
A84 – English Electric/GAF Canberra



GAF Canberra Mk.20 A84-237 resplendent in its distinctive Aircraft Research and Development Unit tail markings. Source: RAAF



GAF Canberra Mk.20 A84-235 of No 2 Squadron in its camouflage scheme as used during and after operations in Vietnam. Source: Alan Flett

The decade following the end of World War II represented something of a 'golden era' for the local manufacture of aircraft for the RAAF. Several major projects were instigated and put into production by the Commonwealth Aircraft Corporation (CAC), de Havilland Aircraft (DHA) and Government Aircraft Factories (GAF).

These included the Lincoln and Canberra bombers, Sabre fighter, Vampire fighter and trainer and Winjeel trainer, while the Mosquito and Mustang remained in local production for a few years after the war. Aircraft engines were also important, with CAC producing Merlins for the Lincoln, Nene jets for the Vampire, and Avons for the Sabre and Canberra.

Although the piston-engined Avro Lincoln heavy bomber had only entered RAAF service in 1946, by late 1948 it was already obvious it would quickly become obsolete. Investigations into a more modern

replacement therefore began, resulting in the order of forty-eight English Electric Canberra jet bombers in 1950.

Like the Lincoln, the Canberra would be built under licence in Australia by GAF. Additionally, its Rolls-Royce Avon engines would be built in Australia by CAC. The bomber was officially named after Australia's capital city at a ceremony at Royal Air Force (RAF) Biggin Hill, attended by Prime Minister Robert Menzies, on 19 January 1951.

Britain's first jet bomber, the versatile Canberra was also one of the most successful early generation jet combat aircraft, remaining in production until the early 1960s, serving with seventeen nations, and built under licence in Australia and also the USA in modified form as the Martin B-57. Other foreign operators included Argentina, Ecuador, Ethiopia, West Germany, India, New Zealand, Peru, Rhodesia, South Africa and Venezuela.

The Canberra was designed by former Westland technical director W E ('Teddy') Petter, who joined English Electric in 1944 to head its newly-established design department. English Electric had not previously designed its own aircraft but had built other manufacturers' products during World War II, including large numbers of Handley Page Halifax bombers.

The first of four Canberra prototypes flew on 13 May 1949 and the first production Canberra B.2 on 8 October 1950. No 101 Squadron RAF at Binbrook received its first aircraft in January 1951 and regular squadron service began the following May. Due to the outbreak of the Korean War and the accompanying uncertainties, large orders were placed and production undertaken by Shorts, Avro and Handley Page as well as the parent company.

The Canberra went on to be built in bomber, gun and bomb-armed interdicator, photo-reconnaissance and dual control trainer variants. The last new production aircraft was delivered to the South African Air Force in 1963, although the manufacturer gained good business from refurbishing and reselling approximately 140 Canberras until the early 1980s.

A total of 1373 Canberras were produced: 901 in Britain, forty-eight in Australia and 424 Martin B-57s in the United States, covering all versions.

The Australian Canberra was based on the British B.2 version but with provision for increased internal fuel capacity in a redesigned wing leading

edge (incorporated from the twenty-first aircraft and retrofitted to earlier examples), a revised radio suite and a reduction in crew from three to two: pilot and navigator/bomb aimer combined. The first twenty-seven aircraft were powered by two 28.9kN (6500lb) thrust Avon Mk.1s and the remainder by 33.3kN (7500lb) thrust Avon Mk.109s. It was designated as the Canberra Mk.20 (not B.20 as is often reported) and the serial numbers A84-201 to A84-248 were applied.

Before Australian production got underway, two British-built Canberra B.2s were ordered to provide training and familiarisation but not (as once again is usually reported) for use as pattern aircraft. The first of these aircraft (A84-307) arrived in Australia in August 1951 and the second (A84-125) in May 1952. After testing both went to No 82 Wing at RAAF Amberley, Queensland.

A84-125 was actually the third Canberra to arrive in Australia, having been preceded by RAF B.2 WD942 in March 1952. Although allocated the RAAF serial A84-2, it was never formally taken on RAAF charge and returned to Britain five years later. A84-3 was allocated to another RAF B.2 in Australia but not used, while the same applied to A84-1, which remained in the United Kingdom and on RAF strength. Two other British-built Canberras did formally join the RAAF—T.4 trainers A84-501 and A84-502 which were both delivered in 1956.



GAF Canberra Mk.20 A84-216 of No 2 Squadron seen flying low over RAAF Garbutt in Townsville, circa 1955. Source: RAAF



English Electric Canberra B.2 A84-307 (RAF serial WD939) was the first of type to arrive in Australia on 5 August 1951. It was converted into a Mk.21 in 1958. This photo was retouched from the original at some time with the addition of the kangaroo over the fuselage RAF roundel. Source: RAAF



GAF Canberra Mk.20 A84-240, previously of the RAAF's No 2 Squadron, accompanied by McDonnell Douglas Skyhawk NZ6205 of the RNZAF's No 75 Squadron on the delivery of the Canberra to the collection of the RNZAF Museum at Christchurch, New Zealand, in August 1984. Source: RNZAF Museum

The first GAF-built Canberra Mk.20 (A84-201) flew on 29 May 1953 from Avalon aerodrome, Victoria, in the hands of GAF's chief test pilot JoÚ Miles, accompanied by senior engineer Edward Barden. Three aircraft had flown by the end of that year and the forty-eighth and last was delivered to the RAAF in September 1958. Five aircraft (A84-201, A84-203, A84-204, A84-205, and A84-206) were converted to dual control Mk.21 trainers in 1958-59.

Before entering squadron service, RAAF Canberras achieved some national fame in 1953 when A84-201 and A84-202 participated in that year's England to New Zealand Air Race, the latter finishing a close second outright to an RAF Canberra. Long distance flights were a feature of early RAAF Canberra operations, including goodwill trips to the US.

The three squadrons of No 82 (Bomber) Wing at RAAF Amberley operated the Canberra, replacing the Avro Lincoln. No 2 Squadron was the first to convert to the new jet from December 1953, its

Lincolns and crews then transferred temporarily to No 6 Squadron. Eleven deliveries were made during 1954 and by the end of that year thirteen Canberras were in RAAF hands.

No 2 Squadron's subsequent history was largely overseas-based including deploying to RAAF Butterworth in Malaya as part of the Commonwealth Strategic Reserve. The Canberras replaced No 1 Squadron's Lincolns which had returned to Australia after eight years' active service against communist terrorists (see entry A73 in the second series). No 2 Squadron Canberras became the first Australian jet bombers to perform a combat sortie in September 1958, when an attack against terrorists in northern Malaya was carried out, the first of many such excursions.

Nine years later, No 2 Squadron was sent to Vietnam in April 1967 as part of Australia's large commitment to that conflict, remaining there until June 1971, achieving an enviable record

flying what was by then regarded by many as an obsolete bomber.

Operating as part of the United States Air Force's 35th Tactical Fighter Wing, No 2 Squadron's Canberras flew just six per cent of the wing's sorties but inflicted sixteen per cent of the damage. Overall, 11 963 sorties were flown in Vietnam, 76 389 bombs dropped and two aircraft lost.

The second squadron to operate the Canberra was No 6 Squadron, which relinquished its Lincolns during 1955 to re-equip with the new jet bomber. The squadron remained basically home-based (at RAAF Amberley) during its fifteen years operating Canberras before temporarily swapping them for the McDonnell Douglas F-4E Phantom II, twenty-four of which had been leased to cover the delayed delivery of the new General Dynamics F-111 fleet.

No 1 Squadron was the third and final unit to convert to the Canberra. Upon returning to Australia in July 1958 after its lengthy service in Malaya flying Lincolns, the squadron immediately re-equipped with the Canberra and continued to operate them from RAAF Amberley until late 1970 when it also received Phantoms pending the F-111's arrival in 1973.

Until receiving dual control Canberra trainers No 82 Wing performed its own conversion training of aircrew, but in January 1959 No 1 (Bomber) Operational Conversion Unit (1OCU) was formed at RAAF Amberley as part of No 82 Wing to perform this role.

In April 1968 1OCU became an independent unit at RAAF Amberley and took over the responsibility of providing Canberra crews for No 2 Squadron in Vietnam. When No 2 Squadron returned home in



GAF Canberra Mk.20 A84-231 of No 2 Squadron dropping its load of six 750lb bombs over Vietnam. This aircraft was one of two Canberras lost on operations in Vietnam. Source: RAAF

June 1971 1OCU was disbanded as it was no longer required. From then until the Canberra's withdrawal from RAAF service in June 1982, No 2 Squadron was the sole unit operating the type and consequently carried out its own conversion training. Tasking included target towing and reconnaissance.

Other RAAF units which operated Canberras include the Central Flying School at RAAF East Sale, Victoria, which used trainers between 1959 and 1964; the Communication Flight at RAAF Richmond, NSW; the Weapons Research Establishment at Woomera; and the Aircraft Research and Development Unit.

No 2 Squadron continued flying the Canberra until 1982, well past its planned retirement date. In the meantime the squadron still had one important task to perform with the venerable jet, completing numerous cartographic surveys in Australia and overseas (notably Indonesia) with Canberras equipped with survey cameras.

The Canberra's distinguished RAAF career officially ended on 30 June 1982 when No 2 Squadron flew four aircraft over Brisbane and surrounding areas in a farewell flypast.

Today there are numerous complete Canberras as well as components (nose sections, cockpits

or tails) on display at various locations around Australia and the world.

Aircraft on display include: A84-125 and A84-242 at the RAAF Amberley Aviation Heritage Centre; A84-201 as a gate guard at RAAF Amberley; A84-203 at the Evans Head Memorial Aerodrome Heritage Aviation Museum; A84-204 at the Meandarra military museum, Queensland; A84-207 at the National Transport and Toy Museum, Wanaka, New Zealand; A84-210 at Mareeba, Queensland; A84-219 at Brymaroo, Queensland; A84-225 at the Queensland Air Museum, Caloundra; A84-226 at the Australian National Air Museum, Moorabin, Victoria; A84-230 at The Aviation Heritage Museum of WA, Bull Creek; A84-232 at Avalon, Victoria; A84-235 at RAAF Wagga, NSW; A84-236 at the RAAF Museum, RAAF Point Cook; A84-240 at the RNZAF Museum, Wigram, New Zealand; A84-241 at the Woomera Rocket Park, South Australia; A84-245 in the grounds of the Defence Science and Technology Group, Fishermans Bend, Melbourne; A84-247 with the Australian War Memorial in Canberra; and A84-502 with the Historical Aircraft Restoration Society, Albion Park, NSW.

TECHNICAL DATA: English Electric/GAF Canberra Mk.20

DESCRIPTION:

Two-crew tactical bomber.

POWER PLANTS:

Two 28.9kN (6500lb) thrust Rolls-Royce/CAC Avon Mk.1 or 33.3kN (7500lb) thrust Avon Mk.109 turbojets.

DIMENSIONS:

Span 19.50m (64ft 0in); length 19.96m (65ft 6in); height 4.75m (15ft 7in).

WEIGHTS:

Empty 11 521kg (25 400lb); loaded 22 680kg (50 000lb).

ARMAMENT:

Max bomb load 3629kg (8000lb); typical Vietnam load six 340kg (750lb) bombs, four in bomb bay and one under each wingtip.

PERFORMANCE:

Avon 109 engines: max speed 933km/h 580mph at 10 668m (35 000ft); normal cruise 703km/h 437mph; initial climb 457m/min (1500ft/min); operational ceiling 13 716m (45 000ft); combat radius with 2040kg (4500lb) bomb load 1822km (1132 miles); max ferry range 5841km (3629 miles).