

THE ENGLISH ELECTRIC A.1 CANBERRA - ITS AUSTRALIAN CONNECTIONS

by

D. G. CAMERON

The English Electric A.1 Canberra was the product of a company not noted for its interest in aircraft design. At the time it began work on the Canberra, its only design effort had occurred after it acquired the Phoenix Dynamo Company in 1918. At that time Phoenix was developing the P5 Cork / Kingston flying boats and this work continued under English Electric control. English Electric's only direct design was the early 1920s ultralight Wren. The old Phoenix works were closed in 1926 and, while English Electric was a major licensed aircraft builder from a new factory during World War 2, it was not until 1944 that the company re-entered the field of aircraft design.

At that stage they were invited, because of the quality of finish and reliability of delivery of their wartime aircraft, to submit a design for a jet bomber and they engaged W. E. W. (Teddy) Petter, the son of the founder of Westland Aircraft, as their Chief Designer. Petter worked to Specification B.3/45, later revised to B.5/47, to produce Britain's first jet bomber, the A.1 Canberra, named, incidentally, after the Australian capital. The formal christening ceremony was carried out by the Australian Prime Minister, R.G. Menzies on 19 January 1951 during one of his visits to Britain.

A remarkable aircraft, it was highly manoeuvrable and apparently a delight to fly. It was perhaps the outstanding tactical bomber/reconnaissance aircraft of the Cold War period. It was to reign supreme in its field for over 20 years and remain in widespread use for much longer.

The Canberra served with the air arms of Argentina, Australia, Chile, Ecuador, Ethiopia, France, Great Britain, India (a major user), New Zealand, Peru, Rhodesia, South Africa, Sweden, USA, Venezuela and West Germany. A total of 1,352 or 1,373 airframes, depending on the authority cited, were built, some 901 in Britain and further licence produced versions in the USA and Australia.

Development and British Versions

The Canberra was developed as a straight, low aspect ratio, mid-wing, twin Rolls-Royce Avon engine, unarmed, tactical day bomber. It emerged to fly for the first time in May 1949 and was produced in almost 30 forms with the last new-built British aircraft being delivered in 1963. Four prototypes were the B.Mk 1. Three of these had Avon engines and one the Rolls-Royce Nene, the latter as insurance in case the Avon, then under development, failed to live up to its initial promise. Intended for blind radar-controlled bombing, the Mk 1s had solid noses and a crew of only two. No defensive armament was provided as, like the DH Mosquito, it was considered it would be fast and manoeuvrable enough and fly high enough to escape attacks by enemy fighters.

The first production model was the B.Mk 2. It was built to the revised specification, B.5/47, carried a third crew member and had provision for visual as well as radar bombing. It first flew in April 1950 and was followed by the generally similar PR.Mk 3 and T.Mk 4. Other major marks, all of which attracted overseas interest as had the initial ones, were the B.Mk 6, PR.Mk 7, the night intruder B(I).Mk 8 and the special high altitude PR.Mk 9, the latter with increased centre section chord and extended outer wing panels, giving it a service ceiling of 58,000ft (17,680m). With the exception of the Australian Mk 20 and 21, Mk 10 to 22 were essentially conversions, in small numbers, of existing airframes for specific purposes. A number of Canberras were used as trials aircraft with various engines and equipment under development.

From the 31 October 1956 British B.Mk 2s took part in the Suez campaign, bombing Egyptian targets. The Canberra suffered its first operational loss on 6 November when a PR.7 was shot down by a Syrian Meteor. However, their initial combat use had been by the RAF during the Malayan Emergency. The RAF's first live jet bombing attack was flown by Canberras in Malaya in February 1955.

American Production

In the USA, 403/424 aircraft were built under licence by the Martin company, as its Model 272, with the US services designation B-57. The first B-57A flew in July 1953. It was virtually a B.2 re-engineered for American production and fitted with Armstrong Siddeley Sapphire engines locally produced as the Wright J65. The B-57A was

followed by a number of versions and sub-variants up to the RB-57F, the latter a drastically modified, special high altitude, reconnaissance type with 122ft (37.19m) wingspan. American models after the B-57A were altered in various ways for local use, some quite drastically, and were powered by various local engines. The most obvious alteration to all of them was the redesign of the forward fuselage. This incorporated tandem cockpits with upward hinged canopies for the pilot and navigator in place of the side entry and fixed canopy of the British versions.

Australian Production and Use

Australia also built the Canberra under licence. Here they replaced the Avro Lincoln on the Government Aircraft Factory (GAF) production lines at Avalon, Victoria. The Australian Canberra, as initially intended, would have been powered by two Rolls-Royce Tay then being considered for the proposed Australian built Hawker P.1081 fighter. With termination of both the P.1081 and Tay developments, the decision was made to follow the British use of the more powerful, but more expensive Rolls Royce Avon engine. This increased the cost of the Australian Canberra by some 25 percent and it would have been cheaper to purchase them direct from Britain. However, local manufacture was undertaken to keep the specialised work force of GAF, and its sub contractors, in existence. As a result, 27 essentially B.Mk 2s with 6,500lb/28.9kN thrust Avon Mk 1 engines and 21 essentially B.Mk 6s, with more powerful engines (7,500lb/33.3kN thrust Avon Mk 109s) and “wet wings” were completed as a bomber, the Mk 20 (not the B. Mk 20 as often cited). This gave a total production of 48 airframes. Except for the first few they were fitted with Australian CAC built Avon engines and received the RAAF serials A84-201 to 248. The first flew in May 1953 while the last was delivered in September 1958. For almost twenty years they served as the RAAF’s tactical strike bomber.

Australian Modifications of the B.2

To meet RAAF specification AC82 and subsequent additional requirements, both groups of Mk 20s were built with a number of changes from the British equipment fittings. These changes included use of Bendix 30E02 DC generators with a wide speed range. The RAAF technical staff did not like the two-speed gearboxes on British aircraft. The two speed boxes were used to correct the fall off in power supply during low engine speeds with the “drift down” from high altitudes. The Bendix 30EC02 was able to maintain sufficient power output at low engine speeds for full

operation of all equipment. As well, revised battery mountings were fitted using a removable tray and plug/earth fittings to the aircraft systems. Other electrical changes included PVC insulated wiring instead of the standard British wiring and the changed lighting systems with the fitment of flashing navigation lights and lights in the bomb bay. The Mk 20 only carried a crew of two, pilot and navigator/bomb aimer against three for the RAF's B.2 and B.6 which carried separate navigators and bomb aimers when required. Changes to the cockpit layout, necessitated by a single pilot instrument panel and extra radio and navigation equipment, also required a revised lighting arrangement.

Major radio and navigation equipment changes were also specified. Some of these were not applied until part way through production but were then usually retrofitted to earlier built aircraft if the need arose. The Australian fitted radio was the Marconi AD107A/AD with revision of the VHF radio to provide for single TR 1936 equipment while an improved intercom system was used. As well, provision was made for the Mk 9 autopilot, although this was rarely fitted.

The navigational change was the substitution of the Marconi "Green Satin" Ground Position Indicator in place of the Gee System used in Europe by the RAF. The ground beacons required for Gee were not available in Australia. "Green Satin" required a di-electric panel on the under side of the port wing between the fuselage and engine nacelle. Another externally distinguishing feature of the Mk 20 was the location of the pitot tube. This was placed immediately below the nose having been moved from the centre of the nose glazing. There were also a number of small radio aerials visible on the Mk 20 not seen on the B.2.

Structurally the airframe and undercarriage were strengthened to allow operating at an all-up weight of 23 000kg, some 2 700kg heavier than the standard B.2. The other major structural alteration from the B.2 was to the wing leading edges to permit the fitting of the integral wing tanks capable of carrying an extra 4 000ltr of fuel, the so called "wet wing". Where necessary these were retrofitted to all Mk 20s but not the Mk 21 trainers. The "wet wing" was not specific to the Australian Canberra. It was first tested on the sole British B.Mk 5 and was a standard fitting on the B.6.

Engine starting procedures also had to be altered to make up for the widespread lack, in Australia's widely spread bases, of ground trolley equipment use to start early B.2s. From the beginning the RAAF specified cartridge starting with sufficient

cartridges being carried for three starts. As the Avon Mk 1 engine starters only utilized a single cartridge the extras had to be carried elsewhere in the aircraft, usually in a hatch in the rear fuselage. The Mk 109 engines had triple breech starters in the engine intake opening. These required a special bullet shaped fairing to prevent them interfering with the air flow through the intake. However, a few occasions of multiple firing of the starter cartridges and ensuing engine and airframe damage resulted in them normally being single cartridge loaded.

As service life progressed, a number of modifications and alterations were introduced. The introductions included Tacan, UHF radio and anti-collision beacons, the latter rotating on top and under the fuselage. Some radar target aircraft were fitted with "Smoke Trail" equipment to enable the trainee fighter pilots to identify their targets during interception exercises.

Australian Camouflage and Markings

Not surprisingly, the surface finishes and markings of the Canberra varied from time to time throughout its service life. Initially the Australian built machines appeared in overall silver with the standard RAAF red, white and blue roundels on the rear fuselage sides and above and below each wing. However, the red Kangaroo centre was introduced from late 1955, initially only on the fuselage sides. In an attempt to keep the cockpits cool in the hot climate, a white top to the fuselage was introduced in late 1962. This was followed in November 1963 by the introduction of a two tone camouflage of foliage green /slate grey on the upper surfaces and fuselage sides with under surfaces in slate grey, although some aircraft appear to have retained silver undersides. There appear to have been two separate patterns for the surface camouflage. In Vietnam the two colours were darkened somewhat. From the late 1950s the individual number of each aircraft was presented in large letters, generally in black, on the fuselage sides behind the roundel. On camouflaged aeroplanes this was often in white. The full serial number was shown on the nosewheel door.

The fin carried the standard red, white and blue flash of the time and, on squadron aircraft, the appropriate squadron marking. The latter sometimes extended over the rudder as well. These markings were a lightning flash of yellow or gold for 1 Sqn, red for 2 Sqn and blue for 6 Sqn. The squadron badge was sometimes incorporated in the centre of the lightning flash. For No 1 (Bomber) Operational Conversion Unit (1(B)OCU) there was a yellow and black checkerboard band marking. Aircraft

specifically involved in target towing duties carried orange bands around the fuselage immediately in front of and behind the wings. The T.4/ Mk 21s had “dayglo” noses, tails and wing tips.

Australian Usage Generally

The Mk 20 replaced the Lincolns in 2 Squadron in 1954, 6 Sqn in 1955 and 1 Sqn in 1958. With 2 Squadron, they served at Butterworth, Malaya from July 1958 until the squadron transferred to Phan Rang in Vietnam from April 1967 where it remained until mid 1971. In late 1972 five Canberras were converted for aerial surveying. The last Canberra was not withdrawn from service until the end of 1982. They had to be kept in use longer than intended due to delays in delivery of the replacement General Dynamic F-111s. To fill the gap it was necessary to lease McDonnell F-4E Phantoms from the USAF for use, from 1970, by Nos 1 and 6 Squadrons. No 2 Squadron was left to soldier on in its survey role with its ageing Canberras.

While No 2 Squadron's Canberra service was mainly overseas, that of the other two squadrons was essentially with 82 Wing from their home base at RAAF Amberley, Qld. Once the Mk 21 trainer aircraft became available, conversion training on Canberras was carried out by 1(B)OCU, also based at Amberley as part of 82 Wing. Limited use of the Canberra was made by other units such as Aircraft Research & Development Unit (ARDU), Central Flying School, East Sale, Communication Flight, RAAF Richmond, NSW and the Anglo-Australian Weapons Research Establishment (WRE), Woomera, SA.

Seven British built Canberras, five B.2s and two T.4s, also received Australian serials. The B.2s A84-2 (WD942) and A84-3 (WH710) were RAF aircraft used at Woomera as part of the WRE. They were never taken on charge by the RAAF and were eventually returned to Britain. A third such aircraft, A84-1 (WD935) intended for Woomera, never left Britain. However, two other British built B.2s, A84-307 (WD939) and A84-125 (WD983), were obtained by the RAAF in 1952 as familiarisation and crew training aircraft in preparation for the introduction into service of locally built machines. Two T.4s, A84-501 (WT491) and 502 (WT492), were obtained in 1956 for pilot conversion purposes. At the same time, work was put in hand to convert five early Australian built aircraft, A84-201, 203, 204, 205 and 206 and the two B.2s, 127 and 307, to dual control trainer configuration without bomb dropping potential, as Mk 21s. They carried a crew of three, trainee pilot, instructor and navigator, and did not

have integral leading edge wing tanks. The first of these conversions flew in June 1958.

As well as the B.2s mentioned earlier, the WRE also had many of the 24 British B.2s converted to U.Mk 10 target drones on strength from time to time. Many of the target U.10s were destroyed in flight.

London – New Zealand Air Race 1953

The first two Mk 20s, A84-201 and 202, while still undergoing pre delivery test flying, were entered in the speed section of the London-Christchurch Air Race of October 1953. For the race they were substantially modified to increase fuel capacity and improve navigational and avionics equipment. The course was from London to Bahrain, Cocos Island, Perth, WA and finally Christchurch, NZ. Their competition came from two RAF Canberra PR.3s and a PR.7. One of the PR.3s won and A84-201 came second, some 40min 54.7sec behind. The second PR.3 was only 8sec behind 201. The latter had lost a valuable 83min at Woomera having a damaged nose wheel repaired. A84-202 arrived at Cocos Island first but blew a tyre on landing and had to withdraw. The RAF PR.7 was delayed at Perth by an unserviceable generator.

Operation Bala Lagan 1956

Early in the Canberra's operational life, the RAAF was invited to take part in the 1956 US Armed Forces Day ceremonies in Washington DC. Under the code name Bala Lagan, five Canberras, A84-221, 224, 225, 226 and 227, took off from RAAF Amberley for Townsville. Departing RAAF Townsville on the 13 May 1956 they flew via Guam, Wake Island, Hickam AFB Hawaii, Travis AFB California, Strategic Air Command Headquarters at Offut AFB Nebraska to Andrews AFB Washington DC. A84-226 was diverted to Bolling AFB Washington DC to take part in the Armed Forces Day static display of a wide range of old and new operational aeroplanes. The return trip was via Randolph AFB Texas, Nellis AFB Las Vegas, Travis, Hickam, Wake Island, Guam, and Townsville which was reached on 6 June after a round trip of 36 220km and a total flying time of 49hr 45min.. They were accompanied by a USAF Douglas C-124 Globemaster II carrying the maintenance crews and appropriate spare parts.

The only major mishap was an aborted take off, due to engine failure, and wheels up landing of A84-227, at Hickam Field, Honolulu on the way home. The aircraft, while not seriously damaged, was beyond immediate repair. Conveniently HMAS Melbourne was in Pearl Harbor, having been on exercises with the US Navy, and it returned 227 to Australia for final repairs.

Operation Bala Lagan has particular significance for Queensland Air Museum as A84-225, one of the five aircraft involved, was its first and still is a highly valued exhibit. A84-225 can still be seen at the Museum. In 2006 it was moved into a hangar after over 30 years in open air display. Presently it is subject to a very thorough restoration.

Service in Malaya – 1958 - 1967

The first RAAF Squadron to receive the Canberra Mk 20s in late 1953/early 1954, No 2 Squadron was also the first and only unit to take them into action. In July 1958 it was deployed to Butterworth, Malaya to become part of the Commonwealth Far East Strategic Reserve and from this base it was sometimes required to fly missions against communist insurgents during the final stages of the Malayan Emergency. The first of these was in September 1958 when five aircraft bombed a target in northern Malaya. However, 2 Squadron's main activities at Butterworth were training, operational exercises with allied ground forces and generally "showing the flag". The Malayan Emergency officially ended two years after No 2 Squadron Canberras arrival. The squadron remained at Butterworth until April 1967 when it was transferred to Vietnam.

Service in Vietnam – 1967 -1971

On 19 April 1967, eight Canberra Mk 20s of 2 Squadron, RAAF ex Butterworth, Malaya, arrived at Phan Rang, Vietnam to become part of the 35th Tactical Fighter Wing of the US 7th Air Force. All other units in the 35th Wing were Americans; three F-100D squadrons, a F-100C National Guard squadron and a B-57 Canberra tactical bomber unit. After a formation fly-over of the base they landed to a colourful welcoming ceremony by senior Vietnamese, American and Australian officers. The squadron soon settled into its intended role with the first operations on the 23 April. Their routine commitment required launching eight Canberra strikes every day, with

each strike having two separate targets to be bombed. This went on seven days a week, in support of the allied ground forces, all over South Vietnam.

Initially the attacks were “Combat Sky Spot” strikes carried out at night from high altitude, up to 30,000ft (9,000m), with bomb release controlled by ground based radar. The results were disappointing but accuracy and effectiveness was substantially improved when, at the Australian’s urging, up to 60 percent of the mission control was passed to Forward Air Controllers (FACs). This allowed low level, 1,000 to 9,000 ft (300 to 1,000m), visual bombing, in daylight, of targets provided by the FACs. These low level attacks could be carried out when low cloud cover forced the higher flying, dive bombing, fighter and American Canberra attacks to be aborted because of poor visibility. The Canberra was often able to fly and attack below the cloud base. Their ample fuel supplies also allowed them to loiter over the target area, when required by either weather conditions or tactical considerations, and then attack when conditions had improved. This never failed to amaze American FACs who were used to the short flying times of the fighters they normally handled.

All allied fighter-bombers and even American and Vietnamese B-57s delivered their bombs from a diving attack. RAAF Canberras were the only level bombing squadron based in Vietnam. The ultra high flying, level bombing B-52s were based outside Vietnam.

Initially, supplies of Australian World War II bombs were used but when these were exhausted the Canberras were modified to enable them to carry the longer USAF Type M117 750lb bombs. Special external racks were designed by GAF to enable two bombs to replace the wing tip fuel tanks. Four bombs could be carried internally but, even for the smaller 500lb American bombs, special GAF designed adaptors were required. A further problem with the use of the American ordinances at low levels was a risk of damage to the dropping aircraft. Shrapnel from the more streamlined and so faster falling, earlier exploding and more powerful US bombs flew to higher levels, before the aircraft was safely out of range. As a result bombing height, on low level missions, had to be increased. The Australians were also unique in that they had access to variable time (VT) fuses for their bombs. If required, detonation could be effected between 50 and 200ft (15 and 60m) above ground. Against vehicles and soft skinned structures this achieved considerable blast and fragmentation effects

To reduce the risk of fire damage from the highly flammable American fuels, which had to be used in place of the normal Australian kerosene, it was necessary to equip the main fuel tanks with a fire suppressing, nitrogen purging system. A number of field modifications were also fitted. These included armour plate to protect the crew from ground fire.

At any one time, the squadron only had eight aircraft on strength but, during the course of its service in Vietnam, 17 of the total 21 late model Mk 20s were rotated through 2 Squadron. All were fitted with the Mk 109 Avon engines and the “wet wings”. These aircraft were A84-228, 230 to 238, 240, 242, and 244 to 248. Only two were lost. On the 4 November 1970, A84-231 disappeared without trace in the Da Nang area immediately after reporting completion of its mission, while on 14 March 1971, A84-228, operating in the far north of South Vietnam, was hit by a surface to air SA-2 missile and critically damaged. Both crew members ejected safely and, although slightly injured, were rescued next day by helicopter, having spent a very uncomfortable 27hrs in the jungle.

The squadron’s last sortie was flown on 31 May 1971 and it left for home shortly afterwards but, in just over four years in Vietnam, 2 Squadron flew almost 12,000 sorties, some 6% of the total flown by aircraft of the 35th Tactical Fighter Wing, but it was credited with causing 16% of the 35th Wing’s total bomb damage. On these sorties they dropped 7,389 bombs weighing a total of 26.8mkg. The damage inflicted was estimated at approximately 70 bridges, 15,000 bunkers and other military installations destroyed and 1,500 sampans sunk. These figures were achieved for the loss of only two aircraft and at a serviceability level of 97%. The Canberras achieved their proud level of effectiveness and efficiency using a World War II bombsight and, initially, WW II bombs. This says much, not only for the work of the ground staff and aircrews, but also for the, by then, obsolete aircraft themselves.

Aerial Survey & Other Work – 1972 - 1982

On return from Vietnam to its base at Amberley, 2 Squadron was redesignated as a Photo-Reconnaissance unit. In late 1972/early 1973 five of its aircraft, A84-245, 230, 232, 233, 234 and 238, were modified for high altitude aerial survey work while the remainder supported fighter training operations from Williamtown, NSW and

Butterworth, Malaysia. The latter work involved acting as radar targets and towing banner targets, one for mock interceptions and the other for gunnery practice.

The survey conversion was achieved by fitting a Wild RC2 or 10 camera in the bomb bay and NF.2 Navigation sight in the cabin. The converted aircraft could be distinguished by a large circular cut out in the forward section of the bomb bay doors, to allow the camera to function, and a fairing just below and behind the crew entry door, on the starboard side of the fuselage, that housed the periscope head of the navigation sight.

Aerial surveys were carried out, in co-operation with the Australian Army Survey Corps, over much of Central and Northern Australia, Papua-New Guinea, Irian Jaya, and, at Indonesia's request, Sumatra. The flights were made at high altitude and the wide angle lens on the Wild cameras allowed much more rapid and precise mapping. The Survey Corps were able to provide high quality maps in less than half the time it had previously needed.

Wind Down & Disposal

By 1978, only 21 of the original 48 locally built Canberras were still on the RAAF inventory, a number having been lost by attrition and 17 had been disposed of in 1973. In August 1979, these 21 were temporarily grounded as inspections had disclosed corrosion of the main wing spar connections on 13 of them. Work was carried out to retain a number of them in service until the final cut off date of June 1982, at which stage eight remained on 2 Squadron's strength and one at ARDU. Their final service was marked by a formation flight by four over the City of Brisbane on 30 June 1982.

Surviving and Museum Aircraft - 2008

It is difficult to be sure how many of the 55 airframes that received RAAF serials still exist. As indicated earlier, several of the RAF aircraft were returned to the UK. At least one of these still existed in a UK museum several years ago. Two Mk 20s were lost in Vietnam and 202, 205, 213, 220, 221, 233, 237, 239, 243, & 244 either crashed during their service life and were written off or were destroyed during trials at Woomera. As well 211, 212, 216, 217, 218, 227, & 501 were struck off charge and

either scrapped or sold and later scrapped. Two, 214 and 246, were used for stress analysis to destruction by ARL in Melbourne.

At the time of writing (January 2008) the following Canberras are extant in Australia.
(Source: www.adf-serials.com)

125	RAAF Amberley, Qld.
201	RAAF Amberley, Qld. (Gate Guard)
203	RAAF Amberley, Qld. (Stored for PNG Air Museum)
204	Rob Keys, Meandarra, Qld.
207	Wanaka Transport Museum, Wanaka, NZ.
208	Ron Schneider, Rupanyup, Vic.
209	(Cockpit only) Camden Museum of Aviation, NSW.
210	Sid Beck's Museum, Mareeba, Qld.
219	Alex Campbell Park, Brymaroo, Qld.
222	(Cockpit only) Australian National Aviation Museum, Moorabbin, Vic.
223	Temora Aviation Museum, NSW.
224	(Cockpit only) Dennison, Vic.
225	Queensland Air Museum, Caloundra, Qld.
226	RAAF Forest Hill, Wagga Wagga, NSW.
229	To USA in exchange for a Lockheed Ventura.
230	Aviation Heritage Museum, Bull Creek, WA.
232	Avalon, Vic.
234	(Cockpit only) RAAF Museum, Point Cook, Vic.
235	RAAF Forest Hill, Wagga Wagga, NSW.
236	RAAF Museum, Point Cook, Vic.
238	Willowbank, Qld.
240	RNZAF Museum, Wigram, NZ.
241	Woomera Missile Park, Woomera, SA.
242	RAAF Amberley, Qld.
245	DSTO, Fishermens Bend, Vic.
247	Australian War Memorial, Canberra, ACT.
248	Willowbank, Qld.
307	Vietnam Veterans' Museum, Phillip Island, Vic.
502	Historical Aircraft Restoration Society. (Stored at AAM, Bankstown)
WD954	South Australian Aviation Museum, Adelaide, SA.
WH700	Lincoln Nitschke, Greenock, SA.
WK165	South Australian Aviation Museum, Adelaide, SA.

In addition to the above, the Temora Aviation Museum imported an airworthy RAF Canberra TT.18 formerly WJ680, which operates under the civil registration VH-ZSQ in No. 2 Squadron RAAF markings as A84-234.

As a result Canberras with Australian connections can still be widely seen.

Bibliography

- Anonymous - *RAAF Canberra Markings*. Aviation Historical Society Aust. Journal 5(11):81. 1964.
- Cameron, D. G. - *Thirty Years on- Queensland Air Museum Major Collections*. Queensland Air Museum, Caloundra, Qld, Australia. 2005.
- Eather, Steve - *Target Charlie*. Aerospace Publications, Weston Creek, ACT, Australia. 1993.
- Eyre, David - *The Illustrated Encyclopedia of Aircraft in Australia and New Zealand*. Sunshine Books, Sydney, NSW, Australia. 1963.
- Farrar, Mark - *Canberra Disposal*. Flightpath 1 (2):26-28. 1990?
- Gillet, Ross - *Australian Military Aircraft*. Aerospace Publications, Sydney, NSW, Australia. 1987.
- Hopton, John - *Canberra- A capital aircraft*. Aviation Historical Society Aust. Journal 21(2):28 & 31. 1981.
- Odgers, George - *Mission Vietnam- Royal Australian Air Force Operations-1964-1972*. Aust. Govt Pub. Serv , Canberra, ACT, Australia. 1974.
- Odgers, George - *The Royal Australian Air Force - An Illustrated History*. Child & Henry Publishing P/L, Brookvale, NSW, Australia. 1984.
- Parnell, N. M. & Lynch, C. A. - *Australian Air Force since 1911*. J. W. Books P/L, Brookvale, NSW, Australia. 1982.
- Potts, Bruce - *Canberra Swansong*. Flightpath 3?(?):46. 1993?
- Wilson, Stewart - *Lincoln, Canberra & F-111 in Australian Service*. Aerospace Publications, Weston Creek, ACT, Australia. 1989.
- Wilson, Stewart - *Military Aircraft of Australia*. Aerospace Publications, Weston Creek, ACT Australia. 1994.
- Wilson, Stewart - *Made in Australia: Canberra - The RAAF's first jet bomber*. Aero Australia (6):56-62. 2005.

**© 2008 D.G. Cameron and Queensland Air Museum.
Researchers are welcome to quote from this paper provided that
appropriate acknowledgement is given to the author and publisher.**

www.qam.com.au