emphasis added].

The Trident Sales Agreement

Under the *1958 U.S./U.K. Mutual Defence Agreement (as amended)* the United Kingdom has previously purchased the submarine-launched ballistic missile system, Polaris. This transfer of information, materials and technology occurred under the *Polaris Sales Agreement*.

When Britain decided to upgrade the Polaris system to Trident *the Polaris Sales Agreement* was amended to become the *Trident Sales Agreement*. All purchases of Trident or Polaris related material as well the transfer of information concerning these two systems are primarily dealt with by the U.S. Navy Strategic Systems Project Office (SSPO)

As can be seen the Trident Sales Agreement and *the 1958 Mutual Defence Agreement* have allowed Britain to obtain copious quantities of information, materials and technology to assist in the deployment of Trident.

The United Kingdom Government would wish to purchase sufficient missiles, complete with multiple independently targetable re-entry vehicles and less only the warheads themselves, together with equipment and supporting services, on a continuing basis to introduce and maintain a force of 4 British submarines•

Co-operation has been so extensive as to put in question whether Britain•s *nuclear deterrent* (sic) is as either independent or even British as the Government claims.

The U.K. Trident Programme

The U.K. Trident submarine-launched nuclear missile programme has been aided and abetted throughout its design, development and deployment by the U.S. Government.

Although the U.S. has not directly provided the U.K. with a complete nuclear warhead for Trident, it has done everything but, through the use of discussion groups, the supply of design, development and manufacturing information and the provision of materials and technology. All British nuclear weapons are almost entirely dependent on U.S. technology and support.

Some 30 per cent, almost £3,000 million, of the total Government estimated cost of Trident is being spent in the United States.

Britain has not built its own Trident missiles. Instead, these are being leased from a central U.S. missile pool. The missiles will also be refurbished in U.S. facilities.

The U.S. has also supplied:

- ☐ Highly enriched uranium to fuel the nuclear reactors onboard Trident submarines;
- ☐ Assistance with the design and testing of the Trident warhead;
- ☐ The supply of all sixteen missile tubes for the first Trident submarine, HMS Vanguard and technical assistance to aid in the installation of the missile tubes in the other three Trident submarines; and
- ☐ Targetting, communication and guidance of Britain•s Trident missiles will be complemented by using U.S. navigation satellites.

Trident Warhead Design and Development

The British (sic) Trident warhead is thought to be most closely based on the U.S. W76 warhead, with perhaps the inclusion of some features from the U.S. W88 warhead. It is placed on the U.S. designed and manufactured Trident MK4 re-entry vehicle.

Further confirmation as to the extent of U.S. assistance was provided when in 1980 the then director of Aldermaston was asked by the House of Commons Defence Select Committee if he was satisfied that he would be getting all that he needed from the U.S. to aid in the Trident warheads design, production and engineering.

I think the answer is yes and I qualify it by saying we already have had a considerable amount of interface with the U.S. weapon laboratories in connection with that particular warhead to an extent where we can judge what is that warhead, how does it work, what is our capacity to make such a warhead, how does it compare with our own capabilities and our own technologies and I believe therefore that we are in a very good position, probably as good a position as we ever could be in such a circumstance to make what appears to be the right judgement for developing and manufacturing the most cost effective warhead for Trident based upon the combined view of our capabilities and designs.

Some seven years later a National Audit Office report stated *that the U.S. will supply• certain warhead related components and services•*and that most *of the [U.K.] expenditure on development and production [relating to the nuclear warhead] is incurred in the U.S.•*

28% of the £2,300 million spent on Britain•s Trident warhead has been spent in the U.S. on nuclear testing, purchasing elements of the re-entry body and other warhead components. Substantial proportions of the special nuclear materials for Trident were also purchased from the U.S..

The U.S. nuclear weapons laboratory at Sandia has extensive support contracts for the British Trident warhead. These included *"engineering services"* for the *"development, evaluation, production and stockpile surveillance of the U.K.'s re-entry body system."* It is estimated that this work will cost the U.K. Government between $1 and $2 million during 1998. The lab, more importantly, also provides one essential component without which the Trident warhead would be nothing more than a pile of radioactive material and electronic components - the Arming, Fuzing and Firing Mechanism.

The only thing British about the British Trident warhead is that it was built in Britain•s nuclear weapons factories by British workers with some British modifications to its design and some British component parts.

The Trident Missile System

Aside from the actual nuclear warhead there is one other fairly essential component: the actual missile on which the warheads sit.

This is totally American. In March 1982, the decision was taken to purchase the planned Trident II D5 missile rather than the system already in service in the U.S., the Trident I C4 missile. Because the Trident II D5 missile was still in development, Britain paid a nominal amount towards its development costs.

At the same time a decision was taken that all missiles purchased for the U.K. programme would be repaired and refurbished in the U.S.. Under this arrangement the U.K. will take its missiles from a shared pool. The U.K. will purchase and take title of its missiles, but it will not own them outright. U.K. Trident missiles will effectively be leased from the United States.

The majority of those parts of the U.K. Trident weapons system that ensure the missiles can not only be fired but will accurately hit the right targets are also being purchased from the United States. This not only covers the purchase of the missile but also the purchase of the navigation, fire control, guidance and launcher systems.

Of an estimated total spend on both missiles and related equipment of almost £1,500 million, only around ten per cent is being spent in Britain.

As of November 1995 (the last available figures) Britain has spent or is committed to spend just over £2,500 million on Trident in the U.S. on missiles and related equipment.

Britain has so far purchased 44 Trident missiles, a further seven were ordered for U.S. Fiscal Year 1997, with further purchases planned of seven more missiles in each of U.S. Fiscal Years 1997 and 1998.

The British Trident Submarine

This is being built by Vickers Shipbuilding and Engineering at Barrow-in-Furness. Three boats have now been built, with the fourth nearing completion. However, U.S. assistance was key to the construction of Britain•s four boat Trident fleet.

Some £240 million of the just over £4,000 million budgeted for the Trident submarine is or has already been spent in the U.S..

The majority of this expenditure is for the missile compartment design, the supply of all sixteen missile launch tubes for the first Trident submarine and the missile compartments for all four Trident boats.

As of 1997 there was still one U.S. person based at Barrow-in-Furness as part of the Trident Sales Agreement.

Appendix 4: Construction/Refurbishment contracts over £250,000 in value underway at Aldermaston.

- Installation of rainwater management system to control discharges to water courses
- Replacement of a tritium processing facility
- High pressure test facility
- Electron beam melter

- New process lines
- Indoor shooting range for MDP
- Computer replacement
- Computer replacement
- New fume cupboards
- Refurbishment of a beryllium facility
- Laboratory upgrade
- New filtered extract system and waste storage tanks
- Upgrade of distributed control system
- Refreshment of health physics laboratory
- Refurbishment of a test facility
- Radiography equipment for drum monitoring
- Refurbishment of trade waste drums
- Refurbishment of hangar
- Radioactive liquid effluent treatment plant installation and commissioning
- Refurbishment of a shock physics facility
- Refurbishment of a facility to accommodate work transferred from Foulness
- Refurbishment of a depleted uranium facility
- Extension of fibre optic network
- Refurbishment of facility to accommodate work transferred from Foulness
- Refurbishment of detonator facility
- Building alarm system
- Conversion of laboratories into electrical workshop
- Installation of automatic fire detection system
- Improvement to ventilation system
- Remedial work on blast walls
- Replace old gas supply pipework
- Improve stack sampling system
- Rewiring of a production facility
- Installation and commissioning of high precision lathe
- Remediation work on a former production facility
- Investigation and remediation of equipment and fittings at AWE for Year 2000 compliance.

Approximate spend for the last five financial years

•	Trident Programme (£m)	Current Safety Standards (£m)	TOTAL (£m)
1993-94	22	4	26
1994-95	16	3	19
1995-96	23	7	30
1996-97	22	16	48
1997-98	19	18	37
TOTAL	102	48	150

End Notes

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5. *"Nuclear Weapons Systems Sustainment Programs"*, Office of the Secretary of Defence, May 1997, p.23
6. *Official Report*, 28 July 1998, col. 202
7. AWE Strategic Plan 1999, produced by AWE Hunting-BRAE, p. 21
8. *"Stockpile Stewardship and Management Plan"*, US Department of Energy Office of Defense Programs, February 29, 1996, p.II-10 (otherwise known as "The Green Book"
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12. Official Report, 30 June 1999, col. 159
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