

Trident - what next?

Introduction

The US decision to develop the D5 Trident II does at least give HMG a reason for re-examining our Trident decision, not in terms of whether we want to remain in the strategic nuclear business (because we assuredly do) but in terms of the type of system which will best do the job for us. The D5 represents a quantum jump in capability and a similar jump in costs, so it would be prudent for the Government to be as sure of its ground as it is possible to be before proceeding.

It is public knowledge that following the US D5 decision, the British Government is reconsidering its earlier C4 decision before deciding whether it too will opt for D5. The timings of the D5 programme do not call for an urgent decision by HMG and it must be important for the Prime Minister to take her time and not be rushed.

Duff-Mason

In any discussion of strategic systems regard must be had at all times to the Duff-Mason criteria which require that a strategic system must be credible in the eyes of the Soviet Union and, in order to be credible, it must be able to penetrate and it must be survivable. It goes without saying that decisions in relation to specific systems must take into account future technological developments that may increase.../

increase vulnerability.

C4 v D5

The advantage to the UK of C4 is that it is a proven system about to enter service with its R & D money already spent. The price can therefore be viewed with some degree of confidence particularly if at the British end the project is gripped and controlled as tightly as the Polaris programme was. The D5 is still in development and, therefore, future costs must be a matter of less precise definition.

Once the US has switched to D5 completely the UK will be operating a 'unique to us'/^{C4}system which the Americans will continue to support but which will be subject to pressures on their budgets over the years. There is obvious appeal in adopting a system which will be in service with US forces at precisely the same time.

There are two possibilities in relation to either system and these are firstly a decision to have 3 boats rather than 4, and secondly to opt for depot facilities at Kings Bay Georgia rather than Coulport. The former possibility would damage credibility in terms of ability to have one boat always on patrol and the latter would raise doubts about the independence of our deterrent but both have to be mentioned as factors to be taken into account. As it is, the costs of the very large new depot at Coulport, needed for.../

for C4 or D5, will be very significant.

The 3 boat option would undoubtedly damage credibility and should not be pursued. The use of US depot facilities, however, is quite another matter and in view of the much improved reliability of both Trident systems over Polaris, the dependence on frequent use of the depot is reduced to the point at which the independence of our system would not be called into question.

Costs

The Misc 7 paper reveals a 13% increase in real terms in the cost of C4 in just over a year. This is a disturbing increase in cost over a relatively short period of time, particularly so in relation to a proven and established system. Such an increase cannot give any confidence that the D5 cost at September 81 prices will be anything like the figure of £7,400m which the paper claims.

Costs are not only highly sensitive in presentational terms, they are critically important in the context of the defence budget where serious consequential reductions in our conventional capabilities later in the decade could induce the very Soviet adventurism that our deterrent posture seeks to prevent.

The Options

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It has been decided to remotor the Chevaline system with effect from 1986 even though there are several disturbing features in relation to the length of time (over 20 years) since the motors were last produced. The forthcoming Chevaline test in January will provide an indication as to how worth while the remotoring exercise is likely to be.

A4

Instead of remotoring, it would be possible to utilise Trident technology in propellant terms and go for range and payload improvements. A new propellant would, however, have to be validated in new trials.

One of the reasons, however, for changing, at least to C4, is the question mark that must be placed against the ability of the existing warheads to penetrate, particularly in relation to the rate of descent for the last 100,000 feet.

C4 (accelerated)

C4 has greater range, payload and ability to penetrate ABM defences than A4. A very large depot will be needed requiring considerable expenditure at Coulport unless it is decided (quickly) that the possibility of the UK sharing the US facilities can be viewed with equanimity.

One possibility that is worth very serious consideration, and which technically is perfectly feasible, is an accelerated back fit of C4 into the existing R submarine force. The Americans.../

Americans have done back fits which involve removing the liners of the tubes.

This course of action would mean purchasing C4 missiles from the centre, as it were, of the US production line as opposed to the earlier plan under which the missiles were acquired off the end of the line after US production had finished and were then put into store. Missile processing and handling facilities would be needed to handle the C4 much earlier than currently planned and once again, the Americans would be asked to help with the Kings Bay facilities.

The accelerated C4 proposal has the supreme advantage of getting on with the job forthwith by catching the first refit, that of Repulse in 1984-6. The expense of remotoring Chevaline is totally saved because that project would cease and the in-service date of D5 could slip to 1997 to allow time in service for C4 and a closer definition of D5 costs should we decide to switch to that system. Although a 97 in service date for D5 means longer for C4 as a 'unique' system, by the same token an accelerated C4 will have seen service alongside the US C4 boats and much common experience will have been gained.

D5

Like C4, very large depot facilities are needed and the D5 will of course have a longer effective life than C4.
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Set against that is the major cost uncertainty. There are also the reasonable questions relating to the need for the UK to have a weapon with such extra range and payload and such accuracy - particularly in relation to our targetting policy which does not call for accuracies of that order.

Future vulnerability of ballistic missile systems

Nowhere in the Misc 7 paper is this crucially important question addressed. The only reference to any form of vulnerability is in the section relating to cruise missiles when it is stated that their more limited range would bring them closer to the Soviet Union and thereby increase the probability of detection. It seems a bit much to dismiss in silence the huge Russian investment in satellites with potential ABM kill capabilities when this investment could well make ballistic missiles very vulnerable by the middle of the next decade i.e. the very time that D5 would be entering RN service.

Cruise Missiles

The Misc 7 paper makes the standard but nonetheless legitimate criticisms of cruise missiles on grounds of their vulnerability and high programme costs. The assumption is erroneously made however that only subsonic cruise missiles need be considered for the strategic role.

Nowhere in Misc 7 is there any mention of the possibility.../

bility of developing a supersonic cruise missile for this role and as such a development is technically feasible it would have been reassuring to find an assessment included in the paper. As it is, it is difficult to escape the conclusion that the paper has been angled to support the conclusions that are believed to command favour.

Supersonic Cruise Missiles

Supersonic CMS can be fitted 3 to a Polaris tube once the liner has been removed. Conventional fuel would be used which is a great advantage over special fuels.

Using a motor like the Odin in the British Sea Dart the weapon would have a 5000 km range at 30 kms altitude and flying at Mach 4. The weapon would have a powered descent to the target quicker than D5 and because it would not leave the earth's atmosphere like a ballistic missile, it would not be vulnerable to ABM satellites.

Submarine launched the weapon has equal invulnerability to detection as ballistic systems and it fully meets the Duff-Mason criteria in terms of penetration and therefore credibility and all this is estimated to cost about a third of C4 at September 81 prices.

Pershing II

It is quite clear that the Pershing II missile would have the range to reach the Western Military Districts and.../

and that this system could theoretically fill the strategic role. The main argument against it, and this must be decisive, is on grounds of its public and therefore political visibility. The supreme attraction of the submarine based systems is the fact that they are far from the public gaze. A land based Pershing II deploying on vehicles from bases in the UK has no such advantages as well as being vulnerable to a Soviet pre-emptive strike.

Possible courses of action

1) The next Chevaline test is due in January. It would be as well to await the outcome of this before taking the main decision. If the test does not go well this strengthens the case for accelerating the C4 and avoiding the expense of remotoring Polaris. The in service date of D5 would move to the right thus easing some pressure off the budget in the later years. There is no justification for claiming, as the Misc 7 paper does, that additional submarines would have to be ordered at the end of the decade and early nineties for the purpose of keeping the shipyards going. This is no more than a device to inflate the cost of an accelerated C4 option in order to compare it unfavourably with a D5 cost that will inevitably prove to have a dynamic all of its own.

At the same time that the above decision was being taken it would seem wise to launch a top secret feasibility study into the supersonic cruise missile option as a possible follow on to C4. The advantage of such a programme is that it.../

it would be much cheaper than D5, as effective and in the nineties could well be more survivable. It would also be an entirely British project which our industry is perfectly capable of handling. Nonetheless it would take a bold and imaginative decision by Government to go this route.

2) Opt in principle for D5 which involves a later in service date than C4 of, say, 1994 and in the meantime launch the top secret feasibility study into supersonic cruise missiles. When that study has reported a further decision could then be made between that system and D5.

The British Strategic Nuclear Deterrent

The case for the possession and the modernisation of the British Strategic Nuclear Deterrent has been well made out and does not need to be restated. It is essential on grounds of prudent national security for Britain to stay in this particular business.

The American D5 decision does however enable the Cabinet to review, not the British replacement decision in principle, but the best way in which the task can be achieved, bearing in mind the fact that the D5 programme itself is still under development and the costs can therefore be regarded as 'uncapped' if not 'uncappable'.

Moreover because the D5 programme is still under development, there would seem to be few reasons for the British Government hurrying to a conclusion at this juncture. Media pressure will undoubtedly increase for some kind of announcement but, providing that the principle of retention and modernisation is firmly and unequivocally stated by the Government, there are perfectly respectable reasons for postponing such a critical decision. The Government must decide its own timing and not be dictated to by so called public pressure.

After all it has to be remembered that the Trident C4 agreement is currently in existence. Failure to announce a move to D5 does not invalidate the C4 agreement in any way. C4 remains as highly effective a system as it was in July 1980 when the decision to acquire it was announced.

The UN disarmament conference in New York in June will set the focus for much disarmament agitation in Britain in the new year. In political and presentational terms this does not make it easier to announce Trident decisions particularly if it is not necessary to do so.

Chevaline

The first, as it were, external event that could colour the Trident thinking concerns the next Chevaline test due in late January 82. It is pointless to speculate about the success of this test but should there be a failure, or indeed anything less than a total success,.../

success, in the trial then the effectiveness and viability and therefore the credibility of Polaris is in question for the rest of its time in service. Those involved with Chevaline would call for more money to be thrown at the problem without being able to offer any performance guarantees.

In the event of a Chevaline failure then, if it was decided to abandon further attempts to get that system to work, it would be necessary to accelerate a new alternative system and have it in service by about 1986/7.

Accelerate C4

One way to meet the problem would be to accelerate the current planned in-service date of C4 by, as it were, retrofitting C4 missiles into existing R class submarines as they come due for major refits starting with Repulse in 1984. In this way there would be no doubting the effectiveness of the system from 1986/7 and the new ballistic missile submarine construction programme would continue in parallel and would eventually take over from the refit programme.

It would be part and parcel of such an acceleration that the in-service date for D5 would be slipped until say 1998. This would still enable a decision to be taken to switch to D5 in due course or, alternatively, to soldier on with C4 or to devise something entirely new.

Costs

The costs of C4 have already increased significantly in real terms in 18 months, although it is fair to say that from now on there should be an excellent prospect of firmly controlling costs in the same way that the Polaris programme was held firmly to budget. This is more than can be said for D5 which is still in development. Opinions and estimates vary but at September 81 prices a figure for D5 in the region of £9½ billion cannot be regarded as beyond the bounds of possibility. One has to pose the question as to whether either Trident is wanted regardless of cost or beyond what point the cost becomes unsustainable.../

sustainable in political terms. There is significant feeling in the Party and the country about the undoubted degradation in our conventional capability and much of this is laid at the door of Trident. Thus far the position has been held but it would be wrong to assume indefinite acquiescence from this quarter. The prospects for the defence budget look pretty grim even after taking John Nott's Way Forward into account.

An alternative

One of the unchallengeable assumptions in strategic deterrent thinking has been that the missile must be submarine launched both on grounds of relative invulnerability and political non visibility.

If it should be decided that it was not essential for the missile to be submarine launched then the possibility of a ground launched missile comes into play always assuming that the Duff-Mason criteria can be satisfied.

It is interesting to note that in recent surveys of public opinion there was considerably greater support for the possession of British nuclear weapons than there was for the presence of American weapons in the UK.

The most obvious land launched ballistic missile would be the American Pershing II deployed on RAF bases, although there could be industrial advantages in regenerating our ballistic missile industry over a period of time, having built under license to begin with.

It is worth recalling that we have deployed British Thor missiles in the UK in the past and we once used to make ballistic missiles like Blue Streak. The key question is to decide what is appropriate for us to be doing over the next 30 years. The Vulcan force used to be our 'strategic' arm and this then changed to a submarine system and perhaps it might be time to plan for another change.

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A British Pershing could be developed as a form of Vulcan replacement in the long range theatre role with either a conventional or a nuclear warhead. This is an important point because of the relevance of future arms control negotiations. Overtly strategic systems such as Polaris and Trident are arguably more likely to be trapped by future negotiations whereas a system which is ostensibly theatre in concept might not be trapped.

In cost terms we would probably be talking in terms of half of the cost of C4 at September 81 prices for a British Pershing, a system that would be taken very seriously by the Russians. In this way credibility would be maintained, pressure on conventional budgets halted and a truly British solution developed to the benefit of UK industry and thereby the economy.

Tactics

The first step is to decide not to take a decision in favour of D5 at this stage.

Next the Chevaline trial must be awaited. In the event of failure either more money must be spent to try and make it work or other programmes must be accelerated. These other programmes could be C4 or Pershing II, and urgent feasibility studies should be put in hand in total secrecy to clarify the technical problems of achieving in-service dates for either system of around 1986/7.

It is worth adding that the accelerated programme cheerfully embraces any problems of a 'mixed' SSBN fleet. There is nothing inherently wrong with a mixed fleet as the French have found. The British like to have a new programme and get everything changed to that new programme as soon as possible and then make no further changes. In an uncertain technological future it will probably be unwise to be so inflexible.

It is probably no exaggeration to say that the revised Trident decision is the most important defence decision in the period from.../

from 1962 until the end of the century. The aim must be to stay in the business at a cost we can afford and at the maximum political and national benefit.

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