



ADF Serials Telegraph News

News for those interested in Australian Military Aircraft History and Serials

Volume 8: Issue 2: Autumn 2018: *Editors and contributing Authors: Gordon R Birkett and John Bennett*

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News Briefs: from various sources. John Bennett & Gordon Birkett @2018

Story: RAAF AIRCRAFT MARKINGS SINCE 1950: SQUADRON MARKINGS

– PART 7 – DROPPING THE FIGLEAF by John Bennett @2018

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Curtiss Wright Corner: P-40N-5 A29-518 Half Addressed. Gordon Birkett @2018

Odd Shots: Shooting for the stars for a twin engine replacement 1950-1981 compiled Gordon R Birkett@2018

Message Traffic Selections: Please address any questions to: question@adf-serials.com.au or <https://www.facebook.com/groups/233552413412953/>

News Briefs

15th January 2018: Our sixth P-8A Poseidon, A47-006 (msn 63182, N849DS) arrived at Edinburgh for 11SQN after stopping in Hawaii enroute on the 12th. Next on the ramp at the factory is A47-007 (msn 63187, N862DS). It is interesting our Poseidons do not have USN Bu numbers, a requirement for FMS contracts, so this must be commercial deal (e.g. as our C-130Hs were).

20th March 2018 Update: Australia's new maritime surveillance aircraft the P-8A Poseidon has achieved Initial Operating Capability (IOC), five months ahead of the original schedule.



Poseidon A47-006 arrives at RAAF Edinburgh 15th January

On the other hand, the first RAF aircraft ZP801 (msn 63185, N858DS) does have a USN number, Bu169337. Initial Operational Capability (IOC) is due to occur in January 2018.

The initial 12 RAAF P-8As are being delivered under the \$5.4 billion AIR7000 Phase 2B project, with an additional three to be acquired in the second half of the next decade.

Recent RAAF P-8A Deliveries

RAAF Serial	US Test Reg	msn	Delivery Details
A47-004	N974DS	62293	Delivered to 11SQN at Edinburgh on 7 AUG 17.
A47-005	N832DS	63179	Delivered to 11SQN at Edinburgh on 14 NOV 17.
A47-006	N849DS	63182	Delivered to 11SQN at Edinburgh on 15 JAN 18.
A47-007	N862DS	63187	Flying at factory, due delivery Edinburgh MAR/APR 19.

25th January 2018: As our P-8As arrive, AP-3C A9-660 (c/n 5660) - the latest addition to HARS at Albion Park - was added to the Australian Civil Register as VH-ORI.

PC-21 Activity

22nd January 2018: Thanks to our *ADF-Serials* "Swiss aeronautical correspondent", Stephan Widmer, the flow of images from Pilatus PC-21 production at Stans, provides an update. Below are **A54-011 as HB-HWK** and **A54-012 as HB-HWL**, both fitted with blue ferry tanks, which left Stans on delivery to Aust on 12th January, and arrived Sale on 22nd January.



A54-011 (HB-HWK) and A54-012 (HB-HWL) in JAN 2018, with 2FTS markings, prepared at Stans for the long ferry

RAAF Serial	Ferry Reg	msn	Delivery Details
A54-011	HB-HWK	244	8 JAN 2018 Stans flightline fitted with ferry tanks, left Stans on delivery to Aust 12 JAN 18; East Sale 22 JAN.
A54-012	HB-HWL	245	Flown at Stans OCT 2017; 8 JAN 2018 flightline fitted with ferry tanks, left Stans on delivery to Aust 12 JAN 18; East Sale 22 JAN.
A54-013	HB-HWM	246	FTS markings, due to depart Stans late MAR 18
A54-014	HB-HWN	247	FTS markings, due to depart Stans late MAR 18
A54-015	HB-HWO	248	A54-015 HB-HWO prepared for ground running tests 29 NOV 17, at Stans test flying JAN 2018. Due APR 18.
A54-016	HB-HWP	249	Due APR 18.
A54-017	HB-HWQ	250	Noted at Stans 6 FEB 2018 with ARDU markings .
A54-018	HB-HWR	251	First engine runs at Stans 28 FEB 2018 with Noted at Stans 6 FEB 2018 with ARDU markings .
A54-019	HB-HWS	252	16 MAR 2018 completing pre-flight testing, the first with Roulettes markings .
A54-020	HB-HWT	253	Noted at Stans 26 FEB 2018, Roulettes , leaving paint shop.



ARDU: A54-017 (HB-HWQ c/n 250) at Stans Feb 2018; A54-018 (HB-HWR c/n 251) first engine runs, 28 February



Roulettes: A54-019 (c/n 252) 19 February enters Stans final assembly; A54-020(253) coming from paint shop 26 Feb



16th March 2018: A54-019 (c/n 252, HB-HWS) completing pre-flight checks at Stans

24th January 2018: 82 Wing's 1SQN F/A-18F Super Hornets returned home at Amberley from the Middle East, marking an end to the RAAF's fast jet combat operations for the foreseeable future. From their base in the Gulf, Hornets and Super Hornets flew almost 3,000 combat missions since 2014.

27th January 2018: EA-18G A46-311 was heavily damaged in an major take-off abort incident on Runway 03L following a reported No 2 Engine disintegrated and fire. This occurred at 10:45 AM local time at Nellis AFB, just outside Las Vegas, Nevada. The two-man crew, pilot and WSO/EWO, escaped and are unharmed. This is the RAAF's first fast-jet accident in many years. It is currently unknown whether this aircraft is a write-off.

The last Fast Jet Accident resulting in a lost airframe was F-111C A8-143, when it was not repaired following its belly landing on 18th July 2006. Three other EA-18Gs that were on Red Flag 18-1 deployment were A46-305/306/310.



In better times.....Photo: ADF Serials via Joel Thomas 2017



Pictured after the engine disintegration, fire and exit of crew from the aircraft. Photo: Mike Yeo @ the baseleg

March 2018: We will now receive F-35As at the rate of one per month; here is our latest, **A35-006** in 20CU markings.



RAAF AIRCRAFT MARKINGS SINCE 1950

SQUADRON MARKINGS – PART 7 – DROPPING THE FIGLEAF (2)

CAMOUFLAGED WWII AIRCRAFT INTO 1950's SILVER

John Bennett 2018

These recent editions have been looking at most of the RAAF aircraft from the war years through the 1950s, that had their camouflage stripped making overall aluminium the prevalent colour of that era. In our last issues we looked at more RAAF WWII silver aircraft that soldiered on through the 1950s after dispensing with their camouflage in 1945:

- Part 5 in the series covered the ubiquitous and transport stalwart the C-47 Dakota,¹ and
- Part 6 looked at the Mustang, Mosquito and Catalina.²

This instalment studies the Beaufighter and Wirraway, as having been stripped of camouflage, through the 1950s these aircraft carried an aluminium or natural metal finish (NMF), colloquially referred to as 'silver'. It also provides a more detailed look at the disposal process for these aircraft, from immediately postwar up until 1960.



A silver air force 1951 – RAAF Laverton, with Mosquito PR.41, Wirraway, Lincoln B.30, and green Beaufighter 21

Serial Numbers. The aircraft covered by this instalment are the Australian-produced Beaufighter and Wirraway.

Serial Number	Serial Policy ³	Aircraft Mark	Remarks
Beaufighter A8-1 to A8-365	Consecutive	DAP Beau Mk.21	Also 218 UK-built Ic, VIc, X and XIc in A19-series.
Wirraway A20-3 to A20-42 A20-43 to A20-102 A20-103 to A20-134 A20-135 to A20-234 A20-235 to A20-434 A20-435 to A20-622 A20-623 to A20-757	Consecutive	CA-1 Wirraway I CA-3 Wirraway II CA-5 Wirraway II CA-7 Wirraway II CA-8 Wirraway II CA-9 Wirraway II CA-16 Wirraway III ⁴	A20-1 (NA-32) and A20-2 (NA-33) had been the NAA imports as evaluation and pattern aircraft. Wirraway II essentially slightly improved Mk.I, and Mk.I aircraft were upgraded to the Mk.II during RAAF service. Mk.III aircraft had wing modifications for a heavier bomb load and dive brakes for dive-bombing.

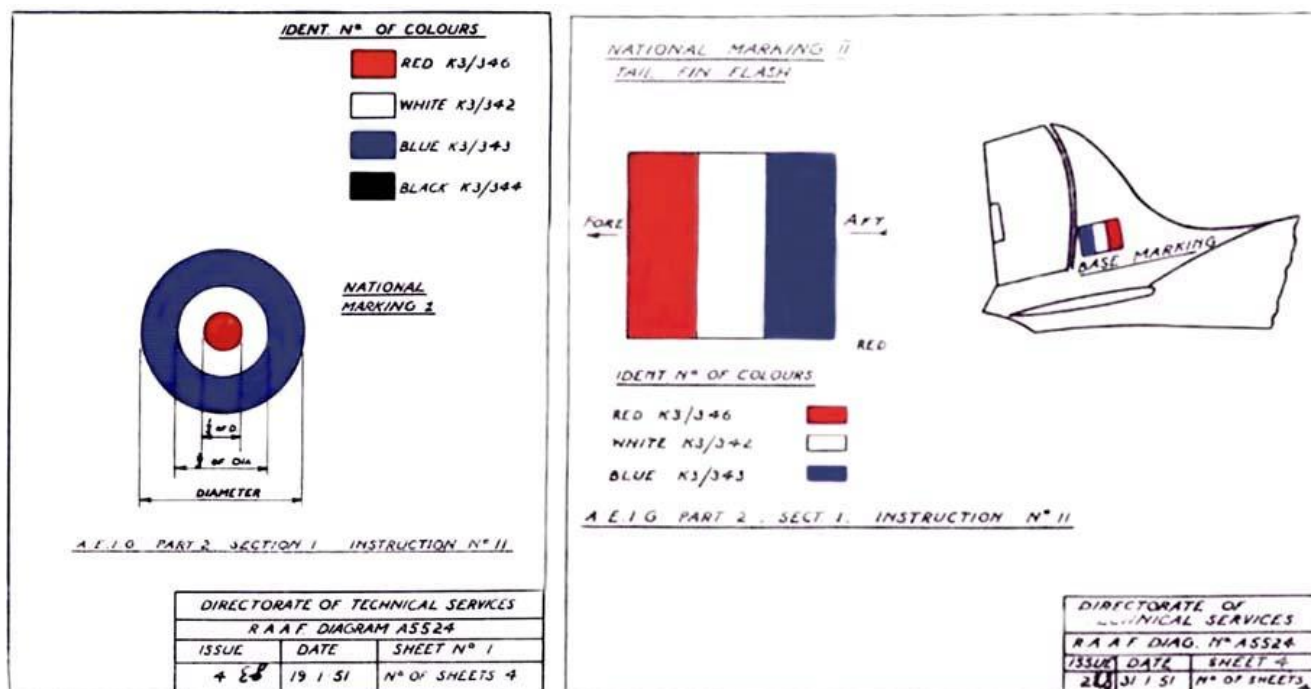
RAAF Colours. Below are wartime RAAF colours that had been adapted from the British Ministry of Aircraft Production colours, including postwar red and blue shades. With the 1948 policy **DTS SIG/96**, see our previous editions, National Marking roundels and fin flashes used bright and glossy shades, known as **K3/343 Glossy Blue** and **K3/346 Glossy Red**.

RAAF STANDARD K3/ VOCABULARY COLOURS

Wartime. RAAF colours had been adapted from the British MAP colours, and then when aircraft were supplied from the US, some of those colours were adopted or adapted. The RAAF had specific requirements for its areas of operations and produced unique markings and colours. Below are some colours from the Spartan company complying to RAAF 3K5, e.g. *Bright Red* was **K3/169** "for ambulances only", and *Dull Blue* **K3/197**. From 1941, the camouflage colours were *Foliage Green* **K3/177** and *Earth Brown* **K3/178**.



Postwar Markings. The RAF re-introduced prewar gloss red/white/blue national markings in MAY 1947 with the roundels in 1:2:3 proportions⁵ (Type-D roundels). In the RAAF, Special Instruction General/96 issued in JAN 1948 directed the introduction of these roundels,⁶ with the Type-D roundel referred to as "National Marking I", and the fin flash as "National Marking II", seen below in abbreviated Diagram A5524 Sheets 1 and 4, 19 JAN 1951.⁷ This Diagram specified red and blue as **K3/346** and **K3/343** respectively, which differed slightly from those adopted by the RAF in 1947 (BS381C-538 *Bright Red* or *Post Office Red*, and BS381C-110 *Roundel Blue*).⁸ These RAAF colours in 1948 were **K3/346 Glossy Red** (BS381C-538 *Bright Red*) and **K3/343 Glossy Blue** (BS381C-105 *Oxford Blue*).⁹



K3/346 was specified as Dulux *Bright Red* 388-5302 (i.e. BS381C-538 *Post Office Red*).¹⁰ After the earlier problems of mixing *Royal Blue*, in 1948 Dulux *Royal Blue* 388-041 was added to the RAAF 3K5 specification as K3/348 *Royal Blue* (i.e. BS381C-106 *Royal Blue*),¹¹ but for the blue in National Markings the RAAF had chosen BS381C-105 *Oxford Blue*, while the RAF had adopted BS381C-110 *Roundel Blue*.

POSTWAR DISPOSAL OF RAAF AIRCRAFT

Both aircraft in this instalment – Beaufighter and Wirraway – went through the disposal process immediately postwar and into the 1950s. Postwar, thousands of aircraft were retained in “War Storage”, totalling over 3,000 aircraft up to the end of 1948, which included 300 Beaufighters and 380 Wirraways.¹² Being surplus to requirements, their scrapping assisted the civilian community to recover from the war years, when metal had been in short supply – any smelting to make “pots and pans” and kitchen utensils was welcomed. On the farms, products to farmers like nuts and bolts, screws and wire, were in short supply. Furthermore, the emergence of a civil aviation industry – both for airlines (primarily to be supplied by surplus C-47 Dakotas converted to DC-3s) and the private flyer/aero club market – could be assisted by large numbers of surplus aircraft. But the Department of Civil Aviation (DCA) was naturally enough reluctant to release powerful warplanes into the hands of the public.¹³ The Beaufighter was not suitable for any civil aviation role, and although the Wirraway was an advanced trainer, its size and power was deemed unsuitable for aero club use. From the mid-1950s, it found a small niche in agricultural aviation. The Beaufighter and the Wirraway were prime candidates for sale as scrap metal, which in return would generate some funds for Government coffers. The Auster and Tiger Moth, the subjects in our next instalment, were ideal for civil flying clubs and private weekend flyers.

The Commonwealth Disposals Commission (CDC) was formed by the Federal Government under the Dept of Supply and Shipping in late 1944 to administer the sale of war assets, including aircraft, no longer required.¹⁴ The Dept of Air meeting with CDC on 10 SEP 1945 recorded that 200 Tiger Moths were about to be released, and a further 150-200 at a later date, that the price of a Tiger Moth be fixed at £500, and a 50% discount would apply to aero clubs.¹⁵ Disposals were authorised by the “CDC Form 1”.

Towards the end of the war, incredibly large numbers of surplus aircraft were stored at flying bases, and Care and Maintenance Units (CMUs) were formed throughout the country to manage the storage, maintenance and disposal of aircraft over 1945-47. For instance, the CMU at Tamworth was established in DEC 1944 to store Tiger Moths from 1EFTS Tamworth and 8EFTS Narrandera – by JAN 1945, 120 Tiger Moths were in storage.¹⁶ Maintenance of the stored aircraft and facilities, and supervise disposals was a major responsibility of the CMU. Main CMUs included Oakey, Tocumwal and Wagga:

- 6AD Oakey held 544 aircraft (mainly Kittyhawks and Spitfires) in DEC 1945,¹⁷ and by FEB 1946 when it became CMU Oakey had 622 aircraft to maintain;¹⁸
- 7AD became CMU Tocumwal in MAR 1946, providing storage for 437 aircraft, including 188 Wirraways;¹⁹ and
- 5AD at Wagga became CMU Wagga in FEB 1946, storing many Mosquitoes, Beauforts and Beaufighters – with 270 Beaufighters being disposed as scrap over 1948-49.²⁰

At other CMUs established mainly at the old flying training bases, 516 Tiger Moths were disposed of by CDC in immediate sales from 1945.²¹ For longer term sales, examples of CDC Disposals Handbooks for FEB 1945 and FEB 1946 were issued, and shown below.²² This initial disposal of 3,000 aircraft would take time – from 1945 into the 1950s.²³

CDC disbanded in early 1949, with disposals kept within Department of Supply under two Divisions– technically by Division of Aircraft Production (DAP), and procedurally by Dept of Supply Disposals Division (DSD).²⁴ E/E.88 aircraft status cards provide an insight into retaining the disposal procedures: some Wirraway cards in DEC 1949 were marked as “handed over to DAP for disposal in accordance with CDC Certificate of Write-Off”; reference is made to the “CDC Certificate of Write-Off A.D.1”; and from 1949 ‘DAP’ is replaced on cards by ‘DSD’.²⁵ Generally through the 1950s, CDC printed forms were still in use, and up to the 1960s the authority for disposal was still required by a “Disposal Form 1”.

Tocumwal became the RAAF’s primary disposal and scrapping base during the 1950s, and a nearby major training base at Uranquinty (home of 5 Service Flying Training School, 5SFTS) was typical of the numerous flying schools established for the wartime EATS. The CMUs for Uranquinty and Tocumwal worked closely, and in JUL 1949 CMU Tocumwal was renamed 1 Aircraft Depot Detachment ‘B’.²⁶ While sometimes referenced as 1AD Det ‘B’ Uranquinty, by 1950 the terminology had settled on 1AD Det ‘B’ Tocumwal.²⁷

In addition to the mentioned Tiger Moth sales by CDC (as this type was more suitable for public release rather than scrapping), 86 Tiger Moths were allotted for storage at Tocumwal between AUG 1951 and FEB 1957.²⁸ Tocumwal would also oversee the disposal, and primarily the scrapping, of many of the aircraft which are subjects here – nearly 250 Wirraways and 50 Beaufighters – and in addition a multitude of Mustangs, Vampires, Meteors, and Mosquitoes, covered in John Hopton’s book *Pots, Pans and Meteors*.²⁹ Many of the Tocumwal Wirraways were acquired by CAC

for its CA-28 Ceres program over 1957-1960, but many more Wirraways were scrapped at Tocumwal over the late 1950s and early 1960s, primarily being sold to the large scrap merchants L&M Newman, R H Grant Trading, and A G Sims Scrap Metals. Tocumwal was closed as an air force establishment in OCT 1960 – scrapping, primarily in the hands of scrap metal dealer R H Grant Trading Co, continued until late 1962.



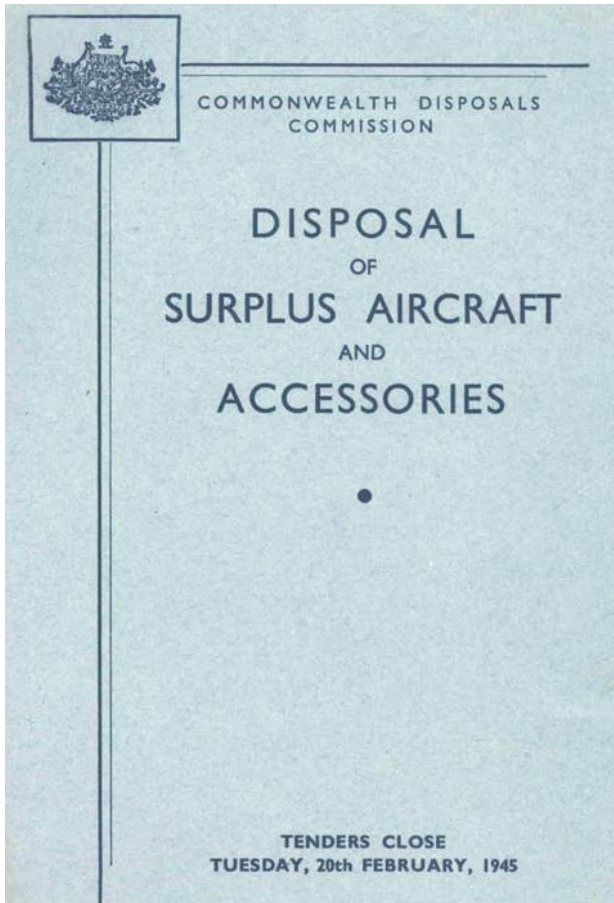
6AD open storage



5AD Open Storage

COMMONWEALTH DISPOSALS COMMISSION

CDC Aircraft Disposal Handbook for FEB 1945 Tender, NAA A705 73/21/1050



PARTICULARS AS TO PURCHASE.

(A) Number and Type of Aircraft Available :

The Commonwealth Disposals Commission has pleasure in offering for public sale eighty-seven aircraft made available by the R.A.A.F. Details of the individual types of aircraft, which range from small single-seater machines to larger passenger carrying types are included herein. In addition, surplus engines and other accessories are separately offered for sale. The attention of the public is invited to this initial sale of aircraft by the Commission. It presents an excellent opportunity to obtain possession of aeroplanes suitable both for personal flying and commercial purposes.

(B) No Guarantees or Warranties :

Whilst brief details are furnished herein in respect of the aircraft offered for sale such details may not necessarily be accurate at the time of disposal. All sales are on the basis of "as is, where is" and the purchaser buys the aircraft strictly on this basis. No guarantees or warranties of any kind are given. To assist intending purchasers, particularly those who up to date may not have been owners or operators of aeroplanes, the following suggestions are made :—

- (1) Consultation with the Department of Civil Aviation on all matters respecting certificates of air-worthiness for machines that might be purchased, all regulations relative to civilian flying, and supplies of aviation spirit.
- (2) It might be advantageous to intending purchasers to consult with recognised agents, manufacturers or repairers of aircraft regarding both initial repairs if such are required, and maintenance.

BEECHCRAFT :

The Beechcraft is a single-engine, cabin biplane with a Curtiss Reed fixed two-bladed metal airscrew.

Dimensions and Weight :		Engine Performance
		(Take-off) :
Span ...	ft. in. 32 0	330 b.h.p.
Length ...	24 4	2,200 r.p.m.
Track ...	7 2	90 Octane.
Wing Area ...	sq. ft. 273	
Tare Weight ...	lb 2,364	
Maximum Weight	3,590	
Fuel Capacity ...	62 gals.	
Average Consumption ...	14.5 gals. per hour.	

Performance :

Maximum Speed, 170 m.p.h.
Range Absolute, 725 miles at 165 miles per hour.



DISPOSITION :

New South Wales	...	...	...	...	1
					1
					1

FAIRCHILD* :

The Fairchild is a single-engine, high-winged, four-seater, cabin monoplane with a fixed pitch two-bladed wood airscrew.

Dimensions and Weight :		Engine Performance
		(Take-off) :
Span ...	ft. in. 36 4	175 b.h.p.
Length ...	24 10	2,450 r.p.m.
Track ...	9 3	73 Octane.
Wing Area ...	sq. ft. 174	
Tare Weight ...	lb 1,707	
Maximum Weight	2,550	
Fuel Capacity 33½ gals	Average Consumption 8.5 gals. per hour.	

Performance :

Maximum Speed, 124 m.p.h.
Range Absolute, 420 miles at 110 miles per hour.



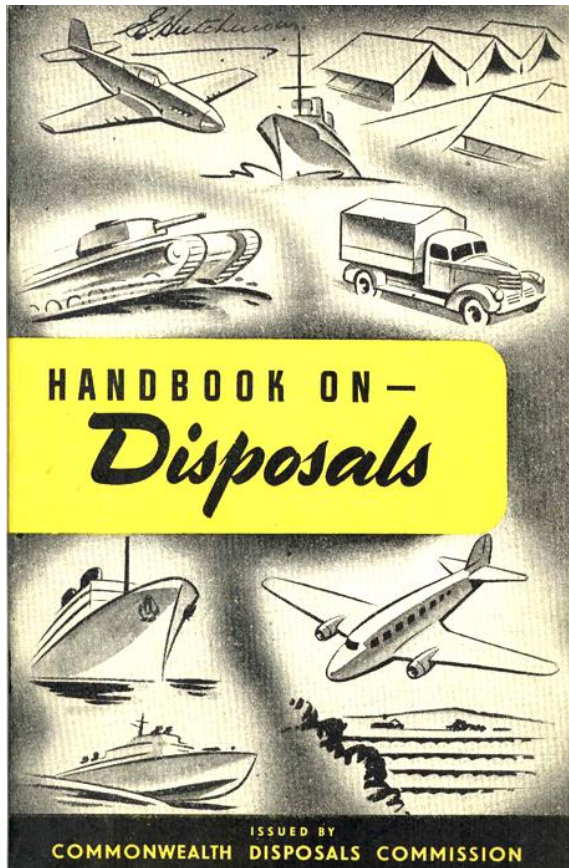
DISPOSITION :

Victoria	...	...	...	...	2
Queensland	...	...	...	...	1
					3

* None of these aircraft is fitted with engine.

COMMONWEALTH DISPOSALS COMMISSION

CDC Handbook on Disposals 1945 (NAA P2571, 12F)



Aircraft, Engines and Spare Parts

The Commission sells Aircraft, Spare Engines and Spare Parts as they are declared surplus by the R.A.A.F.

Aircraft

The types of Aircraft sold so far range from light to passenger carrying aircraft.

A sale of aircraft is made by public tender in the first instance and then by private negotiation once a price has been established for a particular line of aircraft, but the Commission is always ready to negotiate with Aerial Medical Services, Flying Doctors, Aero Clubs, Technical Colleges and Universities with regard to their requirements apart from sales by public tender.

The Regional Manager in each State should be approached by any interested buyer. He is in a position to furnish the applicant with details of aircraft and components available or likely to become available.

It is the policy of the Commission to obtain a survey of each aircraft before offering it for sale. These surveys are open to public inspection by would-be purchasers. The sale of Aircraft conducted by the Commission is based on the purchaser accepting the machine on a "where is and as is" basis. No guarantee of airworthiness is given, and all purchasers are advised to approach the Department of Civil Aviation respecting certificate of Airworthiness for the particular aircraft they have in mind, also fuel allowance, etc., before finally tendering.

Sales by public tender are fully publicised, and brochures are prepared giving all the relative facts as to capabilities, performance, disposition and number of each machine offered.

An Aeronautical Advisory Committee which includes representatives of the several sections of Industry, the Departments of Air, Civil Aviation and Aircraft Production has been established to assist the Commonwealth Disposals Commission in the liquidation of stocks of Aircraft and Aircraft components.

A large mailing list is kept both at Head Office and in each State, and applications should be made to the Regional Manager of the Commission in the particular State the applicant lives in, to ensure that his name is placed on this list.

Aircraft Spare Engines

Spare engines of varied makes and capacity are available for sale.

These engines may be suitable for adaptation to speedboat work as well as for flying purposes.

All applications and enquiries should be made to the Regional Manager in the State in which the applicant lives.

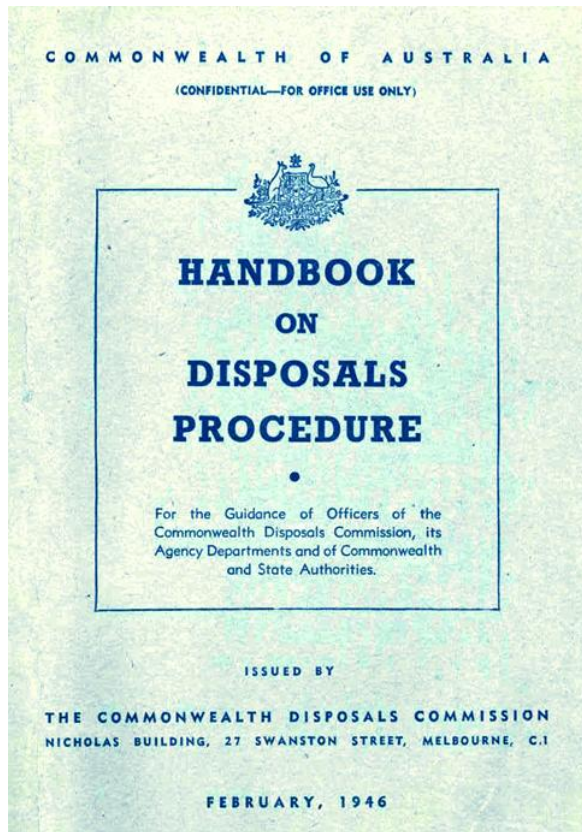
Aircraft Spare Parts

Arrangements have been made with the Department of Air to provide the Commission with a list of Spare Parts relative to lines of aircraft declared surplus.

Advice will be available to purchasers of aeroplanes on application.

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CDC Handbook on Disposals Procedure FEB 1946 (NAA P2571, 15)



V. SALES PROCEDURE FOR AGENCY DEPARTMENTS.

1. Commonwealth Departments and authorities which have been authorised by the Commonwealth Disposals Commission to effect disposal, on its behalf, fall into two main categories. Within the first category are the Department of Supply and Shipping, the Department of Munitions, the Allied Works Council, the Department of Aircraft Production, the Department of the Navy, the Commonwealth Department of Food, the Commonwealth Department of Import Procurement, and the Commonwealth Salvage Commission. The authorities comprise the Commonwealth Disposals Commission's selling agency through which all surplus property is disposed with the exception of aircraft, land and buildings and motor transport vehicles which, at the date of publication of this handbook, are handled directly by the Commission. Each Department or authority has been nominated by the Commission as the selling agent for a specific commodity or range of commodities. This procedure has enabled disposals to be effected through existing administrative machinery and by officers conversant with the technical properties and trade value of the goods handled. Service agencies are referred through the Commission to the appropriate liquidating agency as they arise. Where an agency Department holds surplus goods for which it is not the nominated selling agent a declaration is submitted to the appropriate selling Department through the Commission or direct to the value of the goods declared in the holding Department's designated authority. To expedite liquidation of surplus property, the Commonwealth Disposals Commission has delegated authority to each of these agencies to finalise sales without prior reference to the Commission within certain prescribed financial limits and in accordance with clearly defined procedures. The terms and limitations of each individual delegation and the commodity or group of commodities for

which each agency Department is responsible are detailed in Section A hereunder.

2. Within the second category of Commonwealth Departments and authorities to whom the Commission has delegated certain powers of direct sale are a number of Departments with comparatively small concrete surpluses accruing from time to time. These Departments have not been nominated as selling agents of the Commission in respect of any specific commodity but have been authorised to continue to dispose of their own surplus property within prescribed financial and procedural limits without prior reference to the Commission. The terms and limitations of each delegation within this category are set out in Section B hereunder.

3. The general conditions prescribed by the Commonwealth Disposals Commission for observance by all Departments in the exercise of authority delegated to them are set out in Section C hereunder.

Department of Aircraft Production

7. The Department of Aircraft Production has been authorised to dispose of any surplus property held by it without prior reference to the Commission in the case of transactions where the disposal price does not exceed £1,000 for any one transaction or £10,000 in the case of sales to Governmental authorities. The services of this Department are also being utilised in the liquidation of surplus stocks of aircraft parts and equipment. The authority will be exercised in accordance with the conditions set out in Section C hereunder.

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VI. MARKETING PROCEDURES—COMMODITIES HANDLED DIRECTLY BY COMMONWEALTH DISPOSALS COMMISSION.

At the date of publication of this Handbook, the Commonwealth Disposals Commission handles directly the disposal of the following commodities:

Aircraft
Land and Buildings
Motor Transport Vehicles

(1) AIRCRAFT

The following marketing procedure has been approved for disposal of surplus aircraft—

(a) The sale of aircraft and aero engines to the general public is made either by public tender or by private negotiation. The former method is usually employed where the number of any particular type is few. Where there are large numbers of any particular type the practice is to establish a price for equipment in good condition and to sell at that price for corresponding reductions in the case of items in less satisfactory condition. Sales to Aero Clubs, Medical Services, etc., are on the basis of 80% reduction in the sale price to the public. In addition, the Commission will negotiate sales on a special basis to priority users.

(b) The Commission negotiates directly with Aerial Medical Services, Flying Doctors and Aero Clubs for planes and equipment and with Technical Colleges, Universities and similar organisations for their needs.

(c) Sales by public tender are fully publicised and brochures are prepared giving details of the performance, capabilities, disposition and number of each machine offered.

(d) A survey of each machine will normally be made by the R.A.A.F. before it is offered for sale. The survey sheets setting out details of mileage flown and the general condition of the aircraft and duly endorsed by a prescribed R.A.A.F. officer are available for inspection by prospective purchasers.

(e) Machines are sold on a basis of "as is and where is". No guarantee of airworthiness is given by the Commonwealth Disposals Commission and it is the responsibility of prospective purchasers to consult the Department of Civil Aviation in regard to a Certificate of Airworthiness and any necessary fuel allowance.

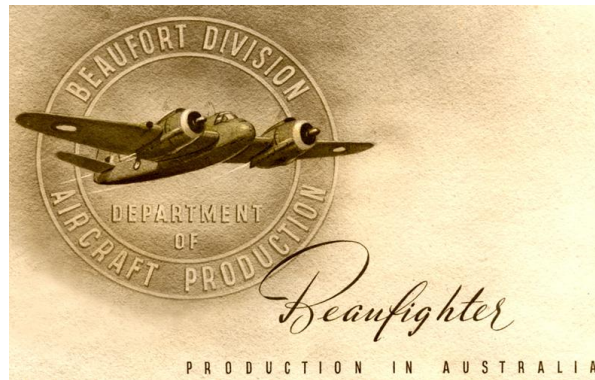
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(f) The Department of Aircraft Production is acting for the Commission in the disposal of aircraft spare parts (see Chapter VII).

(g) Scrap and obsolete aircraft, engines and parts are normally sold by public auction.

(h) An Aeronautical Advisory Committee including representatives of the several sections of the industry, the Departments of Air, Aircraft Production and Civil Aviation has been established to assist the Commonwealth Disposals Commission in the liquidation of surplus aircraft and aircraft components.

DAP BEAUFIGHTER



In 1944, a major policy revision of aircraft markings was **DTS Special Instruction General No.34 (SIG/34)** of 1 MAY 1944, which had stated “fighters, fighter-bombers, and bombers to be uncamoouflaged and fabric surfaces finished in Aluminium dope” – but mostly other aircraft were to be one colour all-over, such as ‘green’ for attack aircraft (e.g. the Beaufighter).³⁰ Australian-produced Beaufighter 21s came off the production line in overall *Foliage Green* (K3/178),³¹ and remained so marked until retirement to the Aircraft Depot/CMU graveyards. A few were stripped of camouflage in 1945 to overall natural metal, and *Aluminium* fabric, and those aircraft are the subject here.



Standard delivery colour *Foliage Green* Beaufighter A8-75 in a 50TU line-up at Williamtown in early-mid 1945

Silver Beaufighters

In NOV 1945, RAAF HQ DTS released the Instruction **DTS SIG/71** for all aircraft expected to remain in service postwar were to have camouflage removed.³² This Instruction went on to specify that 81 Wing Mustangs (i.e. under the command of British Commonwealth Occupation Force Air Forces, BCAIR) in Japan were to be treated in accordance with local direction (which in effect saw the early introduction of red-white-blue National Markings). Then in 1946, *Aircraft General Instruction (AGI) Pt.3 Sect (C) Instruction 1 (Issue No.2)* of 3 OCT 1946³³ reduced RAAF colour policy to just two schemes:

- “Appendix A” *uncamoouflaged* in natural metal/aluminium, and
- “Appendix B” for training aircraft in *Yellow*.

Also in NOV 1945, RAAF HQ DTS had considered the retention of squadron codes, and determined that these markings would remain.³⁴ By MAR 1946, DTS was already discussing the re-introduction of pre-war red-white-blue National Markings, and *had been advised by RAF Liaison in Melbourne that the RAF had reverted to red-white-blue roundels*.³⁵

1945 – SILVER BEAUFIGHTERS

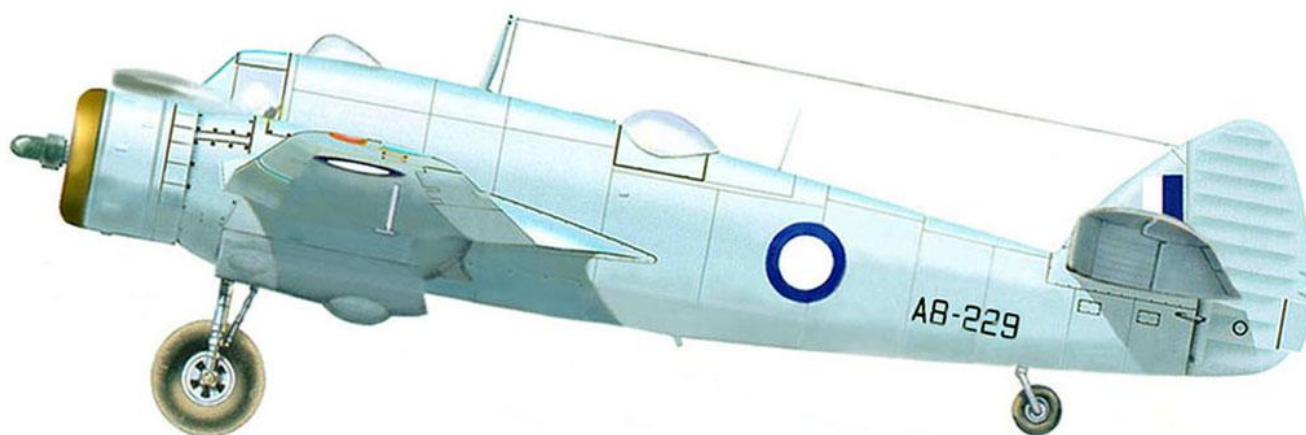


A8-357 in 1945, all-over aluminium – and (unusually for a silver Beaufighter) with 2:5 Pacific roundels delivered to 1AD in NOV 1945, was probably stripped immediately of its Foliage Green, as it was modified for target towing for Target Towing and Special Duties (TT&SD) Flight in OCT 1946, then finally to ATU Woomera in JUN 1954

A8-229 – BEAUFIGHTER Mk.21 31SQN



A8-229 in 1945 – all-over *Aluminium* Beaufighter 21 of 8CU at Madang, with a misaligned fin flash



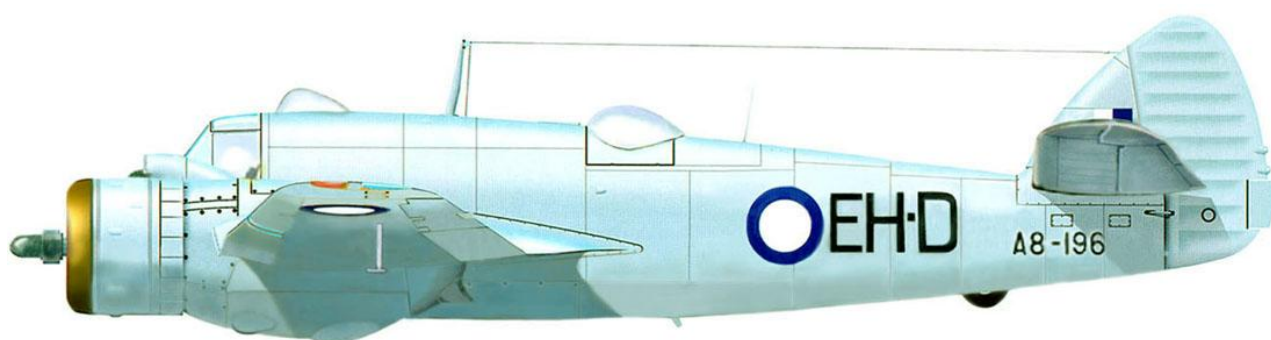
A8-229, at Laverton 1945, had been allotted to 8CU as a VIP transport for HQ Eastern Area

1945 – SILVER BEAUFIGHTERS

A8-196 – BEAUFIGHTER Mk.21 31SQN



A8-196 31SQN EH-D Morotai 1945

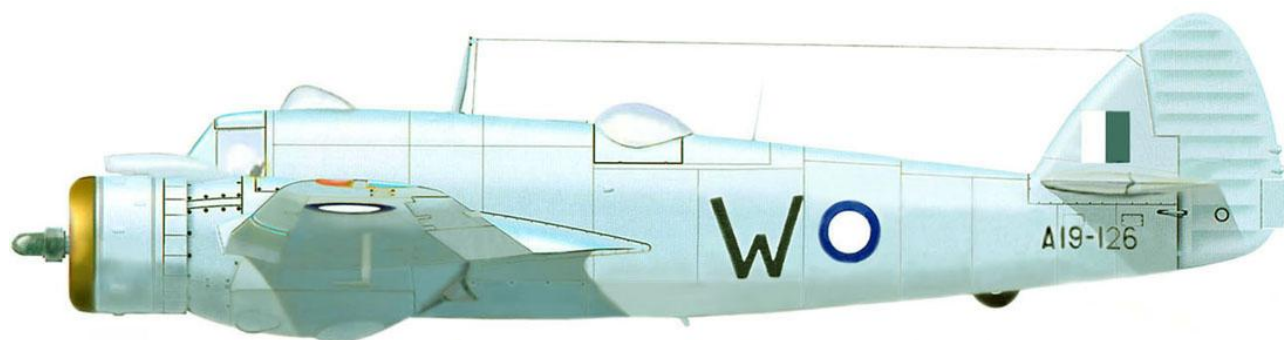


A8-196 EH-D overall aluminium, copper cowl collector rings, 31SQN style of squadron codes.

A19-126 – BEAUFIGHTER Mk.Vlc 5OTU



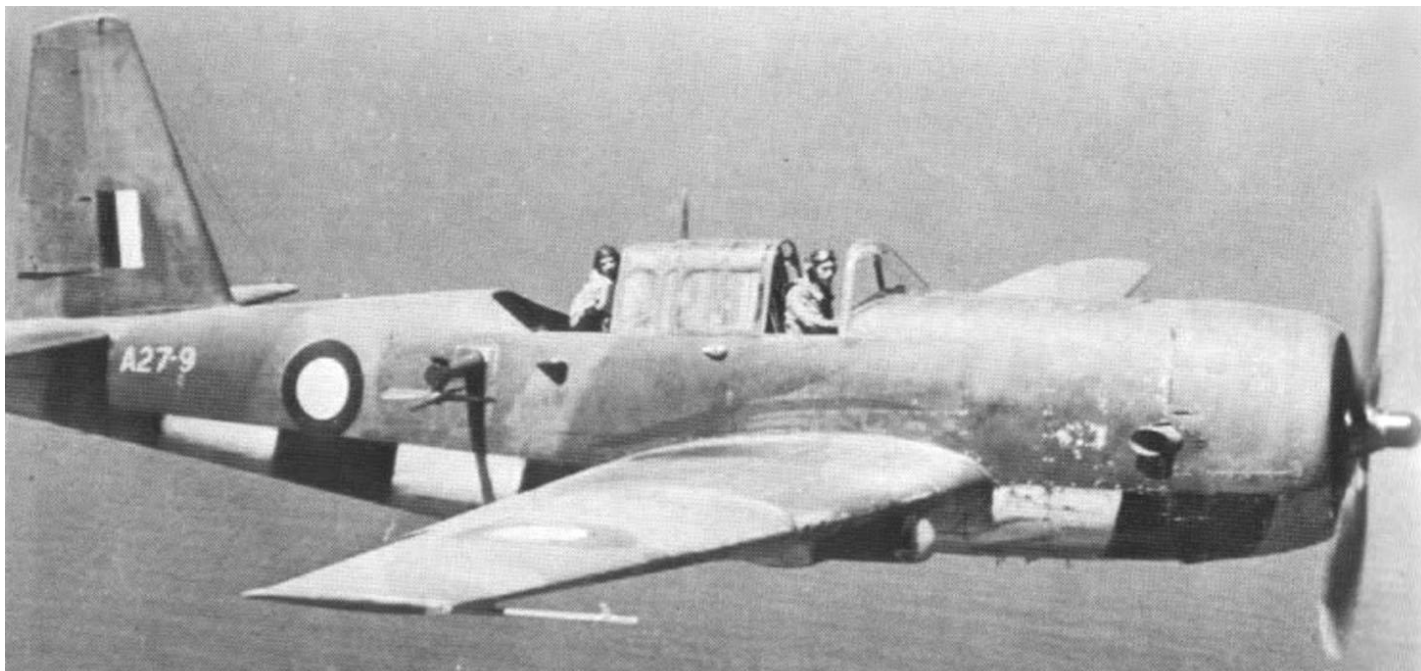
A19-126, UK-supplied Mk.Vlc, individual 5OTU identification letter "W", Williamtown, JUN 1945



This Fairey-built Mk.Vlc had no tailplane dihedral and elongated carburettor intakes. In 1944, A19-126 was classified as "not suitable for operational squadron due to flight characteristics which indicate a twisted fuselage".³⁶ Other silver Beaufighters in 1945 at 5OTU Williamtown were Mk.Ic A19-10 "G" and Mk.Vlc A19-135.³⁷

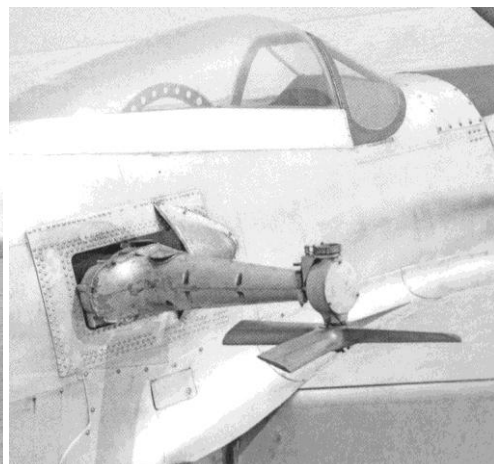
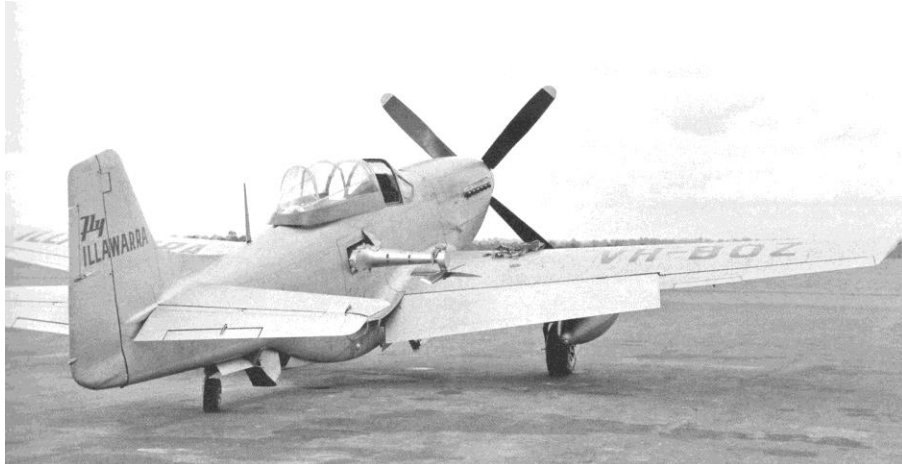
TARGET-TOWING BEAUFIGHTERS (1946-1957)

More advanced than the Wirraway and Battle 'Type D' winch was the 'Type B' which had been introduced during the war on the Vultee Vengeance to provide an enhanced target-towing capability for the gunnery schools and OTUs.



A27-9 in TT stripes NOV 1944 with the starboard-mounted 'Type B' winch arm, later used on the Beaufighter

Powered 'Type B' Winch. A8-265 was the prototype TT Beau in NOV 1945, with a starboard-mounted 'Type B' towing winch mechanism.³⁸ The arm-mounted ram air windmill provided power to a winch drum in the floor of the rear cockpit to wind in a deployed drogue target, the same that had been used on Vengeances. This was also fitted in the early 1960s to the civil Mustangs VH-BOY (A68-39) and VH-BOZ (A68-199) used by Fawcett Aviation/Illawarra Flying School on contract to the Defence Department. Presumably these winches were available from RAAF Beaufighter stocks. Below, from Southern Cross Mustangs, is the civilian Mustang target-towing 'Type B' winch arm and propeller.³⁹



VH-BOZ (ex A68-199) was one of two civilian Mustangs modified with the 'Type B' wind-driven winch

Beaufighter TT Deliveries. 1 Comms Unit flew A8-265 in JUL 1946 to Richmond for acceptance the following month by Target Towing and Special Duties (TT&SD) FLT. In SEP 1947 the unit was re-named TT&SD SQN, and then 30(TT) SQN in MAR 1948. This winch modification was incorporated into a further 16 TT Beaufighters, summarised below. In JAN 1956, the final aircraft A8-328, -350, -358 and -362 were ferried from 2AD to 1AD Det 'B' at Tocumwal for scrapping;⁴⁰ 30(TT)SQN disbanded in MAR 1956. The Beaufighter TT aircraft of Air Trials Unit (ATU) at Woomera were withdrawn from service in 1957 (A8-357 and -363), with their last flights on 9 DEC 1957 on ferry from Woomera to Edinburgh.

Beaufighter Target Tower Conversions		
1946 TT total 6	Prototype A8-265 , then first in the modification production were A8-351 in APR 1946, with A8-352 and A8-353 in JUN 1946	Followed by A8-356 and A8-357 to the TT&SD FLT at Richmond by the end of 1946
1947-50 Total now 13	A8-354, -359, -360, -362, -363, -364 and -365 straight into storage from 1947	Issued to TT&SD in 1947-8, 30(TT)SQN 1949-50; A8-363 remained in storage until issued in 1951
1951 Total now 17	Follow-on batch A8-328, A8-349, A8-350 and A8-358 were modified for target towing	To 30(TT)SQN 1952-55; aircraft to ATU Woomera (A8-349 in 1953; A8-357 1954; A8-363 1956)



A8-364, with the target towing 'Type B' winch arm on the starboard side, served on 30(TT) SQN from 1950 to 1955

Target Towing Colours. From 1946, the TT Beaufighters had basically two different patterns of yellow-black striping. The first from 1946 to the early 1950s, was all-over yellow/black stripes – *Trainer Yellow* K3/185 and *Black* K3/172. Then later, from about 1953 when RAAF TT Mustangs were also being used, the 1948 scheme of all-over *Aluminium* K3/162 and yellow/black undersides was standardised. This scheme is shown above on A8-364, and below on A8-328 which valiantly served at the Lord Mayor's Camp at Portsea, before being rescued for the museum at Moorabbin.



A8-328 – not exactly the end, in 1956 this Beau had been issued to the Lord Mayor's Camp for Children at Portsea, and fortunately was obtained in 1962 for display at Moorabbin, now marked as 31SQN "A8-39 EH-K"

Beaufighter Disposals. Some 270 Beaufighters (both UK A19 and Australian A8 aircraft) were disposed as scrap over 1948-49, with a further 50 at Tocumwal in the 1950s. The last ten Beaufighters were all in open storage at Tocumwal in DEC 1956, being offered for disposal through Disposal Form 1 Tocumwal List 9/56 of MAY 1956, by tender T4/630/3010. They were bought by Sims Scrap Metal in JUN 1957. By then, A8-328 had passed to the Lord Mayor's camp at Portsea in 1956 to replace A8-291 – which had been a newish 3-year old Beaufighter delivered to the Camp in NOV 1948.⁴¹ The final 10 Beaufighters sold to Sims Metal and scrapped at Tocumwal in 1957 were: A8-265, A8-348, A8-349, A8-350, A8-355, A8-358, A8-361, A8-362, A8-364 and A8-365. In Adelaide the two ATU target towing Beaufighters (A8-357 and A8-363) that were sold in APR 1958, were scrapped by W Brown & Sons of Hindmarsh.

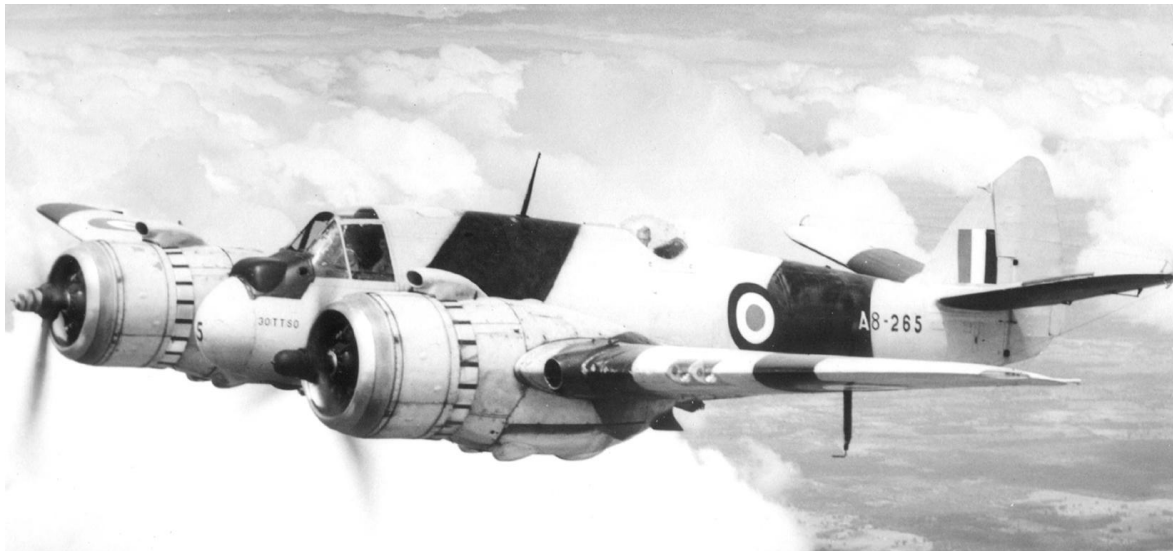


A8-354 still in Foliage Green with post war markings



A8-359 in TT Colours and Post War Markings

TARGET TOWING BEAUFIGHTER Mk.21 – A8-265



Target tower prototype A8-265, in the all-over striped scheme for TT Beaufighters from 1946, subsequently TT markings for both Beaus and Mustangs were standardised in trainer *Aluminium* uppersurfaces, striped undersurfaces, with only black under the tailplane but excluding elevators (presumably as black, *Night*, under the elevators may have caused heavier controls). 30 SQN's "30 TT SQ" inscription on the nose.

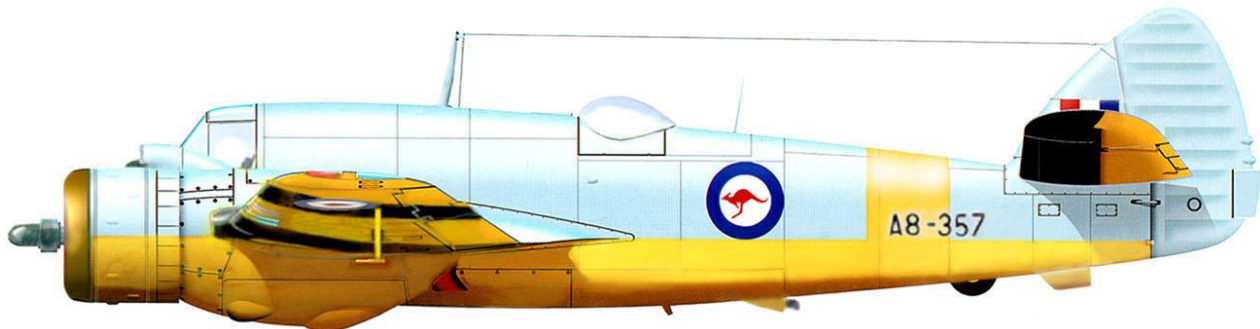


The 'Type B' target towing winch arm is visible in front of the roundel, below the navigator/winch operator's cupola. A wind-driven propeller could be deployed on the arm to power the centreline winch (in front of the tailwheel, which is also fitted with a deflector to prevent any cable jamming) to reel in the cable and target drogue.

TARGET TOWING BEAUFIGHTER Mk.21 – A8-357



A8-357 1956: In the newer TT scheme of upper surface *Aluminium*, and only striped under the mainplane, with the horizontal tailplane black and elevator yellow, and Type-D national markings with kangaroos on the fuselage. TT markings were re-defined by SIG/96 of JAN 1948 as trainer colours with *Yellow* (K3/185) and *Night* (K3/179) three-foot wide stripes 60 degrees to the lateral axis.⁴² A8-357 was delivered to TT&SD Flight Richmond in OCT 1946, then flying with 30(TT)SQN, and in JUN 1954 to Air Trails Unit (ATU) at Woomera. A8-357 and A8-363 were the last RAAF Beaus to fly, when on 9 DEC 1957 they were ferried from ATU Woomera to Edinburgh, for tender and sale as scrap.



A8-357 colours were *Trainer Yellow* K3/185 and *Night* K3/179 undersides, upper surfaces *Aluminium* K3/162. SIG/96 of JAN 1948 had stated *Night* was not to be applied to under the elevators, as had earlier been the case.⁴³



From 1956, A8-357 may have been the only Beaufighter to carry the fuselage kangaroo roundel up to retirement in 1957. The other possibility of flying with the kangaroo was A8-363, which flew with ATU briefly from JUL 1956.

Major servicing for the Beaufighter TTs was done by 2AD at Richmond and by Airflite, which was shortly taken over Bristol Aviation Services (BAS) at Bankstown. By 1955, Bristol's facilities comprised an airframe and electrical overhaul shop at Bankstown Airport, and an engine overhaul section in the Bankstown suburb.⁴⁴ Other military aircraft that BAS serviced included Bristol 170 Freighters and Sycamore helicopters.

A19 BEAUFIGHTER DISPOSALS 1946-1949

The main disposal of the Australian-produced DAP Beaufighters occurred over 1946-49, when 270 Beaufighters were scrapped from aircraft held in Category 'E' storage, mainly held from late 1945 at 5AD at Forest Hill airfield Wagga and at 1AD Laverton.

Disposal List AIR/1606 of 13 MAY 1946

List AIR/1606 approved disposal at Wagga of 44 A19 Beaus, including ex-5OTU aluminium A19-136 Mk.VIc (below), in Cat 'C' storage from SEP 1945. Most of these A19 Beaufighters were scrapped from 5AD (which in FEB 1946 became Care and Maintenance Unit Wagga), with only a handful at 1AD Laverton.



Disposal List AIR/1606 was issued 13 MAY 1946 and the aircraft remained stored with CMU Wagga while the RAAF stripped parts as "spares recovery", before being authorised for passing to DAP for scrapping on 24 FEB 1948. The scrapping work at Wagga had been finally completed by 8 AUG 1949 by DSD – in early 1949 the reorganisation of Dept of Supply saw the responsibility for the disposal of residue had passed from DAP to DSD. There had been delays in this process, and the RAAF Air Board noted in 1951 that "since DSD assumed responsibility, the disposal of the residues of unrequired aircraft has not been handled as expeditiously as when DAP was in control of this function".⁴⁵

DATE	DETAILS	AUTHORITY
—	OFFERED FOR DISPOSAL	LIST AIR ID. 1606
13/5/46	AUTHORISED FOR WRITE-OFF	NO 2
24/2/48	PASSED FOR D.A.P.	AS 61897 27/2/1235
8/8/49	ACTION COMPLETED BY <i>[Signature]</i>	<i>[Signature]</i> 05034963

A19-191 E/E.88 disposals stamp for AIR/1606, and the role of DAP taken over by DSD in 1949

Instructional Airframes

List AIR/1606 also approved disposal of 3 Instructional Airframe Beaufighter Mk.21s (A8-111, A8-148 and A8-186, I/A No.6, 7 and 8) from the Ground Training School (GTS) Wagga, which were sold in MAR 1950.⁴⁶

- This list did not include two other A19 aircraft that had been converted to Instructional Airframes at diverse locations, and offered for disposal in the same timeframe. A19-15 (I/A 4) at 5OTU Williamtown, and A19-43 (I/A 3) at AAGS Nhill were both passed for DAP action in 1947.
- The list did however include A19-89 (I/A 2) at 1 Engineering School in Melbourne.

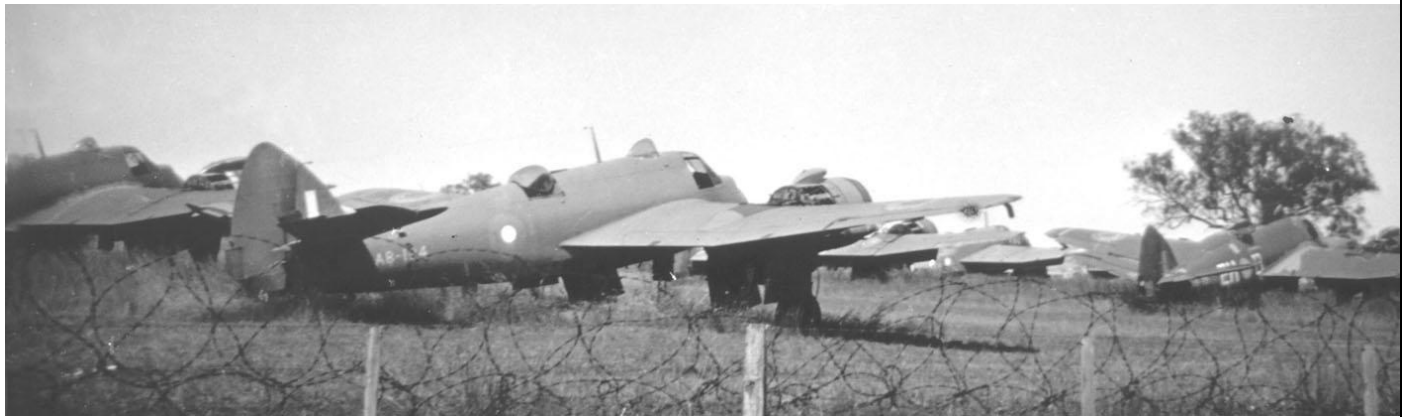
A8 BEAUFIGHTER DISPOSALS 1946-1949

Disposal of the Australian-produced Beaufighter 21s was authorised by AIR/1738, issued a week after AIR/1606, and both these processes occurred over 1946-49 to the same schedule. With 270 Beaufighters being scrapped, most were held at 5AD/CMU Wagga, and later aircraft were delivered directly from production at Fisherman's Bend to storage at 1AD Laverton.

This activity was before Tocumwal became the main storage depot for unrequired aircraft (as 1AD Det 'B' in JUL 1949). Over this period there were 11 Beaufighters stored at Tocumwal, which were released by Disposal List 489 in 1954.

Disposal List AIR/1738 of 22 MAY 1946

AIR/1738 released 223 Mk.21s which had been flown to storage in late 1945 as virtually brand-new aircraft,⁴⁷ with aircraft stored at 5AD Wagga and 1AD Laverton – nearly 150 were at Wagga and 75 at Laverton. Aircraft were initially in Category 'C' storage for future use, but in MAR 1946 all were downgraded to Category 'E', indicating ready for stripping of spares and disposal as scrap. Storage and disposal up to 1949 was controlled by CDC, with the technical assistance of DAP parties to scrap the aircraft after RAAF spares recovery, and then disposal by DSD.⁴⁸



A8-194 (above) – in a field of Beaufighters and Beauforts at Wagga



Lines of Beaufighters at Wagga in 1947: (above) A8-144 LY-D and A8-63; (below) A8-157 and A8-86 SK-H



BEAUFIGHTER DISPOSALS 1950s

By mid-1945, aircraft were flown direct from the Fisherman's Bend factory to storage at 1AD at Laverton, initially being classified as Category 'C' storage at a high maintenance standard. However, by MAR 1946 all aircraft were downgraded to Category 'E', indicating they would not be required for future operational use.

Storage Categories. Study of the E/E.88 and contemporary documents show **Category 'B'** storage was of an airworthy aircraft, often with the flying unit (and referred to as Immediate Reserve, or "I.R."); **Category 'C'** was an initial form of storage away from the unit and was "required for postwar use as a complete aircraft". For non-airworthy aircraft, **Category 'C' (Special Reserve)** and **Category 'E'** were "for conversion to spares and subsequent disposal" – Cat 'C' (SR) was to be held indefinitely for conversion to spares, Cat 'E' to be stripped for spares recovery ("Christmas –treed") then disposed of.⁴⁹ These classifications were changed over 1955-56 to: Immediate Reserve (Class 3), General Reserve (Class 4), War Reserve (Class 5), and Special Reserve (Class 6) – probably equating to Cats 'B', 'C', 'C' (SR), and 'E'.



A8-97, 50TU Williamtown early 1945, before storage at 5AD Wagga in NOV 1945, and disposal by AIR/1738

From 1953 until 1957, nearly another 50 surplus Beaufighters were sold primarily from storage at 1AD Det 'B' at Tocumwal. E/E.88 Aircraft Status Cards provide an insight into disposal and scrapping at Tocumwal (TOC), and recorded entries for Beaufighters over 1953-58 are marked as follows:⁵⁰

- 23 SEP 1952, sale of an additional eight Instructional Airframes from RAAF Technical College at Wagga, offered for disposal by AIR/7200, sold on 14 JAN 1953;
- two separate disposal lists in APR 1953 and JUN 1954, totalling 25 aircraft from Tocumwal for disposal, and all were sold 6 OCT 1954 to R H Grant;
- 30 MAY 1956, listed 11 Beaufighters for disposal on list TOC 9/56, but one aircraft (A8-328) was removed early for issue to the Lord Mayor's Camp at Portsea, leaving 10 per schedule for tenders closing 12 FEB 1957; and
- 2 APR 1958, two TT aircraft from ATU Woomera listed for disposal at Edinburgh by EDN No.93/57.

DISPOSAL LIST AIR/7200 – LISTED 23 SEP 1952

Aircraft Offered	Date of Sale	Purchaser	Aircraft
8 Beaufighters from Wagga	14 JAN 1953	RH Grant Trading Co	A8-84, 190, 202, 212, 232, 240, 241, 257 (Instructional Airframe No.9 to I/A No.16).

DISPOSAL LIST AIR/7264 – LISTED 14 APR 1953

Aircraft Offered	Date of Sale	Purchaser	Aircraft
14 Beaufighters from Tocumwal	6 OCT 1954	R H Grant Trading Co	A8-298, 313, 322, 326, 331, 336, 339, 340, 341, 342, 343, 344, 345, 347.

DISPOSAL FORM 1 DAP LIST 489⁵¹ – LISTED 17 JUN 1954

Aircraft Offered	Date of Sale	Purchaser	Aircraft
11 Beaufighters from Tocumwal	6 OCT 1954	R H Grant Trading Co	A8-316, 317, 318, 327, 329, 330, 332, 333, 335, 337, 338.

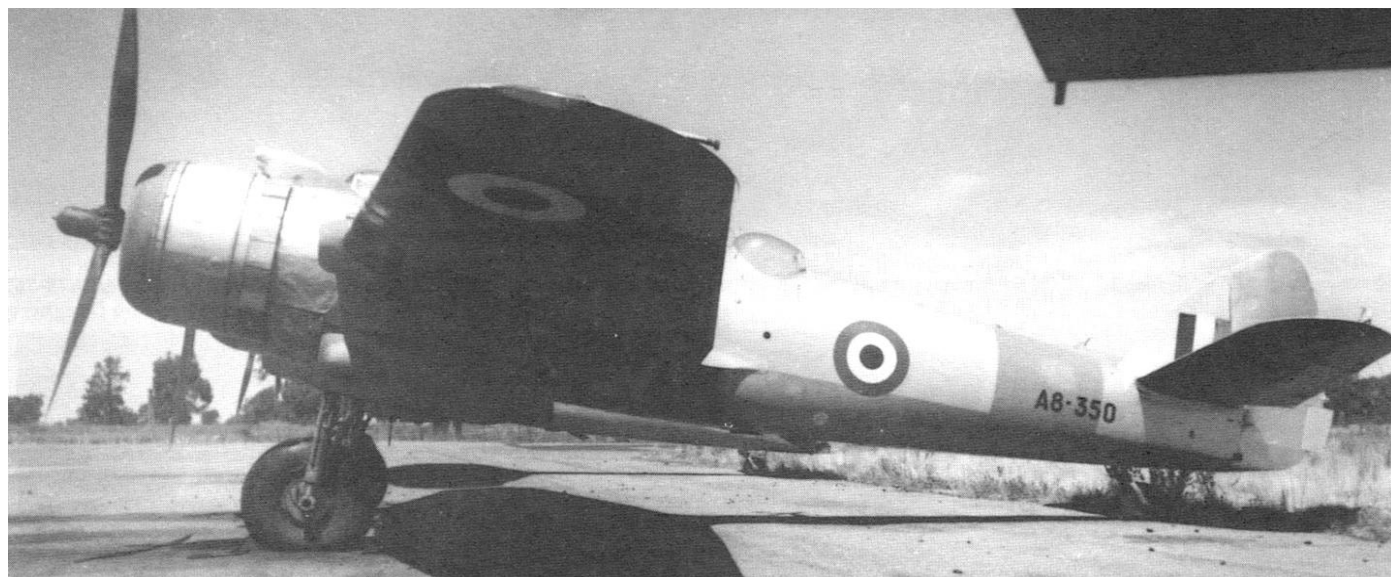
All 25 Beaufighters sold to RH Grant Trading Co, which was becoming the main scrap metal dealer at Tocumwal.

BEAUFIGHTER DISPOSALS 1950s

DISPOSAL FORM 1 TOC LIST 9/56 – LISTED 30 MAY 1956

Aircraft Offered	Date of Sale	Purchaser	Aircraft
10 Beaufighters from Tocumwal	28 JUN 1957	A G Sims Scrap Pty Ltd	A8-265, 348, 349, 350, 355, 358, 361, 362, 364, 365.

TOC 9/56 of 30 MAY 1956 was the final major disposal of 10 Beaufighters, by Tocumwal Schedule T4/630/3010 for tenders closing on 12 FEB 1957 (copied below). 7 of these were TT aircraft, an 11th had already been released to the camp at Portsea. The remaining 9 that had been converted to TT were on other lists, or written-off in service.



A8-350 TT in DEC 1956 awaiting scrapping at Tocumwal – from ‘Pots, Pans and Meteors’⁵²

Other one-off Mk.21 disposals as scrap were:

- **A8-351** had crashed in 1947, and then added to the 1946 List AIR/1738, with disposal completed in 1949;
- AIR/2588, of 19 NOV 1946, was disposal by DSD from Oakey in NOV 1948 of **A8-312**;
- TOC 15/54, of 18 NOV 1954, was disposal of the residue of **A8-354**;
- TOC 9/56 had initially included **A8-328**, but this was removed for issue to Portsea in NOV 1956;
- TOC 5/57, of 21 MAR 1957, the disposal of the scrap of **A8-359**, airframe was 5 tons and engines 2 tons !!

DISPOSAL FORM 1, EDINBURGH LIST 93/57 – LISTED 29 NOV 1957

Aircraft Offered	Date of Sale	Purchaser	Aircraft
2 Beaufighters from Edinburgh	2 APR 1958	W Brown & Sons	A8-357 and A8-363.

Another two TT aircraft from ATU Woomera sold for scrap, and ferried to Edinburgh on 9 DEC 1957.

Instructional Airframes (I/A). The following are the known aircraft converted to Instructional Beaufighters, mostly for use at Wagga with Ground Training School (GTS), which became the RAAF Technical College (RTC).

I/A 1	not known		I/A 9	A8-190	Mk.21
I/A 2	A19-89	Mk.Vlc	I/A 10	A8-84	Mk.21
I/A 3	A19-43	Mk.Ic	I/A 11	A8-212	Mk.21
I/A 4	A19-15	Mk.Ic	I/A 12	A8-241	Mk.21
I/A 5	not known		I/A 13	A8-240	Mk.21
I/A 6	A8-11	Mk.21	I/A 14	A8-232	Mk.21
I/A 7	A8-148	Mk.21	I/A 15	A8-202	Mk.21
I/A 8	A8-186	Mk.21	I/A 16	A8-257	Mk.21

The UK-produced aircraft were converted to instructional airframes in 1944, the DAP Mk.21s were converted postwar in 1947. Unfortunately the E/E.88 status cards are missing for A19-121 to A19-124. Instructional Airframes were a good source for later restoration: **A19-43** survives in the USAF Museum, and **A8-186** at Camden.

BER:C:MFT (316)

- 3 -

T4/630/3010

15. STORAGE CHARGES: If delivery is not completed by the purchaser within thirty (30) days (unless otherwise specified) of notification of acceptance of his tender, he shall be liable to pay on demand storage at the following rates:-

One shilling (1/-) per ton in respect of the first period of three (3) days after expiration of the time allowed for delivery, such charge to be increased progressively by sixpence (6d.) per ton in respect of each subsequent period of three (3) days until the goods are removed or re-sold. For the purpose of computing such storage charges, the full rates shall be applied for a part of a period and the charges shall be calculated by weight or measurement, whichever is the greater.

16. SALES TAX: This equipment is not subject to Sales Tax.

SCHEDULE

DISPOSAL OF 10-NO. BEAUFIGHTER AIRCRAFT.

Item No.	Description	Quantity	Price Tendered For Each
1	A8-348 with engines 119918 and 119940	1	157-12-6
2	A8-349. No engines.	1	.....
3	A8-350 with engines 119951 and 130065	1	157-12-6
4	A8-355 with engines 115207 and 115224	1	157-12-6
5	A8-358 with engines 119933 and 119973	1	157-12-6
6	A8-361 with engines 119934 and 131234	1	157-12-6
7	A8-362 with engines 119987 and 130091	1	157-12-6
8	A8-364 with engines 119994 and 130100	1	157-12-6
9	A8-265 with engines 131414 and 116062	1	157-12-6
10	A8-365. No engines	1	.....

END USE: Tenderers to state end use of aircraft tendered for -

SCRAP.

BEAUFIGHTER SURVIVORS

Two DAP Beaufighter Mk.21s have survived, and are displayed in wartime colours at Museums – **A8-186** at the Camden Museum of Aviation at Narellan, and **A8-328** at the Australian National Aviation Museum.

A8-186

A8-186 had been 'Instructional Beaufighter No.8' at Wagga and sold in 1950. It was fortunately obtained by Harold Thomas for his Camden Museum in 1965, and displayed as DU-I of 22SQN.



A8-328

Although listed for disposal with the scrappers in 1956 on disposal list Form 1 TOC 9/56, A8-328 was reprieved to replace A8-291 as a play-thing for children at the Melbourne Lord Mayor's Camp at Portsea. A8-291 had been dispatched from storage at Point Cook to Portsea in NOV 1948, but by 1956 was deemed due for replacement and so A8-328 was saved from Tocumwal smelters – then saved again by the enthusiasts from Moorabbin, for future display.



A8-291 Portsea 1948-1956



A8-328 Portsea 1956-1962



A8-328 as 'A8-39' EH-K of 31SQN, Australian National Aviation Museum Moorabbin 2014

OVERSEAS MUSEUMS

Major components of two imported A19 Beaufighters have provided the basis of two overseas restorations – **A19-43** at the USAF Museum, Wright-Patterson AFB, Dayton, and **A19-144** at The Fighter Collection (TFC) at Duxford in UK. In addition, components from **A19-148** and from Mk.21s **A8-324**, **A8-371** and **A8-384** (the last two from when DAP production ended), have been used in composite restorations. Both *adf-serials* images below taken in 2012.

BEAUFIGHTER Mk.Ic A19-43/A8-371 as USAAF 'T5049'

Since disposal by CDC, the stripped hulk of **A19-43** had been on a farm near Nhill over 1947-1971, until recovered by the Moorabbin Air Museum, and with the fuselage of **A8-371** (incomplete from when DAP production ended) was exported to Canada in 1986. Acquired by the USAF Museum in 1988, the cockpit section was returned to Sydney in 1993 for restoration by HARS, then returned to USA in 1998. It was assembled standing on its undercarriage in 2005 with A19-43's original serial T5049, as an example fighter of the USAAF 415th Night Fighter Squadron.⁵⁴



Beaufighter Restoration Kits. Several airframe wrecks at Drysdale River (Kalumburu Mission), Kimberley WA, **A19-144** and **A19-148**, had been recovered in 1981 by the Sydney-based Historic Aircraft Restoration Society (HARS) and provided the core for assembled "kits". At a warehouse near Bankstown Airport the components were sorted to make three separate sets of parts for Beaufighter restoration "kits":

- centre-section kit of **A19-144** with cockpit from **A8-324**, is with TFC (below);
- centre-section kit of **A19-148** with fuselage of **A8-384**, was stored at the RAAF Museum in 1998 (its fuselage had been painted inaccurately as 'AH-E'); and
- HARS has retained a long-term composite restoration using multiple-sourced parts.

BEAUFIGHTER Mk.XIc A19-144/A8-324 as 'A19-144'

The **A19-144** centre-section "kit" was assembled with the residue fuselage of **A8-324** (from disposal list AIR/1738), which was acquired by HARS in 1985, and was shipped to TFC for their restoration, with tail section of **A19-36**, cockpit of **A8-324**, and components from **A19-148**. TFC has adopted the identity of A19-144 for its project. This was mounted on wings and undercarriage at Duxford by 2008 – painted in RAAF wartime markings as 'A19-144' and reportedly nearing completion to fly, but this will probably not be approved.⁵⁵



CAC WIRRAWAY



Aluminium Wirraways A20-640 and A20-644, Laverton 1956 – 21SQN's red propeller hub, pre kangaroo roundels

It was literally the Wirraway that got the Commonwealth Aircraft Corporation (CAC) off the ground. The foresight of Lawrence Wackett in the mid-1930s had established an aircraft industry in this country just in time for war – an industry which through several companies positioned Australia well into the 1950s, but sadly diminished in the late 1960s and withered in the 1970s. The CAC factory was at Fisherman's Bend in Melbourne, and I will correct any of my previous errors in this spelling, by deferring to Derek Buckmaster's *CAC Ceres, Australia's Heavyweight Crop-Duster*:

Although the formal address of CAC was actually Lorimer Street, Port Melbourne, it is common to refer to the location of the factory as Fisherman's Bend. The name was first noted on a map made by the English engineer Sir John Coode for the Melbourne Harbour Trust in February 1879. Fishermen and their families lived next to this bend on the lower reaches of the Yarra River as early as the 1850s. When the Shaw-Ross Engineering & Aviation Company applied for a licence to operate an airport in the area in 1922, the "situation of the Aerodrome" was stated as "Fisherman's Bend". Although some other publications refer to the location as Fishermen's Bend, the early spelling is used...⁵⁶

Colours for Wirraways had continually evolved over the war years, briefly summarised as follows:

- 1939 – Initial deliveries were silver/*Aluminium*, but with the start of war in Europe, *Aircraft General Instruction* (AGI) C.11 in SEP 1939 introduced Wirraway camouflage, and blue/red roundels.⁵⁷
- 1940 – AGI C.11 *Issue 3* in OCT 1940 added yellow training bands to the dark green/dark brown camouflage for training Wirraways in 'Scheme E.2'; grey serial numbers, silver undersides and black serials.⁵⁸
- 1941 – RAAF camouflage schemes identified as RAAF *Foliage Green* (K3/177) and *Earth Brown* (K3/178).⁵⁹
- 1942 – AGI C.11 *Issue 4* in AUG 1942 introduced *Sky Blue* (K3/195) as the standard RAAF camouflage lower surfaces colour, and specified the trainer bands as *Yellow* (K3/185).⁶⁰
- 1944 – AGI Pt 3 (c) *Instruction No.1* in MAY 1944, introduced overall yellow, but still specified two Wirraway schemes: Trainers as Appendix 'E' in overall *Yellow*, and Tac/R as Appendix 'C' in overall *Foliage Green*.⁶¹
- 1947 – wartime overall *Yellow* scheme for Wirraways was to be changed, with policy deliberations in AUG and SEP 1947 for a silver finish with yellow bands.⁶²
- 1948 – DTS *Special Instruction General* 96 (SIG/96) of JAN 1948, formalised the above 1947 changes that Wirraways would now be *Aluminium*, no longer all-over yellow, but with yellow trainer bands.⁶³

Wirraway Trainer Markings

Trainer Bands

The new SIG/96 policy of JAN 1948 stated that metal skin aircraft were to be painted *Enamel Aluminium* K3/162, and wood and fabric components in *Dope Aluminium* K3/168. In addition, a band of *Yellow* K3/185 was to be painted round the fuselage and each mainplane – the trainer bands were stipulated as 24" wide for 'small aircraft', 36" wide for 'medium' aircraft (i.e. the Wirraway), and 48" wide for 'large' aircraft.⁶⁴ The SIG/96 policy also standardised the glossy *National Marking* roundel colours, as mentioned in earlier instalments, as *Red* K3/346, *White* K3/342, and *Blue* K3/343.



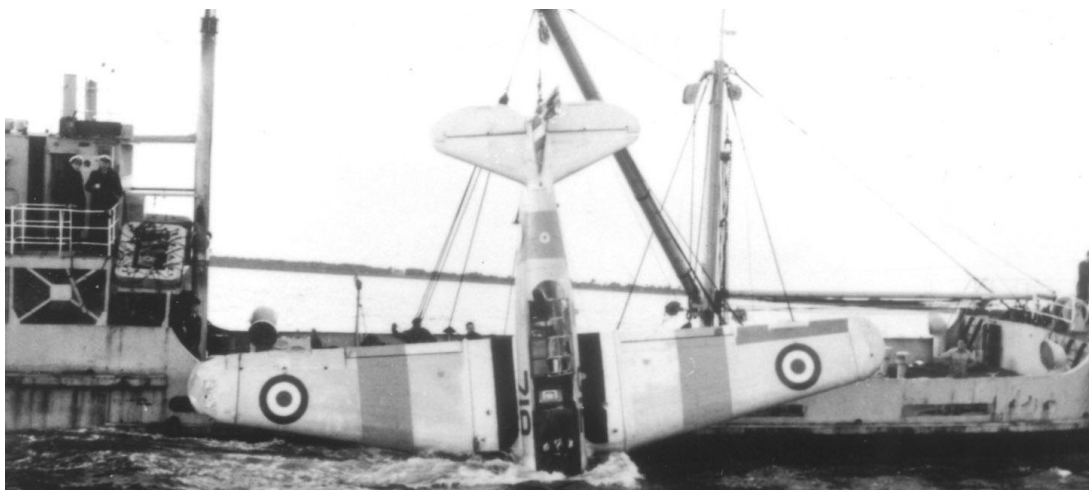
Wirraways at 1AFTS Point Cook

In accordance with the JAN 1948 SIG/96 policy, the *Yellow* (K3/185, BS381C-356) bands were 36",⁶⁵ and fabric from A20-649 shows the 8"x5" serial characters, and the 33" fuselage roundel superimposed on the yellow band. Images of A20-679 and A20-663 show the trainer band with both 'Type-D' and, then 1956, kangaroo roundels.



Standard application of the 36-inch (91.44cm) trainer band

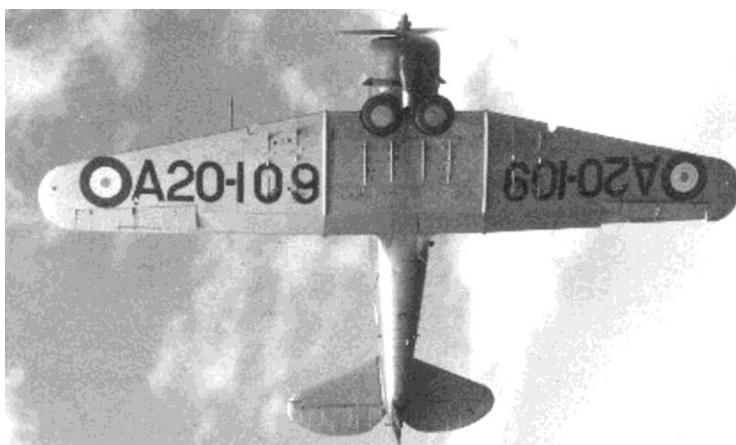
Sometimes the Wirraway's roundel was marked further forward on the fuselage position. An image of A20-689 (later under 'Disposals') shows the roundel marked over the fuselage access door – a peculiarity of DAP at their Parafield airframe workshops.⁶⁶ In late 1946, the Department of Aircraft Production (Maintenance Division) had become the Division of Aircraft Production within the Dept of Supply and Development,⁶⁷ which later became the Dept of Supply, where some Wirraway major servicing was undertaken over 1952-54.



The recovery of A20-718 from Pt Phillip Bay in AUG 1957 shows the mainplane trainer bands
RAAF policy: 'The position for the mainplane band is half way approximately between the roundel and fuselage.' ⁶⁸

Underwing Serial Numbers

Under port wing serials faced aft, under stbd wing faced forward. The size of characters was 21" x 12", in 2.5" strokes, and with a smaller 30" diameter roundels to allow room for the serial – shown below with **A20-109** in 1940.



Postwar underwing serials changed, with just the 'last three', so the larger 36" roundel (per upper wing) could be used.



A20-218 OCT 1956 - with just '218' below the starboard wing, and 36" underwing roundel
 Underwing serials were removed completely in late 1950s

Changes in RAAF Flying Training

Most Wirraways in the 1950s were operated from 1952 by 1 Applied Flying Training School (1AFTS) at Point Cook, and by 1 Basic Flying Training School (1BFTS) at Uranquinty NSW. Also at both bases were Tiger Moths, until withdrawn at the beginning of 1957 – this appears a little duplicated, or disjointed, because the RAAF College at Point Cook required Tiger Moths for basic flying training, and Wirraways for advanced, or ‘applied’, flying training, and so did 1BFTS. Flying training of instructors also occurred at Central Flying School (CFS) at East Sale (having moved from Point Cook in 1947).

The RAAF College had been established as a four-year cadet course, for ‘future air force leaders’. Over the mid-1950s the College flying syllabus was conducted at Point Cook, and comprised: ⁶⁹

- First Year (or the 4th Class) 11.5 hours flight grading, which was subsequently deleted;
- Second Year (3rd Class) nil flying;
- Third Year (2nd Class) basic flying training – 30 hours Tiger Moth, 30 hours Wirraway; and
- Fourth Year (1st Class) applied flying training – 145 hours Wirraway.

The standard trainee pilots undergoing BFTS and AFTS training were referred to as ‘airman aircrew’ courses. Pilots in those days, up until 1960, would graduate with wings and the rank of Sergeant. They would then become eligible for commission as an officer into their career. College cadets, on the other hand, graduated with wings and a commission.

The advent of jet advanced training was to cause a major disruption to the current system. The Vampire trainer could not operate from Point Cook, and the decision was made to undertake this training at RAAF Pearce WA. This was projected to be underway in 1958.

Therefore, over this period, there was a major reorganisation of RAAF flying training:

- in MAR 1951, Wirraways at Point Cook were transferred from 1 Flying Training School (1FTS) to ownership by Base Squadron Point Cook – for use by 1AFTS from MAR 1952, and for training of RAAF College cadets;
- over 1952-56, Wirraways were operated by 1BFTS at Uranquinty together with Tiger Moths, with a longer and more advanced syllabus than when operating solely the Tiger Moth;
- by the end of 1955, 1BFTS Tiger Moths at Uranquinty were being withdrawn, replaced by the RAAF’s new basic trainer the Winjeel, from the beginning of 1956;
- in MAY 1958 1AFTS moved from Point Cook to Pearce and re-equipped with Vampires, which had involved major restructuring of both the flying training and the RAAF College syllabi; and
- 1BFTS Uranquinty moved with Winjeels to Point Cook on 17 DEC 1958.



A20-715 with new arrival 1BFTS Winjeels A85-453 and A85-432 at Point Cook, DEC 1958

So by the end of 1958, the new flying training organisation was 1BFTS with Winjeels at Point Cook, and 1AFTS with Vampires at Pearce – this composition would remain until 1969. Wirraways were formally retired and marked by a fly-over at Point Cook on 4 DEC 1958, and ferried to Tocumwal in mid-JAN 1959; the type continued with several CAF units for the next three months, being progressively ferried to Tocumwal for storage over JAN-MAR 1959.

Target Towing Wirraways

As covered in *adf-serials Telegraph, Summer 2018*, several Mustangs had been converted as target towers ("tugs") in the early 1950s, but with a simple frame under the starboard bomb station to which a 1000ft cable would be attached. As there was no winch fitted to feed out the cable when airborne, the Mustang would line-up on the runway, the cable connected, and simply dragged off the ground. Other aircraft that were converted to target tugs (but with winch attachments) are covered in this instalment – the Wirraway and the Beaufighter.

It is not generally appreciated the extent of the Wirraway target towing program. The Fairey Battle had been imported from UK during the war, with some already fitted with the 'Type D' triple drum winch (designated E9A/3062) to pull drogue targets for aerial gunnery.⁷⁰ 1 Aircraft Depot (1AD) at Laverton had installed a 'Type D' target towing winch on Wirraway A20-283 in 1941 (protruding from under the rear seat), but by APR 1943 only five winches had been received from overseas. In summary, before a comprehensive Wirraway TT program got underway in 1944, earlier towing activity included:

- A20-183, the first Wirraway fitted with TT gear, of the American "Grumman" type, at 1AD in 1941, which served with No. 1 Armament Training Station (1ATS) at Cressy over 1941-42;
- A20-283, the first Wirraway fitted with a Fairey Battle 'Type D' drogue winch in 1941 for 1AD trials, served with 1ATS until 1943; and
- over 1943-44 modified Wirraways (under *Wirraway Instruction No.24*) were operated by AA&GS, 5SFTS, and 7SFTS included A20-9, A20-158, A20-163, A20-339, A20-408 and A20-449.⁷¹ In 1946 these aircraft went to storage at Uranquinty and Tocumwal, to be scrapped over 1956-57.⁷²

In late 1944, more extensive trials were conducted by 1 Aircraft Performance Unit (1APU) at Laverton, with Wirraway A20-449, with the 'Type D' winch and A-5 sleeve target.⁷³

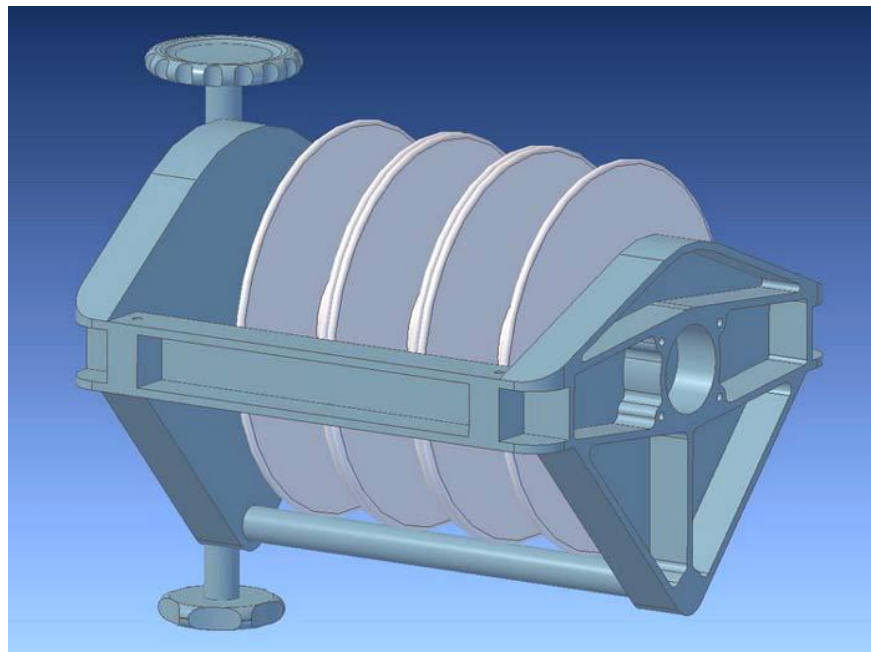


Wirraway A20-449 OCT 1944 for 1APU target towing trials with the internally mounted 'Type-D' winch

These 1APU trials over late 1944 also tested the A-7 and APU-9 drogue targets, which resulted in the RAAF deciding in JAN 1945 to replace the Fairey Battle in the target towing role by the Wirraway (with the 'Type D' winch) and the Vultee Vengeance (with 'Type B' winch). This impacted the gunnery training establishments, the Air Gunnery School (AGS), Central Gunnery School (CGS), and Air Armament and Gas School (AA&GS),⁷⁴ and ultimately the OTUs. The centre-mounted 'Type D' winch on Wirraways and Battles was below the rear cockpit. The 'Type B' on the Vengeance was a starboard-mounted arm for a propeller driven winch, with drum beneath the rear cockpit to stream out the target on the centreline – these winches were retained for postwar use on the Beaufighter.

For the TT production program, 70 Wirraways were to be modified (new production aircraft A20-660 to A20-729 stored at 7AD),⁷⁵ but by MAY 1945 this requirement had been reduced to 45 Wirraways (A20-660 to A20-704).⁷⁶ In the end, A20-685 was not converted, and A20-539 was substituted. Images of Wirraways in the TT configuration have remained elusive, but one indicator of a TT aircraft was the guard that was fitted to the port side of the tailwheel to prevent the towing cable from wrapping around the tailwheel axle.

Derek Buckmaster's *Design Bureau website* provides details of the operation of the 'Type D' winch, which had been issued as Wirraway Technical Instruction No.44 ("*Target towing operation of Type D triple drum gear using automatic target exchange attachment*") issued about DEC 1942. This Instruction covered assembly of drums and winch in the aircraft, launching the first target, exchange of targets (by attaching to a "fish"), release of towing cable, and breakage of cable or failure of the target exchange fish to operate. The first target was launched onto the cable, out of the bomb-aiming doors under the fuselage just aft of the wing. Once the first target was damaged by gunfire, the second target was launched onto the cable. A fish-shaped fitting on the end of the cable allowed the first target to drop from the end of the cable when the second one reached the end, allowing several targets to be streamed from the same cable one after another without having to retrieve the cable to exchange targets. If a cable became damaged or a target refused to unclip, then the cable was dropped (over the airfield for retrieval) and the next cable was unwound from its drum. For the production program, Wirraway Technical Order No.101 ("*Towing Gear - Fitting of 'D Type' Winch*"), issued 16 DEC 1944, provided more details, and the *Design Bureau website* also provides a diagram (below) of the 3-drum winch.⁷⁷



Details of modifications required for target towing were issued as Wirraway Technical Order No.101 "*Towing Gear - Fitting of 'D Type' Winch*", 16 DEC 1944. This Order covered the installation of all the equipment needed: Jockey pulley and bracket; Installation of 'Type D' winch; Empennage guarding system; Operator's seat; Installation of Aldis lamp, tool bag and sliding trap door. The 'Type D' winch was not powered, and was simply a set of 3 removable drums mounted on a shaft together with a brake to control the unwinding of each cable one at a time. In operation, one cable was unwound and trailed behind the aircraft.

'Type D' winch showing the support frame and 3 drums mounted on a common shaft

Over 1952-53, the 45 Wirraway target towing aircraft were converted back to standard trainer configuration by CAC.⁷⁸ In addition to the BFTS role at Uranquinty, Wirraways continued as advanced trainers at 1AFTS Point Cook and CFS at East Sale until 1958, when the advanced role was taken over by the Vampire trainer at RAAF Pearce. The last Point Cook Wirraways were ferried to Tocumwal in mid-JAN 1959.

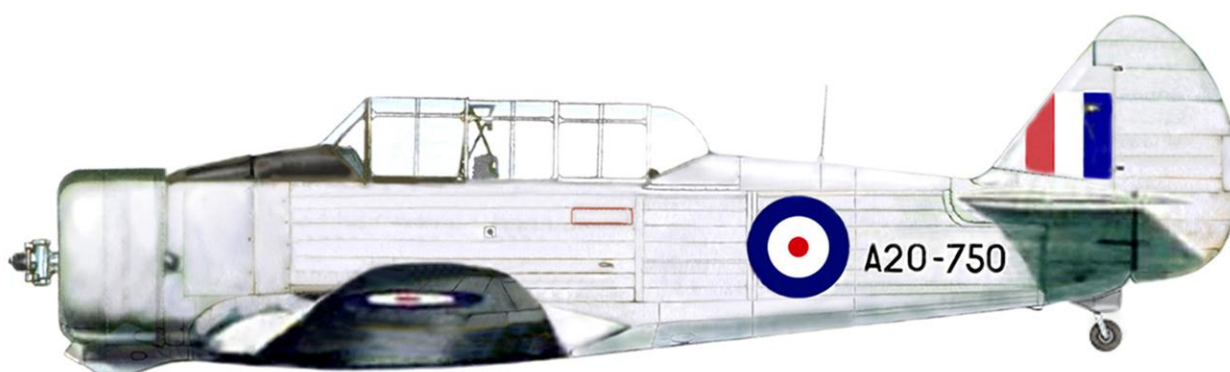


Possible Wirraway TT –Centre aircraft ahead of A20-586 and A20-411, ready for scrapping at Tocumwal, May 57.

BCAIR WIRRAWAYS IN JAPAN 1948-1956



A20-745 of 77SQN mid 1950 at the USAF base at Itazuke, Japan – to 91WG NOV 1950, flew at Iwakuni until 1956



A20-750 of 91 Wing 1950-52, crashed into water in JUN 1952 – all three aircraft were 81Wing Japan from 1948



BCAIR 'Type-A' Roundel

BCAIR (Type-A) Roundel sizes, diameter: fuselage 33" (83.82cm)

Rudder flash: 27" wide (9" each colour) x 27" high Underwing serials 21" high ⁷⁹



A20-740 at Bofu, Japan, c1949 – transferred to 91WG in NOV 1950 and crashed at Sahaya, Japan, in JUL 1951

POINT COOK WIRRAWAY TRAINERS 1953-1954



A20-679 of 1 Advanced Flying Training School (1AFTS), Point Cook, in 1953



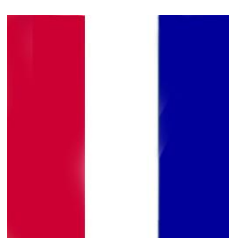
A20-103 Point Cook in MAY 1954



Training bands: wings and fuselage 36" (91.44cm) wide
 Roundel sizes, diameter: fuselage 33" (83.82cm), wing upper 36", lower 30" (76.2cm)
 Rudder flash: 27" wide (9" each colour) x 27" high
 Large side numbers: 32" high, 20" wide, 4" stroke CAC logo: 12" length
 Serial numbers wing undersides: 21" (53.34cm)



Type-D Roundel 1948-1956



Rudder Flash
 27" wide x 27" high

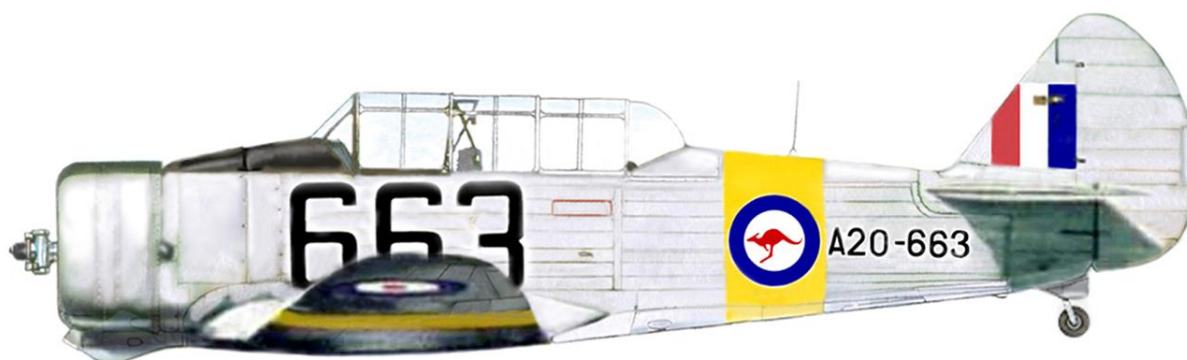


CAC rudder logo, carried by most aircraft

POINT COOK WIRRAWAY TRAINERS 1957-1959



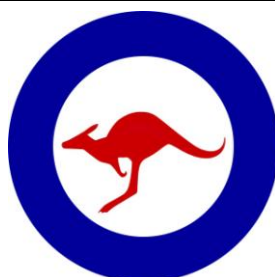
A20-663 with the introduction of the leaping kangaroo fuselage roundel from 1956



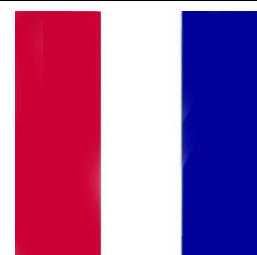
Aluminium K3/162, Trainer Yellow K3/185 bands, National Markings Glossy Red K3/346 and K3/343 Glossy Blue



36" Type-D Wing Roundel



33" Kangaroo Fuselage Roundel 1956



Rudder Flash
27" wide x 27" high

Training bands wings and fuselage 36" (91.44cm) Fuselage roundel diameter: 33" (83.82cm)
Rudder flash: 27" wide (9" each colour) x 27" high Large side numbers 32" high, 20" wide, 4" stroke



Final line-up in JAN 1959 at Point Cook includes A20-648, 681, 671, 739, 684, 687, 715, 674, 635, 631 and 690

CAF SQUADRON WIRRAWAY TRAINERS 1948-1959

21SQN Laverton – 1948-1959: Wirraways A20-432, 644, 698; the last four until JAN 1959 A20-557, 558, 640, 711.



Red propeller hubs here (A20-640 and -644 mid-1950s) were the only examples of CAF Wirraway unit markings



21SQN A20-640 at Laverton with ARDU Mustang A68-158 c1957

22SQN Schofields – 1948-1959: A20-107, 204, 309, 340, 422, 686 (22SQN's last Wirraway 6 FEB 1959), 698, 712, 713, 725, 727, 728.⁸⁰ In OCT 1958 22SQN had on strength 9 Meteors, 2 Vampires, and 3 Wirraways; and by JAN 1959 had also received 2 Winjeels.⁸¹



A20-727 in the trees at Point Cook in AUG 1950, before joining 22SQN in 1953

23SQN Archerfield – 1948-1959: A20-202, 629; and last four held until end of JAN 1959: A20-597, 662, 665, 706.



A20-706 23SQN Archerfield with Mustangs, early 1950s

CAF SQUADRON WIRRAWAY TRAINERS 1948-1959

24SQN Mallala – 1948-1959: A20-136, 165, 660, 666; and last three Wirraways were retained into 1959 to complete cadet training, A20-609 flying to MAR 1959, and both A20-664 and A20-704 to APR 1959.



A20-664 in 1959, shows the 24SQN practice of *serif stencil* style serial numbers

25SQN Pearce – 1948-1959: A20-709, 725; and the last five Wirraways until 1959: A20-267, 636, 688, 708, 744. A20-688 was flown by 25SQN until APR 1959, then to storage before display at RAAF Association Museum.



A20-636 with 25SQN at Pearce in 1959



25SQN Pearce Farewell 31 JAN 1959: A20-267, 636, 708 – these with A20-744 left for Tocumwal the next day⁸²

WIRRAWAY INSTRUCTIONAL AIRFRAMES

24 RAAF aircraft were converted to Instructional Wirraways during the war and up to 1955. These were required initially for technical training at the Engineering School, Ascot Vale Melbourne, at the Ground Training School (GTS, which later became the RAAF Technical College – RTC) at Wagga, and RTC Det ‘A’ at Rathmines, which ultimately merged into No.2 National Service Training Flight at Officers’ Training School (OTS).⁸³



I/A Serial	RAAF Serial	c/n	Unit
I/A 1	A20-2	33-388	Eng School 6/40
I/A 2	A20-1	32-387	Eng School 8/40
I/A 3	A20-4	2	1 Eng School 2/41
I/A 4	A20-189	189	1 Eng School 11/41
I/A 5	A20-379	580	7SFTS Deniliquin 2/42
I/A 6	n.k.	Details not known of these three airframes converted over 1942/43, E/E.88s do not identify them to aircraft, so they could have been assembled from scrap (like I/A 11 below)	
I/A 7	n.k.		
I/A 8	n.k.		
I/A 9	A20-337	538	7SFTS Deniliquin 7/43
I/A 10	A20-91	89	5EFTS Narromine 7/43
I/A 11	n/a	Built from scrap c1944, disposed 1947	
I/A 12	A20-219	219	7SFTS Deniliquin 8/44
I/A 13	A20-511	712	CFS East Sale 1/45
I/A 14	A20-161	161	5SFTS Uranquinty 5/45, GTS, OTS Rathmines 2/54
I/A 15	A20-446	647	GTS Wagga 1/47, OTS Rathmines 6/54
I/A 16	A20-448	649	GTS Wagga 1/47, RTC
I/A 17	A20-482	683	GTS Wagga 1/47, RTC
I/A 18	A20-518	719	GTS Wagga 1/47, RTC
I/A 19	A20-546	747	GTS Wagga 1/47, RTC Det ‘A’ Rathmines 10/51
I/A 20	A20-550	751	GTS Wagga 1/47, OTS Rathmines 1/54
I/A 21	A20-167	167	GTS Wagga 1/47, RTC
I/A 22	A20-581	782	1BFTS Uranquinty 12/54
I/A 23	A20-475	676	Base Sqn Point Cook 7/55
I/A 24	A20-632	1084	RAAF College Point Cook 8/55



Tiger Moth I/A 17 (A17-593), and Wirraway I/A 20 (A20-550) at OTS Rathmines 1954-58, with a Mustang

NAVAL WIRRAWAYS

In anticipation of Sea Fury deliveries in 1949, the RAN required an advanced trainer at Nowra, and four Wirraways were delivered over 1948-49. Six more aircraft were delivered to Nowra from 2AD at Richmond on 30 SEP 1952. The following year a further six were required, "to replace unsuitable aircraft previously issued".⁸⁴ A further aircraft in the third batch (A20-18) was issued to the RAN in OCT 1953 and in naval store at Randwick was deemed "not suitable" and replaced in NOV 1953 by A20-225. Wirraways were initially operated by HMAS *Albatross* Station Flight, and by 723SQN from 1952, and 724SQN from 1955.⁸⁵ (725SQN did not form until 1958, after Wirraways retired.) One Wirraway crashed in naval service, and the remainder were withdrawn from service by 1957, replaced by Vampires.



One of the first four Wirraways delivered in 1949 with Station Flight, with 'W' tail code

RAAF Surplus Wirraways to the RAN				
Batch	No. of Aircraft	Dates	Serials	Remarks
1948-49	4	NOV 1948 – SEP 1949	A20-139, 141, 145, 176	Coded between 901 - 904
1952	6	2AD to Nowra 30 SEP 1952	A20-28, 133, 168, 238, 469, 752	Coded NW/900-series, and NW/971-972
1953	6	Tocumwal to Nowra 30 NOV 1953	A20-209, 211, 214, 225, 250, 490	A20-18 rejected by Navy, replaced by A20-225

As the Wirraways were inherited straight from the RAAF, the combination with Navy markings did vary. The designation CA-20 is incorrectly related to Navy reconditioned Wirraway airframes for service at Nowra.⁸⁶ All RAN Wirraways were surplus, and passed directly from storage at the RAAF's 1AD Det 'B' at Tocumwal, or 2AD at Richmond – so they did not pass through CAC for rework. Indeed in the case of A20-18, its condition was unsuitable for RAN acceptance and, with five other aircraft stored with 2AD Richmond, was subsequently sold as scrap in AUG 1954.⁸⁷



A20-469 delivered in SEP 1952, with unusual black markings, was later coded NW/902

Naval Wirraway Units

From 1949, until being withdrawn in 1957, the Wirraways were flown by three units at HMAS *Albatross*, Nowra.

- **Station Flight**, initially inducted the Wirraways, as the second-line squadrons had not yet formed.
- **723SQN** was the first second-line unit formed in APR 1952, and by the end of the year flew two Wirraways.
- **724SQN** formed in JUN 1955 for fixed-wing conversions, and had Wirraways for that role. When 723SQN decommissioned in OCT 1956, its Wirraways passed to 724SQN.

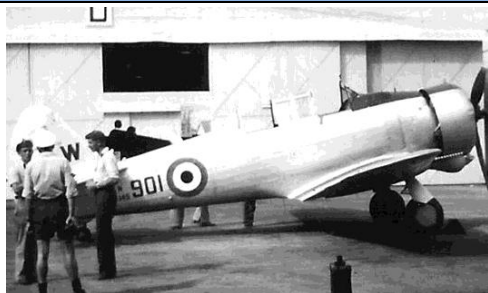
A third RAN training unit, 725SQN formed in JAN 1958, by which time the Wirraway had been withdrawn.

Naval Wirraways – Changing Code Numbers

The code numbers of the RAN FAA's aircraft was basically in line with the Royal Navy. From when the RAN FAA was formed in 1948, the 3-digit fuselage code was carried over from the RN system, this denoting the aircraft's function: communications aircraft used '800-series' codes, and Station Flights used '900' codes. The RAN continued to use a fairly similar system, but changing to '900' codes for all second line units in 1955, and then in 1958 the whole of naval aviation adopted '800' codes for all units.⁸⁸

- **901-905 (1949-1956):** The Station Flight Wirraways carried side numbers 901 to 904 over 1949-1952. When 723SQN formed in 1952, at least two Wirraways were transferred from Station Flight and retained their '900-series' codes, then more aircraft increased codes up to at least '905'. But in true Naval tradition, there was much changing of aircraft codes: A20-145 carried at different times 'W/901' and 'NW/904' (when it crashed in JUN 1953); while '902' was carried by both A20-139 and A20-469; and '904' was carried by A20-141, A20-145 (when it crashed JUN 1953), then by A20-28. When 723SQN disbanded in OCT 1956, the Wirraways were transferred to 724SQN. [In addition, '900' and '901' codes had also been carried by the early Navy Dakotas on 723SQN; and the first 723SQN Sycamores were marked upwards from '906', and then re-used vacant codes.]
- **971-972 (1955-1957):** When 724SQN formed in 1955 for all fixed-wing conversions, at least two Wirraways were passed over, and coded '971' (A20-752) and '972' (A20-168). 723SQN then disbanded in OCT 1956, and their Wirraways were transferred to 724SQN, but as the Navy was on the verge of withdrawing Wirraways, it is doubted that these aircraft were then actually re-coded. [In addition, from 1956 724SQN took on strength Sea Fury '972', and Gannets '973' to '975'.]

THE FIRST NAVAL WIRRAWAYS



901

A20-145 coded W/901 with Station Flight



902

A20-139 W/902 with Station FLT; later **A20-469** NW/902



903

Code W/903 was probably **A20-176**

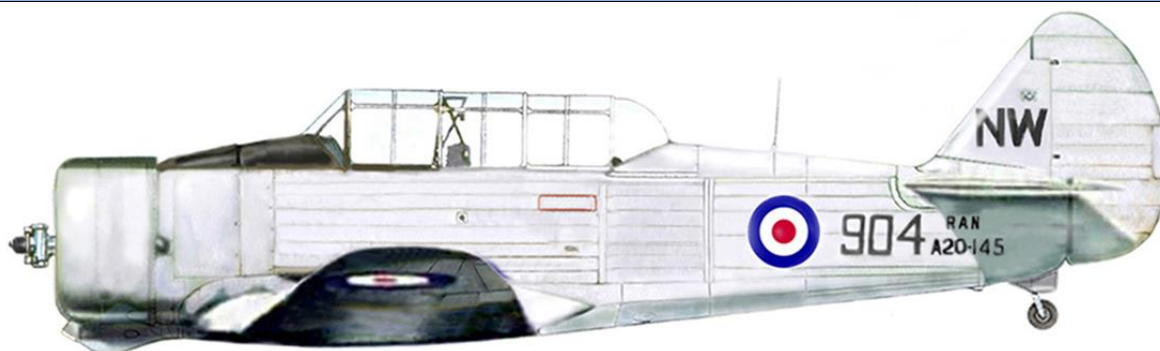


904

The first '904' was probably **A20-141**
A20-145 was NW/904 in 1953; here **A20-28** is NW/904

The original code numbers shown here on 901/902/903 were 12" (30.48cm) high; these were changed to a larger font over about 1954 to 18" (45.72cm) high. The early tail identifier for Nowra was "W", changed to "NW" c1952.

NAVAL WIRRAWAYS



Crash of A20-145 NW/904 near Nowra on 18 JUN 1953 – code 904 and NW 12" high, serial numbers 4" high⁸⁹



Naval Disposals

Other Wirraway airframes were issued to the RAN ex 2AD Richmond for spares use and subsequently deemed unsuitable. They were held by 2AD and the RAN Depot Randwick before disposal: A20-18, 73, 190, 412, 567 and 579 were sold to Wilmor Aviation on 15 JUL 1954 (see CDC Disposal Form 1 below).

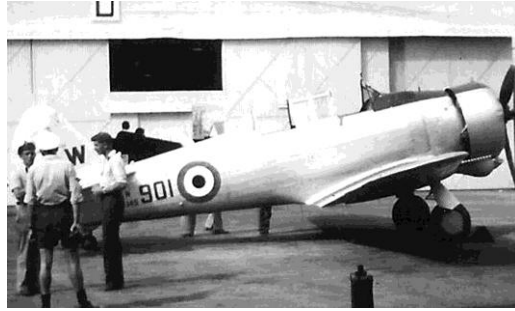
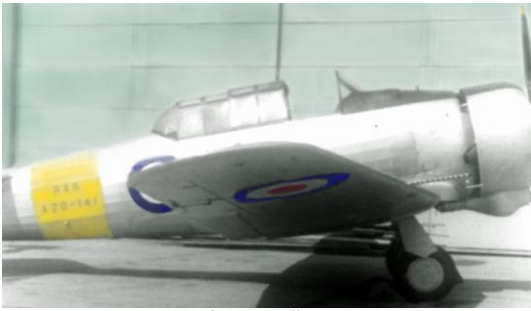
Wilnor Aviation Services Pty Ltd, Sydney: This aviation parts supply business was formed as a partnership between Sydney stockbroker flying enthusiast Joseph Palmer and experienced aircraft engineer Walter Morley. An associate company was Wilnor Aviation Co. Among other military disposals aircraft acquired by Wilnor were several RAAF Mustangs, one being retained as VH-WAS for Wilnor Aviation Services, and flown from Bankstown until 1961.⁹⁰

Lund Aviation Inc of New York: Bought the 15 remaining ex-Navy Wirraways in 1957; two engines to Phelan Aircraft Materials Company of North Hollywood.⁹¹ Both Lund Aviation and Phelan Aircraft had also been bidders in the RAAF 1957 tender T4/630/3644 for 57 Wirraway engines and propellers disposed under TOC List 10/57.



A Nowra hangar, 903/NW possibly A20-176 (left); A20-490, 3SQN Canberra 1951-52, before 1953 transfer to Navy

NAVAL WIRRAWAYS



Station Flight Wirraways, half-size 4" serials: **A20-141** marked on a trainer band; and **A20-145** coded '901' c1950



A20-28 NW/904, **A20-469 NW/902** (probably yellow cowls) **723SQN** c1954-56, **723SQN** decommissioned 1956



724 SQN with 970-codes reformed JUN 1955, so these are c1955-57 – **A20-752 NW/971** and **A20-168 NW/972**



A20-752 with no roundel – probably at the changeover of markings to show the larger **NAVY** and serial number

RAAF WIRRAWAY DISPOSALS

Although disposals of Wirraway scrap had commenced by CDC at the end of the war, its role was continued into the 1950s by Dept of Supply (Disposals Division). With 380 Wirraways in storage in 1948,⁹² War Reserve stocks of surplus aircraft could be reduced:

- as many were no longer required, in JUL 1951 they were released from the restriction of “post-war use storage”, and became available for gradual disposal;⁹³ and
- the RAAF determined in AUG 1954 that the minimum number of Wirraways required now could be reduced to 200, “and that any now held over that number shall be re-classified as Redundant”.⁹⁴

This 1954 number was approximately 65 aircraft which would be disposed of over 1954/56, and then as the type was becoming obsolete, the remainder would be available over 1957/59.

These main batches of Wirraways for disposal, primarily from storage at No 1 Aircraft Depot Detachment ‘B’ (1AD Det B) at Tocumwal, are listed in the following pages in chronological order. Unlike the sales of Tiger Moths (of which 516 were sold by CDC in the immediate postwar years⁹⁵), the Department of Civil Aviation was not prepared to release the powerful Wirraways to the civil market for private buyers or for aero club use – and so they were primarily sold as scrap metal, by the ton – in the case of these six sold by 2AD, the price was £10 per ton.

CDC DISPOSALS FORM No.1 – APPROVAL OF LIST AIR 7306

COMMONWEALTH DISPOSALS COMMISSION													
NOTIFICATION OF PROPERTY APPROVED FOR DISPOSAL													
Disposals Form No. 1													
Date of Notification		Available for sale by		State		Location or Depot where held (Precise location to be stated)							
		Dept. of Supply, Disposals Division, 200 Park Street, Melbourne		Victoria		No. 2 Aircraft Depot, R.A.A.F., Richmond located at Navy Depot, Randwick, Sydney							
Disposals Commission Code No.		Item No.		DESCRIPTION Including Identifying Numbers, Marks, Measurements, Size, Trade Marks or Maker's Name, etc.		CONDITION (See Code below)	QUANTITY	UNIT OF QTY.	PURCHASE PRICE		BOOK VALUE	REMARKS	
									Per Unit	Amount	Per Unit		Amount
		1		Wirraway Aircrafts Serial Numbers :- A20 - 18 73 190 412 567 579		11	6	Ton	£7,000	£42,000			

CODE

Used-Repairs required.

X Items of no further value for use as originally intended.

(E.G. EJ MEANS USED RECONDITIONED IN FAIR CONDITION)

1. EXCELLENT.

2. GOOD.

3. FAIR.

4. POOR.

For further information contact:-

File: Off. Rep. & Insp. 1000

Branch: S.D. 2(A)

Phone No: 485,550 Ext: 7155

Disposal of six Wirraways on Disposal List AIR/7306 by 2AD Richmond, from Navy Depot storage at Randwick ⁹⁶

These six were to be issued to the RAN ex 2AD Richmond for spares use, but subsequently deemed unsuitable. They were held at 2AD and the RAN Depot Randwick before disposal. The above Form 1 for disposal of these AIR/7306 Wirraways was drafted on 8 FEB 1954, and formally listed on 12 MAR 1954. The aircraft were sold as scrap on 15 JUL 1954 at £10 per ton – a total of £80.

However, an exception to this “scrap only” edict was the release of A20-692 and A20-696 to Super Spread Pty Ltd of Melbourne for cropdusting. In MAR 1954 Super Spread had requested the sale or loan of two serviceable Wirraways for agricultural work, having deemed that Ansons and Austers were unsuitable, and that Beavers were too expensive.⁹⁷ The two Wirraways were sold on authority of AIR/7308 from Tocumwal in JUN 1954. Years later, over 1957/60, many more Wirraways were sold back to CAC for the CA-28 Ceres agricultural aircraft program.

RAAF WIRRAWAY DISPOSALS

E/E.88 Aircraft Status Cards provide an insight into disposal and scrapping at Tocumwal (TOC). Recorded entries for these 246 Wirraways over 1954-59 are marked as:⁹⁸

- 12 MAR 1954, authority AIR/7306, 6 Wirraways held by 2AD and not required by RAN, sold as scrap in JUL 1954 to Wilmor Aviation Services Pty Ltd;
- 7 MAY 1954, authority AIR/7308, for 2 airworthy Wirraways, sold to Super Spread Pty Ltd in JUN 1954;
- 20 JAN 1955, residue of 6 Wirraways held for five years listed for tender by disposal TOC Form 1-1/55;
- 13 JAN 1956, residue of 63 Wirraways offered for disposal as scrap by TOC Form 1-1/56, sold to L&M Newman of Newmarket (sometimes listed as Kensington) Melbourne on 22 MAY 1956;
- 25 JAN 1957, RAAF authority AIR/7369 to release 2 Wirraways to CAC to start the CA-28 Ceres program;
- 31 MAY 1957, to scrap metal of 57 Wirraways authority AIR/7365, for tender disposal TOC Form 1-10/57;
- 4 JUL 1958, 5 aircraft listed for disposal PCK List 323 AIR/7369, and immediately sold in favour of CAC;
- 3 NOV 1958, further 5 listed for disposal TOC Form 1-14/58 in favour of CAC, sold DEC 1958;
- 4 DEC 1958, 59 aircraft listed for tender by disposal TOC Form 1-18/58, most going to CAC;
- 21 MAY 1959, last 3 Wirraways of 24SQN Mallala, flown until APR 1959 to permit completion of cadet training, listed by Mallala-26/59; and
- 31 JUL 1959, 39 more aircraft listed for tender by disposal TOC Form 1-17/59 for scrap.

WIRRAWAY DISPOSAL FORM 1, LIST AIR/7306 – LISTED 12 MAR 1954

Aircraft Offered	Date of Sale	Purchaser	Aircraft
6 Wirraways from 2AD Richmond	15 JUL 1954	Wilnor Aviation Services Pty Ltd	A20-18, 73, 190, 412, 567, 579.

14 Wirraways were transferred from the RAAF to the RAN over 1948-53 as the Fleet Air Arm expanded at HMAS *Albatross*. These six reserve Wirraways were not required by the RAN, and disposed by 2AD at Richmond.

WIRRAWAY DISPOSAL FORM 1, LIST AIR/7308 – LISTED 7 MAY 1954

Aircraft Offered	Date of Sale	Purchaser	Aircraft
2 Wirraways from Tocumwal	11 JUN 1954	Super Spread Pty Ltd	A20-692, 696.

2 Wirraways sold to Super Spread Pty Ltd for agricultural flying, and became VH-SSF and VH-SSG.

WIRRAWAY DISPOSAL FORM 1, TOC LIST 1/55 – LISTED 20 JAN 1955

Aircraft Offered	Date of Sale	Purchaser	Aircraft
6 Wirraways from Tocumwal	1955	not recorded	A20-260, 305, 314, 355, 365, 367.

These aircraft had been converted to components and the release of the residue by Tocumwal tender *TOC Form 1 1/55* listed these 6 Wirraways on 20 JAN 1955, which primarily consisted of scrap as the aircraft had been stored and stripped for five years.

WIRRAWAY DISPOSAL FORM 1, TOC LIST 1/56 – LISTED 13 JAN 1956

Aircraft Offered	Date of Sale	Purchaser	Aircraft
63 Wirraways from Tocumwal	22 MAY 1956	L&M Newman, Newmarket, Melbourne	A20-30, 67, 95, 114, 144, 156, 163, 181, 186, 196, 197, 271, 275, 276, 285, 291, 296, 300, 310, 320, 322, 339, 348, 357, 360, 374, 378, 389, 402, 423, 425, 434, 439, 454, 459, 463, 464, 466, 467, 474, 483, 487, 491, 495, 498, 501, 505, 508, 525, 529, 540, 541, 542, 547, 558, 571, 577, 587, 589, 593, 618, 621, 731.

Major scrapping of Wirraways commenced in 1956. Tocumwal tender *TOC Form 1 1/56* listed 63 Wirraways for scrapping on 13 JAN 1956, and these were sold on 22 MAY 1956 to Melbourne scrap merchants L & M Newman of Newmarket. While the disposal primarily consisted of residue, some aircraft were still complete.

(COPY)

Contract Form 28.
Telephone: M04

9A DEP

Supply File No. D54/914
Disposal AIR 7306
Request No. 1572/IR

COMMONWEALTH OF AUSTRALIA

SALES ADVICE

SSN. 10144

Wilmor Aviation Services Pty. Ltd.,
153 Beauchamp Road,
MATRAVILLE.

Department of Supply
District Contract Board,
Dymock's Building,
428 George Street,
SYDNEY.
(Box 38, G.P.O.)
Date 15 JUL 1954

21/6/54 I wish to inform you that your offer to purchase dated
Tender has been accepted
for the purchase of the following:—

Code No.	Approximate Quantity	Item	Price	Total		
				£	s.	d.
E7306-1 -42-15	(6-No.) 18,000-lbs	Wirraway Airframes S/Nos. A20-18,73,190, 412, 567, 579	£10 per ton ex site	£80.	7.	2
<p><u>SOLD</u> "As is - Where is"</p> <p><u>Revenue</u> - Department of Air.</p> <p><u>Payment will be adjusted on the basis of actual weight supplied as per certified weighbridge tickets.</u></p> <p><u>SALES TAX</u> - Not applicable - Material in used condition.</p> <p><u>PAYMENT:</u> Immediate - prior to issue of Sales Advice Note.</p> <p><u>DELIVERY:</u> To be effected by purchaser at his own expense from R.A.N. Depot, Bundoock Street, Randwick, within fourteen (14) days of date of this Sales Advice Note.</p>						

See also 10A

Quantities of goods are approximate only. If there is any deficiency in the quantity of goods actually available at the place and time for delivery thereof the purchaser shall take, and the Commonwealth shall only be required to effect delivery of the quantity actually so available. In the event of a lesser quantity being delivered, the sale price shall be subject to pro rata adjustment but the Commonwealth shall not be liable for compensation or otherwise by reason of any deficiency. Any claim for pro rata adjustment must be made by the purchaser within seven days after due date for delivery.

P. C. ANDERSON
For Secretary,
DISTRICT CONTRACT BOARD.

Agendum 999
Approval No.
Date 7. 7. 54

DISTRIBUTION:
1-Purchaser; 2-File;
3-Finance Officer, Department of Air, Sydney
5 & 1 copy - C.O. No.2 A.D., R.A.N. F. Richmond.
6 & 1 copy- Disposals Division (State.) Melbourne;
7- Disposals Division, Melbourne; 1 copy- Dir. of Contracts file C4/801/1802
1 copy - Mr. Sawyer, R.A.N. Depot, Bundoock Street, Randwick; 1-copy Disposals Records, Sydney; 1-copy C'wealth Audit, Supply, Sydney; 1-copy Chief Finance Officer, R.A.N. F. Melbourne; 1 copy- Director of Equipment Distribution, R.A.N. F. Melbourne.

A. H. PESTIFF, GOVERNMENT PRINTER.

WIRRAWAY DISPOSAL FORM 1, TOC LIST 10/57 – LISTED 31 MAY 1957

Aircraft Offered	Date of Sale	Purchaser	Aircraft
57 Wirraways from Tocomwal	c1957/58 not recorded	57 engines to USA 57 propellers to DH auction scrap only, purchasers not recorded	A20-9, 37, 39, 60, 75, 81, 82, 101, 108, 111, 115, 134, 136, 140, 143, 158, 165, 200, 202, 204, 205, 213, 229, 236, 247, 254, 282, 295, 317, 323, 340, 345, 353, 356, 388, 397, 411, 432, 438, 449, 460, 536, 539, 543, 556, 581, 586, 616, 629, 658, 669, 712, 717, 734, 737, 751, 754.



A field of Wirraways at Tocomwal 1957 – visible are A20-165, 108, 754, 254 – listed on TOC 1-10/57

This release by Tocomwal had been authorised by RAAF Headquarters Disposal List AIR/7365 of 2 JAN 1957, with engines and propellers removed – this came from a query by de Havilland in OCT 1956 requesting R1340 Single Row Wasp engines and 3D40 propellers for DH Canada (presumably for Beaver production). The number of 57 was derived from a reclassification of stored aircraft at Tocomwal in SEP 1955; three aircraft in General Reserve were reclassified as 'Redundant', 54 in War Reserve were reclassified as 'Redundant', and 23 in Immediate Reserve became War Reserve. News of these 57 'redundant' aircraft had led to the enquiry by DH, and on 6 DEC 1956 (below) the 57 were approved for disposal.¹⁰⁰ The 57 surplus Wirraway residue was offered as scrap by *TOC Form 1-10/57* on 31 MAY 1957.

DEPARTMENT OF AIR
HEADQUARTERS MAINTENANCE COMMAND

9/36/296 374
6 Dec. 1956

DISPOSAL OF WIRRAWAY AIRCRAFT

57 Wirraway Aircraft have been approved for disposal after recovery of certain components.

2. As there is a ready dollar market for the engines and airscrews applicable to the Wirraway A/c., it is intended to declare these items for disposal on the condition that they are removed from the A/C. by the purchaser.

3. To take advantage of this market, it will be necessary for you to arrange for the removal of the following engine generators: *immediat*

G5U/500083, G5U/500084 and G5U/500085.

4. After recovery of the components, as advised by this Dept. to complete the residue of



Being towed for scrapping in MAY 1957 from TOC 10/57 – released from Tocomwal storage
Wirraways identifiable in this image are A20-460, A20-556, A20-140 ('40'), silver A20-432, A20-586, A20-411, and possibly silver A20-295; and perhaps two ex-TT A20--158 and -449 – all have E/E.88 status cards anotated '*Tocomwal Form 1-10/57*' on 31 MAY 1957 which indicates scrapping – two here appear to have TT stripes.

WIRRAWAY DISPOSAL FORM 1, LIST AIR/7369 – LISTED 25 JAN 1957			
Aircraft Offered	Date of Sale	Purchaser	Aircraft
2 Wirraways from Tocumwal	3 JUL 1957	CAC Pty Ltd	A20-680, 697.

This release was for the first prototypes for the CA-28 Ceres program. These were £750 each,¹⁰¹ and became the first Ceres CA28-1 (VH-CEA) and CA28-2 (VH-CEB)

WIRRAWAY DISPOSAL FORM 1, POINT COOK LIST No.323 – LISTED 4 JUL 1958			
Aircraft Offered	Date of Sale	Purchaser	Aircraft
5 Wirraways from Point Cook	11 JUL 1958	CAC Pty Ltd	A20-129, 371, 500, 570, 663.

This release was direct from flying at Base Squadron Point Cook to CAC to enable the first production of CA-28 Ceres to be undertaken – sold for £750 each.¹⁰²

WIRRAWAY DISPOSAL FORM 1, TOC LIST 14/58 – LISTED 3 NOV 1958			
Aircraft Offered	Date of Sale	Purchaser	Aircraft
5 Wirraways from Tocumwal	10 DEC 1958	CAC Pty Ltd	A20-630, 649, 676, 689, 702.

Second batch to CAC for ongoing CA-28 Ceres production, in response to CAC request 28 AUG 1958 – sold for £750.¹⁰³ Another aircraft to survive at this stage was A20-722, which was a one-off held in storage at Point Cook over 1956-58, and approved for disposal after spares recovery in OCT 1958. It was eventually rebuilt, and flies as VH-CAC.

WIRRAWAY DISPOSAL FORM 1, TOC LIST 18/58 – LISTED 4 DEC 1958			
Aircraft Offered	Date of Sale	Purchaser	Aircraft
8 Wirraways from Tocumwal	FEB 1959	CAC Pty Ltd	A20-661, 677, 693, 694, 699, 700, 701, 742.
41 Wirraways from Tocumwal	11 JUN 1959 25 MAR 60	Horsham Foundry and Engineering Co Ltd, Wimmera; re-sold to CAC	A20-10, 13, 16, 22, 24, 29, 135, 148, 164, 185, 218, 222, 223, 224, 234, 252, 369, 563, 598, 601, 605, 606, 646, 647, 651, 652, 656, 670, 683, 695, 719, 732, 733, 735, 736, 738, 741, 743, 746, 747, 756.
Horsham had overquoted without inspection, and reneged. ¹⁰⁴ The 41 were re-sold to CAC; 24 of these 41 were surplus to CAC requirements for the CA-28 Ceres, and sold to a scrap metal dealer W Gordon & Sons in Werribee.			
10 Wirraways	9 DEC 1959	R H Grant Trading Co	A20-657, 698, 703, 709, 723, 730, 748, 753, 755, 757

59 had been offered by the 4 DEC 1958 Form 1 18/58.¹⁰⁵ 8 were initially bought by CAC for the Ceres program, 41 by the Horsham Foundry for scrapping, and 10 by R H Grant for scrap. In MAR 1960, CAC bought all the Horsham airframes for rebuild, but Ceres orders were not forthcoming – so 24 were sold to W Gordon & Sons, Werribee, for scrap in 1963. Some survived either on museum display or to fly again (A20-652, A20-695 and A20-719).

WIRRAWAY DISPOSAL FORM 1, MALLALA LIST 26/59 – LISTED 21 MAY 1959			
Aircraft Offered	Date of Sale	Purchaser	Aircraft
3 Wirraways from 24SQN Mallala	unrecorded 1959	unrecorded	A20-609, 664, 704.

Disposal Form 1 Mallala-26/59 of 21 MAY 1959 offered for scrap the last 3 Wirraways of 24SQN. Approval had been given to defer withdrawal of three aircraft to permit completion of cadet pilot training – requesting to retain three aircraft until the end of FEB 1959, and two of these until the end of APR 59.¹⁰⁶ On 12 JUN 1959, both A20-664 and 704 were recorded as still held as stock in 24SQN store,¹⁰⁷ and A20-704 was rescued to become VH-BFO in 1997.

WIRRAWAY DISPOSAL FORM 1, TOC LIST 17/59 – LISTED 31 JUL 1959			
Aircraft Offered	Date of Sale	Purchaser	Aircraft
39 Wirraways from Tocumwal	9 DEC 1959	R H Grant Trading Co	A20-78, 107, 256, 267, 309, 557, 597, 604, 631, 635, 636, 640, 644, 645, 648, 660, 662, 665, 666, 671, 672, 673, 674, 675, 681, 682, 684, 685, 686, 687, 690, 691, 706, 708, 711, 715, 728, 739, 744.

Disposal Form 1-17/59 of 31 JUL 1959 offered for scrap 39 Wirraways,¹⁰⁸ bought by R H Grant Trading Co.¹⁰⁹

Some late Tocumwal Disposals

A20-256

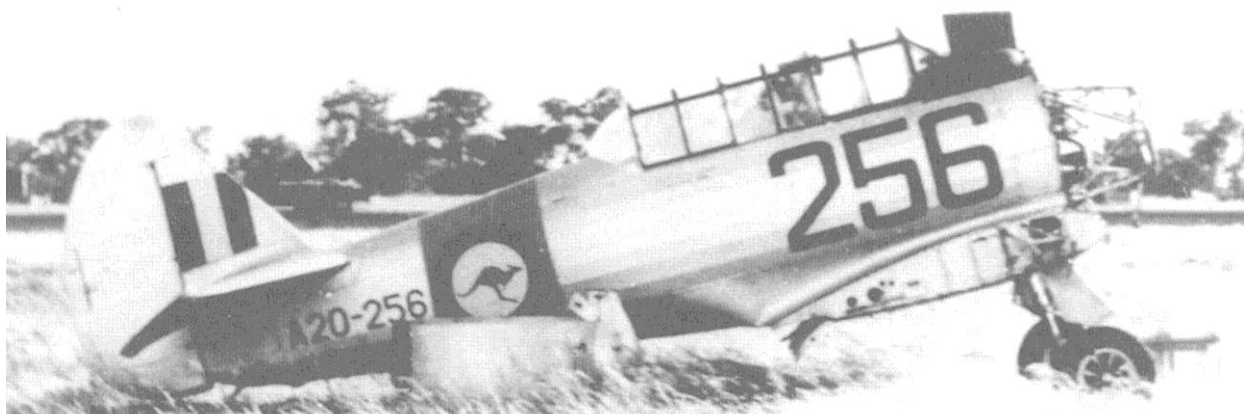
Some aircraft from the disposals TOC 17/59 list above were **A20-256**, **A20-674** and **A20-691**. All had been kept in under-cover storage at Tocumwal and maintained in excellent condition, and by 1960/61 Grants still were hoping some could be sold as complete aircraft. This was not to be, and the last machines were broken up at Tocumwal by late 1962.



Nearly the end of the line – coloured A20-256 crashed at Little River satellite field in JUN 1957

Subsequently held in storage at 1AD Det 'B' at Tocumwal in 1958, sold for scrap to R H Grant Trading Co. in DEC 1959

Below, R H Grants are working on A20-256, with wings and engine removed at Tocumwal in DEC 1960¹¹⁰



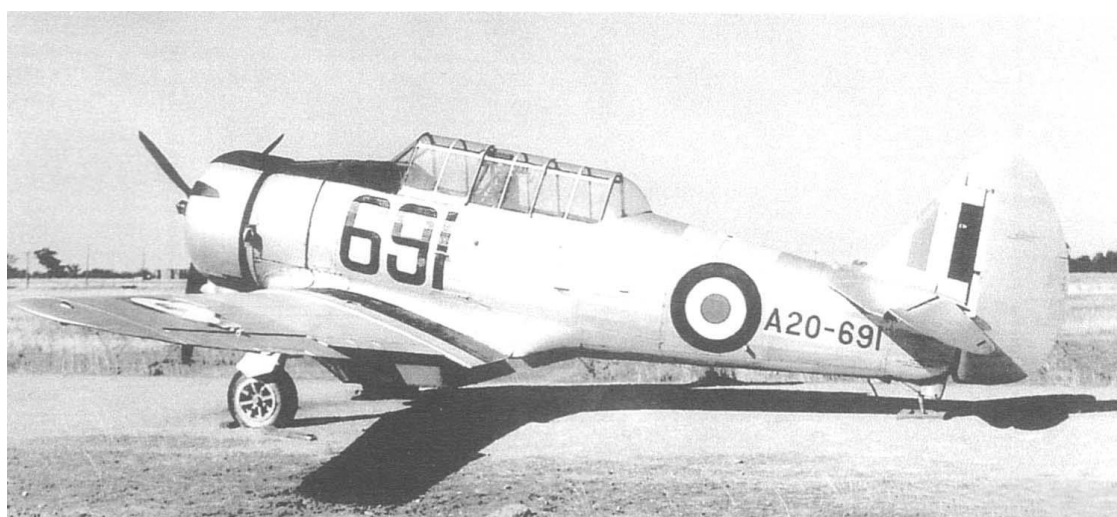
A20-674

A20-674 at Tocumwal NOV 1961 looking almost airworthy, although tailwheels were removed from these aircraft



A20-691

Another from the last disposals list TOC 17/59 was A20-691. Like A20-256 and A20-674, it had been kept in under-cover storage at Tocumwal, and was another still in excellent condition in 1961.



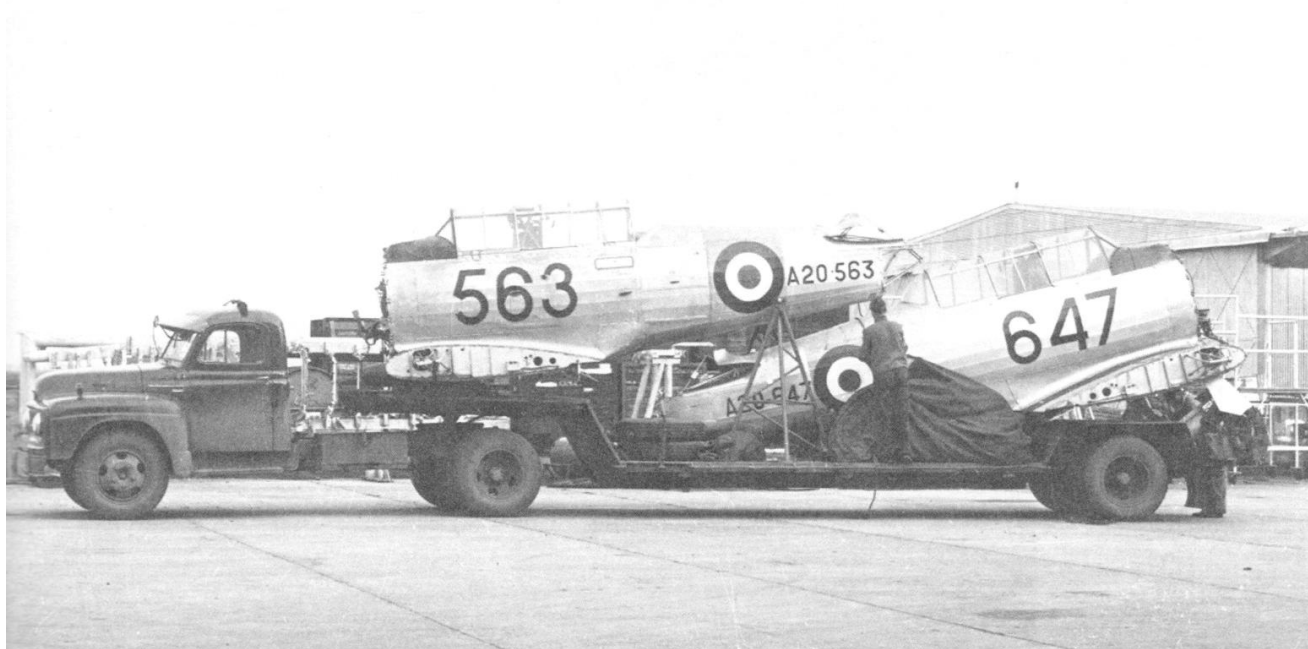
A20-691 at Tocumwal in JUN 1961 (colourised)... and below in MAR 1962 ¹¹¹

A20-691 was Point Cook's over 1956-57, then with 10SQN Townsville 1957-59, until listed on TOC-1 17/59, on 31 JUL 1959, prior to sale in DEC 1959 to R H Grant. Break-up to scrap was not immediate, as the merchants were hoping for higher prices as airworthy aircraft. It was photographed again in MAR 1962 during break-up. Pots, Pans and Meteors, p.9: "These aircraft were all systematically broken down into handleable components for feeding into the smelters. Instruments and wheel units were salvaged for future sale, but most of the remainder was melted down to ingot form."



The Surplus Wirraways Sold to CAC ¹¹²		
Purchase Date	Quantity	RAAF Serials
FEB 1957	1	A20-680
JUN 1957	1	A20-697
JUL 1958	5	A20-129, -371, -500, -570, -663
NOV 1958	5	A20-630, -649, -676, -689, -702
JAN 1959	8	A20-661, -677, -693, -694, -699, -700, -701, -742
MAR 1960	41	A20-10, -13, -16, -22, -24, -29, -135, -148, -164, -185, -218, -222, -223, -224, -234, -252, -369, -563, -598, -601, -605, -606, -646, -647, -651, -652, -656, -670, -683, -695, 719, -732, -733, -735, -736, -738, -741, -743, -746, -747, and -756

To allow CAC's CA-28 Ceres agricultural project to progress, two RAAF Wirraways – A20-680 and A20-697 – were made available by the RAAF in JAN 1957, released by AIR/7369 for CAC “to enable development of an agricultural aircraft”,¹¹³ and these two became Ceres CA28-1 (VH-CEA) and CA28-2 (VH-CEB). A total of 61 surplus Wirraways were acquired by CAC for Ceres production, but those used in the program were basically reduced to components for re-assembly on the production line, so any tie-ups of Wirraway serial numbers to specific Ceres airframes is not possible. However, CA28-13 (VH-CEO) is directly traced to A20-129, but while CA28-11 (VH-CEM) has been linked to A20-661,¹¹⁴ this is uncorroborated. A total of 20 Ceres were produced (plus the wreckage of CA28-1 was remanufactured as CA28-18 VH-CEX, to make a total of 21).¹¹⁵



A20-563 and A20-647 arrive at CAC from Tocumwal, c MAR 1960 ¹¹⁶



**An unknown (with rear side panel from A20-689), with A20-743 and A20-164 c1960
from Derek Buckmaster's 'CAC Ceres' ¹¹⁷**

24 of these 41 purchased from Horsham Foundry and Engineering Co Ltd in 1960 became surplus to CAC requirements for the CA-28 Ceres, so were sold to a scrap metal dealer W Gordon & Sons in Werribee. Three future warbird Wirraway flyers came through this TOC 18/58 'CAC surplus' route – A20-652, A20-695 and A20-719.

A20-10 – A LONG-SERVING SURVIVOR



A20-10 delivered 1939, served Point Cook 1950-57, standard RAAF trainer colours, with bomb racks: *Aluminium K3/162*, with *Trainer Yellow K3/185* bands, and National Markings *Glossy Red K3/346* and *K3/343 Glossy Blue*.



Ex-Tocumwal, ex-CAC, recovered at the end of the Ceres program in 1964 for display at Moorabbin Air Museum



A20-10 had been received by the RAAF in SEP 1939, and was here displayed by the Moorabbin Museum at RAAF Laverton for the 1971 50th Anniversary Airshow in SFTS wartime camouflage of 1940-41 green and brown, with yellow training details: *Foliage Green K3/177*, *Earth Brown K3/178*, and *Trainer Yellow K3/185*.¹¹⁸



A20-10 now displayed at the Australian National Aviation Museum, Moorabbin, *Aluminium* and pre-war markings

CIVIL REGISTER – WIRRAWAYS WITH VH- REGISTRATIONS

Wirraways that have been registered on the Australian civil register – known current flyers are (*) ¹¹⁹



A20-81 VH-WWY* 1995, painted as "A20--176"



A20-652 VH-WIR 1986, to Queensland Air Museum Caloundra 2010



A20-649 reserved VH-WIR but ntu, later to USA 1993



A20-673 is under restoration, to become VH-WAY

CIVIL REGISTER – WIRRAWAYS WITH VH- REGISTRATIONS



A20-653 had been reduced to components on 55QN in JAN 1946... but was recovered and rebuilt, displayed at Airworld Museum Wangaratta, became VH-BFF 1975 rebuilt as a flyer – now at Temora Aviation Museum*



A68-692 VH-VH-SSF crop sprayer 1954-56, then Ceres



A20-696 VH-SSG Super Spread crop sprayer 1954-56 ¹²⁰



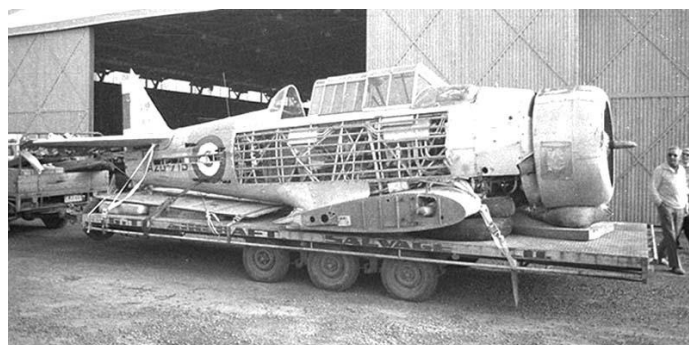
A20-704 VH-BFO 1997 as "A20-436", to USA c2012



A20-695 VH-MFW 1997 Caboolture*



A20-722 VH-CAC 1994, first flight in 2002*



A20-719 c1988 – and then as VH-WRX "A20-458" 1994, which fatally crashed 1999

WIRRAWAYS IN MUSEUMS



A20-10 at the Australian National Aviation Museum at Moorabbin airport



A20-103, a historic aircraft from 4SQN WWII for downing a Jap fighter, to AWM Canberra 1958



A20-511 as "A20-502" 5SQN BF-O, at the Ballarat Aviation Museum



A20-687 as "A20-561" 4SQN QE-B at the RAAF Museum Point Cook



A20-651 in Melbourne at the State Museum of Victoria had been displayed at the Naval Museum at HMAS Albatross, Nowra, over 2006-2010



A20-685 Camden Museum of Aviation, Narellan, among some unique exhibits collected over many years by Harold Thomas



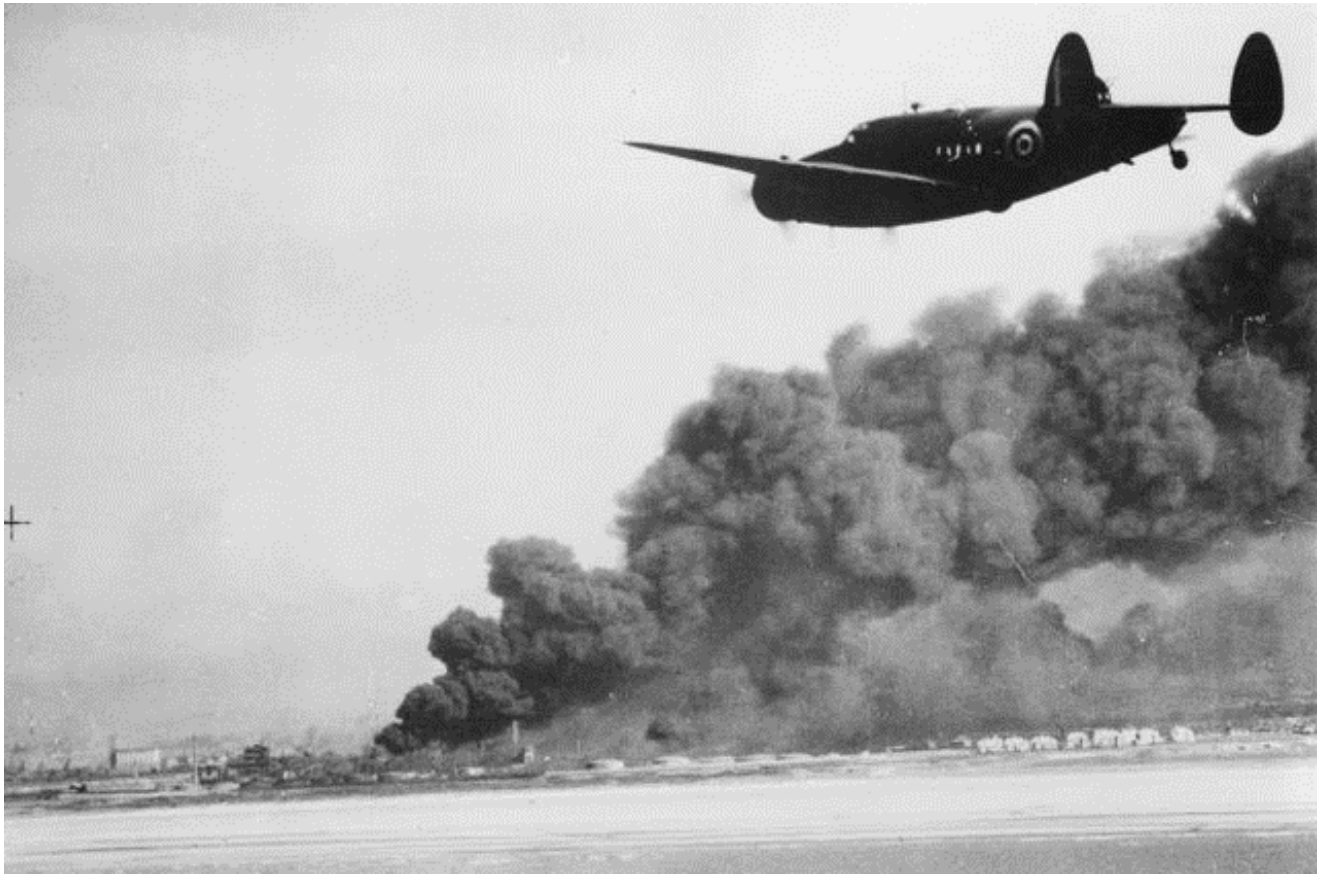
A20-686 Lincoln Nitschke's Aviation Collection of WWII cockpit displays in Greenock, SA



A20-688, Air Force Assoc Museum Bulls Creek, as "A20-668" – the last RAAF flying Wirraway, flying with 25SQN Pearce into APR 1959, to Museum 1973

Getting the RAAF Numbers right in WW2 Part 2 by Gordon R Birkett @2017

The Pacific War Heats up: 1942-1943



How many aircraft do we actually need for each Squadron in light of two year's experience?

There were, from early 1942 following the start of the Pacific War, three further types of categories for Squadron establishment aircraft strengths: Workshop, Reinforcement (Ready) and Transit Reserves.

The first was for airframes being repaired, overhauled or serviced, the second through enemy action and the last in transit (ferrying). Workshop reserved was deemed at 10% of aircraft inventory held, and Reinforcement (Ready) Reserve deemed "on a average", the greatest number of aircraft wasted on operations. The last, Transit Reserve, was the holding of aircraft required to fulfil the Reinforcement (Ready) Reserve requirements to deliver the actual number required, despite losses on route.

Six month Operational Examples:

1. The Air Staff requirement of six months operations for **GR Bomber/Torpedo/Dive Bomber Squadrons**, with an established strength of a total of twelve "in-use equipment" (12 x IE) and six "in-use reserve" (6 x IR) twin/single engine aircraft, would require a further nine aircraft reserve (9 x R) for a monthly wastage of 1.5 aircraft over that period. A total of twenty-seven (27) aircraft required.
2. The Air Staff requirement of six months operations for a **GR Flying Boat Squadron**, with a established strength of a total of six "in-use equipment" (6 x IE) and three "in-use reserve" (3 x IR) twin/four engined aircraft, would require a further 3 aircraft reserve (3 x R) for a monthly wastage of 1/2 aircraft over that period. A total of twelve (12) aircraft required.
3. The Air Staff requirement of six months operations for an **Interceptor Squadron**, with an established strength of a total of sixteen "in-use equipment" (16 x IE) and eight "in-use reserve" (8 x

IR) single engined aircraft, would require a further 23 aircraft reserve (23 x R) for a monthly wastage of 4 aircraft over that period. A total of forty-seven (47) aircraft required.

4. The Air Staff requirement of six months operations for an **Army Co-operation Squadron**, with an established strength of a total of sixteen "in-use equipment" (16 x IE) and eight "in-use reserve" (8 x IR) single engined aircraft, would require a further 16 aircraft reserve (16 x R) for a monthly wastage of 2. 2/3 aircraft over that period. A total of thirty-nine (39) aircraft required.

As at the 11th December 1941, waiting to be delivered, either on the water in transit, to be shipped or still under construction or awaiting approval from requests and orders, were 107 x Hudson Mk III and Mk IVs, 297 x Vultee Vengeances, 54 x Beaufighters, 27 x "C-47 type" Transport aircraft, 6 x Walrus and 9 x Catalina aircraft



From Neutrality Act to Lend Lease: how we got aircraft through a lending hand.

Before Lend Lease

At the outbreak of the war in September 1939 a Supply and Technical Mission was established in Ottawa, Canada. This was named the British Supply Board of Canada and the United States (BSBCUS). The function of this board was to arrange for war supplies to be made available from productive capacity and resources of the North American Continent. At the same time, the British Purchasing Commission (BPC) was set up in the United States in November 1939 after the appeal of the US Arms embargo.

This establishment was a direct result of the United States "Neutrality" Law and the introduction of the Presidential sponsored "Cash and Carry" system. Unlike the Canadian Based British Supply Board of Canada and the United States, the BPC did not place contracts through the United States Government, but rather bought munitions and warlike stores (Aircraft/Tanks etc) on the open market, direct from companies.

An Anglo -French Purchasing Board was set up in New York in November 1939. With the fall of France, in May 1940, the increase of American sympathy against the Nazi War Machine and their success resulted in the BPC to move to Washington DC.

British Gold reserves, foreign exchange monies and exchanges in basing rights on British owned territories ensured a steady flow of bought munitions and warlike stores (Aircraft/Tanks etc).

Lend Lease starts

"I don't say... 'Neighbour, my garden hose cost me \$15; you have to pay me \$15 for it' ...I don't want \$15 — I want my garden hose back after the fire is over."

Proposed in late 1940 and passed in March 1941, the Lend-Lease Act was the principal means for providing U.S. military aid to foreign nations during World War II.

It authorized the president to transfer arms or any other defence materials for which Congress appropriated money to *"the government of any country whose defence the President deems vital to the defence of the United States."*

By allowing the transfer of supplies without compensation to Britain, China, the Soviet Union and other countries, the act permitted the United States to support its war interests without being overextended in battle.

On the commencement of the Pacific War in December 1941, the United States of America and the United Kingdom's procurement organisations in the United States became integrated on the 26th January 1942 with the forming of three combined supply boards; Raw Materials, Munitions Assignments and Shipping.

These combined boards were to ensure complete co-ordination of the two nation's war efforts, including the production and distribution of their war supplies, and to provide for full British and American collaboration with the United Nations. The War Production Board, later the Combine Munitions Board (established Feb 1942), was formed to administer this "Arsenal of Democracy".

In a simple explanative note I've written:

Example:

- Down a level, the Combined Munitions Assignments Board or Combined Munitions Assignments Board, the major government agency for the U.S. and Britain in World War II, was responsible for the control and allocation of war supplies and Lend lease aid to the Allies, in our case, Britain.
- Being part of the British Empire for accounting purposes, our aircraft requests went into the American based Munitions Advisory Commission (British Air Commission's MAC (Air)) which oversaw the application and placement of these cases on behalf of themselves and Commonwealth Countries, to the Combined Munitions Assignments Board.
- Based on the Calendar month of each financial year during the war, a production lot of a certain type of aircraft would be either split or delivered against each case presented on a Lend Lease Request, presented during a meeting. The number available always followed after the requirements of the USAAF were placed first.
- If there was a total of 250 single seater fighters produced in June 1942, at say Curtiss Wright Buffalo New York , and the USAAF wanted to reequip a US Fighter Group with 84 x P-40s, they got them, without question. The balance of 166 x P-40s would be "thrown up" for Lend Lease Case requests.



- If the British MAC(Air) collated a Monthly Case request (which would include our RAAF requirement to fulfil a Indent Order to equip a new Fighter Squadron, and/or for wastage forecasts for a month of operations, say for a total of 35 x P-40s,) it would be combined in total with similar Cases in need for the RAF, RAAF, RCAF and say perhaps RNZAF , for say a breakdown of 35/35/20/12 P-40s each, the Case would be submitted for a total of 102 x P-40's on all of their behalf.
- If successful, the balance would then be delved out and shipped to other Lend Lease Countries on a Defence Aid needs basis. Perhaps 12 x P-40's to Brazil and the remaining balance to Russia (52 x P-40s).
- These monthly requests could change in allocations if there were higher than expected wastage or perhaps a predicted future operation, in any particular theatre.
- In all cases, these aircraft had to be acquitted per receipt and when the war finished, payment for those lost either in operations or accidents. Those that survived were either returned or destroyed insitu, and accounted for, in statistical returns to the US of A. *Simple.*



It should also be noted that the United Kingdom, also paid for, on our behalf for some their diverted aircraft from their contracts at no cost in 1942; Curtiss Wright P-40E-1s, Lockheed A28/A29 Hudson MkIII/IVs and Catalina's, to name a few. Our requests were forwarded through the Australian Legation, based in Washington DC, USA.

In August 1942, Australia separately became a Lend Lease Customer, but was still itself presenting Cases through the United Kingdom's Mac (Air). But in some cases it still had to vide for different types outside the MAC (Air) frame work. Examples of these purchases included Mosquito aircraft, Beaufighters and Auster AOP aircraft from the United Kingdom.

The 1942-1943 Transition: Fighters

Fighter Numbers increase from Lend Lease and new supplies from the United Kingdom

During the first six months of war in the Pacific, delays of replacement and pilots/crews through shipping shortages and other prioritised fronts/Services¹²¹ etc

As stated during 1941, the basic Squadron Establishment Strength had increased from twelve to eighteen aircraft. Pilot shortages caused from the extended training pipeline, the resting of experienced toured expired Pilots, on transfer back from other war theatres, and those who had experienced the devastation of the first six months of the Pacific War exasperated this establishment issue as well through a lack of manning. A replacement aircraft arriving as a reserve aircraft included a recently composed crew from an Operational Training Unit or from an Australian Based Unit used primarily as a pool of both aircraft and crews/pilots.

No 75 Squadron RAAF (a P-40E/E-1 Fighter Unit), when in early operations from March to May 1942 at Port Moresby, was mainly supported by No 76 Squadron RAAF and Townsville Station HQ Flight, both in the supply of replacement aircraft and pilots. *Most of the seasoned P-40 pilots were ex Desert Air Force, with small supply of ex UK based Spitfire Pilots arriving later in July 1942 after converting in June 1942 at 2OTU.*



Early P-40E deliveries in March 1942 from USAAF Stocks, A29-28 and A29-31 (Box#186)

A further P-40 Squadron, No 77, based in Western Australia, completed the sum total of three equipped P-40 Fighter Squadrons in the RAAF with a March 1942 establishment of some just 36 IE and 18 IR P-40E/E-1 Aircraft.

A total of 54 Establishment Aircraft for three Fighter Squadrons use out of 81 delivered.

Out of this total a further 6 P-40E/E-1 Aircraft would be placed in service with 2OTU.

This balanced against a total of 75 P-40E/E-1 Aircraft originally issued from USAAF Stocks in early March 1942, pending redirected NEI/RAF Kittyhawk Mk1A Contracts arriving from April 1942 onwards, to support in use and reserve establishment numbers, and War Wastage for six month's operations of the three Squadrons.

However, through Japanese air action, ship sinking's and accidents, the number had already reduced the operational numbers available by July 1942. The numbers were further complicated with P-40E-1 paybacks to the USAAF from April 1942 to June 1942.

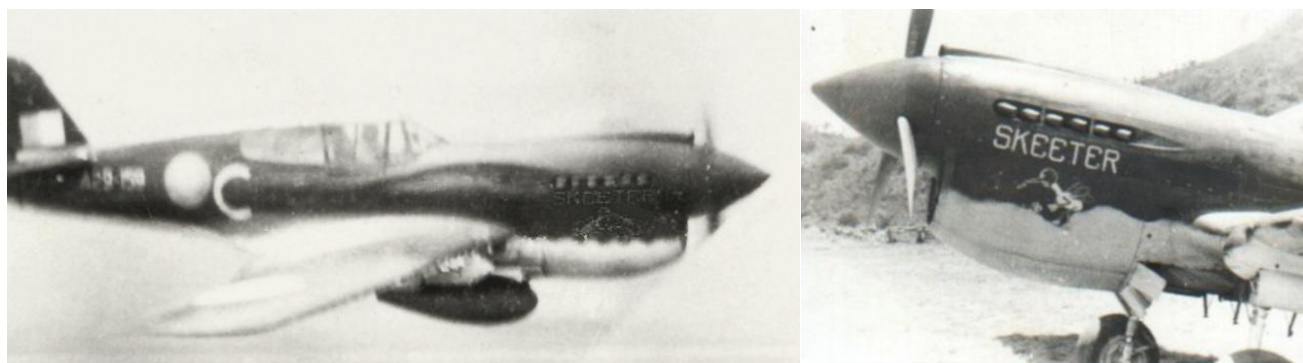
No new deliveries of P-40E-1 aircraft were received direct by the RAAF from after June 1942 following that last RAF Diverted P-40E-1 (**A29-134**) from 2AD was delivered.

With a further 14 had sunk on route during this month, which would have brought the RAAF P-40E/*E-1 inventory strength to 146 Aircraft, an approach to the USAAF in Australia for some of their reserve Pool was necessitated to make up this shortfall.

This resulted in 16 new ***ex-redirected RAAF Contracted Payback P-40E-1s*** held at USAAF Charters Towers Reserve Pool (**A29-135 to A29-150**) being requested and received by August 1942, as well as a further 12 rebuilt tired P-40E/E-1s (**A29-151 to A29-163**) ex 43rd Material Squadron, Adelaide River delivered in late August and early September 1942 as a result of War Wastage during the Milne Bay operations.



49th Fighter Group HQ Flight's #2 lands during July 1942. P-40E-1 41-24875, later became A29-151 on the 30th August 1942



Another 12RSU sourced ex 49th FG P-40E in early September 1942, ex 9th FS #81 "Skeeter", now A29-159 "C" of 75 Sqn RAAF

By December 1942, the total strength of in use and reserve of P-40E/E-1 aircraft in Inventory was 104 Aircraft, with only 72 in Unit establishments, of which only 51 were operational for flight.

- 75(F) Squadron RAAF had 19 on strength with only 14 operational
- 76 (F) Squadron RAAF had 20 on strength with only 14 operational
- 77 (F) Squadron RAAF had 23 on strength with only 16 operational
- 2OTU RAAF had 10 on strength with only 7 operational
- Balance of 32 under repair or rebuild at RSU's ,3AD and 5AD

It wouldn't be until Late January 1943 before new deliveries of P-40K aircraft began to be delivered to No77 (F) Squadron RAAF in February 1943.

The following month in March 1943, P-40Ms started to arrive also, allowing the establishment of the first new P-40 fighter squadron for the RAAF in twelve months, No 86 (F) Squadron RAAF.

This allowed for the remaining P-40E/E-1s to be pooled into two operational Squadrons and the OTU to maintain their establishments for the next three months. 2OTU also got examples of the P-40K and P-40M models to boost its numbers.

“Kingdoms” and “Capstans”; the Supermarine Spitfire, arrives.



During the same time period, from August 1942 when the supplies of P-40E-1s were drying up, Prime Minister Churchill's promise and support saw the initial arrival of 6 Spitfire Mk Vc (T)¹²² for a Wing of Spitfires for the defence of Australia.

The Establishment Number of a fighter Squadron, increased with the introduction of this type, from 18 IE/IR to 24 IE/IR in RAAF Squadrons (16 IE and 8 IR).

By December 1942, the total strength of in use and reserve of Spitfire Mk Vc (T) aircraft in Inventory was 100 aircraft, with only 74 in Unit establishments, of which only 61 were operational for flight.

- 54(F) Squadron RAF had 24 on strength with only 23 operational
- 452 (F) Squadron RAF (RAAF) had 24 on strength with only 19 operational
- 457 (F) Squadron RAF (RAAF) had 24 on strength with only 18 operational
- 2OTU RAAF had 2 on strength with only 1 operational
- Balance of 26 under repair or rebuild at RSU's, 1AD and 2AD

Serviceability rates ranged from 71% for P-40E/E-1s to 82% for Spitfire Mk Vc (T)s.

Sufficient Spitfire numbers would arrive monthly to allow a further RAAF Squadron, No 79 (F) Squadron RAAF to be formed in Australia on the 26th April 1943, from the reserve inventory for operations in SWPAC. Like the P-38 with the P-40/P-39 in USAAF Groups during this period, they would provide a high altitude mix for P-40E/E-1s of 75(F) Squadron RAAF based at Milne Bay at that time.



One of the first six "Kingdom"¹²³ aircraft delivered....BR386 "K", later E/E-88 carded as A58-22(Never carried this number since it was AMSE Written off by late March 43)



Collage of first formation flight:1942

With the arrival of the Churchill Wing in the North West Area, No 77(F) Squadron RAAF would be withdrawn and re-equipped with P-40K aircraft and would join No 75(F) Squadron RAAF. Meanwhile, No 86 (F) Squadron RAAF would deploy to Merauke, Dutch New Guinea as a single unit.

From March 1943, all Spitfire and P-40 Fighter Squadrons were now at the new establishment number of 24 aircraft (16 IE and 8 IR) that would remain until war's end, with an added Wirraway. During the same month, a standard Squadron marking system was also introduced.

Odd Fighter sorts: Boomerangs, Airacobra, and Buffaloes: 1942-1943

The Wirraway Interceptor



Preface: North American had already by 1940 designed and built a single seater version of the early NA-16/BT-9 Trainer...the NA6, later designated the P-64 was a evolution similar to our Wirraway to Boomerang, a year or so later though, so the concept was not really regarded as a one off.



With the prospect that deliveries of 250 (125 ex redirected RAF and 125 re-directed USAAF) P-40E/E-1s being delayed or deferred due to other theatre's needs between January and March 1942, an ambitious "insurance" plan was put forward by CAC to mount a R1830 1200hp Twin Wasp engine on a re-design and modified Wirraway airframe, to produce locally a single seater interceptor equipped with an eight gun .303 Machine gun armaments housed in its wing. This became the CAC Boomerang Interceptor.

A decision was made in January 1942 to cancel Wirraway Production at 622 airframes and produced 100 (Later 200 from October 1942) such interceptors in place of a further 245 Wirraway production for the United Kingdom under EATS.



Production of the 200 contracted Boomerangs would commence by May 1942 and be completed by the 30th April 1943.

The numbers would be enough to initially equip three Fighter Squadrons with 12 IE and 4 IR aircraft, along with a wastage allowance aircraft for each squadron. Several for trials and CAC development, and a further 12 aircraft would be required to establish a OTU to convert partially trained EATS pilots into their operational roles in those squadrons.

Two of the units to be equipped by mid 1943 would be No 4 and No 5 (Army Co-op) Squadrons RAAF, each with 21 Boomerang IE/IR on establishment and with a further 3 Wirraway IE/IR.

The third Squadron that was to be formed would be an Interceptor Squadron, No 86 (F) Squadron RAAF, equipped with 24 IE/IR aircraft.

Like the Beaufort program and production, things did not flow like they were planned. Production lagged with only 25 delivered by the end of 1942, and No 86 (F) Squadron RAAF, was eventually equipped with P-40M aircraft.

Slowly Boomerangs equipped 2OTU first, with No 84 (F) Squadron RAAF became the first fully Boomerang Interceptor Squadron to equip with this aircraft in April 1943 with 16 IE and 8 IR aircraft, followed by No 85(F) Squadron RAAF the following month.



2OTU Boomerangs A46-47/10/13/14/8 and one unidentified one in flight 1943

No 4 (Army Co-op) Squadron RAAF became the third unit to convert as a composite squadron with 12 IE and 6 IR Boomerangs whilst retaining a flight of 3 Wirraway aircraft in July 1943. Then No 83 (F) Squadron RAAF re-equipped in September 1943.



CAC Boomerang A46-155 Coded MH-B of 83 Squadron

Finally No 5 (Army Co-op) Squadron RAAF were equipped as a composite squadron with 12 IE and 6 IR Boomerangs whilst retaining a flight of 3 Wirraway aircraft in July 1943.



CAC Boomerang A46-128 BF-N "U Beut II" in flight

The last RAAF unit to receive the Boomerang was No 8 Communication Unit in late 1943.



8CU's Boomerang A46-95 ZA-O



CAC Boomerang A46-163

Bell Airacobra

Further to the drying up of P-40E/E-1 aircraft deliveries before and after July 1942 deliveries, a stop gap of fighters were needed. The only other modern fighter that was in plentiful supply locally after the P-40E/E-1 was the Bell Airacobra in P-39D/F form.



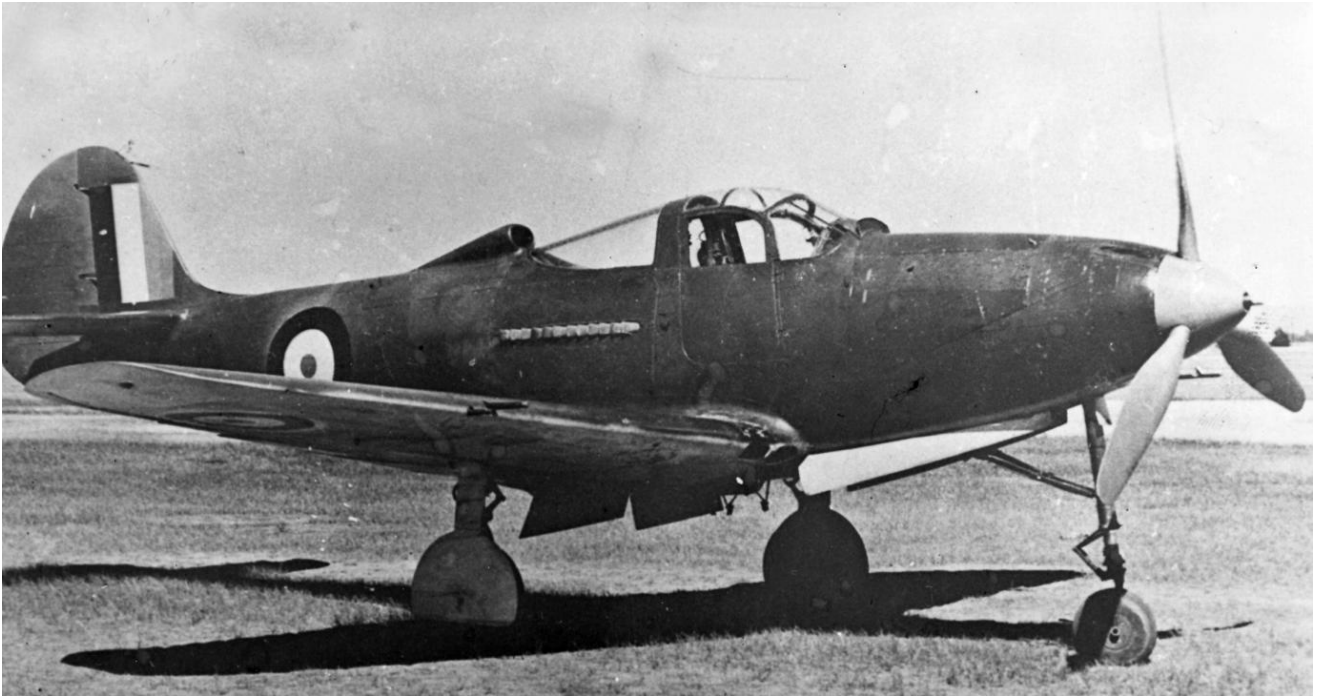
March-August 1942...there was an influx of P-39D/Fs and eventual D-1s into Amberley RAAF

Several decisions and requests to the USAAF resulted in delivery of Reserve Pool P-39D/F Airacobra aircraft to the RAAF.

These were to equip a third flight of two of the three home General Purpose Squadrons for capital cities ...No 24 Squadron with 7 P-39Fs and No 23 Squadron with 7 P-39Ds.

The balance of each Squadron would be made up of two Wirraway equipped flights.

When these two Squadrons were transiting to Vengeance Dive Bombers in early 1943, these aircraft would be transferred to No 82 (F) Squadron and then No 83 (F) Squadron as initial equipment, before their transition to P-40E/E-1s and CAC Boomerangs respectively.



Bell P-39F 41-7119 became A53-1, July 1942 and research shows the remains of this aircraft still exist in South Australia after being dug up in NSW.

Two attrition supply requests sort more Airacobra aircraft in May and July 1943 respectively resulted in a further supply of 6 P-39Ds and 2 P-39Fs, but, none of which served in either squadron.



Preloved, stripped and bent in May 1942 after a forced landing in Princess Charlotte Bay Qld, P-39F 41-7164 later became A53-5.



Bell P-39F 41-7199 became A53-22, but did not serve in a RAAF Squadron



23 Squadron's A53-13 "TY" (Returned USAAF 9/43) and A53-9 "TZ" (Scrapped at Clyde Engineering NSW) at Lowood



A53-9 "TZ" ex P-39D 40-3035, on a visit to the USAAF at Eagle Farm, late 1942 with 81st Air Depot (USAAF)



Where most survivors ended up at Eagle Farm, along with the 35th and 8th FG's worn out P-39D/Fs and P-400s.

Brewster Buffalos

Ex NEIAF Refugee Cargo Brewster Buffaloes used by the USAAF Fighter Training Pool, Williamtown and later from Garbutt, would provide an inventory to add an Interceptor Flight for the third General Purpose Squadron, No 25 Squadron at Pearce RAAF, on the West Coast.



Buffalo ex NEIAF B-3179, Ex USAAF "308" would become A51-11

These nine aircraft were delivered from August 1942 and would serve till until February 1943 with 25 Squadron before it transited to a Vengeance Dive Bomber Squadron.



Buffalo ex NEIAF B-3167, ex USAAF "310" became A51-13

These then formed the initial equipment for No 85 (F) Squadron RAAF before it converted to CAC Boomerangs.¹²⁴

Both types were returned to the USAAF in 1943/44 period.

GR Bomber Strength as at August 1942;

Lockheed Hudson GR Bomber Strength shrinks to 50%.



Darwin saw many a No 2 and 13 Squadron Hudson destroyed following evacuation from the NEI on 19th February 1942

With the last of two hundred and forty seven (247) Hudsons delivered to the RAAF on the 20th May 1942, attrition and wastage had taken its toll on their numbers.

Five Operational Units were stated operating with two versions, Hudson MkIII (No 2/6/13/32 Sqn's) and MK IVs (No 14 Sqn), each with 18 x IE/IR aircraft on RAAF Establishment.

Actual strength actually shows 83 Hudson Aircraft in use:

- No 2 Sqn RAAF: 14 Mk III x IE
- No 6 Sqn RAAF: 13 Mk III x IE
- No 13 Sqn RAAF : 1 Mk I x IE/14 Mk III x IE/ 2 Mk IV x IE (17 x IE in total)
- No 32 Sqn RAAF: 14 Mk III x IE
- No 14 Sqn RAAF: 15 Mk IV x IE

No 1 OTU flew all three versions, with 24 IE and 10 IR on establishment. However, only the following numbers of aircraft were in actual use, 14 Mk I x IE, 2 Mk III x IE and 3 Mk IV x IE (19 x IE in total).

A further Hudson Mk I was flown on the behalf of the Chief of Air Staff within No 1 Communications Flight, making in total One hundred and twenty-six (126) in use.

Of the above aircraft, twenty-six aircraft were under repair:

- No 1 Air Depot, Laverton: 4 x Mk I, 1 x Mk III and 3 x Mk IV Hudsons.
- No 2 Air Depot Richmond: 2 x Mk I, 1 x Mk III and 2 x Mk IV Hudsons.
- No 3 Air Depot Amberley: 5 x Mk III Hudsons.
- No 1 Repair and Salvage Unit, Daly Waters: 1 x Mk I, 6 x Mk III and 1 x Mk IV Hudsons.

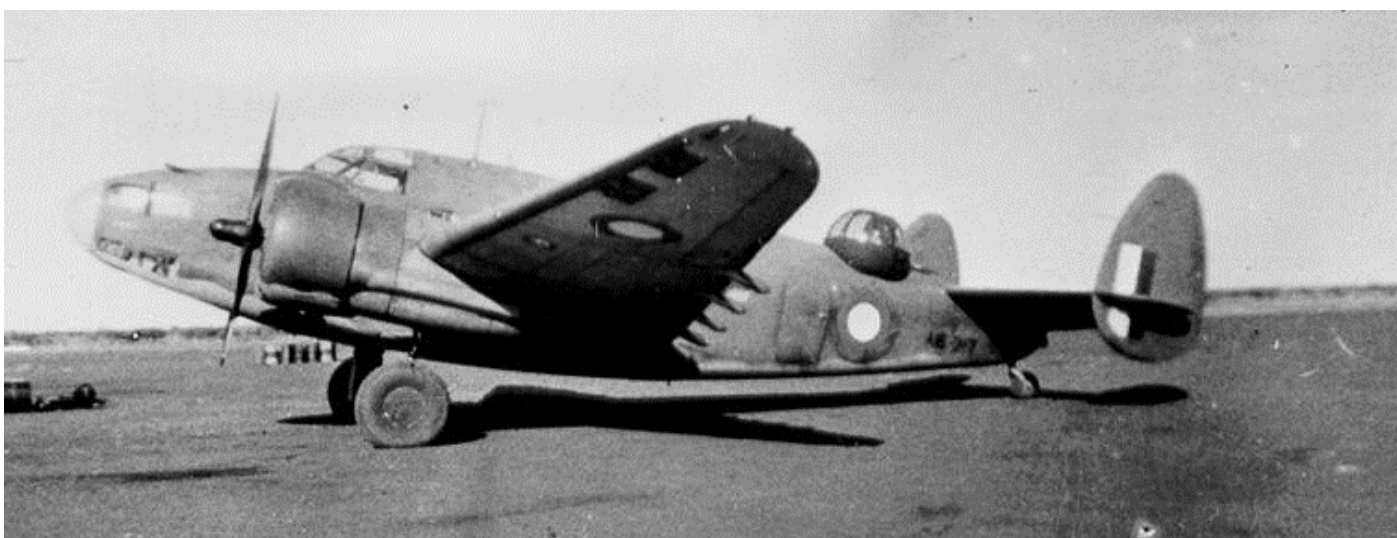
With one hundred and thirty Hudsons (26 x Mk Is, 74 x Mk IIIs and 30 x Mk IVs) left in inventory, a total of one hundred and twenty seven (74 x Mk Is, 34 Mk III s and 19 Mk IVs) Hudsons had been lost through attrition and wastage to date since 1940.



Malaya and NEI survivor, Hudson A16-26 at Laverton March 1942¹²⁵



Hudson A16-114, pictured with No 7 Squadron Marking (G) in January 1942. It later became a transport with 1CU.



One of 247 Hudsons delivered, A16-217

With no further Hudson ordered or now in production, the GR/ Bomber Force was to be replaced progressively by late 1943 by the DAP Beaufort that was now in series production locally.

Beaufort GR Bomber/Torpedo Force grows, but serviceability shrinks in effort: 1942-1943

Prior to the commencement war in the Pacific, both the RAF Far East Air Force and the RAAF were to receive the DAP Beaufort from two newly established production lines, Geelong and Mascot, in Australia.



The Fisherman Bend Line, pictured about mid 1942.

The first RAF Operational Squadron was to be 100 Squadron RAF, of twelve "in-use equipment" (12 x IE) and six "in-use reserve" (6 x IR) twin/single engine aircraft, to be followed by two other locally Malaya based RAF Squadrons (One was to be 36 Sqn RAF) in the Far East. A RAAF GR/ Bomber Squadron would then form after the delivery of the last RAF original contracted Beaufort. *However all of this went out the window by March 1942 due to the early successes of the Japanese.*

The first Squadron to form was, in recognition and staffing of RAF, No 100 GR/Torpedo Squadron (RAAF) on the 25th February 1942, after absorbing all insitu RAF Aircraft (17 MK V x IE) and Crews (38 Airman) under conversion and training at Richmond RAAF Station.



DAP Beaufort MkV T9552 NK-B, later re-serialised A9-13 in flight with 100 Sqn (RAF) Markings early 1942.

The second Squadron, No 7 Squadron, originally reformed on the 7th January 1942 at Laverton was equipped with twelve "in-use equipment" (12 x IE) and six "in-use reserve" (6 x IR) Hudson aircraft.

In late June 1942, all its Hudsons were to be absorbed into the newly established 1 OTU in July 1942, with the Squadron accepting its first DAP Beaufort Mk VII now being designated as a GR/Torpedo Squadron in August 1942 and based at Nowra RAAF Station to hone its torpedo role.

Around one hundred and fifty Beauforts had been delivered by the end of 1942 period, equipping two operational GR/Torpedo Squadrons (No 100 and No 7) and two OTUs (No 1 and No 5).

Though production figures seem high in comparison of Squadrons/Units equipped, it must be noted that serviceability and post production modifications of early production aircraft caused a low availability rate of 52% by August 1942.



7 Sqn RAAF's A9-123 KT-Q "Slippery Sam" mid 1943

This further dropped per a statistical return dated 1st February 1943, for...per Beaufort Strength of 190 Beauforts held, only 79 were serviceable; **that reflected a low 41.5% serviceability rate.**

- Both No 100 and No 7 Squadrons: 27 Serviceable with another 13 unserviceable, out of a total of 40 x IE/IR.
- Both No 1 OTU (No 2 Beaufort Squadron) and No 5 OTUs: 52 were serviceable with a further 41 unserviceable
- Some 25 undergoing Depot Repair and a further 19 being repaired or held at RSUs.
- Finally, a further 35 under erection or being modified operationally.

All in all by early 1943 the RAAF, despite having growing pains, manning issues and product delivery problems, was expanding with new operational types and increased deliveries of improved existing types.

RAAF Transport Squadrons: 1942-1943

During the first year of the Pacific War, the RAAF was the most deficient in transport aircraft within the RAAF Establishment Structure.

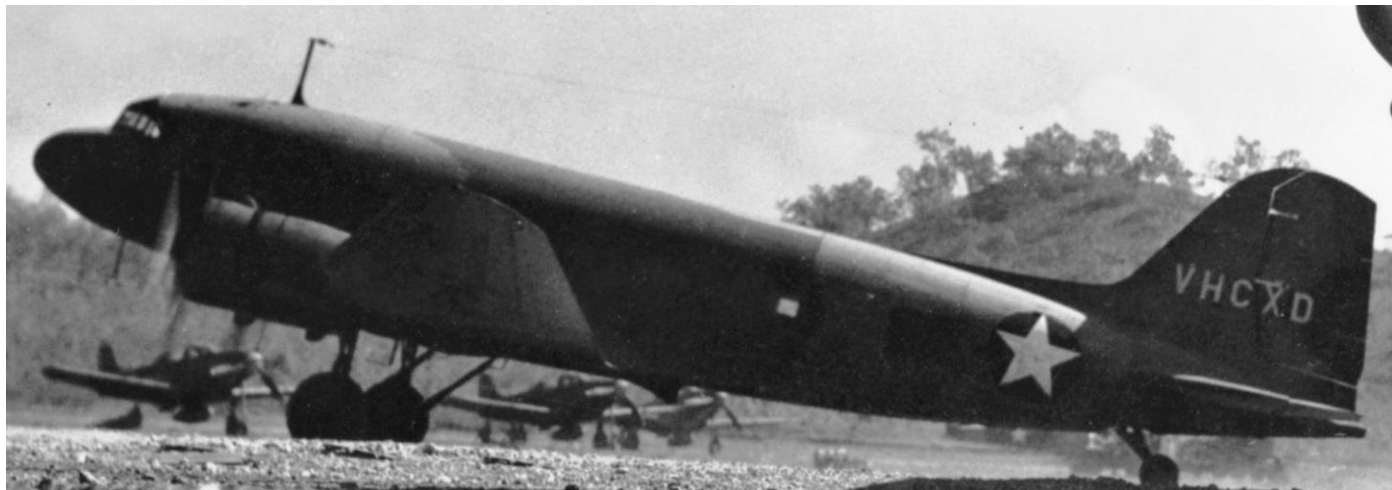
A total of four Land based (No 33/34/35 and 36 Sqn's) and one Sea Transport Squadrons (No 41 Sqn) were formed by October 1942. The uniformity of establish types were, to put simply, was almost non-existent with thirty-seven (37) assorted aircraft.

- No 33 Sqn RAAF: 4 x Ansons/5 x Moths/1 x DH-84 and 1 x Miles Falcon
- No 34 Sqn RAAF: 3 x Ansons and 5 X Moths
- No 35 Sqn RAAF: 1 x Moth, 1 x Fox Moth and 2 X Battles
- No 36 Sqn RAAF: 7 x DC-2, 1 x Moth, 1 x Fairchild, 2 x DH84, 2 x DH-86 and 1 X DH89
- No 41 Sqn RAAF: 2 x Empire C Class Flying Boats

It relied very heavily on USAAF resources to supply the required effort in PNG and locally under the auspices' of DAT (Directorate of Allied Transport) with their allotted C-39s/C-49s/C-53s and C-47s.

As supplies of C-47As were slowly arriving for the USAAF in theatre, refurbished Transport aircraft (C-47/49/50/53/56s) were loaned to the RAAF and ANA.

Supplies of RAAF C-47s, though at a trickle, would round out our immediate requirements by the end of 1943.



C-49H VHCXD started out as the last KLM Aircraft (PH-ALT KLM "Torenvalk") to leave Java, in March 1942. Eventually it would serve with No 33 Sqn RAAF/ANA, before crashing at Higgins Field in 1945.



Other stalwart types were used in Transport and communications roles, including the Avro Anson

A separate order for 10 C-60 Lockheed Loadstars were sourced ex Lend Lease Order by the RAAF. This resulted in the following changes and establishment by August 1943:

- No 34 Sqn RAAF: 3 x C-47, with a further 4 x C-47 from RAAF allocation.
- No 35 Sqn RAAF: 3 x C-47s on RAAF allocation
- No 36 Sqn RAAF: Loaned 5 x USAAF C-53, 5 x USAAF C-47 and a further C-47 from RAAF allocation. 3 x Loaned USAAF C-60.
- No 37 Sqn RAAF: 9 x C-60 Lodestars under RAAF Allocation from July 1943.

Surplus RAAF Hudsons would be thrown up from operational Squadrons after being replaced by DAP Beauforts and introduced, with modifications, as establishment equipment for No 38 Sqn RAAF and later No 33 Sqn RAAF by year's end.

Light types would be withdrawn as aircraft were introduced, save for a flight of two Tiger Moths per establishment of No 33 and 34 Sqn's RAAF.



A16-147 "M" fitted as a 7 Seater Staff transport with 1 Communications Unit

41 Sqn RAAF exchanged its establishment of two Empire C Class Flying Boats to five Dornier Flying Boats.



Plagued by serviceability issues of these tired and worn out ex NEI MLD aircraft, this issue of serviceability would not improve until the following year when it was re-equipped with Martin Mariner Flying Boats.

All in all by the middle of 1943 the RAAF was getting aircraft at regular intervals and in increased totals, allowing the next phase of expansion which would match the turning tides of war.

The American, United Kingdom and Australian Aircraft Industry was, by then, in total War Production.

Part 3 will address the 1944 to late 1945 period that would see the RAAF increase its size to become the World's fourth largest Air Force, and then the fast post war reduction.



Curtiss Corner: P-40N-5 A29-518

Gordon Birkett @2018

A29-518 ex Mac Air **A29-1118** ex P-40N-5 USAAF FY42-105372 Curtiss Sequence Number 944



Pictured in flight when coded K-LB on the starboard fuselage, only "K" had the No 84 Squadron RAAF "LB" Markings when this photo was taken near Horn Island , along with E/H/D. Coloured by Brendon Scott





Evidently,...to the keen observer, the reverse photo in that series taken that same day reveals that only "K" has Squadron Code of "LB", though only on Starboard side, and fin flash applied, but not the Code on the port side!!, before this Photo flight.

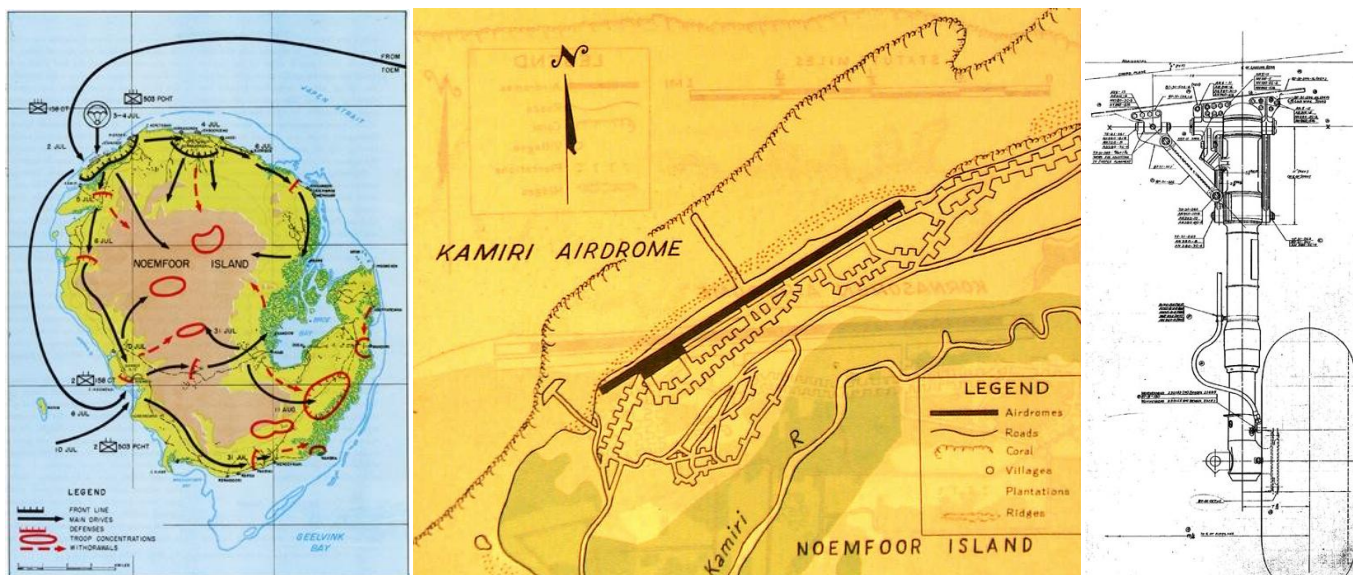


A29-518 Peels off.

Her History: Ordered on USAAF Contract AC34423, RAAF Case 200, Indent 2012A RFDA-322A, Diversion 406-A, Aus15 #16 Shipped Ex Oakland California USA CV #??? Delivered by sea as MAC Air **A29-1118**. Received by 3AD Amberley Queensland ex USA 09/09/43. Here it was assembled, tested and renumbered as **A29-518** 09/09/43.

Eventually it would be received by 84 Sqn RAAF, then based on Horn Island ex 3AD 22/10/43. Rec 11RSU ex 84 Sqn RAAF 08/06/44. Rec 11RSU Res Pool ex 11RSU 10/06/44. Rec 78 Sqn RAAF ex 11RSU RP 14/06/44. Rec 11RSU ex 78 Sqn RAAF 26/06/44.

Rec 22RSU ex 11RSU 15/07/44. Rec 78 Sqn RAAF ex 22RSU 16/07/44. On the 20th July 1944 the Squadron moved from Hollandia to Kamiri Strip some two weeks after its capture by the 503rd Parachute Regiment and the 156th Regiment Combat Team , US Army .



Accident 1000hrs 22/07/44 when the starboard wheel brake jammed on landing when landing at Kamiri Strip , Noemfoor Island after a routine 24 aircraft dawn to dusk flights of 4. The aircraft became uncontrollable after touch down, veered off the strip and crashed. The pilot, F/O Colin Harold Heard Serv#417637, was not injured. Approved to be Written Off per AMSE File#9/16/1848 27/07/44.



Odd Shots: Shooting for the stars for a twin engine replacement 1950-1981



Hawker's P1081 Fighter, which was once a 1951 consideration to replace the Meteor in combat.



Lockheed's F-104A, which was once the only 1956-57 consideration for a fighter to replace the Meteor's replacement, the CAC Avon Sabre.



SAAB's J35B Draken, which was once a 1961 consideration prior to the GAF Mirage IIIIO Order. RAAF Flew aircraft "001" (Pictured) and "011" in March 1961.



1975 Contenders for the RAAF's Tactical Fighter Program included the F-16, F/A-18A and F-18L (YF-17 pictured)



The winner in 1981 was the F/A-18A; at last a Multirole Fighter with twin engines like the Meteor!!

Editor's Notes: Contributors are most welcome to provide written articles or even topics to be covered by others.

Special thanks to John on the inclusion of his article, his advice and contributions: Many Thanks

End Notes:

End Notes: RAAF AIRCRAFT MARKINGS SINCE 1950 SQUADRON MARKINGS – PART 7 – DROPPING THE FIGLEAF (2) CAMOUFLAGED WWII AIRCRAFT INTO 1950's SILVER: John Bennett 2018

¹ See *adf-serials* Vol 7 Issue 5, Summer 2017, for Dakota article no.5 in this series:

<http://www.adf-serials.com.au/newsletter/ADF%20Telegraph%202017%20Summer%20.pdf>

² See *adf-serials* Vol 7 Issue 6, Autumn 2018 for the article no.6 in this series:

<http://www.adf-serials.com.au/newsletter/ADF%20Telegraph%202018%20Summer.pdf>

³ For policy details of RAAF aircraft serial numbering, re 'consecutive', 'block', 'aircraft c/n' or previous serial, see *ADF Serials Telegraph* Vol.5 Issue 3, Spring 2015:

<http://www.adf-serials.com.au/newsletter/ADF%20Telegraph%202015%20Spring%20Vers%20Fin.pdf>

⁴ D Buckmaster, *CAC Ceres, Australia's Heavyweight Crop-Duster*, Design Bureau, Melbourne, 2017, p.222 states the Wirraway II designation applied to the CA-3 through CA-9.

B Hill, *Wirraway to Hornet, A History of CAC*, Southern Cross, Melbourne, 1998, p.241: Under "CAC Designated Project Numbers", Hill interestingly lists the production as CA-1 Wirraway I, CA-3 Wirraway II, CA-5 Wirraway III, CA-7 Wirraway IV, CA-8 Wirraway V, CA-9 Wirraway VI, and CA-16 Wirraway VII. Also listed is the CA-20 Wirraway (as a 1943-45 cancelled project), a designator which has also been applied to RAN postwar Wirraways. N Parnell & C Lynch, *Australian Air Force Since 1911*, Reed, Sydney, 1976, p.196.

D Buckmaster 'Design Bureau', 22 SEP 2012 website, also states that CA-20 was a contract for modification of Mk.III Wirraways for delivery to the RAN, a total of 17 aircraft being modified:

http://dbdesignbureau.buckmasterfamily.id.au/tech_info_cac_wirraway_tt.htm

⁵ RAF directive AMO A.413, para.18, 15 MAY 1947.

⁶ AEIG Part 2, Sect 1, Instruction 11, RAAF HQ DTS Special Instruction Gen/96, TS.1840, File 9/1/1595, para.D(8a), 14 JAN 1948.

⁷ RAAF DTS Diagram A5524, Sheet 1, Issue 4, 19 JAN 1951.

⁸ Initially the red and blue were introduced as wartime matt colours; RAAF Support Cd (HQSUPCOM) Minute 1/501/329 (56) of 20 NOV 1947; and RAAF HQ Signal TS.1831, File 1/501/329, 24 NOV 1947. (These were identified as K3/235 and K3/232; AGI 3(c) Instruction No.19, of 30 AUG 1946, but are not considered to be *red* and *blue* for *National Markings*, only ancillary paint colours.) However, the 1942 wartime colours had previously been identified as K3/196 *Dull Red* and K3/197 *Dull Blue*; a listing of RAAF K3 colours up to K3/324 is provided by P Malone & G Byk, *Understanding RAAF Aircraft Colours*, Red Roo, Melbourne, 1996, pp.38-9.

⁹ AEIG Part 2, Instruction No.9, Sect 1, Sheet 5, App D of 31 MAY 1951, provides the National Marking K3/ identification numbers, the colour names, and the BS381C equivalents. *Bright Red* K3/346 was similar to the wartime K3/169.

¹⁰ *Bright Red* was *Post Office Red* BS381C-538, and later became *Cherry*. Lucas, p.88. These red and blue hues were maintained by the RAAF in National Markings, becoming *Post Office Red* (AS K185-538) and *Oxford Blue* (AS K185-105) in 1975; DEF(AUST)572 '*Insignia (Defence Aircraft)*', MAR 1975, A/L 1 JUL 1977, Fig.1. In 2011, these same colours are defined in the AAP.7021.004-1(AM1) as Australian Standard (AS) R15 *Crimson*, and AS B13 *Navy Blue*; AAP.7021.004-1(AM1) *Aircraft Finishing Schemes, Material and Processes*, Sect 2, Chap 1, Ann G diagram p.1G-1, dated 4 JUL 2011 - this authority lists the following equivalents standards for our roundel colours: AS R15 *Crimson*, BS381C-538 *Cherry Red*, FS595-11136; AS B13 *Navy Blue*, BS381C-105 *Oxford Blue*, FS595-15048.

¹¹ Other K3/ colours introduced in JUL 1948 were K3/347 *Orange* and *Royal Blue*, K3/348, for brush-painting insignias and lettering; RAAFHQ File TS1(D) note of action 9/1/1539(30A) of 30 JUL 1948.

¹² W Green & J Fricker, *The Air Forces of the World*, Macdonald, London, 1958, p.22. This 1948 total of 3000 comprised 76 Boomerangs, 307 Kittyhawks, 164 Mosquitoes, 199 Mustangs, 399 Spitfires, 300 Beaufighters, 329 Beauforts, 27 Hudsons, 207 Liberators, 32 Mitchells, 228 Vengeances, 52 Venturas, 52 Catalinas, 12 Kingfishers, 12 Mariners, 450 Ansons, 270 Oxfords, 195 Tiger Moths, and 380 Wirraways. E/E.88 cards provided different classes of storage at the CMUs and ADs.

¹³ NAA CRS A705 AMSE file "Procedure for the Disposal of Surplus RAAF Aircraft - CDC Dept to Civil Aviation", 73/21/1050 (21A), 43/1/922 of 6 DEC 1944, Summary of CDC Conference 27 NOV 1944: para.7(i) "The DCA was to consider all types of aircraft available for disposal and to inform the CDC officially whether such types would be eligible for a certificate of airworthiness."

¹⁴ NAA CRS A705 73/21/1050 (M.1), 9/50/26 of 30 AUG 1944. CDC was "to dispose of or arrange for the disposal of all property of the Commonwealth acquired or used in connection with the defence of the Commonwealth which is no longer required."

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- ¹⁵ NAA CRS A705 73/21/1050 (64A) of 12 SEP 1945.
- ¹⁶ CMU Tamworth Unit History A.50, 31 JAN 1945.
- ¹⁷ *Units of the RAAF, A Concise History, Vol 7 Maintenance Units*, AGPS Canberra, 1995, p.20.
- ¹⁸ NAA A705 231/9/2028, Establishment Table M.204, of 14 FEB 1946. For Oakey CMU formed in FEB 1946 from 6AD had the following aircraft in store: 70 Boomerangs, 236 Kittyhawks, 266 Spitfires, and 50 Mosquitoes, total of 622 aircraft.
- ¹⁹ NAA A705 231/9/2029, Establishment Table M.308, of 27 MAR 1946, listed the following stored aircraft: 83 Beauforts, 25 Boomerangs, 120 Liberators, 8 Lodestars, 10 Norsemen, 3 Venturas, with the 188 Wirraways was a total of 437.
- ²⁰ Of the 300 Beaufighters earlier cited in storage in 1948 (which included both UK and Australian-made aircraft), most of these were at 5AD/CMU Wagga and 1AD Laverton, while about 20 others remained in service for target towing, making total holdings 320 Beaufighters. Of this total: 270 were disposed by 1949 under AIR/1606 and AIR/1738, and about 50 from various disposals from Tocumwal over 1953-57.
- ²¹ J Forsyth, *The D.H.82A Tiger Moth in Australia*, Skyline, Melbourne, 1995, p.216.
- ²² *CDC Aircraft Disposal Handbook for FEB 1945 Tender*, NAA CRS A705 73/21/1050; NAA P2571 12F (1945); NAA P2571 15 (1946).
- ²³ By **MAR 1948**, the status was: 500 aircraft disposed by DAP, another 154 in the following month; 553 had been stripped by DAP awaiting sale by CDC; at least 1000 more awaiting initial action by RAAF. Air Board Agendum 8628 23 MAR 1948, 9/86/197 (47A).
- By **SEP 1949**: 2499 aircraft had been handed over to DAP. Dept of Air letter to Director Supply 9/1/1866 of 27 SEP 1949, A705 9/86/197 (68A).
- ²⁴ As noted in the C-47 Dakota instalment: Dept of Aircraft Production (Beaufort Division), which produced the DAP Beaufighter Mk.21, in NOV 1946 became Government Aircraft Factories (GAF), and the previous DAP (Maintenance Division) then became Division of Aircraft Production (the 'new' DAP) within Dept of Supply. This 'DAP' had worked with CDC on aircraft storage and disposals, but by 1948 ceded this role to the Disposals Division (DSD); DAP then concentrated on aircraft maintenance, with a main facility at Parafield (which in turn in 1960 became Airframe Repair Workshops).
- ²⁵ A20-365 E/E.88 for DEC 1949 is marked as "handed over to DAP for disposal in accordance with CDC Certificate of Write-Off"; A20-260 card also in DEC 1949 refers to the use of the "CDC Certificate of Write-Off A.D.1".
- ²⁶ E/E.88 aircraft status card A20-285, stamped 11 JUL 1949 IAW renaming of Organisation Memo 37/49.
- ²⁷ "Closure of Air Base Today", in *Canberra Times*, Canberra 14 OCT 1960, p.12 states: "1AD Detachment B was formed on 26 JUN 1950". Some E/E.88s are stamped "11 JUL 1949 renamed 1AD Det B"; other E/E.88s refer to 1AD Det B Uranquinty until late 1951.
- ²⁸ Forsyth, p.203.
- ²⁹ J Hopton, *Pots, Pans and Meteors*, Clyde North Preservation Group, Melbourne, 1994.
- ³⁰ RAAF HQ DTS SIG/34, signal T.20/PGM, of 1 MAY 1944.
- ³¹ I Baker, *Aviation History Colouring Book*, self-published, Queenscliff VIC, No.24 (1995) p.4.
- ³² RAAF HQ DTS SIG/71, signal T.1219/PGM, of 13 NOV 1945, file 1/501/329 Pt II (51A).
- ³³ RAAF HQ AGI 3(C)1 Issue 2 of 3 OCT 1946 superseded the Issue 1 of 26 MAY 1944, and enclosed Diagrams A5524 Sheets 1 to 4 with roundel, serial number, squadron code and fin marking details. RAAF HQ file 1/501/329.
- ³⁴ RAAF HQ DTS Minute 1/501/329 (29), of 26 NOV 1945. Other issues considered by DTS were that training aircraft were to continue to be "Training Yellow", that target tugs continue to have yellow/black striping, anti-glare panels were required for non-painted aircraft, and "P" in a circle be retained for prototype aircraft, DTS Minute 1/501/329 (31), of 6 DEC 1945.
- ³⁵ RAAF HQ DTS Minute 1/501/329 (33), of 19 MAR 1946.
- ³⁶ E/E.88 aircraft status card for A19-126, 15 JUN 1944.
- ³⁷ Baker, No.79 (2013) p.15.
- ³⁸ N Parnell, *Whispering Death*, Reed, Sydney, 1980, p.74.
- ³⁹ D Muir, *Southern Cross Mustangs*, Red Roo, Melbourne, 2009, pp.272-281, 361-369.
- ⁴⁰ 2AD Unit History A.50, 26 JAN 1956.
- ⁴¹ E/E.88 aircraft status card for A8-291.
- ⁴² RAAF HQ DTS SIG/96 of 14 JAN 1948, para (7) 'Target Towing Aircraft'.
- ⁴³ RAAF HQ DTS AGI 3(c)1, Appendix B (v) in 1946 had defined the undersurface TT striping: "excepting that the under surface of the tailplane is to be black". RAF AMO A.413 of 15 MAY 1947 para.11 changed this to: "The under surface of the tailplane, excluding the elevators, is to be *Night*". This was copied in RAAF DTS SIG/96 of 14 JAN 1948 para (7).
- ⁴⁴ 'The Australian Industry', in *Flight*, 26 AUG 1955, p.327.
- ⁴⁵ NAA CRS A705 file 9/86/296 (73A), Air Board Agendum 8628/48 Supplement 2, AMSE to Sec Air Board, of 7 FEB 1951, para 9.
- ⁴⁶ A8-186 (I/A No.8) survives at Camden Museum of Aviation. In addition, Beaufighter I/A No.3 A19-43 survived through CDC disposal in 1947, to be acquired eventually by Moorabbin's AARG in 1971, and transferred in 1988 for restoration at the USAF Museum at Wright-Patterson AFB in Dayton.
- ⁴⁷ This 223 total comprised 222 DAP Mk.21 aircraft, plus imported Beaufighter A19-28, which had been in storage at Point Cook.
- ⁴⁸ These early disposals of basically brand new equipment (aircraft often delivered from the factory in 1945) are typically recorded by a stamp stating 1946 at 1AD store, and offered for disposal by AIR/1738; 22 MAY 1946 authorised for write-off and RAAF spares recovery; 19 MAY 1948 passed to DAP for scrapping to begin; 8 AUG 1949 action completed by '**DAP DSD**' (note

that DAP is crossed out and replaced by DSD), under authority DSD 34963. No details of individual dates of sale of the scrap, or customer, are provided.

⁴⁹ NAA CRS A705 9/86/197 (54A), DOSD Minute of 13 SEP 1948.

⁵⁰ E/E.88 aircraft status cards for A8 Beaufighters.

⁵¹ The timeline for Disposal List 489 with Dept of Defence Production (DDP) was: 7 JUL 1952 passed to DDP (at the request of Dept of Air for spares recovery due to insufficient RAAF manpower); 23 SEP 1953 DDP was requested to offer these aircraft for disposal; 17 JUN 1954 DDP (through its division DAP) issued the DAP Disposal List 489; aircraft sold to R H Grant as scrap. E/E.88 status cards, and file A705 9/86/197.

⁵² Hopton, p.30.

⁵³ Hopton, p.35.

⁵⁴ T5049 also reportedly displayed as 'KV912', which was a Beaufighter Mk.VI serial.

<http://www.goodall.com.au/warbirds-directory-v6/bristol.pdf>

⁵⁵ From Geoff Goodall's site on the recovery of Beaufighters from the Kimberleys:

<http://www.goodall.com.au/australian-aviation/kimberley-war-relics/kimberleyrelics.html>

⁵⁶ Buckmaster, *CAC Ceres*, p.viii.

⁵⁷ RAAF HQ Aircraft General Instruction (AGI) C.11, 22 SEP 1939, introduced Camouflage Scheme No.1 to the Wirraway, and blue/red 'Type-B' roundels to the fuselage and upper surfaces.

⁵⁸ RAAF HQ AGI C.11 *Issue 3* of 3 OCT 1940 para 1(a)(ii). No copies of AGI C.11 *Issue 2* (of c JUN/JUL 1940) appear to survive. The definitions of green/brown camouflage are researched in Ian Baker's series. Baker, No.7 (1995) pp.3-4. Baker No.67 (2009) pp.18-19, refines this and refers to these colours as '*Camouflage Green*' and '*Camouflage Brown*'. Other colours sometimes referenced are *Dark Green* and *RAF Dark Earth*. Baker, No.27 (1996) p.12 provides SFTS markings over 1940-41 on A20-26, with *Aluminium* undersides.

⁵⁹ RAAF HQ Directorate of Technical Services (DTS) 368/41, undated c mid-1941, file 150/4/852 (53A), appears to be the first mention of these RAAF camouflage colours to replace *RAF Dark Green* and *Dark Earth*.

⁶⁰ RAAF HQ AGI C.11 *Issue 4* of 31 AUG 1942 para 1(a)(ii); also Baker, No.8 (1995) p.3. Furthermore, in 1941 other colour terminology was standardised: *Camouflage Green* became K3/177 *Foliage Green* (BALM colour S13983), and *Camouflage Brown* became K3/178 *Earth Brown* (BALM 13982), Baker, No.68 (2009) p.8.

⁶¹ AGI Pt 3 Section (c) Instruction No.1 of 26 MAY 1944, Appendix A; Baker, No.77 (2013) p.6.

⁶² RAAF HQ T.S.1 Minute 12 to DTS, file 9/1/1595 '*Aircraft Markings - General Technical File, 1945-50*', para.5, of 4 AUG 1947: "All over yellow finish was introduced during the heavy pressure war training to eliminate as far as possible collisions in the air and on the ground. Now that this high pressure period is past the deletion of all over yellow finish is recommended." RAAF HQ file 9/1/1755, D Ops memo '*Standard Finishes and Markings of Aircraft - Policy*', to DCAS, of 30 SEP 1947, para.2(vii): "If of wood and fabric construction to be painted with a silver finish; if of metal skin construction to be painted with aluminium and with the smoothest possible finish. In addition, a band of yellow is to be painted round the fuselage and each mainplane."

⁶³ RAAF HQ file 9/1/1595, SIG/96 of 14 JAN 1948, para.D(6); Baker, No.82 (2014) p.4.

⁶⁴ RAAF DTS policy SIG/96 14 JAN 1948 of 14 JAN 1948, paras.D(2), (3) and (6).

⁶⁵ In G Pentland, *Wirraway & Boomerang Markings*, Kookaburra, Melbourne, 1970, p.12, the bands widths were given as: '36" on the fuselage, and 40" wide on the wings (44" outboard of the centre-section)', however photographic evidence shows a standard 36" band. See, for instance, the 1957 picture of the water recovery of A20-718. Undoubtedly, marking of aircraft varied.

⁶⁶ Buckmaster, *CAC Ceres*, p.226.

⁶⁷ Parnell & Boughton, p.183.

⁶⁸ RAAF HQ DTS policy 9/1/1755 (5A) of 30 SEP 1947, para.2(vii)(c).

⁶⁹ NAA CRS A705 40/4/537 (11A), of OCT 1955.

⁷⁰ RAAF HQ *Technical Order Target Towing Instruction No.2*, of 8 JAN 1943, NAA CRS A705 150/4/3569, folios 2A and 22A.

⁷¹ Buckmaster '*Design Bureau*', Target Towing Wirraways, 27 SEP 2012 website: Eventually in 1944 it was determined that Battle target towing aircraft should be replaced with the Vengeance fitted with 'Type B' winch at OTUs and Wirraways fitted with the 'Type D' at gunnery schools, which would enable the Battle to be declared obsolete.

http://dbdesignbureau.buckmasterfamily.id.au/tech_info_cac_wirraway_tt.htm

⁷² E/E.88 aircraft status cards A20 for Wirraways.

⁷³ 1APU file A/6/20 of NOV 1944, in NAA CRS A705 9/15/490 (38A).

⁷⁴ Dept of Air Minute of 20 JAN 45, NAA CRS A705 9/15/490 (40A); and Minute 30 of 4 OCT 1944.

⁷⁵ RAAF HQ signal TJ.408 of 17 OCT 1944, NAA CRS A705 9/15/490 (33A).

⁷⁶ RAAF HQ signal QT.950 of 11 MAY 1945, NAA CRS A705 9/15/490 (45A).

⁷⁷ Buckmaster '*Design Bureau*' website:

http://dbdesignbureau.buckmasterfamily.id.au/tech_info_cac_wirraway_tt.htm

⁷⁸ NAA CRS A705 9/15/490 (48A) of 14 SEP 1954.

⁷⁹ G Pentland, *Wirraway & Boomerang Markings*, p.11, gives 20" height. CAC Drawing 16-10002 of 7 JUL 1944 gives 21" height.

⁸⁰ N Parnell & T Boughton, *Flypast – A Record of Aviation in Australia*, AGPS, Canberra, 1988, p.288, records that on 27 APR 1959 A20-686 flew from Sydney to Tocumwal for storage as the last flying Wirraway; but the E/E.88 for A20-686 records this flight as

being on 6 FEB 1959. In contrast, the 25SQN Unit History notes one Wirraway (A20-688) flying through MAR and APR 1959, being in Category 'B' reserve storage. Subsequently, A20-688 remained over in the West at the Bulls Creek museum, and is currently incorrectly marked as "A20-668".

⁸¹ 22SQN Unit History A.50, MAR 1958-JAN 1959.

⁸² 25SQN Unit History A.50, JAN-FEB 1959.

⁸³ *Units of the RAAF, A Concise History, Vol 8 Training Units*, AGPS Canberra, 1995. **Engineering School** was formed at Ascot Vale on 1 MAR 1940, and by 1941 had become 1ES; 1ES reformed at Wagga as **Ground Training School (GTS)** 4 MAR 1946 (sometimes initially referred to as GTU); renamed as **RAAF Technical College (RTC)** 1 MAY 1950; renamed **RAAF School of Technical Training (RSTT)** on 1 DEC 1952. RTC Det 'A' was formed at Rathmines in 1950, which became part of OTS.

⁸⁴ E/E.88 aircraft status cards for A20 Wirraways.

⁸⁵ 723SQN: <http://www.navy.gov.au/history/squadron-histories/723-squadron-history>

724SQN: <http://www.navy.gov.au/history/squadron-histories/724-squadron-history>

725SQN: <http://www.navy.gov.au/history/squadron-histories/725-squadron-history>

⁸⁶ The CA-20 designation applied to a final wartime Wirraway order of 1943-45 which was cancelled: B Hill, *Wirraway to Hornet, A History of the CAC*, Southern Cross, Melbourne, 1998, p.241. Also K Isaacs, 'CAC Classics' in *Aircraft*, Melbourne, OCT 1976, p.35: "CA-10 and CA-20 contracts were cancelled".

⁸⁷ These included A20-18, 73, 190, 412, 567 and 579, which were sold to Wilmor Aviation on 15 JUL 1954.

⁸⁸ See *adf-serials* notes by J Chartier on RAN code numbers:

<http://www.adf-messageboard.com.au/invboard/index.php?showtopic=2482>

⁸⁹ 1956 RANAMO gives "half size" serial fonts as 4" x 2.5" (0.6" stroke); codes 10" x 7" (1.25" stroke), RANAMO General/A8 1956 for Vampire, see Vampire article in Spring 2016 Telegraph:

<http://www.adf-serials.com.au/newsletter/ADF%20Telegraph%202017%20Spring%20.pdf>

⁹⁰ Some details on Wilmor Aviation are provided in Geoff Goodall's site:

<http://www.goodall.com.au/australian-aviation/dh98/civilmosquito.html>

⁹¹ T Boughton & N Parnell, 'RAN FAA Aircraft' in *AHSA Journal*, MAR-APR 1974, p.5; R Gillett, *Wings Across the Sea*, Aerospace Publications, Canberra, 1998, p.134.

⁹² Green & Fricker, p.22.

⁹³ E/E.88 A20 status cards are stamped: "17 AUG 1948 Required for post-war use, to be stored Category 'B', authority SAS 300"; and then "24 JUL 1951 Not required post-war use, authority SAS 579".

⁹⁴ NAA CRS A705 file 9/86/296 (17A), Dept of Air DOSD Minute of 18 AUG 1954.

⁹⁵ J Forsyth, *The D.H.82A Tiger Moth in Australia*, Skyline, Melbourne, 1995, p.xxxiv.

⁹⁶ NAA CRS A705 file 9/86/296 (4A) Form 1 for AIR 7306, draft 8 FEB 1954, released 12 MAR 1954.

⁹⁷ NAA CRS A705 file 9/86/296 (5A) letter from Super Spread P/L, 4 MAR 1954.

⁹⁸ E/E.88 aircraft status cards for A20 Wirraways.

⁹⁹ NAA CRS A705 file 9/86/296 (9A) Sales Advice of AIR 7306 to Wilmor Aviation, 15 JUL 1954.

¹⁰⁰ NAA CRS A705 file 9/86/296 folios 36A to 40A, 1956/57.

¹⁰¹ NAA CRS A705 file 9/86/296 (49A) and (54A) sale prices lowered to £750 each.

¹⁰² NAA CRS A705 file 9/86/296 (65A) Sales Advice for PCK List 323, 11 JUL 1958.

¹⁰³ NAA CRS A705 file 9/86/296 (73A) CAC letter of request, 28 AUG 1958; Sales Advice 9/86/296 (79A) of 7 NOV 1958.

¹⁰⁴ NAA CRS A705 file 9/86/296 (92A) 1AD Det B Tocumwal letter to Dept of Supply, 8 JUL 1959.

¹⁰⁵ NAA CRS A705 file 9/86/296 (83A) TOC disposal list 18/58, 4 DEC 1958.

¹⁰⁶ NAA CRS A705 file 9/86/296 (M.85), DG Org Minute of 20 FEB 1959.

¹⁰⁷ E/E.88 aircraft status cards for A20-664 and A20-704 dated 12 JUN 1959.

¹⁰⁸ NAA CRS A705 file 9/86/296 (95A) TOC disposal list 17/59, 31 JUL 1959.

¹⁰⁹ With 39 aircraft from TOC 17/59, and a further 10 from TOC 18/58, by 1959 Grants had a major presence at Tocumwal, which gave the company the largest scrapping and smelting presence on the aerodrome.

¹¹⁰ Hopton, p.7.

¹¹¹ Hopton, p.9.

¹¹² Buckmaster, *CAC Ceres*, p.225. Also included in his MAR 1960 list is A20-688, which did not pass through Tocumwal to CAC, but remained with 25SQN Pearce, and is now with the museum at Bulls Creek.

¹¹³ E/E.88 aircraft status cards for A20-680 and A20-697 dated 25 JAN 1957.

¹¹⁴ G Goodall, Aviation History Site, *CAC CA-28 Ceres*.

¹¹⁵ Buckmaster, *CAC Ceres*, p.201.

¹¹⁶ Buckmaster, *CAC Ceres*, p.84.

¹¹⁷ Buckmaster, *CAC Ceres*, pp.225-6.

¹¹⁸ Baker, No.67 (2009) pp.18-19, refers to these colours as 'Camouflage Green' and 'Camouflage Brown'. Other colours sometimes referenced are *Dark Green* and *RAF Dark Earth*.

Baker, No.27 (1996) p.12 provides these SFTS markings over 1940-41 on A20-26, with *Aluminium* undersides.

Baker, No.68 (2009) p.8 explains that in 1941 *Camouflage Green* became K3/177 *Foliage Green* (BALM colour S13983), and *Camouflage Brown* became K3/178 *Earth Brown* (BALM 13982).

¹¹⁹ A full list of Wirraway restoration projects, planned or underway, is given in *Warbirds Directory*:

<http://www.goodall.com.au/warbirds-directory-v6/commonwealth-cac.pdf>

¹²⁰ A20-692 and A20-696 released by Disposal Form 1 AIR/7308 of 7 MAY 1954, sold 11 JUN 1954.

End Notes: Getting the RAAF Numbers right in WW2 Part 2 by Gordon R Birkett @2017

¹²¹ Basically through the December 1941 discussion between the UK and the USA, for the "Germany first" campaign, it was decided that supply of aircraft ex UK and USA be sufficiently dealt with to replace actual established losses (For the USAAF, it was Hawaii Air Defence and Pacific Supply Route Island, and Australia) to stop and later hold the Japanese in the short term until production increased to a level whereupon all theatres could be supplied on a prioritised basis. In short, hold and only carry out limited offensive operations and marshal resources.

¹²² 42 aircraft of the first 48 aircraft shipment were diverted due to the Desert Air Force need to stem Rommel's Afrika Korps campaign then. These remaining six arrived on the SS Sterling Castle on the 25th August 1942.

¹²³ **Rec 14/08/42 1AD ex UK, under the code name "Kingdom" (Before Capstan was used).** Completed for delivery 28/08/42. Issued RAF Fighter Training Wing Richmond 04/09/42. In Serv 452Sqn RAAF 26/09/42. Coded "K". Accident 1100hrs 21/02/43 when engine cut out at 28000 feet and would not start again. Pilot endeavoured to force land but misjudged his approach at 600 feet and landed in trees on boundary of Strauss strip at right angle. Pilot, Sgt P.D. Tully Serv# 404998 slightly injured with abrasions and shock. Rec 7RSU ex 452Sqn RAAF 24/02/43. AMSE Approval to W/O 26/03/43. Photo held

¹²⁴ *6 earlier Ex NEIAF Refugee Cargo Brewster Buffaloes were modified as PRU Aircraft for 1PRU. A further two ex USAAF Buffaloes that were abandoned at Williamstown were used by the CGS.*

¹²⁵ A16-26 Rec 2AD ex USA 16/02/40. Issued 1Sqn RAAF 06/05/40. Reserve aircraft held by 151MU RAF. Served with 1 Sqn in Malaya. Coded "US-A". Survived and flew last RAAF personnel out of Bandeong Java. Refuelled in flight through by a hose leading from the cabin (where 25x 4 gal fuel cans located) through a forward cabin window to the starboard fuel intake. (departed 2330hrs 5/3/42 F/Lt Emerton, FLt G White & crew) Landed near Trans Australian telegraph at Mardie Cattle Station. Rec 1AD ex 1Sqn RAAF (Flown in combat from Khota Bharu, 08/12/41, to NEI 07/03/42) Veteran 11/03/42 for overhaul as result of air action damage in Malaya and bomb burst damage on ground at Malang NEI. Rec 7Sqn RAAF 11/04/42. Rec 1AD ex 7Sqn RAAF 18/06/42. Rec 1OTU 03/08/42 without Bomb Racks. Damaged in 1OTU Transport operations in PNG 25/08/42 with Sgt Robert Howells Dalls Serv# 416178 wounded by enemy action between Keita and Buka area. 14/09/42 fitted with Modified Boulton Paul Turret. Used in Port Moresby by 1OTU 23/11/42 to 15/01/43 operationally (15 Hudsons and crews in Transport Role). Accident 20/12/42 when in tropical thunder storm, spun down 1000 feet and pulled out and landed at Cooktown Civil Aerodrome. Captain was F/Lt Parry. Damage after losing door. Repaired by 12RSU. Rec 1OTU ex 12RSU Port Moresby 22/01/43 after repairs. Rec 7AD ex 1OTU 21/05/43. Allocated 1OTU 29/10/43. Allocated and issued to 7CRD for conversion 9-10/08/44. Converted to components 07/08/44.