



TSR-2: A BRITISH STORY WITH AN AUSTRALIAN CHAPTER

"All modern aircraft have four dimensions: span, length, height and politics. TSR2 simply got the first three right."

- Sir Sydney Camm (1893-1966),
Chief Designer, Hawker Aircraft Ltd

With the era of the F-111 coming to a close, it is timely to reflect on the development of this aircraft and the rivals that existed at the time of its selection. The principal competitor was the British Aircraft Corporation's Tactical Strike and Reconnaissance (TSR-2) aircraft. However, as indicated by Sir Sydney Camm's comment, the development and subsequent abrupt cancellation of the project in 1965 was politically charged. While it was suggested at the time that Australia played a key role in the demise of the TSR-2, there appears to have been many other contributors to its downfall.

From the mid 1950s, the RAF and subsequently the RAAF identified the need to replace the Canberra bomber, focusing on a nuclear-capable aircraft (see Pathfinder #29). Given the rapid advances in anti-aircraft weaponry capability, having supersonic strike aircraft that could slip under radar surveillance was seen as a priority. The development of the TSR-2 was also the result of the British Government's focus in the late 1950s on rationalising the eight main British aircraft manufacturers that then existed. On New Year's Day 1959, Vickers-Armstrong and English Electric, amalgamated as the new British Aircraft Corporation (BAC), were awarded the contract to combine their earlier individual designs into the TSR-2. Later that year Bristol-Siddeley were awarded the contract for development of the Olympus engines which were to power the aircraft.

Like the development of any aircraft, the TSR-2 had its technical problems. In late 1964, three completed prototypes had made it off the production line and the maiden flight was undertaken by XR219 from Boscombe Down. A three-month delay between the first and second test flights occurred, due to the engines on the aircraft not being up to specification, trouble with the undercarriage, and fuel pump oscillation that led to cockpit vibration at the same frequency as the human eyeball which affected the vision of the pilot. While

these were not minor problems, two other factors of greater import arose that sounded the death-knell for the TSR-2: a change of government, and projected costs. The newly elected Labour Government which promised defence expenditure cutting measures in its election campaign announced in the 1965 Budget that the TSR-2 was cancelled 'forthwith' and the remaining aircraft on the production line were sent to scrap merchants. It is said that the melted TSR-2 parts went on to serve the nation as washing machines.



XR 220 at RAF Museum, Cosford

It was also claimed that the Labour Party and Treasury officials believed that America would provide the UK with F-111 aircraft at a fixed price, something that BAC could not offer, and this would amount to a saving of 300 million pounds over the TSR-2. The UK took out an option on 24 F-111s to be in service by 1967 but once this order got caught up in the same delivery delays that Australia experienced the commitment was cancelled. These decisions made the British aircraft industry feel abandoned by their own government, which failed to appreciate the advanced sales methods of the Americans and also that in many cases the US adopted aircraft production techniques that were developed in the UK.

Australia expressed a high degree of interest in the TSR-2 when the TFX (later to become the F-111) was still on the drawing board. While the majority of Australia's air force budget from 1959 to 1965 was devoted to the purchase of the Mirage III, Australia was actively canvassing for a bomber replacement. In August 1960, the Commonwealth

Chiefs of Staff were briefed on the TSR-2 which had a marked effect on the Australian delegation. In March 1962, the Chairman of BAC came to Australia to brief Prime Minister Menzies, Minister of Defence Townley and the Chairman, Chiefs of Staff Committee, Air Marshal Scherger to discuss the TSR-2. Subsequent to this meeting, Scherger was kept 'fully and frankly' informed of the progress of the TSR-2 but a few fateful events swayed Scherger and the Australian Government against the aircraft.

First, the UK Ministry of Defence turned down a suggestion by BAC that the later stages of the flight program involving terrain following and weapon delivery should be carried out at Woomera. Second, in April 1963 Scherger went to Paris for a SEATO conference and paid a short visit to London during which he met with Lord Mountbatten, the UK Chief of Defence Staff. Mountbatten expressed doubt that anything would come of the TSR-2 project on the grounds of cost and complexity, and made it clear that he was arguing in favour of the Buccaneer aircraft over the TSR-2. In his book *Murder of the TSR2*, Stephen Hastings, a decorated World War II army officer and Conservative MP (as well as a director of aircraft company Handley Page), claims 'that three and half years of painstaking promotion, technical explanation and sales preparation during which a seemingly impregnable position had been built up by BAC, were dissipated overnight'.

On Scherger's return to Australia, in May 1963, the Australian Government announced that they had authorised the Chief of the Air Staff, Air Marshal Sir Valston Hancock, to evaluate the Canberra replacement. He decided to consider the French Mirage IV, the British TSR-2, and the US Phantom and Vigilante, in that order. At that point the F-111 did not feature on the shortlist. When Hancock visited the UK, it was suggested that V-bombers could be provided to Australia as an interim arrangement until TSR-2 deliveries were made. However, this offer was conditional upon the force being both crewed and under the command of the RAF—a proposal that clearly did not appeal to the Australian Government or the RAAF.

Another telling shortcoming in the TSR-2 development process was that BAC did not receive a firm order from the UK Government for 21 development and pre-production TSR-2 aircraft until shortly after the Australian

decision to order the F-111 in October 1963. After that, the TSR-2 project did not gain sufficient momentum and was finally ended by the fateful Labour Government decision.

Today only two TSR-2s remain. One (XR 220) is at the RAF Museum at Cosford and the other (XR 222) at the Imperial War Museum, Duxford. The only TSR-2 to fly (XR 219) and two unfinished air frames (XR 221 and XR 223) were used as gunnery targets. The haste with which the Labour Government made its decision has been the source of argument and bitterness ever since. The F-111 has served Australia well, but had it not been for a combination of factors Australia might have been farewelling the TSR-2 in 2010.

Crew: 2

Length: 89 ft ½ in (27.12 m)

Wingspan: 37 ft 1¼ in (11.27 m)

Height: 23 ft 9 in (7.24 m)

Weight: 54,750 lb (24,834 kg) empty; 102,200 lb (46,357 kg) max. takeoff

Powerplant: 2 x Bristol-Siddeley Olympus BO1.22R (Mk. 320) turbojet

Maximum speed: Mach 2.15

Ceiling: 54,000 ft (16,459 m)

Range: 1,150 (1,850 km)

Armament: 1 Red Beard (nuclear) or 6 x 1000 lb (450) HE bombs internally; or 4 x 37 rocket packs or nuclears on inner pylons only

- *The main contender when Australia ordered the F-111 from America in 1963 was the British-designed TSR-2, which was also still in development*
- *It is alleged that the RAAF decision to buy the F-111 caused the TSR-2 project to be abandoned*
- *In reality, the costs and technical problems which initially plagued the TSR-2 due to the aircraft's complexity (just like the F-111 later) led the British Labour government elected in 1965 to cancel the program*



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