



BLUE STEEL

THE RAF'S AIR-LAUNCHED NUCLEAR DETERRENT, 1952-70

In the next part of our series on the history and technical development of Britain's aerial weapons, **IAN BOTT & CHRIS GIBSON** take a look at Avro's *Blue Steel* air-launched stand-off nuclear weapon, developed in parallel with the RAF's V-Force bombers, from which this pioneering cruise missile would be released to find its own way to the target

IN 2012 I made an elderly gentleman weep. He wept because he had never heard anyone have a good word to say about a machine that he had worked on in his youth. That machine was the Avro *Blue Steel* nuclear stand-off weapon, and not only did I have a good word about it, I had an entire lecture. Comparatively little had then been written about *Blue Steel*, much of it describing it as a failure — disaster even. In reality, however, it was almost certainly the most advanced flying-machine Britain had produced before 1965.

BLUE STEEL GENESIS

The story of what ultimately entered service as *Blue Steel* in September 1962 begins almost a decade earlier, when the Air Staff was becoming exercised by the need to attack Soviet cities and military targets. The latter would be defended by surface-to-air guided weapons (SAGW) such as the S-25 Berkut (Nato reporting name SA-1 *Guild*) with a range of 25 miles (40km), analogous to Britain's *Red Duster* and *Red Shoes* SAGWs. [See *Bloodhound in this series in TAH44 — Ed.*] This led to the issuing of Operational Requirement (OR) 314 in May 1952 for a low-altitude bomber aircraft.

By October 1952 this had been replaced with the more ambitious OR.324. To arm the latter a nuclear "stand-off" missile was required, so OR.1125 was issued in November 1953 under the Ministry of Supply (MoS) codename *Red Cat*. Realistically, OR.324 would be expensive to develop and was so complex that the requirement specified that a technician be included in the aircrew. *Red Cat* would have used the *Blue Danube* fission package and would have been at least 5ft 3in (1.6m) in diameter.

Meanwhile, at the Royal Aircraft Establishment (RAE), a team which included aerodynamicist R.H. Francis had been studying the W.1 series of powered bombs to arm the V-Force's existing machines rather than the OR.324

MAIN PICTURE RAF groundcrew prepare to move a *Blue Steel* from its AEC Mk V Mandator Missile Carrier vehicle to a waiting Vulcan. Note the frangible discs at the rear of the missile to protect the powerplant from foreign object debris etc during ground operations. To prepare a *Blue Steel*-equipped Vulcan took 4hr, and, once prepared, the missile could remain at readiness for a week.

BAE SYSTEMS VIA BLUE ENVOY COLLECTION



ABOVE Avro Vulcan B.2 XL321 of No 617 Sqn in its distinctive all-over-white nuclear flash scheme carrying an operational *Blue Steel* recessed in its belly after the unit became the first operational squadron to be armed with the weapon in 1962. Operational examples of *Blue Steel* were white, drill rounds pale blue and trials rounds black.

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