PROFILE PUBLICATIONS

The Commonwealth Wirraway

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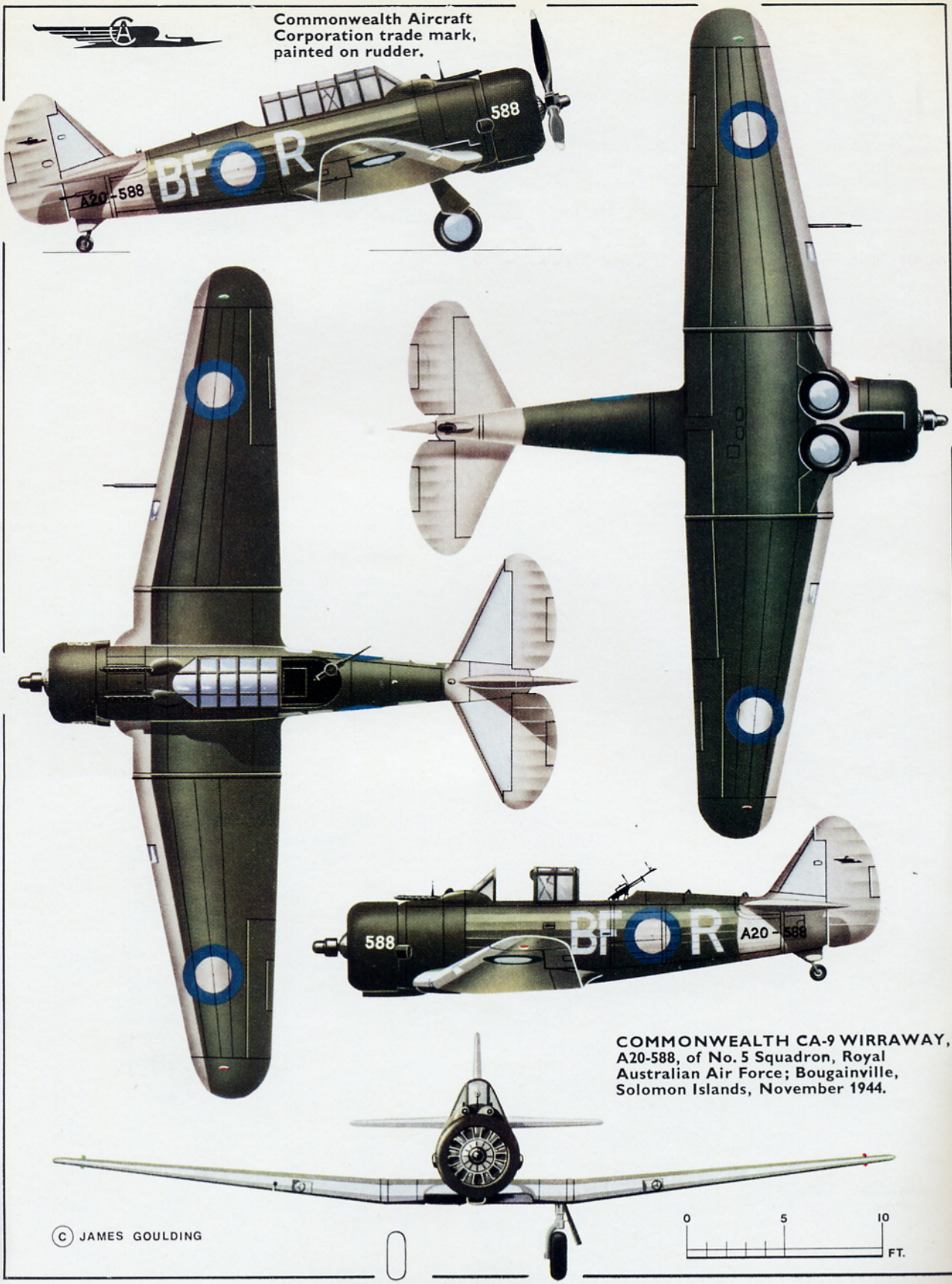
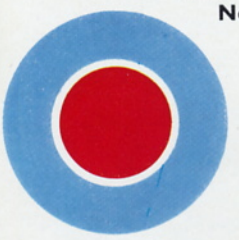


COMMONWEALTH CA-9 WIRRAWAY, A20-588, of No. 5 Squadron, Royal Australian Air Force; Bougainville, Solomon Islands, November 1944.

The first Wirraway, A20-3, April 1939.

R.A.A.F. roundel in use until 1942, then out of use until revived after VJ-Day.

Commonwealth CA-8 Wirraway, A20-367; R.A.A.F., late 1941. Note non-standard roundel.

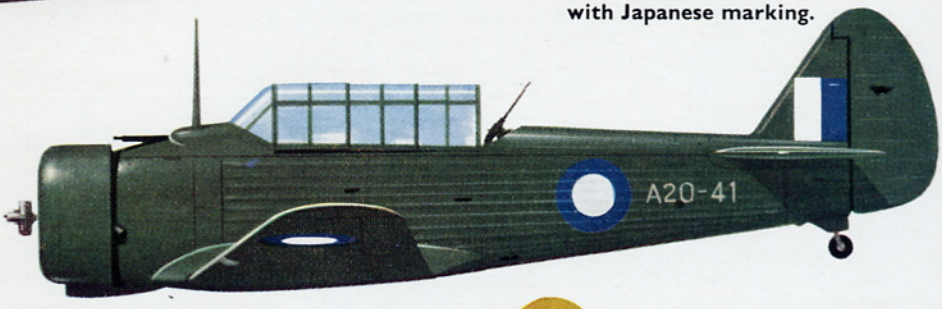


Non-standard R.A.A.F. roundel.

CA-9 Wirraway, A20-483; R.A.A.F., 1943.

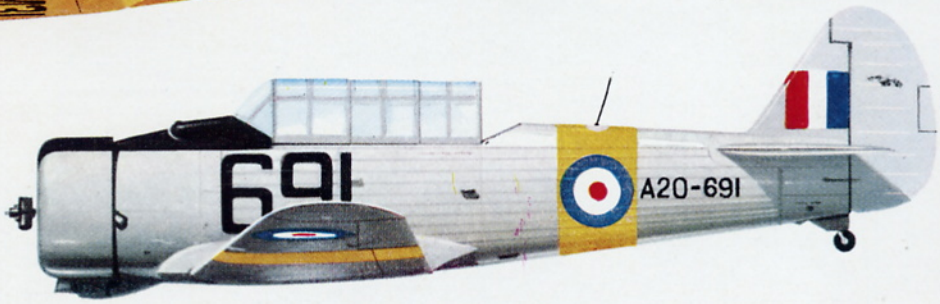
R.A.A.F. roundel used 1942-45 deleting red centre to avoid confusion with Japanese marking.

CA-3 Wirraway, A20-41; R.A.A.F., May 1943.



CA-8 Wirraway, A20-431; No. 2 O.T.U., R.A.A.F., June 1945.

CA-16 Wirraway, A20-691; R.A.A.F., October 1956.



Photographed while executing a slow roll, A20-3 was the first Wirraway built at Fisherman's Bend. The aircraft remained active for several years and was issued to the Australian War Memorial on 8th March, 1950. (Photo: Wide World Photos.)

The Commonwealth Wirraway

Compiled by Profile Publications Research Staff

It is no exaggeration to say that the Wirraway* is the most famous of all Australian aircraft, for it was this aptly-named machine which in 1936 saw the foundation of the Australian aircraft industry. Designated A20 by the Royal Australian Air Force, the type was built as a trainer, pressed into front-line service in Malaya and the South West Pacific as a stop-gap fighter, and achieved immortality in January 1942 when eight Wirraways from Rabaul engaged a force of more than 100 Japanese aircraft. Although completely outclassed by the enemy types it was called on to oppose, the Wirraway remained in front-line service for many months, and on one occasion carved itself a humble place in history with the destruction by an incredulous Australian pilot of an infinitely superior Mitsubishi Zero-Sen.

The story of the Wirraway began in 1936, when it was announced that the R.A.A.F. was to be developed along lines suggested by the Salmond Report. This document was the result of a thorough evaluation of the rôle and future policy of the R.A.A.F. undertaken by Marshal of the Royal Air Force Sir John Salmond in 1928. The Depression had prevented earlier implementation of the report, but the time had arrived when action was essential if Australia wished to have an Air Force capable of defending the nation against outside aggression. This involved a three-year initial stage in which five new squadrons were to be formed and new airfields constructed throughout the Commonwealth of Australia.

The most significant event of the time, in that its repercussions affected the R.A.A.F. expansion programme, was the announcement in May 1935 that the Royal Air Force hoped for an increase in first-line strength to 1,500 aircraft by 1937. The main source of equipment for the R.A.A.F. up to this time had been the British aircraft industry; an increase of 50 per cent. in R.A.F. strength meant that Australia's main source of aircraft would be under an increasing strain in fulfilling a dual commitment.

As a result of a foreign tour undertaken in 1935, Mr. Essington Lewis, Chief General Manager of the Broken Hill Proprietary Co. Ltd., became concerned about the necessity of establishing an Australian aircraft industry. At his instigation, the Government convened a special conference at which plans were made to form a syndicate responsible for establishing factories to make aircraft and engines.

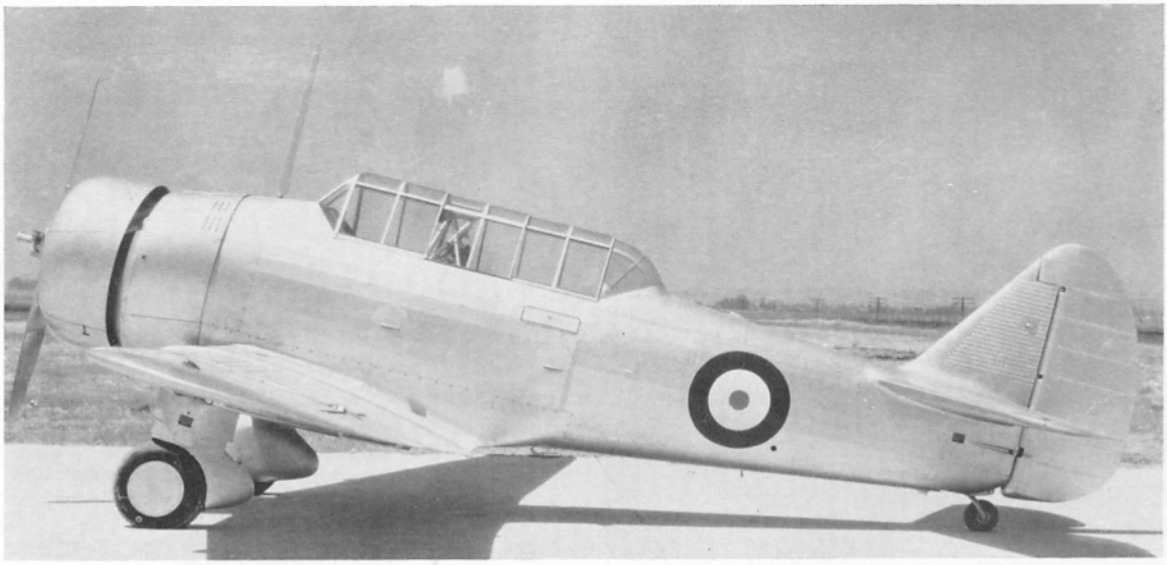
In February 1936, the syndicate sent a mission of three qualified men (W/Cdr. Wackett, and Sqdn. Ldrs. Harrison and Murphy) to Britain, Europe and the U.S.A. to investigate aircraft production. The mission recommended the erection of factories to produce, in the first instance, at least 40 general purpose aircraft. The basic features sought in the general purpose aircraft were those of a low-wing, stressed skin, all-metal monoplane having a retractable undercarriage and a variable-pitch propeller; none of these features was to be found on aircraft serving at that time with the R.A.A.F.

It is important to remember, in the light of subsequent misunderstandings concerning the capabilities of the aircraft, that the Australian Government's chief objective was the establishment of an aircraft industry. A modern high-performance aircraft, such as the Spitfire, was considered too much of a liability. Therefore a good, reliable general purpose aircraft was chosen with the goal of producing a high-performance aircraft within five years.

On 17th October 1936, the Commonwealth Aircraft Corporation was incorporated with an authorised capital of £1,000,000, the shareholders being six leading Australian companies. Work on the factory buildings began in April 1937 at Fisherman's Bend, Melbourne, ready for the production of both airframes and engines.

No aircraft in R.A.A.F. service seemed desirable for production in Australia, and an investigation of

* *An aboriginal word meaning "Challenge."*



Shipped to Australia in mid-1937, this aircraft was designated NA-32 by North American and NA-16-1A by the Australians. The machine was handed over to the R.A.A.F. on 2nd February 1938 and later given the serial A20-1. (Photo: North American)

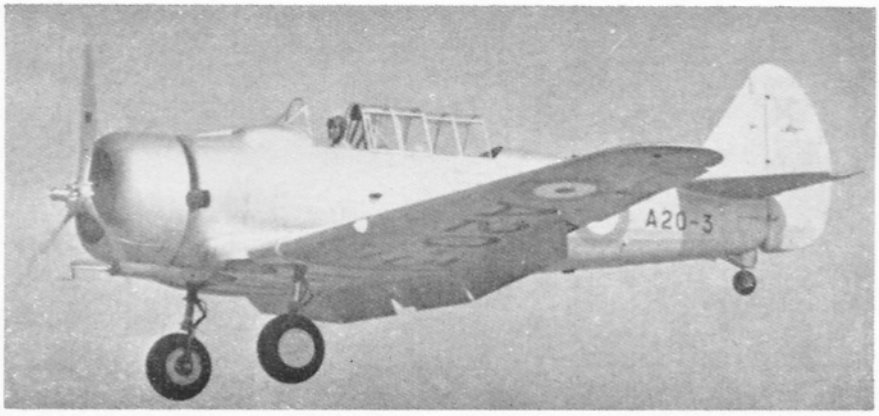
European and U.S. aircraft was undertaken to see if any type embodied the features recommended by the mission. The Commonwealth Aircraft Corporation decided that the type most closely resembling the "ideal" was the North American NA-33 powered by the single-row Pratt & Whitney Wasp engine. The chief reason for this choice was that both the airframe and engine were comparatively simple and presented no great construction problem. The choice of an American design drew some protests in Parliament about keeping aircraft construction "within the Empire", but the idea was approved and planning began for production of the NA-33, with modifications, to be known as the Wirraway.

In March 1938, a three-year plan was announced to raise the first-line strength of the R.A.A.F. to 12 squadrons incorporating 198 aircraft (raised to 212 aircraft as a result of the Munich crisis). At this time, there was considerable dissension regarding the efficiency and potential of the R.A.A.F. The Australian cabinet decided to obtain an independent report from the best expert available. After exchanging opinions with the Air Ministry in London, the government invited Marshal of the Royal Air Force Sir Edward Ellington to make such a report. The report was begun in June 1938 and finished in about one month. During this time, Ellington had visited Commonwealth's factory at Fisherman's Bend and inspected the Wirraway which was then under construction. "I understand", he reported, "that it is intended to use it in replacement of the [Hawker] Demon as a fighter-bomber. I consider that the Wirraway should be regarded as a temporary expedient . . . it can only be regarded as an advanced training aircraft." He suggested that the choice of a new type should be delayed until a suitable aircraft had been tested in Britain.

At the end of June, while Ellington was still engaged in his investigations and before he had made known his poor opinion of the Wirraway, the Government

The second machine imported from the U.S.A. was the NA-33 (known to the Australians as the NA-16-2K): it was taken on charge by the R.A.A.F. on 8th November 1938. (Photo: North American)

Flaps and undercarriage down, A20-3 comes in to land.

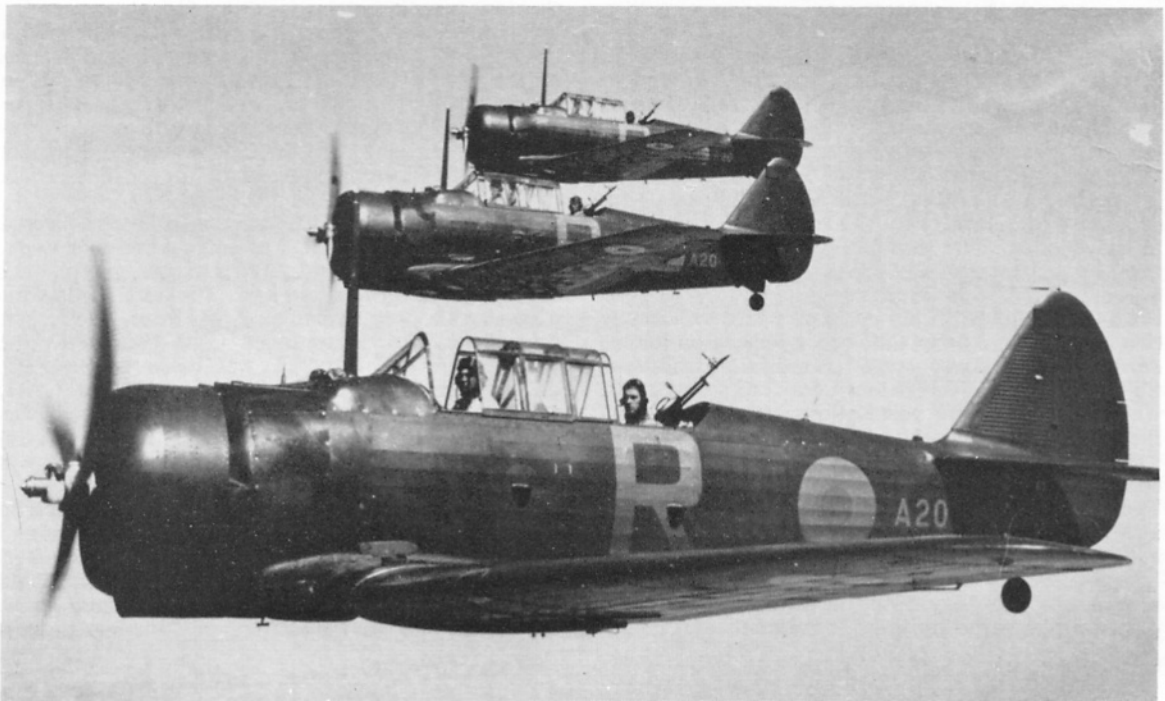


announced that 40 of these aircraft had been ordered on definite contract at "a very satisfactory price" in relation to that for imported machines of a similar type. Between 60 and 70 additional aircraft would be ordered later. (During 1937, Commonwealth had been told to prepare for an initial order of 40 if the type looked like being satisfactory. The June 1938 contract was confirmation of this intention.)

Ellington's report was adopted by the Government much to the indignation of the Air Board. The report was highly critical of the Air Board and the Chief of Air Staff in particular. The Air Board warmly defended the Wirraway as the best aircraft available in its class. The Board could not believe that Ellington intended that the Demon should be used on operations while the Wirraway was regarded as a trainer only (which was what, in effect, he appeared to say). His words "temporary expedient" were misleading; every type could be so regarded until a better aircraft became available—and a better aircraft in its class than the Wirraway was not even in sight. In this way, with considerable bitterness, the details of the Ellington report were argued.

Following the decision to produce the NA-33, licences were obtained to build the airframe and the Wasp engine. Whilst the C.A.C. buildings were being erected at Fishermen's Bend, two aircraft were shipped from America for evaluation and the first, a fixed undercarriage NA-16 which, overseas, became known as the Yale, arrived in mid-1937 and was transferred from C.A.C. to the R.A.A.F. on 2nd February, 1938. For some time these two aircraft remained un-numbered, but later became A20-1 and A20-2, respectively. In June 1940 the two aircraft were transferred to the Engineering School as instructional airframes. Various modifications were made to the NA-33, the single wing gun being replaced in the Wirraway by twin synchronized guns in blast troughs in the upper forward fuselage, and a single gun on a swivelling mount in the rear cockpit. Camera and radio installations were introduced, and the wing and tail units were redesigned and strengthened for dive-bombing. The first Wirraway, A20-3, was test flown by Flt. Lt. H. "Boss" Walker at Fishermen's Bend on 27th March, 1939; and the first three R.A.A.F. Wirraways were accepted in July, 1939.

A trio of Wirraways of No. 21 Squadron, R.A.A.F., A20-21 *in the foreground; a camera-gun is mounted above the port wing of this aircraft.* (Photo: Australian Official via M. Kerr)



Another view of A20-21 *seen here over Melbourne during 1940. Details of the fixed forward-firing guns and the flexible gun are clearly visible.* (Photo: Australian War Memorial)

INTO SERVICE

In June 1939, the Chief of Air Staff recommended expansion of the R.A.A.F. to 32 squadrons—a first-line strength of 360 aircraft with the necessary ancillary units. This force was to include nine general purpose, two fighter and three army co-operation squadrons. The recommended general purpose and intermediate training aircraft was the Wirraway, with a planned production life of five years. The 32 squadron plan was deferred and when World War II began, the R.A.A.F. was striving to complete a 19 squadron plan by mid-1941.

As already stated the first Wirraways had been delivered in July 1939. The worsening situation in Europe and the likelihood of war induced the Defence Committee to declare a State of Emergency on 25th August. Instructions issued in conjunction with this included ordering a flight of four Wirraways to Darwin on or about 1st September, or if the situation demanded it, a flight of four Demons earlier than this in place of the Wirraways. On 28th August the R.A.A.F. possessed 246 aircraft, including seven Wirraways. On 1st September, Germany invaded Poland and Great Britain declared war on Germany two days later, closely followed by the Dominions. Australia's "full war stage" went into operation; for the Air Force this meant complete mobilisation with all squadrons at war stations and on short call for combat operations.

During the first year of the war, the Wirraway was consolidating its position within the R.A.A.F. The squadrons were working up to peak efficiency and training units were finding the type a useful addition to their ranks, although a temporary shortage of spares during the summer hampered the training programme. In May 1940, the British Government placed an embargo on aircraft materials and equipment. The Australian War Cabinet, however, approved the procurement of supplies sufficient for the manufacture of 811 Wirraway's, although Commonwealth Aircraft's orders only totalled 232. Experience was proving that Wirraway airframes could be produced more quickly than Wasp engines and that potential production was greatly in excess of R.A.A.F. needs. Therefore, Britain offered to take all aircraft that could be produced in excess of R.A.A.F. orders, with the provision that any engine shortage would be remedied by British orders for Wasp engines placed in the U.S.A. The result was an order for 245 Wirraways to be delivered to Britain by the end of 1942. (This was increased to 500 in October 1940, with 300 for 1943 delivery.) With the introduction of Lease-Lend these orders were cancelled, although the British Government did in fact finance the procurement of aircraft for use in Australia in the Empire Air Training Scheme.

By the end of 1940 204 Wirraways had been delivered and the production rate was seven aircraft a week. By September, 1941, 45 "Wirras" per month were coming off the production line. The initial orders for 620 aircraft were completed by June, 1942, but limited production continued until 1946 when the 755th Wirraway, A20-757, was delivered. C.A.C. designations for Wirraway orders included CA-1, -3, -5, -7, -8, -9, -10 (a bomber version which was cancelled), -10A (dive bomber), and -16. The designation CA-20 covered the conversion of Wirraways for the Royal Australian Navy.

By the beginning of 1941, reports were reaching Australia of new Japanese combat aircraft; and reviewing the performance of the Wirraway *vis-à-vis* these aircraft, it seemed unlikely that the type would be able to compete with the latest Japanese types. Having regard to the classes of Japanese aircraft

likely to be used to attack Australia, it was considered that the "Wirra" would be able to put up "quite a good show". It was an obsolete type but it had some fighting value.

No. 12 Squadron, based at Darwin, was doing sterling work patrolling convoy routes during the initial period of the war, and during mid-1940 another Wirraway squadron, No. 21, moved to Malaya to bolster the peninsula's defences. Air-Chief Marshal Sir Robert Brooke-Popham, C.-in-C. Far East, described the Wirraways as "quite good machines for attacking ships over short distances" but not equal to the latest Jap aircraft. (Later, in his official report on the Malayan campaign, Brooke-Popham declared that "the Wirraways could only be considered as training aircraft".) No. 21 Squadron reached Singapore in July 1940 with 12 operational aircraft and six in reserve, and moved to Seletar. By the end of November 1941, however, the unit had re-equipped with Brewster Buffalo fighters. The Wirraway did not leave Malaya before the invasion. To help training, five of No. 12 Squadron's most experienced pilots and six aircraft were dispatched to Kluang to form a special advanced flying training unit which received operational status after the invasion. No. 24 Squadron also operated the type, at Rabaul in New Britain, before the outbreak of the Pacific War. All these Wirraways were camouflaged, and at the outbreak of war in the Pacific most of the other units' aircraft were similarly painted.

RABAUL AND MALAYA

On 7th December 1941 the Pacific War opened, the Japanese making a seven-point assault on strategic points throughout the Pacific. The "Wirra" was not immediately involved in the fighting and the allocation of the type on 12th December was as follows:—

First Line

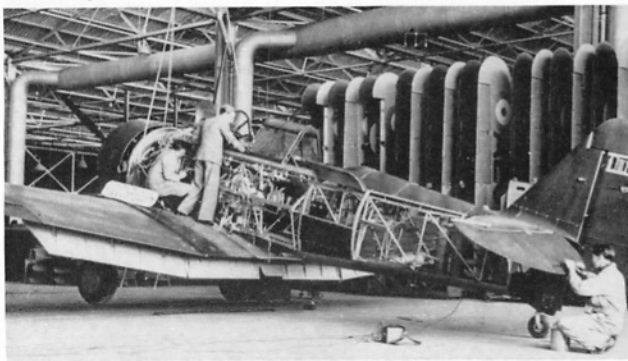
Squadron	*Location*	*Strength*		
No. 4	Canberra	12	aircraft	
No. 5	Laverton	12	,,	
No. 12	Darwin	18	,,	
No. 22	Richmond	17	,,	
No. 23	Archerfield	12	,,	(plus 3 Hudsons)
No. 24	Townsville	12	,,	(plus 4 Hudsons; ordered to Rabaul)
No. 25	Pearce	18	,,	
	TOTAL	101	,,	

Second Line (Reserve: crews not operationally trained)

Unit	*Location*	*Strength*	
No. 2 S.F.T.S.	Wagga	36	aircraft
No. 5 ,,	Uranquinty	36	,,
No. 6 ,,	Deniliquin	36	,,
TOTAL		108	,,

No. 24 Squadron reached Vunakanau airfield, Rabaul, during December 1941. Conditions were primitive and the increase in enemy air activity as reconnaissance aircraft overflew the area made it plain that a Japanese onslought was not far away. In retrospect, the decision to make a stand at Rabaul seems questionable, especially in view of the fact that

A busy scene at the Commonwealth Aircraft Corporation factory at Fisherman's Bend. By December 1940, seven aircraft were being delivered weekly. (Photo: Keystone)

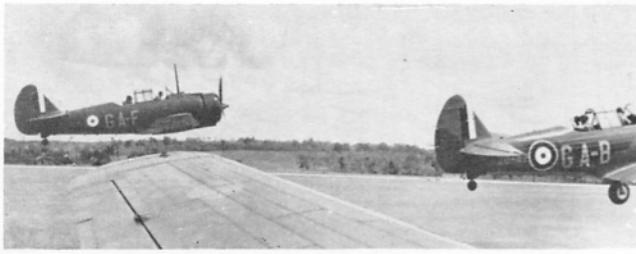


A Wirraway (above) during final assembly, and (below) roll-out. Forty-five Wirraways were being produced every month by September 1941. (British Official photos.)

defence against air bombardment rested on a small number of Wirraways. However, the decision was made and the first significant air attack on Rabaul took place on 4th January 1942, when 22 "Nells" (see *Profile* No. 160) made an attack. Two Wirraways took off, but were unable to make contact before the "Nells" flew off unscathed. On 6th January, Flt. Lt. B. Anderson of No. 24 Squadron became the first R.A.A.F. pilot to engage in air-to-air combat in the South-West Pacific, when his Wirraway intercepted a Kawanishi "Mavis" flying-boat over Rabaul. On the 7th January a formation of about 20 "Nells" raided Rabaul; two Wirraways were

destroyed by bombs and the three machines which managed to get into the air were unable to climb quickly enough to make an interception. Two weeks later, on the 20th, two Wirraways on standing patrol reported the approach of about 100 Japanese aircraft. Six more Wirraways took off to join the patrol aircraft, but one crashed on take-off. Three were quickly shot down by the escorting Zeros (see *Profile* No. 129); the four surviving Wirraways fought on against impossible odds, two of them being severely damaged in crash landings after the vicious 10-minute battle. The following day the strength of No. 24 Squadron stood at just two Wirraways and one Hudson; the unit succeeded in escaping almost intact from New Britain to Australia. By March 1942 the squadron was based at Horn Island, with Wirraways and Hudsons; but the replacement of the Wirraways was considered a priority and No. 24 Squadron returned to Bankstown, New South Wales, ultimately re-equipping with Vultee Vengeance aircraft as a dive-bomber unit.

A small detachment of Wirraways was based at Kahang in Malaya when the invading Japanese began to make significant headway. It was in fact a training unit but due to shortage of aircraft was raised to operational status. The crews of these aircraft were unusual, the pilots being New Zealanders and the observers Australians, and the aircraft were used as makeshift dive-bombers. They were fitted with sirens made from tin soup plates which, when turned into the wind, made an almost deafening scream. On 19th January 1942, four Dutch Glenn Martin bombers and five Wirraways attacked enemy positions and barges on the Maur River in Malaya. The force was escorted by eight Buffaloes from 21/453 Squadron (an amalgamation of Nos. 21 and 453 Squadrons R.A.A.F.). The Martins bombed Japanese headquarters, while the "Wirras" made attacks on launches and troop-laden barges crossing the river. The sirens appeared to demoralise enemy troops as the Wirraways dived on them, but enemy fighters retaliated and all four Martins were shot down as well as one Wirraway (the Australian crew parachuting to safety and being rescued by Allied ground troops). The few remaining machines contributed little further to the defence of Malaya.



This training unit in Malaya was formed using pilots and aircraft of No. 21 Sqdn., R.A.A.F. when No. 21 re-equipped with Brewster Buffaloes in late 1941. Here two machines are climbing away after take-off. (Photo: Imperial War Museum)

This close-up shows details of the crew positions and cockpit canopy. (Photo: Imperial War Museum)

After the fall of Malaya and New Britain, there was a pause for the regrouping and re-equipping of the battered units, and also to prepare the defence of Australia. No. 12 squadron at Darwin was called upon to defend the homeland against air attacks which began on 19th February 1942. At that time No. 12 had 14 Wirraways (five unserviceable) and, as can be imagined, the type had little success as a fighter. Fortunately more modern types became available and, in July 1942, the unit withdrew to Pell. At the end of the year, No. 12 was being reorganised as a dive-bomber unit with Wirraways and Vengeances, ultimately being entirely equipped with Vengeances by April 1943.

By this time, after the terrible losses around Rabaul, the Wirraway seemed to be finished as an operational aircraft, although its greatest moment was yet to come. On 10th August 1942, only 62 Wirraways

The 200th Wirraway receiving a final check after final assembly in December 1940. (Photo: A.P.)

were in first-line use (33 unserviceable). The type was in widespread use with the Empire Air Training Scheme; Britain undertook to supply, or finance, over 1,100 of the aircraft required in Australia, including 223 Wirraways, and Australia undertook to supply (among others) 82 Wirraways. As the war progressed, the type was used in progressively greater numbers as a trainer, over 400 still being on hand at VJ-Day.

IN ITS ELEMENT

Once Allied artillery was in action in New Guinea, the task for which No. 4 Squadron had been schooled became a reality. In October 1942, Field Marshal Blamey made a request for an army co-operation squadron operating comparatively slow aircraft—Wirraways, Boomerangs or Tiger Moths. Next day he learnt that No. 4 Squadron with Wirraways was to be sent to Port Moresby as soon as possible. At headquarters there was some opposition to this, in view of the unfortunate record of the type at Rabaul, and it was suggested that Boomerangs should be used instead. However, the Boomerangs would not be available for three months, and there was no alternative but to use the Wirraway.

The first three aircraft reached Port Moresby on 7th November 1942 and by the 21st the squadron was established at Berry aerodrome with 18 machines on strength. Tasks undertaken included aerial reconnaissance, photography, artillery spotting, message and supply dropping, dive-bombing, ground attack and the dropping of propaganda leaflets.

The decision to employ the Wirraway for army co-operation was shown to be justified; its low speed and the fact that it carried an observer behind the pilot made it highly suitable for the task. Two detached flights were sent from Berry to the other side of the Owen Stanley range to assist troops in the front-line against the Japanese. When airborne, the Wirraway was so much like the "Zeke" that an altitude limit was imposed upon it to avoid mis-leading A.A. gunners. Primarily the Wirraway missions concerned tactical reconnaissance, but the type soon became recognised for its versatility.

. . . SEND SIX BOTTLES BEER

One of the detached flights from No. 4 Squadron was based at Dobodura. On 26th December 1942 a Wirraway from this base, piloted by Flying Officer J. S. Archer with Sgt. J. L. Coulston as observer, was on a tactical reconnaissance flight over Gona. While flying over a wrecked Japanese ship, Archer sighted a "Zeke" flying about 1,000 feet below him. Without hesitation, he seized the advantage offered by his altitude, put the nose of his aircraft down and fired a five-second burst with his forward guns. The "Zeke" plunged into the sea. Shortly afterwards, squadron headquarters received an understandably elated signal from Dobodura which read, "*Archer has shot down one Zeke, repeat one Zeke. Send six bottles beer.*" The victory was unique; the beer—a precious commodity—was sent.

In the heavy fighting as the tide turned in favour of the Allies in New Guinea, the Wirraway performed invaluable work. No. 4 Squadron moved from Port Moresby to Wau, and participated in the fighting around Gona, Buna and Sanananda. General Eichelberger remarked of the Wirraway pilots, "I never hope to fight with braver men."

TRAINING AND POST-WAR DUTIES

By the middle of 1943, the Boomerang had almost entirely replaced the Wirraway in first-line service. The type had served mainly in the following squadrons (code letters in brackets): Nos. 4 (BE), 5 (BF), 12 (NH), 14 (PN), 21 (MJ), 22 (DU), 24 (GR), 25 (SJ), 54 (DL), 60 (EY), 78 (HU), 82 (FA), 85 (SH) and 87 (QK). Most squadrons, however, had Wirraways on strength at one time or another. Besides serving in the E.A.T.S., the type served many O.T.U.s and after the war continued to serve the R.A.A.F. until

This view of CA-7 trainer A20-202 *shows the Wirraway in excellent detail.* (Photo: via M. Kerr)

A Wirraway of a home-based R.A.A.F. training unit. (Photo: Keystone)

1959. The Royal Australian Navy used the Wirraway for training purposes at Nowra after the war, aircraft being converted specially for the Navy as the CA-20.

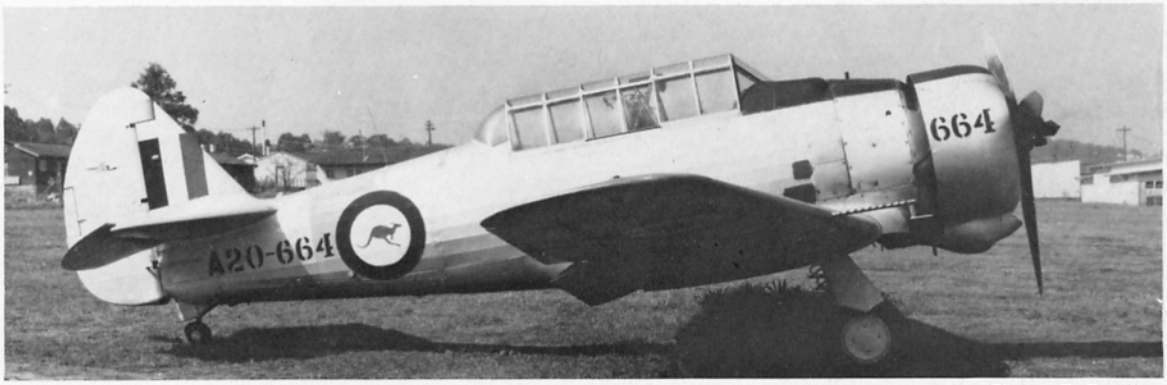
A number of Wirraways found their way onto the Australian civil register, several being used for crop-spraying and agricultural duties. In view of this, Commonwealth developed the CA-28 Ceres utilising a large number of Wirraway components. (380 Wirraways had been put into long-term storage, and the parts for the Ceres were readily available.) Even today, in the shape of the CA-28 agricultural aircraft, the Wirraway family is still serving Australia's needs.

THE WIRRAWAY DESCRIBED

Fuselage consisted of a welded chrome molybdenum steel framework with integrally welded fittings. It was built up from four sections bolted together, the sides being covered with fabric-covered aluminium alloy frames, while the decking and undersides were metal covered. Wings were of single spar construction with spaced ribs and stressed skin covering; they were built in five sections, a parallel chord centre section, two tapered outer panels and rounded wing tips. Wing section varied from N.A.C.A. 2215 to 2209. The split flaps, fitted to early Wirraways were supplemented later on by dive brakes. Tailplane and fin were all-metal, with stressed skin covering. Right and left-hand sides of the tailplane were interchangeable. Control surfaces were metal-framed with fabric covering and featured non-reversible trimming tabs.

This burning aircraft of No. 4 Sqdn. at Wau was set afire by a "near miss" during a Japanese raid.
(Photo: Australian War Memorial)

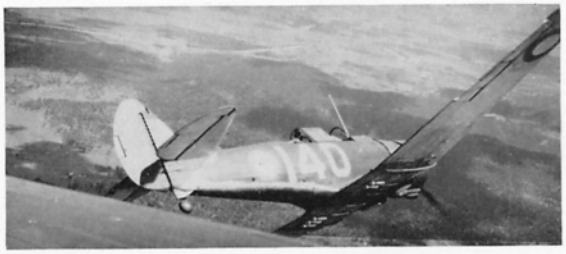
Wirraway III A20-752 *was originally a CA-16 but was later converted by Commonwealth to a CA-20* (see p. 10) *and used at the Royal Australian Naval Air Station, Nowra.* (Photo: P. Ricketts)



The Wirraway carried the R.A.A.F. "kangaroo roundel" during its last days in service. (Photo: E. E. Allen)

The Commonwealth-built Pratt & Whitney Wasp S1H1-G nine-cylinder air-cooled radial engine was rated at 600 h.p. at 7,000 ft. and enclosed in a N.A.C.A. cowling, drove a three-bladed D.H. variable-pitch propeller. The fuel was carried in two 45 gallon tanks.

The crew was accommodated in tandem cockpits beneath sliding canopies and the rear cockpit featured a rotating and folding seat for the gunner/bomb-aimer. Dual controls were fitted, and there was a prone bombing position in the floor. Early aircraft carried provision for parachute flares in the rear fuselage. Defensive armament comprised two fixed synchronised Vickers Mk. V machine-guns in the upper fuselage decking ahead of the cockpit and a movable Vickers Mk. I gun in the rear cockpit.



Commonwealth Wirraway I, A20-140, *after being retro-fitted with a modified carburettor air intake.* (Photo: P. Ricketts)

One 500 lb. or two 250 lb. bombs could be carried under the wings and there was provision for light bombs or marker flares under the centre-section.

COMMONWEALTH WIRRAWAY PRODUCTION LIST

Serial No.	c/n	Type	Quantity
A20-1	—	NA-16-1A	—
A20-2	—	NA-16-2K	—
A20-3 to 42	1-40	CA-1	40
A20-43 to 102	41-100	CA-3	60
A20-103 to 134	103-134	CA-5	32
A20-135 to 234	135-234	CA-7	100
A20-235 to 434	436-635	CA-8	200
A20-435 to 622	636-823	CA-9	188
A20-623 to 757	1075-1209	CA-16	135
A20-758 to 772	1210-1224	CA-16	25*

c/n—Construction Numbers * Ordered but not built.

Delivered to Royal Australian Navy (as CA-20): A20-18, 73, 141 145, 168, 190, 209, 211, 214, 225, 238, 250, 469, 479, 490, 567 and 752.
Delivered to U.S.A.A.F. (28/6/42): A20-497 and 527.
To civil register: A20-532 to VH-AAZ, A20-692 to VH-SSF, A20-696 to VH-SSG, A20-697 to VH-CEB, A20-680 to VH-CEA (Ceres prototype c/n A28-1.)
In existence: A20-103 at Australian War Memorial, Canberra. (P/O. Archer's machine). A20-10 held by Australian Aircraft Restoration Group, Melbourne. A20-685 Camden Museum of Aviation, N.S.W. plus at least two others privately owned.

SPECIFICATION

Dimensions: Span 43 ft. 0 in., length 27 ft. 10 in., height 12 ft. 0 in., wing area 255·75 sq. ft.
Weights: Empty 3,980 lb., loaded 6,353 lb.
Performance: Max. speed 205 m.p.h., cruising speed 182 m.p.h., climb s/l. 1,950 ft./min., service ceiling 23,000 ft., range 720 miles.

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