

9/1/92
 before VANGUARD's refit, and a number of different programme options are under consideration. Rear Admiral Pirnie told us that there was as yet no reason why the delay in signing the contract should delay the ISD.¹ Different programme options are being considered for VIGILANT and 08 —

“in order to achieve the most cost effective and industrially sustainable construction programme while achieving our operational needs”.²

As MoD pointed out, the time from invitation to tender until order for 08 to date — eight months — is less than the eventual period for any of the other three boats.³ The sums spent on long-lead for 08 probably represent around 20–30 per cent of the likely final price,⁴ compared to 4, 8 and 34 per cent at time of order for 05, 06 and 07 respectively.⁵ We have in past reports set out our concerns on long-lead funding, in particular the possibility that “long-lead funding can give rise to extra costs, particularly when it is not maintained on a steady basis”.⁶ Although we accept that long-lead funding does not necessarily give rise to extra costs,⁷ it is clearly preferable for all concerned, including the workforce, that as much as possible of the work should be done under a properly negotiated build contract.

33. In 1991, MoD told us that a decision not to proceed with a fourth boat would lead to savings of around £400–£450 million.⁸ A figure of around £400 million⁹ was given this year, demonstrating the relatively slow pace of progress in construction of the boat over the past year. The Chief Executive of VSEL has been quoted as suggesting that cancellation would produce savings of no more than £250 million. Any such figures are by their nature hypothetical, since cancellation would involve a number of renegotiations of contracts, not only with VSEL, but also with contractors providing the nuclear power plant, and the strategic and tactical weapons systems. MoD confirmed that its estimate covered all capital, but not personnel, costs.¹⁰

Strategic weapon system

34. The Trident D5 missile is a three stage solid fuel ballistic missile, over 44 feet in length and 83 inches in diameter, with a throw weight of 135,000 lb and a range of over 4,000 nautical miles at its full payload, or up to 6,000 nautical miles with a reduced number of warheads. Her Majesty's Government has not stated how many warheads the UK missile will carry, but has made it clear that it will be less than the maximum possible number.

35. The arrangements for the UK purchase of Trident D5 missiles are based on the 1963 Polaris agreement. The UK regularly provides the US Strategic Systems Program with a schedule of requirements;¹¹ the Strategic Systems Program then makes the contractual arrangements with the US producers. In 1982, the British Government agreed with the US authorities that British Trident missiles would be processed with those of the United States at King's Bay, Georgia. This means that the UK will take its missiles from a shared pool held at King's Bay and, when an SSBN is ready for her long refit, the missiles will be returned to King's Bay for servicing.¹² As we have reported previously, although specific missiles in the King's Bay pool will not be identified as UK property, the UK Government will take title to the missiles it purchases; it will possess full information about the effectiveness and serviceability of its operational missiles. Although the missiles will normally remain in the submarines for the full length

¹Qq 2096, 2099.

²Q2096.

³Q2100 and note by witness.

⁴Q2102; Evidence, p 35, para 5.

⁵Qq 2103–5.

⁶1991 Report, para 26; also 1990 Report, para 26.

⁷1990 Reply, para 4.

⁸1991 Report, paras 27–28.

⁹Q2061; also Q2046.

¹⁰Qq 2061–8.

¹¹Q2125.

¹²1991 Report, paras 104–105.

of each commission, emergency facilities exist should it prove necessary for whatever reason to remove and preserve a submarine's missile load.¹

36. The cost of the missiles is now estimated to be £988 million, all of which is to be spent in the United States.² This represents a reduction of £838 million, or almost 46 per cent against the 1981 estimate, arising only in part from the decision to process the missiles at King's Bay. MoD estimates that further savings equivalent to about 5 per cent of the current cost would have been achieved, had it not been for the recent changes made in the US Trident II D5 missile programme.³ The cost of £988 million is £24 million more in hybrid prices than last year's figure. There has been a reduction of £42 million in the contingency programme for the strategic weapon system, in line with the broad trend over the programme as a whole.

37. We reported last year that the UK's planned buy of D5 missiles for 1991 had been deferred for a year and was being included in the production order for US Fiscal Year 1992.⁴ MoD has confirmed that this was done and that 23 missiles were purchased in Fiscal Year 1992.⁵ Over the same period, the US Congress granted some \$977 million for the procurement of 28 Trident II D5 missiles and related costs.⁶ Changes in the US D5 procurement programme have led to some increase in the UK's costs. MoD told us that the US Navy decision to defer until 1998 its programme to retrofit D5 into existing Trident I C4 hulls will give a gross cost increase of the order of \$105 million (£66 million), although offsetting savings had been identified elsewhere in the SWS programme.⁷ These savings consist of around £20 million in missile processing costs at King's Bay, "other minor savings" of £20 million and £42 million from use of contingency funds.⁸ The last-named is not a saving. The Ministry does not seem unduly concerned at the effects on the UK programme of the recent changes in the Trident II D5 missile programme, nor, apparently, is the US seeking to alter the UK's buying pattern to make up for the reduced US requirement.⁹

38. Procurement of missiles is being phased to meet UK missile outload dates; subject to this consideration the procurement programme is kept under review to ensure that requirements are met in the most cost-effective manner.¹⁰ Although the Government has confirmed information published by the House of Representatives Armed Services Committee relating to the UK planned buy of 23 D5 missiles for Fiscal Year 1992,¹¹ the UK planned total buy of missiles remains confidential.¹² We remain unclear from whom this information is being safeguarded. It makes no sense to suggest that "it would reveal information about the overall size of the force":¹³ the necessary element of uncertainty relates to warheads and not missiles. **We welcome the Ministry's agreement to reconsider the classification of the period of time over which the missiles are to be purchased, and recommend that it also reviews classification of the total UK missile buy.**

39. The Secretary of State has reported that, as in previous years, delivery, installation and testing of the Strategic Weapon System equipment for the Vanguard class submarines is proceeding to schedule.¹⁴ Strategic weapon system equipment is now estimated to cost £1,168 million, 28 per cent below the 1981 estimate of £1,621 million; all the savings arise on the US expenditure which still accounts for around 90 per cent of the programme. The non-missile elements of the strategic weapon system — the navigation, fire control and launcher sub-

¹*ibid.*, para 109; 1989 Report, paras 42-43

²Evidence, p 25, Answer 1, Table b

³*ibid.*, A16b.

⁴1991 Report, para 35.

⁵Evidence, p 28, A14.

⁶*ibid.*

⁷Evidence, p 29, A16a; Q2131.

⁸Q2124.

⁹Qq 2126-2130.

¹⁰Evidence, p 28, A14.

¹¹Evidence, p 29, A15.

¹²Qq 2116-2123.

¹³Q2117.

¹⁴Evidence, p 23, para 3; 1991 Report, Evidence, p 17, para 3.

systems — seem to have been relatively trouble-free parts of the Trident programme.¹

Tactical Weapon System

40. We have reported in some detail over past years on problems experienced in the development of the tactical weapon system (TWS) for Trident submarines.² These problems primarily concern the sonar suite, the Submarine Command System (SMCS) and their integration in the Shore Development Facility (SDF). After initial reluctance, MoD has been commendably full and open in setting out the difficulties consequent on the complexity and sophistication of the systems, and reporting on progress made. In his report to the House this year, the Secretary of State said that the development of the submarine's TWS was making "steady progress", with final testing and integration underway in the SDF and in VANGUARD.³ Evidence to us referred to "substantial progress" over the past year in resolving the outstanding problems.⁴ **The cumulative delays and problems of the last four years mean that there is very little contingency left in the programme. Nonetheless, MoD is confident that the overall requirements of the programme will be met.**

41. In 1991, MoD told us in some detail of the problems which had arisen over the development of SMCS software.⁵ MoD planned to use successive issues of SMCS software to provide "progressively enhanced system capability", and initial issues had already been demonstrated successfully at the SDF. Two further issues were planned for 1991, the second one to support VANGUARD's contractor sea trials.⁶ The Secretary of State's report stated —

"The second issue of the software to be used by the Submarine Command System (SMCS) is now being tested, but there is now very little contingency remaining in the SMCS development programme".

MoD has told us that this second issue of software "did not include adequate performance to support Contractor's Sea Trials",⁷ and that it had been necessary to restructure the issues of software needed to support the later programme and to redefine the functionality of some issues.⁸ There will be two further main issues, with two interim issues of the first of these, and one of the second. It was recognised in 1986 that it might not be possible to achieve full capability in the command system for VANGUARD's initial deployment and that it would be possible for submarines to operate "using the manual systems they have used for many years past", but Rear Admiral Pirnie thought that such an eventuality was "extremely unlikely" and was confident that there would be no repetition of the Type 23 frigate command system saga.⁹ The timely issuing of the submarine command system software remains risky.

42. The Secretary of State's report stated this year that —

"Since the last report, significant progress has been made towards resolving the remaining development issues with the Sonar Suite, and the final design review of the system was held in the autumn".¹⁰

MoD has told us that solutions have been found to all the major development problems in the inboard equipment, including the only problem identified in 1991 as of major significance,¹¹ and to new problems which emerged during

¹1990 Report, Evidence, p 60, A15 et al

²e.g. 1990 Report, paras 30-33; 1991 Report, paras 39-41

³Evidence, p 23, para 4.

⁴Evidence, p 28, A12.

⁵1991 Report, p 27, A14b.

⁶*ibid.*

⁷Evidence, p 28, A13a, b; p 23, para 4.

⁸Q2111.

⁹Qq 2111-3; see Tenth Report from the Defence Committee, *The Vertical Launch Sea Wolf Missile System and the Type 23 Frigate Command System*, HC 409 of Session 1988-89; and Fourth Report from the Defence Committee, *Further Examination of Defence Procurement Projects*, HC 432 of Session 1990-91, paras 4-16.

¹⁰Evidence, p 23, para 4.

¹¹1991, Evidence, p 22, A14a(ii).