

Extract British Nuclear Weapons and the Test Ban 1954—1973 Britain, the United States, Weapons Polices and Nuclear Testing: Tensions and Contradictions (Ashgate: Farnham, 2010) John R.Walker pp 325—327

'Nixon endorsed the UK request for up to three tests on 15 August; the first of these, code name Fallon, took place at Nevada on 23 May 1974.¹¹⁹ Officials had hoped at the start of December 1973 that if the first test worked sufficiently well then it would be possible to cancel the second one.¹²⁰ This could save about £1 million. The test appears to have been delayed because of slippage in the supply of 3D quartz phenolic (3DQP) heat shields provided by the US firm AVCO because of a large order from the US.¹²¹ It also appears that this test was originally intended for February and had been postponed two and half months to permit inclusion of a design change.¹²² It is also clear therefore that the resumption of testing and the Polaris modernisation programme were instrumental in reviving the 1958 Agreement.

The UK Resumes Testing: The Nine Year Self-imposed Moratorium Ends

This 'fairly small' test appears to have demonstrated the performance of the basic design yield of the new hardened warhead.¹²³ AWRE deemed this test successful and the scientists were overwhelmingly satisfied that the device tested was one-point safe, a view confirmed by the USAEC. Consideration then turned to reviewing requirements for further tests, either to improve the Polaris warhead by a large factor, or to prove the safety of the existing design.¹²⁴ The Nuclear Weapons Safety Committee appears to have accepted AWRE's safety advice and its chairman (Sir William Cook) planned to recommend that a safety test was not required. This meant

that the UK could use the other two slots allocated for underground nuclear tests by the US for other research purposes; any further test for Polaris would have to be held before the end of 1975 when the warhead drawings were due to be frozen.¹²⁵ Warhead and Re-entry Body (REB) designs were 'chilled' by early September 1975, which meant that formal approval was required for any subsequent modifications.¹²⁶ Warhead production was due to begin by the summer 1976.¹²⁷ Roy Mason, Secretary of Defence, wrote to Wilson on 14 May 1975 to note that the 1974 test results had been very satisfactory. AWRE was sure that the UK could manufacture an intrinsically safe warhead to meet the specifications required. However, the Fallon test of a radically new design had not given the scientists sufficient information to be able to guarantee to keep it in a reliable and safe condition over the expected ten to 15 years of service life. To acquire this information a further one or two tests of the basic design were needed. As a bonus these tests might also enable the UK to economise on the manufacture of the Warhead, especially in its use of plutonium. To fit the development programme the next test would have to be held in mid 1976.¹²⁸ The Prime Minister agreed to authorise a provisional booking of a slot in the US 1976 underground test programme.¹²⁹ A third test was planned for the autumn 1978, which was intended to further develop the warhead design to make a major reduction in its weight. If successful, this would allow the Chevaline system greater range and thus a greater amount of sea room for operational Deployment.¹³⁰ The date of this test was eventually brought forward in order to avoid political complications in relation to the recently agreed US, USSR and UK test-ban treaty negotiations.¹³¹ Echoes of 1958 are clear here. In the event the test took place on 11 April.'

¹¹⁸ TNA DEFE 19/182, M.G. Davies WLR3 TPC Visit Report 3rd Vulnerability Working Group, 27 September 1973.

¹¹⁹ Norris, Burrows, Fieldhouse, Nuclear Weapons Databook Volume V, pp. 402 and 404, footnote 68. There was some concern about this test in the Labour Cabinet and the Prime Minister noted that some of his colleagues felt that there should have been a discussion about the need to test in the full Cabinet. TNA CAB 128/54 CC (74) 21st Conclusions Minute 3, 27 June 1974. The decision, he reassured his colleagues, had been taken solely in order to keep open the option of retaining a credible deterrent and did not prejudge any policy decisions. Wilson added in a subsequent note to his colleagues that he, the Defence Secretary, Foreign Office Secretary and Chancellor had to decide when they met on 5 April whether the planned test should proceed; the previous government had set the timetable. He said that the UK knew from technical assessments of all the available information on the nature and rate of development of Soviet ABM developments that UK missiles would have to be given better penetration capability. This could be done without MIRVing, but it did involve some testing. Once the need had been accepted, the timing had been governed by the tight logistic programme for modification of the missile and the need to fit into the US test programme schedule. A decision not to test would have prejudiced the effective fulfilment, in terms of time and money, of one of the options that the UK might wish to take. Wilson went on to state that there would be no need for a further test before HMG had decided, in the context of the defence review, on the UK's future defence policy as a whole. TNA CAB 129/178, C (74) 85, Nuclear Testing, Note by the Prime Minister, 31 July 1974. Wilson, Callaghan (Foreign Secretary), Healey (Chancellor) and Roy Mason, however, had decided on 5 April to delay an announcement about this test. Mason had argued that this was desirable in light of the First NPT Review Conference. TNA PREM 16/1181, Record of a Meeting held at 10 Downing Street, 5 April 1974. The Americans also agreed to make no announcement about the test, John Hunt to Prime Minister, 3 May 1964.

¹²⁰ TNA DEFE 19/182, KH 793 Project Review Board Minutes of Meeting held in Polaris Management Centre, MOD, Chairman's summary – ACSA (N) Dr F. Panton, Monday 3 December 1973.

¹²¹ TNA DEFE 19/182, KH 793 Project Review Board, Report on Technical Progress, Note by the Secretary DC Fakley, 28 November 1973.

¹²² TNA DEFE 19/182, Record of a Special Super Antelope Review Meeting (Roy Dommet, RAE and Peter Jones, AWRE present) held on 6 September 1973.

¹²³ TNA DEFE 19/19, Draft paper to KH 793 Project Review Board, Chevaline 1974

Development Cost Plan, Note by DAWD dated 16 June 1975; TNA DEFE 13/1039, F.H.Panton, ACSA (N) to DCA (PN), Nuclear Test, Draft Note from Secretary of State to Prime Minister, 17 February 1976; TNA PREM 16/1181, Record of Conversation between the Secretary of the Cabinet and the American Secretary of State, 26 April 1974. 'Fairly small' was Kissinger's term when told of the planned yield; the actual yield remains classified.

¹²⁴ TNA PREM 16/1181, Background Note, UK Underground Nuclear Tests. Effects tests were also planned for a further three events before the end of 1976. It is also worth noting that although UK tests had been required primarily for improvement programmes, AWRE aimed to extract as much information from each test. None of the UK nuclear tests since 1964 has had a single or simple objective. The nuclear tests themselves were the culmination and proof of a long series of non-nuclear testing, which had enabled the UK to exercise the expertise of the design teams and provide reasonable proof of its continued validity. It takes more than a year to plan and execute a test. See TNA AIR 8/2785, B.M. Norbury, Head of DS 11 to APS/Secretary of State, CTB: Warhead Stockpile Safety and Reliability, 3 April 1978, attachment Comments of the Foreign Secretary's minute to the PM of 31 March.

¹²⁵ TNA DEFE 19/208, KH 793 Project Review Board, 4 October 1974.

¹²⁶ TNA DEFE 19/170, D.B. Janisch, DAWD to ACAS (N) Chevaline Status report to Secretary of State, 2 September 1975. The warhead also had a fuzing capability for airbursts at three different altitudes and for a surface burst. The underground nuclear effects test programme was nearing completion.

¹²⁷ TNA DEFE 24/895, Draft letter from PUS to Mr Pliatzky, Treasury, Chevaline, June 1976. In this regard it is odd to see that Callaghan, Prime Minister, told the Cabinet in 1976 that a UK underground test that year was to 'improve the effectiveness of our existing system'. TNA CAB 129/59, Cabinet Conclusions 3 August 1976, p. 2. TNA DEFE 13/1039, F.H. Panton, ACSA (N) to DCA (PN) Nuclear Test, 17 February 1976. A draft Note from Secretary of State to Prime Minister noted that the design was a new departure for the UK and that a further test was necessary to give greater depth of knowledge of the design that would enable AWRE confidently to cope with any in-service problems. In this context Callaghan's comment is understandable. Macklen told the Secretary of State that although an intrinsically safe warhead to meet the Chevaline specifications could be manufactured

following the successful 1974 test, AWRE needed to conduct one or two more tests in order to be able to guarantee to keep the warhead reliable and safe during its expected ten to 15 years in-service life. V.H.B. Macklen, DCA (PN) to PS/S of S Chevaline Nuclear Warhead Tests, 27 February 1976. A further test might also enable the designers to economise in the use of plutonium. Draft Minute from Defence Secretary to Prime Minister, 3 March 1976.

¹²⁸ TNA PREM 16/1181, Roy Mason to Harold Wilson, Polaris Improvement Programme – Nuclear Testing, 14 May 1975.

¹²⁹ TNA PREM 16/1181, P.R.H. Wright, 10 Downing Street to J.F. Mayne, MOD, Polaris Improvement Programme – Nuclear Testing, 28 May 1975.

¹³⁰ TNA PREM 16/1181, UK Nuclear Weapons Programme, 30 May 1977.

¹³¹ TNA PREM 16/1181, Fred Mulley to Prime Minister, Planned Date for the Possible Next British Nuclear Test, 2 June 1977.